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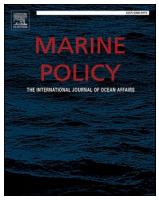

Beyond growth: Reshaping fisheries for a wellbeing economy

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ABSTRACT

Contemporary fisheries have been shaped by a paradigm of perpetual growth, characterized by increasing global production and consumption. While this growth has driven economic benefits and technological progress, it has jeopardized the sustainability of marine ecosystems, with implications for the long-term livelihoods and well-being of fishers, consumers and resource dependent coastal populations worldwide. This paper advocates for a shift beyond growth towards a wellbeing economy. It considers how five fundamental principles intrinsic to a wellbeing economy - purpose, nature, fairness, participation and dignity - can help reorient the fisheries sector. The paper then provides ten actionable recommendations for reshaping the composition and structure of economic activity in fisheries to enhance societal wellbeing and equity within ecological boundaries. In a world grappling with the consequences of unchecked economic growth, this paper offers insights into fostering a regenerative fisheries system that safeguards human prosperity and environmental integrity.

1. Introduction

Our current economic system is deeply rooted in capitalism, colonialism, and exploitation, that promotes hyper-consumption; incentivizes the use of intensive and destructive technologies; and drives fossil fuel dependence [1–4]. This approach to economic development is marked by escalating inequalities, exploitation and environmental degradation that threatens our planet's life support systems, including in marine ecosystems [5–8]. At the core of these issues is the principle of perpetual growth, which prioritizes continuous economic expansion, wealth accumulation and profit maximization. This growth-centric approach inherently disregards ecological limits, driving a relentless cycle of exploitation and depletion, and neglecting social wellbeing [2, 9–11]. The unsustainable trajectory it creates requires fundamentally rethinking our economic values [2,10,12].

For most of recent human history, marine ecosystems have been regarded as seemingly inexhaustible resources, crucial for global nutrition, food security, economic development and cultural identity

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[13–22]. The prevalent growth mindset also underpins the modern ocean economy and is characterised by escalating production and consumption of marine resources, leading to overfishing, pollution, biodiversity loss, climate change, social injustice and economic inequality [1,4,5,23,24]. Seafood supply chains are highly complex and interconnected and the high level of international trade in seafood underscores the global nature of the market. The benefits of this trade are not evenly distributed and contribute to the accumulation of profits and market power in the hands of a few, wealthy corporations and nations, undermining livelihoods of less powerful nations [25–27].

Alternative economic frameworks to neo-capitalism such as degrowth, post-growth and doughnut economics challenge the perpetual growth paradigm, aiming to recalibrate progress based on wellbeing rather than infinite consumption [2,3,10,28–31]. The common thread among these paradigms is that they offer a model for a fair and sustainable economy where people and the planet thrive [8]. The most prominent of these initiatives is wellbeing economics, with "wellbeing economy" used as a proxy for systemic change to the design of the economic system to achieve the purpose of social and ecological wellbeing [32]. Scotland is a founding member of the Wellbeing Economy Governments (WEGo), but the gulf between policy vision and implementation remains wide [32–34].

Ocean ecosystems are vital for achieving the Sustainable Development Goals (SDGs) of reducing poverty, inequality, climate change, environmental degradation, peace and justice by 2030 [35]. Addressing the current issues and challenges in fisheries requires a fundamental reorientation of current economic thinking based on various political economy assumptions, and a departure from pro-growth structures inherent in advanced capitalist societies towards an economy rooted in equity, dignity, and sufficiency [36]. This paper aims to challenge the current growth-centric paradigm in fisheries by examining how degrowth principles can be operationalised in the fisheries sector. We advocate for a transition towards a wellbeing economy approach rooted in equity and sufficiency. We begin by examining the concept of a wellbeing economy before exploring how its five principles - purpose, nature, fairness, participation and dignity - can help reorient an extractive, renewable industry such as fisheries. We then provide ten actionable recommendations for changing fisheries paradigms, policies and practices to enhance societal wellbeing within ecological boundaries.

2. Wellbeing economy and fisheries

Wellbeing is a fundamental human aspiration that is increasingly recognized by policymakers [37]. Although hard to define universally, it encompasses positive, holistic and integrated aspects of life, considering both objective measures like income, and subjective experiences of quality of life [5,6,12,33,38–43]. Multidimensional wellbeing frameworks and associated metrics are increasingly being employed by national governments in policy processes. More than two-thirds of OECD governments have developed national frameworks, development plans or surveys with a wellbeing focus, which have accelerated in recent years [37]. The mechanisms that countries employ to embed wellbeing concepts and principles across government include legislation (Italy, New Zealand, France); capacity building and evidence gathering (UK); cross-agency coordination and collaboration mechanisms (New Zealand, Japan); and public consultation (Australia, France, Germany, Ireland, Israel, Italy, UK).

In fisheries, wellbeing means living a valued and worthwhile life as part of a fair society and within ecological boundaries [5]. Wellbeing in fisheries is linked to economic benefits, sustainable livelihoods, human rights, and equity, and has been most explored in small-scale fisheries in particular [7,44–48]. Scholars such as Bennett et al. (2024)[49], Coulthard et al. (2018)[50] and Drury et al. (2024)[51] 24/08/2025 21:25:00have emphasized the multi-dimensional nature of wellbeing in fisheries, highlighting the social, cultural and ecological aspects of fisheries beyond economic gain. Others have focused on fairness, equity and justice based on the representation of different groups and individuals in decision making processes, but also the consideration of diverging views, beliefs, interest and needs, and how input is weighted [52,53]. Wellbeing research has also encompassed the unequal distribution of economic benefits in fisheries, with wealth and market power concentrated in the hands of large corporations, particularly evident in the global seafood trade, where small-scale fishers and coastal communities as well as vulnerable groups such as migrant workers, may be exploited and marginalised [54–57]. Declines in wellbeing have also been associated with distributional inequity and the social and economic vulnerabilities of fishing communities, suggesting that structural changes are needed to enable economic benefits to be more equitably shared [58,59]. Much of the literature to date focuses on wellbeing at the individual, group or community level. This paper moves beyond the individual and local scale to propose a fundamental restructuring of fisheries governance and management, including business models, to prioritize wellbeing over profit maximization. We also push past the critique of growth-oriented approaches to propose practical recommendations for implementing a wellbeing economy in fisheries that realign fisheries with human prosperity and ecological health.

To achieve this, we structure our analysis using the five needs framework as set out by the Wellbeing Economy Alliance: Purpose, Nature, Fairness, Participation and Dignity [60]. These are conceptualized as the common dimensions required to embed wellbeing across individual, community and social levels, and across cultural contexts [61,62]. They act as design principles to be incorporated into all policies, financial mechanisms and infrastructure used to shape and structure a wellbeing economy, and have been successfully deployed by national governments via the WEGo initiatives and incorporated into a practical guide on how to build wellbeing economy policies across scales [63,64]. This framing has been chosen as the principles can be applied to transform fisheries towards a new vision centred on human socio-economic and environmental wellbeing. By embracing this approach, fisheries can shift from extractive and growth-driven practices to a sustainable and equitable model that respects ecological boundaries and improves quality of life for all stakeholders.

3. Principles of a wellbeing economy and their application to fisheries

3.1. Purpose

Modern economic systems are shaped by an ideology of neo-liberal capitalism, which prioritizes the ever-increasing production of commodified goods [65–69]. Industrial fisheries rely on intensive extraction practices such as trawling, long-lining, purse seining and dredging, characterized by mechanization, automation, mass production and consumption. Technological innovations such as acoustic fish finders, monofilament lines, navigational aids and weather prediction models have enabled fishing fleets to fish ever more efficiently [70]. Engineering innovations in vessel design, engines and onboard equipment have expanded the geographic range, speed and depths at which species can be harvested, increasing the overall scale of operations. Freezing and transportation infrastructure have further facilitated growth, while marketing campaigns have driven consumption [71]. These factors have led to increased productivity and capital accumulation within the fishing industry, often reinvested into fleets, causing overfishing and overcapacity, and spreading ecological degradation into previously unexploited waters [72]. This has also incentivized illegal, unregulated and unreported (IUU) fishing, labour and human rights abuses, and funnelled profits and food back to high income nations [73,74]. Fisheries management strategies, likewise, prioritise profitability and efficiency. Focusing on maximising economic yield (MEY) aims to balance fish stock sustainability with economic profitability, while property rights-based approaches, such as individual transferable quotas

(ITQs), allocate fishing rights as tradable commodities, reinforcing market-driven exploitation and often marginalising small-scale fishers and coastal communities [73,74]. Small-scale and artisanal fisheries, approaches and gears such as handlines, small nets, and traps, typically have a lower environmental impact, as they use selective and less invasive methods of fishing than industrial fishing, although in regions of high population pressure or inadequate regulation, even small-scale fisheries can contribute to localized overfishing. Small-scale fishers often face economic challenges due to market competition, lack of market access or reduced access to fishing grounds [75,76], and their reduced catches can undermine food security, local economies and threaten traditional ways of life.

In a wellbeing economy, the purpose of the fishing industry transcends the singular pursuit of yield or profit [77]. It emphasizes a holistic approach integrating social equity, environmental sustainability and economic vitality. Enhancing multidimensional wellbeing rather than increasing material profit fundamentally changes the purpose of seafood production, trade and consumption, requiring profound structural change in how seafood is produced, marketed and distributed. This purpose frames economic activities and political institutions as the drivers of human and planetary wellbeing. For example, in a wellbeing economy, the private sector creates the means of meeting human and planetary needs, only conducting operations that preserve and regenerate natural systems while guaranteeing the respect of human rights and principles of decent work [78]. Ocean governance provides the structures for this purpose through policy-making that delivers distributional and generational justice and wellbeing through inclusive food systems that empower local communities and build on local and Indigenous knowledge to achieve social protection, employment creation, fisheries management and conservation, and food security. Achieving a wellbeing economy in the face of population growth is a complex but necessary goal. As populations expand, the pressure on natural resources intensifies, making it crucial to rethink how we organize our economies to ensure long-term sustainability and equity.

3.2. Dignity

Human dignity is a cornerstone of major international and national legal frameworks and humanitarian policies, including the Universal Declaration of Human Rights [79], regional human rights protection systems [80–83]; and foundation values of the European Union [84]. It is also integral to the FAO Guidelines on the Responsible Governance of Tenure, and the Guidelines on Small-Scale Fisheries [85,86]. While human rights have been increasingly prioritised in fisheries governance over the past decade [44,46], the concept of human dignity extends beyond these rights [87]. Dignity in wellbeing terms is centred on everyone having enough to live in comfort, safety and happiness, encompassing the right to live without shame and with access to sufficient, nutritious, culturally-appropriate food, a safe and thermally-comfortable home, appropriate clothing, the ability to rest and recover, and opportunities for social connection [88,89].

Capitalist systems are inherently growth-based [32], prioritizing profit maximization in the pursuit of perpetual growth, which can lead to the exploitation of workers through low wages, poor working conditions and limited benefits. When companies focus on reducing costs and improving efficiency, human dignity can be compromised as at-sea and on-land fisheries workers may face unsafe working environments, excessive hours and job insecurity [90–95]. Capitalism also tends to concentrate wealth among a small elite, exacerbating inequality, poverty, and restricted access to essential services such as healthcare, education and housing [96]. This wealth disparity often devalues the dignity of those who are already vulnerable or marginalised [97].

In capitalist economies, almost everything – including human labour and lives - can be commodified, reducing essential aspects of life to market goods and eroding the intrinsic value of individuals. Nowhere is this more apparent than in the high prevalence of trafficking, slavery, forced labour, child labour, and horrific working conditions found in some global fisheries; an issue that has been brought to the world's attention by civil society, investigative journalists, and researchers [98–104]. The economic pressures of capitalism can strain family and community life and wellbeing, while also promoting consumerism, where value is assigned to purchasing power, undermining human dignity [65]. Additionally, large corporations may exert significant influence over politics and policy making, prioritizing profit over human dignity, which can result in policies that favour corporate interests at the expense of human rights, social equity and environmental protection [105,106]

In a wellbeing economy, the holistic welfare of individuals, communities, societies and the environment is paramount. In a wellbeing economy, the focus shifts from traditional metrics of success such as GDP growth and profit maximization to a more inclusive and balanced approach that values the holistic welfare of individuals, communities and ecosystems. This shift transforms how industries like fisheries operate, reshaping policies and practices to prioritize human dignity. For example, policies that recognize the inherent worth of all workers see stakeholders as active in decision-making processes rather than a passive recipients of economic benefits, requiring decisive action by governments to prevent the human rights abuses that have been plaguing fisheries globally [90,91,107]. Dignity emphasizes the need for policies and practices that recognize and prioritize the inherent worth of all people in fisheries and aquaculture, addressing social, cultural, and environmental dimensions. In a wellbeing economy, fishing is designed to not merely maximise output but to balance the needs of the ecosystem with those of the community, including their cultural identity and preservation of traditions and relationships, rather than just material wealth [34].

3.3. Nature

There is an extensive literature on the commodification of nature within capitalism [108–112]. From a capitalist perspective, nature is viewed as a source of wealth, providing use values crucial for creating commodities. This perspective has led to a steady decline in global marine fish capture [113–115] with 35.5 % of the world's fish stocks overfished and nearly one in ten on the brink of extinction [116]. Capture fisheries are contributing to the broader spectrum of human activities that drive exploitation and environmental degradation. Certain fish species such as some tuna, cod and marlin species have experienced sharp declines [117,118]. Fishing can now be found in all geographies [25,119,120] including the deep sea [121–123] and polar waters [124–126]. Additionally, around 23.8 million mt of global edible aquatic food was lost or wasted along the value chain in 2021, from discards at sea to onshore processing, retail, food service and household consumption (but which does not include losses associated with processing at sea, aquaculture production or small-scale fisheries due to a lack of reliable data) [127]. Fossil fuel-dependent fleets and destructive fishing practices have exacerbated marine ecosystem degradation. This exploitation has led to biodiversity loss, overfishing and associated poverty [124,128–130], and the persistence of IUU fishing [131–133]. Changing species migration patterns are also a result of climate change, which is an outcome of the use of fossil fuels [134–136]. New commercial opportunities arising from the 'greening' of industries may lead to tokenistic gestures in business operations that barely diverge from business-as-usual, rather than substantive meaningful changes [137–139]. The mounting problems at global and regional scales have been exacerbated by the inability of existing institutions to address these behaviours [140,141] and the ocean economy's trajectory remains dangerously unsustainable.

Reversing decades of destructive practices requires a paradigm shift towards stewardship, viewing nature as more than a commodity. Abundant and healthy fish stocks yield greater social and economic benefits for society at large [142–145] and so prioritizing the long-term

conservation of natural resources must become the guiding principle for decision-making criteria. Prioritizing the long-term conservation and regeneration of natural resources should guide decision-making in finance, production, trade and consumption in a wellbeing economy. Current short-term returns must be replaced with a commitment to sustainable practices and responsible management and policies, and regulations must incentivize reinvestment in the regeneration of nature, aligning with long-term environmental health rather than short-term profit. Embracing this transformative mindset is essential for oceans to thrive and support both ecological balance and human prosperity.

3.4. Fairness

The pervasive narrative that countries with high levels of poverty only need to work harder, be tighter with budgets, and root out corruption so that they too can develop, ignores the historical and structural causes of poverty [146,147]: resource flows from low development index countries in the 'Global South" to high development index countries in the 'Global North' perpetuating inequalities. In capitalist economies, decisions around what to produce, for what purpose, for whose benefit and under what conditions, are generally made in the narrow interests of the capitalist class. A traditional, linear understanding of 'development' fails to recognize the richness of countries not measured by GDP and the environmental degradation, poverty and exploitation underpinning the wealth of financially privileged countries. In fisheries, power imbalances rooted in imperialism and colonialism have led to the unequal accumulation of wealth and opportunity, perpetuating inequities [148–151]. These structures disproportionately harm vulnerable populations, particularly in low-income countries where fisheries are crucial. Inequity in fisheries manifests in many ways: high-income countries gain unfair access to resources in low-income countries through third country access agreements [152,153]; traditional and Indigenous ecological knowledge is often ignored [154]; subsidies favour industrial sectors [155]; persistent inequities persist in ocean governance [24]; reduced regulatory capacity undermines management; and overexploitation and human rights violations are rife [90,94,156–158]. For example, in 2020, over 58 million people globally were engaged in the fisheries and aquaculture sector, with small-scale actors, particularly in developing countries, contributing significantly to global catch but often facing economic disparities [159]. Small-scale, artisanal fishers and aquaculture workers are responsible for 40 percent of global fish catches but do not hold an equivalent value of the USD 195 billion global fish trade [159], and the threat of climate change exacerbates the compounding effect of these issues [160].

Despite numerous initiatives aimed at addressing the challenges associated with the structure of capitalism and consumption, such as standard setting, impact investments and Fisheries Improvement Projects (FIPs), these efforts often fall short of tackling the entrenched power dynamics at the heart of these inequalities. To genuinely rectify these issues, a wellbeing economy offers a comprehensive approach that goes beyond traditional regulatory measures and delves into the root causes of power imbalances and unequal distribution of resources. In a wellbeing economy, justice and fairness are at the heart of the economic system and decision-making processes through inclusive policies address disparities, empower marginalized groups, and promote the overall welfare of communities reliant on fisheries [161,162].

3.5. Participation

The historical exclusion of major stakeholders such as developing countries from global decision-making, and coastal communities and fishermen in the local or national context, is a key factor in the current fisheries crises and a major weakness in fisheries management [163,164]. Since the 1990s, improving stakeholder participation in fisheries governance has been a priority due to dissatisfaction with management systems and the rising importance of stakeholder involvement [163,165–168]. Involving rightsholders and stakeholders in fisheries management benefits understanding, trust, conflict resolution and policy enforcement [169–171]. Despite these benefits, groups such as women, migrant workers, Indigenous peoples, and small-scale fishers remain excluded [54,86,172].

Meaningful participation requires recognizing all groups as stakeholders, providing access to information, financial means, and capacity to participate, and ensuring adequate representation, voice, and influence in decision-making [77]. In a wellbeing economy, local ecological knowledge, rights, values, perspectives, visions, and livelihoods are integral to decision-making, complementing scientific data [140,164]. This approach mandates the inclusion of all relevant stakeholder groups, supported by laws guaranteeing participation rights, adequate funding, capacity building, public platforms for information sharing, and access to justice. Involving rightsholders and stakeholders in fisheries management has benefits such as facilitating common understanding, establishing trust, resolving and avoiding conflicts [171], increasing stakeholder responsibility and accountability [170], enhancing the legitimacy and acceptance of management policies and decisions, and contributing to more effective enforcement of rules and regulations [169]. A challenge remains that corporate governance structures often exclude marginalized groups and lack clear standards and accountability for stakeholder engagement.

4. Recommendations to transform fisheries in a wellbeing economy

While material progress has improved the human condition in many ways, it has simultaneously jeopardized both the current and future wellbeing of society and the planet. Transitioning to a wellbeing economy is essential and requires interconnected actions across multiple scales: individual habits and behaviours; communities; national and supranational institutions and governance; business operations; within and across the wellbeing economy pillars in a connected and coordinated manner. In essence, this is systemic transformation, or a simultaneous transformation in existing systems at all levels [173].

Here, we present 10 recommendations that are grounded in the five principles to shift fisheries towards a wellbeing economy (Fig. 1). These changes will primarily be instigated by policymakers who have the regulatory authority and incentives to reform resource governance and management. While a fully-fledged wellbeing economy in fisheries is still an evolving concept, elements of this approach are already being implemented in various contexts, and we provide some examples of where change is already happening, as well as necessary actions that can be drawn from these examples to move fisheries towards a wellbeing economy.

4.1. Recommendation 1. Promote long-term holistic wellbeing in fisheries

The current economic system rewards short-term profits, consolidation, and inequitable distribution following a "grow first, redistribute, clean up later" approach that fosters extraction, rent-seeking, and social inequality [174]. A transformation of the fishing industry is necessary, shifting from wealth accumulation towards prioritizing holistic wellbeing, embedding social equity, environmental sustainability and economic resilience from the outset [175]. At the broadest level, this shift requires reframing economic and political narratives to focus on human and planetary wellbeing that guides reworked national planning frameworks, supported by legislative and regulatory changes that embed this approach into each sector of the economy, including fisheries. To reshape the sector effectively, norms and principles of human wellbeing, social equity and human rights must be integrated into fisheries policies, programmes, practices and decision-making processes at all levels [7]. The aim of such change is to ensure that fishing activities are only permitted when they benefit the environment, society, fishers and fishing communities, ensuring all costs and impacts are

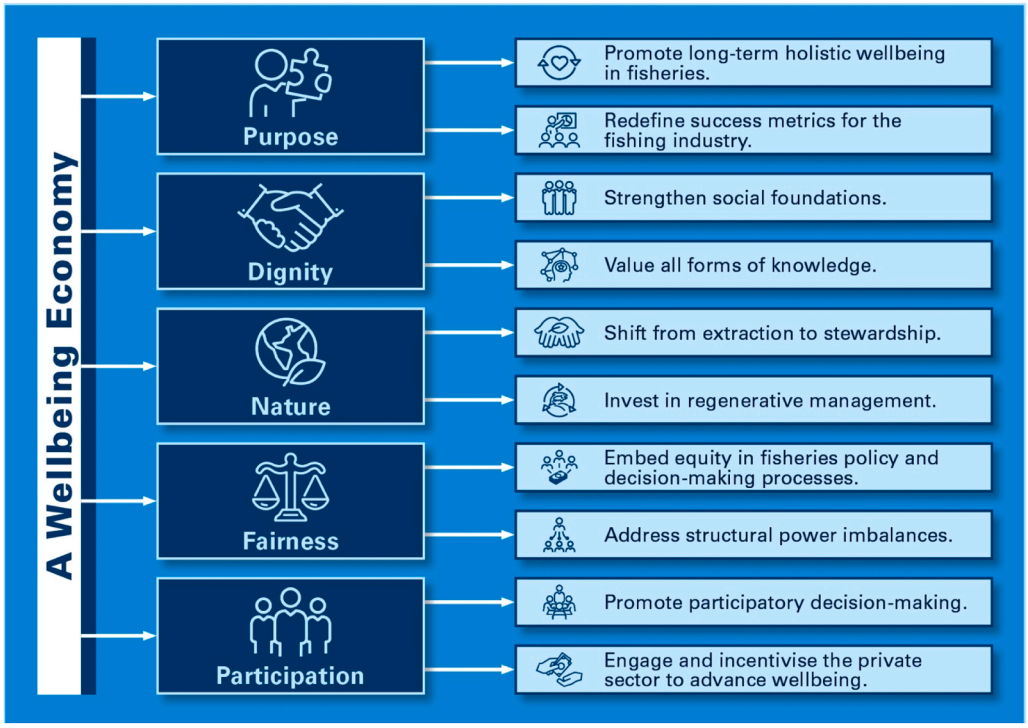

Fig. 1. Recommendations to transform fisheries in a wellbeing economy.

accounted for and internalized.

To date, sustainability measures in fisheries have primarily operated within a particular economic framework that takes profit maximization and property rights as central drivers of rational behaviour [176]. According to this logic, the 'tragedy of the commons' in fisheries arises from open access, distorting rational economic behaviour and leading to inefficient and destructive outcomes such as environmental destruction and social inequity [177]. Solutions have typically focused on government regulation and the market itself by privatizing rights to fish; enclosing for a few what was once the property of all [44,177,178]. This paper argues that policy frameworks must confront the deeper economic structures that drive unsustainable practices. Overfishing, habitat destruction and social inequity in fisheries stem not from greed or human nature, but from a global political-economic system of uneven development that drives large-scale industrial extraction, cheap products, and inequitable flows of resource wealth from the Global South to the North [110,179]. The privatization process and new property relationships disrupts long-standing social and ecological relationships and dispossesses people from their culture and access to resources, disproportionately harming the least powerful [178,180–182]. A 'tragedy of commodification' [183] now presides over many fishers and fishing communities who have been alienated from fishing livelihoods through processes of commodification and marketization of fishing access rights, replacing traditional social relationships with competitive dynamics [73].

Although efforts to reform fishery systems for goals beyond wealth maximization do exist, they are generally limited to small-scale and coastal fisheries rather than industrial fleets. Reforms within current systems focus on enhancing equity within ecological boundaries through power-sharing initiatives such as Māori restitution policy initiatives in New Zealand [184]; access rights to certain quantities of quota for coastal communities, as seen in Iceland [178]; more equitable governance arrangements [78]; more equitable distribution of benefits, such as in Alaska [185]; and community based fisheries management [186]. These examples demonstrate that moving to a long term holistic wellbeing approach involves governance and management schemes promoting cultural and economic pluralism, recognizing environmental constraints, and adapting to specific contexts [187,188]. At the same time, promoting long-term, holistic wellbeing in fisheries requires shifting the economic focus from purely per capita economic growth to an emphasis on human wellbeing and the interdependence between people and nature. By adopting an integrated framework encompassing relational, subjective and material dimensions of wellbeing, fisheries managers can better balance multidimensional aspects of wellbeing [189].

4.2. *Recommendation 2. Redefine success metrics for the fishing industry*

Although GDP is only technically a measure of the monetary value of all goods and services produced annually, is has long been used as a proxy for wellbeing [190,191]. Current assessments of fisheries often prioritize their GDP contributions, but this neglects environmental sustainability, social and community impacts, and non-market values associated with fishing, while favouring short-terms gains over long-term sustainability [192,193]. True progress must be measured in sustained improvements in wellbeing, rather than by the expansion of market economic activity and net financial gains [194]. To transition to a wellbeing economy, progress metrics and indicators must be revised to reflect the triple-bottom-line of sustainability, encompassing environmental, social and economic dimensions, and capturing the needs of current and future generations. An economic system that is rooted in care, ecology and sustainability will instead rely on metrics associated with local values, incentivizing operating interconnectedly rather than managing trade-offs; and supporting collaborating and contributing rather than consumerism. These new metrics, indicators and timeseries data should be developed through inclusive, deliberative processes involving stakeholders and traditional owners to foster negotiation and acceptance of objectives that align fisheries management with broader social policies [162,195].

A number of different models of alternative metrics already exist at the international level (with many more developed and applied locally and nationally), including the OECD Well-being Framework, Eurostat's Quality of Life framework and many others [196,197]. However, these have not formally been used in fisheries. Numerous academic papers

have sought to advance approaches to assessing social sustainability or wellbeing in fisheries [192,198–200] but these do not appear to have been taken up in national fisheries management efforts. Establishing non-financial performance indicators, such as community wellbeing, environmental impact and worker satisfaction, can help align industry goals with the principles of a wellbeing economy [49,89,201]. This includes flanking policies applied in the fisheries sector that emanate from policy domains outside of seafood, such as fuel taxes, subsidies, international finance, and retraining programmes. Some efforts have been made to incorporate indicators of social responsibility, grounded in human human rights, into the assessment of fisheries improvement projects and seafood markets [202,203]. These initiatives can be built on to refine metrics for true progress in fisheries.

4.3. Recommendation 3. Strengthen social foundations

Fisheries policies have traditionally favoured large-scale commercial operations, leading to the concentration of resources and rights among a few powerful entities. This can exacerbate poverty, perpetuate gender disparities, and weaken the resilience of small-scale fishing communities [9,204,205]. In particular, gendered power imbalances and the marginalization of women's participation in fisheries governance exacerbates procedural injustices, consequently shaping distributive outcomes [206].

Income and asset poverty, marginalization and vulnerability are interconnected conditions, with the poor more susceptible to external shocks and lacking resources to recover [44]. Adopting a human rights-based approach has been the method to improve social foundations in fisheries to date [44,207]. In industrial fisheries, attempts have been made to strengthen social foundations through various social standards, audits, tools and certifications, to ensure fair labour practices, safeguard human rights, and promote social equity. For example, the Social Accountability International certification (SA8000) demonstrates adherence to principles such as fair wages, reasonable working hours, freedom of association, protection against forced and child labour and discriminatory practices; the Responsible Fishing Vessel Standard (RFVS) is a tool to assess working and living conditions aboard fishing vessels; the UN Food and Agriculture Organisation (FAO) Voluntary Guidelines for Securing Small-Scale Fisheries (SSF Guidelines) promote responsible governance while enhancing social development; and the International Labour Organizations's Work in Fishing Convention (c188) sets clear standards for working conditions and strong labour rights. However, unless national governments also enforce these principles, private standards and international agreements may fail to significantly improve social foundations [94,106]. Nevertheless, moving from 'do no harm' to 'do more good' in industrial fisheries by combining this recommendation in synergy with the others, is the only way to shift from a 'tick box' approach to social standards to transforming the very framing of how dignity, equity and wellbeing are embedded in the sector; moving from compliance to the central tenets of empowering fisheries and their communities.

In fisheries management, setting goals such as fair wages, decent working conditions and social support systems is insufficient without new governance processes and institutions [208]; and there remains a gap in policies and mechanisms to promote broader values such as incorporation of Indigenous knowledge, gender equity, culture and traditions, links to food security, tenure and access rights, and equitable distribution, without degrading ecosystems. This requires inclusive governance frameworks based on systems of cooperation, community empowerment and an alignment of social and environmental safeguards with equitable distribution of resources, as is occurring in Alaska [209]. Strengthening social foundations involves prioritizing dignity and wellbeing, tailored to the specific needs and challenges of local sectors and communities. For example, by recognizing and addressing the unique challenges faced by women and other marginalized groups in fisheries, social equity can be strengthened as a foundation of fisheries management.

4.4. Recommendation 4. Value all forms of knowledge

Conventional fisheries science and management have been largely shaped by a Western paradigm, initially developed for single-stock, large-scale, commodity-oriented fisheries in North temperate regions [210,211]. This approach is not applicable in many parts of the world where small-scale and Indigenous fishing practices dominate [210]. It often operates under the illusion that nature is predictable, abundant, and controllable - a hierarchical and paternalistic worldview, leading to command-and-control resource management strategies [212,213]. Despite some managed stocks showing signs of rebuilding, this system is failing both ecologically and socially [143,214]. Fisheries are complex socio-ecological systems, where no single perspective is comprehensive or correct.

A plurality of viewpoints, based on diverse knowledge systems, can address power imbalances, knowledge inequalities, and racially linked injustices. Recognizing and valuing all forms of knowledge is essential for sustainable and equitable fisheries management. Efforts to preserve and promote the cultural identity, heritage and traditional knowledge of fishing communities are vital to valuing the diverse systems that support fishing livelihoods. The specific knowledge developed by fishers in a particular region is based on their direct experience of local ecosystems and resources, and is therefore context-specific. For example, in the Mediterranean, fishers use local knowledge of specific species behaviour to determine the best fishing seasons and methods [215], whereas in the South Pacific Islands, local communities play a key role in customary marine tenure systems where communities govern access to fishing grounds based on historical rights and knowledge [216,217].

Instead of merely integrating other knowledge systems into Western science, fostering an ethic of knowledge coexistence and complementarity is essential. Indigenous knowledge systems should complement, not be subsumed by, Western scientific insights [218–220]. Indigenous communities have long recognized the interconnectedness of people, planet, and economy in their approach to living [210] and so local ecological knowledge (LEK) and Traditional Ecological Knowledge (TEK) (knowledge accumulated by indigenous and local communities and often passed down through generations [221]) play crucial roles in illuminating paths towards more democratic models of governance. For instance, in New Zealand, efforts have been made to integrate Mātauranga Māori (Māori knowledge) into fishing practices and fisheries management [222,223].

4.5. Recommendation 5. Shift from extraction to stewardship

To truly value nature beyond its economic utility, long-term conservation over short-term profit must be prioritized. This requires a fundamental shift in investment, production, trade and consumption towards sustainable practices rooted in natural capital and healthy ecosystem functions [224,225]. Climate change is causing significant, widespread, and persistent impacts on marine ecosystems, which are predicted to interact and intensify [226]. Effective fisheries management must restore marine biodiversity and strengthen food security and livelihoods to increase resilience in the face of climate change. This can only be achieved by permitting fish stocks to fully recover within a carbon-neutral system [227]. In practice, this means decoupling work and employment from economic growth and building a carbon-neutral, circular and inclusive economy [228]. Prioritizing stewardship over extraction will lead to more resilient communities and healthier ecosystems when efficiency gains from trade are incorporated into a sufficiency strategy rather than a growth strategy [222,223]. For example, this approach will mean that trade enhances sustainability and equity, rather than driving economic expansion.

Shifting away from an extractive mentality in fisheries management not only requires policy reform but also a fundamental change in the

markets and value chains that drive the industry; recognizing that current market systems are focused on maximizing short-term profits through high extraction rates that undermine resource stewardship. Simple solutions are already being implemented such as the full utilization of catch and viewing by-products as an ethical imperative to capture nutrition and reduce seafood waste [127]. Paradigm shifts such as this are driven by a combination of regulation, market incentives, cultural change and global cooperation. Shifting towards small-scale fisheries systems, where local tenure and access rights are collectively recognized and protected for the benefit of local communities, also provides an inventive for stewardship over fisheries resources [229, 230]. Many global examples exist of where small-scale fishing and local communities are taking stewardship actions – such as to promote sustainability [231–234].

4.6. Recommendation 6. Invest in regenerative management

Achieving sustained ocean health and effective governance demands a comprehensive, long-term perspective that actively restores degraded ecosystems, integrates multiple uses into planning and minimizes waste while maximizing the reuse, repair and recycling of materials in the ocean economy [235–238]. Regenerative management moves beyond the neutral environmental impact of sustainability towards rethinking and redesigning fishing practices to create positive effects such as (re) building and contributing to (i.e. regenerating) natural ecosystems and community cohesion [239-242]. For fisheries management this means moving beyond seeing sustainability as simply avoiding overfishing, to imagining how fisheries could be managed to be regenerative [243].

Policy reforms, alongside capacity-building initiatives, and sustainable financing are essential to enhance the capabilities of governments, businesses, and civil society organizations to address underlying systemic issues such as economic inequality, gender injustice, market failures, and regulatory barriers that hinder sustainable and regenerative ocean economy initiatives [244,245]. Various forms of 'blue finance' exist, such as blue levies, stakeholder taxation, payment for ecosystem services, biodiversity offsetting, carbon (and other nutrient) trading credits, debt for nature swaps, blue bonds and blue tokens [246] show promise for incentivizing efforts by all actors – governments, businesses, and local communities – to improve the sustainability of the blue economy [245,247]. Robust governance frameworks are needed to ensure inclusive, equitable, transparent and accountable management of funds for ocean conservation to ensure that that investments are geared towards long-term ecosystem restoration and regeneration [245], while not increasing inequalities or undermining the human rights or well-being of fisheries.

Regenerative business strategies can accelerate the recovery and enhancement of marine ecosystems. This requires strategies for organizations to contribute to life-supporting conditions by mobilizing capital towards ocean conservation, restoration, and sustainable finance initiatives like green bonds and impact investment funds [245,248]. For instance, in 2018 the Seychelles launched the world's first blue bond, raising $15 million to fund sustainable marine projects. However, in general, the blue bond market faces barriers such as a lack of standardized metrics and limited reporting on impact [249]. Addressing these barriers is essential for scaling initiatives and ensuring their long-term effectiveness.

4.7. Recommendation 7. Embed equity-driven decision-making in marine policy processes

Procedural equity and power dynamics vary depending on context, which can have a major influence on fisheries allocations, access and social outcomes [250]. Diverse backgrounds across stakeholder groups and nation states, including disparities in wealth, power, and capacity, can lead to disproportionate experiences of benefits and costs from fisheries management and allocation decisions [251]. For international and national fisheries agreements to be equitable, they must prioritize the specific needs and vulnerabilities of marginalized groups and less powerful nations while resolving conflicts. Addressing the concentration of wealth and power among countries requires creating enabling conditions for equity to emerge in and through marine policy and decision-making processes [140,161,162].

Finding equitable solutions in fisheries management and allocations, for instance, requires embedding equity considerations into policy, and structured and consistent allocation and access processes that recognize relevant parties, including them in the process, developing clear rules for achieving equity in decision-making [252]. While hierarchical institutional regimes may seem efficient, disregarding stakeholder perspectives and inputs can undermine management outcomes at multiple scales. Recognizing that perceptions of fairness and legitimacy vary across different user groups underscores the need for targeted strategies to ensure equitable outcomes that are underpinned by inclusive governance, while remembering that fairness judgements change over time and are influenced by a number of social changes such as education and wealth accumulation [153].

Ensuring fair and just labour practices in industrial fisheries also requires dedicated legal frameworks, decision-making processes, and spaces for dialogue. For example, the Sectoral Social Dialogue Committee for Sea Fisheries (SSDC-F) in the European Union is a platform for equity-driven decision-making involving governments, workers, employers and fishers' unions. It provides a space for representatives and other stakeholders to negotiate agreements on pay and benefits, working conditions, safety at sea, and social protections, strengthening inclusive governance.

4.8. Recommendation 8. Address structural power imbalances

Achieving equity in fisheries necessitates addressing entrenched structural power imbalances through decentralization and democratization of economic processes [46,206,250,253]. Structural imbalances include the historical catch records, financial capacity or political influence that leads to the monopolization of access and exclusion of traditional access holders; centralized ownership and control in a few large corporations with minimal benefits for local fishers and their communities; the power of large fleets, retailers and seafood buyers primarily based in the Global North and who concentrate profits among their shareholders and investors; inequitable access to markets; and resource exploitation (overfishing and human) rooted in processes of colonization, privatization, deregulation and liberalization. All of these prevent coastal low-income countries and often coastal communities in developed countries from capturing the full benefits of their fisheries and escaping poverty through sustainable development of their fishing industries. Addressing disparities also requires proactive efforts to integrate gender perspectives into fisheries governance and decision-making processes. In fisheries, gendered power imbalances and the marginalization of women's participation in governance exacerbate procedural injustices, consequently shaping distributive outcomes [206, 208,254].

A fairer approach ensures equitable access to resources, opportunities and decision-making frameworks, particularly for marginalized and vulnerable groups [44,119,255]. Existing fisheries management regimes grounded in principles of local ownership of licenses, tenure rights protection and community-based management are relevant to small-scale and subsistence fisheries, particularly in developing countries such as West Africa and the Pacific Islands [190,256,257]. The applicability of these regimes may vary in large-scale, industrial fisheries, where corporate ownership and broader market forces dominate. In such contexts, predistribution involves crafting market systems that foster a more equitable distribution of economic resources without relying on government interventions such as taxation to redistribute wealth and narrow the gap between the rich and the poor after earnings [258]. Examples include: employee ownership such as the Scottish

finfish processor, Aquascot; worker cooperatives; community-owned utilities and community wealth-building initiatives that emphasize local ownership such as the Alaska Community Development Quota Program [209]; procurement; and employment. Additionally, it involves implementing measures such as salary ratios or maximum wage limits, as well as adopting true cost accounting practices, which factor in environmental costs and social impacts to provide consumers with more accurate price signals [258]. These steps are crucial for fostering economic and social justice within the fisheries sector [259–261].

4.9. Recommendation 9. Promote participatory decision-making

Systemic change is required to address underlying issues of injustice and inequality in fisheries by dispersing economic and political power more equitably among stakeholders [24,262]. An ongoing transformation towards co-created solutions requires continuous engagement and collaboration among stakeholders, ensuring the active inclusion of marginalized groups in decision-making processes, such as small-scale fishers and aquaculture farming communities. Creating inclusive spaces for dialogue and collaboration is essential so that the voices and perspectives of all stakeholders are valued and integrated into governance frameworks [163,166,170,250,263]. Participatory approaches are pivotal in this transition, fostering new relationships between historically privileged and disadvantaged communities within the fishing industry [264]. By promoting transparency, accountability, and meaningful engagement, participatory frameworks bridge gaps between stakeholders and cultivate justice and wellbeing across the sector. Only through inclusive and participatory approaches can a fishing industry that serves the needs of all stakeholders while safeguarding the health and integrity of oceans, be created [24]. Despite an increase in participatory processes more recently, there has also been a paradoxical decline in public support and legitimacy for marine policies. Participation in ocean governance is often poorly undertaken or in a 'tick-box' manner, lacking a deep understanding of social and public policy dynamics [167,168].

Nevertheless, a number of successful participatory approaches and co-created solutions can be found in various contexts worldwide (see 239,241,242). Co-management is one of the most common structures for promoting representation, inclusion, and participation in fisheries management [265]. It has been applied to fisheries at various scales, but is particularly important to ensuring the representation of small-scale fishers in decision-making processes related to capture fisheries. In order to produce more equitable outcomes between nations, participation by small-scale fishers in global fisheries management decisions and allocations, such as tuna Regional Fisheries Management Organizations (RFMOs), is warranted [148,266–268].

4.10. Recommendation 10. Engage and incentivize the private sector to enhance wellbeing

Engaging with the private sector is critical for transforming fisheries in a wellbeing economy, where aligning economic interests with environmental and social wellbeing can motivate businesses to prioritize long-term sustainability over short-term gains [248]. To integrate the principles of regenerative sustainability into business strategies, businesses must first reshape their objectives to restore the health of socio-ecological systems and then adopt regenerative business strategies to prioritize societal and environmental needs over traditional economic growth metrics [269]. This involves aligning organizational missions with collective values that prioritize wellbeing and moving beyond merely minimizing harm to actively contributing to the resilience and health of ecosystems [36,270–272]. In the fisheries sector, challenges such as a highly competitive and cost-conscious retail market, complex supply chains, and misalignment between commercial and sustainability strategies have hindered progress towards improved wellbeing.

The profit-driven nature of firms, which prioritize unlimited returns for equity-based investors, contributes significantly to economic growth, but also drives environmental degradation and inequality [273]. Restructuring business models to embrace principles such as equitable benefit sharing, local employment, and community-driven trust funds aligns business incentives with principles of regeneration and justice in fisheries [36,271,272,274]. For example, business structures that prioritize social benefit or balance financial gain with social good, such as B Corporations, offer a fairer and more equitable distribution of resources and benefits in industries like fisheries. Employee-owned companies, community-owned enterprises, steward-ownership models, social enterprises, trust-ownership models and mutual organizations integrate profit and purpose and a more equitable distribution of income and wealth. Not-for-profit businesses exist solely for social benefit and reinvest all surplus in furthering social goals reducing the pressure to produce for profit [275]. Nevertheless, they are unlikely to unlock existing growth-based pathways. Ultimately, more minimalist lifestyles (focused on reducing consumption and reusing and recycling inputs and outputs) supported by business regulations and taxes will combat the consumerism that is so detrimental for people and planet [273].

Failure to move beyond "do no harm" may eventually undermine business' social license to operate as stakeholders, both in impacted communities and among end-consumers who question business operations, with potential instability and reputational risks increasing [276]. Aligning with the principles of wellbeing economics, on the other hand, could address underlying drivers of severe human rights infringements, such as forced labour, plaguing the global fishing industry. This may in and off itself have a positive impact on business results [277].

5. Conclusion

This paper is a starting point for conceptualising a fisheries supply system oriented towards balancing wellbeing for fishers, businesses, the environment, and society in general. It is a vital contribution to the contemporary discourse on the urgent need for post-growth frameworks in the context of fisheries. The paper challenges the prevailing economic structures and paradigms that prioritize growth and consumption in the fisheries sector. These inequitable and imbalanced structures have fuelled unsustainable practices in marine ecosystems, leading to environmental degradation, exacerbating social injustices and threatening the viability and wellbeing of communities worldwide.

The principles of a wellbeing economy offer a pathway to remedy these challenges. By shifting from profit-driven models to those centred on holistic wellbeing, fisheries can play a pivotal role in sustainable development, aligning economic prosperity with social equity and environmental resilience. This paper offers recommendations for restructuring the composition and structure of economic activity in fisheries to achieve these goals. These recommendations aim not only to enhance the wellbeing of societies dependent on marine ecosystems but also to contribute to the broader aims of economic and social progress as outlined in the OECD's frameworks.

Given the inadequacy of the current system in addressing the scope, urgency and nature of the issues humanity currently faces, the principles outlined in this paper will require various stakeholders to champion specific responsibilities to effectively implement them. Policymakers at local, national and international levels must advocate for, and create, enabling environments that support wellbeing-centred models in the fisheries sector. This requires dialogues with local and regional stakeholders, including small-scale fishers, community leaders, and industry representatives. Achieving this transformative vision will also require the adoption of new business models, institutions and behavior that focus on transformative ways of doing business for the benefit of people and the planet. It will also take the creation of cross-disciplinary processes that address intersectionality, amplify the voices of marginalized groups, and ensure their inclusion in decision-making. Studies that evaluate the impact of these models and provide evidence-based recommendations for policy reform are required to demonstrate workable

models, facilitate advocacy and underpin the mindset changes that are needed. No one organization can tackle it alone; governments, businesses, communities, and management agencies must collaborate in diverse areas to transform the fisheries sector, leading to a more sustainable and equitable future.

CRediT authorship contribution statement

Julia Cirne Lima Weston: Writing – review & editing, Investigation. **Evgenia Micha:** Writing – review & editing, Formal analysis. **Tobias Troll:** Writing – review & editing, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Birgitte Krogh-Poulsen:** Writing – review & editing, Methodology, Investigation, Formal analysis, Conceptualization. **Iain Black:** Writing – review & editing, Supervision, Methodology, Investigation, Conceptualization. **Ibrahim Lawan:** Writing – review & editing, Investigation. **Ingrid Kelling:** Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Nicky Pouw:** Writing – review & editing, Investigation. **Katarina Wiese:** Writing – review & editing, Investigation. **Cristina Pita:** Writing – review & editing. **Wakita Kazumi:** Writing – review & editing, Investigation. **Andrew Jeffs:** Writing – review & editing, Investigation, Formal analysis. **Alexandra Leeper:** Writing – review & editing, Investigation. **Kate Barclay:** Writing – review & editing, Visualization, Supervision, Investigation, Formal analysis, Conceptualization. **Melanie Siggs:** Writing – review & editing, Methodology, Investigation. **Nathan Bennett:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization.

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Data availability

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

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