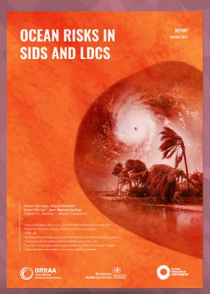
OCEAN RISKS REPORTS

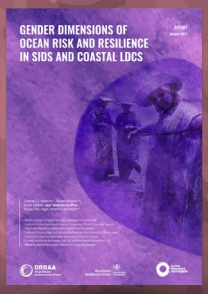
KEY MESSAGES

The ocean, its coastlines and coastal communities are at the front line of climate change, and are being massively impacted by increasing carbon dioxide and other greenhouse gas emissions. The world's poor, the majority of whom are women, are disproportionately encumbered by the associated risks. At the same time we see increasing hopes and expectations that the ocean will serve as an engine to sustain a bright "blue" future. There is an accelerating scramble for current, and future, ocean benefits that is unfolding with unprecedented intensity and diversity. Fisheries, mining, genetic resource patenting, aquaculture development, transportation, conservation, and communication, or emerging financial mechanisms and political interests, create an interesting mix of old and new interests. This scramble for the seas will generate surprising ecological, economic, equity and policy effects, and previously unperceived risks and opportunities. These 3 reports synthesise the latest knowledge and generate new insights on some of the key emerging ocean risks, and their implications on the resilience and human wellbeing on SIDS and LDCs:

- Jouffray J-B, Blasiak R, Nyström M, Österblom H, Tokunaga K, Wabnitz CCC, Norström AV (2021) Blue Acceleration: an ocean of risks and opportunities. Ocean Risk and Resilience Action Alliance (ORRAA) Report
- Tokunaga K, Blandon A, Blasiak R, Jouffray J-B, Wabnitz CCC, Norström AV (2021) Ocean risks in SIDS and LDCs. Ocean Risk and Resilience Action Alliance (ORRAA) Report
- Wabnitz CCC, Blasiak R, Harper S, Jouffray J-B, Tokunaga K, Norström AV (2021) Gender dynamics of ocean risk and resilience in SIDS and coastal LDCs. Ocean Risk and Resilience Action Alliance (ORRAA) Report

This is a contribution to the Ocean Risk and Resilience Action Alliance (ORRAA). It has been led by the Stockholm Resilience Centre at Stockholm University and the Global Resilience Partnership, and supported by the Government of Canada





www.oceanrisk.earth

ORRAA
Ocean Risk and
Resilience Action Alliance

Stockholm
Resilience Centre
Stockholm
University

GLOBAL
RESILIENCE
PARTNERSHIP

Blue Acceleration: an ocean of risks and opportunities

Jouffray J-B, Blasiak R, Nyström M, Österblom H, Tokunaga K, Wabnitz CCC, Norström AV

A new ocean reality – While humanity has depended on the ocean for millennia, the extent and diversity of today's ocean use is unprecedented. Many ocean-based industries are growing faster than the global economy, and in many cases exponentially. Driven in part by technological innovation, the ocean is widely seen as the next economic frontier and the solution for sustainable future human development. Yet this is unfolding in a complex and uncertain governance landscape and concerns have been raised over what this new ocean reality entails and who it is supposed to benefit.

Ocean for food, energy, material and space – Since 2000: aquaculture has been the world's fastest growing food production sector; offshore wind energy capacity has increased five hundred-fold and 70% of the major discoveries of hydrocarbon deposits have happened offshore; more than 13,000 marine genetic sequences have been registered in patents, and a surge in desalination plants has led to 65 million cubic metres of seawater being desalinated every day; nearly one million kilometres of fibre-optic cables have been laid on the seabed to carry 99% of international telecommunications, the annual volume of cargo transported by container shipping has quadrupled, and an area of ocean floor equivalent to the size of Peru has been leased for exploratory deep-sea mining. This is the "Blue Acceleration".

Blue Acceleration: for whom? – The Blue Acceleration represents a new phase in humanity's relationship with the ocean that exhibits a phenomenal rate of change over the last 30 years, with a sharp acceleration characterising the onset of the 21st century. But this scramble for the seas also poses issues of equity and benefit sharing: if there is a rush for the ocean, then who is winning? And who is being left behind? With a tendency to prioritize economic growth and an unequal distribution of technical and financial capacity to engage in ocean sectors, benefits from ocean use disproportionately flow to economically powerful states and corporations, while harms are largely felt by developing nations and local communities. A small number of corporations, headquartered in an even smaller number of countries, generate most of the revenues from ocean-based industries. Virtually none of the 100 largest corporate beneficiaries of ocean use are headquartered in small island developing states (SIDS) or coastal least developed countries (LDCs), except for a handful of companies based in Singapore, and more than half of all their revenues end up in just seven countries: the USA, Saudi Arabia, China, Norway, France, the UK and South Korea.

Equity and benefit sharing – Serious concerns exist about unsustainable growth trajectories and systemic inequity in the current ocean economy. A geographical focus on SIDS and LDCs shows a striking pattern with little if any acceleration. Consider for instance the promising biotech industry and the 13,000+ marine genetic sequences that have been associated with a patent since 1988: only 4 of these are from institutions located in SIDS. Likewise, while 18 countries in the world have installed offshore wind capacity (the three largest ones – UK, China and Germany – accounting for more than 79% of global capacity), none of the SIDS and LDCs are among those. Aquaculture is the world's fastest food production sector but only 0.09% of global production is taking place in SIDS and LDCs. On the other hand, they collectively account for 13% of the global marine protected areas and are "state sponsors" for almost a third of the seabed area under deep-sea mining exploration contracts.

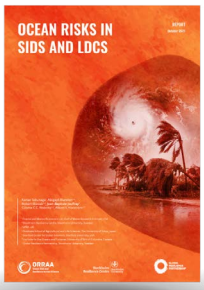
A new risk landscape – As commercial uses of the ocean accelerate and climate change impacts worsen, marine ecosystems and the communities who depend on them face unprecedented cumulative pressures and the emergence of new interconnected risks. Interactions and conflicts among users also intensify as the ocean space becomes more crowded. Addressing ocean risks – defined as the degree of deviation from the path to a sustainable and equitable ocean – must recognise the multidimensionality of risks (i.e., beyond biophysical hazards to also include social, geopolitical and financial dimensions). How financial institutions define "risks", for instance, rarely aligns with the complex nature of ocean risks and may fail to account for the materiality of non-financial information. Risk assessment in the Anthropocene is made ever more complicated as the baseline of stressors and hazards is rapidly shifting.

Stranded ocean assets – Investments in the ocean economy may become stranded assets and lose economic value ahead of their anticipated useful life due to changes in legislation, market forces, disruptive innovation, societal norms, or environmental shocks. Similarly, marine resources may become stranded resources if they are considered unprofitable or cannot be developed as a result of technological, spatial, regulatory, political, social, or environmental changes. SIDS and LDCs are particularly exposed in this context as they often qualify as latecomers (as opposed to first-comers), and are at risk of e.g., losing the opportunity to exploit their resources or being the recipients of stranded technologies (no longer wanted by first-comers).

Ocean finance – There is growing momentum on the role that public and private finance can play in assisting transformation towards sustainability. In the context of the ocean economy, sustainable finance is arguably two dimensional: financiers can act either as "enablers" by unlocking capital and increasing finance where it is lacking (e.g., SDG 14 remains the least financed goal and, in the last 10 years, less than 1% of the total value of the ocean economy has been invested in sustainable projects through philanthropy and official development assistance), or as "gatekeepers" by redirecting investments towards more sustainable and equitable practices (by deciding what to finance and under which conditions). This requires the mainstreaming of non-financial sustainability factors within the financial risk system and the continued analysis of how multidimensional ocean risks translate into financial risks.management, and climate adaptation.

Ocean risks in SIDS and LDCs

Tokunaga K, Blandon A, Blasiak R, Jouffray J-B, Wabnitz CCC, Norström AV



Small Island Developing States (SIDS) and Least Developed Countries (LDCs) share certain features that make their development paths susceptible to ocean risks. Their economies are heavily reliant on the natural environment; and they are vitally dependent on public sector employment and foreign financing. These make SIDS and LDCs particularly vulnerable to certain environmental and socioeconomic stressors such as extreme weather and geological events, coastal urbanization, as well as global health and financial crises.

However, SIDS and LDCs are not homogeneous groups, but represent a set of countries and territories that differ across many dimensions. Countries and territories classified as SIDS and LDCs are diverse in terms of population size, levels of economic development, land masses, sizes of territorial sea and exclusive economic zones (EEZs), types and availabilities of natural resources, cultures, histories, and governance systems. Thus, vulnerabilities, adaptive and transformative capacities, and pathways in which ocean risks manifest will vary across coastal communities in SIDS and LDCs.

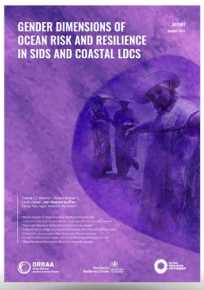
Ocean risks are coupled complex risks. Ocean risks to coastal communities in SIDS and LDCs are experienced across multiple dimensions. They include environmental stressors linked to climate change, such as floods, tropical storms, as well as shifts in species distributions and abundance. These interact with socioeconomic stressors including fisheries overexploitation, pollution, dredging, and poor land use. The unprecedented levels of hyper-connectivity in our world exacerbate this ocean risk landscape. Events such as pandemics, financial crises and synchronized food shocks propagate more rapidly than in the past and with greater geographic spread, and intersect with broader existing socio-cultural, economic, and political vulnerabilities.

Efforts to quantify risk and vulnerability must pay more explicit attention to the coupled complex nature of ocean risks. For example, impacts from sea level rise tend to be assessed in isolation from the effects of ocean warming. Likewise, fishing communities located in areas that will be inundated due to sea level rise likely will also be affected by changes in fisheries' productivity. In such cases, coastal infrastructure planning to adapt to climate change, for instance, needs to consider possible shifts in use patterns, such as changes in fish processing facilities and market functionalities. Such planning should also consider changes in seafood demand by the global market, demand for environmental conservation, and development of the carbon market, among others, while keeping social equity concerns in mind.

The complexity of ocean risk is mirrored in the complexity of resilience, which is multidimensional and dynamic. The global community will need to gain experience in understanding and addressing more complicated risks in the coming years. This report highlights examples of the socio-economic impacts of displacements and migration, which disrupt local social structures and can reduce or destroy social capital critical for economic growth and resilience. At the same time, an inability to relocate also negatively impacts community resilience and may trap communities in patterns of continually facing future risks. It is important to keep in mind the context-specificity of how ocean risks manifest and impact SIDS and LDCs, meaning a diverse set of approaches will be needed to adequately understand and respond to risk and vulnerability. Context-dependent solutions are essential; for instance, projects tailored to local ecological systems may work better than global-scale approaches under certain conditions. Projects that are designed with local communities can benefit from local knowledge to ensure that project address local demands and reflect socio-cultural contexts to achieve long-term success.

Strengthening of scientific and technical capacities as well as integration of local indigeneous and ecological knowledge can promote resilience, sustainabiilty, and equity. SIDS and LDCs often lack domestic technical capacities and data to conduct their own vulnerability and risk assessments. Thus, investments in building domestic scientific and technical capacities, baseline monitoring, data collection, and deployment of blue techs are critical for mitigating risks to build resilience. At the same time, many communities in SIDS and LDCs hold valuable local indigenous and ecological knowledge that are often neglected in the scientific or decision-making process. Integration of these knowledge systems can benefit disaster response, resource management, and climate adaptation.

Gender dynamics of ocean risk and resilience in SIDS and coastal LDCs



Wabnitz CCC, Blasiak R, Harper S, Jouffray J-B, Tokunaga K, Norström AV

Commit to and support the systematic collection of sex-disaggregated socio-economic data throughout small-scale fisheries (SSF) value chains and other ocean economy sectors, particularly in Small Island Developing States (SIDS) and Least Developed Countries (LDCs). Women play important roles across fisheries value chains and throughout the tourism sector. Yet, in many locations women remain undervalued and confined to particular roles, despite efforts to mainstream gender across coastal social-ecological systems. To change these patterns, relevant agencies need to collect sex-disaggregated data (e.g., on sector participation, resource use, nutrition, and decision making) and undertake gender analyses, to better understand and overcome gender-based inequalities as well as support coastal and community resilience. Such data are also key to determining if governments and donors are meeting their gender commitments and evaluating progress against targets under Sustainable Development Goal (SDG) 5 ("Gender equality and women's empowerment") and gender dimensions of other SDGs.

Strengthen women's agency in the fisheries and tourism sectors for widespread benefits. Both fisheries and tourism have been highlighted as pivotal sectors for achieving the SDGs. Targeted activities to support women's empowerment should include the development of organisational, communication and leadership skills, removing barriers to accessing basic education, credit, loans and insurance and developing financial literacy. Evidence from the tourism sector suggests that when women are empowered, their roles and contributions are better recognised and they benefit from greater economic independence. They also gain an increased sense of confidence, self-respect, social status, and overall well-being, as well as greater representation among community groups and in decision-making. When implementing activities to strengthen or shift social/cultural norms to support women's empowerment, gender dynamics must be carefully considered to avoid the risk of increasing gender-based violence.

Use an intersectional understanding of those who participate in and are dependent on fisheries and tourism to achieve an equitable ocean economy. Ensuring that fisheries and other ocean sectors develop in a manner that benefits society broadly equires consideration of how gender intersects with other dimensions of social identity (e.g., race, ethnicity, and wealth) to determine access to and control over ocean resources. Such an intersectional understanding of the factors shaping individuals' vulnerabilities, adaptation processes, and outcomes, will help advance strategies to bolster resilience and support ocean-dependent livelihoods.

Engage women and men to transform harmful gender norms and advance gender equality. Greater awareness of and focus on how power dynamics affect access, rights, and governance are needed to better understand gender-differentiated risks and to support equitable outcomes. Barriers to women's access to resources and opportunities, economic empowerment, and participation in leadership and decision making often are structural in nature, designed to privilege men. However, norms and expressions of masculinity can also be harmful to men's well-being. Gender transformative approaches focus on working with men and women – the entire community – to build a shared understanding of restrictive norms and promote locally-led and culturally appropriate shifts in these norms and the relationships between people towards equality and inclusion.

Consider cumulative as well as gender-differentiated (and intersectional) effects across shocks and sectors when assessing impacts of large-scale events, such as climate change and a global public health crisis. For example, across several SIDS, COVID-19 related declines in visitor arrivals, and losses and damages to fishing gear due to tropical cyclones have dramatically exacerbated hardships faced by women. Women are not inherently more vulnerable to these impacts. However, because of socio-economic structures, power relations, social-cultural norms, and expectations, women enjoy more restricted freedoms and rights than men, and therefore have social, economic and political disadvantages. Response and recovery actions, as well as resilience building initiatives, must consider gender and other identity factors that can lead to differentiated outcomes. Specific efforts are needed to integrate women's priorities, needs, and interests. These are necessary prerequisites for developing successful, long-term

solutions that work for all stakeholders, enabling the equitable distribution of aid, and supporting food security and sustainable livelihoods in the face of continued anthropogenic crises.

Bolster institutional strengthening efforts and policy coherence to maximise synergies and avoid unintentional trade offs across sectors. Seeking and supporting opportunities for synergies and collaboration between national entities assigned to promote gender equality and those responsible for sectors of the ocean economy can maximise efforts to mainstream gender in policies and across initiatives. This will require training and adequate capacity to support the implementation of such mechanisms, as well as budgets and planning processes that are gender responsive.

Provide clear and tractable objectives in Official Development Assistance (ODA) that support gender equality, and ensure these align with national priorities and support locally-led and determined actions and solutions. ODA from the Development Assistance Committee (DAC) donors is one of the key sources of financing towards achieving SDG5. However, this financing needs to align with nationally determined priorities. In addition, ODA projects that target gender equality should clearly state how activities are to contribute to advancing gender equality, reducing gender discrimination, or meeting gender-specific needs in practice, and outline outcomes that can be monitored and evaluated. ODA and other financial mechanisms also should create opportunities for locally-led and determined efforts. Currently, most financial flows are channelled through recipient governments and NGOs. Support for and engagement with locally-led civil society organisations focused on gender equality and women empowerment can strengthen local capacity, build trust, and promote social investment and innovation.

Address gender bias and barriers within institutions that provide development support. Donors should demonstrate their commitment to and leadership on gender equality in development and risk resilience projects across the ocean economy by increasing their total and proportional allocations to gender-focused programming. In addition, there is a need to build and strengthen leadership at all levels, from local communities to the international community, including with greater participation by women across (climate) finance mechanism boards.

Make gender equality explicit in philanthropy and private finance aimed at supporting a sustainable, resilient and just ocean economy. An important focus in finance provided to SIDS and coastal LDCs in the context of the ocean economy has been and should remain sustainability. However, it is imperative that funders also emphasize gender equality. While philanthropy is playing an increasing role in support of sustainable development, with a renewed focus on advancing justice and equity, there are currently no standardised means of tracking the proportion of philanthropic aid that supports gender equality. In the private finance sector, the 14 Sustainable Blue Economy Finance Principles have set out standards for mainstreaming sustainability of ocean-based sectors. To support a "Blue Economy" these 14 principles should explicitly state and mandate equity considerations as part of the guiding framework, making specific reference to SDG5, and promote the integration of these requirements by finance institutions more broadly.

ORRAA
Ocean Risk and
Resilience Action Alliance

Stockholm
Resilience Centre

Stockholm
University

GLOBAL
RESILIENCE
PARTNERSHIP