

The One Ocean Hub's Written Evidence to the United Nations High Commissioner for Human Rights

Call for inputs: Report on the adverse impact of climate change on the right to food

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Background information on the One Ocean Hub

The One Ocean Hub is an international programme of research for sustainable development, working to promote fair and inclusive decision-making for a healthy ocean whereby people and planet flourish. The Hub brings together coastal people, researchers, decision-makers, civil society, and international organisations to value, and learn from, different knowledge systems and voices. It specifically addresses the challenges and opportunities facing South Africa, Namibia, and Ghana, endeavouring to share relevant research findings at the regional and international levels. The Hub is funded by UK Research and Innovation (UKRI) through the Global Challenges Research Fund (GCRF), a key component in delivering the UK AID strategy to tackle the UN Sustainable Development Goals (SDGs). Led by the University of Strathclyde, UK, the Hub gathers 126 researchers, 21 research partners, and 19 project partner organisations, including UN bodies and programmes. The Hub is currently collaborating with the UN Food and Agriculture Organization, the UN Office of the High Commissioner for Human Rights, the Children Environmental Rights Initiative, and the UN Environment Programme to clarify and mainstream within pertinent policy dialogues the nexus between the ocean, climate change, biodiversity, and human rights. It has also been collaborating with the UN Division for Ocean Affairs and the Law of the Sea since 2020, providing virtual training sessions for government officials and other ocean practitioners around the world on the law of the sea, international environmental law, and human rights.

Scope of this written submission: This submission addresses three questions raised in the call for inputs on the adverse impact of climate change on the right to food, as listed below.

1. Please describe through concrete examples and stories how climate change is affecting the full realisation of the right to adequate food in your country.

The One Ocean Hub research in Ghana, Namibia, and South Africa shows that climate change has contributed to changes in oceanographic conditions, declining reproduction patterns, distribution of fish and human populations. Professor Kofi Nyarko from the University of Cape Coast explained that biogeographical distribution of fish species towards the high altitude, jeopardizing food security and livelihoods in the tropics and causing forced migration among coastal communities that relies on fisheries resources (IMO Maritime Week, 24 September 2020). He further noted that flooding and erosion caused by climate change further complicates the definition of artisanal fishing zone and industrial fishing zone that are measured from the shoreline (IMO Maritime Week, 24 September 2020). In Ghana, industrial and semi-industrial vessels are not permitted to operate within 12 nautical miles of the shoreline (IMO Maritime Week, 24 September 2020). The rapid change of the shoreline due to flooding and migration and the migration of fish to deeper-cooler water could intensify conflict between small-scale fishers and commercial fishers. Research by Dr John Ansah from the University of Cape Coast reveals that the development of flood defence walls to protect coastlines from sea level rise has also contributed to reducing fishing zones for small-scale fishers and further added to the tension between different fisheries stakeholders in Ghana (FAO-One Ocean Hub Workshop on Small-Scale Fisheries, 14 April 2021). This is not a problem unique to Ghana only. The Hub research in Namibia also reveals that small-scale fishers have to travel further away from the shoreline because there are not many fish left in shallow waters (FAO-One Ocean Hub Workshop on Small-Scale Fisheries, 14 April 2021).

Hub research on deep-sea also highlights how the deep and open ocean is vast, and vulnerable to changes caused by climate change such as warming of temperature, acidification, deoxygenation negatively impacted fishery sector (Roberts, 29 April 2020). Professor Murray Roberts, of the University of Edinburgh, noted that ocean acidification brought profound impact to both tropical

and cold-water coral. According to Roberts, ocean acidification has direct and rapid impact on coral reefs as it increased porosity in structurally critical sections of coral framework. This condition will lead to crumbling of load-bearing material, and a potential collapse and loss of complexity of the larger habitat and the biodiversity that the coral reefs support (Hennige et.al, 2020). A study conducted between 2016-2020 at ocean-basin scale that focused on the North Atlantic Ocean revealed how anticipated climate change will affect the distribution of deep-sea species including commercially important fishes that are crucial for food security and foundation species. This study projected that by the end of this century, the year of 2100, there will be a decrease of 28%-100% in suitable habitat for cold-water corals and a shift in suitable habitat for deep-sea fishes of 2.0°-9.9° towards higher latitudes (Morato, 2020: 2181). Scientists predicted that ‘the largest reductions in suitable habitat were projected for the scleractinian coral *Lophelia pertusa* and the octocoral *Paragorgia arborea*, with declines of at least 79% and 99% respectively’ (Morato, 2020:2181).

2. Please share a summary of any relevant data that captures how climate change adversely affects the full realisation of the right to food, taking into account discrimination, including multiple and intersecting forms of discrimination.

Climate change and biodiversity crisis affected all socioeconomic groups. However, the extent of their impacts is differentiated by gender, economic, social and geopolitical factors. The negative impacts are not the same within and between communities but will vary as these communities are heterogeneous. The One Ocean Hub’s research sheds light on the impacts on women and girls in relation to their right to food. The full realisation of girls and women right to food in the face of climate change intersects with their land tenure and access to productive assets and technology, access to water, and sea-level rise. The Hub research and partnerships generally underscoring the need for further attention to girls and women as ocean defenders (environmental human rights defenders).

Hub research led by Buhle Francis in the rural **Eastern Cape, South Africa**, revealed that women still struggle to have the right to access and own land (Mutangadura, 2004) in the context of patriarchal societies where the prevailing view that women should not own land is shared by traditional leaders who are responsible for distributing land within their rural areas. Rural livelihoods are mainly depended on agricultural production, hence discrimination in land allocation increases food insecurity for women. Also, women and girls have hardly any productive assets such as farming equipment and livestock, which results in their economic marginalisation. Poverty increases vulnerability and women have also limited access to adaptation technologies and micro-finance support initiatives, which coupled with low literacy levels compromises their coping power. Women’s livelihood strategies are more dependent on natural resources and this makes them highly exposed to the impacts of climate change (Mutangadura, 2004, Moser and Satterthwaite, 2010). The majority of women and girls in the South African coastline are experiencing severe shortages of water (especially in the Eastern Cape, like Hamburg) within their communities and spend significant time trying to collect water, sometimes having to walk for more than 5 kms. This problem, unfortunately, is not unique to South Africa. The issue of water shortages in rural and coastal communities and its implications on women is also common in Ghana (Filho et al., 2022; Buor, 2004)

Hub researchers based at the University of Cape Coast, Ghana, Dr Georgina Yaa Oduro and Dr John Ansah and news on Ghanaian Times by Kafui Gati noted how tidal waves and increase in sea level due to climate change have washed away essential infrastructure in some Ghanaian communities, such as in schools and homes, preventing girls from attending schools and women from performing their basic domestic chores, including cooking (Oduro and Ansah, forthcoming).

Interviews with community members in coastal communities in the Central and Western Regions of Ghana have shown that the construction of sea defences have safeguarded community settlements and women fish processors smoking sheds against the destructions from these high tides. However, this adaptation measure also deprived some artisanal fishermen of their livelihoods due to the resulting reduction in opportunities to operate their beach seine and bring canoes ashore for maintenance.

Hub research in Ghana further underscored that with dwindling fish stocks due to illegal, unreported and unregulated fishing practices and climatic change, the livelihood of women in coastal communities have been rendered vulnerable together with their right to a healthy environment. Furthermore, Kyei-Gyamfi, 2022 reported on a ‘fish for sex’ phenomenon, whereby women who have unequal access to limited fish stocks offer sex to fishermen in an exchange for fish to support their fish-related business. Girls whose mothers cannot guarantee food security for their household are also involved. This phenomenon has increased the potential for contraction of HIV/AIDS and other sexually transmitted diseases.

The Hub’s women small-scale fishers workshop organised in Ghana in November 2021 revealed that women are poorly organised and, as a result, they lack a voice in fisheries management decision-making. The lack of access to savings and micro credit also reduces their opportunity to move into other livelihoods during the lean fishing season. At the workshop, it was revealed that if most women were to own boats and fund most fishing trips, they would be able to influence/dictate the fisheries methods used by the fishermen who are indebted to or employed by them. This contributes directly to sustainable fishery practices. In Elmina, women fish mummies are said to have boycotted fish caught with small mesh nets and dynamite and have enforced their fishermen to desist from chemical fishing by using their daily wages to safeguard daily marketing revenue losses (Ansah, Oduro, Boateng & Dadoo, OOH workshop in Ghana, July, 2022). Fish mummies have also been known to refuse buying fish on Tuesdays, which is supposed to be resting days for the fishermen. These findings highlight the pressing need to protect women’s access to working space, provide financial literacy, and empower women to improve food security.

3. Please identify and share examples of promising practices and challenges in the promotion, protection, and fulfilment of the full realisation of the right to food in the context of the adverse effects of climate change.

In **South Africa**, with input from the Department of Forestry, Fisheries and Environment (DFFE), we are modeling and developing climate scenarios for fisheries, for the southern Benguela system. In addition, the Algoa Bay case study co-produced with the local municipality an online tool to assess ability to respond to climate change through human, legal/policy, and environmental resources, integrating social sciences, climate science, conservation biology, social-ecological systems, and ecology. Significance has been recognized at the regional level, through invited policy brief and presentations to the Nairobi Convention for the Western Indian Ocean (February 2021; **SDG 13b**).

In **Ghana**, we developed ecosystem and fish stock assessment models to assess and identify fish stocks of economic and social importance (sea breams) that are at risk from a number of cumulative factors, including climate change. These findings informed the design of community fieldwork to elicit views of the Elmina fishing community on the cause of reduced stocks, and community observation of changes in catch size, and catch locations. This local knowledge is informing ongoing climate change vulnerability assessments, the outputs of which will inform dialogue on

alternative and supplementary livelihoods. This iterative research process with the community, allows local knowledge to inform science, and science to be fed back to the community. In parallel, we are co-developing with government departments (Ghana’s Environmental Protection Agency and Fisheries Commission), a new geo-meta database, to provide a common data depository available in-country to address issues of disconnects between agencies responsible for managing marine biodiversity.

In Ghana, Namibia, and South Africa the Hub developed different methods to integrate indigenous and local knowledge into decision-making:

- small-scale fisher community-level assessments of vulnerability to climate change and impacts on their well-being (**SDG 14.4**),
- documentation of alignment between science and indigenous knowledge through an original animated film, *Indlela yokuphila* (isiZulu for “the soul’s journey”), which brought together artists, traditional healers, marine sociologists and deep-sea marine ecologists that have been presented at the Glasgow Climate COP26 in collaboration with the Green Climate Fund.
- support networks for Indigenous Peoples and local communities (such as the Khoisan community in South Africa, the Topnaar community in Namibia, and small-scale fishers in Ghana) with scientific and legal evidence, to express concerns regarding proposed ocean uses that would contribute to climate change (**SDG 13.3**).
- In South Africa, the Hub used theatre-based research to identify ocean-related injustices and increase participation in ocean governance. A play developed with communities along the Kwa-Zulu Natal coast (Lalela uLwandle “Listen to the Sea”) has offered decision-makers and stakeholders a facilitated discussion on ocean governance and collected testimonies on people’s concerns and hopes for the ocean. Some of these testimonies were used by civil society partners in judicial proceedings against oil and gas drilling in the seabed, resulting in decisions on the protection of cultural and participation rights, as well as environmental protection. Lalela uLwandle was presented at the UNFCCC’s Capacity Building Hub at Sharm El Sheik Climate COP27.

In conclusion, this written evidence highlights two important points:

1. Human rights are directly impacted by climate change. Climate change threatens the enjoyment of a range of human rights including rights to food security and sovereignty, life, water and sanitation, a healthy environment, culture and sustainable development.
2. Inter- and trans-disciplinarity research and science/policy engagement on the nexus of climate change, ocean, biodiversity and human rights are key to fair and inclusive climate solutions. Climate change is driving rapid and vast changes to the ocean and the ways people relate to it. Adaptation to these changes is essential to maintain the services and values the ocean provides. Given the complexity of challenges posed by climate change, multi-disciplinarity and science/policy engagement are key to suitable adaptation and mitigation processes (Roberts, 30 April 2020; Febrica, 29 April 2021). There is a pressing need to integrate both marine and social sciences in ocean research. The One Ocean Hub adopts transdisciplinarity, working with stakeholders and experts from varied disciplines including marine science, law, anthropology, sociology, history, and arts (Wahome, Hills, and Morgera, 30 August 2020; 29 October 2020). Particularly, the One Ocean Hub’s tools, technology and policy guidance, which support ecosystem mapping and sustainable fisheries, are developed across marine and social sciences.