



One Ocean Hub: Knowledge Integration Workshop Report

February 2024



UKRI GCRF 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 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 Sustainable Development Goals. It addresses the challenges and opportunities of South Africa, Namibia, Ghana, and shares knowledge at regional (South Pacific, Africa, and Caribbean) and international levels. The One Ocean Hub is led by the University of Strathclyde, UK and gathers 126 researchers, 21 research partners, and 19 project partner organisations, including United Nations bodies and programmes under one umbrella.

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One Ocean Hub: Knowledge Integration Writing Workshop Report

Monday 5-9 February 2024

Ocean Science Campus, Gqeberha, South Africa

Co-chairs:	Nina Rivers and Philile Mbatha	
Meeting Convenor:	Meredith Fernandes	
Schedule:	Mon 5th	Paper pitches and developing high impact abstracts <i>Nina Rivers, Philile Mbatha, Bernadette Snow, Elisa Morgera and paper groups</i>
	Tue 6th	Paper ideas, developing abstracts and boat excursion <i>Paper groups</i>
	Wed 7th	Paper development and IIWG high level synthesis outputs and UN Ocean Decade <i>Paper groups, Milica Prokic, Jeremy Hills and Elisa Morgera</i>
	Thu 8th	Current trends in funding, revising legacy themes and developing high-level theories of change <i>Rachel Holtby, Nina Rivers and country groups</i>
	Fri 9th	Writing, paper timelines, page fees and closing <i>Paper groups, Elisa Morgera and Nina Rivers</i>

**See Appendix 1 for full list of workshop participants*

Summary of the workshop

The overall purpose of the writing workshop was to integrate work across the Hub through high impact papers and proposals. Over the course of the week, Hub researchers (from the Universities of Cape Coast, Namibia, Nelson Mandela University, South Pacific, Strathclyde, West Indies and Cefas) collaborated on developing co-authored papers around high impact Hub themes: Transdisciplinarity; Culture and art; Socio-legal aspects of SSFs; Climate vulnerability and National Blue Economy policies. The key aim was for participants to think about how their papers integrate lessons and knowledge from other disciplines, work packages and Hub countries. Most days were set aside for paper development but on Thursday 8 February, country groups (Ghana, South Africa and Namibia) developed high-level theories of change according to legacy themes co-identified out of each country around Climate Change & Heritage; Fisheries: Culture and Legal (see Appendix 2 for detailed legacy themes for each country). The aim of developing these high-level theories of change is to assess the potential of these being developed further into funding proposals.



The knowledge integration writing team of OOH researchers (Gqeberha, 8 February)

Four papers covering high-impact themes: SSFs, Blue Economy, Transdisciplinarity, and Cultural Heritage & Art

Nina Rivers opened the week with a welcome talk to give the attendees a broad overview of the purpose of the week. Dr Philile Mbatha then set the writing workshop within the broader context of ongoing OOH monitoring, learning and evaluation and legacy activities including the OLAs, annual questionnaire, country meetings, as well as the Hub's participation in the UN Ocean Decade.

Professor Bernadette Snow then led two “paper pitch” sessions where each paper group presented the main idea and message of their paper and received constructive and valuable feedback from the larger group. The secondary purpose of these sessions was to ‘advertise’ the papers to see if anyone else was interested to contribute.

Before lunch, Dr Nomtha Hadi, the acting director of the Institute for Coastal and Marine Research (CMR) welcomed the group as the host of the workshop.



Acting director of the Institute of Coastal and Marine Research (CMR), Dr Nomtha Hadi, welcomed workshop participants.

Developing a high-impact abstract

After lunch Professor Elisa Morgera presented four top tips to develop a high impact abstract:

- The first was to have a ‘cosmic statement’ that captures the paper’s novel or ultimate message.

- The second is the 'so what?' of the paper where she encouraged authors to think about how to get people interested in papers who would not usually know about or be interested in the paper's work.
- The third tip was to clearly articulate the original work of the paper and list these contributions in the abstract.
- Lastly is to explain the 'how?' of the paper and to emphasise the inter and transdisciplinary nature of the way researchers have worked across the Hub.

For most of the week, participants worked in paper groups and developed working structures for four co-authored papers with working titles and timelines as follows:

Paper 1: "The complexities within SSF and RF definitions: a comparative analysis between Ghana, Namibia and South Africa" (Co-leads: Aphiwe Moshani and Natanah Gusha).

Possible journals: Fish and Fisheries; Marine Policy

Working timeline: First draft end March 2024

Current list of co-authors: A. Moshani, K. Hyder, E. Morgera, P. Mbatha, J. Aggrey-Finn, M. Wilhelm, J. Sunde, B. Francis, B. Erinosho, D. Watson, E. Acheampong, T. Warikandwa, L. Libebe, E. Shakalela, A. Winkler, M. Farthing, W. Potts, N. Gusha

The manner in which fisheries sectors are defined impacts on the tensions, challenges, and opportunities within ocean governance. Fisheries have a diverse range of participants that have different needs, that are governed by sectors that are generally split into large scale and small-scale commercial, and recreational fisheries. The complexity of constructing definitions that capture the full range of fisheries sectors and practices can lead to misclassification of individual actors, exclusion from decision making processes, and power imbalances. This occurs vertically across international, national, and local scales and horizontally across local contexts. These issues have not been captured within existing governance structures across scale. This paper explores these issues through a comparative lens across distinctive contexts in three different countries, Ghana, Namibia, and South Africa. Firstly, the study will achieve this by focusing on understanding the implications of these nuances in locally manifesting tensions stemming from ill fitting definitions in fisheries sectors, what this means for fishers who fall outside of national statutory definitions, for people who do not recognize themselves in these definitions and how this leads to change/influence fishing behaviours. Secondly, the paper aims to identify the role of power dynamics in the interpretation and manner in which resource users engage with existing definitions of a fishery. Outcomes? Novel contribution of

paper can be highlighting the knowledge systems informing certain fisheries definitions and a recommendation for knowledge co-production and transdisciplinarity.

Paper folder link:

https://drive.google.com/drive/folders/1mJrOv6O8QeuEhCrqKC_LhIEPf-ZZFm91

Paper 2: "Does A Rising Tide Float All Boats? A Comparative Analysis of the Blue Economy & Small Scale Fisheries in South Africa, Namibia, Ghana and the Caribbean" (Co-leads: Merle Sowman and Elize Shakalela).

Possible journals: Ocean and Coastal Management; Frontiers.

Working timeline: First draft end of May 2024

Current authors: M. Sowman, B. T. Erinosho, A.M.S.N. Lancaster, J.W. Ansah, I. Senekal, T. Pereira, E. Shakalela, T. Kadhila.

The experiences of small-scale fishers across African and Caribbean countries challenge the narrative of Blue Economy as a transformative paradigm for sustainable livelihoods and development. Using a blue and environmental justice lens, the Paper explores Blue Economy policies, programmes, initiatives and implementation practices in Ghana, Namibia, South Africa and the Caribbean from the perspective of small-scale fishing (SSF) communities. Based on empirical work in the participating countries, our research reveals that despite policy rhetoric that promises attention to environmental sustainability, economic upliftment, and fair distribution of benefits especially for vulnerable SSFs, in practice, the rights of coastal fishing communities are being undermined through more aggressive and destructive ocean activities such as oil and gas exploration and production, increasing focus on mineral extraction, intensification of industrial fishing and aquaculture, and expansion of large ports, harbours and maritime transport. While mechanisms for marine biodiversity protection through tools such as MPAs, blue bonds, fishery closures are in place, most countries are advocating expansion of marine protected areas (MPAs, 30x30) as a tool to offset biodiversity losses of ocean development. The research reveals policy contradictions, especially in terms of climate change and biodiversity commitments, weak governance and increasing tensions across Blue Economy sectors which have implications for SSF communities. From insights and lessons across participating states, there is an urgent need for a transformed relationship with the ocean which is underpinned by principles of blue justice (environmental justice, HRs, gender equity, economic justice) and approaches that centre values, rights and priorities the ocean dependent communities.

Paper folder link:

<https://docs.google.com/document/d/1rU55l5dq4EYzbGpefiuCFuEMzI3fdotQBuYJOuOjNC4/edit?usp=sharing>

Paper 3: "TD or not TD-that is our question: Using transdisciplinary approaches for delivering development outcomes" (Co-leads: Jeremy Hills and Mia Strand).

Possible journals: People and Nature

Working timeline: First draft end of March 2024

Current authors: J. Hills, B. Snow, M. Strand, E. Acheampong, M. Prokic, N. Rivers, K. Hyder, A. Lancaster

The multiple and seemingly intractable challenges to sustainability of the world's ocean demand transformation in knowledge and action. Such transformation is achievable through integrated and transdisciplinary understanding of ocean dynamics; breaking away from traditional sectoral approaches and homogenous (non-diverse) knowledge bases. This research analyses the role of transdisciplinary (TD) research approaches in promoting transformative ocean governance. It seeks answers to one key question: To which extent is TD research effective for tackling intractable issues within ocean governance? Thirteen research initiatives, across multiple developing countries implemented through the One Ocean Hub, were used to assess the effectiveness of TD in contributing to transformative ocean governance. The first methodological step was to identify the strength of transdisciplinary design features in each research initiative using a set of indicators i.e determining if an initiative in question falls under 'strong' or 'weak' transdisciplinarity); initiatives were separated into two groups of strong or limited transdisciplinarity. The second step tracked the research initiative outcomes onto 13 principles of transformative ocean governance; a difference in the coverage of the principles between the two groups emerged. The analysis concludes that transdisciplinary approaches do indeed affect development outcomes for oceans. This supports the contention that for some intractable challenges in the ocean, transdisciplinary approaches should be invoked. Furthermore, the research provides the first prototyping of transdisciplinary implementation within the ocean setting, for furthering global agendas such as the SDGs and the UN Ocean Decade.

Paper folder link:

https://drive.google.com/drive/folders/1odNIV7qPrJtSO9ECKOxghEKOmeyDobix?usp=drive_link

Paper 4: "Ocean governance, culture heritage, and human rights: Exploring critical intersections through collaborative and art-based approaches in Ghana, Namibia and South Africa" (Co-leads: Elsemi Olwage and Loyiso Dunga).

Possible journals: Maritime Studies; African Journal of Marine Science; Ecology and Society; People and Nature.

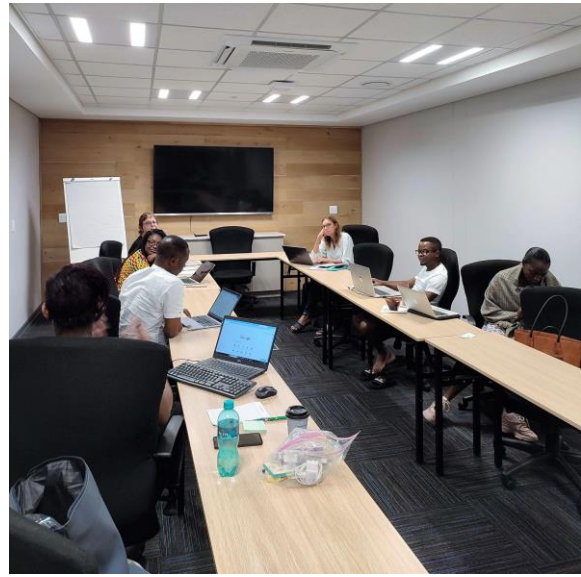
Working timeline: First draft end of June 2024

Current authors: E. Olwage, L. Dunga, E. Morgera, D. Wilson, L. Libebe, H. Golo, J.W. Ansah, M. Strand, N. Rivers, P. Mbatha, S. Tshiningayamwe, W. Tsidi, T. Sanni, S. Ibrahim

Integrating cultural heritage into marine and coastal governance is crucial for inclusion, recognition and protecting human rights. Whose heritage is recognised and included, and how, matters, especially in contexts of marginalisation and power and knowledge asymmetries. Globally there are numerous calls to integrate cultural heritage into ocean governance. However, how it is done in practice is unclear, contested and often a tick-box exercise. In addition, the focus is still often limited to shipwrecks and underwater heritage and tangible and colonial conceptions of heritage such as monuments. In this paper, we draw on praxis and case-based research from three African countries, namely Ghana, Namibia, and South Africa, to argue for building a more comprehensive and context-specific understanding of marine cultural heritage. Secondly, we demonstrate the role of innovative collaborative processes, especially art-based processes, in integrating both tangible and intangible cultural heritage, including indigenous ways of knowing and social and popular memory, into marine and coastal governance processes and outcomes. We argue that such approaches are critical to support decision-makers, coastal communities, and researchers in co-planning for the well-being and future of both people and nature and in ways that are more inclusive, participatory, and generative.

Paper folder link:

<https://drive.google.com/drive/folders/1vosQ5ME61kya7q5eczrakgfhcMJ0QhA5>



Participants working in paper groups

Immersive sea excursion of Algoa Bay

On Tuesday 6 February, several workshop participants joined a boat cruise of Algoa Bay with a local tour operator. Although no whales or dolphins were spotted, participants got to experience the Bay from an ocean vantage point as well as were greeted by a giant string-ray when docked back at the harbour.



Participants enjoying a Bay sunset cruise hosted by local tour operator, Raggy Charters, including a visit from a curious stingray.

International Impact Working Group (IIWG) high-level synthesis outputs and the UN Ocean Decade

On Wednesday 7 February, Professor Elisa Morgera and Jeremy Hills presented on the [IIWG high level synthesis outputs](#), by presenting the broader International Theory of Change first and then honing in on each of the three pathways.

International Impact – Pathway 1 (Human rights) - Lead: Elisa Morgera

High-level synthesis outputs:

- UN guidance for international human rights bodies to assess governments' compliance with ocean-dependent human rights
- Guidance on better compliance with ocean-dependent human rights at the national level

International Impact – Pathway 2 (EIA/SEA/MSP) -Co-leads: Elisa Morgera and Kerry Howell

High-level synthesis outputs:

- National-level blue economy assessment tool, based on ecosystem services and human rights
- Applied framework for building new knowledge of ecosystem services and human rights into SEA/EIA/MSP in ABNJ
- International guidance on fair access to deep-sea research

International Impact – Pathway 3 (Transdisciplinarity and capacity building) - Lead: Philile Mbatha

- International guidance for ocean and development donors on transdisciplinary research
- Good-practice guidance on transdisciplinary ocean research

Elisa encouraged the workshop participants to join IIWG meetings and to contribute to the preparation of the high-level synthesis outputs. She also suggested that draft outputs will be discussed at the Closing Conference in May 2024.

UN Decade Implementing Partner (DIP)

Dr Milica Prokic also briefly presented on the Hub's new role as a Decade Implementing Partner (DIP) as well as the upcoming Ocean Decade conference to be held in Barcelona in April 2024.

Namely, the Hub has been endorsed as the Decade Implementing Partner since October 2023, and within our 5-year mandate we will deliver the Transdisciplinary Toolbox for Transformative Ocean Governance: a curated system of academic papers, research projects, artwork, knowledge sharing outputs and products that came out of the Hub transdisciplinary work (and that is currently in the pipeline), alongside the 'user manual,' an output that will help researchers, research programs and groups implement transdisciplinary methods in their research on the ocean and beyond.

Dr Prokic also shared some announcements related specifically to the Hub's mandate as Decade Implementing Partner (DIP):

- On March 6, at the Edinburgh Napier University, Philile Mbatha and Milica Prokic will attend the UK Ocean Decade National Decade Committee meeting. Philile will also give a short presentation to introduce the Hub and our activities to the committee.
- On 9 April 2024, as part of the Barcelona UN Ocean Decade Conference Satellite Events program the Hub will host a two-hour event entitled 'Presenting the Transdisciplinary Toolbox for Transformative Ocean Governance consisting of a panel discussion, live theatre piece (Indlela Yokuphila performance), and the dialogue forum engaging with the audience.
- In the main UN Decade Conference program (10-12 April), Nina Rivers will also hold a poster session focusing on knowledge integration with Ghana as case study, entitled 'Weaving it all together: Inter and transdisciplinary co-design of ocean science for a sustainable and equitable future- a case study from Ghana'

Current trends in funding, revising legacy themes and developing high-level theories of change

Current trends in funding

One day of the workshop was set aside to think towards future funding opportunities for Hub partners. Rachel Holtby presented current trends in the funding landscape.

Revising and developing country legacy themes

The co-identified legacy themes from Namibia and Ghana were presented and then revised by country groups (as not all country co-Is were present, groups consisted of country

representatives). As legacy themes were not co-identified with South African Co-Is (due to capacity, knowledge integration work focussed specifically on Ghana and Namibia), representatives from South Africa were asked to identify legacy themes that they felt were important. As most South African Co-Is were not present for this workshop, this process will be opened up further at the next SA OOH country meeting to continue identifying legacy themes.

Revised legacy themes-Ghana

Climate change, migration, and (fisheries) governance

- Investigating migratory patterns of fishers in the context of climate change and other multi-sectoral stressors and its impact on
 - Livelihoods - job opportunities
 - Human security
 - Ocean governance
 - Ocean health
 - Children's rights and survival of fisher families
- Developing inclusive, equitable water quality criteria in the context of climate change
- This builds on SEIA tool that has already been developed under the Hub
 - Ultimate aim: development of culturally sensitive tools for decision-making
 - Possible activities:
 - Microplastics as a vector for co-pollutants to the sea

Wetlands, Heritage, and Socio-Environmental Resilience

- Exploring nature-based solutions for managing and conserving wetlands through holistic analysis of environmental management, cultural heritage, multiple knowledge systems, and community resilience.
- Culturally Significant Area mapping (of mangrove)

Citizen science for fisheries management

- (Fisheries) data collection
- identification of essential (offshore) habitats
- support co-management strategies
- Culturally significant area mapping surrounding fisheries / coastal waters
- Communication, empowerment, and community outreach
- Ocean defenders
- Improve fisheries data collection
- (Mapping citizen climate change literacy)

Blue Economic Development

- Equitable blue economic development in Ghana
- Informing decision making surrounding marine tourism as a sector of the blue economy using the lens of blue justice dynamics
- Challenges and opportunities for tourism, heritage/history and supplementary livelihoods
- Alternative livelihoods/gender/factory work
- Socio-economic and political factors on estuary/land transition

Revised legacy themes - Namibia

Climate change, Heritage and Conservation

- Impacts of climate change on the cultural livelihoods of SSF and Topnaar community in the marine space including urban context (blue urbanism)
- Traditional knowledge of the coastal communities (e.g. seaweed harvesters, Lobster fishing and spiritual practices)- to explore the knowledge practices of specific coastal communities in relation to conservation and climate change
 - How communities and traditional knowledge effects contribute to the protection of our oceans and coastal zones
- Mapping cultural heritage in coastal national parks and MPAs in the context of climate change (lack of recognition of cultural and social histories of Namibia's coastal zones and its impacts on conservation and inclusion)
- Cultural heritage mapping – extend scope to areas that are not recognised as MPAs or national parks (learn from SA experience)
- *Coastal community's way of engaging with climate change? What changes they have seen? (engagement? Education... in the way we express climate change that resonate with communities....) for Namibia and South Africa*

Blue livelihoods (coastal communities e.g. SSF)

- How do coastal SSF perceive climate change and its impacts – social ecological survey on fishing and narrative based research on coastal SSF lived experiences and knowledge (ongoing marginalisation of coastal SSF due to lack of empirical research and regulatory environment)

- Identifying equitable economic benefits
 - Governance perspectives
 - Existing practices in coastal communities for more equitable blue livelihoods (e.g. social capital, sharing, self-organising)

Fisheries

a) Fish biology

- Small study on fisheries larvae and ichthyoplankton research (Margit)
- Data need: Sharks data-include Oceanographic Research Institute (ORI) and mega fauna marine research (MFMR) tag and release data
- Understanding the impacts of climate change parameters (e.g. sea surface temperature, currents, ocean acidification) on fish biology (reproduction, spawning, migration etc)

b) Human dimension

- Data need: Interviews with fishery managers-Interview coastal/fishery managers. (Separate anglers and managers in surveys because will give different answers)
- Trans-shipment issues: Cross-country similarities between Ghana + Namibia
- Data need: Artisanal fisheries catch data in Henties Bay

Legal

Gaps

- MPA- Protected Areas: How to ensure legal protection for fish? Protecting breeding areas/essential fish habitats for spawning etc. (Tapiwa/Elize)
- The impacts of MPAs on coastal communities- exploratory research
- To which degree does the MSPs integrate the coastal zone governance concerns, in terms of environmental impacts? (There might be disjuncture between coastal and ocean management mechanisms)

- MPA and Cultural heritage – Ghana lessons learned in relation to regulatory framework on development of MPAs by capturing traditional concerns

New legacy themes-South Africa

Inclusion of coastal communities in Spatial Planning of ocean environment from conceptualising, design to implementation

-Representation of **mapping** (what spaces are included or excluded? Who owns this information and who understands it?)

- Building, strengthening and supporting SSF organising and learning together toward restoring and protecting meaningful relationships with the ocean- **community agency**.

- **Decolonial approaches** and **decentering** governance decisions i.e relooking roles of academics, research institutions, organisational partners as ‘facilitators’ toward being better allies.

- Power and politics

- SSF elite capture of **commercial rights** i.e SSF squid rights, line fish around climate vulnerability, repositioning SSF regarding export markets. Exploring the possibility of building co-operative value chains. **Educational responses in place to address marginalisation of SSF, taking them away from the hands of technocrats.**

-**Climate Impact, adaptation** and **beneficiation** of SSF communities from livelihood perspective- CC Call?

- National economic development i.e Blue Economy vs making space for local development (SSF challenging economic frameworks).

- **Localising community** and local economy i.e local heritage, artefacts, art

-Next phase to include more explicit strategic thinking and **planning across the HUB**, different approaches and strategies toward changes. The importance of finding ways of learning and reading together in the group.

-Desires for learning exchanges, deepening lessons, learnings and pan-African relationships of coastal communities across African countries.

- Ways of understanding incoming, new concepts, projects like **ocean accounting framework** and their impacts.

Reflections on value and impact of workshop

Face-to-face value of workshop

There was considerable value in the face-to-face nature of the workshop, although it involved considerable resourcing and organisation. Work on transdisciplinarity may not have advanced adequately without this timely meeting in which some deep collaborative deliberation was necessary to progress the synthesis. This also applied to other research areas such as the small-scale and recreational fisheries investigators being able to sit in one room and deliberate

The in-person nature of the workshop also gave Hub Co-Is the opportunity to meet and advance work on previous papers, proposals and projects within the Hub. Co-Is from Ghana also met with the acting director of the CMR to explore potential avenues of collaboration with the institute and the University.

Stock-take of Hub progress

The workshop also helped to identify how far we have come together during the project, which is not so necessarily apparent through the MEL. This progress could be exemplified in the work on transdisciplinarity, which although embedded in the One Ocean Hub proposal, was nascent and of a largely theoretical basis in the early stages of the project. At this workshop transdisciplinarity had progressed to a tenable research area in which multiple research outcomes across the project could be coherently interrogated and synthesised; this would probably not have been possible earlier in the project.

Supporting OOH Code of Practice

The workshop also followed, supported and reflected many of the OOH Code of Practice guiding principles.

As the workshop focus was knowledge integration, it strongly supported the principle of **Integration** which argues that Hub research outputs should amount to more than the sum of the parts (individual research programmes) and that Hub research should focus on the interconnectedness of the ocean. Paper leads were reminded of this point and to shape papers on key lessons and high-level themes both across countries and within the research area (SSFs, blue economy, TD and art and culture) when developing their arguments and the stories they seek to tell. At the beginning of the workshop Dr Rivers and Prof Elisa also stressed that diversity across the Hub (including different development contexts) should not be undermined by integration efforts and should be explicitly engaged with, as a valuable resource for Hub research on connections and disconnects.

The principle of **Inclusiveness** asserts that Hub research should support the inclusion of diverse vulnerable communities, women and youth (as immediate beneficiaries of the Hub), as well as other stakeholders (broader research community beyond the Hub, government departments, private sector, etc) in ocean research, governance, management and economy.

Although these groups were not directly included in the writing workshop, the papers written form a part of the broader body of work contributing to the impact of the Hub.

In terms of **Environmental Sustainability** the organisers of the workshop instructed participants to bring their own water bottles to refill so as to avoid the consumption of non-recyclable materials and limit their carbon, plastic and other environmental footprints.

Multiple dimensions of fairness under the Hub as well as **Trust** was built and protected through *transparency* where a transparent selection criteria was co-developed with Hub Co-Is across the three different partner countries in order to fairly select workshop participants. All Hub Co-Is had the opportunity to review the selection criteria and add or comment on it in the form of a survey, see appendix 3.

1. Participants are CO-Is in the OOH
2. Participants come from a mix of disciplines (In order to write truly integrated papers/proposals it is important we have multiple disciplines represented)
3. Participants have capacity and potential to take proposals/papers forward at an international level (Participants have the ability and time to identify high level impact journals and funding calls (e.g. for global application) that will have immediate or short-term impact E.g. UN Decade Programme around legacy themes previously identified through knowledge integration work)
4. Participants have current or emerging paper ideas/themes (Participants already have emerging paper ideas around themes previously identified in knowledge integration work)
5. Participants are interested and available to participate in the writing workshop (Participants must be interested and available to participate in the writing workshop scheduled for 5-9 February 2024)
6. Participants are prepared and available to do pre-work leading up to in-person writing workshop (In order to make the most of the week-long, in-person writing workshop (5-9 February 2024), participants must be prepared and able to do pre-work before the workshop E.g. form writing groups around a paper, discuss working title and structure, collect all required literature and data, select a possible journal etc.)
7. There should be a good gender balance of workshop participants selected.

Trust was also built around *frank and respectful dialogue* about concerns, sensitivities and objections during plenary sessions as well as facilitators and the Hub Director, Elisa Morgera, inviting participants to talk to them privately about any concerns they may have about Hub processes or the papers in development.

The workshop was also designed around creating a **Nourishing** environment where workshop participants were encouraged and expected to support one another through peer-learning and constructive peer-review, giving equal weight to the Hub's and the individual researchers'

needs. To this end, participants gave respectful and constructive feedback on each other's papers as well as helpful ideas around future funding opportunities.

In terms of the principle of **Complementarity**, the workshop set aside time to work on ideas around legacy activities as well as funding applications. The motivation for this was to connect existing research projects through the creation of enabling mechanisms to share research across countries, regions and scales (multi-scale syntheses).

Transformation, as understood within the Code of Practice, took place in the workshop, with researchers engaging through creative thinking around their papers and capacity building, especially for ECRs as they learn to lead and co-lead on all four of the papers. This co-development sometimes brought about (ideological) tensions and discomfort for researchers to the surface such as thinking through the novel challenges of research "for development" - this was certainly a discussion point for the co-authors of the TD paper.

The workshop also supported the principle of the **"Rosetta Stone" approach to inter- and trans-disciplinarity** where Hub researchers are expected to contribute to inter- and transdisciplinary research, but may do so in different ways and to different extents. There are several legal researchers co-authoring the arts and cultural heritage paper and they admitted to being quite challenged by the conversations and ideas in that paper as the language used by anthropologists and sociologists is very different from that of law. To this end, working on this paper enabled them to interrogate their own discipline (to identify blind spots and limitations) by engaging with data and criticism arising from other disciplines within the Hub.

Supporting Hub Early Career Researchers (ECRs)

Paper groups were also designed so that ECRs have the opportunity to either lead or co-lead the integration papers. As such all of the four papers are either led or co-led by ECRs. Paper 1 is co-led by two ECRs, Aphiwe Moshani (SA) and Natanah Gusha (SA). Paper 2 is co-led by Elize Shakalela (Namibia) while Paper 3 is co-led by ECR, Mia Strand (SA). Finally, Paper 4 is also co-led by two ECRs, Elsemi Olwage (Namibia) and Loyiso Dunga (SA).

Conclusions and next steps

The integration writing workshop was designed to contribute to plans toward the **2024 UN Ocean Decade Conference** to be held in Barcelona, Spain 8-12 April as well as the May 2024 OOH closing conference to be held in Cape Town, South Africa.

Discussions from the workshop, especially those on transdisciplinarity, were key in helping us firm up what it means for the Hub as a DIP, mandated to demonstrate the opportunities that TD methods afford. To this end, on 9 April 2024, as part of the UN Ocean Decade Conference Satellite Events program, the Hub will host a two-hour event entitled 'Presenting the Transdisciplinary Toolbox for Transformative Ocean Governance' consisting of a panel

discussion, live theatre piece (excerpt from the Umkosi Wenala play), as well as a dialogue forum engaging with the audience. In the main UN Decade Conference program (10-12 April), Nina Rivers will also hold a poster session focusing on knowledge integration with Ghana as a case study, entitled 'Weaving it all together: Inter and transdisciplinary co-design of ocean science for a sustainable and equitable future- a case study from Ghana'.

As the second to last Hub-wide, in-person event before the May 2024 closing conference, the workshop was a good check-in for the Hub support team to engage with Hub Co-Is from partner countries and to mark discussions that need to be taken further into the closing conference such as legacy and funding, as well as to share progress on high-level synthesis work such as the integration papers.

Integration work going forward will be to help develop the Transdisciplinary Toolbox that the OOH is contributing to for the UN Ocean Decade. This will include weaving together knowledge integration work with the Hub's activities linked to developing the Toolbox. The knowledge integration work will also feed into carrying forward and aligning the specific in-country research activities (especially from Namibia and Ghana) that link to the broader legacy strategy, to complete developing the research legacy strategies for Namibia and Ghana, as well as developing a research legacy strategy for South Africa.

Appendix 1: List of workshop participants and their affiliations

#	Name	Affiliation
1	Alana Lancaster	University of the West Indies
2	Aphiwe Moshani	University of Cape Town
3	Bernadette Snow	Scottish Association for Marine Science
4	Bolanle Erinoshio	University of Cape Coast
5	Buhle Francis	Rhodes University
6	David Wilson	Strathclyde University
7	Elisa Morgera	Strathclyde University
8	Elize Shakalela	University of Namibia
9	Elsemi Olwage	University of Namibia
10	Emmanuel Acheampong	University of Cape Coast
11	Eugene Libebe	University of Namibia
12	Harrison Golo	University of Cape Coast
13	Irna Senekal	Nelson Mandela University
14	Jeremy Hills	University of the South Pacific
15	John Windie Ansah	University of Cape Coast
16	Joseph Aggrey-Fynn	University of Cape Coast
17	Kieren Hyder	Centre for Environment, Fisheries and Aquaculture Science
18	Loyiso Dunga	South African National Biodiversity Institute
19	Meredith Fernandes	Nelson Mandela University
20	Merle Sowman	University of Cape Town
21	Milica Prokic	Strathclyde University
22	Natanah Gusha	Rhodes University

23	Nina Rivers	Strathclyde University
24	Philile Mbatha	Strathclyde University
25	Pippin Searle	Strathclyde University
26	Rachel Holtby	Strathclyde University
27	Sirkka Tshiningayamwe	University of Namibia
28	Sulley Ibrahim	University of Cape Coast
29	Taryn Pereira	Rhodes University
30	Timoteus Kadhila	University of Namibia
31	Wisdom Tsidi	University of Cape Coast

Appendix 2: Original legacy themes for Ghana and Namibia

**Names proceeding themes are those potentially interested in this work*

Legacy themes-Ghana

Climate change and heritage

- Investigating link between migration and climate change (John, Gina, Wisdom A)

Fisheries

- Migratory patterns of fish and fishers who follow them (gender dynamics)- links to Gender and Law as well as Socio-economics
- Food security and fishing
- "Capture fishers"- cultural aspect
- Contribution of international cultural heritage to wetlands and link to customary laws (Bernard, Kofi, Gina and John, John, Sulley and David Wilson)-perhaps for data collection further discussion
- Microplastics as a vector for co-pollutants to the sea (Albert, Kofi, Prof Joseph)
- Improve fisheries data collection (Prof Joseph)

Culture

- Culturally Significant Area mapping (Gina, John)
- Cultural significance of mangroves (Gina and Bernard)

Socio-economic

- Children's rights and survival of fisher families (Harry, Sulley, Wisdom A)

- Challenges and opportunities for tourism, heritage/history and supplementary livelihoods (Gina, John, Wisdom A, Kofi)
- Socio-economic and political factors on estuary/land transition (Bernard, John, Gina and Wisdom A)
- Alternative livelihoods/gender/factory work (Wisdom A and Gina)

Legacy themes-Namibia

Climate change and Heritage

- What is the impact of climate change on cultural heritage? (Sirkka/Elsemi/Kieran/Georg/Prof Alex)

Fisheries:

- Small study on fisheries larvae and ichthyoplankton research (Margit)
- Data need: Sharks data-include Oceanographic Research Institute (ORI) and mega fauna marine research (MFMR) tag and release data
- Data need: Interviews with fishery managers-Interview coastal/fishery managers. (Separate anglers and managers in surveys because will give different answers)
- Trans-shipment issues: Cross-country similarities between Ghana + Namibia
- Data need: Artisanal fisheries catch data in Henties Bay

Culture:

- Futures work: What past and futures are Indigenous people imagining? (Sirkka/Elsemi)

Legal:

- Protected Areas: How to ensure legal protection for fish? Protecting breeding areas/essential fish habitats for spawning etc. (Tapiwa/Elize)

Appendix 3: Selection criteria for workshop participants

Number	Criteria	Description of criteria
1	Participants come from a mix of disciplines	In order to write truly integrated papers/proposals it is important we have multiple disciplines represented
2	Participants have capacity and potential to take proposals/papers forward at an international level	<p>Participants have the ability and time to identify high level impact journals and funding calls (global application) that will have immediate or short-term impact E.g. UN Decade Programme around legacy themes previously identified through knowledge integration work:</p> <ul style="list-style-type: none"> ● Migration as per gender, climate change and legal aspects ● Food security as pertaining to fisheries ● Trans-shipment challenges as per Ghana and Namibia cross linkages ● Plastics pollution as per microplastics ● Cultural aspects of wetlands and capture fishers; culturally significant area mapping; future work for indigenous communities ● MPAs as per human rights and legal protection for non-humans/more-than-human beings ● Fisheries data as per fisheries larva; tag-and-release shark data; interviews with coastal/fishery managers; catch data for artisanal fishers in Namibia
3	Participants have current or emerging paper ideas/themes	<p>Participants already have emerging paper ideas around themes previously identified in knowledge integration work:</p> <ul style="list-style-type: none"> ● Transdisciplinarity ● Culture and art: Lessons from Ghana, Namibia and South Africa regarding cultural heritage and the use of art ● Socio-legal aspects of SSF: Human rights of SSFs across Namibia, Ghana and South Africa; gender and customary law aspects

		<ul style="list-style-type: none"> ● Climate vulnerability: Climate change and livelihoods: synergies across Ghana, Namibia and South Africa
4	Participants are interested and available to participate in the writing workshop	Participants must be interested and available to participate in the writing workshop scheduled for 5-9 February 2024.
5	Participants are prepared and available to do pre-work leading up to in-person writing workshop	In order to make the most of the week-long, in-person writing workshop, participants must be prepared and able to do pre-work before the workshop E.g., form writing groups around a paper, discuss working title and structure, collect all required literature and data, select a possible journal etc.
6	Participants are prepared and available to do pre-work leading up to in-person writing workshop	In order to make the most of the week-long, in-person writing workshop, participants must be prepared and able to do pre-work before the workshop e.g. form writing groups around a paper, discuss working title and structure, collect all required literature and data, select a possible journal etc.
7	Gender balance	There needs to be a gender balance in the selected participants