One Ocean Hub Code of Practice

The Code of Practice of the One Ocean Hub is the guiding framework for which all research and activities under the Hub are expected to be carried out. The Code was originally co-developed with Co-Investigators from across the Hub during January-July 2019. It is a living document and will be updated periodically in line with Hub findings, reflections and learning in accordance with the Governance structure, Risk Management approach, and the Monitoring, Learning and Evaluation strategy of the One Ocean Hub.

Version 2: 1 November 2022

UK Research and Innovation

GCRF Global Challenges Research Fund

Contents:

One Ocean Hub Principles

What are the Hub principles for?

- To spell out how we will pursue the vision of the Hub.
- To guide future decision-making under the Hub (including about new partnerships and new funding opportunities) and justify decisions by the Executive Team.
- To guide risk management under the Hub (identification and discussion of trade-offs among the various risks and opportunities identified in the Risk Register; alignment of project decision with the overall Hub approach to the intractability of ocean sustainability).
- To track learning under the Hub through: 1) periodic anonymous surveys of Hub researchers and partners on the implementation of the Hub principles; and 2) the convening of a "learning circle" (as part of a virtual Living Aula) to reflect on how we are applying the principles over time (contributing to Monitoring, Evaluation and Learning).

Where do the principles come from?

- They capture the underlying reasons why Hub partners came together (key ideas that emerged during the preparation of the grant and from responses to reviewers and funder).
- They capture comments on an initial set of draft principles from the first inception workshop (Port Elizabeth, South Africa) and key concerns arising from the other two inception workshops (Ghana and Fiji).
- They will include further comments from online consultation with Hub partners and stakeholders (April-July 2019).
- They include inputs at the first virtual Online Living Aula (3 May 2019).

PRINCIPLES

Integration

Hub research (research funded by the Hub) should focus on the inter-connectedness of the ocean
Hub research should make connections within science(s) to consider inter-related challenges to ocean health and governance, through inter- (as opposed to multi-) disciplinarity, and connections between different knowledge systems (trans-disciplinarity: integrating "modern" science and traditional knowledge of indigenous peoples and local communities, as well as other knowledge systems)
The outputs of Hub research should amount to more than the sum of the parts (individual research programmes)
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

Inclusiveness:

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. This entails that each researcher in the Hub has a responsibility to be responsive to communities', women's and youth's needs in light of the Hub's Theory of Change, and be mindful of diversity within groups:

- If unable to (re)direct the research to respond to these needs, researchers should explain to other Co-is and beneficiaries why this is the case and explore through the Executive Team whether in-kind contributions from existing partners, new partnerships or use of flexible funds could help respond to these needs.
- If it is not possible to respond to beneficiaries' need by means of in-kind contributions, partnerships or flexible funds, the Executive Team should use best efforts to advertise the fact that other researchers are called upon to consider contributing to the research needs (a step which can, per se, be a contribution to connect science and dialogue).
- The Hub will connect different knowledge systems and seek to develop new learning pathways and to support the recognition of traditional knowledge custodians, through postgraduate certification for instance)

Environmental sustainability:

Hub researchers and partners are expected to use best endeavours to recycle, avoid the consumption of non-recyclable materials and limit their carbon, plastic and other environmental footprints in Hub events and research (including artwork commissioned by the Hub). The Hub will identify specific approaches to track the implementation of this principle (eg guidance for event organisation and GHG emission tracker).

Trust will be built and protected through:

- frank and respectful dialogue about concerns, sensitivities and objections;
- solutions that build upon and foster cooperation rather than competition;
- transparency (including in the exercise of leadership and in the use and allocation of budget) and timely communication;
- requests of confidentiality being respected; and
- a heightened concern for engaging respectfully with vulnerable communities, women and youth and supporting their leadership under the Hub.

Nourishing: Hub researchers are expected to support one another through peer-learning and constructive peer-review, giving equal weight to the Hub's and the individual researchers' needs, in a context of:

- conviviality;
- solidarity;
- openness;
- acceptance – understanding of vulnerability and learning from failure (ie not only celebrating successes but also ...);
- resilience;
- attentive and active listening (ie learning through others' knowledge and experience); and
- responsiveness to peer review.

Complementarity: Hub researchers are expected to engage in research activities funded by the Hub that are complementary and add value to those undertaken under the Hub and by Hub partners, as well as those undertaken outside the Hub (filling gaps, bringing together sectoral research, setting sectoral research into broader context).
The Hub will thus contribute to connect existing research projects through the creation of enabling mechanisms to share research across countries, regions and scales (multi-scale syntheses) as well as through new funding applications and legacy activities.

Transformation: Hub researchers are expected to engage in research co-development, including through creative thinking and capacity building. It is expected that co-development will bring to the surface (ideological) tensions & discomfort for researchers. The latter will receive support and benefit from coping strategies to remain engaged also in uncomfortable phases of the research, with a view to:

- proactively addressing the novel challenges of research "for development";
- taking as a starting point the intractability of the challenges to ocean health and governance;
- constructively engaging with disagreements ("conflict transformation"), including those arising from tensions among the Hub principles. The Executive Team will seek to reach decisions by consensus after a process for raising and addressing concerns has been followed (see Hub Governance) and, when necessary, ensure the recognition of irreconcilable differences with a view to supporting learning and further debate (within and outside the Hub - including as part of the Hub's Publication Strategy);
- further supporting collaboration through the Hub's embedded legacy strategy and new funding applications for achieving longer-term benefits (see also complementarity above).

"Rosetta Stone" approach to inter- and trans-disciplinarity: Hub researchers are expected to contribute to inter- and trans-disciplinarity, but they may do so in different ways and to different extents.

Because many researchers may feel the need to develop a common language across the Hub to better understand one another across disciplines (and we will develop a common vocabulary to make sure we are all aware of key terms of reference across disciplines), the Hub will seek to support effective communication and mutual understanding across disciplines (and gradually across knowledge systems), without the need to translate one discipline into the terms of another discipline in order to avoid the risk of something being "lost in translation."

Instead, the Hub will use different formats (eg, maps, modelling, art) at the same time, so that different researchers can interact with the format with which they feel more comfortable and their inputs can be reflected in other formats that other researchers prefer.

To that end, at a minimum, Hub researchers are expected to:

- make proactive effort to enable others to understand their research and to understand others' research;
- interrogate their own discipline (to identify blind spots and limitations) by engaging with data and criticism arising from other disciplines within the Hub; and
- ensure research excellence within their discipline and to persuasively convey how inter-disciplinary research can contribute to advancements within their specific disciplines.

Multiple dimensions of fairness under the Hub:
Hub researchers will consider explicitly multiple considerations of fairness within the Hub, with a view to identifying collective approaches to fairness, including towards:

- vulnerable groups ("partnership" implies, for instance, being able to respond to the questions "when are you coming back?" and "how can we keep in touch between this visit and the next?")
- each region and across regions
- each researcher (see recognition under the Publication Strategy)
- partners (including previous trust-based relationships between specific partners and specific researchers under the Hub)
- the funders and tax-payers vis-à-vis Hub budget and in-kind contributions

RESEARCH ETHICS

The One Ocean Hub's guidelines for research ethics go beyond data collection and also cover post-data collection practices. We wish to supplement the ethics approach of "do no harm" with ethics of care. - the research will be conducted within the spirit of equality and reciprocity between researchers and community partners/ co-researchers, and will not be considered in isolation from but rather be integral to, the full research process, including the conduct and representation of research. This contributes to making the Hub an inclusive process of cautious and respectful research co-development that acknowledges and responds to what has gone wrong in past research and development interventions and refines the broad research directions identified for the Hub with people we will work with.

Intertwined with the Hub's methodology for inter- and trans-disciplinary research, its pathways to impact, and its monitoring and evaluation. The Hub's research ethics guidelines are informed by the Hub vision and Principles, and in turn they will inform the Publication Strategy, the Data Management strategy, the Knowledge Exchange strategy and complement the Safeguarding Policies of the Hub.

We will need to constantly monitor our practices and listen to researchers, partners, and co-researchers. To that end, we seek to document how researchers often rely on their own intuition in navigating new areas for research ethics (trans-disciplinary, research for development). Thus, this is a living document that will be updated to reflect learning.

Safeguarding and ethics protocols and approaches will always have limitations, and we are keen to prevent ethics creep where protocols erect barriers between researchers and researched persons. Co-research is designed not to be extractive and ethics protocols can erode agency i.e. the ability of people to make choices independently and express their preferences. We aim to promote, not prevent, collaboration and mutual learning in the co-design of research with community partners and among academic researchers.

Research Plan

Research teams, or individual researchers, will produce research plans (coordinated by the Co-Directors under the relevant Research Programmes and by the Executive Team for Hub-wide synergy purposes) guided by the Theory of Change that outline:

a. The research design, which will include ethical considerations and confirmation on whether data produced and/or findings can be archived for open access use.

b. The plan for transdisciplinary research with academic investigators (see page 4) and/or knowledge co-production with non-academic co-researchers (see page 5).

c. Consent and fair and equitable benefit-sharing (see page 6).

d. Dissemination activities (see page 6).

Baseline Rules Regarding Data Collection

1.Human-centred research

We need to ensure that our research meets societal and environmental needs and wherever possible is of local relevance, that our research is designed explicitly to ask and answer questions of concern to our non-academic partners, through in-depth research of the local context in collaboration with local partners (iterative Work Package 0 approach) and with a view to including particularly women, children, marginalized and vulnerable communities throughout our research process (from

iterative research planning to feedback and evaluation) and increasingly in research leadership under the Hub.

At a minimum, OOH researchers interacting with community co-researchers will follow the following standards:

Permits

a. Hub partners will submit to the ethical review processes of their universities and of the national ethics review bodies of the countries in which they are gathering data.

b. UK researchers will consult DAC country researchers about the research permits and protocols necessary to conduct research in the country in question.

c. Research permissions must be obtained. Country Directors and Managers will be responsible for ensuring and recording this.

d. Researchers will submit evidence of ethics permits and ethical review documents to the relevant Country Director.

Consent

a. Researchers will obtain informed consent (including free prior informed consent when indigenous peoples and local communities are involved[1]) prior to undertaking research and will exert best efforts to fully understand ethics requirements in collaboration with local research partners.

b. Prior, informed consent procedures should be tailored to local requirements. Whether obtained orally or in writing, researchers should ensure that co-researcher genuinely understand the process and be availed of procedures for feedback and complaint.

c. The informed consent process should communicate the fact that the researcher is deriving benefit from their interaction with the co-researchers. Equally, the researcher, as part of the consent process, should understand the needs of co-researchers that can be met by the proposed research. The goal is to communicate a sense of interdependence.

d. Informed consent should involve a discussion on how any collected materials will be used. Including: video, audio, and other forms of documentation.

e. Aside from submitting to institutional procedures, researchers will respect local knowledge systems and value systems by adhering to communities' customary laws, protocols that affect the conduct of research, for instance, regarding consent procedures, collection of research materials, and benefit-sharing.

Bias and Positionality

a. We will mitigate against sources of unconscious bias where possible, for example by using double-blind processes for data collection, random sampling, etc.

b. Due attention should be given to facilitating representation in terms of gender, disability, age and ethnicity that reflects the local society.

c. We also should be mindful of our positionality. Within the overall research project context, we are in a position of privilege and power relative to co-researchers. Yet, there are other contexts in which we are vulnerable and co-researchers may be more powerful than us. In either case, we aim to be mindful of the effect these statuses have on our research.

d. We will protect all persons against negative consequences of our scientific research or its applications on their food, health, security and environment.

e. One of our goals is to be a data resource and archive for individuals and groups who lack access to ocean-related data sets and findings We will balance this against the need for data protections. Investigators should indicate the need for data protections in their research plan submissions.

f. Researchers are encouraged to discuss within Country Teams ethical considerations and experiences in the field, so that decisions are more collaborative and take into consideration multiple viewpoints.

g. Hub researchers will train their assistants and make them aware of ethics and safeguarding protocols.

2. Marine scientific research

We need to ensure that our research contributes to the protection of the environment, that our methods do not pose new or worsen existing threats and pressures, and that wherever possible the research seeks to strengthen existing efforts towards environmental conservation.

At a minimum, OOH marine scientific research will use the following standards to minimize negative impacts on the environment:

[1] Free is used in this context to emphasize that indigenous peoples and local communities should not be pressured, intimidated, manipulated or unduly influenced, including by taking into account the time requirements of indigenous peoples and local communities in understanding the requirement for "prior" informed consent.

a. All sampling at sea will use minimally invasive approaches (e.g. science-class ROV)

b. Experiments will be carefully designed to avoid inducing stress, which in any case would confound results.

c. Experiments will be designed to balance need for statistical replication against need to sample.

d. Only specimens from locally abundant populations will be taken.

e. Where required (e.g. for scleractinian and antipatharian corals) CITES (Convention on International Trade in Endangered Species) permits will be obtained.

Ethical Aspects of Research for Development

We are aware of the broader context in which this transdisciplinary research project occurs, that are additional to the persistent ethical issues related to the asymmetries of academic research. There are novel ethical issues arising from the recent trend of academic research being funded by development cooperation funds. This prompts us to produce guidelines that supplement institutional research ethics standards.

The goal of research for development is to produce evidence-based interventions in areas experiencing systemic global inequality. This includes acknowledging and responding to what has gone wrong in past research and development interventions. In light of global power geometries, we will avoid imposing an externally pre-determined agenda on the environment we are working in and the people who live there.

We should begin our research planning on the basis of the history of matters of concern in-country, and what progress has already been made in relation to these concerns. We need to be aware of the risk of dominant elites co-opting research agendas, as well as recognising our status as dominant elites, with a view to including relevant marginalized individuals and groups throughout our research process (from research planning to feedback and evaluation) and increasingly in research leadership under the Hub and its partners.

a. To ensure that our research is of local relevance, it is backed up by in-depth research of the local context in collaboration with local partners (Work Package 0).

b. Researchers should familiarise themselves with the findings of Work Package 0.

c. Researchers closest to the region and researched communities should support other Hub researchers in:

    - understanding who constitutes a community, which individuals can be said to represent them and about the relevant norms and cultures.
    - exploring in advance of research, how to respect local protocols including regulatory requirements for research ethics.
    - how to build trust.
    - making decisions about the compensation of co-researchers. Typically, co-researchers should only be paid for their time and costs[2] in order not to foster any sense of obligation to the researcher and increase gradients of power.
    - vetting and hiring research assistants.
    - managing expectations.

d. Where a local Hub researcher is unavailable, these processes should be developed alongside local research assistants who have a track record of local research. Their local knowledge should be relied upon in lieu of hypotheses and assumptions.

e. Research assistants will be acknowledged during publication and other dissemination activities. (See Box 1 Bukavu Series; and Publication Strategy).

f. Hub researchers will endeavour to include marginalised voices. Research assistants who are helping to identify co-researchers should be made aware of the Hub's interest in engaging also with "invisible" and "silent" voices. (See Box 1 Bukavu Series).

g. Where relevant, researchers should seek to obtain the perspective of a wide swathe of the community. For instance, ensuring that women's perspectives are included in data that is supposed to representative of a population.

h. Local research assistants should either have previous research experience or receive training from research partners on OOH ethics and safeguarding rules. Many in-country researchers have experience with training research assistants and should take the lead in hiring and vetting of these workers.

i. Where necessary, and in discussion with local hub researchers, research assistants and/or fieldworkers should attend methodology sessions and reflective meetings on their time in the field.

Ethical Aspects of Transdisciplinary Research

The research will be conducted within the spirit of equality and reciprocity between researchers and will not be considered in isolation from but rather be integral to, the full research process,

[2] co-researchers may incur costs travelling to meet researchers, for instance.

Box 1 The Bukavu Series

The Bukavu Series is a set of blog posts written by research assistants to allow them to reflect on their research experiences. It is a collaboration between European researchers and research assistants from the Congo who are living through violent conflict.
Often research seeks to ensure that marginalised and vulnerable voices are heard, sometimes some of the most marginalised and vulnerable are the research assistants supporting the data gathering exercise.

Debriefing research assistants is different from giving them opportunity to tell their story. The Bukavu Series documents a conflict situation, but the conditions under which research is undertaken are not the only reason to seek to hear from as many people as possible. The mere goal of having data be representative should encourage researchers to include a diversity of voices. Especially those who are often overlooked and unseen.

including the conduct and representation of research. This contributes to making the Hub a democratic process of cautious and respectful research co-development.

j. When developing research methods and sharing research processes with co-researchers, take care to be as open and honest about the details of attribution and intellectual property.

k. Avoid putting pressure on research partners and consultation processes due to researcher's own timelines. (See The Power of Milk)

l. The goal is to our data feed into one another's work even if not working on transdisciplinary teams

m. When reporting or making claims based on exchanges with other researchers and co-researchers,

   i. Do so with the permission of the co-researchers, and mindful of the need to protect the trust underlying that relationship;

   ii. Resist easy categorizations, oversimplification, essentializing and romanticising - in order to contextualize claims in complex individual and social realities and keeping in mind that certain opinions have been marginalized;

   iii. Acknowledge different contributions to the collective body of knowledge emerging under the Hub and in your own discipline;

Box 2 The Power of Milk

The University of Zurich's ethnographic museum has sought to shift the historical and one-sided tendency for extractive knowledge production relations between Europe and Africa. They did so by working with the Ugandan National Museum on a collaborative project that is centred on both countries' milk production capacities. The exhibits located in Switzerland and Uganda are an example of knowledge co-production. They were co-curated and co-designed by the partners. The researchers at Zurich have also generated academic analyses from this project that reflect on the process of knowledge co-production. In a conference paper, Conjunctures of Knowledge Creation in a Museum Partnership between Uganda and Switzerland they emphasise that transnational corporation can never occur in a neutral zone. Funding conditions limit autonomy and shift the burden of power and responsibility permanently onto the institution disbursing funds; elaborate contracts create an atmosphere that needs to be overcome. The European partners became aware of their unconscious bias when they found themselves surprised that their Ugandan partners were further ahead than them in their progressive thinking and practices. It was also expressed in an expectation of their Ugandan partner's underperformance which was expressed in paternalistic practices including policing time, inducing time pressure and micro-managing. In the end, the project proceeded well because of a mutual adaptation that took place. In the interim, good will and a clear objective carried them through until trust was developed. Their advice to all those interested in co-production was "equality cannot be seen as a state, it must be understood as an attitude and an ongoing process that requires continuous re-negotiation and self-critical reviewing".

Knowledge Co-Production

The Hub is committed to explore higher research ethics standards and believe that this can be achieved by viewing co-researchers (individuals and groups) as co-producers of knowledge. Co-production is a process whereby we:

1. Value all co-researchers
2. Develop mechanisms for working as peers: shared language, shared understandings, shared spaces (See Geonet Conference).
3. Develop networks of mutual support
4. Do what matters for all the people involved

5. Build relationships of trust
6. Share power and responsibility

At a minimum, we expect all Co-Is to indicate in their research plans what knowledge co-production and engaged scholarship mechanisms are relevant for them:

a. Meetings and input from co-researchers should be considerate of their work, education and other commitments, with explicit acknowledgement of the time and value of participation at all stages of the project.

b. Research Co-Is should seek to integrate co-researchers in planning and co-ordination workshops.

c. We will use different ways to respectfully represent different views and the tensions among them (different approaches to modelling; different approaches to maps; different forms of art (music, enhanced reality, computer games); different genres of writing (report/poetry/story-telling/legal argument).

d. All efforts to incorporate co-researchers' views are taken seriously, and acted upon, with opportunities for co-researchers to provide feedback on their experiences of participating at all stages of the project.

e. Research designs should make room for validation exercises where re co-researchers can review research findings and analyses before they are made final.

f. Documenting the co-researchers interaction with the findings should be part of the data gathering process. This can be conducted through interviews, focus groups, theatre, and other demonstrable means. To that end, discuss with co-researchers how they would wish, if at all, to be included in virtual and in-person Living Aulas, including the final conference.

g. Researchers should plan to have fora and processes for discussing interim findings in their research plans in Country Team meetings.

h. Where possible (ethics protections precede this goal) we will archive co-produced data and make it available to all individuals and groups who participated in its creation.

i. Avoid putting pressure on research partners and consultation processes due to the researcher's own timelines.

j. The need to protect the identity and safety of researchers and co-researchers (from risks of stigmatization, incrimination, discrimination or personal risk) needs to be agreed upon with local partners on a case-by-case basis (and lower local data protection standards or compliance procedures cannot excuse potential breaches).

Box 3 Geonet Workshop

Knowledge production need not end with data analysis. The Geonet project at the Oxford Internet Institute ended its research process by hosting a conference, where, uniquely, a large majority of presenters and panelists were the digital workers and digital entrepreneurs who had informed the research. For academics, this was an opportunity not only to share, but to validate their analyses not only through the perspectives of other academics and policy researcher but through the lived experience and knowledge of those from whom the data underlying the analysis had been developed. It was an occasion for debate and discussion and one that clearly illustrated the value of thinking of knowledge as co-produced. While the cohort in question was largely familiar with creating power point presentation and making presentations, this idea can be tailored to fit different kinds of knowledge sharing activities where co-researchers are treated as peers.

Fairly and Equitably Sharing the Benefits of Research

Hub researchers acknowledge that they derive material benefit and feelings of accomplishment from the project and are committed to seek to expand the benefits of the research programme to the community in which the research is being conducted. We will do so proactively, but responsively. This means maintaining an awareness that benefit sharing is a requirement and engaging in a concerted dialogue to identify benefits, sharing modalities and beneficiaries as early in the consent process as possible and iteratively throughout the knowledge co-production process. This is with a view to deciding together which benefits will be shared and how (see Box 4 Examples of Benefit Sharing from OOH researchers). The goal is to empower co-researchers, rather than act on their behalf or create transactional relations.

Specific activities include:

a. Data and findings will be slated for open access archiving unless protections (ethical and IP) are requested.

b. Direct the Flexible Fund with benefit-sharing in mind.

c. Mentorship and support of in-country early-career researchers.

d. Researchers from outwith the country of research should commit to engaging with the local research community. Learning resources and guides for supporting advocacy and training

e. Research assistants, translators, artists and oral narrativists will be remunerated and acknowledged (see Publication Strategy).

f. Conferences and seminars will take place in research locations and should be freely open to the public.

Ethics as Research

The Hub's research ethics are intertwined with the Hub's methodology for inter- and trans-disciplinary research, its pathway to impact, and its monitoring and evaluation. Research ethics will also be an active area of inter-disciplinary research involving all contributing disciplines.

The RP1 team will reflect on human rights and the marine environment can contribute to 1) explain how different areas of research may contribute to society's knowledge needs and particularly those of vulnerable groups; and 2) balance environmental protection and social justice demands. The RP 1 team will also develop specific benefit-sharing approaches for:

a. the use of the traditional knowledge of indigenous peoples and local communities;

b. research carried out on lands, water and natural resources traditionally owned or used by indigenous peoples and local communities; and

c. the use of genetic resources of one country for the purposes of research and innovation in another country

d. as these are matters entailing respect of international law.

Box 4 Examples of Benefit Sharing from OOH Researchers

- We asked OOH research partners to tell us some of the ways they have engaged in benefit sharing in their previous projects. The sections below represent some of their illustrations. As other examples emerge from the experiences of researchers under the Hub, the RRI Fellow will document them and RP 1 team and the Research Ethics team will research their relevance also from an international law perspective.
- Involving the researched community in vetting, and choosing on-site research assistants and training them to gather data. They often seek to select from households experiencing economic hardship (while also fitting other criteria set by the research team).
- Organising placements for community co-researchers or research assistants at inter-governmental policy bodies (this could be done through the Hub's Flexible Fund: Global Placement Programme.
- Researchers gave a seminar/class at a local university.
- Setting aside wariness about creating transactional relationships, providing parting gifts and tokens as a sign of friendship and gratitude. There was also the case of over-researched communities who have become weary of being sampled but never witnessing the outcomes of research. In these communities, tokens have become the norm.
- Organising exchange visits between groups who can learn from each other. In this case, the researchers organised a visit to a community that had been adversely affected by the presence of a mining company in order to arm a community with information to block the entry of the company in their area.
- Organising a meeting with various stakeholders in order to give voice to grassroots communities (this could be done through the Hub's Flexible Fund: regional inter-governmental meetings)
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- Using local vendors when planning meetings locally. This means hiring local caterers and staying in local accommodation.
- Co-identifying and responding to community co-researchers' preference for knowledge exchange from the Hub (format, language, focus), to ensure that research findings are communicated in ways that are specifically geared to support co-researchers' own objectives (see Publication Strategy)
- Facilitating co-researchers' access to researchers' networks and resources (including Hub partners and networks) that can support co-researchers' own objectives
- Skill-sharing between researchers and co-researchers such as creating a blog, fund-raising, making submissions to UN bodies (this could be done through the Hub's Flexible Fund: immediate-response capacity building or by Hub researchers or partners in kind)
- Discuss how Hub research can contribute to foster recognition of co-researchers' views, values, knowledge and needs.

SAFEGUARDING

3.1 Safeguarding Context

In October 2018, a group of UK government departments and research funders working in international development issued a joint statement affirming their commitment to raising safeguarding standards across the research sector:

"commit to supporting the development of the highest standards in organisational culture, systems and practice required to prevent and tackle all incidents of harm and abuse... We pledge to work on raising standards of behaviour across our sector, recognising the strength of existing good practices and working in partnership with the development research community. We will place utmost importance on the protection from harm and abuse of all individuals; including research participants and their communities, and those that volunteer, work (researchers and others) or study in the research sector"

This commitment to raising standards across the sector led to the development of best practice guidance and principles to prevent and tackle harm and abuse across research for international development (with a special section highlighting the increased risks as a result of the Covid-19 pandemic):

- the UKCDR Guidance on Safeguarding in International Development Research (April 2020): https://www.ukcdr.org.uk/resource/guidance-on-safeguarding-in-international-development-research/
- UKCDR Safeguarding in international development research – Practical application of UKCDR Safeguarding Guidance during Covid-19: https://www.ukcdr.org.uk/wp-content/uploads/2020/04/010420-UKCDR-Safeguarding-Companion-Piece_Practical-application-of-guidance-during-COVID-19.pdf

The UK Research and Innovation issued a new safeguarding policy in May 2020, which is intended to act as a framework to help organisations to be better placed to anticipate, mitigate and address any actual or potential exploitation, abuse and harm in their research and innovation activities. This policy applies to all UKRI-funded activities, irrespective of whether they take place in the UK or overseas, and to all organisations and individuals receiving UKRI funding, either directly or indirectly through a partner organisation.

3.2 Safeguarding in the One Ocean Hub

The One Ocean Hub award letter notes that we must "safeguard... from all forms of exploitation, violence, abuse or harm as a result of their association with the project or with project staff, associated personnel, volunteers or visitors"

While the term 'safeguarding' is not widely used in some of the Hub's partner countries, we recognise the UKCDR definition that "Safeguarding is about preventing and addressing any sexual exploitation, abuse or harassment of research participants, communities and research staff, plus any broader forms of violence, exploitation and abuse... such as bullying, psychological abuse and physical violence".
We recognise that safeguarding is ultimately about power imbalance, and note that research takes place within contexts often structured by inequalities and power imbalances which directly shape research relations and activities. These inequalities could be between partners; between colleagues; or between institutions and a local community. Examples of power imbalances could include research teams working with individuals or communities facing systemic vulnerabilities, junior staff dependent on senior staff for mentorship and support, or research staff engaged on short-term contracts.

Within the One Ocean Hub, we recognise that 'vulnerabilities' should be viewed as being relational, rather than absolute. We also note that safeguarding vulnerabilities are generally unequally distributed and tend to be higher for women, early career researchers and field workers.
We are committed to ensuring that research is conducted in a way that ensures the health, wellbeing, human rights and dignity of the research participants and their communities and is fair and free from exploitation and abuse.

The One Ocean Hub Code of Practice, co-developed with co-investigators from across the Hub as the guiding framework for all research and activities under the Hub, states that "the principle on which we are operating is ensuring that no individual or group should experience a wrong as a result of interaction involving the One Ocean Hub and its partners".

3.3 Safeguarding Report Handling Process

The UKRI GCRF Hubs safeguarding guidance states that as the Hub host institution, the University of Strathclyde has a "safeguarding duty of care to research participants, beneficiaries, staff and volunteers, including where downstream partners are part of delivery".

The One Ocean Hub Code of Practice also notes that "safeguarding is a shared responsibility between collaborating research organisations and should be approached in a spirit of inclusiveness and mutual learning, with attention to risk of unintended harms that could arise from dictating standards". The One Ocean Hub is committed to dealing with alleged incident swiftly and comprehensively.

We have designed the below safeguarding report handling process for the One Ocean Hub, which describes:

- How to receive information about concerns or incidents

- How to support survivors and their children or family members, friends, witnesses and the potential wrongdoer to address their safety, security, medical, psychosocial and legal needs
- How to respond to the report to confirm or dismiss allegations (including fact finding, formal enquiry and disciplinary action)
- Where to document certain details of a concern or incident
- Roles and responsibilities in relation to handling concerns (including suspicions/rumours), incidents and reports
- How, when and to whom feedback should be given

The process has been designed to be robust and fair, and to balance the University of Strathclyde's responsibilities as host institution with the shared responsibility outlined in the One Ocean Hub Code of Practice, consistent with the principle of Fair and Equal Partnerships.

The involvement of the One Ocean Hub Head of Operations will ensure consistency and fairness of the process for both the individual who raised the report, and the individual who the report concerns, as well as facilitating institutional learning across the Hub; while the involvement of the partner institution will bring the knowledge and understanding of the local context, giving consideration to any pertinent social, cultural, and gender norms.

4. Publication Strategy

Executive Summary

This document outlines the One Ocean Hub Project Publication Strategy and should be cross-referenced with other relevant elements of the Code of Practice including the Data Management Plan.

The strategy is founded within a commitment to producing both excellent research within specific disciplines and inter- and trans-disciplinary research. As such, the Co-Directors will lead on the co-development of **a publication strategy** (with a draft by end 2022) **for each country team and IIWG** for the remaining duration of the Hub.

Each Co-I will be expected to ensure recognition of the originators of ideas within the Hub. A key approach is **blogging** and **pre-publication online of Working Papers.**

To reflect variety of views and approaches, the Hub will develop a **diversified publication strategy** (including parallel options for single authorship and co-authorship, as well as self-reflexive pieces in addition to substantive and methodological research publications) and a **process to engage with conflicting views** as part of our collective learning across disciplines, sectors and regions.

The Support Team developed in 2020 a **light Hub-wide process for internal peer-learning,** that can be found here, which supports excellent outputs and cross-Hub citations, as well as strategic KE and comms.

On IPRs, the Hub favors **copyright to the individual author(s)** of a specific research publication (co-ownership of co-authors if applicable), with a l**icence to use the work for all research partners for research and non-commercial purposes**. If a commercial purpose is envisaged, a separate agreement needs to be concluded with the institution's IP office. In addition, we are required by the funder to secure **open access** for most academic publications of the Hub.

Publication planning process

As the Hub is expected to produce both excellent research within specific disciplines, and inter- and trans-disciplinary research, a planning process should be envisaged for each Country Team, and for the International Impact Working Group (IIWG):

- Each Co-I will discuss with the relevant Country Directors and IIWG leads individual publication plans that will draw on:
  - research carried out with funding from the Hub,
  - data gathered by the Hub,
  - others' research under the Hub.
- Country Directors and IIWG leads will steer the co-development of **a publication plan for each country team and for the IIWG** for the duration of the Hub (including specific types of outputs and target journals/ publishers, with a view to reaching a variety of scholarly and other audiences, and indications about open access). They will prepare a draft by end 2022.

  The research plans are meant to:
  - identify trends across the Hub in terms of fair recognition and representation across the Hub, and support career progression;
  - plan strategically comms and international knowledge-exchange engagements on new Hub publications; and
  - allocate resources both fairly and strategically, where funds may be needed for Open Access (see below).
- Country Directors and IIWG leads will provide updates on the publication plans every six months, including if:
  - any Co-I leaves the Hub or new Co-Is join the Hub;

Safeguarding process

Report received

- Safeguarding report received (Note: safeguarding reports can be received anonymously).
- Report forwarded to the Hub Head of Operations (Hub Lead for Safeguarding), with the Advisory Board Chair as an alternative pathway.
- Hub Head of Operations to confirm receipt of report (within 24 hours).

Assess and Log

- Sort and classify report, and create a new record in the Hub's confidential and secure central system for recording and managing safeguarding reports. Information will be shared on a limited 'need to know' basis only to assure the safety and well-being of all parties.

Ad Hoc Team

- Establish an ad hoc safeguarding team (to include Hub HOO and Strathclyde Legal Counsel, and others where necessary). Consider potential conflicts of interest, gender balance, diversity in terms of race and LGBTQI considerations.

Fact-finding

- Initial fact-finding process (including contacting the reporter to establish if there are others who can confirm the facts shared in the report, and/or any written materials in support). The safeguarding team evaluate the report to determine whether there is a basis to warrant a fuller fact-finding and enquiry process. Reports which do not proceed remain on file, and wider lesson learning considered.

Action Plan

- Develop Action Plan to decide next steps, timeframes and reposibilities, including when and how to inform the potential wrongdoer and their institution. Undertake a risk assessment to determine whether there are any current or potential risks to any stakeholders involved in the case, and develop a mitigation plan if required.

Contact Partner

- Contact partner university to agree how to proceed, and update Action Plan.

Inform OOH ET

- Inform OOH Executive Team that a report has been received and the home institution has been alerted. To maintain confidentiality, no details of the report will be disclosed.

Formal Enquiry

- As per the Action Plan, conduct the formal enquiry or mediation (led by the partner institution, with the OOH HOO as an observer) to collect further information about the case in order to determine decision-making. Note: institutions will likely have to seek external support to enable an impartial and confidential enquiry to take place.

Support

- Support for survivor (and reporter, if different).
- Support for the potential wrongdoer

Review/ decision

- Joint review of enquiry (or mediation) report by the local team and the Strathclyde safeguarding team; with joint decision made regarding actions. Issues raised will be considered thoroughly and with impartiality, and decisions will be made in an impartial manner, based on evidence.

Action Decision

- Following confirmation of wrongdoing, appropriate (proportional) action must be taken to sanction staff wrongdoers. This can include performance management, disciplinary action or other consequences, and will involve a risk assessment for continued involvement in the Hub. If an incident is not proven, preventive action may still be necessary

Feedback

- While maintaining confidentiality, feedback to stakeholders (including survivor, reporter, subject of report, others where necessary), as well as to the OOH Executive Team. Where necessary, inform UKRI.

Review/ Learning

- Review to ensure that any learning from the case is documented and feeds into the functioning of the safeguarding report handling mechanism to adjust the process over time as lessons are learned. Identify any trends in concerns, therefore early detection of potential areas of maltreatment or harm.

- research plans change,
- new ideas emerge from collaboration with partners and stakeholders,
- project partners and beneficiaries contribute to the research (and needs for support via Hub partnerships), and
- new opportunities for knowledge exchange and impact arise).

- The research plans will be shared with all Hub Co-Is via the Operational Update for any comments.

Recognition

As the Hub is a collective research endeavour, based on research co-production and cross-regional learning, each Co-I will be expected to ensure recognition of the originators of ideas within the Hub, as well as other contributions that help to develop these ideas and enrich other's research.

Co-Is should also acknowledge when the Hub is building upon research findings from previous or other projects in which the Co-Is were/are involved

Hub Co-is should discuss at the start of a joint publication project the expected contributions of co-authors. They could follow the:

- "sequence-determines-credit" approach, whereby the sequence of authors should reflect the declining importance of their contribution (and the paper could quantify relative contributions of each author in percentages).
- "equal contribution" if authors are listed alphabetically to acknowledge similar contributions or where it is difficult to quantify relative contributions. [3]

More generally, we wish to create a culture of acknowledgement, appreciation and attribution for all the support (practical and intellectual) that each Co-I and partner will offer to others under the Hub. The following practical steps are proposed to that end and a periodic feedback exercise will assist in evaluating the implementation of these practices:

- taking **minutes** of specific meetings to record origin of ideas;
- using **citations** to recognise originators of ideas and those that peer-reviewed or otherwise supported others' research (note that Empatheatre plays also include footnotes to published research); validating and acknowledging each other's work in citations is also a means of making the intangibilities of the Hub network and its collaborations visible and measurable.
- **checking in** with originators of ideas and other contributors about their preferred form of acknowledgement and whether there are any concerns about the timing of reference vis-à-vis their own research;
- pre-publication of new ideas and concepts as **blog posts** to:
  - publicise the originators of ideas and capture how they wish to express the idea (before others can work on it for different research purposes);
  - protect the originator's expression of ideas (IPRs);
  - allow other Hub researchers to respond with other blog posts (so allowing for individual recognition of other contributions, as well as different views); and
  - disseminate findings to a wider audience and open a dialogue with researchers and stakeholders outside the Hub via the comments section.

  Blog posts can be used to:

  - outline an emerging research agenda, including an invitation to Hub and non-Hub researchers to collaborate in implementing it;
  - encourage dialogue across disciplines on research ideas and research findings;
  - increase general accessibility of research findings;
  - write up a dialogue/interview between Hub researchers (potentially with divergent views);
  - Promote the public visibility of the Hub as a source of cutting edge trans-disciplinary research.

All of the above may also feed into our Monitoring, Evaluation and Learning (MEL) and serve to engage other researchers and stakeholders beyond the Hub in our inter-disciplinary dialogues and in our search for fair research partnerships.

- draft papers should preferably be pre-published online as **Hub Working Papers, subject to specific considerations in different disciplines and any limitations (potential embargo period, etc.) set by the target publisher (to be captured in the publication plan)**. Online pre-publication is to allow:
  - authors to obtain international visibility for their work without being "held hostage" to publication times (that may vary significantly from one publication outlet to another);
  - other Hub researchers to be alerted of preliminary or pre-published research findings that can be tested

[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1769438/.

or built upon in other areas of research of the Hub, to support inter-disciplinarity and cross-regional learning;

- Hub partners and stakeholders to be alerted of preliminary or pre-published research findings that can be relied upon in other own areas of activities (including DEEP Fund activities);
- researchers and stakeholders outside the Hub be alerted of preliminary or pre-published research findings to provide feedback or help identify connections with other projects and initiatives;

These papers also act as a means of dissemination to other audiences that might not have access to journals (see also Open Access below).

Diversified publication approach and divergence of views

The Hub is likely to look into the same object of research from a variety of perspectives and disciplines and in fact we hope to have frank and respectful exchanges about how our different views may be a factor contributing to connections or disconnections in ocean research and governance. In addition, we are committed to value difference while researching connections, and to engage with conflicting views as part of our collective learning across disciplines, sectors and regions. Furthermore, we hope to share our research findings to different academic audiences (within our own discipline, in other disciplines, in inter- and trans-disciplinary contexts). For all these reasons, publication plans should include a diversified approach to publications, including "process" (self-reflexive) publications, in addition to substantive and methodological research publications. This is expected to support the points about recognition made above.

What this may look in practice is something along the lines of a potential example Elisa Morgera discussed with Katy Soapi while in Fiji:

- **publications in each discipline involved in a research project under the Hub, that will build upon individual Co-Is' body of work** (e.g. Katy Soapi, Rosie Dorrington and Mat Upton could publish – together and/or individually – on their bio-medical discoveries under the Hub; Elisa Morgera and Tobias Schonwetter could publish – together or separately - on international biodiversity and human rights law and for intellectual property in response to the new legal questions identified by Katy, Rosie and Mat);
- **publication across different disciplines** (i.e. Katy, PJ Bordahandy and Elisa could publish a joint piece reflecting on scientific and legal developments on bio-prospecting in Fiji and their international relevance from a marine science and legal perspective; Rosie, Mat, Rachel Wynberg and Tobias could publish a joint piece on scientific and legal developments on bio-prospecting in South Africa; an artist could write a short story on bio-prospecting contrasting experiences in South Africa and Fiji);
- **self-reflexive publications** (i.e. Elisa, Rachel, Rosie, Katy and Tobias could write a piece together on the extent to which they learnt from each other within the Hub (and also about the blind spots/barriers within their respective disciplines for developing a fair partnership); Katie, Rosie and Mat could write – jointly or separately - a piece reflecting on their collaborations with marine scientists form other regions and with lawyers under the Hub; Rachel could write a piece on research ethics based on her experience in supporting law and natural science researchers under the Hub).

This diversified strategy should be discussed before the start of/ as early as possible in the context of a specific collaboration under the Hub in order to:

- identify individual expectations, roles/contributions (including on the basis of guidance to be developed on the order of authors in different disciplines), aspirations (career progression needs of different Co-Is);
  - consideration should be given in particular to how each Co-Is' individual voice may be recognised/ distinguishable (including in decisions about whether to publish joint pieces or individual pieces with cross-reference – ideally, a combination should be identified to show the benefit of Hub collaboration for individual Co-Is' research trajectories, as well as the benefit of Hub collaborations for new/more diverse teams of co-authors;
  - consideration should also be given to how joint publications may support Co-Is to reach new academic audiences (beyond the usual epistemic communities/academic debates they have reached until now; audiences in different disciplines; inter- and trans-disciplinary audiences);
- identify potential sources of conflicts and seek advice from relevant Hub bodies (Safeguarding);
- set out an agreed approach and monitor the need for any adjustment to it.

Hub-wide peer learning

Each Country Director and IIWG lead, as part of the publication strategy, will support a peer-learning process to ensure research excellence in publications arising from the Hub, as well as to support inter- and trans-disciplinary publications. This will

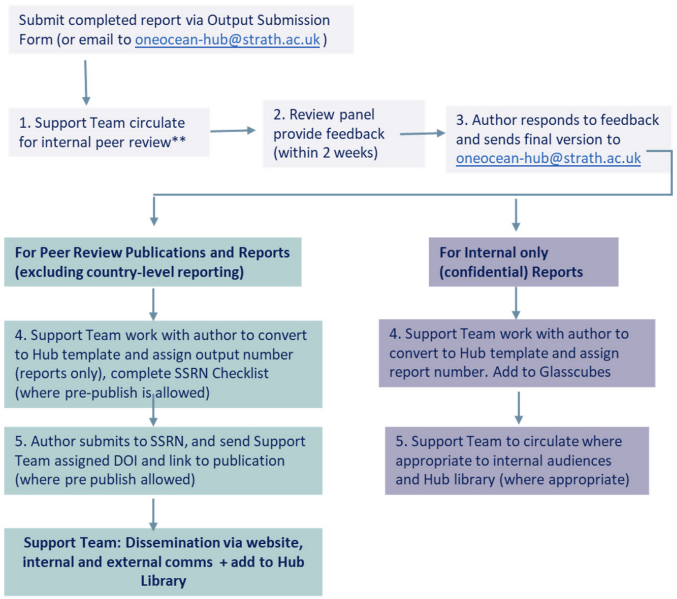
entail:an internal, light-touch review by at least another Country Director/IIWG lead and ideally also by one Co-I that was not involved in the specific research project/activity that led to the publication.

- Where requested by the author, allocating a critical friend to support colleagues in the development of their writing style and achieving publications in target journals.

The **light Hub-wide process for internal peer-learning** is outlined below. This is mainly aimed at ensuring that Hub publications benefit from insights from all the disciplines included in the Hub, and will also allow the identification of new opportunities for inter-disciplinary research under the Hub. It may also help identify any risks (reputational; trust among researchers; partners' trust, etc.: see Risk Register and Research Ethics) or need for advice from Country Teams and IIWG.

If there is a disagreement or difficult conversation about a publication (or about the findings arising from a specific area of research under the Hub or across different Country Teams), the ET will set up a panel with representation from all RPs for the CO-Is to discuss the matter (and mediation support, if needed). The learning arising from the divergence of views will be documented and in principle shared externally (as a blog post, as two separate publications). Where requested, confidentiality concerns will be addressed.If there is a disagreement or difficult conversation about a publication (or about the findings arising from a specific area of research under the Hub or across different Country Teams), the ET will set up a panel with representation from all RPs for the CO-Is to discuss the matter (and mediation support, if needed). The learning arising from the divergence of views will be documented and in principle shared externally (as a blog post, as two separate publications). Where requested, confidentiality concerns will be addressed.

Report submission flowchart



Intellectual Property Rights

Written research outputs and art works are automatically copyright protected. The current thinking is to assign, where possible, copyright to the individual author(s) of a specific research publication (co-ownership of co-authors if applicable) or art work. The copyright owner shall grant a license to all research partners for use of the work for research and non-commercial purposes. If a use for commercial purposes is envisaged, a separate agreement needs to be concluded with the copyright holder. If this seems to conflict with individual Co-Is country's or university's law and policy framework, we may need to engage with individual institution's IP office on that.

In cases where a research project involves more than one author, our proposed approach is to develop a simple online document to guide internal discussions about the expected contributions and publications. We envision the default situation to be co-authorship and co-ownership. The rights of co-owners will also be explained in the online document.

Anyone involved in the Hub can use pre-existing intellectual property rights which a collaborator might be using on a project (developed models for example) for the purposes of carrying out new research under the Hub but for no other reason unless separately agreed with the owner.
If research involves access to indigenous/traditional/local knowledge, it is critical that the interests of the custodians of such knowledge are preserved (including the interest in seeking IP protection for such knowledge at a later stage), that benefits are shared fairly and that applicable legal and ethical frameworks are fully observed and complied with (see Research Ethics and Community safeguarding). Equally, if research involves seeking the views of indigenous peoples and local communities, seeking free prior informed consent is essential and includes alerting community partners to potential negative consequences of their involvement in the project, including consequences related to intellectual property protection. Where appropriate, co-authorship between research partners and community partners should be considered. A separate guideline document/blog posts on our learning for engaging with indigenous communities as a research partner will be developed by the project.

The Hub co-developed Code of Practice will be distributed under a Creative Commons licence (version 4.0 that is drafted in a way that can be applied and enforced in most countries because it uses terminology from international treaties on IP).

In accordance with the Data Management Strategy, we expect that Hub data will be deposited in archives that hold material under a right to distribute licence and apply a Creative Commons licence (version 4.0). If researchers are considering a data repository/archive that requires a transfer of copyright on

accession (because they may require original data deposits to be ported to multiple new formats through time), researchers are expected to negotiate on this matter with the support of the IP specialist under RP1.

Patents: We do not anticipate that Hub budget will be spent on patenting (also to avoid a delay in publishing results). We will rather rely on "defensive publishing": publishing information about a potentially patentable invention, to avoid that someone else patents the invention at a later stage.

The Executive Team may take a decision on patenting on an exceptional basis if a Co-I makes a case for patenting an invention developed under the Hub.

Open access: Based on funder's requirements and to achieve the most impact and accessibility of our research, we commit to making research results available open access.

The 2022 UKRI Open Access policy applies to:

- any article submitted for publication from April 2022, and
- books (monographs and edited collections) and book chapters submitted for publication after 1st January 2024.

In order to comply, publications should ideally be published as **Gold Open Access** [4] (against payment of a fee) **OR covered by a Read and Publish agreement** with the publisher (so, ideally, we should target journals for which the publisher has concluded these agreements with your institution).

Note that UKRI has made available block funding for open–access (golden open access) publication to UK-based research partners. This is not likely to cover the costs of all Hub publications, so: each Country Director and IIWG leads will make suggestions in the respective publication plans, and the ET will take a decision, if needed, regarding which publications should be prioritised for open-access funding (to ensure fair distribution across all research institutions, across disciplines, across regions, and across Co-Is at different career stages).

Alternatively, a copy of the full-text accepted manuscript should be deposited in an institutional or subject repository under no embargo period and a creative commons attribution (**CC BY licence**). Please make sure you discuss this with the journal editor when you submit your manuscript. Then the submitted manuscript must include the following statement:

"Funding from United Kingdom Research and Innovation (UKRI) Global Challenges Research Fund (GCRF), One Ocean Hub (Grant Ref: NE/S008950/1). For the purpose of open access, the authors have applied a creative commons attribution (CC BY) licence to any Author Accepted Manuscript version arising from this submission."

Strathclyde will include all Hub publications in its own repository, to ensure green access and will import the metadata for a link to into the Strathclyde repository, then provide a feed from there onto a page on the OOH website.

Acknowledgement of UKRI GCRF One Ocean Hub: Publications that do not follow this approach will not be able to refer to the One Ocean Hub. In case of disagreement on whether a publication has or not followed this approach, the ET will make a decision.

To be considered a "Hub publication", each academic output needs to include either of these acknowledgments:

SHORT VERSION: With funding from United Kingdom Research and Innovation (UKRI) Global Challenges Research Fund (GCRF)One Ocean Hub (Grant Ref: NE/S008950/1).

LONG VERSION: The One Ocean Hub is a collaborative research for sustainable development project funded by UK Research and Innovation (UKRI) through the Global Challenges Research Fund (GCRF) (Grant Ref: NE/S008950/1).

It is possible to "double-hat" publications that also originate from research outside the Hub with acknowledgements both to Hub funding and collaboration, and to other sources of funding or collaborations.

Reporting: All Hub publications are required by UKRI to be catalogued within Researchfish on an annual basis[5] The Support Team does so on the basis of the publications shared with them by Hub researchers (by email as soon as a paper is published or – although this is not ideal – as part of their individual annual questionnaire).

One Ocean Hub Publications Library: All Hub outputs are stored in the One Ocean Hub library, which can be accessed here (full link also below) and is linked to the Dashboard on Glasscubes. This library provides all researchers free access to the full text of all Hub publications. It also enables researchers to search for publications from across the Hub by keyword. The One Ocean Hub library also includes publications that are not directly attributed to the Hub, but that have been provided as useful/relevant references for use in research and writing.

Communication about publications and knowledge exchange (non-academic publications)

[4] "Gold OA allows immediate access to the final version of an output, with a licence to allow maximum re-use. This may be subject to a payment being made to the publisher." -- https://www.ukri.org/files/legacy/oadocs/ukri-open-access-principles-and-high-level-policy-pdf/.

The Support Team and Ocean Governance Research Group work closely with relevant Co-Is to develop international policy briefs and knowledge-translation materials that could accompany the (pre)publication of Hub research findings for global distribution, on the basis of prioritised publications in the IIWG publication plan and Country-specific publication plans, where relevant.

As part of this collaborative process, Co-Is will benefit from peer-learning in translating research findings into policy briefs and knowledge-translation materials. The Support Team has develop guidelines and provide support to Co-Is developing blog posts for wide audiences that are included in the Opeartional Update.

RP2 and RP5 colleagues will support Co-Is in sharing their research through arts and different media (noting the importance of wordless outputs), by considering the publication plans in developing calls for the DEEP Fund, as well as supporting collaborative processes and training in art-based approaches to knowledge exchange. This is also meant to ensure access to Hub findings for audiences that do not have access to academic publications.

RP1 and RP 5 colleagues will provide advice to others Co-Is on how to report back on their research to communities in a timely and culturally appropriate fashion.

The Communications Officer of the Support Team provides advice (upon request or of its own initiative) to Co-Is on advertising publications on the Hub social media and collaborations with media partners.

Key dissemination materials of Hub research findings are, wherever possible, translated in local languages – to be determined jointly with beneficiaries (as part of benefit-sharing discussions – see Research Ethics). Country Directors monitor budget allocation for local-language ethnographers and translations.

5. Data Management Statement

EXECUTIVE SUMMARY

This is the 3rd version of the One Ocean Hub Data Management Statement, an integral part of the Hub's Code of Practice.

Data management and preservation (section 2): Data has to be well managed throughout the life of the project. Best practice encourages the creation of a specific Data Management Plan (DMP) for a project or sub-project. Even when data will not be preserved in the long-term or cannot be shared widely due to the ethical or legal distinctions (see section 2 below), a DMP is required, documenting decisions and their rationale. A DMP is a living document and can be subject to regular, or "as needed" reviews throughout the lifetime of a project.

Data Repository (section 3): A key task for partners generating research data, in whatever domain, is the identification of a suitable data repository for long-term preservation of digital data that supports or is associated with research publications and/or has reuse value to the wider community (not just the academic community). The standard for this is a Trusted Digital Repository (TDR) following a preservation reference model such as the Open Archival Information System. There are a number of domain-specific data repositories, particularly for scientific datasets, that are also accredited, such as OBIS and PANGEA. Strathclyde University hosts an institutional repository for research data [6]and can discuss the provision of TDR services to partners, if there is no viable alternative, on a case by case basis. With respect to principles, the FAIR (Findable, Accessible, Interoperable and Reusable) principles are the foundation of Hub's approach to good data management.

Data discovery/datasets (section 4): It is an ambition of the One Ocean Hub to act as a resource discovery metadata aggregator for research datasets, from all domains, that have been generated during the lifetime of the project. However, the Hub's ability to do this is entirely contingent on the types of metadata that partners are able to provide, and whether that metadata is able to be made available through standards enabling harvesting.

Specific questions for partners to inform research data management (section 5): A Hub-wide assessment of current data management practices will be undertaken in late 2022.

Recommendations (section 6): This section contains guidance on DMPs, consortium membership of the Digital Preservation Coalition; Hub-specific general statement on the ethics of data sharing; and role of Strathclyde University.

1. INTRODUCTION

The One Ocean Hub is a collaboration between a large number of research partners spread across four continents and across multiple academic domains. Each continent, each country, each domain and each institution may have specific policy and guidance relating to the long-term management of research data, as does the UK funding council through which the Hub is funded (UKRI GCRF). This makes for a complicated and potentially confusing data management and data preservation landscape and one where it is unlikely that a 'one size fits all' approach will cover all possible eventualities. Developing such an approach would be a significant work package in itself. The purpose of this document is to articulate minimum requirements for managing, preserving and sharing data.

[6] The Pure Repository: https://www.strath.ac.uk/research/researchdatamanagementsharing/datadeposit/

2. JUSTIFICATIONS FOR MANAGEMENT AND PRESERVATION OF RESEARCH DATA

The arguments and justifications made for the need to preserve research data actually share a remarkable degree of overlap across the Science, the Arts and the Humanities domains. For instance, the UK Principles Paper on Supporting long term access to digital material (agreed by The National Archives; The Heritage Lottery Fund; The Archaeology Data Service; The British Library; The Collections Trust; The Digital Preservation Coalition amongst others), makes the case by highlighting how long-term preservation and access benefit us all by helping to:

- Improve access to cultural services for all
- Protect our cultural heritage in all its forms
- Show best practice in collections management
- Support learning and participation
- Make efficiencies for current and future front-line service delivery
- Improve return on investment for funders

The principles identified in the UK Principles Paper apply to both data creators, i.e. researchers, and the organisations charged with curating the data in the long term. With regards to planning data creation and creating a Selection and Retention policy, the key relevant principles for data creators are:

- Long term access to digital material should be considered throughout organisational strategies, policies, practices and roles, as it efficiently supports the delivery and development of front-line services.
- Long term access to digital material should be considered throughout all of the service management life-cycle, especially the **planning** and exiting phases.
- Digital material should be **created**, managed and acquired to support many uses by many parties and long-term viability.
- Choices should be made about what digital material to sustain for long term access, for how long and how, based on an analysis of current and expected service needs and priorities and available resources. (**i.e. Selection and Retention**)

It should be noted, however, that some disciplines take a very different perspectives on the long-term preservation and sharing of their data and whether or not this is appropriate, notably in the Social Sciences.

Data has to be well managed throughout the life of the project. Best practice encourages the creation of a specific Data Management Plan (a DMP) for a project or sub-project. A well formed DMP, should include a statement regarding Selection and Retention of data, i.e. what data will be selected for long term preservation and sharing (with or without embargo) and what data will be destroyed and how it will be destroyed. The DMP should also discuss how data is collected and managed throughout the life of the project, including due attention to issues such as Data Protection etc. So the fact that in some cases no data will be preserved in the long-term or cannot be shared widely due to the ethical or legal distinctions (as discussed above) does not mean that a DMP is not required, documenting these decisions and their rationale remains good practice in all contexts to which Hub partners commit to adhere to.

3. THE FAIR GUIDING PRINCIPLES FOR SCIENTIFIC DATA MANAGEMENT AND STEWARDSHIP

A key fundamental task for partners generating research data, in whatever domain, is the identification of a suitable data repository. This is not storage or back-up, but long-term preservation of digital data that supports research publications and/or has reuse value to the wider community (NB this does not just mean the academic community). The standard for this is deposition of the data, after a rigorous selection and retention process, with a Trusted Digital Repository (TDR). This is an organisation with the staff, the expertise, the physical infrastructure and the funding/business model to enable it to look after data in the long term following a preservation reference model such as the Open Archival Information System (OAIS, ISO 14721, http://www.oais.info/). Many HEIs will have institutional repositories will be TDRs or be working towards full TDR status and there are a number of routes to accreditation.

In addition to repositories embedded in HEIs there are a number of domain specific data repositories, particularly for scientific datasets, that are also accredited, such as OBIS and PANGEA, these services host data and are not simply metadata aggregators.

The One Ocean Hub is hosted with the University of Strathclyde which has well developed policies and guidelines in this area which can be shared with research partners. Strathclyde also hosts an institutional repository for research data and may, in certain situations, where there is no viable alternative, be able to offer TDR services (see https://pureportal.strath.ac.uk/ and the recommendations section below).

Data Management Plans

A Data Management Plan (DMP) is a written document, most often generated at the point of applying for funding; it should however, be treated as a 'living' document and reviewed throughout the life of a project. This is the key document for all project researchers, it describes the data-types that will be

collected &/or generated during a research project; sets out a detailed plan for how the data will be managed throughout the project and what will happen to it after the end of the project. In the interest of fair and equitable sharing of research and its benefits, data and findings will be slated for open access archiving unless the DMP makes a case for protections (ethical and/or IP) (see Research Ethics guidelines).

DMPs should:

- include information about formats, volume, documentation, storage, ethics & legal/IPR, sharing, preservation and/or destruction of data;
- cover the four aspects of the FAIR principles; and
- be aligned with the EU 2016 General Data Protection Regulation (GDPR) on the protection of natural persons with regard to the processing of personal data (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.119.01.0001.01.ENG) and the 2018 UK Data Protection Act (https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted), where applicable.

The FAIR (**F**indable, **A**ccessible, Interoperable and **R**eusable) principles, which are now widely adopted, including as the standard for H2020 projects, should be the foundation of Hub's approach to good data management and they are detailed in 'FAIR Guiding Principles for scientific data management and stewardship' which were published in Scientific Data in 2016 (Wilkinson, M., et al, 2016).

Finally, it is important to highlight the relationship between TDRs and the Hub's Publication Strategy. A number of journals specify not only the length of time that supporting data must be maintained, but the access conditions and in some cases the repository. From the Hub's perspective, this means that DMPs should at least consider likely targets for academic publishing and think about any implications for data management beforehand. JISC in the UK runs a discovery service for TDRs that maintain content in support of journals, however this will close in July this year and there is no clear replacement (https://thekeepers.org/).

Hub approaches to publication, including addressing such issues as the appropriateness of Open Access and the desirability of publishing for non-academic, community and policy making audiences are covered in the separate (but complementary) Hub Publication Strategy.

4. ONE OCEAN HUB AND DATA DISCOVERY

It is an ambition of the One Ocean Hub to act as a resource discovery metadata aggregator for research datasets, from all domains, that have been generated during the lifetime of the project. This is an opportunity for the Hub to highlight and promote the outcomes of its research activity at a single point making it easy for data users or other interested parties to find our data outputs.

At its very simplest, this could be links/pointers to where partners have deposited data, however it is also possible to create much more sophisticated ways of finding and accessing One Ocean Hub data, including map interfaces. In terms of inter-disciplinary working and inter-disciplinary thinking there are clear advantages to being able to present data outside of their traditional domain siloes and offering the ability to search across multiple relevant datasets from multiple domains is a starting point for this process. However, the Hub's ability to do this is entirely contingent on the types of metadata that partners can provide. The FAIR guiding principles above refer in general terms to rich metadata, by which is meant the underlying data is both well described and described in a way that allows it to be compared with other datasets. The richer the metadata the more ways there are of finding it and finding it in association with other relevant datasets. It is also true that specifying a standard data structure could allow cross-searching between datasets at record level. In practice this is often barely achieved within a particular domain let alone across multiple domains in the arts, sciences and humanities.

However there are often common components of metadata that do allow apparently heterogeneous datasets to be discovered via a single interface. From the Hub's perspective the most likely way, beyond text search, by which we can categorise data so that it is discoverable together, across all domains, is via geolocation. All research activities undertaken by the Hub, be they oceanographic, marine bioscience, fisheries, arts or ethnographic, will take place at some location, or relate to some location. Whilst this makes them theoretically cross-searchable using geocoding of the datasets (even at resource level), there are still a number of potential issues. One is scale, it might not be meaningful cross-searching a datasets where one of them relates to a large expanse of ocean and one of them relates to a specific village and the area in which the villagers fish. Another issue, is that there is more than one way, to geo-locate data, multiple positional systems and even clashing cultural conceptions of how areas of sea and land can be described (the simplest and most universal is likely a Lat./Long. bounding box).

This poses both a challenge and an interesting opportunity to research some of these issues, especially as they are expressed cross-culturally, and to explore new ways of drawing together disparate forms of data. However, during the 3rd OLA a consensus arose that 1) deep technical research into these

issues is likely beyond the remit if the Hub and 2) too much focus on these arcane issues might distract from the data creation activities. Some level of consideration of these issues does remain necessary though and the next section outlines some very basic questions that would allow the Hub to start thinking through how datasets are constructed and particularly how metadata is attached to it is strongly indicative of the world view of the data creators (metadata can in one sense be thought of as a kind of distilled categorisation of an ontology). Through looking at datasets derived from multiple ways of working in multiple regions and through cultural conceptions of the world, and finding those things that are shared between them, we might be able to erode the boundaries between these world views in a beneficial way. While the above section discusses geocoding of datasets, basic metadata schema such as Dublin Core (http://dublincore.org/) with its focus on people/creators, will provide a starting point. The first stage, though, is to understand how One Ocean Hub partners currently describe and structure their data sets.

5. QUESTIONS FOR RESEARCH PARTNERS

In order to get a clearer understanding of how One Ocean Hub research partners manage their data an assessment exercise was due to take place in early 2020 to allow the Hub to consider the practicalities of how data from different partners in different regions and in different domains might be discoverable via the Hub's own infrastructure. However, global events and the budget cuts in 2020 prevented this work from going further. A new set of questions is being drafted and will be issued in September 2022 to revive progress in this area.

Commitments

Other sections in this document discuss best practice for long-term data management, preservation and sharing, and where resources to assist this can be found. This section contains commitments regarding areas where the Hub can helpfully intervene beyond pointing partners to DMP templates etc.,

- One Ocean Hub will act as a broker for organisations/researchers that do not have institutional infrastructure or well developed policy. This would involve infrastructure or preservation support being offered by one institution to another e.g. Strathclyde offering institutional repository space to a partner without access to their own, as appropriate.
- Strathclyde University is willing in some circumstances to be the final repository for datasets which have no other way to be archived. This would require the data creator to liaise directly with Strathclyde Data Management Team as early in the data creation process as possible. As a general point of principle it is highly desirable for all datasets to be stored locally as far as possible – even if a version is archived elsewhere.
- All One Ocean Hub partners should agree to a general statement on the ethics of data sharing between Hub participants by **March 2020** (this is separate to data sharing policies adopted by TDRs managing access to Hub data by 3rd parties). This should highlight the need for respect, acknowledgement and ethical consideration for reuse of data, including data that may have commercial value (or derived from commercial rather than academic sources). This might enhance and facilitate data sharing between partners throughout the length of the project, by making partners explicitly aware of what is expected with regards to data sharing. This statement will be part of the Hub's governance regime and be referenceable as part of the contracting process between the Hub and its partners.
- All data creators who are part of the Hub should commit to creating a well-developed Data Management Plan (DMP) for each research activity they undertake. [7]
    - A DMP may say that data is **not** being retained or being shared for any number of reasons and this, depending on the reasons, can be perfectly acceptable (see the section below on Social Science data). A DMP is still required. UKRI's Common Principles on Data, state that: "Institutional and project specific data management policies and plans should be in accordance with relevant standards and community best practice. Data with acknowledged long-term value should be preserved and remain accessible and usable for future research"; while also recognising that "...there are legal, ethical and commercial constraints on release of research data. To ensure that the research process is not damaged by inappropriate release of data, research organisation policies and practices should ensure that these are considered at all stages in the research process." (https://www.ukri.org/funding/information-for-award-holders/data-policy/common-principles-on-data-policy/)
    - The ethical and political considerations addressed in research project Selection and Retention policy, as well as choice of repository should be made explicit in the DMP (the Registry of Research Data Repositories may help with this: https://www.re3data.org/).
    - The cost implications of the DMP should be explicit to allow brokering if that is appropriate (see above).
    - The DMP (whichever model/template is chosen)

[7] One tool that can support this activity is the UK-funded, internationally used DMPOnline: http://www.dcc.ac.uk/dmponline.

should be clear about the level of discoverability and/or cross searching will be supported by the choice of metadata (DC/Geospatial as a minimum). This may seem straightforward, but is a key element for future discoverability e.g. via any proposed Hub portal.

- Many partners will complete DMPs as a matter of course so this should not be an extra burden for them, however if they currently don't have a requirement to do one from e.g. their own institution, or access to a template, then the Hub recommends working from the suite of Strathclyde University templates (a generic template is available courtesy of Strathclyde University here: https://www.strath.ac.uk/research/researchdatamanagementsharing/datamanagementplans/)

6. EARLY CAREER RESEARCHER PROGRAMME

The One Ocean Hub (OOH) aims to create an early career researcher development resource for transdisciplinary research in ocean governance. The programme will include self-identified early career researchers (ECRs) who are One Ocean Hub co-investigators, and other researchers working in relevant physical and social science fields. Age and experience are not necessarily a factor in identifying who an ECR is, as it varies depending on discipline, region and university system.

One of the One Ocean Hub's desired outcomes is to develop the capacity of researchers to continue the One Ocean Hub's mandate beyond the life of the Hub. The activities identified in this draft are targeted at increasing ECR participation in the Hub and empowering them to deliver on future research projects.

Taking into consideration the fact that different disciplines present different hurdles, the programme aims to develop holistic approaches that are beneficial to everyone and that generate learnings for other similar programmes. Thus, we support the transitions from Masters to PhD, to postdoc, to Co-I, and PI and will place particular emphasis on establishing PhDs and post-docs within academia.

The Hub will develop an environment and supporting structures that allow Early Career Researchers to:

- develop and share knowledge and skills among ECR peers and with senior researchers and project partners;
- benefit from Hub-wide networking, resources and new opportunities to gain professional experience, including transdisciplinary experience;
- be recognized for their contributions to the Hub and play an increasingly prominent role in the iterative design and implementation of the Hub; and build their capacity for research leadership.

ECRs from all regions represented in the hub are providing guidance on the kind of environments that are most conducive for their career development. Discrimination or other disadvantages that ECRs face are addressed in the Hub safeguarding and research ethics protocols. Details on mediation and progressing issues of concern are included in the Hub's Governance plan

ECR Coordination Group and Hub Representation

A self-organized **ECR Coordination Group** is the main governance body that will coordinate the programme's activities. The Coordination Group will reflect on and coordinate how ECRs can benefit from the Hub. In-person and teleconferencing meetings will provide ECRs with an opportunity to plan activities and volunteer for and allocate roles, identify training needs and lessons learnt through ECR involvement in the Hub. ECR representation on governance committees will ensure that ECRs have an opportunity to be made aware of and participate in all activities and opportunities within the Hub. Regular KE updates by the Support Team include opportunities for ECRs. Update emails will also be sent whenever relevant information needs to be communicated.

Programmatic Elements

1. Capacity Building, Development and Training

Professional Development Courses

ECRs will propose training programmes that they may find relevant for their career development. In the first round of consultation, Project management training was identified as valuable for researchers who intend to manage research projects in the future. ECRs suggested that programme managers from CEFAS or OOH Support Team could provide in-kind training sessions.

Thematic training and capacity-building activities

Each Co-Director and WP Lead is expected to communicate opportunities for training and capacity building under the respective research programme and work packages that could be of interest to ECRs through the Support Team. Each research institution is expected to allow ECRs as broad participation as possible in these activities (virtually or through in-kind travel contributions).

2. Funding

The Flexible and DEEP Fund guidelines identify ECRs as priority beneficiaries. As a prioritised community they are also first in line when it comes to seeking support from the Hub's Development Fellow.

The Flexible Fund allows ECRs to finance small projects, meetings, experiments and ideas that fit within the modalities of the Flexible Fund guidelines (notably collaboration with beneficiary organizations). It will also support the **Global Placements Programme** which facilitates three- to six-month placements in partner organisations.

3. Knowledge Exchange, Dissemination and Benefit Sharing

Benefit Sharing

ECR's serve as an important resource and/or point of contact for benefit-sharing activities (see Research Ethics). The ECR programme is itself a means of extending the resources of the Hub beyond immediate hub researchers and is one of the Hub's pathways to impact. When it comes to the involvement of local communities, ECRs based in their home countries have cultural capital that allows them to serve as bridges between worlds and champions for uptake who can communicate across knowledge ecologies. For instance, they can communicate the intentions of the Hub and in turn help Hub actors identify and gauge the interests and sentiments of various stakeholders.

Conferences, seminars and workshops

The One Ocean Hub, as part of its transdisciplinary and knowledge co-production activities, will plan Living Aulas, public workshops, theatre, exhibitions, protected spaces, etc. where (willing) research participants are integrated as presenters and contributors, not just as audience members. ECRs will participate in planning these and other events led specifically by ECRs. Aside from enabling ECRs to plan events, OOH and in-kind resources will also be mobilised to allow ECRs who would not ordinarily have the opportunity to do so, to travel to conferences.

Peer-to-Peer Learning

The ECR programme is an opportunity for within group cross-disciplinary and cross-cultural learning and the establishment of professional networks that will support individuals as they mature in their careers. These relationships will support researchers as they seek to establish experience in a new research area (both disciplinary and geographic).

Translation

Various Hub activities, particularly those that involve uptake, like dissemination, communication and knowledge exchange, will rely on a translation—not only of language but of meaning, as has been discussed on the section on benefit sharing and in the Publication Strategy. ECRs can act as bridges and translators between languages and knowledge types (see also Publication Strategy).

Opportunities for academic publishing in languages other than a few languages of European extraction, are few and far between. There will be other opportunities for OOH partners to disseminate knowledge in non-traditional formats. For instance, the multi-media One Ocean Shoal project, which will consolidate art-based DEEP fund projects, will seek to make localised knowledge globally available—not only in the dominant languages but in the myriad languages of the world. Collaborations between researchers and artists, like the Empatheatre work, could produce written iterations where researchers collaborate with artists to interpret artistic works in multiple languages.

In general, the OOH has an interest in protecting indigenous knowledge that has been passed from generation to generation through oral histories and other means and making it useful to others in the world. Importantly, the ECR programme is an opportunity for cross-regional collaboration between ECRs to translate their knowledges and make them known to each other.
Writing and publishing

While we will seek to archive all forms of knowledge co-produced through the Hub (within the parameters laid out in the Data Management and Research Ethics guidelines), the durability of written forms makes publishing an important way of protecting knowledge. Aside from academic publishing, the OOH aims to involve ECRs in the various platforms where different kinds of written outputs will be made available. Written outputs that will be acceptable include working papers, policy briefs, blogs, impact narratives, stories, and poetry (see Publication Strategy).

4. Mentorship

Each Co-Director and WP lead will be matched with an ECR, this will allow ECRs to shadow and receive the support of established researchers. In order to support capacity building in transdisciplinary research, the pairings will ideally match across disciplines and establish links between two complementary, but distinct, areas of research. For this we will rely initially on the knowledge mapping exercise and then on other variables including geographic location, and access to library, open access publishing and other resources. The modalities and practicalities of these opportunities will have to be worked out in detail, and it is expected that the Hub will experiment with different modalities depending on the needs and workloads of different Co-Is.

At the **Hub level**, ECRs will be involved in RP-specific discussions and will also be invited to participate in other areas, including Ethics, Monitoring & Evaluation, and Publication. Each research institution is expected to allow as broad participation as possible of ECRs in the virtual Living Aulas, as well as to support (through in-kind travel support [8] or virtual connection) participation of

[8] This could either be part of the Co-Is' travel budget or an arrangement between the Co-Is and their respective research institutions to allocate other travel funds (ie. use of part of over-heads or other internal funds as in-kind contribution to the Hub, that can be recorded and reported back to the funder).

ECRs in in-person Living Aulas. The second and third Living Aulas will also have a dedicated session for ECRs where Hub-wide input will be welcomed. The final Living Aula, that will also include a global science-policy conference, will feature ECRs in each panel.

ECRs will also have the opportunity to network with, support and mentor one another through the establishment of the ECR group.

Further networking: ECRs will be invited to participate in relevant networks and partnerships that individual Hub researchers have further connections to (e.g. "Pluriversity for Stuck Humans").

Academic Publishing

Publishing is a knowledge-exchange exercise but, due to its importance for academic careers, it is highlighted here as a priority particularly for PhD and post-doc researchers who are seeking stable academic positions. DAC-country researchers face particular hurdles such as access to online journals, libraries and computing facilities. The following avenues are opportunities to make the pathway to publishing less difficult.

Co-authorship

Co-authorship is an expected outcome of the Hub's transdisciplinary research. But, we especially seek to emphasise the inclusion of PhDs and post-docs from all regions not only in data gathering, but in producing written academic works with appropriate recognition through co-authorship (this should be reflected in the annual publication plans proposed by Co-Directors – see Publication Strategy).

Special Issue(s)

Given the reach of the Hub, it is likely that we would be able to identify a journal that can host one or several special issues which would carry the Hub's transdisciplinary research. Through this vehicle, ECRs mentored by established researchers would have the opportunity to publish their work. It would also allow Hub researchers to produce works that might not necessarily be considered by regular journal issues. For instance, articles that foreground indigenous knowledge as ocean knowledge, rather than characterise it as cultural information.

Open-Access Fees

UK partners often have funds to support open access publishing that will be used to the benefit all research partners (in light of plans proposed by Co-Directors – see Publication Strategy).

Other programmes will be developed as the project develops and coordinated through the mechanism of the ECR Coordination Group.