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 has been 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.

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1 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 include inputs from Co-I that participated in four Online Living Aulas (May-July 2019).

PRINCIPLES

Integration

- Hub research (research funded by the Hub) should focus on the interconnectedness of the ocean
- Hub research should make connections within science(s) to consider interrelated 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
2 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 participants, 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 a democratic 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, evaluation and learning, the Hub’s research ethics guidelines are informed by the Hub vision and Principles, and in turn they inform the Publication Strategy, the Data Management strategy, the Knowledge Exchange strategy and complement the Safeguarding Policies of the Hub. In addition, research ethics will be an active area of research.

We will need to constantly monitor our practices and listen to researchers, partners, and researched participants. 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 participant communities.

2.1 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 participants (see page 5).

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

d) Dissemination activities (see page 6).

2.2 Baseline Rules Regarding Data Collection

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 (Work Package 0) 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 human participants 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. Exceptions can be made if Research Ethics Learning Lab supports a petition to do so for instance if university procedures do not align with Hub ethic’s procedures. The Hub will feedback learning to the relevant institutions for their consideration.

d) Researchers will submit evidence of ethics permits and ethical review documents to the relevant Co-Director (depending on the Research Programme) and to the RRI Fellow.

Consent

e) Researchers will obtain informed consent (including free prior informed consent when indigenous peoples and local communities are involved\(^1\)) prior

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\(^1\) 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
to undertaking research and will exert best efforts to fully understand ethics requirements in collaboration with local research partners.

f) Prior, informed consent procedures should be tailored to local requirements. Whether obtained orally or in writing, researchers should ensure that the research participant genuinely understand the process and be availed of procedures for feedback and complaint.

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

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

i) 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

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

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

l) 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 research participants. Yet, there are other contexts in which we are vulnerable and research participants may be more powerful than us. In either case, we aim to be mindful of the effect these statuses have on our research and seek advice, if in doubt, from the Research Ethics Learning Lab.

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

n) 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.

o) Researchers are encouraged to set-up meetings with their local OOH research teams to discuss ethical considerations and experiences in the field, so that decisions are more collaborative and take into consideration multiple viewpoints.

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

peoples and local communities in understanding the requirement for “prior” informed consent.
1. 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:

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.

2.3 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 research participants. Typically, participants should only be paid for their time and costs in order not to foster any sense of obligation to the researcher and increase gradients of power.
   - vetting and hiring research assistants.
   - managing expectations.

b) 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.

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

d) Hub researchers will endeavour to include marginalised voices. Research assistants who are helping to identify research participants should be made aware of the Hub’s interest in engaging also with “invisible” and “silent” voices. (See Box 1 Bukavu Series).

e) 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.

f) 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.

g) 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.

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2 Research participants 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.

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

1. When developing research methods and sharing research processes with research participants or co-engaged researchers, take care to be as open and honest about the details of attribution and intellectual property.
2. Avoid putting pressure on research partners and consultation processes due to researcher’s own timelines. (See The Power of Milk)
3. The goal is to our data feed into one another’s work even if not working on transdisciplinary teams
4. When reporting or making claims based on exchanges with other researchers and research participants,
   1. Do so with the permission of the participants, and mindful of the need to protect the trust underlying that relationship;
   2. 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;
   3. 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”.

2.5 Knowledge Co-Production

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

1) Value all participants
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 participants 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 researcher participants 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 participants’ views are taken seriously, and acted upon, with opportunities for participants to provide feedback on their experiences of participating at all stages of the project.

e) Research designs should make room for validation exercises where research participants can review research findings and analyses before they are made final.

f) Documenting the research participants’ 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 research participants 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. These can be the Hub’s Living Aulas, public workshops, theatre, exhibitions, protected spaces, etc. where (willing) research participants are integrated as presenters and discussants, not just as audience members.

h) As part of Hub-level outcomes, research participants will be given an opportunity to reflect on and create narratives about the research process and their interactions with the researcher. This is part of the RRI fellow’s research and the OOH MEL process.

i) 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.

j) Avoid putting pressure on research partners and consultation processes due to the researcher’s own timelines.

k) The need to protect the identity and safety of researchers and participants (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 research participants are treated as peers.

2.6 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 research participants, rather than act on their behalf or create transactional relations.

Specific activities include:

- d) Data and findings will be slated for open access archiving unless protections (ethical and IP) are requested.
- e) Direct the Flexible Fund with benefit-sharing in mind.
- f) Mentorship and support of in-country early-career researchers.
g) 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

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

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

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**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 research participants 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)

Using local vendors when planning meetings locally. This means hiring local caterers and staying in local accommodation.

Co-identifying and responding to research participants’ 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 research participants’ own objectives (see Publication Strategy)

Facilitating research participants’ access to researchers’ networks and resources (including Hub partners and networks) that can support research participants’ own objectives

Skill-sharing between researchers and research participants 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 research participants’ views, values, knowledge and needs.

### 2.7 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 Responsible Research and Innovation Fellow and other hub researchers will research fairness and power imbalances across scales, in research and academic disciplines, including in light of their implications for impact.

We are committed to discuss and document learning on:

- a) Potential intended and unintended impacts of research
- b) Underlying motivations and uncertainties
- c) Facilitated deliberation among potentially impacted folks and their influence on research and innovation plans
d) Different regional perspectives vis-à-vis institutionalized approaches to RRI (EPSRC: Anticipation, Inclusion, Reflexivity, Responsiveness; EC Horizon 2020: societal engagement, gender in research, open access, science education, ethics, governance); in other words, how are ‘right impacts’ determined when operating outside of the UK, at the international level or across different regions?

e) Aligning research goals and practices with the values, needs, and expectations of diverse societies and other democratic models of decision-making that better acknowledge and grapple with power differentials, and are not based on seeking consensus.

Through:

a) Reviews of Hub researcher partners’ and project partners’ ethical approaches (as well as governance, policies, and data) to conduct original collaborative research on ethics (based on the due diligence forms, knowledge-mapping, collection of testimonials, etc);

b) Capturing in writing the approaches to research ethics in different regions that may not yet be documented in institutional procedures;

c) Organizing Hub-wide training and self-reflexive/awareness-raising workshops and events for researchers at different career stages and from different disciplines to peer-learn and peer-review research ethics practices within the Hub (including on the basis of logbooks on ethics that Co-Directors, in collaboration with RP members, will keep on the wider impact of the research and the development component);

We expect that this area of research ethics will allow the Hub as a whole to reflect on the responsibility and answering the following research questions:

a) What does it mean for researchers to deliver development aid?

b) How do research practices affect the implementation of international obligations related to marine scientific cooperation, capacity building and technology transfer?

c) How can we generate knowledge that is truly relevant for a variety of users and whose dissemination is not simply reflective of the impetus and infrastructure that supports globalising knowledge produced in (primarily) Euro-American institutions

In addition, the RP 1 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 as these are matters entailing respect of international law.
3 Safeguarding Vulnerable individuals and Groups

3.1 Safeguarding

Safeguarding refers to taking preventative action to prevent exploitation, violence, abuse, harassment and harm including sexual exploitation, bullying, harassment, psychological abuse and physical harm of researchers, research participants and partners.

Research institutions receiving funding from UKRI need to make a commitment to taking all reasonable steps to prevent harm to those involved with research. The following points should be taken into account in this context:\(^3\)

1. Safeguarding expectations should be proportionate, contextually sensitive and appropriate to the scope and nature of the research, while upholding international standards governing ‘do no harm’.
2. 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.
3. The approach to safeguarding capacity development should encourage open and constructive engagement, cognisant of power differentials, and responsive to emergent needs across the research process.
4. Approaches to safeguarding should adopt a victim/survivor-centred approach, as recognised by the International Development Committee (Parliament UK, 2018), by clearly articulating standards of behaviour, contextually appropriate and safe reporting, commitment to the rights and needs of victims and survivors, and listening to their voices in the development of policies and practice.
5. Researchers cannot realistically be expected to resolve ‘all forms of harm’ they may encounter through their research or as a bystander, and boundaries of responsibility and expertise must be clearly defined, with team members having access to safeguarding advice.

In light of funders’ requirements, this document is to be respected by each Hub researcher, project partner (beyond the level of engagement of “Hub community” – see Appendix) and each beneficiary of the Hub’s Flexible and DEEP Fund. The document provides guidelines for conduct that pertains not only to the researcher—research participant context but to the broader context for research.

3.2 Vulnerability

Both research ethics and safeguarding processes require us to identify vulnerable groups within the scope of the research project. (See:  

Safeguarding overlaps somewhat with research ethics but extends to cover interactions with people with whom we come in frequent contact beyond the researcher/researched dynamic. With this in mind, vulnerability is defined as situation where power dynamics are not in favour of a particular person or group. Vulnerability does not determine that there will be a negative event or outcome. A reflexive awareness of when these dynamics are in your favour can mean that you can act to use your situational power for good outcomes. The guidelines in this document are aimed at facilitating this.

Vulnerability is context specific, and 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 Boundaries of Responsibility

This document only refers to situations and relations that stem from One Ocean Hub-funded activities. Researchers and OOH partners must observe the protocols set out by their primary organization and its rules and regulations around these matters. These rules are supplemental to the guidelines and safety measures existing at those institutions. If you feel that the OOH can offer a different kind of support, please contribute to our thinking on this subject. One avenue is to contact the Responsible Research and Ethics Fellow: michel.wahome@strath.ac.uk

If you need to make a report, see the interim Process for Raising Concerns in the Governance document (reiterated in Appendix II).

Aside from the typical view of vulnerability as a state in which a person or a group can be exploited and/or victimized, vulnerability also relates to being unable to protect one’s own interests, or affect decision-making. Thus, the safeguarding protocol itself should not be used as a means of limiting the agency of individuals or groups. Adopting a saviour standpoint can be paternalistic and antithetical to the intent of the safeguarding measures which aim to allow to people to be heard, rather than to have someone speak on their behalf.

If you are in a situation that requires mediation, see the interim Process for Raising Concerns in the Governance document (reiterated in Appendix II).

In line with a victim/survivor-centred approach,

- the interim Process for Raising Concerns is clear and accessible;
- it provides multiple reporting options, with at least one being clearly independent of the research team (independent members of the Research Ethics Learning Lab); and
A suitable individual within one of the collaborating research organisations should be designated as ‘safeguarding focal point’ for any research (the RRI Fellow).

The interim Process for Raising Concerns will be reviewed and further developed by the RRI Fellow and WP 1.3 researchers, during the first year of the Hub implement, to adopt further ideas arising from a victim/survivor-centred approach, namely:

- Communities and research participants should be consulted about how they would wish to report concerns, and viable means of reporting made available to them accordingly.
- People reporting should be advised of the response and what to expect. Consideration should be given to what immediate support can be provided, reflecting a victim/survivor centred approach.
- The reporting mechanism should anticipate and address the key barriers to reporting.

### 3.4 Safeguarding Committees

Safeguarding Committees on gender, children and youth, and vulnerable communities will be convened on an ad hoc basis, as needed, if any unanticipated or confidential issues will arise. The Committees will be comprised of researchers and advisors who have been appointed on the basis of their expertise in the subject area, and an expert member of the Advisory Board (see Governance).

Safeguarding Committees will receive and manage any ad hoc safeguarding concerns relating to specific cases of vulnerability as they arise and subsequent inquiry/investigation, including bringing matters to the attention of the Hub’s Executive Team (confidentially, if needed). The Executive Team will review all complaints that might require escalating any matter to researchers’ ‘home’ institution. The Committees will also provide advice, identify training needs and support the development of specific tools for safeguarding under the Hub.

### 3.5 Safeguarding Training

Each Hub researcher, project partner (beyond the level of engagement of “Hub community) and each beneficiary of the Hub’s Flexible and DEEP Fund investigators and partners will become or be made familiar with this safeguarding document and research ethics guidelines by hub partners. If you hire any individuals during the course of your work please ensure that they become familiar with the safeguarding principle and its procedures.

The RRI Fellow, with support from the RP1 team, the Research Ethics Learning Lab and the Safeguarding Committees, will:

- contribute to developing needs-based training materials,
o monitor risks related to safeguarding
o documentation of lessons learnt with a view to feeding into the MOOC on Responsible Research for Development; and
o develop safeguarding induction and training materials, and a code of conduct to facilitate understanding of professional boundaries when working with children, women, vulnerable communities and environmental defenders and what is and is not acceptable behaviour.

In the meantime, useful materials are located here:

- UKCDR guidelines on international development research: https://www.ukcdr.org.uk/resource/safeguarding-in-international-development-research-briefing-paper/
- Bias training: https://implicit.harvard.edu/implicit/

### 3.6 Monitoring of Safeguarding

As part of our research interests and as part of our responsibility to the funder we will be reviewing the safeguarding protocols and process and compliance. This process will involve:

a) Annual review and update of the risk register by the Project Manager.

b) OOH investigators and partners will undertake a biannual reflection on the ‘Code of Conduct’ whenever need arises.

c) Integration of safeguarding into monitoring, evaluation and learning (MEL) process using tools such as anonymous surveys.

d) Maintenance of contact with groups interacting with OOH investigators and partners.

e) Interviews and participant observation of the Hub community by the RRI Fellow.

In the event of evidence of non-compliance, the Safeguarding Committee will discuss measures for redress including training, reporting to employing institutions and even withdrawal of links and funding in consultation with the RO’s Contracts and the University of Strathclyde’s Research and Finance departments.
Hub members will receive reports from the MEL Learning Lab on how well we are achieving our aim to coproduce an environment that emphasises well-being. The reports will be informed by continuous monitoring and evaluation processes undertaken by the RRI Fellow and the knowledge exchange Fellow.

3.7 Research related to Safeguarding

The Hub’s own research activities have been designed to develop and monitor safeguarding protocols.

The Responsible Research and Ethics Fellow research will produce:

b) A literature review of academic scholarship on the subject

c) A discourse analysis of safeguarding policy

d) Interviews and participant observation related to adoption of safeguarding perspective and principles

This research is designed as a workplace place ethnography that:

a) Contributes to the production of safeguarding and research ethics guidelines

b) Contributes to the development needs-based training materials

c) Monitors risks related to safeguarding

d) Documents and disseminates lessons learnt with a view to feeding into the MOOC on Responsible Research for Development;

e) Runs and analyses periodic, anonymous, surveys related to monitoring and evaluation of safeguarding compliance

Aside from the Responsible Research and Ethics Fellow, other researchers within the Hub are making the Hub the subject of their research.

The RP 1 team (under the responsibility of the Co-Directors Elisa and Patrick) will design research that investigates the relevance of the UN Convention on the Rights of the Child, UN Convention on the Rights of Women, and other relevant international human rights instruments in the context of ocean research and ocean governance.

In addition, they will cooperate with Strathclyde Centre for Excellence for Children’s Care and Protection, the UN Special Rapporteur on Human Rights and the Environment, and the UN Environment Programme, with a view to:

a) Further developing the Hub’s policy and training materials on children, women, community and environmental defenders’ safeguarding;

b) Addressing any issues and lessons learnt in the application of the Hub’s children safeguarding policy as research questions/leads for RP1;

c) Supporting the RRI Fellow’ Ocean Explorers’ Learning Lab and the MEL Learning Lab in integrating matters related to safeguarding in their work; and
d) conveying any key research finding and lessons learnt to relevant
decision-making fora through policy briefs and other knowledge
exchange materials.

Research by the RRI Fellow and by RP 1 team will also be integrated with WP1.3
‘Conflict transformation’, which investigates approaches that see conflict as
prompting a productive relationship between actors, rather than necessarily requiring
avoidance, mitigation or resolution.

The following A-Z guide provides guidance into situations and contexts in which
safeguarding rules apply. Each Hub researcher, project partner (beyond the level of
engagement of “Hub community) and each beneficiary of the Hub’s Flexible and
DEEP Fund should familiarise themselves with these topics. Research ethics and
safeguarding protocols aim at thoughtful interactions that protect, but also promote
agency and reduce stigma and stereotyping that may arise from assigning labels.

3.8 Asymmetry of Power

Power asymmetry is inherent in research practice. Please review the research ethics
document that governs the researcher-researched relationship. Beyond the relations
covered by research ethics are the power gradients that exist in working relationships.
Despite our best intentions, individuals or groups may be vulnerable to neglect or harm
because of the tendency to submit to those we view as having authority. We should
all consider the ways in which we have power not only over research subjects, but
also junior staff members, subordinates and research assistants.

We encourage reporting and whistle blowing (through the interim Process for
Addressing Concerns, in the Governance document) in order to make any instances
of bullying and harassment known. Early-career researchers, research assistants and
others should be encouraged to speak freely and truthfully and allowed to participate
in monitoring and evaluation exercises.

Our project is also occurring within the context of ‘North-South’ collaboration—a
dynamic that is not neutral due to power geometries. These gradients of power have
both the force of history and contemporary material effects behind them. These are
dispensible in the asymmetry between funding and funded, who is researching and
being researched.

The structure of the relationship between the Hub, the funder, investigators and
partners is one in which there is an unequal distribution of responsibilities and decision
making. One-sided funding inherently limits autonomy and decision-making. While
providing funds for development, research widens the population where the funder
and the Hub have responsibility.
These dynamics are embedded in the global, structural fabric and do not require us to do anything in order to operationalize them. Our goal is to manage them in a positive way. Because of the difficulty of eliminating unconscious bias, adherence to guidelines is the best way to ensure against missteps and harm. Prejudices are often only revealed retrospectively; for this reason each Hub researcher, project partner (beyond the level of engagement of “Hub community) and each beneficiary of the Hub’s Flexible and DEEP Fund should be open to receiving guidance on their conduct.

3.9 Asymmetry of Information

It is likely that relations will occur in a context of information asymmetry. Research ethics, data management, knowledge exchange and communications guidelines govern the transmission of information related to research processes. With respect to safeguarding:

a) We should not withhold or share information that would endanger any individuals or groups
b) Information on OOH perspective on safeguarding and its protocols is information that might be situationally relevant. In which case, notify all relevant individuals about the protections it offers.

3.10 Children

A child is someone under the age of 18 regardless of the age of majority/consent in their country of residence. All actions on child safeguarding are taken in the best interests of the child, which are paramount.

If your research involves children, please review research ethics guidelines and submit your permits and ethical review documents to the Responsible Research and Ethics Fellow. We are aware that Hub actors intend to conduct research with and alongside children.

Everybody has a responsibility to support the protection of children. Organisations have a duty of care to children with whom they work, are in contact with, or who are affected by their work and operations; therefore, in broader interaction with children remember that:

a) Children and young people may understand instructions but may have a different understanding and weighting of implications. For that reason, project work related to children and young people should proceed through trusted adults and guardians.

b) Avoid being alone with children under 12.

c) Do not share pictures of children under 12, even with consent of adults.

d) Do not abuse, bully, neglect or in any other way harm children.
Instances of bullying or sexual harassment will not be tolerated. If a person affiliated to the One Ocean Hub is the perpetrator, we will rescind our relationship and report the matter to all responsible authorities, including employers. If you fear that a child is being bullied, mistreated and abused, neglected or otherwise harmed see the Process for Raising Concerns (Governance document; reiterated in Appendix II).

3.11 Cognitive and Neurological Difference

If your research involves individuals or groups with cognitive and/or neurological difference, please review the research ethics guidelines and make the Responsible Research and Ethics Fellow aware. We will expand this section should we become aware that Hub actors will be engaging regularly with individuals in this group.

Everybody has a responsibility to support the protection of vulnerable individuals. In broader interaction with people who fall under this category, remember that you hold power. If you fear that this person or group is being abused or neglected, contact local authorities and the Process for Raising Concerns.

3.12 Human rights/ environmental defenders (environmental and social justice activism)

In July 2017, statistics released by Global Witness revealed that, on average, three environmental defenders are being killed per week. Around 40-50% of all victims come from indigenous peoples and local communities who are defending their lands, and their access to the natural resources their communities depend on for survival and livelihoods. Women environmental defenders are especially vulnerable. In fact, all forms of discrimination can lead to the targeting or vulnerability to violence of women human rights defenders, who are prone to multiple, aggravated or intersecting forms of discrimination.

Some of those with whom we interact identify as or are considered activists within the territories in which they operate. An awareness that some individuals’ or groups’ activities may place them at risk means that we should ensure that our interactions with them do not put them at further risk.

If your research involves individuals or groups whose activities place them at risk for retribution or other forms of violence, persecution or neglect, please make the RRI Fellow aware.

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4 UN General Assembly Resolution 68/181, “Promotion of the Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms: protecting women human rights defenders”.
Ideally, One Ocean Hub investigators, partners and implementers will avoid places where such tensions have escalated into violent conflict. If your research involves going to such places, please make RRI Fellow aware to receive support in submitting your permits and ethical reviews documents.

We should also be aware that sometimes that our environmental/social justice goals may be at loggerheads with rationales of stakeholders, activists, special interests and beneficiaries. Though we may disagree with their positions, these safeguarding protocols are designed to protect those with less power. It is better not to align yourself, rather than compound a situation where a less powerful actor is under pressure.

Safeguarding procedures involve:

a) Understanding when and how Hub research, communications, knowledge exchange and engagement activities may contribute to make environmental defenders a target

b) Understanding the kinds of support and resources the Hub can offer in solidarity to environmental defenders threatened by intimidation tactics (this could include legal support, research support, media and communications, etc.)

c) Partnerships with UN bodies, other organizations and civil society networks that can advise the Hub on this issue and collaborate in their safeguarding (including by providing responses to emergencies and preventive actions)

d) Obtaining permission from environmental defenders and/or their trusted local contact before disseminating information or taking action and generally to avoid inadvertently increasing risks

In addition,

● Everybody has a responsibility to contribute to the identification of risks and the protection of environmental defenders

● The Hub will liaise with local and international organizations (Special Rapporteur on Human Rights and the Environment and UNEP at unenvironment-defenders@un.org) that can provide support, advice and emergency responses to environmental defenders (individuals or whole communities) and to their colleagues and family members that may also be at increased risk

● Researchers will ask permission from environmental defenders and/or their trusted local contact before disseminating information or taking action and generally to avoid inadvertently increasing risks.

3.13 Cultural Difference

Transnational research does not occur in neutral zones. A respectful and caring ethics view is one that views culture as a factor of the variety of knowledge bases that individuals and groups hold. Taking this view means that one maintains an awareness that they might not know why certain outlooks and approaches are utilized or have
relevance for particular groups. This does not imply that one should ignore activities that they find disturbing, rather, that you should begin by relying on local processes and outlooks.

There is no expectation that one should set aside their values in order to engage with others; the rules of engagement do however mean that ‘do no harm’, supersedes the impulse to do what one assumes is doing good.

a) An important awareness is the dominance of Western culture and the way in which its values determine what is construed as normative and important. In contrast, the knowledges of researched communities are often treated as sources of data rather than as rationales for action.

b) Should any professional discord arise, please refer to the Process for Raising Concerns (reiterated in Appendix II).

c) Instances of bullying, abuse or harassment will not be tolerated. If a person affiliated to the One Ocean Hub is the perpetrator, we will report the matter to all responsible authorities, including employers.

d) If you as an investigator or partner of the Hub experience or witness any harm, please make a report to your organization and use the Process for Raising Concerns (reiterated in Appendix II).

Development Research

The researcher-researched context is covered primarily by research ethics protocols. Not every investigator or partner will be conducting human-centred research; however, in the context of developmental research, which often operates at a macro-level (see Theory of Change), the goal is to have your research affect development aims. Please review the Hub’s Research Ethics document for information on research benefit-sharing and knowledge coproduction, as these will also apply to non-human centred research. In addition, you are likely to be interacting with people who are part of the more generally researched populace. To that end:

a) Refer to guidelines on cultural difference above.

b) The geographic scope of our research is designed to coproduce knowledge with indigenous communities. The terminology indigenous community typically refers to groups who were originally settled in a geography and continue to experience the ramifications of settler colonialism. Not all the communities that will be researched fall under this category.

c) Our research seeks to integrate a decolonial perspective which means that these protocols must be shared and further developed alongside in-country investigators and partners. To contribute to thinking and research on this topic please contact the responsible research and ethics Fellow: michel.wahome@strath.ac.uk

d) All OOH researchers and co-investigators should review research ethics guidelines and submit permits and ethical review documents to responsible research and ethics Fellow.
3.14 Gender

Female presenting people are generally unequally treated in global society. These inequities present themselves in varied ways depending on the context.

Instances of bullying or sexual harassment will not be tolerated. If a person affiliated to the One Ocean Hub is the perpetrator, we will report the matter to all responsible authorities, including employers. Matters involving bullying, mistreatment, abuse and other forms of harm should be escalated using the Process for Raising Concerns (reiterated in Appendix II). Please note:

a) Everybody has a responsibility to support gender equality.

b) Gender mainstreaming is a funder’s requirement and essential to achieve the Hub’s vision. This translates into including women in all spaces, including as co-creators and research participants.

c) Partner organisations should engage in dialogue on gender equality and equity with their employees

d) We will pay attention to particular problems faced by rural women.

e) We will document (through an anonymous survey) previous experiences of gender discrimination in ocean research and international research collaborations and use that as a basis to develop more specific principles and training materials.

f) The goal of gender mainstreaming, however, should avoid putting the onus of our agenda on women. A means of alleviating gender disparity is apportioning tasks with an awareness that women might be shouldering multiple roles in a society. Finding ways in which to make this visible, to acknowledge it and accommodate it is important.

g) If you are a researcher researching particularly vulnerable women (e.g. abused women) please contact the RRI Fellow to receive support in submitting permits and ethical review documents who will pass on the documents to the Gender Safeguarding Committee.
3.15 Socioeconomic background

Socioeconomic disparity is central to the logic of development research. Beyond this, the context for this research is one in which there are structurally embedded economic differences. The Hub intends:

a) Employers should pay a fair wage
b) To target a portion of DEEP and Flexible funds towards individuals and groups who are from the lower economic percentiles in their communities
c) Ideally, investigators and partners will not be travelling in areas that have been reported to be unsafe. If they so, they should observe reasonable procedures to ensure their safety. If they fear that they might be targeted, they should contact their organisation’s security officials.

3.16 Pressure

Hub researchers and project partners should hold each other to reasonable standards of productivity and time pressure. Additionally, participants should not feel pressurised to participate in any activity aside from that which governs the fulfilment of Hub goals. The funding-funder relationship is difficult to navigate and the goal is to enable, rather than constrain, autonomy and well-being, including work-life balance.

3.17 In short:

1. Maintain awareness of power differentials. Power gradients often determine who the vulnerable party is at the scale of individual interactions.
2. Do not bully, abuse or harass.
3. Please use the OOH Process of Raising Concerns (reiterated in Appendix II) if you:
   a. are bullied, abused or harassed;
   b. are concerned that an interaction with an individual or group is putting them or yourself in danger; and
   c. feel that something you have witnessed is criminal or dangerous.

- Each Co-Director, WP lead and member of the Core Team will:
  o need to consider when, where, how our work may affect vulnerable groups or individuals in light of this Safeguarding document, and what risks this presents as part of our:
    • research planning (responsible: Co-Directors for each RP)
    • implementation of the Hub’s Engagement mechanisms (responsible: Core Team, relevant Co-Is and partners)
    • communications (responsible: Core Team and relevant Co-Is)
• fund-raising activities.
  o seek the advice of the RRI Fellow in the first instance, or of the relevant Safeguarding Committee, in case of doubt or complexity; and
  o integrate relevant safeguarding materials and advice into specific training and other events (eg: RP5-specific training for ethnographers; RP3-4 training for marine scientists), in consultation with the relevant Safeguarding Committee.

• Each Hub researcher, project partner (beyond the level of engagement of “Hub community) and each beneficiary of the Hub’s Flexible and DEEP Fund will be responsible for:
  o Sharing safeguarding policies and procedures from her/his/their organization or helpful examples of which she/he becomes aware of with the RRI Fellow;
  o Taking any safeguarding induction and training developed under the Hub, to ensure they know what the Hub expects of them and what to do if they have a concern;
  o Following a code of conduct that the Hub will develop to facilitate understanding of professional boundaries when working with children and what is and is not acceptable behaviour; and
  o Raising any potential risk or concern about safeguarding that may arise in the context of the planning or undertaking of research, events, knowledge-exchange activities and communications, with the respective Co-Director or Core Team (or directly with the relevant Safeguarding Committee if confidentiality is needed);
  o Collaborate with the relevant Safeguarding Committee and RRI Fellow upon their request.
4 Publication Strategy

4.1 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 2019) for each Research Programme for the 5-year duration of the Hub; and
- a Hub-wide strategy for cross-RP publications (with a draft by the beginning of 2020).

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 Executive Team (ET) will develop a light Hub-wide process for internal peer-review across RPs and for cross-RP publications.

On intellectual property rights (IPRs), the Hub favours copyright to the individual author(s) of a specific research publication (co-ownership of co-authors if applicable), with a licence 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 copyright holder.

4.2 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 RP as well as for the Hub as a whole:

- Each Co-I will discuss with the relevant Co-Director 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.
- Co-Directors will lead on the co-development of a publication plan for each RP for the 5-year 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). They will prepare a draft by end 2019, and provide timely updates to the Hub on implementation and on necessary adjustments to it every year, including if:
  - any Co-I leaves the Hub or new Co-Is join the Hub;
  - 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 Flexible Fund or Hub partnerships), and
  - new opportunities for knowledge exchange and impact arise.
- In addition, the Executive Team will develop a Hub-wide plan for cross-RP publications (a draft will be prepared at the beginning of 2020; and updates/adjustments will be made every year). The first plan could include an inaugural special issue to be published at the start of the UN Decade of Ocean Science.
- The Executive Team will develop a list of key journals to target within specific disciplines, as well as for inter- and transdisciplinary publications. The Executive Team will also identify target journals that have broad audiences (Marine Policy, Sustainability, etc)
- The draft RP and Hub-wide publication strategies will be discussed within the Research Ethics Learning Lab, Early Career Researcher Learning Lab and the Communications Learning Lab. The drafts, and comments from these Learning Labs, will then be circulated to the Hub as a whole and discussed in a Living Aula before the plans are finalised.
4.3 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.\(^5\)

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 RP and WP-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);

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\(^5\) [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1769438/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1769438/)
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 (M&E) 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 discussion within the relevant RP to consider specific considerations in
different disciplines and any limitations (potential embargo period, etc.) set by
the target publisher (to be captured in the RP-specific 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 or built upon in other areas of
    research of the Hub, to support inter-disciplinarity and cross-regional
    learning (including feed into the Hub’s knowledge mapping and
    syntheses under RP1, RP2 and RP5);
  - 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 and Flexible Fund bids/funded 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).

The RRI Fellow will identify good practices among Hub institutions and in different disciplines (authorship including for non-academic contributors and stakeholders, other recognition issues) and share them with a view to iteratively develop this Publication Strategy (and potentially training materials/best practices feeding into the Massive Open Online Course (MOOC) on Responsible Research for Development). The RRI fellow will also seek to publish research based on these observations.

4.4 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-Ils’ 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), based on WPs 1.1 /4.2 interactions; Katie,
Rosie and Mat could write – jointly or separately - a piece reflecting on their
collaborations with marine scientists from 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);
  o 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;
  o 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 (ECRs, Research Ethics, Safeguarding);
● set out an agreed approach and monitor the need for any adjustment to it.
4.5 Hub-wide mentoring and peer review

Each Co-Director, as part of the RP-specific publication strategy, will oversee a mentoring, peer-learning and peer-review process to ensure research excellence in publications arising from the Hub, as well as to support inter- and trans-disciplinary publications. This will entail:

- allocating a critical friend to support colleagues in the development of their writing style and achieving publications in target journals, as needed;
- an internal review by at least one Co-I and the Co-Director/WP Lead that was not involved in the specific research project/activity that led to the publication.

The Executive Team (ET) will develop a light Hub-wide process for internal peer-review across RPs (on the basis of specific pieces identified in the RP-specific plans) and for cross-RP publications. 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) or need for advice from Research Ethics Learning Lab.

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 RPs), the ET and Research Ethics Team will set up a panel with representation from all RPs for the CO-Ils 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.

4.6 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 licence 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-Ils 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.

(New) 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 communities, seeking prior informed consent is essential and includes alerting interview subjects 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 indigenous informants should be considered. A separate guideline document 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).

(New) 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 (new section):** 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 decisions 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. 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 Co-Directors will make suggestions in the respective RP-specific publication plans, and the ET will make suggestions in Hub-wide publication plans 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).

Where Gold Open Access can’t be obtained, all publications (and data) will be deposited in either institutional or discipline-specific open repositories under a Creative Commons licence (exact licence to be agreed?). 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. All publications are also required by UKRI to be catalogued within Researchfish on an annual basis.

**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 Research Ethics Learning Lab will advise.

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.

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

The Hub Core Team and RP1 will work closely with relevant Co-Is to develop policy briefs and knowledge-translation materials that could accompany the (pre)publication of Hub research findings for global distribution, on the basis of the Hub-wide Publication Strategy and prioritised publications in RP-specific publication plans. As part of the RP-specific publication plans, opportunities for policy impact at

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6 “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/.

7 See for example the EPSRC policy requiring CC-By Licence: https://epsrc.ukri.org/about/access/roaccess/.

8 https://www.ukri.org/funding/information-for-award-holders/research-outcomes/how-we-collect-your-research-outcomes1/
local, national and regional levels (particularly with or targeting beneficiaries) should be identified by Co-Is with the Co-Directors (see Hub’s Comms Strategy under development & Pathways to Impact).

As part of this collaborative process, Co-Is will receive training in translating research findings into policy briefs and knowledge-translation materials. The Support Team will develop guidelines and provide support to Co-Is developing blog posts for wide audiences and policy briefs.

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 Learning Lab will provide advice (upon request or of its own initiative) to Co-Is on advertising publications on the Hub social media and collaborations with media partners.

The RRI Fellow will document and feed into the Hub’s MOOC:

- existing practices (and lessons learnt) to co-develop non-academic outputs with beneficiaries;
- different types of non-academic outputs of benefit to beneficiaries (summaries, pamphlets, affidavits) and novel co-production of these documents and their leading to co-authored academic outputs with beneficiaries; and
- existing practices of co-authoring with beneficiaries.

Key dissemination materials of Hub research findings will be translated in local languages – to be determined jointly with beneficiaries (as part of benefit-sharing discussions – see Research Ethics). RP5 Co-Directors will monitor whether current budget allocation for local-language ethnographers under RP5 may contribute to this and bring to the attention of the Executive Team whether fund-raising will be needed.

The Executive Team will also investigate opportunities (through partnerships – eg with Confucius Centres in research partners - or fund-raising) for translating Hub outcomes in French, Spanish and Chinese and other languages.
5 Data Management Statement

5.1 Executive Summary

This is the 2nd draft of the One Ocean Hub Data Management Statement, which will become an integral part of the Hub’s Code of Practice. It incorporates comments and suggestions from multiple One Ocean Hub researchers and was subsequently discussed in detail during the 3rd OLA as well as being made available for project wide direct editing and comment between the 3rd and 4th OLA.

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 data9 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): In order to get a clearer understanding of how One Ocean Hub research partners currently manage their data a few basic questions are presented here for submission to the Hub Support team by December 2019. This is to allow for consideration of the

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9 The Pure Repository: https://www.strath.ac.uk/research/researchdatamanagementsharing/datadeposit/
practicalities of how data from different partners in different regions and in different domains will be discoverable via/across the Hub’s own infrastructure(s).

**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.

### 5.2 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. This is particularly the case as the Hub recognises the philosophical, political and ethical issues that need to be considered in alongside the benefits of good data management and preservation. These issues will have a bearing on all datasets the project is likely to generate, in every domain, but is especially important in ethnographic and cultural heritage-based research activities. Such considerations are in addition to the multiple complications of data ownership and appropriate levels of data sharing, and ethics of data sharing, between partners and other audiences more widely. The purpose of this document, therefore, is not to specify an exact data management processes, but to articulate minimum requirements for managing, preserving and sharing data.

Importantly, this is a living document, intended to grow through incorporating the experiences of Hub researchers. As it develops, it will provide an opportunity for project partners to share good practice across regions and across domains. It is also fundamental to the objectives of the Hub, including its continuation beyond the initial five-year funding cycle, that we demonstrate our good stewardship of the data we create and promote our results as widely as is possible. This document should be considered in association with the other One Ocean Hub Codes of Practice, especially those on Publication Strategy Copyright and Intellectual Property Rights.

For a good glossary of many terms used in this document see the Digital Preservation Coalitions online glossary: [https://www.dpconline.org/handbook/glossary](https://www.dpconline.org/handbook/glossary)
5.3 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. A good overview on how data preservation and data sharing enhance future scientific research can be found in the document “Ensuring the Integrity, Accessibility, and Stewardship of Research Data in the Digital Age” (2009), from a US committee on the topic including the National Academy of Sciences (US), National Academy of Engineering (US) and Institute of Medicine (US). This wide-ranging document includes sections describing the impact of barriers to sharing and the costs of limiting access to research data. Similarly, 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. The text below makes this case very well and is from “Guidelines for data management and scientific integrity in ethnography” (Dilger, Pels & Sleeboom-Faulkner, 2018) and has direct relevance to RP5 activities and also, perhaps to a lesser extent the co-production activities in RP2:

“Social scientists are increasingly confronted by attempts of employers, media, policy-makers, funding agencies and journals to regulate their management of research materials through protocols developed for sciences that employ a formal, context-neutral design usually borrowed from medical research. These protocols do not recognize the specific nature of qualitative social science research, or regards it as exceptional or problematic. As a result ‘data management’ may effectively hinder responsible research conduct and threaten the scientific integrity of ethnographers…..

Ethnographers recognize that social research is necessarily rooted in social relationships. The social relationships built by ethnographers provide a qualitative, intersubjective and value-laden foundation for knowledge. This knowledge usually derives from the mutual co-production of research materials involving both researchers and researched. This implies that research materials or data are rarely fully owned by either researcher, researched, let alone a third party. The first duty in ethnographic research is therefore to recognize this joint production and joint ownership of research materials. All forms and norms of managing data depend on it.

The collaborative nature of ethnographic research implies, secondly, that researchers should continue to treat research materials and data as collaborative for as long as they work with them. Ethnographic research is a process, in which the establishment of trust and the interpretation of data continue to evolve, as mutual understanding of both researchers and research participants changes in intensity and meaning. ‘Data’ are therefore never completely fixed and finished products, nor is consent ever completely informed by the quasi-contractual gesture of a written consent form. Prior and written consent provides only an artificial ethical security in the ethnographic research process, and may be deceptive towards research participants: consent forms can never predict all contingencies of the research process and may even themselves threaten to disclose data that should be kept private. Moreover, ethnographers have the duty to keep in mind that the commodification of research materials as ‘data’ may obscure questions of intellectual and cultural property. Ethnographers have long preferred the dynamic possibilities for renegotiation that oral forms of consent allow.”

The issues discussed in the sections above apply mainly to questions of long-term preservation sharing and access. In order to get to this stage, 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.

5.4 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. Note, “UNESCO adopted OBIS as part of its International Oceanographic Data and Information Exchange (IODE) programme. Since then OBIS received recognition for its contribution to marine scientific research at the highest political level, through resolutions 69 and 70 of the United Nations General Assembly (Oceans and the Law of the Sea in the General Assembly of the United Nations 2015, Oceans and the Law of the Sea in the General Assembly of the United Nations 2014). OBIS also moved from a purely scientific endeavour to one that also supports monitoring, assessment and conservation in the marine environment” De Pooter et al (2017). This quote suggests that OBIS should be the logical destination for One Ocean Hub marine data, however the quote actually comes from an article that highlights some deficiencies that suggest its collection policy is too narrow in scope for e.g. Oceanographic survey data: The article is entitled “Toward a new data standard for combined marine biological and environmental datasets -
expanding OBIS beyond species occurrences (2017). Also note that UK researchers are expected to provide data to the British Oceanographic Data Centre (BODC) which is a national facility for preserving and sharing data (https://www.bodc.ac.uk/), as per NERC rules.

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).

### 5.5 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

There are links to a number of DMP templates, checklists and other resources at the end of this document. Specific requirements can vary per domain, per institution and per funder. A DMP should also include, or refer to, a Selection and Retention statement that specifies which data will be selected for long-term preservation, which shall be kept only for the life of the project and how data that is not to be retained shall be destroyed. For information, the University of Strathclyde Records Management have guidance on the destruction of data.
Research/Project Partners may already have developed similar guidelines or protocols. Beneficiaries' preferences, in line with Hub's Theory of Change, and the Hub's Safeguarding will also guide decisions on retention or destruction.

The FAIR 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).

**FAIR stands for: Findable, Accessible, Interoperable and Reusable**

Below is an outline of the FAIR principles as formulated by Wilkinson et al, notes have been added in italics where the Hub may need a different approach. The section on Reusability is the most directly relevant for data creators, assuming they have identified a TDR that complies with the other principles. The FAIR principles are consistent with the UKRI’s Guidance on best practice in the management of research data, which should also be observed (https://www.ukri.org/files/legacy/documents/rcukcommonprinciplesondatapolicy.pdf).

**“Findable**

The first step in (re)using data is to find them. Metadata and data should be easy to find for both humans and computers. Machine-readable metadata are essential for automatic discovery of datasets and services, so this is an essential component of the FAIRification process.

F1. (Meta)data are assigned a globally unique and persistent identifier – this is normally the responsibility if the TDR, i.e. they have authority to mint these identifiers, such as DOIs (https://www.doi.org/) – This is a key aspect of making data findable and is one of fundamental reasons data should go to a TDR rather than only be managed and stored locally – however some form of local storage is highly desirable.

F2. Data are described with rich metadata (defined by R1 below) – this is the responsibility of the data creator in the first instance.

F3. Metadata clearly and explicitly include the identifier of the data they describe

F4. (Meta)data are registered or indexed in a searchable resource – again this is generally one of the roles of the TDR, links to example searchable resources, i.e. metadata aggregators are given in the Resource section below (e.g.
Europeana). However, the Hub itself may wish to act as an aggregator, at a resource discovery level, for data generated by the project.

**Accessible**

Once the user finds the required data, she/he needs to know how they can be accessed, possibly including authentication and authorisation. – the points below are again a technical role of the TDR rather than the individual data creator.

A1. (Meta)data are retrievable by their identifier using a standardised communications protocol

A1.1 The protocol is open, free, and universally implementable

A1.2 The protocol allows for an authentication and authorisation procedure, where necessary

A2. Metadata are accessible, even when the data are no longer available

**Interoperable**

The data usually need to be integrated with other data. In addition, the data need to interoperate with applications or workflows for analysis, storage, and processing – the points below are again (mainly a) role of the TDR rather than the individual data creator although the creator will have responsibility for selecting metadata schema and qualified references.

I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2. (Meta)data use vocabularies that follow FAIR principles

I3. (Meta)data include qualified references to other (meta)data

**Reusable**

The ultimate goal of FAIR is to optimise the reuse of data. To achieve this, metadata and data should be well-described so that they can be replicated and/or combined in different settings. – the choice of metadata schema and controlled word lists (e.g. thesauri) is generally the role of the data creator, being the domain expert, however for some types of metadata e.g. resource discovery the advice of the TDR should be sought as this has an impact on levels of interoperability. The richness of the metadata and the specification of usage licences is similarly the role of the data creator, again however the TDR may have policies (especially regarding licensing). It is important to note that NERC’s Data Policy states that: “All NERC-funded projects must work with the appropriate NERC Data Centre to implement the data management plan, ensuring that data of long-term value are submitted to the data centre in an agreed format and accompanied by all necessary metadata” (para 13).
R1. (Meta)data are richly described with a plurality of accurate and relevant attributes
R1.1. (Meta)data are released with a clear and accessible data usage license
R1.2. (Meta)data are associated with detailed provenance
R1.3. (Meta)data meet domain-relevant community standards”

In relation to R1.2, although not mentioned in the FAIR principles, in a broader Arts and Humanities context, particularly in digital heritage, documentation of the decision making processes in the production of complex visualisation datasets, including reuse cases and interpretation (known as paradata) is defined by the London Charter (http://www.londoncharter.org). The charter defines the following principles (3-6) which are directly relevant RP2 visualisation activities and should be referenced in the DMP for these projects:

**Principle 3 - Research Sources**

In order to ensure the intellectual integrity of computer-based visualisation methods and outcomes, relevant research sources should be identified and evaluated in a structured and documented way.

**Principle 4 - Documentation**

Sufficient information should be documented and disseminated to allow computer-based visualisation methods and outcomes to be understood and evaluated in relation to the contexts and purposes for which they are deployed. (i.e. Paradata)

**Principle 5 - Sustainability**

Strategies should be planned and implemented to ensure the long-term sustainability of cultural heritage-related computer-based visualisation outcomes and documentation, in order to avoid loss of this growing part of human intellectual, social, economic and cultural heritage.

**Principle 6 - Access**

The creation and dissemination of computer-based visualisation should be planned in such a way as to ensure that maximum possible benefits are achieved for the study, understanding, interpretation, preservation and management of cultural heritage.

It will not be difficult to assess how well your own or your institution’s RDM policies align with the FAIR principles as there are a number of tools available to help make this assessment. A number of these tools are themselves assessed by the Research Data Alliance here: Analysis of Existing FAIR Assessment Tools - https://www.rd-alliance.org/group/fair-data-maturity-model-wg/outcomes/results-analysis-existing-fair-assessment-tools.
In addition NERC in the UK has provided training resources in aligning data with the FAIR principles, intended for data creators: Data Tree [https://datatree.org.uk/](https://datatree.org.uk/).


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.

### 5.6 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 interdisciplinary 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 geolocate 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.

5.7 Questions for Research Partners

In order to get a clearer understanding of how One Ocean Hub research partners currently manage their data there are a few basic questions it would be good to know the answer to. Specifically this is 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.
The following questions are a starting point for a One Ocean Hub data RDM questionnaire to inform future policy iterations. There is a balance to be struck between detail and complexity on one hand and over simplification on the other. These questions represent the minimum question set in terms of existing policy, ethics, sharing/licensing and commercial interest. The deadline for the completion of this questionnaire and submission to oneocean-hub@strath.ac.uk is by December 2019.

- If possible, provide a link to your organisational, institutional or government policy on data management for your area of research?
  - Example from Plymouth: 
- Can you provide a link to your organisational, institutional or government policy on data protection (personal data)?
  - Example from Plymouth:
    https://www.plymouth.ac.uk/uploads/production/document/path/12/12337/General_Research_Ethics_Policy_final_draft_V1.0_.pdf
- Do you use or do you have access to a Data Management Plan template specific to your organisation or domain?
  - Does this include a research ethics approval section with regards data creation/gathering.
  - Does it include a statement on how you store your data safely?
- Who do you normally archive your data with?
  - Do you know their accredited status?
  - Do they have authority to issue permanent digital identifiers (e.g. a DOI)?
  - Is there a cost associated with deposition (and do you know how this is calculated?)
  - If you do not archive data, do you have access to physical infrastructure for sustainable data storage?
- What licencing or access regime do you normally adopt?
  - Is your data managed for its commercial value?
- What metadata schema(s) do you use in your domain?
  - Do these include references to controlled word lists?
    - Which?
  - Do they include a standard for geospatial reference?
    - Which?
- Do you publish material with publishers that require sustainable access to underlying datasets?
- Do you generate datasets that cannot be ported to an openly documented format for archiving (i.e. do you use proprietary software with no open equivalent format?)
● Are there domain specific ethical or political issues that impact on the ways in which you manage and archive your research data?

● Do you currently generate paradata (A&H Domains)

5.8 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 Support Team will seek to apply for consortium membership of the Digital Preservation Coalition, as appropriate, as this gives access to a world leading set of resources and forums suitable for both data creators and data managers. Consortium membership normally requires a single consortium point of contact to manage consortium queries.

● 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.\[10\]

- 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) 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/)

- One Ocean Hub research partners should feedback information requested in section 5 above on their current practice regarding data management and

\[10\] One tool that can support this activity is the UK-funded, internationally used DMPOnline: http://www.dcc.ac.uk/dmponline.
preservation to inform further iterations of this policy. One of the reasons that section 5 of this document is essentially a list of general questions for partners is that getting a clear idea of ethical, political or commercial barriers to data sharing, particularly via Open Access will be quite important and to explore how these barriers (if any) align with or are at odds with funder requirements. In addition it will help address any issue arising from UK researchers collecting samples/data, with the ultimate aim of publication, and this work needing to account for the requirements of those whose waters we are working in, who perhaps have different perceptions on how this data can be shared.

5.9 References, Further Reading and Resources.

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<thead>
<tr>
<th>ADS Guides to Good Practice Wiki</th>
<th><a href="http://guides.archaeologydataservice.ac.uk/g2gpwiki/">http://guides.archaeologydataservice.ac.uk/g2gpwiki/</a></th>
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<td>Alliance of Digital Humanities Organizations (ADHO)</td>
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<td>Data Tree (NERC)</td>
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<td>Digital Curation Centre</td>
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<tr>
<td>Digital Curation Centre – Data Management Plan development tool DMPOnline (UK Funder requirements)</td>
<td><a href="https://dmponline.dcc.ac.uk/">https://dmponline.dcc.ac.uk/</a></td>
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<td>Digital Preservation Coalition (DPC)</td>
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<td>Digital Repository of Ireland – File Formats Fact Sheet</td>
<td><a href="https://repository.dri.ie/catalog/jw82mv08x">https://repository.dri.ie/catalog/jw82mv08x</a></td>
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<td>International Oceanographic Data and Information Exchange - IODE</td>
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<td>University of California Curation Center DMP tool</td>
<td><a href="https://dmptool.org/general_guidance">https://dmptool.org/general_guidance</a></td>
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<tr>
<td>University of Strathclyde Data Management Plans (per funder requirements)</td>
<td><a href="https://www.strath.ac.uk/research/researchdatamanagementsharing/datamanagementplans/">https://www.strath.ac.uk/research/researchdatamanagementsharing/datamanagementplans/</a></td>
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A&H Further reading: some of the links included above are from the ALLEA E-Humanities Working Group, Sustainable and FAIR Data Sharing in the Humanities – this document is currently out for open consultation (May 2019) and is not yet published, it is likely to be a very valuable document when approved and published.

There is also a very new report focusing on Cultural Heritage data from the European Commission: Report on Cultural Heritage: Digitisation, Online Accessibility and Digital Preservation


This was actually released between the first draft of this document 10\textsuperscript{th} June 2019 and the 3\textsuperscript{rd} OLA.
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.
6.1 ECR Learning Lab and Hub Representation

A self-organized **ECR Learning Lab** is the main governance body that will coordinate the programme’s activities. The Learning Lab will reflect on and coordinate how ECRs can benefit from the Hub. The Responsible Research and Innovation (RRI) Fellow will be the ECR Learning Lab liaison to the Support Team and the Research Ethics Learning Lab. The RRI Fellow will organise in-person and teleconferencing meetings where ECRs have 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. To facilitate communication, a SLACK channel dedicated to ECRs will be established where news and opportunities will be advertised. Update emails will also be sent whenever relevant information needs to be communicated.

6.2 Programmatic Elements

Through various consultations, the following supporting mechanisms for ECRs have been identified so far and updates will be made as the project unfolds:

6.2.1 Capacity Building, Development and Training

6.2.2 Doctoral Training Centre

A Doctoral Training Centre is to be established under the Hub, initially with Strathclyde University’s in-kind contributions under Daniela Diz’s leadership and to focus on skills development for research leadership for development. The establishment of a **Centre for Doctoral Training (CDT)** where further networking, problem-solving oriented approaches related to the OOH research areas, and knowledge development and sharing will be consolidated among ECRs. Dr Diz and the RRI Fellow will apply under Strathclyde Centres for Doctoral Training initiative for £30k seed funding and the Hub’s Development Officer will, on that basis, develop a large-scale, externally-funded proposal with other research partners, considering other Doctoral Training Centres in the other institutions.11

6.2.3 Professional Development Course

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

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11 As indicated in the Hub’s Case for Support and Strathclyde University’s support letter for the Hub.
future. ECRs suggested that programme managers from CEFAS or OOH Support Team could provide in-kind training sessions.

### 6.2.4 RP-related 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).

### 6.2.5 Summer Schools

Summer schools are a popular means of imparting specific knowledge and skills to PhD students. They are generally organised around discrete and focussed topics that are relevant to a particular discipline. In order to make them relevant for transdisciplinary research, the OOH Summer Schools will be organised in years 3, 4 and 5 around a case-study problem that has emerged as a product of the Hub’s research and that requires resolution by a multi-disciplinary team of experts. In this way, the Summer Schools will cater to a variety of disciplines and further the Hub’s goal of embedding transdisciplinary research skills in a global cohort of researchers.

### 6.3 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 Officer.

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.

The DEEP Fund will fund art-based knowledge production and participant engagement strategies. ECRs who are involved in this kind of research or who become interested in these approaches for knowledge co-production collection or research dissemination can also be involved in the One Ocean Shoal project, which aims to create a multi-media/virtual reality archive of DEEP Fund projects.
6.4 Knowledge Exchange, Dissemination and Benefit Sharing

6.4.1 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.

6.4.2 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.

6.4.3 Massive Open Online Course (MOOC)
The ECR Learning Lab will contribute to the iterative design and teaching of Massive Open Online Course (MOOC) on transdisciplinary research, with the support of the Strathclyde Education Enhancement Team. Demonstrable ability to design a course is useful for ECRs seeking an academic career. As it is currently envisioned, the MOOC will primarily focus on transdisciplinary research methodologies. An ECR from a particular discipline will produce a course in which they demonstrate how engagement with the One Ocean Hub has affected their research practices and provided them with the tools to design and conduct transdisciplinary research. These narratives will also contribute to MEL reports.

6.4.4 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).
6.4.5 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.

6.4.6 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).

6.5 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 Learning Labs, 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\(^{12}\) or virtual connection) participation of 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”).

### 6.6 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.

#### 6.6.1 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).

#### 6.6.2 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

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\(^{12}\) 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 (i.e. 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).
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.

### 6.6.3 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 Learning Lab.
Appendix 1: Depths of Engagement for Project Partners

Depths of Engagement for Partner Organisations

Joining the One Ocean Hub means joining a global network of experts and competent organisations, with a shared vision for the oceans.
Organisations may join the Hub at a depth of engagement that best aligns to the organisation’s needs and interests, and flow between levels at any time.
Organisations at all levels have the opportunity to shape research questions aligned with the Hub’s objectives and capabilities and benefit from the respective findings.

Hub Network
If you are curious about the Hub and want to keep up to date with Hub news, events and opportunities, join our Hub Network. By joining at this depth you/your organisation will:
• Be kept up to date via our monthly Hub Newsletter
• Be invited to attend/participate (in-person or virtually) in high-level Hub events
• Have the opportunity to co-host events (including virtual events) with the Hub
• Engage at a deeper level with the Hub should opportunity and interests align

Project Partners
Engagement at this depth focuses on the emerging research and initiatives. Partners at this depth of engagement may choose to be involved with ad-hoc activities or specific research projects in response to particular needs. Such projects may be developed on a collaborative basis and will receive Hub support in sourcing external funding if required. In this depth partners will benefit from all the opportunities of the Hub Network level, as well as:
• Opportunity to receive travel support in attending Hub events
• Assistance from the Hub’s Development Manager to seek external funding for collaborative projects aligned with the Hub
• Have use of the Hub logo on materials relating to collaborative pieces of work

Integrated Hub Partners
As an integral part of the Hub, organisations in this deep level of engagement are key partners and play an important role in the delivery of Hub research and activities.
Organisations at this depth are committed to the periodic and structured engagement platforms of the Hub. As well as benefiting from all the opportunities of the Project Partner level, Integrated Hub Partners have the opportunity to engage directly in all tracks of the Hub’s Capacity Escalator Programme:

Track 1: Co-develop and define Regional events
Track 2: Participate in responsive projects to support capacity and institutional strengthening (including small-scale/seed research or Knowledge Exchange projects)
Track 3: Participate in the Hub’s Global Placements Programme as either placement host or participant.

As placements or specific projects are developed any required formal arrangements will be developed (including data sharing arrangements where necessary). Partners at this depth are considered integral partners to the Hub and are committed to promoting the Hub through use of the Hub logo. Integrated Hub Partner Logos will also be displayed on Hub materials and website.

At any point you can request further information simply by emailing us:
oneocean-hub@strath.ac.uk
Appendix 2: Process for Raising Concerns (also in Hub Governance Document)

Questions and concerns related to safeguarding and conflict resolution will be addressed through the following avenues and process of resolution/escalation:

1) Initially bring an issue up with a choice of possible interlocutors:
   - Scheduled drop-ins with Director or Deputy Director OR
   - using the confidential and anonymous mailbox (which will be monitored by the Hub Manager) OR
   - contact the Regional Stakeholder Manager OR
   - contact a Member of Research Ethics Taskforce (including one of the independent members of this Learning lab) OR
   - contact the Responsible Research and Innovation Fellow OR
   - contact the Mediation Fellow OR
   - contact your designated “buddy” (as part of a buddying system to be developed in autumn 2019; the buddy can just be a person to talk about the concern, but could also be somebody that then “accompanies” or “speak for” the person with the concern if the latter so desires).

2) People consulted as at 1) will suggest whether the concern should be brought to the attention of the Research Ethics Learning lab or other Hub body or “Hub mediators” for advice or action; the person with the concern needs to agree or accept that the matter will not be further addressed under the Hub (but it will still be reported in an anonymous or aggregated manner by the RRI Fellow under 5).

3) Possible escalation to Executive Team to develop a negotiating strategy.

4) Possible co-identification of negotiator by the person that raised the concern and the person under 1) on the basis of the ET negotiating strategy

5) Possible request for Advisory Board Advice and majority decision on matter.

6) The RRI Fellow will report (on the basis of anonymous or aggregated information from people under 1) with a view to identifying any learning or need to revise the Code of Practice or need for training); the report will be addressed to the ET and to the AB.