Ocean Risk and Resilience Action Alliance

FULL BUSINESS CASE (FBC) – HIGH VALUE (OVER £2 MILLION VALUE OF PROCUREMENT)

SRO:	[redacted]
Project Manager:	[redacted]
Organisation:	Department for Environment Food and Rural Affairs

	Name	Signature	Date
Prepared by:	[redacted]		22/04/2021
Reviewed by:			
Approved by:			

This Business case was written in November 2021 to reflect the delivery priorities and required compliance standards at the time. At publication (December 2025), some of these priorities and standards have changed. The Business case has been published in the form it was approved at the time and should be considered in context.

Cover Sheet

PROGRAMME SUMMARY	*A direct grant award to the Ocean Risk and Resilience Action Alliance. The grant will support a number of projects, selected in collaboration with the ORRAA Secretariat. The grant will support ORRAA's aims to leverage $500 million USD in finance in Nature-based Solutions by 2030 and surface at least 15 new and innovative finance products by 2025 that incentivise private and blended finance into coastal natural capital.*
COUNTRY / REGION	*International – ODA eligilible countries*
PROGRAMME VALUE	[redacted]
START DATE	*June 2021*
END DATE	*31st March 2022*

ACRONYMS

BAF	Blue Action Fund	LDCs	Least Developed Countries
BAU	Business as Usual	MEL	Monitoring, Evaluation and Learning
BCR	Benefit Cost Ratio	MDB	Multilateral Development Bank
BPF	Blue Planet Fund	MIS	Management Information System
BBNJ	Biodiversity Beyond National Jurisdiction	MPA	Marine Protected Area
CAD	Canadian Dollars	NbS	Nature-based Solutions
CBD	Convention on Biological Diversity	NGO	Non-Governmental Organisation
CBD COP 15	15th meeting of the Conference of the Parties to the Convention on Biological Diversity	ODA	Official Development Assistance
Cefas	Centre for environment, fisheries and aquaculture science	ORRAA	Ocean Risk and Resilience Action Alliance
CO2	Carbon Dioxide	PNG	Papua New Guinea
COP26	26th UN Climate Change Conference of the Parties	PSEAH	Prevent sexual exploitation, abuse and harassment
CPIC	Coalition for Private Investment in Conservation	RDEL	Resource Departmental Expenditure Limit
Defra	Department for Environment, Food and Rural Affairs	SDG	Sustainable Development Goal
EDI	Equality, Diversity and Inclusion	SIDS	Small Island Developing States
FCDO	Foreign and Commonwealth Development Office	SR	Spending Review
FLD	Front Line Delivery	SRC	Stockholm Resilience Centre
FRA	Fraud Risk Assessment	SRO	Senior Responsible Officer
FTE	Full Time Equivalent	SU	Stockholm University
G7	Group of Seven (intergovernmental organisation)	ToC	Theory of Change
GEF	Global Environment Facility	UK	United Kingdom
GFCR	Global Fund for Coral Reefs	UN	United Nations
GOAP	Global Ocean Accounts Partnership	UNEP	United Nations Environment Programme
GRP	Global Resilience Partnership	UNFCCC	United Nations Framework Convention on Climate Change
HMG	Her Majesty's Government	USD	United States dollars
HMT	Her Majesty's Treasury	VfM	Value for Money
ICF	International Climate Finance	WTO	World Trade Organisation
ICPP	Inter-Governmental Panel of Climate Change	WWF	World Wide Fund for Nature
IUCN	International Union for Conservation of Nature		
KPI	Key Performance Indicator		

Contents

Intervention Summary

What support will the UK provide?

The UK will provide [redacted] in financial year 2021/22 to the Ocean Risk and Resilience Action Alliance (ORRAA) as a direct grant award. The grant will support a number of projects, selected in collaboration with the ORRAA Secretariat. The duration of the agreement will be one year, however based on performance we will look for opportunities for future investment. The project will support the Government's manifesto commitment to establish the Blue Planet Fund and will be financed out of the UK Official Development Assistance budget.

- What is ocean risk and resilience?

Hazards including ocean warming, sea level rise, ocean acidification, marine pollution and habitat destruction all create risk and uncertainty, with wide-ranging implications for coastal communities, infrastructure, biodiversity and the lives and livelihoods of billions of people who live there.

- Why is it a problem?

The hazards above are being intensified and the frequency increased by climate change. For example, sea level rise and population density projections indicate that 800 million people will be at risk of coastal flooding and storm surges by 2050.

- What actions are needed to tackle it?

We first need to better understand and mitigate ocean-derived risks, and second build the resilience of coastal natural capital. Investing in Nature-based Solutions is a key part of protecting the most vulnerable communities and regenerating biodiversity, specifically through valuing and protecting coastal ecosystems which are critical natural assets for reducing disaster impacts.

- What benefits we expect to flow from those actions?

Nature-based Solution example: just 100 metres of mangroves can reduce wave height by 66%. Mangrove forests sequester five to ten times more carbon from the atmosphere than terrestrial forests.

Coastal risk index example: indexes can be used to integrate the protective benefits of coastal ecosystems into insurance risk models, calculating physical risk to coastal assets and then measuring the fiscal risk caused by the loss or degradation of those ecosystems. For example, coral reefs have been estimated to reduce coastal erosion and flooding via dissipating 97% of wave energy, consequently reducing annual damage costs by over $4 billion[1].

Summary of programme & its objectives

ORRAA are uniquely placed to deliver on a critical pathway to impact identified within the Blue Planet Fund Theory of Change - 'investing in finance-based climate resilience and risk reduction'. ORRAA is a multi-sector alliance, focussing on de-risking

[1] WEF, 2020. The ocean is changing faster than ever. Investing in nature can help protect it. https://www.weforum.org/agenda/2020/11/solutions-to-climate-change-in-the-ocean/

investments into critical ecosystems, that provide resilience against climate change, supporting the world's most vulnerable communities. ORRAA's objectives to de-risk focus on:

- Practice & Innovation: building risk-adjusted, innovative and scalable finance products that change the risk perceptions of investing in coastal natural capital and increase resilience to climate change while delivering a return on investment.
- Research & Knowledge: accelerating research and using data to better understand, analyse, predict, model and manage ocean risk.
- Policy & Influence: informing and advancing ocean resilience policy, governance, as well as advancing Ocean Literacy: supporting private sector and public understanding.

Why is UK support required and why now?

Many marine ecosystems have already been severely degraded and actions by humans are estimated to have severely altered 66% of the marine environment[2]. The Dasgupta review states that to reverse these trends, we must act now, and immediate action will significantly reduce the cost[3], as well as helping to achieve wider societal goals, such as addressing climate change and poverty alleviation.

There are also barriers that prevent finance flowing into Nature-based Solutions (NbS - solutions which use nature to tackle climate change, reduce poverty and biodiversity loss). These barriers to finance include but not limited to a lack of ocean literacy, gaps in the enabling science as well as higher (perceptions of) risk. UK HMG intervention and leadership in finance for NbS and ocean resilience can be used to leverage increased levels of public and private finance and de-risk investment from the private sector, building confidence for a return in investments in nature. In turn this will help surmount the barriers to finance, as well as encourage engagement from a broad spectrum of stakeholders.

The UK is already a full member of ORRAA and well positioned this year to demonstrate leadership and leverage through its COP26 and G7 presidency roles to highlight the importance of investment and accelerated action for marine NbS globally. All G7 members are observers of ORRAA, except Canada and the UK who are full members. Canada worked with ORRAA to establish the Alliance and consequently invested [redacted] in 2019/20. ORRAA has also been supported by [redacted] who provided [redacted] in cash and in-kind assistance in 2019/20.

Strategic alignment

"Super Year" 2021 offers unparalleled opportunities to raise ambition and for international collaboration on the key climate change and biodiversity agendas.

[2] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019, Summary for Policymakers of the global assessment report on biodiversity and ecosystem services, IPBES. https://www.ipbes.net/sites/default files/downloads/spm_unedited_advance_for_posting_htn.pdf

[3] The Economics of Biodiversity: The Dasgupta Review Headline Messages. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957629/Dasgupta_Review_-_Headline_Messages.pdf

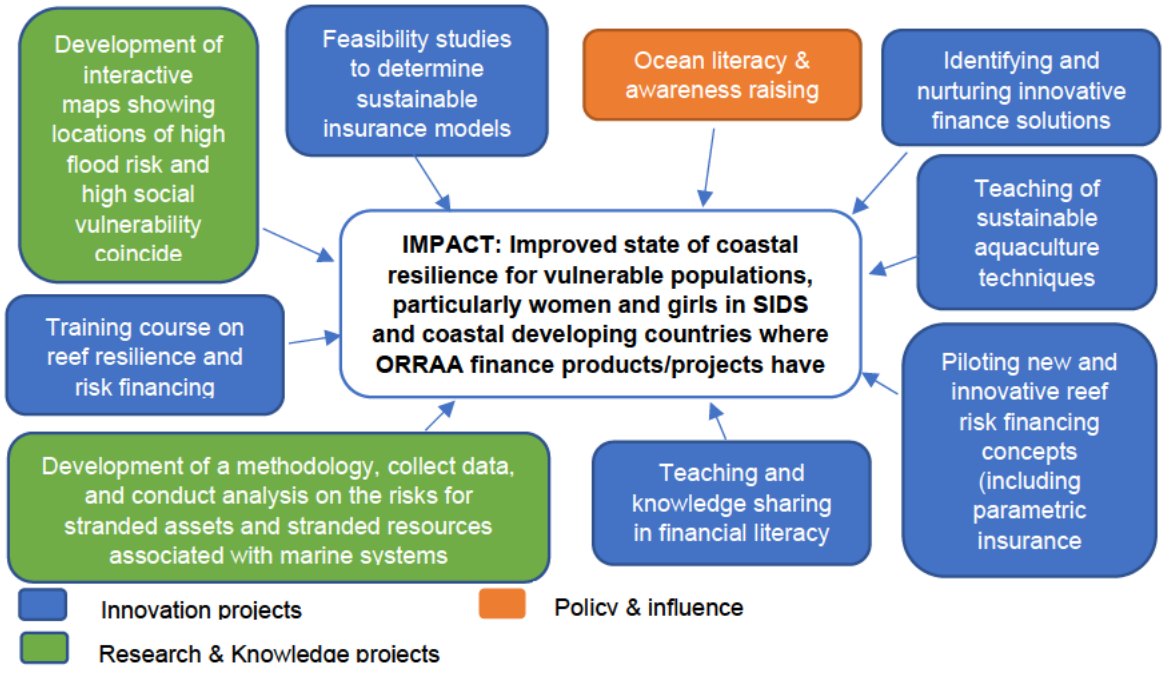
Through our COP26 and G7 Presidencies, the UK will showcase global leadership and this project will play an important part in achieving this. Investment into ORRAA, announced at the G7, will help showcase the role of ocean NbS, in alignment with the United Nations Framework Convention on Climate Change (UNFCCC) COP 26, Convention on Biological Diversity (CBD) COP 15 and Biodiversity Beyond National Jurisdiction (BBNJ)[4] Treaty negotiations. It also supports the UK's contribution to the launch of the UN Decade of Ocean Science for Sustainable Development and Ecosystem Restoration in 2021; a priority for the G7 Climate and Environment Ministerial.

The UK is committed to doubling our International Climate Finance (ICF) to £11.6 billion over the next five years, with £3 billion of ICF earmarked for climate change solutions that protect and restore nature and biodiversity. Supported by this is the Government's manifesto commitment to establish a £500 million Blue Planet Fund (BPF), to help protect the ocean from plastic pollution, warming sea temperatures and overfishing.

In addition, investing in ORRAA will help to deliver the outputs of the HMG SIDs Strategy, projects could be delivered in the Philippines, Indonesia and the Caribbean, supporting the UK's vision to be viewed as their leading partner in addressing climate and economic vulnerability by 2025. It also supports the HMG International Nature Strategy which outlines how we must use 2021 as a spring board for an ambitious global, integrated approach to halt biodiversity loss by 2030.

What are the main project activities and where?

Project activities may include:



[4] Implementing Agreement under the UN Convention on the Law of the Sea for the conservation and sustainable use of marine biodiversity of areas beyond national jurisdiction.

What are the expected results?

Our investment would contribute to ORRAA's aims to leverage $500 million USD in finance in NbS by 2030 and to surface at least 15 new and innovative finance products by 2025 that incentivise private and blended finance into coastal natural capital. Specific results attributable to the UK for the project will depend on the projects we choose in collaboration with ORRAA.

Based on proposals and past evaluations, we can be confident that the projects funded by the UK's investment will contribute to:

- **improved resilience** for vulnerable populations, for example through improved local insurance schemes for small-scale fishermen
- **marine habitat conservation and restoration**, ultimately supporting livelihoods, marine biodiversity and contributing to climate regulation

In addition, ORRAA brings great benefits through the learning and understanding which stems from these projects – and the sharing of knowledge and underpinning evidence to leverage finance for marine NbS.

Using anticipated leverage ratios from similar ICF projects, we can estimate that [redacted] investment from the UK could lead to private finance of [redacted] of private investment by 2030, with a best estimate of [redacted]. In the shorter term (next 5 years), the UK investment is more likely to achieve private investment **equal or slightly more than the investment put in.**

Risk

Main project risks have been identified in table 9 in the Management Case (page 54), these have been prioritised through a RAG system. The top two risks are 'COVID-19 impacts delivery of activities due to travel restrictions, as well as reducing the capacity of on the ground delivery partners' and 'The wider governance arrangements fail to be established or fall short of what Defra considers to be acceptable, resulting in delays to project delivery and a lack of accountability'. Both have strong mitigating actions in place, we will work with ORRAA to embed COVID-19 practices into all projects. Governance arrangements are being discussed with other donors and ORRAA at present and should be resolved before the grant agreement is in place, should this fail UK will not sign the agreement and as such not commit to funding.

As a component of project management, a risk register will be kept and tracked alongside other BPF programmes through the BPF Programme Board. When appropriate, these risks will also be escalated to the BPF Joint Management Board (Defra-FCDO), the Marine and Fisheries Programme Board, as well as the ODA Board.

1. Strategic Case

1.1 Context and need for a UK intervention

1.1.1 The Challenge

The context and need for UK intervention is shaped by two major challenges. One is anthropogenic climate change and the other is the barriers that prevent finance flowing into Nature--based Solutions (solutions which use nature to tackle climate change, reduce poverty and biodiversity loss). These barriers to finance include a lack of ocean literacy, gaps in the enabling science as well as higher (perceptions of) risk.

Anthropogenic climate change

The ocean is altering dramatically because of the unprecedented conditions brought about by climate change and anthropogenic pressures – physically, chemically and environmentally. Actions by humans are estimated to have severely altered 66% of the marine environment[5]. These changes are affecting the ocean's health and ability to regulate our climate and are leading to rising temperatures and sea levels, acidification, deoxygenation, marine heatwaves and increasing frequency and severity of extreme weather events.

This will continue to affect marine and coastal ecosystems, and their capacity for adaptation and resilience. With increased risks to resilience and adaptative capacity of ecosystems, vulnerability to climate change and marine hazards will increase, particularly for coastal communities. The most severe impacts will be felt by those who rely directly on marine resources for their livelihoods and those living in low-lying coastal areas. Risks associated with sea level rise include increased saltwater intrusion, increased sediment inundation from river systems, flooding and loss of commercially important species. All of which affect the usability and extent of habitable coastal areas and marine resources, changes to land use, loss of coastal and marine ecosystem services, threats to human health and life, and damage to the built environment[6,7], fishing vessels and infrastructure. By 2030 it is expected there will be 900 million people living in low elevation coastal areas – most of them in developing countries (e.g. Bangladesh and Vietnam) - and these populations will be disproportionately affected by the effects of sea level rise,[8] as will those in Small Island Developing States (SIDS).

Women and girls are also disproportionately vulnerable to these risks, particularly in the fisheries sector where 47% of the total fisheries workforce is women[9] but their role is often overlooked and goes unrecognised and unsupported[10]. Additionally, women

[5] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019, Summary for Policymakers of the global assessment report on biodiversity and ecosystem services, IPBES. https://www.ipbes.net/sites/default files/downloads/spm_unedited_advance_for_posting_htn.pdf

[6] SROCC p.4-75; Mendelsohn *et al.* (2006); Diaz (2016); Lincke and Hinkel (2018)

[7] SROCC pp.4-72–4-73 (Figure 4.13)

[8] Neumann et al (2015) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4367969/

[9] The World Bank (2012), *The Global Contribution of Capture Fisheries,* https://openknowledge.worldbank.org/bitstream/handle/10986/11873/664690ESW0P1210120HiddenHarvest0web.pdf?sequence=1

[10] FOA (2018), *Women's participation and leadership in fisherfolk organisations and collective action in fisheries,* http://www.fao.org/3/I8480EN/i8480en.pdf

are commonly faced with higher risks and greater burdens from the impacts of climate change in situations of poverty, and the majority of the world's poor are women[11]. It has been found that if projects or policies are implemented without women's meaningful participation it can decrease effectiveness and increase existing inequalities[12]. The IUCN state that 'women have proven to be leading the way towards more equitable and sustainable solutions to climate change'[13].

Loss of marine biodiversity and habitats, due to climate or anthropogenic pressures, can further add to the risks presented by climate change and ocean hazards. As ecosystem services decline, so will options for livelihoods and income, exacerbating existing poverty and potentially pushing communities to environmentally damaging activities, such as illegal fishing, overfishing, mangrove harvesting, or unsafe livelihoods.

To quantify the risks from ocean hazards, in the last 10 years, insurers alone have paid out more than $300 billion USD globally for coastal storm damage, but this is minimal compared to the amount paid out by governments and the taxpayers[14]. With predicted increases to global populations, sea level rise, flooding and extreme weather events, 50 million people will be at risk by 2080[15], placing even heavier demands on insurance requirements.

Barriers to finance

There is increasing global recognition of the role of Nature-based Solutions (NbS) in tackling these interconnected issues. However, there are barriers to delivering effective and well-managed NbS, at the scale required. To address the challenges, we need innovative solutions that can drive investment into the types of coastal natural capital and NbS that can support ocean resilience and adaptation; and financial instruments to support resilience in vulnerable coastal communities.

A report by the Global Environment Facility[16] estimates that reducing the degradation of coastal and ocean resources would require total finance flows of £1 trillion to £2 trillion over the next 10-20 years. Considering all climate risks, it is estimated that developing countries will need upwards of $140 billion USD annually by 2050 in additional finance to help them adapt and build resilience[17] and are currently facing a financing gap of over $100 billion USD per year[18]. To build resilience and enable adaptation, significant sums are needed. Public financing alone will be insufficient, and it is thus vital to attract greater private investment.

[11] UNFCCC. Introduction to Gender and Climate Change https://unfccc.int/gender
[12] UNFCCC. Introduction to Gender and Climate Change https://unfccc.int/gender
[13] IUCN. Gender and Climate Change. https://www.iucn.org/resources/issues-briefs/gender-and-climate-change#why
[14] ORRAA (2020) https://www.oceanriskalliance.org/ocean-risk/
[15] ORRAA (2020) https://www.oceanriskalliance.org/ocean-risk/

[17] Adaptation Gap Report 2020, UNEP (2020). https://www.unep.org/resources/adaptation-gap-report-2020
[18] DELIVERING ON THE $100 BILLION CLIMATE FINANCE COMMITMENT AND TRANSFORMING CLIMATE FINANCE, UNEP (2020). https://www.un.org/sites/un2.un.org/files/100_billion_climate_finance_report.pdf

However, there are significant barriers to private investment in marine and coastal NbS,, [19]. These include:

- **Ocean literacy in business and finance sectors**: the High Level Panel's 2020 report on Financing[20] states that there is a lack of familiarity with ocean-based project development and financing by both the business and finance sectors. Capacity gaps, particularly in developing countries, exist regarding how to access sustainable ocean finance.[21]
- **Risk adjusted financial return:** In general, for those seeking financial returns, there is an inherent challenge with many investments in natural assets[22], which, by their nature, address **public or common goods and positive externalities** where there is no market. Many of these projects do not take place without intervention for this very reason – that it is difficult to achieve private, financial returns from these projects. With ocean investments, there are additional uncertainties in and risks to projects delivering required environmental (and financial) outcomes. For example, in terms of environmental hazards and risks: coastal ecosystems may have high exposure to natural disasters and high exposure to anthropogenic pressures (pollution from sewage systems or agriculture) which could both damage natural assets. Coastal ecosystems are particularly vulnerable to climate change[23] – sea levels and varying temperatures may have greater impacts. There are also likely to be greater risks and uncertainties with project success. Blue carbon habitats require a long lead time to reach full sequestration potential.[24] This means that blue carbon investments based on restoring or enhancing habitats are particularly sensitive to regulatory and policy uncertainty. **Undefined property rights**, overlapping responsibilities from different government agencies (and a lack of marine plans) can make it challenging to secure the benefits of a long-term restoration project.

- Lower confidence and higher risk-adjusted returns is also due to **information failures and data challenges**. For investments in the marine environment, there are inherent uncertainties in yield and return on investment. There are a lower number of successful case studies / investment examples[25], as well as the significant uncertainty in baseline environmental condition and the economic role and importance of marine habitats.[26] Adequate monitoring and verification procedures as well as adequate impact management procedures have been cited

[19] Eric Usher, head of the United Nations Environment Programme Finance Initiative (UNEP FI),
[20] High Level Panel (2020) Ocean Finance: Financing the Transition to a Sustainable Ocean Economy
[21] A growing awareness of market participants is considered a pre-requisite for the success of blue financial products such as "coastal resilience" blue bonds (Blue Natural Capital Financing Facility (2019): Blue Bonds: Financing Resilience of Coastal Ecosystems. Key Points for Enhancing Finance Action)
[22] Such as conservation projects or those investing e.g. in natural defences that enhance coastal protection and biodiversity
[23] https://www.nature.org/content/dam/tnc/nature/en/documents/CoastsatRisk.pdf
[24] 20-25 years for mangroves, 50 years for seagrass restoration and up to 100 years for saltmarsh restoration (Bell-James, 2016)
[25] Methods, metrics and tools that will more transparently and efficiently inform project outcomes should be repeatable (yield the same outcome under unchanged conditions), transferable (valid and adaptable to different socioeconomic and environmental conditions), and replicable (be measured using metrics that enable comparison of multiple investment options): these do not yet exist for investments in the marine environment [check ref].
[26] For example, there is a lack of standardised blue carbon accounting methodologies and there are significant complexities of providing robust on-going data to quantify stocks & flows.

as pre-requisites for NbS financial products such as “coastal resilience” blue bonds.[27]

- **Regulatory barriers** and the **role of governments** levelling the playing field. Generally, economic incentives favour the growth of economic activity, and often leading to environmental degradation, over conservation, restoration and sustainable use that supports financial activity[28]. Failure to use informed social and environmental accounting associated with biodiversity loss results in underestimating the price of biodiversity risk, leading to misinformed policy choices and investments.

Lastly, a key challenge commonly cited for financing marine NbS includes **a lack of supply**, or the lack of a pipeline of products – i.e. there are impact investors willing to invest in the sustainable ocean, but insufficient large-scale options for them to do so. This lack of supply in turn reflects the challenges cited above: projects lack the appropriate deal size and risk-return ratios to match capital, making scaling and replication more complex than in familiar terrestrial sectors. [29]

There are also barriers to **private financing of wider financial products**. Financial services such as insurance, loans, income protection and savings schemes that would build resilience to the short-term and long-term shocks caused by climate-related impacts, are not readily available to many in the most vulnerable areas. In many cases, this is due to the gaps in risk modelling which are required for the development of insurance products. In addition, empirical evidence shows low uptake due to financial barriers, behavioural barriers (personal perceived risk; low trust in providers), and technical barriers (basis risk) (Clarke, 2016)[30]

There are also **coordination barriers** to effective action and financing for resilience and NbS. Understanding their roles and working to attract the buy-in of the diverse stakeholders is a further challenge in coordination and communication and requires engagement with private insurance companies and investors; the individuals and households who are impacted by these climate risks; local and national government bodies making planning and investment decisions; as well as the scientists and researchers working in finance and natural science.

These market failures in financing mean that there is a strong role for public funding and government intervention in creating the enabling environment as well as, in some cases, subsidising investments and / or providing guarantees. However, the figures for public support are small: recent figures demonstrate that only around 3% of public international climate finance is spent on nature[31], with the majority directed towards

[27] A Blue Natural Capital Financing Facility (2019): Blue Bonds: Financing Resilience of Coastal Ecosystems. Key Points for Enhancing Finance Action

[28] IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany.

[29] High Level Panel (2020) Ocean Finance: Financing the Transition to a Sustainable Ocean Economy

[30] Clarke, D. (2016). A Theory of Rational Demand for Index Insurance. *American Economic Journal: Microeconomics, 8*(1), 283-306.

[31] *Climate Policy Initiative Global Landscape of Climate Finance 2019*

terrestrial solutions. Including all biodiversity-related Official Development Assistance (ODA) spend, only an estimated 4% targets *marine* biodiversity each year[32].

1.1.2 Rationale for Government Intervention

As outlined above many marine ecosystems, have already been severely degraded. Those whose economies and livelihoods are heavily reliant on marine ecosystem services, such as developing countries and in particular women and girls, are most vulnerable to the impacts. The Dasgupta review states that to reverse these trends we must act now, and immediate action will significantly reduce the cost[33], and would help us to achieve wider societal goals, such as addressing climate change and poverty alleviation.

Public finance is required to significantly scale private investment. UK intervention and leadership in finance for NbS and ocean resilience can be used to leverage interest and investment from the private sector. Government leadership can work to bolster confidence in investments in nature, used to encourage leverage for the necessary engagement and de-risk private finance.

For the UK with the Presidencies of G7 and COP26, 2021 is a vital year to show leadership on and raise the profile of ocean, climate and nature issues. Additionally, the UK is committed to working together and using the best available science for faster climate action.

All G7 members are observers of ORRAA, except Canada and the UK who are full members. Canada worked with ORRAA to establish the Alliance and consequently invested [redacted] in 2019/20. Through the (Expanded) G7 Future of the Seas and Oceans Technical Working Group, the G7 have agreed in April 2021, to strengthen their commitment to ORRAA. The UK, along with Canada, will be encouraging the G7 to engage with a series of events and knowledge exchange sessions led by ORRAA, designed to promote ocean literacy in the finance sector and further open up the dialogue on ocean risk and resilience. UK investment would encourage additional G7 members to seek full membership, as well as help leverage additional funding and direct engagement in this series of events. The outcomes of this programme of events and dialogue is a high-profile roundtable, planned for COP26. The Roundtable will convene high level representatives from a cross-section of experts, ministers and leaders in the finance and insurance industries and will deliver tangible outcomes against the UK and ORRAA's strategic objectives including documented pledges and actions and next steps to mobilise finance, build resilience and to maintain momentum beyond 2021.

[32] A Comprehensive Overview of Global Biodiversity Finance. OECD (2020). https://www.oecd.org/environment/resources/biodiversity/report-a-comprehensive-overview-of-global-biodiversity-finance.pdf

[33] The Economics of Biodiversity: The Dasgupta Review Headline Messages. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957629/Dasgupta_Review_-_Headline_Messages.pdf

1.1.3 Strategic Priorities

As a global leader in ocean protection, the UK is championing and driving forward the protection of marine ecosystems to improve the ocean's natural resilience to climate change and support the restoration and protection of habitats critical for adaptation and resilience. The HMG International Nature Strategy sets out how we must use 2021 as a spring board for an ambitious global, integrated approach to halt biodiversity loss by 2030.

Investing in marine NbS will positively contribute towards addressing the nature crisis and climate crisis and as highlighted by the Prime Minister at the One Planet Summit in January 2021, both are needed: '*it's right to focus on climate change, obviously it's right to cut CO2 emissions, we won't achieve a real balance with our planet unless we protect nature as well'.* This is because depending on the management of ecosystems, they can either contribute to the problem, or effectively provide NbS to solve it[34].

The UK is committed to doubling our International Climate Finance (ICF) to £11.6 billion over the next five years. In January 2021 the Prime Minister committed £3 billion of ICF to climate change solutions that protect and restore nature and biodiversity. Supported by this is the Government's manifesto commitment to establish a £500 million Blue Planet Fund (BPF), to help protect the ocean from plastic pollution, warming sea temperatures and overfishing (more detail in Annex A). Investment into ORRAA is fundamental to delivering on these commitments.

As part of the COP26 Nature Campaign, the UK is championing a step-change in delivery of marine NbS and initiatives to address challenges to the ocean-climate-biodiversity nexus, including the Leaders' Pledge for Nature, the UK-led Global Ocean Alliance for 30by30 which calls for 30% of land and the ocean to be protected within MPAs or other effective area-based measures by 2030. The strategic importance of NbS in addressing global challenges is also highlighted by the Government's recently published Dasgupta Review on the Economics of Biodiversity[35].

The "Super Year" 2021 offers unparalleled opportunities to raise ambition and for international collaboration on the key climate change and biodiversity agendas, including the role of NbS, through the United Nations Framework Convention on Climate Change (UNFCCC) COP 26, Convention on Biological Diversity (CBD) COP 15 and Biodiversity Beyond National Jurisdiction (BBNJ)[36] Treaty negotiations; alongside other important international conferences and meetings, including the G7 2021 Summit and the launch of the UN Decade of Ocean Science for Sustainable Development and Ecosystem Restoration in 2021.

UK SIDS Strategy sets out the UK's vision to be viewed as their leading partner in addressing climate and economic vulnerability by 2025. One of the key strategic

[34] IUCN, 2018. Protecting climate by protecting nature. https://www.iucn.org/news/climate-change/201812/protecting climate-protecting-nature

[35] Final Report - The Economics of Biodiversity: The Dasgupta Review - GOV.UK (www.gov.uk) February 2021

[36] Implementing Agreement under the UN Convention on the Law of the Sea for the conservation and sustainable use of marine biodiversity of areas beyond national jurisdiction.

deliverables of the strategy is to have UK leadership with like-minded allies that profiles action on climate, ocean, economic vulnerability and rights.

1.2 Programme Overview

1.2.1 How the UK can address the challenge through ORRAA

To meet the challenges outlined above, one of the identified pathways to impact through the BPF is investing in finance-based climate resilience and risk reduction, which the Ocean Risk and Resilience Action Alliance (ORRAA).

ORRAA is an association of organisations from industry, the Non-Governmental Organisation (NGO) community and G7 members including AXA, Ocean Unite, Global Resilience Partnership, the Canadian Government and UK Government, Stockholm Resilience Centre, The Nature Conservancy, Willis Towers Watson, Rare, WWF and Greensquare ventures. Though a full member of the Alliance, through Cefas providing contribution in-kind, the UK does not currently provide additional funding to ORRAA.

The three priority objectives of ORRAA are:

- **Practice & Innovation:** building risk-adjusted, innovative and scalable products that change investors' risk perceptions of investing in coastal natural capital and increase resilience while delivering a return on investment.
- **Research & Knowledge:** accelerating research and using data to better understand, analyse, predict, model and manage ocean risk, for use by communities, insurance companies and other private investors.
- **Policy & Influence:** informing and advancing ocean resilience policy, governance, private sector and public understanding.

These objectives have been designed to deliver the ultimate outcome of improved coastal resilience for vulnerable populations, particularly women and girls in SIDS and coastal developing countries where ORRAA finance products/projects have been deployed.

The Alliance works with its members and delivery partners to engage three priority stakeholder groups:

1) Vulnerable communities - to increase the adoption of practices and financial instruments that increase coastal resilience;
2) Private and public sector investors - to increase private/public investment into scalable, gender-sensitive ocean resilience pilot projects focused on key vulnerable regions; and
3) Global public/finance policy makers - to improve global governance and support for investments and measures related to building ocean and coastal resilience.

Recognising the challenges in attracting private investment in NbS, as outlined above, ORRAA has been designed to develop and scale up through three phases (more details in figure 1).

Ocean Risk and Resilience Action Alliance

Developing innovative finance solutions that reduce vulnerability and build resilience to ocean risk

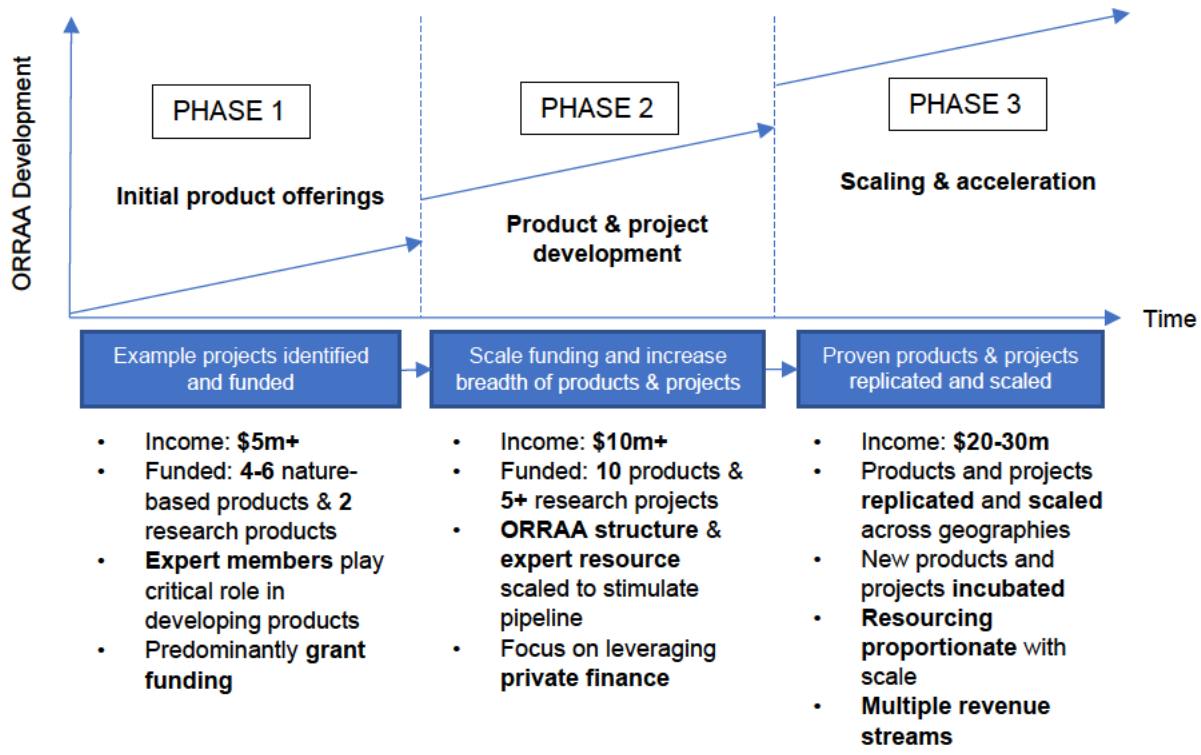


Figure 1 ORRAA's three phase approach

ORRAA have deliberately not set out hard and fast timescales for moving from one phase to another as they acknowledge that funding streams and resource will play a major role. Although ORRAA would like to progress through the phases as quickly as possible, they want to ensure solid foundations are laid for the long-term success of the Alliance.

Year 1 of BPF funding will support the actions within Phase 1, with the ambition to obtain future multi-year funding to build on these actions and support Phase 2 through to Phase 3.

Funding for ORRAA through direct financial support for multiple projects, coupled with our engagement through the UK's existing membership of the Alliance, will enable the UK to meet the strategic priorities on investment in nature (see section 1.1.3), in line with the pathway for impact for the BPF; as well as meeting UNFCCC climate financing commitments. ORRAA's mission is also strongly aligned with Sustainable Development Goal (SDG)[37] 14.2: *to sustainably manage and protect marine and coastal ecosystems to achieve healthy and productive oceans*, and multiple other SDG's and goals under Defra's 25 Year Environment Plan.

[37] There are 17 Sustainable Development Goals (SDGs) in total, adopted by all United Nations Member States in 2015, which are an urgent call for action by all countries - developed and developing - in a global partnership.

Through the UK's work with ORRAA we will have the opportunity to lead on identifying and overcoming barriers to private investment in natural capital through:

- **Overcoming the lack of understanding** of how investing in marine natural capital can provide a timely and productive return
- **Expanding the currently limited pipeline (globally)** of risk adjusted investable projects to attract financing
- **Supporting sufficient data and modelling capabilities** for investors to quantify ocean-derived risk
- Providing support for **enabling policies,** to shift investment away from unsustainable infrastructure
- Encouraging change in thinking on the apparent need for **investment returns** to be available in a short time period

Ultimately, in opening up the dialogue on finance for NbS that can drive resilient communities, the UK in partnership with ORRAA will bring its leadership in ocean science and evidence to the expertise offered by ORRAA and its delivery partners. This will in turn accelerate understanding at the scientific level of the requirements and the types of NbS that will help to boost confidence from private investors and increase financing flows into NbS.

1.2.2 How ORRAA will effectively address the challenge

ORRAA expect to leverage $500 million USD of investment into NbS by 2030. As a new Alliance, ORRAA is co-hosted by the Global Resilience Partnership (GRP) and Ocean Unite. Over the past 5 years, the GRP has funded over $35 million USD of investments in resilience that have benefited over 7 million people and supported over 1100 organisations. ORRAA addresses ocean risk with a holistic approach focussing its efforts in the three areas outlined in section 1.2.1, although a new alliance ORRAA already is supporting a number of projects globally and looking to incubate more through their Ocean Resilience Innovation Challenge.

UK investment into ORRAA will directly support these objectives and outcomes outlined above, through funding approved projects that are in ORRAA's pipeline (process for approval outlined in Management Case – section 5). A number of these pipeline projects are summarised in Annex B and are indicative of the projects that could be realised through UK investment into ORRAA. Although projects have already approved by the ORRAA Secretariat, they could not go ahead without UK funding.

ORRAA's strategy is that each project should bring sectors together to collaborate, generate knowledge, derive investable products and leverage public funds to significantly scale private investment. Projects detailed in Annex B are examples of projects which could enable a 'step-change' in the financial landscape and the potential for marine NbS to attract funding. Projects must show they are workable elsewhere and at scale. Barriers are tackled through 'solutions sessions' that put the best people with the most pertinent skills around the table to problem solve and address challenges. Key outcomes of projects include de-risking private sector

investment through blended finance tools, concessional finance and guarantees as well as adopting learning from sectors that have already undertaken a similar path.

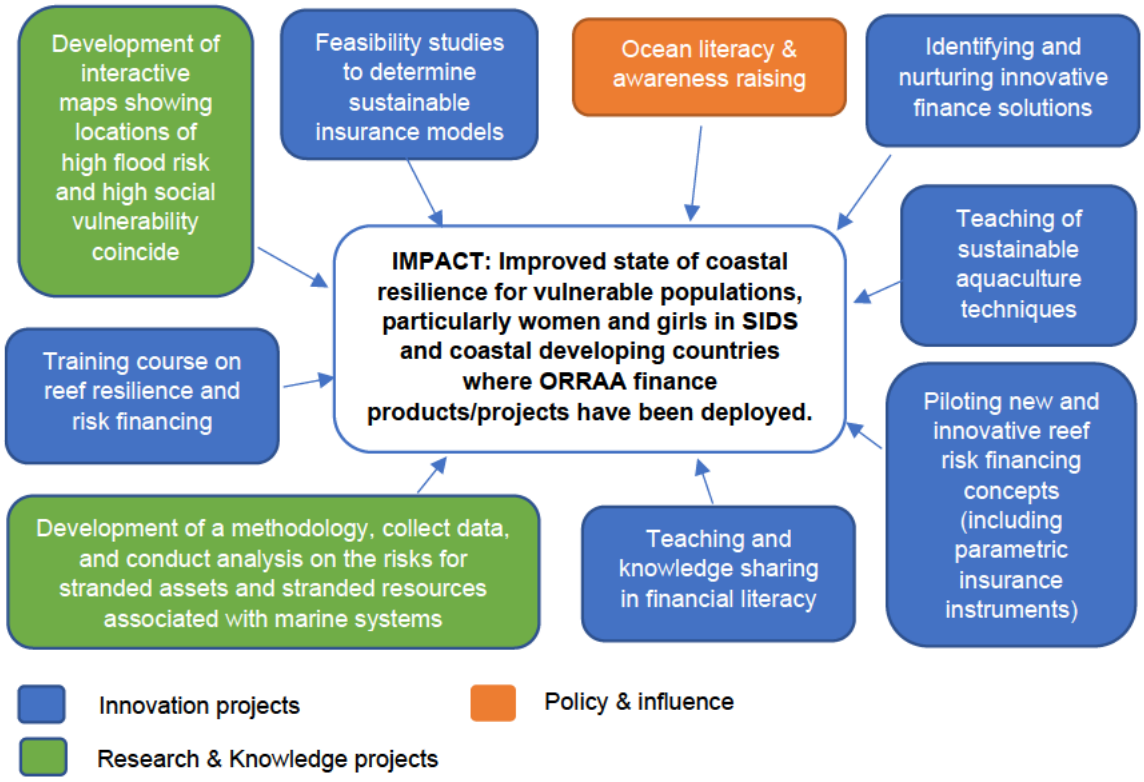


Figure 2 Example activities that could be undertaken as part of ORRAA projects

1.2.3 What type of support will the UK provide

The UK would provide [redacted] in financial year 2021/22 through a direct grant to ORRAA.

Due to the implications of a one-year spending review (2021-22) and the wider strategic timeline, the first year's investment will be completed as a one year business case. The intention will be to develop a multiyear funding package for ORRAA financed from the Blue Planet Fund and develop a multiyear business case from April 2022, if the next spending review allows. Although in best practise a multiyear business case would be more appropriate for delivering the objectives and scope of work possible with ORRAA. There are benefits to a one year business case for a new investment such as the ability to focus on establishing a feasible programme that meets the timescales for all necessary compliance and approvals processes in a shorter timeframe, as well as being able to assess the success of a one year project to inform whether future funding would be appropriate and deliver good Value for Money (VfM).

1.2.4 Impacts, outcomes and outputs

ORRAA's impact as outlined in its Theory of Change (ToC) is an '*Improved state of coastal resilience for vulnerable populations, particularly women and girls in SIDS and*

coastal developing countries where ORRAA finance products/projects have been deployed'.

Our investment would contribute to ORRAA's aims to leverage $500 million USD in finance in NbS by 2030 and to surface at least 15 new and innovative finance products by 2025 that incentivise private and blended finance into coastal natural capital. Specific results attributable to the UK for the project will depend on the projects we choose in collaboration with ORRAA.

The **Intermediate Outcomes** identified in ORRAA's logic model are designed to realise the objectives of Phase I of the Alliance's work:

- Deliver an increased pipeline of pilot projects for innovative finance products that increase coastal resilience,
- Grow the effectiveness of the Alliance to influence greater investments in coastal natural capital, and,
- Improve the design/implementation of gender-sensitive ocean resilience pilot projects in key vulnerable regions.

The deliverables and outcomes of potential new ORRAA projects that could be delivered using UK funding have been drawn out in Annex B. The project will be reporting against at least one BPF Key Performance Indicator (KPI), in this case KPI 1, 2 & 7 and relevant ICF indicators (see management case for more details). As UK investment has not yet been committed to actual ORRAA projects, it is hard to set out expected results. A logframe will be developed within the next 6 months which will establish clear SMART deliverables and outcomes.

1.2.5 Cross over and connections

Initiatives exist that are similar in scope to ORRAA, such as the Blue Action Fund and the Global Fund for Coral Reefs. However, ORRAA is sufficiently different to warrant separate investment. ORRAA is the only multi-stakeholder alliance working in the ocean finance space that brings insurers, bankers, governments, multi-lateral entities, academics and civil society to work together across geographies to innovate and collaborate specifically on coastal protection and resilience, by pioneering, piloting and scaling innovative finance products that invest in NbS. A strength of the Alliance is its ability to mobilise and scale up a variety of pilot projects quickly, that in combination across the programme, work to address the multipliers of ocean risk (overexploitation of resources, poverty, habitat loss).

ORRAA have access to a variety of delivery partners, as well as an established working relationship with larger, less agile organisations. The UK through Defra will benefit from this in terms of access to a wide pool of project partners and expertise without compromising on the advantages of being able to interact directly with funding recipients or steer the programme of projects through the UK's position on the ORRAA Steering Council.

1.3 Gender equality and inclusion

The BPF is committed to considering and incorporating the role, equality and inclusion of gender throughout our programming and decision making. All programmes funded

through the BPF will be required to deliver in line with relevant UK legislation, such as the UK International Development (Gender Equality) Act 2014. Gender has been integrated into the design of the fund through the following:

- **Cross-cutting themes:** gender consideration is one of the cross-cutting themes of the BPF and integrated into the underpinning outcomes that steer the direction of the programmes.
- **BPF equality, diversity and inclusion (EDI) strategy:** sets out the BPF approach to ensuring that we include a mixed portfolio where EDI is mainstreamed throughout, as well as including programmes where EDI is specifically targeted;
- **Investment criteria:** The BPF will only invest in programmes that meet the required criteria. Such criteria include 'do no harm', an assessment that a programme or project with create no harm and minimise unintended consequences; 'country engagement and fit', an assessment of host country/local interest to ensure that the intervention is appropriate for the country context; and 'poverty reduction', which includes inclusion for women and marginalised groups;
- **Monitoring, evaluation and learning (MEL):** The BPF has fund-level indicators disaggregated to provide information on gender, such as number of projects or planning and/or governance processes with increased inclusion of local people and knowledge in decision making to improve the marine environment. Mid- and end-of-programme reports will investigate the potential impacts of the intervention on gender through targeted studies.

1.3.2 Gender in ORRAA

ORRAA's overall goal is to improve the state of coastal resilience for vulnerable populations, **particularly women and girls using gender-sensitive approaches**, in SIDS and coastal developing countries. Through the ORRAA Governance ToR ORRAA commits to ensuring their programme of work is underpinned by gender, equity and human rights considerations. All projects submitted to ORRAA are required to demonstrate how the project will address gender and equity.

This goal and commitment is evident in current projects funded by Canada including the 'cornerstone analyses of the impacts of ocean risks on SIDS and Least Developed Countries (LDCs) and the gender effects of these risks', and the project pipeline which includes the development of a gender action plan under the 'financial tools for small-scale fishers in Melanesia' project.

2. Appraisal Case

2.1 Options for intervention

The objectives for this proposal are to address the failures highlighted in the strategic case, to substantially improve investment in marine and coastal NbS. This will

ultimately support the most vulnerable coastal populations and the marine natural environment which they depend on for their livelihoods.

Longlist options

A **longlist** of options was considered to achieve these objectives, including a range of: type of delivery organisations, options for the scale of funding and options for the type of support to ORRAA, as presented in Table 1.

All options were considered against the Blue Planet Fund investment criteria of: Poverty reduction potential; Environmental benefit potential; Do no harm; UK Government priorities; Country alignment; Financial soundness; Delivery and implementation potential; Additionality; Mobilising potential – finance; Mobilising potential – stakeholder action. See Annex C.

Four options were taken forward to the more detailed appraisal stage (see section 2.2); a further five options were considered at the long list stage, but discounted. The following text includes a description of each of the rejected options and a rationale for doing so, a summary of the more detailed investment criteria scoring is set out in Annex C.

Table 1 Summary of long list options

Longlist Option	
0. Do nothing	Considered in short list
1. Bilateral support to relevant research organisations working on marine NbS and risk modelling	Does not achieve strategic aims of a coordinated, multi-stakeholder approach to mobilise finance for NbS. **Discounted**.
2. Bilateral support to conservation organisations working in-country, directly on projects	Achieves benefit for marine NbS and poverty but will not leverage private finance to enable future protection and will not address the underpinning challenges to bring about a step-change in support. **Discounted.**
3. Support to a multi-stakeholder platform such as the Sustainable Blue Economy Finance Initiative	Engages cross-sector to address barriers to sustainable blue finance but focuses only on sustainable blue finance principles and does not have the specific focus on marine NbS. **Discounted.**
4. Support to the Coalition for Private Investment in Conservation (CPIC) initiative.	Aims to improve the conservation and sustainable use of biodiversity by demonstrating innovative finance blending models to increase return-seeking private investments but does not have a specific focus on marine NbS and the specific barriers in the marine environment. **Discounted.**
5. Support through a multilateral development bank	Unable to focus support purely on marine NbS neither to have an agile approach to influence projects and countries in future years. **Discounted.**
6. Support to ORRAA of [redacted] over 1 year, to fund the ORRAA secretariat and specific projects	Considered in short list

7. Support to ORRAA of [redacted] for 1 year, supporting only projects	Considered in short list
8. Support to ORRAA of [redacted] over 1 year	Considered in short list

Option 1: Bilateral support to relevant research organisations

This option would provide bilateral support to research organisations in priority countries to model risk and develop solutions.

As shown in Annex C, the benefits when focusing on finance for marine NbS, may be lower where this research is not part of an existing, coordinated approach including access to finance industry experts that incorporate outputs into investment decisions. This option would not *necessarily* enable us to achieve in-country alignment, without involving further actors beyond the research organisations. Supporting individual research projects and organisations would also require a higher level of management input and resource from Defra. This option would not directly lead to mobilisation of finance unless part of a wider, coordinated solution. We could not guarantee the ability to maintain oversight of the developments nor major investments taking place across key donors and could not be sure of additionality.

This does not meet the strategic aims of this investment, for a holistic step change in marine NbS and we have therefore discounted this option.

Option 2: Bilateral support to conservation organisations working in-country, directly on projects

This option would provide bilateral support to conservation organisations focusing on conservation and restoration of marine NbS in priority countries.

As shown in Annex C, this option would achieve part of our aims: there is robust evidence showing the environmental and poverty benefits of many conservation and restoration projects. However, this would not address the underpinning barriers to finance for NbS nor lead to the step-change in support for NbS which is required. Working directly with organisations on very specific projects could result in an uncoordinated approach across donors and would not necessarily lead to sharing of learning and mobilisation of action in countries and areas beyond the specific projects.

Based on this assessment, we have discounted this option.

Option 3: Multilateral support to a multi-stakeholder platform such as the Sustainable Blue Economy Finance Initiative

This option would provide support to a multi-stakeholder platform galvanising action on sustainable blue finance – for example, the Sustainable Blue Economy Finance Initiative.

This option would helpfully engage cross-sector to address barriers to sustainable blue finance. However, it does not specifically focus on the barriers facing marine NbS and is limited to a focus on the sustainable blue finance principles as opposed to marine NbS. Based on this, it is unlikely to lead directly to mobilisation of finance specifically

for marine NbS and achieve our strategic aims, including poverty reduction. Lastly, although the focus is on achieving finance for sustainable blue finance, including finance for the SDGs, it is not the entire focus of the principles. It may be challenging to justify the spend in its entirety as an objective to reduce poverty.

Based on this assessment, we have discounted this option.

Option 4: [redacted] a group of leading civil society organizations, private and public sector financial institutions and academia working to deliver a material increase in private, return-seeking investment in conservation. This organisation has similar aims in terms of addressing the underpinning barriers to investments in nature, and ultimately to increase the flows of finance to nature.

However, the coalition focuses wider than marine NbS, also focusing on forest landscape conservation and restoration, green infrastructure for watershed management and sustainable agriculture intensification. This will not address the challenges specific to marine NbS, including a lack of ocean literacy and risk adjusted returns specific to the marine environment, as described in the strategic case. We are seeking a solution which addresses the under-representation of sustainable ocean investments and marine NbS.

Based on this assessment, we have discounted this option.

Option 5: Support through a multilateral development bank

This option would involve support to financing NbS through a multilateral development bank or foundation.

Investments in many of the relevant multilateral development banks have a strong track record of effective action in the environment and sustainable development. There *could* be benefits in terms of lower management costs.

However, as demonstrated in the assessment in Annex C, we would not be able to ear-mark a certain amount of funding for specific issues or certain countries and we would not have the opportunity to directly connect with the range of diverse delivery partners with the potential for knowledge sharing. This is a less preferred option to achieve our strategic aims of the Blue Planet Fund.

Option 6-8: Support to ORRAA

These options would involve investing into ORRAA. As shown in Annex C, investing in ORRAA supports targeted action to mobilise private finance for marine NbS, with a proven track record of benefit for the environment and poverty, through risk reduction.

With this investment, the UK will benefit from direct contact with diverse delivery partners and donors, to support a joined-up approach in enabling finance for NbS and cross-sector and cross-country learning. With longer-term investment, the UK will inform and influence the longer-term direction and investments of the Alliance.

ORRAA draws together the insurance and finance sector with applied science and research for marine NbS, along with governments and decision-makers. They are the only organisation with the necessary holistic, multi-sector approach that is required to lead to fundamental change. **ORRAA are our preferred delivery partner.**

Short description of short list options

This narrowed down to a **short list** of more detailed implementation options relating to ORRAA, discussed below, followed by more detailed appraisal.

Option 0: 'Do nothing'

For this option, the UK would not invest in ORRAA, nor any other initiative aiming to mobilise finance for marine NbS. Do nothing would result in no costs to Defra directly and there would be no resource costs of time associated with managing the programme.

Even if the UK does not financially support ORRAA, the UK will still be a member of ORRAA. The work of ORRAA will continue, however at a much lower scale and impact, given that ORRAA has only one other key donor. The UK will forgo a valuable opportunity to demonstrate the UK's leading role catalysing action for climate change and finance for nature.

Option 6: Support to ORRAA of [redacted] over 1 year funding specific projects alongside wider ORRAA functions (preferred option), with the intention to extend funding,

This option would involve investing into ORRAA's pipeline of projects, as well as a proportion of the investment directed to the development the ORRAA secretariat. Based on the current pipeline developed by ORRAA and the Canadian Government, this could support six projects on the ground and two research projects, as well as funding the development and operation of the ORRAA secretariat.

[redacted] In addition, this funding would pay for the work under ORRAA's third priority objective, their work in 'Policy & Influence', informing and advancing ocean resilience policy, governance, private sector and public understanding. This wider outreach work carried out by the secretariat would also enable membership to be widened, supporting the UK's wider international ambitions. Support to the secretariat also enables the UK to claim greater attribution of the results to our funding, supporting greater VfM.

This would be an important investment, demonstrating commitment to the longer-term success of the Alliance: the most significant risk to ORRAA's success is that insufficient resource for the secretariat will reduce the speed and scale at which products and solutions can be developed and deployed. In addition, this third objective, supported through funding the secretariat, is the fundamental pillar which

enables ORRAA to achieve transformational change – without sharing learning and understanding, the impact of the individual projects is and will be limited.

With the intention of continued support across the 5 years of the BPF, UK support could help develop, scale up and create sustainable long-term finance models.

This is the preferred option.

Option 7: Support to ORRAA of [redacted] over 1 year, with the intention to extend funding, funding specific projects only

This option would involve investing into multiple projects in ORRAAs' pipeline as described above in the strategic case.

Based on past work from ORRAA and the Canadian Government, this could support between seven to eight of the identified projects on the ground and two research projects - for a one-year period.

This investment would show significant support, recognising a clear understanding of the scale of the challenge. With the intention of continued support across the 5 years of the BPF, UK support could help develop, scale up and create sustainable long-term finance models. However, a lack of support for the wider ORRAA functions means there would be limited cross-sector learning. The potential 'step change' in the finance enabled through the wider insurance and financial sectors would be constrained. This option is less preferred.

Option 8: Support to ORRAA of [redacted] over 1 year, with the intention to extend, funding specific projects only

This option would involve supporting ORRAA with a smaller amount of funds, either directly supporting the ORRAA secretariat or supporting fewer projects in the ORRAA pipeline, for example from 2-4 projects.

The UK will still benefit from direct contact with a range of diverse delivery partners and donors, to enable a joined-up approach, however this option does not consider the range of challenges and scale of the problem. This scale of investment may not be large enough to ensure long-term sustainable outcomes. The third objective of the ORRAA, focusing on understanding and wider change across sectors, will not be funded. The benefits under this option are constrained. This approach is less preferred.

2.2 Appraisal of shortlist options

Appraisal approach

There are many uncertainties in the appraisal, due to:

- Evidence gaps in the 'Business As Usual' situation, including climate risks and action of others
- Evidence gaps in the specific benefits of NbS projects, including effectiveness of interventions in specific locations

- Uncertainties in the potential effectiveness and leverage of ORRAA's work: we have a track record from the Global Resilience Partnership, but the targeted work of ORRAA is new
- Uncertainties in the attribution of final results to the UK's financial contribution.

This means it is not possible to appraise and fully quantify with certainty the options with a whole-programme Benefit-Cost-Ratio. Part of the foundational work of ORRAA, around building the science and modelling, aims to address these specific evidence gaps. The planned evaluation of ORRAA and its funded projects will enable us to assess with more confidence the value for money of the specific investments in future. However, at this point, with the information available, we can set out the overall benefits and costs we anticipate from our investment in ORRAA, draw from global estimates of the benefit-cost ratio associated with marine NbS (Box 1) and present illustrative case studies of the costs of specific projects along with the benefits we can expect (Box 2), to assess a part-quantitative, part qualitative value for money assessment. This evidence is shown below.

Costs and Benefits of Option 0: Business as Usual

In a 'business as usual' scenario (BAU), there will be **ongoing loss of marine NbS, with a resulting negative impact of the environmental and societal benefits they provide**. Modelling suggests nearly 100% of mangroves could be lost in the next 100 years.[38] [39] If mangroves were lost, it is estimated 15 million more people would be flooded annually across the world.[40]
Coastal zones exhibit higher rates of population growth and urbanisation, with this trend expected to continue in BAU. [41] Not only does the development of coastal areas increase anthropogenic pressures on the marine environment through dependence on natural resources and habitat loss, but as cited above, greater populations are being exposed to existing hazards such as climate change impacts and this number will rise with projected increases in population size.

In the Business as Usual scenario, there would be a **continuation of the current low levels of finance directed to marine NbS**. As described in the strategic case, in the Business as Usual scenario, there is a lack of investor understanding, lower confidence and low risk-adjusted return for marine NbS, resulting in lower levels of investment compared to what would be optimal.

In the case studies estimated below, the BAU scenario presented includes the estimated country-level loss of NbS. Benefits are assessed compared to this BAU scenario.

[38] Saintilan et al., 2020, Thresholds of mangrove survival under rapid sea level rise
[39] https://wwf.panda.org/our_work/our_focus/oceans_practice/coasts/mangroves/mangrove_threats/ As much as 50% of natural mangrove forests have already been lost, and they continue to be deforested quicker than any other forest type
[40] Menéndez, P., Losada, I.J., Torres-Ortega, S. et al. The Global Flood Protection Benefits of Mangroves. Sci Rep 10, 4404 (2020). https://www.nature.com/articles/s41598-020-61136-6
[41] Neumann B, Vafeidis AT, Zimmermann J, Nicholls RJ (2015) Future Coastal Population Growth and Exposure to Sea-Level Rise and Coastal Flooding - A Global Assessment. PLoS ONE 10(3): e0118571. doi:10.1371/journal.pone.0118571.
Asian countries such as China, India, Bangladesh, Indonesia and Vietnam are estimated to have the highest total coastal population exposure in the baseline year (2000) and this ranking is expected to remain largely unchanged in the future. However, Africa is expected to experience the highest rates of population growth and urbanisation in the coastal zone, particularly in Egypt and sub-Saharan countries in Western and Eastern Africa.

Benefits of Options 6-8: investment in ORRAA

The investment in ORRAA aims to address the challenges set out in the strategic case and change the conditions to enable private resilience finance for vulnerable coastal communities and ecosystems: proposing and directly delivering innovative solutions and pilots as well as delivering cross-sectoral needs, focusing on solutions which require the intersection of the insurance industry, wider finance players, science and governance.

Under these preferred options, the areas of focus and their associated benefits include:

A] Practice and Innovation: Piloting and scaling direct improvements in resilience and NbS.

- **Conservation and restoration of mangroves** – and demonstrating the potential for scale up – through for example the climate smart shrimp initiative (see box 2). Evidence shows that conservation and restoration of coastal habitats such as mangroves can reduce the impacts faced by storms; provides benefits for biodiversity and fishing stocks; can improve livelihoods through increased access to raw materials including timber; can offer alternative income sources including ecotourism or sales of sustainable products such as shrimps.

- **Improvement in community level resilience to climate shocks** through, for example, access to savings clubs and weather index-based parametric insurance for some of the most vulnerable coastal populations. Studies of index insurance products indicate they support consumption smoothing: i.e. individuals can continue to buy the items they need in order to maintain their standard of living, they also support asset retention as well as purchase of assets (Bertram-Huemmer and Kraehnert 2018; Jensen, Barrett, and Mude 2017; Karlan et al. 2014).

- These projects and products will change the risk perceptions of investing in coastal natural capital and increase resilience while delivering a return on investment, ultimately providing benefits the environment and reduction of poverty.

B] Delivering cross-cutting needs in research and knowledge to better understand, analyse, predict, model and manage ocean risk to enable finance for NbS.

- **Improvement in the underlying evidence base to enable resilience investments,** through for example the coastal risk index for NbS and the Climate and Ocean Risk Vulnerability Index, as well as feasibility for blue carbon investments. These products will begin to address the data and information challenges raised in the strategic case, with the ultimate aim of enabling finance for marine NbS and the resulting benefits for the marine environment and poverty as described above.

Under the preferred option, option 6, there is the additional benefit of:

C] Addressing underpinning barriers and supporting the longer-term success of the Alliance through direct support to the wider functions of the secretariat. This will include:

- **Policy & Influence**: informing and advancing ocean resilience policy, governance, private sector and public understanding.
- **Increased ocean and financial literacy** across different sectors of society, specifically addressing the lack of understanding across decision-makers and investors, a driver for the lack of finance for marine NbS.
- **Cross-sector learning and scaling -** ensuring the innovative products and solutions can be developed and deployed at the pace and scale required.

These will, in turn, begin to address the challenges raised in the strategic case: the lack of ocean literacy and the lower investor confidence in NbS. Addressing these barriers will aim to enable finance for marine NbS, ultimately leading to the **benefits for climate, biodiversity and people.**

The work of ORRAA under A and B will only contribute to the change required when the findings are adequately communicated, learnings across one project and sector are shared across sectors and regions, new projects are developed and scoped and the underpinning barrier of ocean literacy in the finance sector is addressed. This support to the secretariat of [redacted] will enable this.

These intermediate benefits in turn support the Blue Planet Fund objective of: '*Improved resilience, adaptation to and mitigation of climate change, particularly through enabling and investing in inclusive nature-based solutions'.* The innovative and responsive approach of ORRAA means that there are uncertainties in the exact quantification of the benefits. However, as described above, we can draw from past successes of the Global Resilience Partnership and the initial projects which have been run over the past year through ORRAA's leadership, as proposed in Box 2.

Private finance leveraged through ORRAA: illustrative estimates

The key, transformative pathway through which ORRAA is expected to lead to benefits is through leveraging private finance. There are uncertainties in the potential, but it is possible to take illustrative estimates

ORRAA's target is to leverage an additional $500m USD of private finance invested in marine and coastal NbS by 2030.

This will rest upon the UK's investment, alongside investments from further donors to enable the system-wide approach of ORRAA.

It is challenging to forecast the scale and number of future donors, the impact of ORRAA initiatives in mobilising the private sector, as well as the amount of this mobilised finance for NbS which is truly 'additional' and attributed to ORRAA and the UK's support – in a BAU scenario some finance would have gone to marine and coastal NbS anyway, and may be simply displaced through the work of ORRAA. We

can, however undertake scenario analysis to provide estimates of the scale of further investors and the displacement of NbS funding. This is incorporated in our sensitivity analysis.

As shown in Annex G, we assess a number of scenarios across these different areas of uncertainty.

With these scenarios and sensitivities, in our preferred option (option 6), **investment from the UK is estimated to leverage private investment of [redacted] times the initial UK investment by 2030, with a best estimate of [redacted]** This is broadly in line with the type of leverage ratios which have been estimated for similar ICF programmes. Focusing on the [redacted] investment in this business case would represent [redacted] **of private investment by 2030, with a best estimate of [redacted].**

This is a long-term target and we could expect that in the shorter term (next 5 years), the UK investment is more likely to achieve private investment **equal or slightly more than the investment put in.**

The assumption is that, in a scenario where the UK does not support the wider functions of ORRAA (option 7 and 8), this finance leverage is less likely to be achieved – the total target of $500m USD by 2030 is reduced to $300m USD. With this assumption and in the scenarios described below, the leverage ratio reduces to 0.7-3.8, with a best estimate of 1.4. In option 7, the illustrative estimate of leveraged funding reduces to [redacted], with a best estimate of [redacted]. In option 8, the illustrative estimate of leveraged funding reduces to [redacted], with a best estimate of [redacted].

Further detail:

Across these options, we apply the following scenarios:

Achievement of target: As a starting point, we use ORRAA's target of leveraging $500m USD of private investment for marine NbS by 2030, (~£392m). [redacted]k.

Additionality: Following ICF guidance, since we do not have an accurate baseline of how finance for NbS would have increased in the absence of ORRAA, we adjust down this total amount, assuming that in the absence of ORRAA (and the UK's intervention) there may have been an increase in finance for marine NbS from other initiatives. [redacted]

[redacted] This is the range in row 4a in Annex G.

Co-donors and UK's proportional attribution: In terms of the UK's contribution to this, as the starting point, we assume that the UK only invests for one year [redacted]. The implications of this range for ORRAA's potential effectiveness is incorporated in the range of 'achievement of target'. Given these additional contributions means that the UK contributes [redacted] of the total estimated finance invested in ORRAA under option 6 and 7 and [redacted] in option 8.[42] Taking this proportion, we can apply to the total amount of private finance leveraged to calculate a leverage ratio – and the assumption of the amount of private finance which could be mobilised by 2030 from the UK's initial y1 investments.

The leverage ratios are purely illustrative, given the uncertainties in the co-funders, the displacement as well as the final amount of finance mobilised, but it demonstrates that the UK's investment has the potential to leverage significant funding for marine and coastal NbS – and that providing sustainable support to the secretariat is likely to be a preferable option.

Costs and Risks of Options 6-8

The costs associated with this proposal include:

- **Costs to Government** of [redacted] in year one for options 6-7, [redacted] for option 8, with the proposal to extend. The split of costs across the programmes are set out in the financial case.
- **Costs to individuals and wider industry in the countries involved**. One of the aims of ORRAA is to leverage private finance and private action to support investment in coastal resilience: this action will have associated costs to investment beyond the costs to government. However, the private sector will only invest where there is a positive financial return and evidence has shown that the societal benefits of marine NbS by far exceed the financial benefits. Since global and project specific benefit-cost ratios have shown highly positive BCRs (see Box 1).

Box 1: Generalised BCRs for nature-based solution conservation and restoration

At a worldwide level, the High Level Panel estimates that the BCR for mangrove conservation is as high as **88-to-1,**[43] with the BCR for mangrove restoration at **2-to-1.** This cannot be used as an estimate of the costs and benefits *of specific projects*

[42] as described above in achievement of target – in the low scenario, we incorporate the assumption that there are a lower number of co-donors, in the high scenario, we incorporate the assumption there are a higher number of co-donors.

[43] Konar, M. and Ding, H. for High Level Panel (2020), *A Sustainable Ocean Economy for 2050: Approximating Its Benefits and Costs* available https://oceanpanel.org/sites/default/files/2020-07/Ocean%20Panel_Economic%20Analysis_FINAL.pdf

supported under ORRAA, but it demonstrates that action to conserve and restore marine NbS is net positive for society, with the potential for good value for money.

At a project scale, NbS have also represented good value for money. For example, the Blue Forest project[44] is a community-led mangrove management project in Madagascar, funded by Defra under the ICF programme. Benefits have been estimated to range from [redacted] for every £1 of government spend, a BCR of [redacted] The business case for Mikoko Pamoja, a Plan Vivo blue carbon project in Kenya[45] indicates a BCR of [redacted]

The specific conservation and restoration projects funded by ORRAA are likely to replicate these BCRs in some cases. However, the benefits go wider than this project-level scale. ORRAA aims to achieve **long term value for money** through demonstrating the success of projects and enabling private finance – creating the potential of further, knock-on benefits since projects are selected to enable learning and replication. In the intermediate term, the BCRs of some ORRAA demonstration projects may be lower than those described here, representing the innovative nature of many of these investments. However, this *potential* lower BCR in the intermediate term will contribute to the longer-term value for money associated with learning and enabling private finance. The potential for private finance mobilisation is illustrated in Box 3.

Box 2: Illustrative benefits of example ORRAA 'Practice and Innovation' projects: Blue Carbon Resilience Credits Pre-Feasibility, Climate-Smart Shrimp Initiative and Resilience Insurance

Annex B describes the deliverables and outcomes expected from a number of the specific projects.

An example project proposed to be funded by the ORRAA is **Blue Carbon Resilience Credits Pre-Feasibility** in Papua New Guinea, which will determine market access for blue carbon projects in PNG; assess legal standing of landowners to participate in market; estimate blue carbon offset and resilience credit generation potential and provide recommendations for next steps to project implementation.

Papua New Guinea has seen an average (gross) loss of mangroves of over 1000 hectares per year between 1996 and 2016 – 0.25% of the total area. Carbon markets can be an important source of income, to enable and support conservation and restoration of blue NbS. Since this project sets out the enabling conditions for carbon markets, it could be assumed that it is an enabling factor for reducing deforestation and potentially encouraging additional restoration. Considering the benefits to individuals and communities of improved food supply, reduced climate risks as well as the global value of carbon storage, the mangroves conserved and restored have significant value. Due to a lack of Ecosystem Services Valuation Data directly for

[44] Blue Ventures, 2019: https://blueventures.org/conservation/blue-forests/
[45] Mikoko Pamoja: A Business Case for Carbon Credit in Gazi-Kwale County, Kenya (Plan Vivo, 2017)

Papua New Guinea, we considered the available evidence for mangroves in the same broad region - and applied the range of total economic valuation of mangroves in Indonesia[46]. The benefits of mangrove conservation include **direct livelihoods benefits** of availability of raw materials, potential higher incomes, as well as **environmental benefits** of biodiversity and carbon regulation. Assuming that the project contributed 0.2% to the reduction of deforestation in PNG over 30 years, with benefits starting 4 years after the project starts leads to a benefit-cost ratio of [redacted].6, representing the high and low scenario. With these assumptions, this specific project, with costs of [redacted], would 'break even' even if it contributed only [redacted] to a reduction in deforestation and increased restoration of mangroves in Papua New Guinea. This can be considered a highly conservative assumption, given that carbon markets are likely to be an important monetised benefit to 'stack' to incentivise conservation – and that that this is an essential piece of work in order for carbon markets to be developed in PNG.

Another example project is the **Climate Smart Shrimp Initiative**, expected to restore 20 ha of mangroves, **enhance resilience** for at least 250 people, with **emissions reductions** of 10 MT of CO2/year per ha. Alongside this restoration, semi-intensive shrimp ponds are built, reducing the requirement for additional deforestation for extensive shrimp farming as well as benefiting small-scale shrimp farmers with **additional revenues from the sustainable shrimps**. The project, with costs of [redacted], is estimated to 'break even' in terms of financial costs within 5 years. Beyond this direct financial benefit to incomes for these farmers, there are significant environmental and social benefits from the mangroves as described above and valued below.

A cost-benefit analysis of this programme was conducted over a 30-year period, considering the ecosystem service benefits that mangroves demonstrate, as well as the additional income that is expected as a result of shrimp aquaculture investment and revenue. Across both a high, central and low scenario, this project has a positive benefit cost ratio estimated as ranging between [redacted] depending on the scenario considered.[48] In the longer term, and not included in the BCR, this project aims to demonstrate the environmental, social, and economic benefits and challenges of Climate Smart Shrimp at the single farm-level and encourage future, further private investment in similar projects.

A last illustrative example is **weather index-based parametric insurance** for the economic and ecological resilience of municipal fishing communities **in Southeast**

[46] the economic value of mangrove resource in Indonesia is estimated ranging from ~ US $3.5k - US $27k ha per year. Rizal et al (2018) Economic Value Estimation of Mangrove Ecosystems in Indonesia Biodiversity Int J 2018, 2(3): 00051

[47] Range based on the low and high estimates of the total economic value of mangrove resource

[48] This analysis uses a survival rate of restored mangroves at 45%, as well a range of 10-20 years required to for the mangroves to reach mature growth. Under a high scenario, where mangroves reach mature growth after 10 years, benefits are expected to be £345,188, leading to a benefit cost ratio of 1.31:1. Under a central scenario, where mangroves reach mature growth after 15 years, benefits are expected to be £198,118, leading to a benefit cost ratio of 1.18:1. Under a low scenario, where mangroves reach mature growth after 20 years, benefits are expected to be £78,619, leading to a benefit cost ratio of 1.07:1.

Asia. This project will pilot the product across 75-90 coastal municipalities, reaching 50,000 fishers[49], as well as a feasibility study and a roadmap to scale across the Philippines, with the potential of reaching over 400,000 small-scale fishers[50]. The insurance will help to **build resilience** in coastal communities by providing fishers with the liquidity necessary to recover from a poor fishing season exacerbated by climate change factors.[51] The pilot alone would represent a cost of [redacted] per fisher in UK values. Similar programmes have estimated good value for money. Under the past Commonwealth Marine Economies programme, it has been estimated that an extreme weather event insurance product for fisheries in the Caribbean could provide up to [redacted] of benefit for every £1 of spend.[52] This is a different but complementary programme, in a different area from the focus of ORRAA, but can be considered an illustrative example of the potential of these programmes.

The three case studies in Box 1 focus on [A] practice and innovation projects. These types of projects represent a total of £1m of funding – 50% of the proposed investment in ORRAA for year 1. The remaining funding will focus on [B] delivering cross-cutting research and knowledge and [C] supporting the secretariat to enable long-term, sustainable action from ORRAA.

These value for money assessments are illustrative, since ORRAA will invest over its lifetime in a range of enabling projects in a range of locations. In some cases, final value for money may be lower, especially where there are greater risks, uncertainties and barriers. However, such projects may be exactly the type of projects which enable a 'step-change' in the financial landscape and the potential for marine NbS to attract funding. The benefits of [B], research and knowledge and [C], supporting the secretariat, is more challenging to directly assess, but it is an important enabling condition for the effective work of ORRAA – and achieving the benefits set out in Box 1 above and the illustrative scale of finance leveraged, described above.

Alongside this quantitative assessment, the investment in ORRAA has been assessed against the 'four Es' of ODA value for money. Overall, it is assessed that ORRAA has the right procedures, plans and approaches in place to ensure Economy, Efficiency, Effectiveness and Equity.

Table 2 The 'four E's of ODA Value for Money: assessment for ORRAA

VfM principle	Assessment for ORRAA

[49] There are approximately 100,000 fishers in this area and the pilot will target 50% market penetration.
[50] Over a million Filipinos are engaged in marine fishing. Of these, an estimated 800,000 are small-scale fishermen using tradition, low-cost techniques, notably net fishing from small boats and the fish corral. Source: Culturalsurvival.org
[51] As well as supporting sector formalization by incentivizing and rewarding responsible fishing practices: providing coverage offerings to fishers who formally register as fishers. This demonstrates the inter-connected nature of ORRAA proposals, supporting outcomes across the themes.
[52] Cefas Economic Appraisal for the Commonwealth Marine Economies Programme, Year 2. Benefits and costs over 10 years from 2016/17 to 2026/27 and adjusted for risk. Based on Net Present Value costs of £0.08m and benefits of £0.81m

Economy (are we buying at the right price?)	ORRAA has policies and procedures in place to appropriately manage HMG funding and ensure financial soundness. ORRAA, whilst a new Alliance, is co-hosted by the Global Resilience Partnership (GRP) and financial monitoring of funds are managed through the overall Stockholm University financial system. Defra have in the past funded Stockholm University. ORRAA applies the appropriate type of financing for the country, partner or issue in question: seeking co-funding where relevant and direct grants to local organisations where appropriate. ORRAA works with a wide range of delivery partners and Alliance members, providing opportunity to choose the best organisations for each project with their strong investment criteria. ORRAA has welcomed a range of new delivery organisations through the competitive innovation fund.
Efficiency ('spending well')	Efficiency means turning inputs into the desired outputs – in this case, the intermediate outputs are producing the relevant data and modelling, or the example projects which can be scaled up, as well as the commitment of funding from partners and stakeholders. ORRAA is expected to leverage $500 million USD of investment into NbS by 2030 and to surface at least 15 new and innovative finance products by 2025 that incentivise private and blended finance into coastal natural capital. The final outputs are the protected or restored marine and coastal habitats, which have the potential to support ecosystems and livelihoods. To spend well, ORRAA bases decisions on the best available evidence of restoration and conservation, choosing interventions with the greatest potential, as well as seeking innovative solutions.
Effectiveness ('spending wisely'):	Effectiveness means focusing on the 'right' investments in order to lead to a reduction in poverty, improvements in resilience and improvement in the marine environment. ORRAA addresses a clear gap: enabling finance into marine NbS. It is well prioritised, addressing the underlying challenges for finance with a multi-stakeholder solution. ORRAA, whilst a new Alliance, is co-hosted by the Global Resilience Partnership (GRP). Over the past 5 years, the GRP has funded over $35 million USD of investments in resilience that have benefited over 7million people. See above for the estimated benefit cost ratios of the type of interventions which will be supported.
Equity ('spending fairly'):	ORRAA seek to focus on the most vulnerable populations. Project partners are required to specifically explain how their project has been designed and will be delivered in such a way to take into consideration gender and equity and outline how women, children and other vulnerable groups will benefit from the project. In addition, ORRAA engages with a wide range of delivery partners and Alliance members that means diverse stakeholders are involved, beyond what might be perceived to be 'tried and tested' partners. This enables diverse perspectives to be heard and considered, which increases the equitable approach.

2.3 Conclusion and preferred option

Table 3 Benefits, cost, risks and conclusions of each option

	Benefits and pros	Costs	Risks	Conclusion
Option 0: Do Nothing		£0m	UK will forgo an opportunity to demonstrate the UK's leading role in catalysing action for climate change and finance for nature.	Discarded
Option 6: Funding ORRAA [redacted] supporting secretariat and projects	**Improved funding to marine NbS**, resulting in improved resilience and ecosystem benefits of these habitats, with benefits for marine biodiversity, climate regulation, livelihoods and poverty. **Illustrative estimate of [redacted] private finance** attributed to UK's initial investment. A wide range of projects with positive BCR could be supported, recognising the scale of the problem and the multisector approach needed to solve it. Support to the secretariat would share learning and address underlying barriers in ocean literacy, **with the potential for greater transformational change.**	[redacted]	Supporting the secretariat is a contributing function and has less well-defined outputs and environmental and poverty outcomes compared to the specific project proposals. Some project proposals are innovative, with the aim of improving knowledge – there is no guaranteed BCR or benefit. Monitoring and management will be important (see management case and KPIs) alongside effective learning and evidence sharing.	**Preferred option**
Option 7: Funding ORRAA [redacted] supporting only projects	**Improved funding to marine NbS**, resulting in improved resilience and ecosystem benefits of these habitats, with benefits for marine biodiversity, climate regulation, livelihoods and poverty. **Illustrative estimate of [redacted] private finance** attributed to UK's initial investment, lower due to less effective functioning of ORRAA in the influencing space. A wide range of projects with positive BCR could be supported, recognising the scale of the problem and the multisector approach needed to solve it.	[redacted]	There a risk to the sustainability of ORRAA and delivery of projects without support to secretariat. As above - some project proposals are innovative, with the aim of improving knowledge – there is no guaranteed BCR or benefit. Monitoring and management will be important (see management case and KPIs) alongside effective learning and evidence sharing.	
Option 8: Funding ORRAA [redacted]	**Improved funding to marine NbS**, resulting in improved resilience and ecosystem benefits of these habitats, with benefits for marine biodiversity,	[redacted]	There a risk to the sustainability of ORRAA and delivery of projects	

	climate regulation, livelihoods and poverty. **Illustrative estimate of [redacted] rivate finance** attributed to UK's initial investment, lower due to less effective functioning of ORRAA in the influencing space. A more limited number of projects could be supported.		without support to secretariat. As above - some project proposals are innovative, with the aim of improving knowledge – there is no guaranteed BCR or benefit. Monitoring and management will be important (see management case and KPIs) alongside effective learning and evidence sharing.	

Based on this assessment, funding coordinated delivery through ORRAA (of [redacted] in the 1st year) is the favoured approach: we have assessed that they are the only organisation delivering the necessary holistic, multi-sector approach which is customised to regional and country level challenges, that is required to lead to fundamental change**.** Similar initiatives exist in this field, such as the Blue Action Fund and the Global Fund for Coral Reefs, (see Annex E), but while there is complementarity, ORRAA is sufficiently different to warrant separate investment. ORRAA is the only multi-stakeholder alliance working in the ocean finance space that brings insurers, bankers, governments, multi-lateral entities, academics and civil society to work together across geographies to innovate and collaborate specifically on coastal protection and resilience, by pioneering, piloting and scaling innovative finance products that invest in NbS. A strength of the Alliance is its ability to mobilise and scale up a variety of pilot projects quickly, that in combination across the programme, work to address the multipliers of ocean risk (overexploitation of resources, poverty, habitat loss).

ORRAA have access to a variety of delivery partners, as well as an established working relationship with larger, less agile organisations. The UK through Defra can benefit from this in terms of access to a wider pool of project partners and expertise without compromising on the advantages of being able to interact directly with funding recipients or steer the programme of projects through the UK's position on the ORRAA Steering Council.

The track record of the Global Resilience Partnership[53], their hosts in the Stockholm Resilience Centre and the influential role of the UK within the steering group provides the confidence that this is the best investment to achieve the desired outcomes.

Our preferred funding option is for a [redacted] investment in year 1, funding a range of priority delivery and research projects alongside funding the cross-cutting work of the

[53] ORRAA, whilst a new Alliance, is co-hosted by the Global Resilience Partnership (GRP)

secretariat, to enable the full potential of ORRAA to be realised – and the 'step change' in finance for marine NbS.

3. Commercial Case

3.1 Competency of the delivery organisation

ORRAA is led by a secretariat combining the expertise of AXA XL, the Global Resilience Partnership and Ocean Unite. Its work is driven by its members, singularly focused on delivering its three priorities, and strengthening the pipeline of financial products that incentivise investment in coastal natural capital.

ORRAA's expertise comes from leading figures in the insurance and banking sectors who have track records of delivering action in their own fields. These individual actors have been brought together as a partnership to effectively deliver change and their roles and responsibilities are outlined in Annex H.

3.2 Due diligence

The Project Manager has undertaken due diligence checks against the delivery partner, this includes the Defra Group Commercial due diligence checklist which found no issues and a scored a green recommendation meaning very limited risks.

ORRAA completes due diligence on all its project partners, a process undertaken by the Secretariat in accordance with GRP processes that are governed by Stockholm University. Any partners that are provided funding, must agree to all GRP due diligence processes including:

- Completing an organisational self-assessment
- A risk register that is regularly updated
- Annual audits
- Financial reports
- Site visits where appropriate
- Narrative reports and evaluations

3.3 Why is the proposed funding arrangement the right one for this intervention, with this delivery partner?

Having considered the alternative options to deliver the desired outcomes of this business case, such as competing this opportunity, the conclusion was that a direct award to ORRAA is the most optimal route to market due to their specialised offering. ORRAA is the only multi-stakeholder alliance working in the ocean finance space that brings insurers, bankers, governments, multi-lateral entities, academics and civil society to work together across geographies to innovate and collaborate specifically on coastal protection and resilience, by pioneering, piloting and scaling innovative finance products that invest in NbS.

3.4 Management and governance

The ORRAA Secretariat is co-hosted by the Global Resilience Partnership (GRP) and Ocean Unite and will be until such time as an independent legal entity is incorporated

to take on this role. ORRAA has engaged [redacted], to develop a proposal for an organisational development pathway towards becoming an independent organisation, the transition is expected to take place in the next 12-18 months.

ORRAA has an advisory body known as the Steering Council, governed by the 'ORRAA Interim Governance Terms of Reference', its purpose is to help ensure the delivery of ORRAA's Mission, and to activate its members' capabilities, resources and networks to increase the scale and impact of the work of the Alliance. The objective of the Steering Council is to help set the overall strategic direction for the ORRAA Secretariat, including guidance on ORRAA's strategy, objectives, plans, and programmes. The Steering Council ensure a good geographical and gender balance, and an appropriate mix of experiences to address the different dimensions of ocean risk and resilience.

Seats 1 - 3: Representatives from civil society and the non-profit sector
Seats 4 - 6: Representatives from the Private Sector
Seats 7 & 8: Representatives from multilateral organisations
Seats 9 & 10: Representatives from SIDS and LDCs
Seats 11-15: All donors above US$1million

Figure 3 Seat allocation on the ORRAA Steering Council

The ORRAA Steering Council has two Co-Chairs drawn from its membership. For its first two years, the Co-Chairs of the Steering Council are AXA and Ocean Unite representatives. After the initial two years (from 2022), co-chairs will be chosen from amongst the Council members either by consensus, or if this is not possible, by the approval of a majority of the members through a vote. In the case of a tied vote at any meeting, the Chairs will have the casting vote.

Where there are any potential conflicts of interest regarding ORRAA, Steering Council Members will be expected to declare these. When necessary, members will recuse themselves from any discussions where these conflicts could arise. A record of this will be made in the minutes of meetings of the Steering Council.

An identified conflict of interest includes the role of the Centre for Environment, Fisheries and Aquaculture Science (Cefas). Membership of ORRAA is held by Defra on behalf of HMG, however Cefas represent Defra with respect to the day to day relationship. [redacted]. To mitigate this potential conflict of interest, Cefas has been excluded from all discussions and products related to this investment and has been made aware of the conflict of interest. A Programme Board governs the relationship between ORRAA and Cefas. There is a Terms of Reference for Cefas and Defra in regard to the collaboration with ORRAA, in which there is a clause in section 3.1 which states 'specific circumstances or for specific topics, Defra, as HMG lead for ORRAA, may elect to sit directly on the Programme

Board for key meetings', therefore this will be enacted where necessary, including as a measure to mitigate potential future conflicts of interest. A Ways of Working paper is being developed to provide more clarity on how the internal Defra teams – International Blue Finance and Ocean Climate Policy – work together to maximise our leverage of ORRAA membership and the investment described in this Business Case. This also includes mitigation of potential conflicts of interest.

3.4 Safeguarding

ORRAA follows the safeguarding policies of Stockholm University and the Global Resilience Partnership. GRP has a specific whistle blower policy and as part of due diligence and ongoing monitoring, all organisations that are receiving ORRAA funds will need to complete and regularly update a risk register and review policies that include a focus on anti-corruption and safeguarding. [redacted]

3.5 Budget and payment mechanism

The budget for this investment is [redacted], over the period of FY2021/22. However, the intention is to continue funding beyond this date, see section 1.2.3 for more details. The payment mechanism would be through a direct grant award to ORRAA.

3.6 UK domestic subsidy

The funding delivered in this project needs to ensure compliance with the following 3 regimes:

1. World Trade Organisation (Agreement on Agriculture)
2. New subsidy controls under the EU-UK Trade and Cooperation Agreement (Chapter 3)
3. Northern Ireland Protocol Art 10

Relevant WTO and UK subsidy colleagues have been consulted and provided the following advice. The project does not provide support to agricultural producers or processors, so it is outside the scope of the WTO Agreement on Agriculture. However we may need to notify under the terms of the WTO Agreement on Subsidies and Countervailing Measures, the next WTO notification round is in 2023 and we will work with the WTO team to ensure compliance.

Additionally, subsidy colleagues have confirmed that they do not consider this funding to constitute a subsidy and thus not be in scope of the Trade and Cooperation Agreement or the Northern Ireland Protocol Art 10.

3.7 Commercial risks

The key commercial risks in this investment include:

- Limited control over where and how our funds are spent.

- Fluctuations in exchange rates could cause a reduced sum of money. In the event of adverse currency movement, there will be reduced potential for project delivery
- Difficulty in attributing every £ to specific activities and outcomes

Those mentioned above are discussed further within the management case risk register (section 5.5) as well as the mitigating actions.

4. Financial Case

4.1 Nature and value of the expected costs

To help ORRAA develop innovative finance solutions that reduce vulnerability and build resilience to ocean risk this project requires a direct grant into ORRAA, to go towards implementation of projects and to support the Secretariat function. The total funding for this project is [redacted] a one-year direct grant from Defra (2021-22).. The costs of this project are [redacted] RDEL. Consolidated Budget Guidance (CBG) states capital spend is unrequited transfer payments which the recipient must use to buy capital assets; buy stocks or repay debt. Of the activities and outputs set out in the Strategic Case, none of the spend meets the capital definition.

Table 4 Project budget breakdown by funding area

Funding area	Estimated cost
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

This funding will come from Defra's ODA budget and is affordable for financial year 2021-2022, the project timeline is expected to start in May 2021 and end March 2022.

Managing public money recommends all public funds are not paid for in advance of need. However, as a new alliance (established as a G7 Initiative in 2019), ORRAA will require funds in advance as they do not have funds available. This will allow ORRAA to purchase and set up what is required for delivery of the project, examples of what will purchased include IT equipment and software, communications support and outreach tools, staffing cost and operation costs. The Defra Financial Governance team have given approval for payment in advance.

For each payment, ORRAA shall present a request for payment that includes the information identifying the amount required as well as a budgetary forecast providing a detailed estimate of eligible costs for the period.

4.2 How will funds be paid out?

This project will be entirely financed through a direct grant.

Payments will operate on a basis of quarterly advance payments (subject to budgetary forecast and cash flow requirements) up to a maximum ninety-five percent of the total contribution, with the remaining amount paid upon approval of the final report. This structure replicates the agreement between ORRAA and Canada in FY20/21. The grant agreement will outline milestones and how performance will be evaluated to release further payments.

Table 5 Payment schedule

Milestone	Expected date of invoice	Estimated amount of funding payable (illustrative purposes only)
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

4.3 Accounting Officer Tests

Affordability (and financial sustainability): the first year of this investment has an allocated budget from financial year 2021/22, subsequent investment will be delivered subject to the agreed availability of future budgets.

Regularity: the project will be managed in accordance with HMT's Managing Public Money guidance and in line with the Defra ODA guidance. Legal powers are in place through the International Development (Official Development Assistance Target) Act 2015. This project meets the ODA requirement that the activity must promote the economic development and welfare of developing countries as its main objective.

Propriety: ODA funding will be allocated under Section 1 of the International Development Act 2002 and expenditure will be in accordance with this legislation and all ODA requirements. The project will not breach any parliamentary control procedures or expectations, Defra Board governance structures will be followed which are guided by the Corporate Governance Code. Additionally, payment in advance has been approved by the Financial Governance team.

Value for money: the recommended option for funding has been appraised carefully against alternatives, including a do nothing option as well as alternative funding mechanisms and delivery approaches.

Feasibility: the need for investment has been outlined in the strategic case, the investment can be realistically be implemented accurately, sustainably and to the intended timescale.

4.4 Front Line Delivery Costs

Within HM Government, managing the UK's contribution, as well as influencing and participating in key decisions, will require the below staff (full time equivalent (FTE)). Front Line Delivery (FLD) will be funded separately outside of the project budget, the Defra International Blue Finance team has sufficient budget under the current SR to fund staffing costs.

Table 6 Front Line Delivery breakdown

Internal HM Government staff dedication (FTE)	
Grade	**DEFRA**

[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

4.5 International Climate Finance

The UK is committed to spending £11.6 billion over the next 5 years (2021-2026) on ICF. With climate being a strategic cross cutting theme of the BPF a proportion of the programming will be considered as ICF.

Using robust methods based on globally accepted standards, Rio markers,[54] it has been estimated that 100% of the funding given to ORRAA will classified as ICF. This figure will be reassessed throughout the lifetime of the project. The project will follow ICF regulations and reporting, which are already embedded into the BPF Monitoring, Evaluation and Learning (MEL) framework.

4.6 Financial management: monitoring, reporting, accounting

4.6.1 Defra financial management requirements

We require annual audited and quarterly unaudited financial reports from the Delivery partner. Table 7 below sets out the cycle of these reports.

Table 7 Financial requirements

Document	Lead	Description	Cycle	Estimated Deadline
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[54] The Rio Markers have been developed to track ODA flows towards the Rio Conventions, including the United Nations Framework Convention on Climate Change. The Rio Markers are used to mark ODA projects as targeting climate change mitigation and/or adaptation as a principal or significant objective or as not targeting climate change. The Rio Markers offer examples of climate change mitigation or adaptation activities across sectors.

4.6.2 ORRAA financial management requirements

ORRAA is co-hosted by the Global Resilience Partnership at the Stockholm Resilience Centre (SRC) and financial monitoring of funds are managed through the overall Stockholm University (SU) financial system.

The overall turnover of the Stockholm University is around 550 million USD and it has a well-developed financial management system. As a governmental entity, Stockholm University is governed according to Swedish laws and regulations pertaining to all public entities, through this Stockholm University are required to develop an annual financial report for external and public review.

Stockholm University is subject to an annual audit process and individual departments or centres are subject to random internal audits, at least once every 5 years. Procurement is guided by the Stockholm University procurement policy, subject to Swedish public procurement law, which is built on the principles of fair competition, cost effectiveness and minimising social and environmental impacts.

4.7 Financial management

There is no expected accrued costs, leftover funds or interest as a result of this investment. The investment will be paid out in pounds sterling and transferred into US dollars by the delivery partner, therefore there is no financial risk due to fluctuating exchange rates on our side.

4.8 Financial fraud and risk assessment

In line with ODA guidance, Defra expects all organisations to have a zero tolerance approach to fraud and corruption; acting immediately if it is found, working with authorities to bring perpetrators to account and pursuing aggressive loss recovery approaches. A full Fraud Risk Assessment (FRA) has been completed and approved, and a risk register will be kept live and updated throughout the lifetime of the agreement. There are mitigations and procedures in place to combat residual risk. We are satisfied from the FRA and the due diligence checklist (referred in section 3.2) that ORRAA have adequate systems in place to detect and combat fraud.

ORRAA will use the rules and regulations of its co-hosts to mitigate fraud and risk. GRP has various routines and procedures in place for due diligence, including a risk register, self-assessment form as well as a decision memo for downstream partners. ORRAA will also follow the Stockholm University set of rules and regulations, as well as the policies in place for fraud and corruption.

Ocean Unite (OU), the other co-host of the Alliance, has a specific set of policies to combat financial fraud and any abuse of power and corruption which are included in all contracts and require contractors to adhere to its policies and standards. Any funds that flow through the GRP/SRC to OU for the delivery of ORRAAs mission adhere to Stockholm University standards and policy requirements.

4.9 Provision for Defra to Withdraw Funding

The scenarios of potential suspension of funding, termination and returns to Defra and how they might be triggered, including by the monitoring and reporting cycle, are as follows:

Table 8 Scenario timing and reporting trigger

Scenario	Timing and reporting trigger (if relevant)
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

5. Management Case

5.1 What are the management and governance arrangements for implementing the intervention?

5.1.1. Governance structure

There will be 2 main pillars of governance supporting this project. Firstly, the existing structure that governs the full membership to ORRAA, this consists of the ORRAA Steering Council, ORRAA Secretariat, Cefas and Defra (more details in section 5.1.3). See figure 4 below for the various formal meetings and agreements set up to manage this relationship. The second pillar will focus on the bilateral funding arrangement between ORRAA and Defra, which will be established to govern this BPF project (see dotted box in figure 4 below).

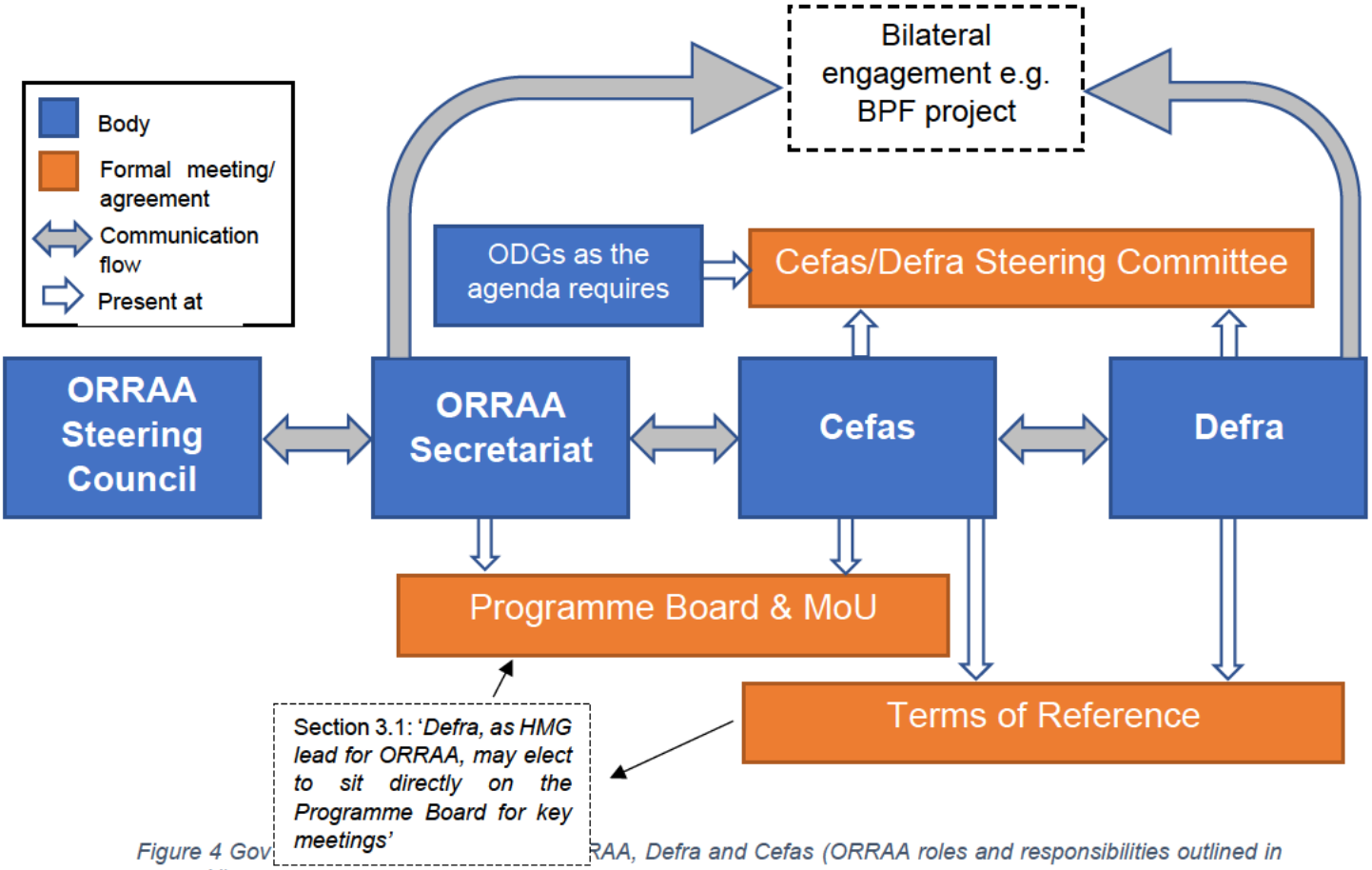


Figure 4 Gov RAA, Defra and Cefas (ORRAA roles and responsibilities outlined in annex H)

5.1.2 Defra management and governance arrangements

A grant agreement will be set out between the UK and ORRAA outlining the management roles and responsibilities of both parties.

The day-to-day management of this project will be undertaken by ORRAA and selected downstream delivery partners, with Defra taking an overarching and decision-making role and reflecting policy priorities from across HMG in their input to ORRAA. Progress will be monitored monthly via meetings between ORRAA and the Defra

project manager (see bilateral BPF engagement in figure 4). The Defra project manager will report to the internal Defra BPF Programme Board, which oversees all BPF investments, their timelines and the potential risks. There will be onward reporting to the Marine & Fisheries programme board, and the BPF Joint Management Board, a joint FCDO-Defra board which retains strategic oversight of the whole Blue Planet Fund.

The UK is already a full member of ORRAA through providing in-kind technical and/or professional support through Cefas of at least $50,000 USD per annum to develop the work programme; directly engage in the Alliance's projects, research and policy work; and attend expert workshops and ORRAA meetings. Until full membership is announced, the UK has observer status on the ORRAA Steering Council. Through the BPF investment, the UK would also secure a formal seat on the Steering Council where the UK would look for opportunities for collaboration and to influence strategic direction. Once both full membership and investment through BPF are confirmed, it is the UKs intention to secure two seats on the Steering Council.

To enable Defra to direct the BPF spend, ORRAA and Defra will establish a separate group to govern funding decisions. This will also mitigate conflicts of interest such as the risk posed by Cefas (more details in section 3.4). The steer for BPF spend will likely be incorporated into the monthly project management meetings, as detailed above.

At present it is acknowledged that there are limitations in wider governance arrangements, such as how many seats the UK will have on the ORRAA Steering Council (given that we are a full member of ORRAA and also provide additional investment on top) and the coordination between the UK and other donors e.g. Canada. However, it is a priority to resolve these limitations and to ensure funding decisions are taken in a transparent and inclusive manner to ensure greatest impact for ORRAA projects and visibility for UK leadership. Efforts to address this in collaboration with ORRAA and Cefas are in progress.

5.1.3 ORRAA management and governance arrangements

The ORRAA Secretariat provides the day-to-day management of the Alliance. The Alliance is hosted by the Global Resilience Partnership at Stockholm University's Stockholm Resilience Centre (SRC).

ORRAA is led by a secretariat combining the expertise of AXA XL, the Global Resilience Partnership and Ocean Unite, see annex H for outline of roles and responsibilities. Its work is driven by its members, singularly focused on delivering its three priorities, and strengthening the pipeline of financial products that incentivise investment in coastal natural capital.

The Alliance Secretariat is guided by a Steering Council of 10-15 representative members to ensure that it is accountable to ORRAA's members (see more details section 3.4). The Steering Council sets the overall strategic direction for the ORRAA Secretariat, including guidance on strategy, objectives, plans, and programmes. It also coordinates with like-minded entities to ensure complementarity of efforts. It ensures

transparency and accountability and that the mission of the Alliance is delivered. The Steering Council meets twice a year, once in person (if possible).

The Steering Council has a delegated responsibility to the Secretariat to make final decisions about which projects should be supported, including the specific geographic or thematic interest of the funder. Steering Council members do not select projects for funding to avoid potential conflicts of interest, as many Steering Council members are also potential/past project delivery partners.

Defra will have a decision-making role, working with ORRAA to select projects from the approved list to be supported by UK funding. The mechanism for this and the way in which this decision-making interacts with the Steering Council and other donors is under discussion. The ORRAA Secretariat selects projects that advance the mission and vision of ORRAA. The following elements in figure 5 must be incorporated.

Figure 5 ORRAA investment criteria elements

5.2 HM Government staffing – Resource Requirements

The project will require minimal Defra resource (see section 4.4 for FLD costs), resources will be mainly required to monitor progress, oversee governance arrangements and take part in ORRAA Steering Council meetings and Defra/Cefas/ORRAA Programme Board and Steering Committee meetings. A combination of the [redacted] will be required to attend these meetings. Please see the FLD requirements in *table 6* of the financial case for cost details, these resources are already in place and do not require recruitment.

5.3 How will progress and results be monitored, measured and evaluate

5.3.1 BPF MEL framework

As a BPF investment, the project will have to follow the BPF Monitoring, Evaluation and Learning (MEL) framework. This sets out how MEL activities will support the BPF to identify what impact it is achieving, which activities and approaches are working or not, help to assess the programme's value for money (VfM) performance, and contribute to the global evidence base for intervention areas.

MEL activities will likely include the below, and will be updated as the process develops:

- **routine monitoring** of activities to track their impact, results and progress, such as through annual reviews, which help departments manage the programme's performance and maintain VfM;
- a process of **mid-term and end-term evaluation** of projects and programmes to assess their contributions and identify if they are meeting or met milestones and expectations for performance and delivery;
- promoting **learning** and building the evidence base where this is weak to inform future programming and adaptive management of projects.
- a **logframe** will be developed (within the next 6 months) in collaboration with ORRAA, detailing a defined set of outputs for the investment with specific indicators, which will allow progress to be monitored. Regular governance meetings will be used to track and review progress and performance.

5.3.2 ORRAA MEL framework

ORRAA itself is monitored and evaluated against a Performance Measurement Framework. Through building and sharing evidence and learning, staff, partners and clients, ORRAA's MEL activities aim to understand if and how ORRAA has had a transformational and sustainable impact and ways in which that understanding can further improve resilience outcomes more widely.

ORRAA and its implementing partners follow the established GRP MEL process, which requires partners to provide a MEL plan as part of their proposal, report progress and learning semi-annually/quarterly and produce a final narrative report. Through MEL activities, GRP will[55]:

- Navigate towards achieving GRP's vision;
- Monitor and evaluate its contribution to resilience and to changing the behaviour, relationships and actions of its stakeholders;
- Generate and integrate knowledge from evaluation through a learn-by-doing approach about what works best to strengthen resilience;
- Translate knowledge into knowledge and evidence products to inform policy and practice,
- Ensure that GRP partners, coalition members and donors are an integral part of GRP's learning process and benefit from knowledge generated by GRP MEL.

5.4 KPIs

5.4.1 BPF KPI requirements

All BPF projects and programmes will be required to report against at least one BPF KPI, but ideally all relevant BPF KPIs. The KPIs are designed to reflect the BPF theory of change and the key poverty reduction and environmental aims of the Fund. BPF

[55] APPENDIX D: GLOBAL RESILIENCE PARTNERSHIP MONITORING EVALUATION AND LEARNING (MEL) PLAN 2021-2024.

KPIs remain under development and methods will be produced to enable projects to report on a greater number of BPF KPIs as the BPF progresses. BPF KPIs mirroring ICF KPIs have agreed and published methods and will be reported on initially.

It is likely that this project will be monitored against the following BPF KPIs, in addition to all relevant ICF KPIs:

- **KPI 1 (ICF KPI 11 & 12):** Volume of finance mobilised for purposes which match BPF objectives.
- **KPI 2 (ICF KPI 1 & 2):** Development Outcome: Number of people, as a result of BPF finance, with improved outcomes: i) income; ii) ability to cope with the effects of climate change; iii) climate resilience
- **KPI 7 (ICF KPI 6):** Net change in greenhouse gas emissions– tonnes of GHG emissions reduced or avoided as a result of BPF finance.

5.4.2 ORRAA KPI requirements

ORRAA uses GRP's Management Information System (MIS) to collate, store, and manage indicator reporting data. The MIS is designed in a modular way that allows for additional modules or functionalities. In addition, the MIS system is based on open-source technology and can be adapted by non-experts, e.g., to accommodate indicators or reporting requirements. The indicator guidance to implementing partners sets out the definitions and guidance for all required indicators (see GRP indicator guidance), all GRP indicators are listed in Annex F.

5.5 What are the risks and how will they be managed?

There are eight key identified risks, detailed in table 9 (page 54), in line with organisational risk management the categories considered include external context, delivery, safeguards, operational, fiduciary and reputational. Of these risks numbers 2 and 3 are considered the biggest risks, RAG rated red. To reduce the likelihood and severity of these risk these priority risks we will work with ORRAA to establish the mitigating actions outlined in table 9, making sure in response to no.2 that COVID-19 planning is embedded into every project. The mitigation of no.3 is already in progress with conversations between other donors and ORRAA underway to establish the future governance structure and ways of working. Should these governance discussions not be resolved before the grant agreement is signed, i the UK will not sign the agreement.

In addition to the above a full risk register will manage project management risks in accordance with HMG guidance and reported to the BPF Programme Board. When appropriate, risks will also be escalated to the BPF Joint Management Board (Defra-FCDO), the Marine and Fisheries Programme Board, as well as the ODA Board

Table 9 Project risks and mitigation measures

No.	Risk type	Risk description	Likelihood	Severity	RAG	Mitigation measure
1	External context	Political instability of countries where ORRAA activities are taking place, which results in	Medium	Medium	Amber	We will work closely with ORRAA to align country focus. We will

		projects not going forward or lack of political buy-in.				work closely with the FCDO across the BPF, ensuring regular updates are made and advice is taken on board.
2	Delivery	COVID-19 impacts delivery of activities due to travel restrictions, as well as reducing the capacity of on the ground delivery partners.	Medium	High	Red	The ORRAA Secretariat and partners are well adapted to working virtually, prior to the pandemic, the ORRAA Secretariat was already carrying out much of its work remotely through regular video conferences with the Secretariat, ORRAA members, and project partners. Going forward the systemic nature of such shocks and stresses will be incorporated into ORRAA's understanding of risk and resilience, particularly how the pandemic will impact economic resilience and exacerbate the impact of ocean risk and climate change on the economies of LDCs and SIDS.
3	Delivery	The wider governance arrangements fail to be established or fall short of what Defra considers to be acceptable, resulting in delays to project delivery and a lack of accountability and transparency	Medium	High	Red	It is a priority to resolve these limitations by negotiating and developing a more formal and transparent project governance structure that is future-proofed and will work if and when more donors invest into ORRAA. Action is being taken in collaboration with ORRAA and Cefas. Should these negotiations fail the UK will not sign the

						agreement and as such not commit to funding.
4	Safeguards	Investment in projects have unintended social or environmental impacts, including Sexual Exploitation, Abuse and Harassment (SEAH)	Low	Medium	Amber	ORRAA are subject to the polices of the Stockholm Resilience Centre and GRP, which has strict policies in place and training and support to prevent sexual exploitation, abuse and harassment (PSEAH). They also use social and environmental analysis tools as part of programme design. All organisations that are receiving ORRAA funds will need to complete and regularly update a risk register and review policies that include a focus on anti-corruption and safeguarding, including PSEAH.
5	Operational	Limited control over where and how our funds are spent.	Low	Low	Green	We will work in collaboration with ORRAA to direct where UK funds are spent. We also have influence over the direction of spend via the ORRAA Programme Board and Steering Committee.
6	Fiduciary	Fluctuations in exchange rates could cause a reduced sum of money. In the event of adverse currency movement, there will be reduced potential for project delivery	Low	Low	Green	Exchange rates will be monitored, and concerns will be raised if there is potential for a large loss of funds. There is possibility to adjust the timing of payments to avoid liquidity risk if necessary, however it should be noted that

						perfect matching may not be possible. ORRAA will need to be able to absorb some currency fluctuations and accept that the total amount the received may slightly differ.
7	Fiduciary	Fund Diversion, including fraud, corruption, bribery, theft, terrorist financing, money laundering and other misuse of funds that prevents funds being directed to the correct purpose	Low	Medium	Green	A zero tolerance to fraud will be taken. A full Fraud Risk Assessment has been completed for this investment, a risk register will be kept and monitored throughout the lifetime of the agreement. ORRAA will follow the rules and procedures of its well-established co-hosts GRP who has various routines and procedures in place.
8	Reputational	Lack of consideration of social and cultural impacts from coastal and ocean development	Low	Low	Green	ORRAA use a multi-sector approach which minimises the likelihood. They work with local delivery partners such as RARE, who contextualise interventions for local contexts and work alongside local delivery partners.

5.7 Safeguarding

ORRAA follows the safeguarding policies of Stockholm University and the Global Resilience Partnership. GRP has a specific whistle blower policy and as part of due diligence and ongoing monitoring, all organisations that are receiving ORRAA funds will need to complete and regularly update a risk register and review policies that include a focus on anti-corruption and safeguarding. Additionally, ORRAA are subject to the polices of the Stockholm Resilience Centre and GRP, which has strict policies in place and training and support to prevent sexual exploitation, abuse and

harassment [redacted] They also use social and environmental analysis tools as part of programme design.

Annex A Blue Planet Fund Background

Identifying we are now at a pivotal moment, the 2019 Conservative Manifesto formally committed to "*establish a new £500 million Blue Planet Fund to help protect our oceans from plastic pollution, warming sea temperatures and overfishing*"[56]. Reflecting the value of the ocean to the development agenda, the Conservative Party earlier stated that this would be "resourced from the International Aid budget".[57]

Recognising, the indivisible link between ocean health and its effect on poverty alleviation and the sustainable development prospects of the world's most disadvantaged communities, the Blue Planet Fund (BPF) will '*protect and enhance marine ecosystems through the sustainable management of ocean resources, to reduce poverty in developing countries'.*

Based on evidence from the World Bank[58], reports by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES); the Biodiversity and Sustainable Development Advisory Council's report into UK Official Development Assistance and the High Level Panel for a Sustainable Ocean Economy; we have identified four key themes that underpin this overarching impact. A specific outcome has been agreed under each theme:

- Biodiversity
  *Improved **marine biodiversity** and livelihoods by protecting and enhancing marine ecosystems, reducing pressures and increasing resilience, and enabling sustainable and equitable access to, and use of, these resources.*

- Climate change
  *Improved resilience, adaptation to and mitigation of **climate change**, particularly through enabling and investing in inclusive nature-based solutions.*

- Marine pollution
  ***Marine pollution** reduced through action on land-based and sea-based sources that also contributes to improved livelihoods and healthier environments.*

- Sustainable Seafood

[56] https://assets-global.website files.com/5da42e2cae7ebd3f8bde353c/5dda924905da587992a064ba_Conservative%202019%20Manifesto.pdf
[57] https://www.conservatives.com/news/vote-blue-go-green
[58] https://www.worldbank.org/en/results/2013/04/13/oceans-results-profile

Seafood *produced and distributed in ways which support healthy ecosystems, do not overexploit marine stocks, provide sustainable inclusive and equitable livelihoods and enhance resilience to climate and socioeconomic shocks.*

Annex B List of example projects for investment

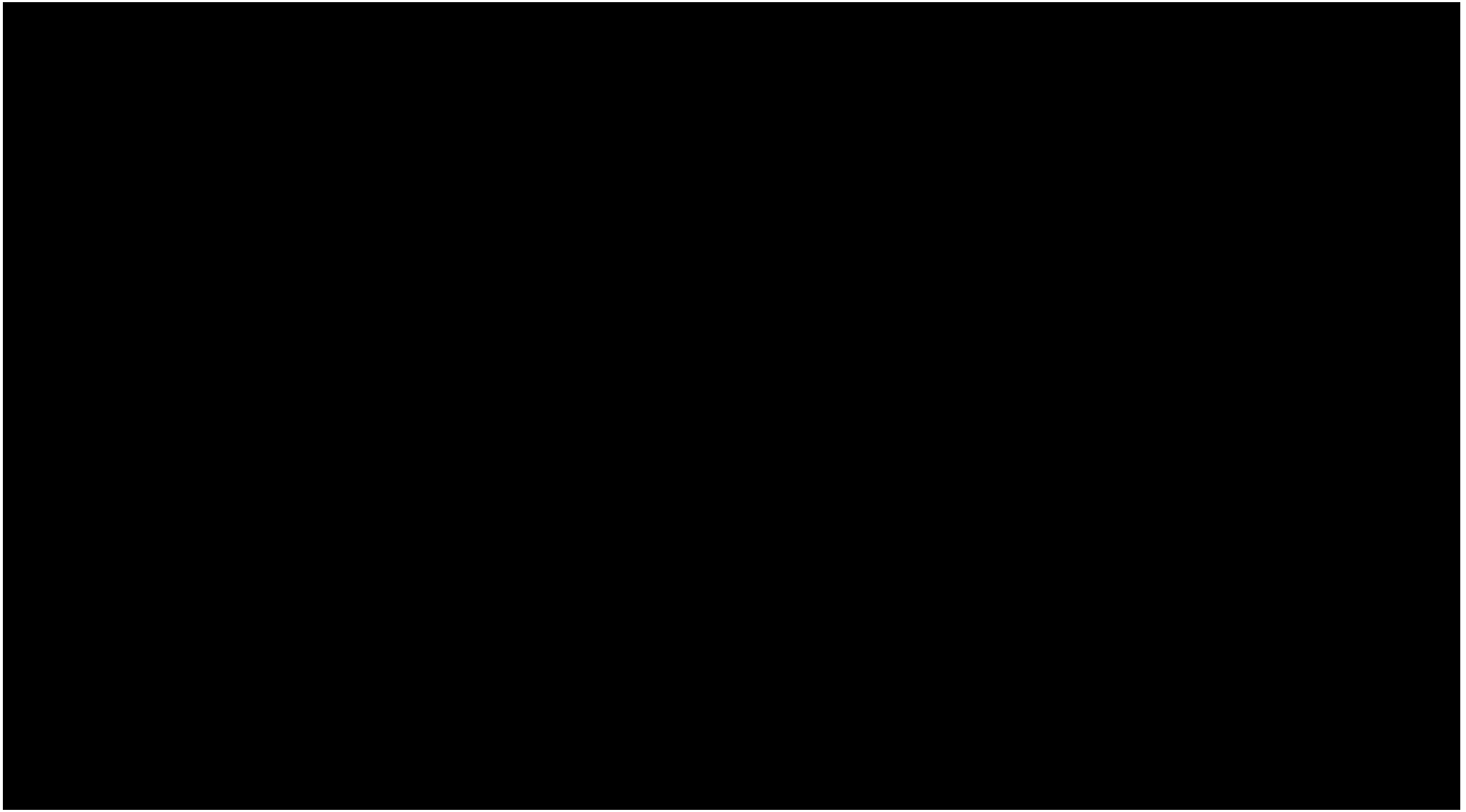
Project Title	Project Partners	Geography	Deliverables/outcomes	Estimated Cost (GBP)
Practice & Innovation projects				
Ocean Resilience Innovation Challenge 2.0	ORRAA	Global	Identify and nurture 6-10 innovative finance solutions to build resilience through investments into coastal natural capital. A communications campaign will support the Challenge, using key channels and platforms to reach potential investors and promote innovative NbS finance	[redacted]
Weather index-based parametric insurance for the economic and ecological resilience of municipal fishing communities in Southeast Asia	Willis Towers Watson, Rare	Philippines	Complete a feasibility study to determine if a temporary subsidy could be provided for via a technical assistance facility to reduce the premium for initial purchasers. Pilot the product across 75-90 coastal municipalities, where Rare already has a footprint, as proof of concept. There are approximately 100,000 fishers in this area and the pilot will target 50% market penetration. Create a roadmap to scale the product throughout the Philippines.	[redacted]
Strengthening the financial resilience of small-scale fishers in the Philippines to reduce climate related risks to coastal communities and their fisheries	Rare	Philippines & Indonesia	Over 300 savings clubs (with cumulative membership exceeding ~5,000 households) with access to basic coverage.	[redacted]
Blue Carbon Resilience Credits Pre-Feasibility	The Nature Conservancy	Papua New Guinea	Feasibility report with recommendations of legal and science gaps to be addressed	[redacted]
Reef Resilience and Risk Financing in the Greater Caribbean	MAR Fund, Willis Towers Watson	Greater Caribbean	Training course on reef resilience and risk financing for Caribbean environmental funds, including training on reef response for at least 1 reef site.	[redacted]

			Novel reef risk financing concepts (including parametric insurance instruments) for at least 2 pilot reef sites in the Caribbean.	
Climate Smart Shrimp Initiative: West Java Pilot Project	Conservation International	West Java, Indonesia	Restoration of 20 ha of mangroves, Enhanced resilience for at least 250 people, Emissions Reductions of 10 MT of CO2/year per ha. Demonstrate the environmental, social, and economic benefits and challenges of Climate Smart Shrimp at the single farm-level.	[redacted]
Climate Smart Shrimp Initiative: Pilot Projects	Conservation International	Options from Indonesia, Philippines, Ecuador & Costa Rica |	*Same as above*	[redacted]
Research & Knowledge projects				
Coastal Risk Index: profiling social vulnerability risk with Nature-Based Solutions	AXA XL, University of California, Santa Cruz	Global, with a focus on emerging markets in the tropical belt	Interactive maps showing the locations where high flood risk and high social vulnerability coincide Indices and maps showing how flood hazard, social vulnerability, and ecosystem protection will change in the next 30 years as a result of climate change.	[redacted]
Identifying stranded ocean assets and resources	Stockholm Resilience Centre	Global focus, with potential focus on specific regional/local case-studies in SIDS and LDCs	A synthesis report on ocean stranded assets and associated risks, from social, ecological, and financial perspectives. Roadmap for policymakers, investors and assets managers to reduce stranding risk across ocean asset classes.	[redacted]
The Climate and Ocean Risk Vulnerability Index: Measuring Coastal City Resilience to Inform Action (2)	Stimson Center, Western Indian Ocean Marine Science Association (South Africa) &/or Ca Mau Provincial Government, Mekong Environmental Forum (Vietnam)	Durban, South Africa &/or Ca Mau City, Vietnam	Expand the number of CORVI assessments and produce a CORVI risk dataset and coastal city risk profile for 1 or 2 new cities e.g. Durban, South Africa & Ca Mau City, Vietnam.	[redacted]

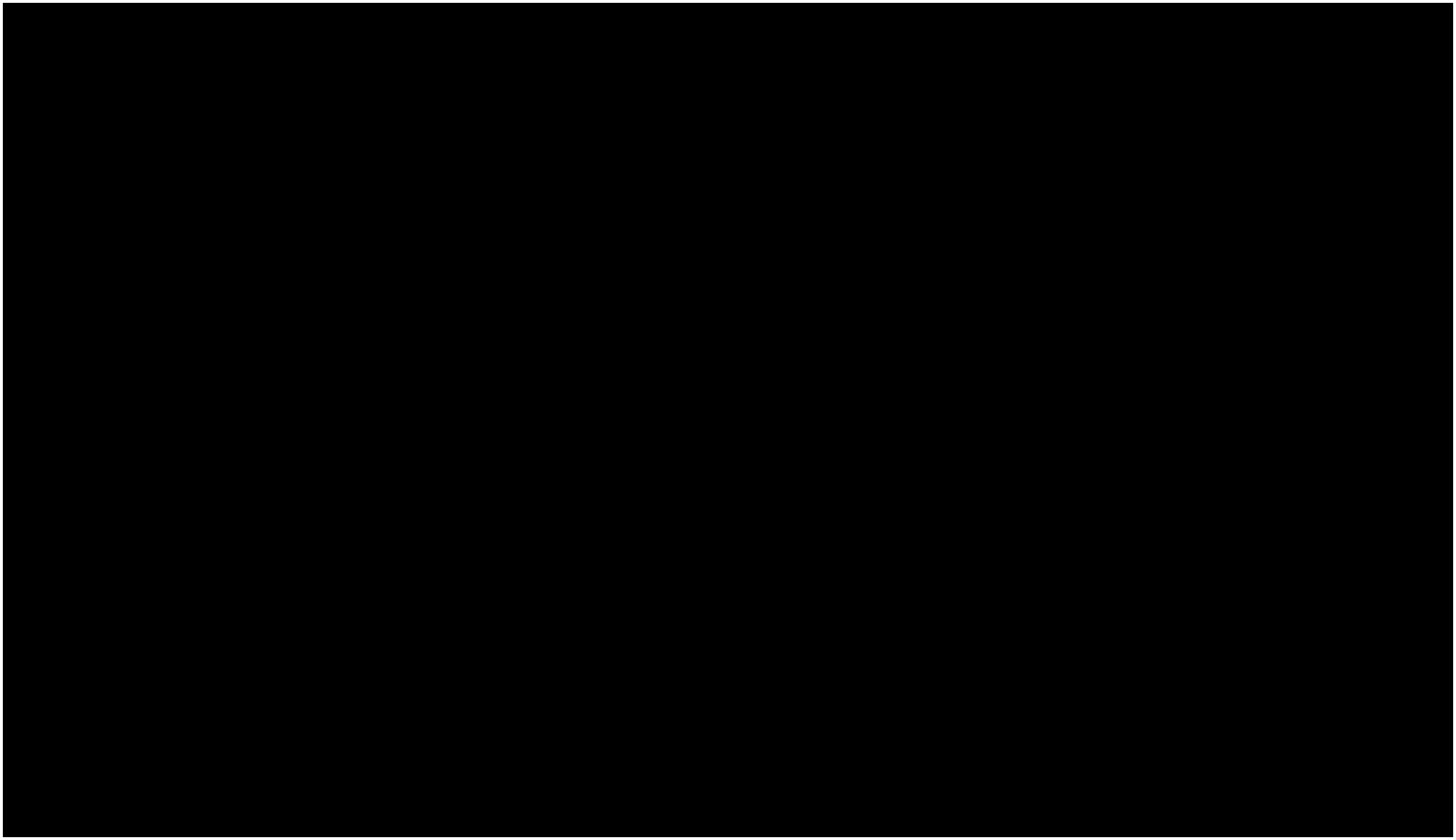
Annex C Comparison of Options with the Blue Planet Fund Investment Criteria

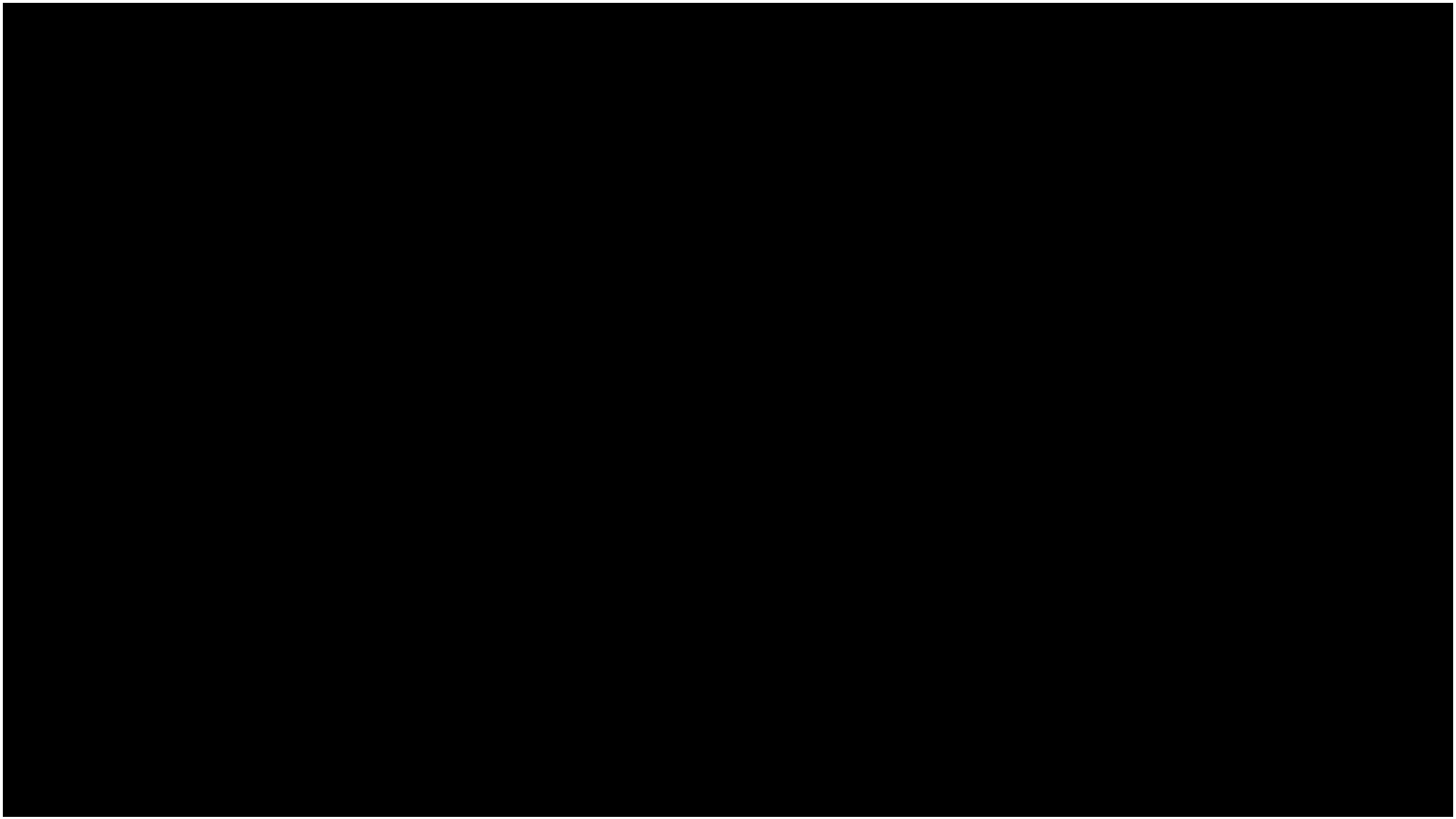
The Blue Planet Fund investment criteria are based on the BPF theory of change, and the principles and conditions which are important for a project to deliver the greatest benefits for the world's poorest, the greatest environmental outcomes and prove value for money. The investment criteria draw upon HMG's Strategic Framework for ODA and aim to help embed its priorities within the BPF's delivery.

Ocean Risk and Resilience Action Alliance

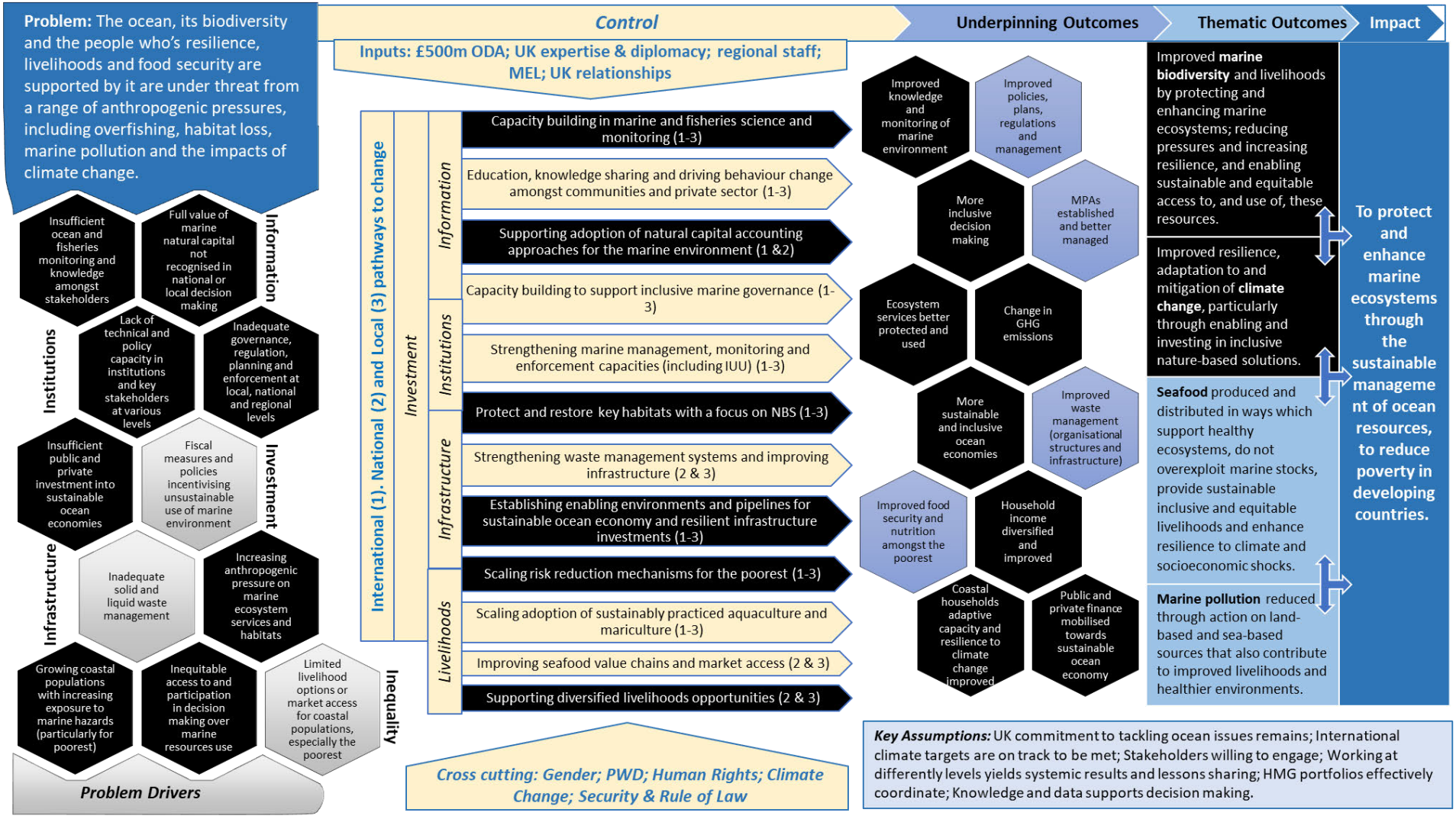


Ocean Risk and Resilience Action Alliance





Annex D Alignment of ORRAA investment with BPF Theory of Change (to update with updated ToC)



Annex E Cross over and connections

Programme	Purpose & objectives	How it differs from ORRAA
Blue Action Fund (BAF)	Provides grants to conservation projects that hope to establish, enlarge or better manage MPAs and promote sustainable livelihoods in coastal communities.	Grants are distributed mainly for marine and coastal conservation projects, whereas ORRAA works to drive investment into solutions that align global finance with conservation outcomes that are carbon neutral and biodiversity positive.
PROBLUE	The World Bank's umbrella multi-donor trust fund, that supports the sustainable and integrated development of marine and coastal resources.	Development of national and sub-national ocean economic activities. Contributions are primarily by government agencies and public financial institutions. Large scale multi-lateral fund with less potential for steering programmes and projects.
Global Environment Facility (GEF)	Set up to tackle our planet's most pressing environmental problems. Provides grants and mobilises finance through co-finances projects around the world.	Development of national and sub-national ocean economic activities. Focus on global environmental benefits, ocean is not the sole focus.
Global Fund for Coral Reefs (GFCR)	Multi-partner Trust Fund for SDG 14[59] which integrates public and private grants and investments. Main objective of saving coral reef ecosystems and uplifting reef-dependent communities from poverty and lack of economic opportunities.	The GFCR will offer risk equity capital and grant funding to deliver impactful projects with particular attention on SIDS). The Fund is focused on coral reefs, whereas ORRAA consider projects to support a range of coastal habitats and natural capital.
Blue Natural Capital Financing Facility	IUCN managed, it supports the development of sound, investable blue natural capital projects with clear ecosystem service benefits, based on multiple income streams and appropriate risk-return profiles.	Helps to reduce the risk of natural capital investments and is focused delivering adaptation and resilience benefits specifically of blue carbon habitats. Partners include well established blue carbon networks. BNCFF is managed by IUCN and has fewer, less cross-cutting delivery partners than ORRAA. Potentially less opportunity to influence programme direction.

[59] The UN Sustainable Development Goal 14: 'Life Under Water', the aim of this goal is to conserve and sustainably use the oceans, seas and marine resources for sustainable development. There are 17 Sustainable Development Goals (SDGs) in total, adopted by all United Nations Member States in 2015, which are an urgent call for action by all countries - developed and developing - in a global partnership.

Sustainable Blue Economy Finance Initiative	Hosted by UNEP Finance Initiative, Galvanising the financial community around the Sustainable Blue Economy Finance Principles.	A platform, which brings together institutions to work with scientists, corporates and civil society.
Conservation Finance Initiative	Coalition for Private Investment in Conservation (CPIC) initiative. Aims to improve the conservation and sustainable use of biodiversity by demonstrating innovative finance blending models to increase return-seeking private investments.	Supporting blended finance in conservation.
InsuResilience Global Partnership	The InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions was launched at the 2017 UN Climate Conference in Bonn as a V20- G20 initiative. The central objective is to enable more timely and reliable post-disaster response and to better prepare for climate and disaster risk through the use of climate and disaster risk finance and insurance solutions, reducing humanitarian impacts, helping poor and vulnerable people recover more quickly, increasing local adaptive capacity and strengthening local resilience	Scope of InsuResilience is very broad, with over 75 delivery members. It does not have a specific marine focus and ORRAA are engaged with the Partnership on areas for potential future collaboration.

Annex F Indicators

Code	Indicator	Unit	Type	Frequency
GRP 1	People supported by GRP	No.	Output	Semi-annual
GRP 2	Net dollar benefit per person	USD	Outcome	Final report
GRP 3	People more resilient	No.	Impact	Final report
GRP 4	End users satisfied with support	No.	Outcome	Final report
IP1a	Policies engaged with	No.	Outcome	Final report
IP1b	Policies proposed / adopted	No.	Outcome	Final report
IP1c	Policies implemented	No.	Outcome	Final report
IP2a	Investments mobilised by GRP grantees	USD	Outcome	Final report
IP2b	Investments directly leveraged through GRP	USD	Outcome	Final report
IP2c	Investments indirectly leveraged through GRP	USD	Outcome	Final report
IP3a	End users engaged with the project	No.	Output	Semi-annual
IP3b.i	People trained	No.	Output	Semi-annual
IP3b.ii	Uptake of financial services	No.	Output	Semi-annual
IP3b.iii	Users of EWS or climate information	No.	Output	Semi-annual
IP3b.iv	Users of other GRP innovations	No.	Output	Semi-annual
IP3c.i	Area under innovations	Ha.	Outcome	Final report
IP3c.ii	Value of financial services provided	USD	Outcome	Final report
IP3c.iii	Jobs created	FTE	Outcome	Final report
IP4a	Knowledge products generated	No.	Output	Semi-annual
IP4b	People accessing knowledge products	No.	Outcome	Final report
IP4c	Organizations receiving assistance	No.	Output	Semi-annual
IP4d	Partnerships formed	No.	Output	Semi-annual
IP4e	Organizations increasing profit or self-sufficient	No.	Outcome	Final report

The table above aims to estimate the potential finance leveraged which can be attributed to the UK. There are a range of uncertainties in displacement, in co-funders and achievement of the target, but we can make illustrative estimates of the proportion of finance and attribution of UK investment.

As a starting point, we use ORRAA's target of leveraging $500m USD of private investment for marine nature-based solutions by 2030, (~£392m) and in the central scenario, apply an optimism bias to this ambitious target, reducing by 40% so that ORRAA is assumed to achieve 60% of this target. This optimism bias is based on the newness of the organisation: we will have more confidence in following years, once initial financial products have been established, there is greater certainty in co-financing from other public and private donors and there is a stronger track record for ORRAA as an organisation independent of the Stockholm Resilience Centre.

Since we do not have an accurate baseline of how finance for NbS would have increased in the absence of ORRAA, we adjust down this total amount, assuming that in the absence of ORRAA (and the UK's intervention) there may have been an increase in finance for marine NbS from other initiatives. We reduce the total attributed only to ORRAA by [redacted] which leads to the range in row 4 above.

In terms of the UK's contribution to this, as the starting point, we assume that the UK only invests for one year. We assume, in row 4a, that ORRAA is more effective in mobilising finance where there are a greater number of co-donors. We assume that, over the next 5 years, there will [redacted] in public and private investment in ORRAA. This means that the UK contributes [redacted]

of the total finance invested in ORRAA under option 6 and 7 and [redacted] in option 8. Taking this proportion, we can apply to the total amount of private finance leveraged to calculate a leverage ratio – and the assumption of the amount of private finance which could be mobilised by 2030 from the UK's initial y1 investments.

Based on assumptions of the lowered effectiveness of ORRAA's action without wider support for the secretariat, the total finance leveraged is estimated to be **higher** under option 6 – where the UK supports the wider functions of ORRAA.

Annex H ORRAA Roles and Responsibilities

Roles	**Responsibilities**
Global Resilience Partnership	Co-host
AXA XL	Co-chair Steering Council
Ocean Unite	Co-chair Steering Council Co-host
ORRAA Secretariat *Global Resilience Partnership, AXA XL & Ocean Unite*	Day to day management of ORRAA Permanent observer of the Steering Council Attend Steering Council meetings to take minutes Make final decisions about which projects should be supported Engage bilaterally with steering council members and full ORRAA members
ORRAA Steering Council *See make up in management case figure 3.*	To guide the Secretariat and set strategic direction Commitment to promoting ORRAA's mission and objectives. They are expected to collaborate in a spirit of trust, mutual respect, effective and transparent communication, and continuous learning. Attend and contribute to meetings and help set the Alliance's agenda; Contribute to reviews of ORRAA strategies and other outputs; Respond to consultations and calls for advice on specific topics; and, Help ensure the voices and views of the communities ORRAA serves are heard in Steering Council discussions. Assist with fundraising for the Alliance
ORRAA full members	Help set ORRAAs objectives and strategy and remain engaged on its progress. Commit to collaborate, share knowledge, coordinate and catalyse innovations.

See list of all members here: https://www.oceanriskalliance.org/about/membership-and-governance/#full-members	Identify gaps and opportunities and engage to fill them through new programmes and investments. Work together to communicate and highlight what effective action is and the policy and institutional changes that are needed. Support ORRAA, either through funding joint actions or activities, core funding, secondment of staff, project/product development and/or other in-kind contributions (e.g. coordinating and sharing information).
ORRAA delivery partners *e.g. Oceana, MAR Fund, World Economic Forum, full list here: https://www.oceanriskalliance.org/about/membership-and-governance/#full-members*	Either leading the work on the ground to make the project outcomes a reality, or key thought-leaders in the field critical to the delivery of the project objectives and outcomes. May be invited to Steering Council meetings for the discussion of specific agenda items.