Global Fund for Coral Reefs Investment Plan 2021 – Annexes

GLOBAL FUND FOR CORAL REEFS

Annex 1 GFCR Theory of Change Outcomes and potential outputs

Outcome	Potential outputs	Potential revenue streams
Outcome 1: Protect priority coral reef sites and climate change-affected 'refugia'		
Strategic coral reefs are protected (i.e. reefs with high biodiversity or produce ecosystem services; climate refugia and natural 'seed banks' with assigned value to protect intellectual property and patents[1]) and ecosystem resilience is increased in the face of climate change. Degradation drivers of coral reefs are mitigated or eliminated.	• Increase in well managed and enforced MPAs and LMMAs that protect and promote healthy reefs • Entrepreneurial MPAs • Increase in scientific studies on identifying climate refugia • Water quality/land-ocean interface projects roll-out to protect coral reefs • Elimination of destructive fishing practices and harmful gear from protection sites • Establishment of 'no-take' zones and nurseries within protected areas • Legal advice on intellectual property, potential uses and patents related to climate-resilient corals located in refugia	• Ecotourism user fees • Debt-for-nature/adaptation swaps • Eco-resorts • Special use permits • Visitor centers • Biodiversity offsets • Blue carbon credits • Impact bonds • Patents • Provision of legal advice and expertise • Sale of seeds and fragments, storage of seeds and fragments, and coral farming
Outcome 2: Transforming the livelihoods of coral reef-dependent communities		
Reduced reliance and unsustainable practices in coral reef ecosystems as people are made aware of the crisis and motivated to make and support pledges to take positive action at scale. Transition to sustainable fisheries and tourism. Private sector-led investments funneled into alternative livelihoods and reef-first businesses.	• Community-based projects for sustainable fisheries, seaweed farms, aquaculture, tourism, etc. • Sustainable value chain development and educational programmes to build skills for alternative careers and livelihoods • Women empowered through capacity building and safety nets • Reef-first businesses • Economic valuation of coral reefs and ecosystem services • Communication and educational campaigns to drive and sustain behavioral change	• Sustainable fisheries (e.g. export sales from high value fish products including premiums for sustainability) • Sale of seaweed or other marine based products • Eco-tourism SMEs • Waste management systems • Bioprospecting
Outcome 3: Restoration and adaptation technologies		
Coral reef restoration and adaptation technologies are made scalable, cost-efficient, and applicable to a variety of regional	• Restoration technologies developed and piloted • Strategies for high-impact restoration • Strengthened national policy frameworks based on robust business	• Fees for workshops and training for reef restoration and on new technologies • Sale of new technologies

[1] See https://qz.com/1305587/basf-owns-the-majority-of-the-worlds-patents-on-the-genes-of-sea-creatures.

contexts; with proven outcomes for ecological resilience.	cases for coral reef restoration and maintenance • Restoration guidelines and training on coral reef restoration • 'In situ' water restoration projects • Identification of priority restoration sites within targeted MPAs	• Green-grey solutions for coastal and beach protection • Fee for services to apply and provide technology training • Insurance schemes • Reef restoration ecotourism • Biodiversity offsets • Debt-for-nature/adaptation swaps • Payments for ecosystem services
Outcome 4: Recovery of coral reef-dependent communities to major shocks		
Reef-dependent community livelihoods are more resilient to shocks, avoiding a resurgence of drivers of degradation for coral reef ecosystems. MPA management and enforcement operations are equipped to continue functioning during periods of crisis.	• Mechanisms in place for rapid financial support to reef-first SMEs and MPAs impacted by shocks. This includes the use of parametric reef insurance. • Crisis plans in place to mitigate impacts from supply chain disruptions, bleaching events, health crises, etc. • "Blue" stimulus packages to help recovery after shocks. • Alternative temporary employment during periods of crisis to aid recovery efforts and provide sources of income for those that have lost their livelihoods. • Rapid material deployment to deal with crisis	• Grants • Parametric reef insurance • Impact bonds • Government assistance for recovery efforts

Annex 2 Coral Reefs, Climate Change and Communities: Prioritising Action to Save the World's Most Vulnerable Global Ecosystem

Report prepared by Peter Smith (UNDP Consultant), Penny Stock (UNDP), Gabriel Grimsditch (UNEP), Maxime Philip (GFCR Global Team) and David Meyers (CFA). 2021

2.1 Coral reefs and climate change

The consequences of climate change are already significant and will intensify into the future with average global temperature expected to increase by 1.5–4.8 C by 2100 and precipitation patterns predicted to undergo spatial and temporal alterations among other major impacts (IPCC 2014). For the global marine environment, the average sea surface temperatures (SST) of the Indian, Atlantic and Pacific oceans have already increased by 0.65, 0.41, and 0.31°C from 1950–2009[2] (figure 1). Average global sea levels are increasing by an average of 3.2 mm year−1 (over 1993–2010) because of thermal expansion from warming seas and the melting of land ice (IPCC, 2013). Under current climate trajectories (RCP 8.5), the sea surface temperate (SST) across six major coral reef ocean provinces (figure 2) is expected to rise an additional 0.67 to 0.83°C by 2040 and 2.66 and 3.14 °C by 2100. Even under moderate emissions scenarios (RCP 4.5), the SST in the major coral regions is expected to rise between 1.18 and 1.44°C by the end of the century.

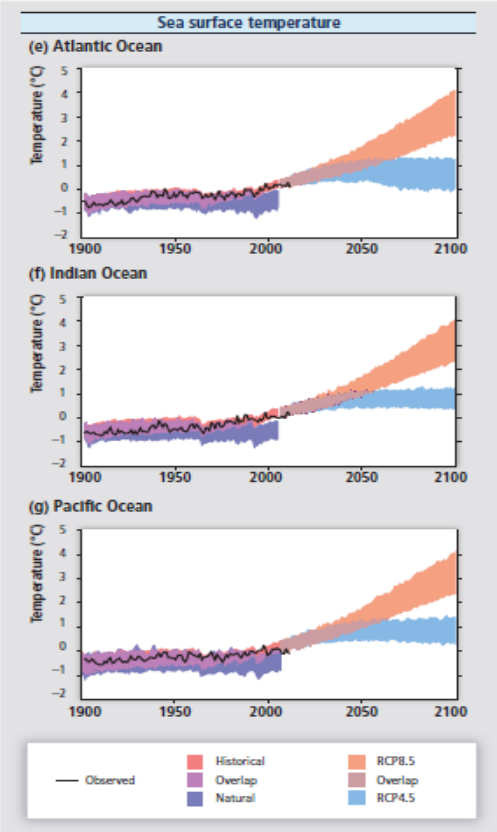


Figure 1. Sea Surface Temperature Projections

This rapid climate change poses a significant threat to biodiversity at all levels of biological organisation[3]. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) ranks the existing level of climate change as the third most significant current driver of global biodiversity loss after changes in land and sea use and direct exploitation of organisms. Detrimental climate change effects have already been observed, including shifts in species' ranges, altered timing of key seasonal events destabilizing marine food-webs and other ecological relationships, and extinction of populations and species. However, the significance of climate change as a driver of biodiversity loss is expected to accelerate over the coming decades. A synthesis conducted by the IPBES estimates that 5% of species around the world are at risk of climate-related extinction at 2°C warming, and 16% of species are at risk at 4.3°C warming.

Coral reef ecosystems are one of the most vulnerable ecosystems across the globe and although there are many local factors influencing the health and longer-term resilience of coral reefs, climate change has emerged as a dominant and rapidly growing threat (IPCC 2014; figure 2).[4] Warming oceans are linked to increase risk of widespread regional mass coral bleaching. Corals can recover from single bleaching events over several years, but only if temperatures return to normal and there are limited local stressors. Unfortunately, recent global studies have shown that the median time between pairs of

[2] Hoegh-Guldberg, O., R. Cai, E.S. Poloczanska, P.G. Brewer, S. Sundby, K. Hilmi, V.J. Fabry, and S. Jung, 2014: The Ocean. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1655-1731.

[3] Hoegh-Guldberg, Ove, Elvira S. Poloczanska, William Skirving, and Sophie Dove. "Coral reef ecosystems under climate change and ocean acidification." Frontiers in Marine Science 4 (2017): 158.

[4] Hawthorne L. Beyer et al (2018) Risk-sensitive planning for conserving coral reefs under rapid climate change Conservation Letters. 2018;11:e12587

severe bleaching events has reduced from an average of once every 27 years in the early 1980s to once every 5.9 years in 2016.[5]

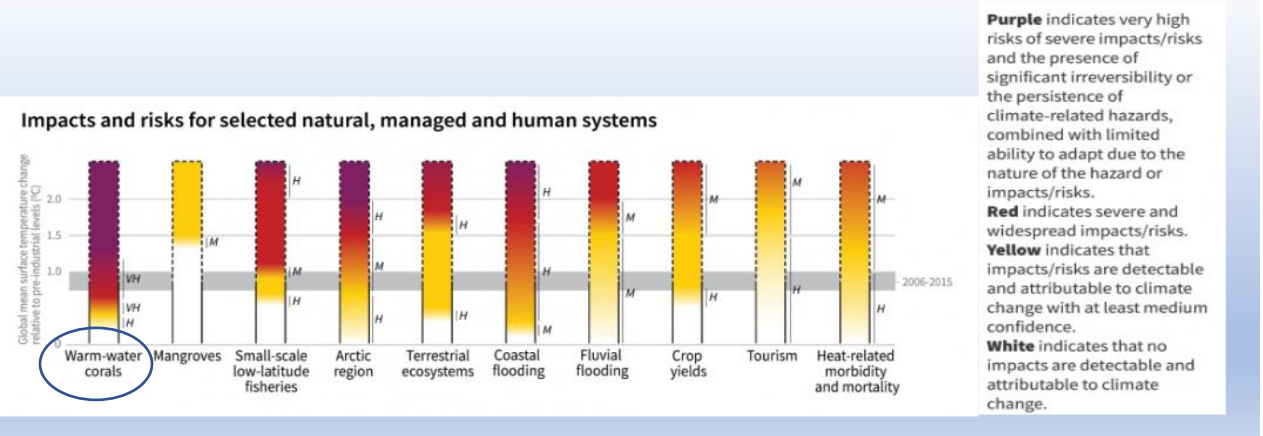
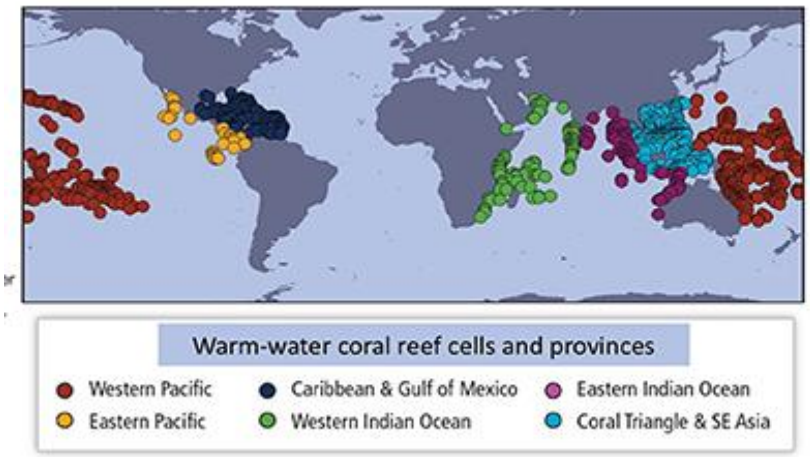


Figure 2. Global Warming and comparative risks to natural and human systems[6]

Figure 3. Coral Reef Provinces (Hoegh-Guldberg et al. 2017)



Globalized and intensifying anthropogenic impacts on coral reefs, coupled with warming seas and changing ocean chemistry (such as ocean acidification), have transformed coral and fish communities, reduced coral growth rates, diminished reef ecosystem resilience, undermined structural integrity of coral skeletons, and severely weakened their ability to continue providing valuable ecosystem goods and services to people. Half of the world's live coral cover has been lost over the last 30–50 years due to these anthropogenic and climate pressures. Local pressures have also severely impacted 60% of all reefs and the combination of local anthropogenic disturbance and ocean warming means that up to 75% of reefs are already considered threatened.[7] It has been well documented (REFS) that local drivers of reef degradation not only directly harm reef but also decrease coral reefs' resilience to climate impacts. Of even greater concern is that even lower greenhouse gas emission scenarios (such as Representative Concentration Pathway RCP 4.5) are still likely to drive the elimination of most warm-water coral reefs by 2040–2050. Coral reefs are projected to decline to 10-30% of former cover at 1.5°C warming and to less than 1 per cent at 2°C

[5] Hughes et al., Spatial and temporal patterns of mass bleaching of corals in the Anthropocene Science 359, 80–83 (2018)

[6] IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)].

[7] L. Burke, K. Reytar, M. D. Spalding, A. L. Perry, Reefs at Risk Revisited (World Resources Institute, The Nature Conservancy, WorldFish Center, International Coral Reef Action Network, UNEP World Conservation Monitoring Centre, and Global Coral Reef Monitoring Network, Washington, DC, 2011).

warming (IPBES 2019). **At the current rate of warming (RCP 8.5), the coral biome could be effectively extinct (<1% live cover) by the middle of this century**.

Cumulative pressures from global climate and ocean change combined with multiple regional and local-scale stressors pose fundamental challenges to coral reef managers worldwide. Increasing levels of atmospheric carbon dioxide increase the risk of degradation and loss of shallow, warm-water coral reef ecosystems via two key global environmental stressors: i) elevated sea surface temperature (that can cause coral bleaching and related mortality), and ii) ocean acidification (OA). Ocean acidification has several deleterious impacts on coral species. Principally, it reduces the concentration of carbonate ions that corals need to construct their skeletons and can also significantly impair other ecological and physiological functions such as larval recruitment.[8] Of particular concern is that the combination of increased OA and thermal stress have a greater harmful effect on both larval success and growth rates than either factor alone.[9] This could make coral recovery even more difficult as both stressors can occur simultaneously under increasing carbon dioxide concentrations.

Although the decline in coral reefs is a globally consistent phenomenon (with all reefs showing some form of decline), the rate and extent of reef condition decline contains significant regional and localised variation due to both variation in global and regional ocean conditions and the intensity of local stressors. The western Atlantic appears to have warmed sooner than other areas and began to experience regular bleaching events sooner than most other locations. The abundance of reef building corals had already declined across the Caribbean by more than 80% by the turn of the millennia (1977–2001; Gardner et al., 2003). This is in addition to the problems of intense local stressors on coral reefs in the region where, by the end of last century, there had been dramatic phase shift from corals to algae occurring on Jamaican reefs (Hughes, 1994). The coral cover within the Great Barrier Reef, declined by an estimated 51% during this same period.

A global study of bleaching over the last two decades reinforces this regional and localised variation with significant coral bleaching being more widespread and significant within the Caribbean (figure 4). Nevertheless, even within these broad regions there are localised reefs where bleaching has either not occurred or has occurred with lower frequency or intensity.

Figure 4: A global analysis of coral bleaching over the past two decades[10]

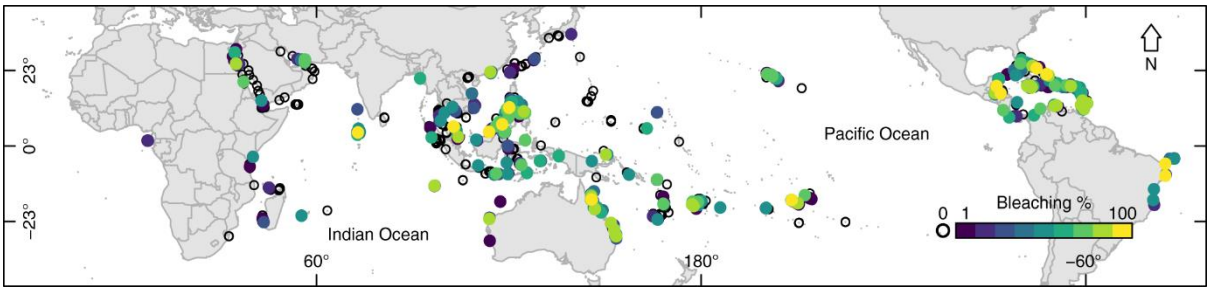
[8] Pendleton L, Comte A, Langdon C, Ekstrom JA, Cooley SR, Suatoni L, et al. (2016) Coral Reefs and People in a High-CO2 World: Where Can Science Make a Difference to People? PLoS ONE 11(11): e0164699. https://doi.org/10.1371/journal.pone.0164699

[9] Albright R, Mason B. Projected Near-Future Levels of Temperature and pCO2 Reduce Coral Fertilization Success. PLoS One. 2013;8. pmid:23457572

Hoegh-Guldberg, Ove, Elvira S. Poloczanska, William Skirving, and Sophie Dove. "Coral reef ecosystems under climate change and ocean acidification." Frontiers in Marine Science 4 (2017): 158.

Burke, L., K. Reytar, M. Spalding and A. Perry. (2011). Reefs at Risk Revisited. World Resources Institute: Washington D.C.

[10] Sully, S., Burkepile, D.E., Donovan, M.K. et al. A global analysis of coral bleaching over the past two decades. Nat Commun 10, 1264 (2019). https://doi.org/10.1038/s41467-019-09238-2



Coral bleaching distribution. Prevalence of coral bleaching presented as a percentage of the coral assemblage that bleached at survey, measured at 3351 sites in 81 countries, from 1998 to 2017. White circles indicate no bleaching. Coloured circles indicate 1% bleaching (blue) through 100% bleaching (yellow)

Projections of the extent and severity of coral bleaching under a range of emission scenarios show that this regional variation is likely to continue[11]. This analysis shows that the risk of mass bleaching[12] (Figure 5) increases across all major coral reef regions. However, even under moderate emissions (RCP 4.5) all the Caribbean & Gulf of Mexico and the Eastern Pacific will experience conditions conducive to mass coral bleaching by the middle of this century. Whilst in contrast the Western Pacific Ocean, Coral Triangle, and Indian Ocean are likely to experience less stress and will still have large areas unaffected by annual mass coral bleaching by the end of the century. Additionally, conditions that drive mass mortality events today (DHM >5) will spread across most regions by the end of the century under RCP 8.5. This risk decreases from RCP 8.5 to zero under RCP 2.6 with no regions experiencing annual conditions that would cause mass mortality events.

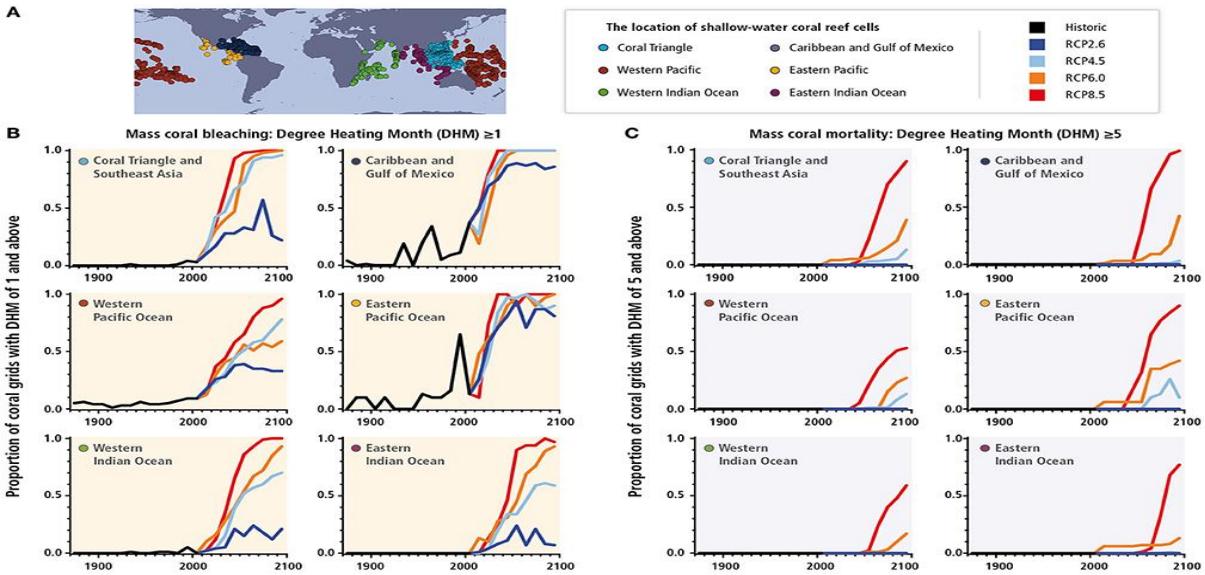


Figure 5. Projections of Coral Bleaching 1

[11] Ove Hoegh-Guldberg, Elvira S. Poloczanska , William Skirving and Sophie Dove 2017,Coral Reef Ecosystems under Climate Change and Ocean Acidification Front. Mar. Sci., 29 May 2017 Https://doi.org/10.3389/fmars.2017.00158

[12] one Degree Heating Months

2.2 Coral reefs and interaction with local stressors

Direct human-induced negative impacts on marine biodiversity and coastal habitats exacerbate the impact of ocean warming and acidification. Increasing global climate and local anthropogenic pressures have caused the loss of warm-water coral reefs by at least 50% over the past 30–50 years in large parts of the world's tropical regions. Warm water coral reefs are largely dependent on the physical and chemical changes occurring in the surface layers of the ocean. Already weakened, coral reefs are more prone to suffer diseases and outbreaks of invasive alien species (including Crown of Thorn starfish), which further decimate the ecosystem. Uncontrolled tourism, land reclamation and poorly managed coastal zone development also contribute to the demise of the ecosystem, which undermines the natural assets on which national and local economies are built. These pressures are observed in each of the target countries.

From a reef management and policy perspective, this means that climate change and ocean acidification will increase the need for efforts to abate regional- and local-scale stressors[13]. Further to global warming and climate change, ambitions for economic development and a higher quality of life in the short term have led to unsustainable practices that degrade coral reef ecosystems. These include overfishing, destructive fishing (including blast and cyanide fishing), nutrient loading from agricultural runoff, litter (such as plastics and derelict fishing gear), irresponsible or unmanaged tourism and poor waste management (such as untreated sewage effluent, chemical leaks). These local drivers of degradation are directly damaging reefs and deteriorating the resilience of coral reef ecosystems to climate change and jeopardizing vital ecosystem services for which the reef-dependent communities in the targeted countries have few other alternatives for income, subsistence and coastal protection.

Although the long-term projections for corals globally are dire, there is evidence from a range of field studies and modelling exercises that local management of threats can either acerbate or partially ameliorate the impacts of rising temperatures and ocean acidification. For example, modelling of the ability of Indo-Pacific reefs to maintain reef building capabilities and keep up with sea level rise are significantly enhanced if targeted improvement in management of local fishing and water quality are undertaken. Under a “business as usual” climate trajectory (RCP 8.5), only *3.7 ± 0.13%* of reefs are projected to keep up with climate change without successful local reduction in stressors. On the other hand, if local improved management of water quality and fishing is successful this would lead to a 21% increase in area of reef able to keep up with climate change (*4.6% ± 0.2).* Under RCP 4.5 (drastic reduction in GHG), 27.3 % of reefs are expected to keep up with sea level rise if effective local management of stressors is undertaken, versus only 15% without[14].

Similarly, modelling of local scale recovery after projected bleaching in Bolinao in the Philippines found that management of water quality, and to a lesser extent fishing, can have a significant impact on future reef state, including coral recovery following bleaching-induced mortality.[15] Experimental field studies are limited, but there is some empirical evidence for the synergistic effects of local stressors with climate change. On the Great Barrier Reef, after a regional bleaching event in areas with a high diversity of herbivorous fish, algal abundance remained low and the coral cover doubled over a 3-year period.

[13] Ove Hoegh-Guldberg, Elvira S. Poloczanska, William Skirving and Sophie Dove 2017, Coral Reef Ecosystems under Climate Change and Ocean Acidification Front. Mar. Sci., 29 May 2017 Https://doi.org/10.3389/fmars.2017.00158

[14] Cacciapaglia, C.W. and van Woesik, R. (2020), Reduced carbon emissions and fishing pressure are both necessary for equatorial coral reefs to keep up with rising seas. Ecography, 43: 789-800. https://doi.org/10.1111/ecog.04949

[15] Gurney GG, Melbourne-Thomas J, Geronimo RC, Alin˜o PM, Johnson CR (2013) Modelling Coral Reef Futures to Inform Management: Can Reducing Local-Scale Stressors Conserve Reefs under Climate Change? PLoS ONE 8(11): e80137. doi:10.1371/journal.pone.0080137

Areas where the herbivorous fish were removed led to an explosion of macroalgae which suppressed recovery of corals.[16]

2.3 Setting priorities for coral resilience – The case for climate coral refugia

Understanding how cumulative stressors affect coral reef vulnerability is critical for successful reef conservation, now and in the future. Based on this, the Global Fund for Coral Reefs (GFCR) has adopted an approach that recognises that all reefs are potentially in peril. It also recognises that the impacts of climate change are likely to be so pervasive that for most reefs, there is little chance of effective system adaptation irrespective of which emissions scenario is followed. The reality is that, for many current reef ecosystems, there will likely be a localised forced ecological transition from a system dominated by a scleractinian coral holobiont rich in biodiversity to another ecological state such as an algal dominated community without the reef-associated fish assemblages which human communities rely for income and subsistence. This means that if local biodiversity and ecosystem services are to be maintained for many of the existing reef localities, the adaptation pathways in that locality would normally require a transformative pathway to a system that is not dependent on a coral-dominated community (see Box 1 at the end of the document for a discussion of adaptation pathways and the outcomes for coral reefs). However, for the GFCR, the priority is to maximise the persistence and biodiversity value of a coral reef biome long enough for the climate system to stabilise and for coral reefs to acclimatise and re-establish in areas previously affected. On this basis, the adaptation pathway for targeted coral reefs must avoid such systemic transformation of the basic ecosystem.

The effects of climate change on marine ecosystems are accelerating. Identifying and protecting areas of the ocean where conditions are most stable is a key approach for climate change adaptation. As was the case during historical periods of climate change, climate refugia—areas retaining suitable habitat despite regional climate change—are likely to be critical in preventing considerable loss of biodiversity. Climate refugia have been recommended by numerous authors as a key component of any climate change and biodiversity adaptation program.[17] As a result, their protection is becoming a commonly prioritized conservation target. These climate refugia should be incorporated into Marine Protected Areas, which can provide a safe haven for species in a changing environment, buffering them against preventable habitat loss, fragmentation and localized-climate change.[18] Ideally, for coral reefs, refugia should be selected to buffer regional changes in stressors related to climate change, in particular ocean temperature and acidity over decades or centuries. Specifically, for coral reefs, these climate refugia need to be selected and managed to optimise six key criteria.[19] These include long-term buffering, multi-stressor protection, accessibility, microclimatic heterogeneity, size and low exposure to other disturbances.

Ultimately, for these refugia to be effective in maximising long-term persistence and acting as future source populations, they must be targeted for a coordinated and comprehensive program that integrates global and local threat management and adaptation. For example, Hoegh-Guldberg et al[20]

[16] Hughes TP, Rodrigues MJ, Bellwood DR, Ceccarelli D, Hoegh-Guldberg O, McCook L, Moltschaniwskyj N, Pratchett MS, Steneck RS, Willis B. Phase shifts, herbivory, and the resilience of coral reefs to climate change. Curr Biol. 2007 Feb 20;17(4):360-5. doi: 10.1016/j.cub.2006.12.049. Epub 2007 Feb 8. PMID: 17291763.

[17] (Keppel et al. 2012; Tzedakis et al. 2002 Jones et al. 2016

[18] (UNEP-WCMC and IUCN 2016).

[19] Kavousi, J., & Keppel, G. (2018). Clarifying the concept of climate change refugia for coral reefs. ICES Journal of Marine Science, 75(1), 43–49. https://doi.org/10.1093/icesjms/fsx124

[20] Hoegh-Guldberg O, Kennedy EV, Beyer HL, McClennen C, Possingham HP (2018) Securing a Long-term Future for Coral Reefs. Trends in Ecology & Evolution: 33(12) https://doi.org/10.1016/j.tree.2018.09.006.

describe a "pyramid of conservation action for coral reefs" (Figure 6). This approach relies on strong global climate action to reduce greenhouse gas emissions, **prioritising investment to regions with greatest potential to ensure resilience**, identification of regional threats and potential solutions, and implementation of strategies to reduce local stressors on coral reefs.

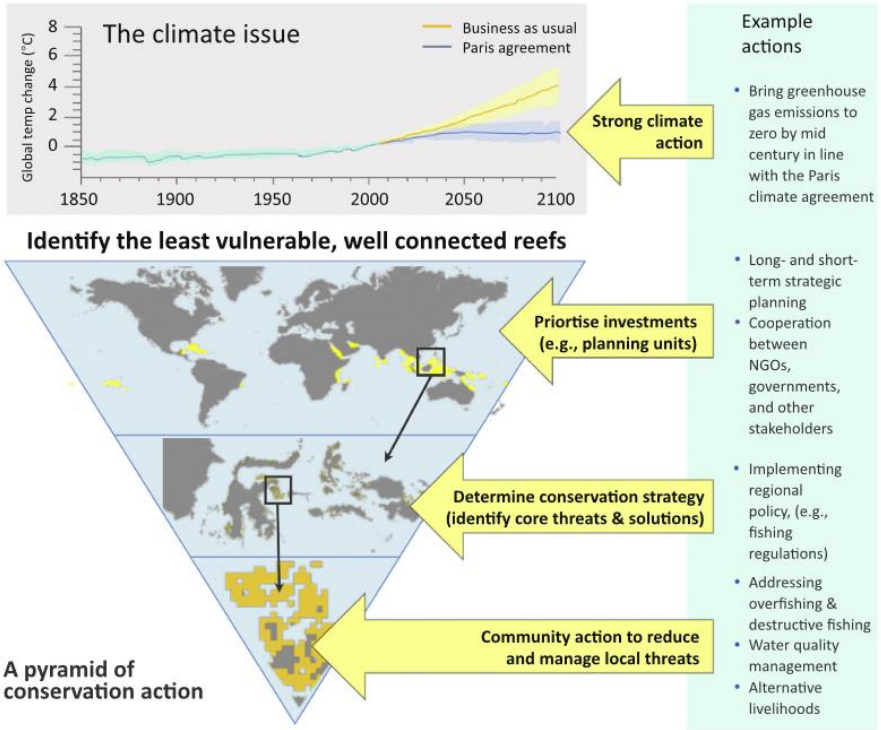


Figure 6: Pyramid of Conservation Action for Coral Reefs (REF)

Similarly, in defining "Climate Smart" Design for Coral Reef Ecosystem Management, J. West and others[21] have proposed 7 Climate Smart Adaptation Strategies which include protection of refugia as a key component:

i. reduce non-climate stresses
ii. protect key ecosystem features
iii. ensure connectivity
iv. restore structure and function
v. support evolutionary potential
vi. protect refugia, and
vii. relocate organisms

2.4 The GFCR Approach: Options Analysis

Climate change adaptation for biodiversity purposes generally attempts to achieve one more of three broad goals.

1. Maximising biodiversity persistence across a region or geographical space

[21] J West et al 2017. Climate-Smart Design for Ecosystem Management: A Test Application for Coral Reefs Environmental Management (2017) 59:102–117 DOI 10.1007/s00267-016-0774-3

2. Maintenance of Ecosystem Services for a target population or region
3. Maximising the persistence of vulnerable ecological communities or species

For the GFCR, number 3. above (maximising global long-term persistence of a coral reef biome and its rich biodiversity) is the priority. Maintenance of ecosystem services for affected local communities is seen as a significant and vital co-benefit of the Fund's interventions to support reef survival and persistence.

On the basis of the above, there are three options for a priority adaptation pathway for the long-term persistence of even a modified but biodiverse coral reef biome, as opposed to maximising the ecosystem services of coral reefs:

- **Option 1:** Target the most resilient reefs (identifying climate refugia) by identifying those areas most likely to be either more resilient to climate change or those regions localities where the impacts of climate change will be less extreme, such as the 50 reefs project.[22] Within this set of resilient reefs priority should be focused towards those refugia that maximise ecological or conservation value and provide important local ecosystem services.
- **Option 2:** Target a portfolio of reefs that attempts to capture a full range of possible climate futures by creating networks of protected areas that span the range of past and future climate space along multiple axes of change.[23]
- **Option 3:** Target emergency action for those reef areas at most risk or that are the most vulnerable to climate change.

Option 3, although superficially attractive, in that it focuses on those areas of perceived most need, is not considered an appropriate strategy for the GFCR. As outlined, the probability of the most exposed and vulnerable reefs being able to maintain a coral dominated ecosystem with even a moderate level of continued warming is almost negligible. At best, a strategy that focusses on the most vulnerable reefs will require the implementation of untested techniques and with costs potentially orders of magnitude greater than the resources available for the GFCR.[24] Based on present climate projections, we will not be able to implement strategies for these reefs to continue for extended periods and diversion of limited funds to probable lost causes is not a highly effective strategy.

Option 2 has the advantage of spreading risk across the broadest section of possible outcomes. However, it also suffers slightly from the same problem as Option 3. Spreading climate adaptation activities into reefs where we have a high degree of confidence that adaptation efforts will be ineffective at best and result in some areas undergoing inevitable transformation to non-coral ecosystems is not an effective strategy if coral conservation as opposed to local ecosystem services is the priority (see figure 3 and 4 in box 1). If the objective of the GFCR were to maximise ecosystem service benefits to regional communities or to ensure the maximum representation of all marine biodiversity into the future, then this option would be favoured. To be clear, the Fund's primary focus is

[22] Hawthorne L. Beyer et al (2018). Risk-sensitive planning for conserving coral reefs under rapid climate change. Conservation Letters. 2018; 11:e12587

[23] DEREK P. TITTENSOR et al 2019. Integrating climate adaptation and biodiversity conservation in the global ocean SCIENCE ADVANCES27 NOV 2019: EAAY99

[24] See Hardisty P, Roth CH, Silvey PJ, Mead D, Anthony KRN (2019) Reef Restoration and Adaptation Program – Investment Case. A report provided to the Australian Government from the Reef Restoration and Adaptation Program (100 pp). for a summary of adaptation techniques and potential costs. Cost estimates for more interventionist strategies for the Great Barrier reef range from $1.4 to $28 billion.

the survival and persistence of coral reef ecosystems, with clear and significant co-benefits for dependent populations.

Preferred Option – Option 1. Because the GFCR prioritises the long-term persistence of the coral reef biome, then priority for resilience actions and the investment strategy should focus on those reef systems with the best chance of survival in the face of accelerating climate change (if local stressors are removed). We propose to locate the reefs most resilient to climate change and to enable activities that ameliorate or eliminate existing local stressors in order to 'buy reefs time', with benefits for dependent communities. By protecting the identified priority networks of climate refugia coral reefs and reducing their local stressors, some ecosystems will survive the impacts of climate change and may help repopulate neighbouring and more distant reefs.

In terms of prioritisation of activities, the focus of the GFCR is threefold.

1. To create mechanisms and mobilize resources to conserve low climate vulnerability reefs that have potential to reseed to other regions once the climate has stabilized.
2. To ensure that climate refugia protection also maximises long term biodiversity values. Refuge areas with rich biodiversity or high ecological values should receive priority.
3. Maximise support to the most resilient reefs (once identified) to support the most vulnerable populations reliant on those reefs.

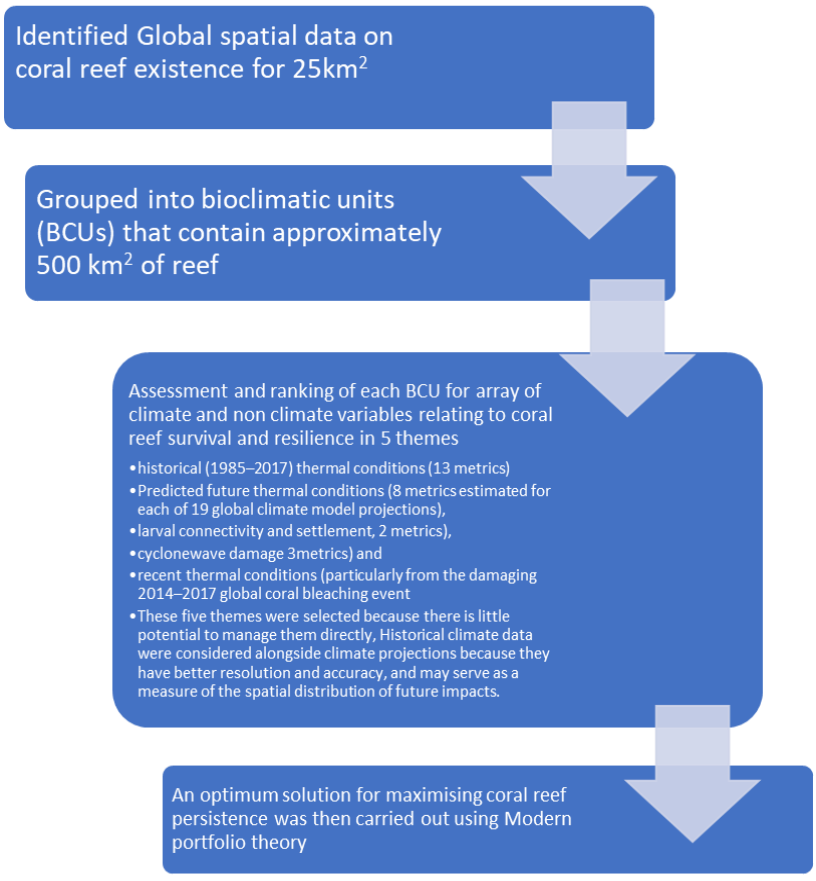
The GFCR approach does include some aspects of both Options 2 and 3. For example, the overall GFCR objective is to target coral reefs, which are one of the most globally vulnerable ecosystems to climate change. So it is true to say that the GFCR will target vulnerable reefs or those at significant risk—but we are using a realistic assessment of which of these vulnerable ecosystems has the best chance of survival, if we take action to reduce local drivers of degradation. The approach adopted by the 50 Reefs Study (and Vibrant Oceans) and the GFCR seeks to spread risk across a range of climate futures and vulnerabilities. It is simply constrained by those futures and vulnerabilities that include a projected coral biome as part of the desired outcomes.

In undertaking Option 1, there are two risks to consider:

1. The first is that the process due to inadequate knowledge or poor resolution of data within the 50 Reefs study means we do not identify all of the possible climate refugia. In recognising this risk and acknowledging that there will most likely be significant local variation in bleaching responses while global models will not pick up some potential refugia at smaller scales (especially if models only depend on project sea surface temperatures without taking into account other more localized oceanographic or biophysical conditions), the GFCR will use a combination of global models and local knowledge/observation to select the projected climate refugia.
2. The second is that some of the areas classified as refugia are more at risk than assumed. In the first case, the scale of the problem is so vast that no one single program will be able to identify and secondly carry out adaptation activities on all suitable reefs. The assessment we have used is based on the best available information and data available to date. If the second risk occurs, it means that some of the effort will be spent in areas with limited return, which is similar in outcome to Option 2.

For implementation of **Option 1,** the selection of countries and sites for resilience-based management of coral reefs has been guided by two key global initiatives:

- The 50 Reefs Initiative: The GFCR's approach is predicated on the findings of the 50 Reefs initiative, financed by Paul G. Allen Family Foundation, Tiffany & Co. and Bloomberg Philanthropies, which aims to identify and protect 50 Reefs so they are resilient to climate change, promote adoption of science-based fisheries and marine protection policies in 10 countries and support 20 countries in achieving fishing activity transparency. Importantly, the 50 Reefs initiative has identified an optimum global portfolio of reefs for targeting coral reef conservation that have the potential to survive the impacts of accelerating climate change. This is based on a peer reviewed global analysis of existing reefs against a range of climatic and non-climatic existing and projected stressors[25] (Figure 7, schematic of selection process). By making the identified coral reefs priority conservation sites, it is expected that these areas will also have the ability to repopulate neighbouring reefs that suffer degradation from climate change. In turn, the project will work with reef-dependent communities to adapt their activities to reduce local impacts on coral reefs and related ecosystems to augment the resiliency of reefs. Taking action for the regeneration and protection of coral reefs constitutes a direct intervention to preserve exceptional biodiversity and reduce the exposure and vulnerability of reef-dependent populations and economies at the frontlines of climate change.



[25] Hawthorne L. Beyer et al (2018) Risk-sensitive planning for conserving coral reefs under rapid climate change Conservation Letters. 2018;11:e12587

Figure 7. Schematic of 50 Reefs Climate Refugia identification (REF)

- The second major study is "Projections of Future Coral Bleaching Conditions using IPCC CMIP6 Models" by the United Nations Environment Programme (which identifies Indonesia , western Australia, the Bahamas, Madagascar, India, and Malaysia as countries with the highest proportions of climate refugia) and the related Coral Reef Rescue by WWF: this approach builds on related work undertaken by UNEP's Coral Reef Unit and WWF's Coral Reef Rescue initiative (which focuses on building the resilience of coral reefs and the communities dependent on them by securing reefs in 7 main countries—Fiji, Solomon Islands, Indonesia, Philippines, Madagascar, Tanzania and Cuba—that account for 70% of the regeneration capacity of coral reefs globally). It is believed that protecting the identified priority networks of climate refugia coral reefs and reducing local stressors, some coral ecosystems will survive the impacts of climate change and may help repopulate neighbouring reefs.

For the GFCR, these two global and independent studies outline the potential candidate climate refugia/ resilient reefs sites. As part of the resiliency prioritization for the GFCR activities and programs a process to include local data validation of these global studies will be included.
In order to identify potential countries for investment and targeted support, GFCR partners[26] have produced a range of indicators related to the GFCR's objectives and proposed interventions. These indicators were used to prioritize countries based on four key factors: i) climate resilience, ii) ODA eligibility, and iii) trade restrictions, as follows:

1. Climate resilience: Based on the presence/absence of the 50 Reefs Bioclimatic Units (BCUs) and UNEP's identified refugia, only countries with priority BCUs or reefs for climate resilience have been selected. Climate resilience remains the guiding principle of the Fund, and therefore countries with climate resilience references from peer-reviewed studies should be prioritized.
2. UNFCCC Non-annex I Status: Only countries with UNFCCC Non-Annex I Status are eligible for support due to the grant and concessional financing approach of the GFCR.
3. Trade Restrictions: Althelia and BNP Paribas cannot invest in countries with UN, US, and EU sanctions, or other trade restrictions.

[26] Conservation Finance Alliance (CFA) preparatory work for the GFCR Investment Plan

BOX 1: Coral Resilience—Recognizing Different Adaptation Pathways

When considering what actions are required to improve the resilience of any system in the face of climate change it is useful to consider the following two questions:

1. What will that system have to do to adapt to climate change and
2. What are the properties or attributes of a resilient system?

There are an array of activities, techniques and approaches to best ensure climate change resilience for coral reefs. Which combination of these are used are specific to the circumstances of an individual system. However, in general, adaptation to climate change will include one or a combination of the following path ways:

- **Absorb or resist the impacts of climate change.** Building the capacity to absorb climate change shocks whilst maintaining the essential function of the system. For example, improving local coral reef health by reducing non climatic stressors for coral reefs
- **Adapt or acclimatise to the changing conditions.** Modify or change characteristics and actions to better respond to existing and anticipated future climatic shocks and stresses and to take advantage of opportunities. For example, coral gardening and assisted restoration after bleaching event.
- **Transform to another state** that is more suitable to the new conditions. A fundamental alteration of the nature of a system once the current ecological, social, or economic conditions become untenable or are undesirable. For example, An ecological shift from a coral holobiont to another state such as algal dominated reefs.

These are not hard classifications and occur along a continuum (see Figure 8) and a system that is resilient to climate change may adopt elements of all three simultaneously. The choice of which adaptive pathway to follow is largely dictated by the magnitude and significance of the climate impacts and the vulnerability of that system to those changes. As the size of the impact of climate change increases there is a tendency for the response to move from absorptive to adaptive to transformative. At a certain point the system can no longer absorb or adapt to the changing climate and must make significant changes that transform the system to a new state. In parallel, both the cost of adapting to climate change increase dramatically as we move from absorption to transformation as well as the uncertainty and variability of responses.

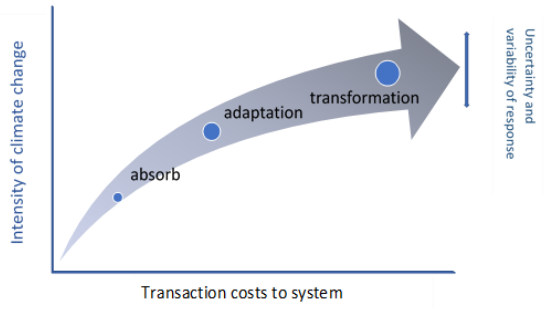


Figure 8 adaptation pathways

The choice of which adaptive pathway to follow is also constrained by the properties of the system being considered and the objectives set out for them. For one system where the objective is to maintain the resilience of a service provided by that system, the transformation of the system in order to maintain that service would be acceptable. For another system where the objective is to improve the resilience of a particular system, for its own intrinsic value, then the transformation to another system should be considered maladaptation.

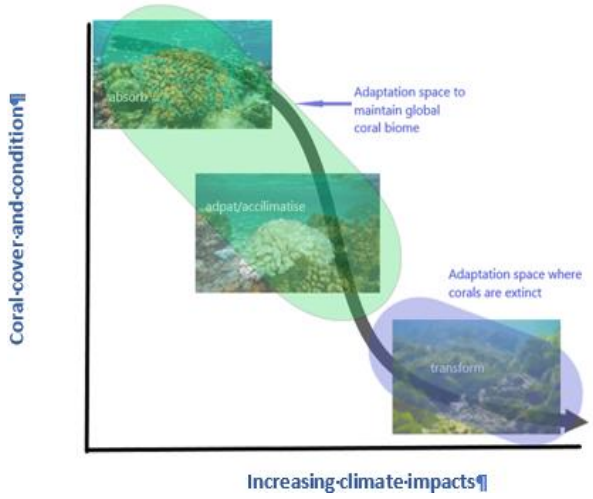
Climate change adaptation for biodiversity purposes generally attempts to achieve one more of three broad goals.

4. Maximising biodiversity persistence across a region or geographical space
5. Maintenance of Ecosystem Services for a target population or region
6. Maximising the persistence of vulnerable ecological communities or species

The long-term persistence of a coral reef biome and its rich biodiversity is the priority under the objectives of the GFCR. For this approach, the adaptation pathways need to be in the absorb to acclimatise space (the first two bullets above). An adaptation pathway that involves transformational change of the ecosystem from a coral dominated to something such as an algal reef would be inconsistent with that objective (Figure 9).

However, although The GFCR is targeting non transformational adaptation for the reef ecosystem itself, it will consider the full range of adaptation options for those communities that are associated and dependent on those reefs. Part of dealing with the local stressors in an altered climate future may require transformational adaptation responses in the way that dependent human communities utilise or access reef resources.

Figure 9. Coral Adaptation Space



Alternatively, Table 2 below outlines a series of adaptation success outcomes based on a matrix of adaptation pathways from absorb to transform across the 3 differing biodiversity adaptation objectives. Each have similarities but there are important differences in outcomes based on the adaptation pathway followed. This is particularly the case for the Global Fund for Coral Reefs, where the overriding objective is to secure the global persistence of the coral reef biome. Transformation from a scleractinian coral reef holobiont to another system such as an algal dominated reef community is not desirable due to the loss of biodiversity and ecosystem services.

Table 2: Adaptation Pathways and Biodiversity Outcomes

Biodiversity related objective	Maintenance of Ecosystem Services within a region	Maximising biodiversity in Marine Protected areas	Habitat type/Ecological formation - Coral reef persistence
Adaptation pathway			
Resist/absorb	Yes, existing ecosystem service provision should be maintained based on the existing biological assemblage	Yes, well designed MPA should be able to conserve the majority of species and assemblages	Yes, if scleractinian coral dominated assemblage is maintained

Adapt/acclimatise	Yes, but some alteration of the composition of the biological assemblage will be expected	Yes, but not all species or assemblages that existed prior to the climate change will continue to be extant	Yes, if scleractinian coral dominated assemblage (coral holobiont) is maintained but will inevitably include the loss of a number of coral and other holobiont species
Transform	Yes. The provision of ecosystem services may be retained even though the biodiversity elements are radically altered	Partial. Even a radically altered biological assemblage will provide some representative biodiversity elements. The goal is to maximise the biodiversity represented based on the prevailing climate envelope	No. An area that transforms to another state such as an algal community means that the scleractinian coral holobiont will effectively be extinct at that site

Annex 3 Countries included in the GCF Proposal

Indonesia
Philippines
India
Bahamas
Tanzania
Brazil
Maldives
Kenya
Thailand
Fiji
Solomon Islands
Comoros
Madagascar
Sri Lanka
Cambodia
Dominican Republic
Timor Leste
Egypt
Belize
Guatemala
Honduras
Costa Rica
Mexico
Ecuador
Seychelles

Colombia
Saudi Arabia
[Malaysia] secondary target
[Vietnam] secondary target

Annex 4 Request for Information Results

A Request for Information (RFI) was carried out to solicit existing or potential ideas of (a) business models and (b) coral reef focal areas (sites) for the Global Fund for Coral Reefs. The RFI window was open from August 10th to October 21st, 2020. The CFA and GFCR partners circulated the RFI surveys widely and held various webinars and discussions with large potential implementing partners to generate submissions. The RFI was meant to guide the development of the Investment Plan and the questions posed in the survey were the result of close study of the GFCR's Theory of Change as well as internal discussion and consultation with leading coral reef scientists. The two RFI templates are provided in the Appendices.
The Business Model RFI had no geographic boundaries or outcome restrictions and was distributed widely among GFCR partners and the CFA network. It was available to respondents in two formats, as an online SurveyMonkey survey or as a document which could be completed and submitted by email to the CFA Secretariat.
The section that follows presents an overview of the survey results. Detailed responses continue to be analyzed and will be presented in more depth in the Investment Plan. Most of the projects described in the initial opportunities are derived from this RFI.

4.1 Site Selection Results

The Global Fund for Coral Reefs' Request for Information on Site Selection received a total of 335 responses. These responses were primarily from international organizations and NGOs, but also included several entries from governments, academic organizations, and individuals. Of the submissions, 258 either contained sufficient information (at least a country and site name) to use in our site selection process or were not duplicates. 41 submissions represented ineligible countries (UNFCCC Annex I status or trade sanctions). In total, 72 countries, territories and regions were included in the submissions.

- Total responses: 335
- Useable responses: 258
- Number of countries, regions and territories: 72
- 217 eligible responses

4.1.1 Geographic Distribution

Nearly all of the submissions received represent important coral reef regions, including Atlantic including the Caribbean, Indian Ocean region, Red Sea and Middle East, Southeast Asia, and the Pacific

(Figure 10).

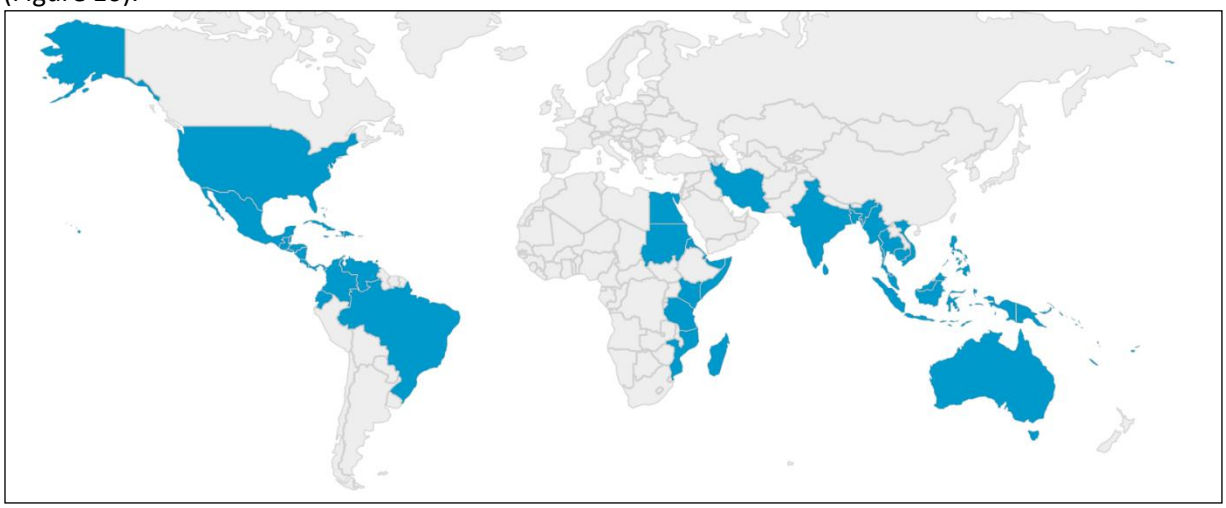


Figure 10 Geographic Distribution of RFI Site Submissions

Responses by region: Atlantic (ATL) - 46%, Middle East (ME) - 4%, Indian Ocean (IO) - 21%, Southeast Asia (SEA) - 14%, Pacific (PAC) - 11%.

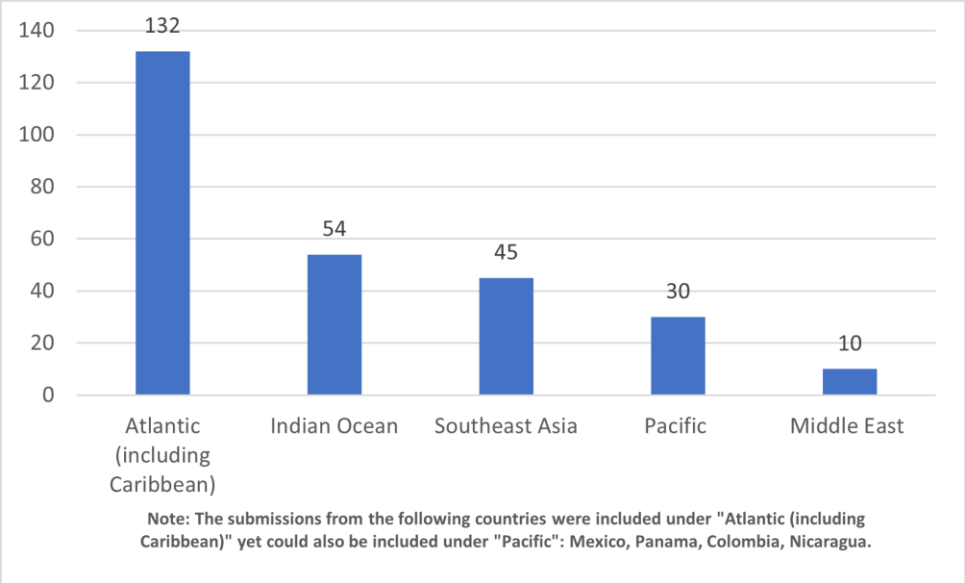


Figure 11 Responses by Region

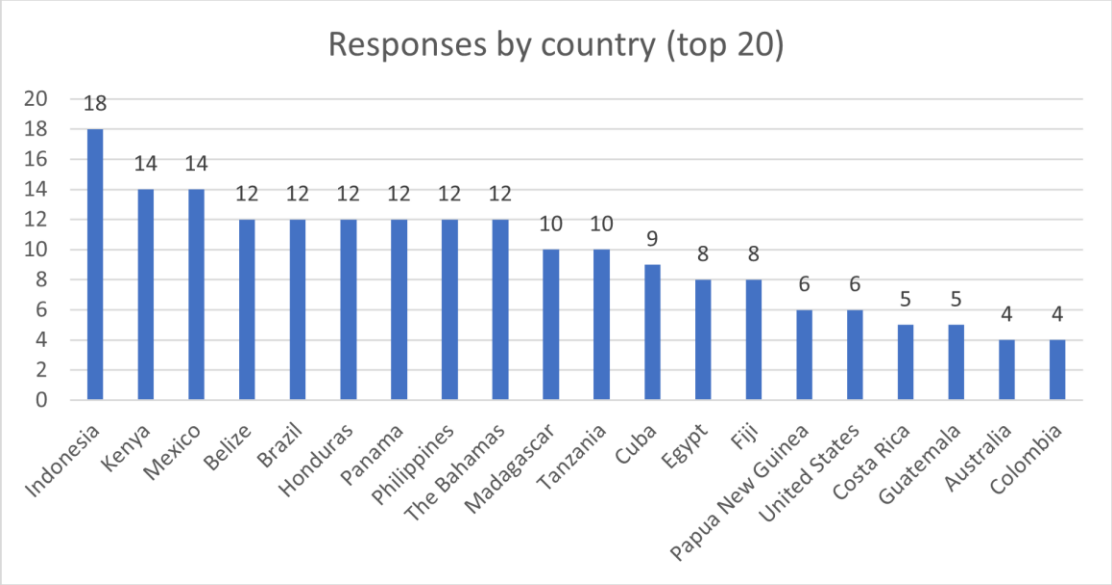


Figure 12 Top 20 countries – 150 Responses total

4.1.2 Economic Activities

The RFI surveyed respondents on a large variety of economic activities taking place within the proposed site or focal area. The large majority included ecotourism (74%), research and monitoring (71%), and Marine Protected Areas (71%). The next most common activity was fishing (59%) followed by coral restoration (51%) and waste management and wastewater treatment (43%). Less frequent but still significant were plastics reduction, recycling, and circular economy; enhanced governance; aquaculture; near-shore agriculture; and micro and small infrastructure at below 30% of responses. This information can be useful for identifying different sites' investment potential.

Table 6 Economic Activities – Number of Responses

Existing and Potential Acitivities	Number of Sites	% of Sites (n=271)
Ecotourism	200	74%
Research and Monitoring	193	71%
Marine Protected Areas	193	71%
Sustainable Wild Fisheries	160	59%
Coral Restoration	138	51%
Waste Management and Wastewater Treatment	117	43%
Plastics Reduction, Recycling and Circular Economy	97	36%
Enhanced Governance	89	33%
Micro and Small Infrastructure	70	26%
Sustainable Aquaculture	69	25%
Sustainable Near-shore Aquaculture To Reduce Harmful Runoff	69	25%
Sustainable Marine Transport and Related Infrastructure	69	25%
Blue Carbon	64	24%
Responsible Supply Chains	57	21%
Green Finance	47	17%
Technical Assistance Facility or Incubator	42	15%
Clean Energy	28	10%
Other	19	7%
Pharmaceuticals	11	4%

4.1.3 Drivers of Degradation

The RFI surveyed respondents on the drivers of degradation at the proposed sites. This information is useful for determining the cumulative threats facing a site and investment potential from reduction of those threats. Warming was the most common driver of degradation with 187 responses. In terms of direct impacts on the sites, overfishing, marine litter, land-based pollution and coastal development were the main drivers identified. These threats overlap greatly with the economic activities identified above.

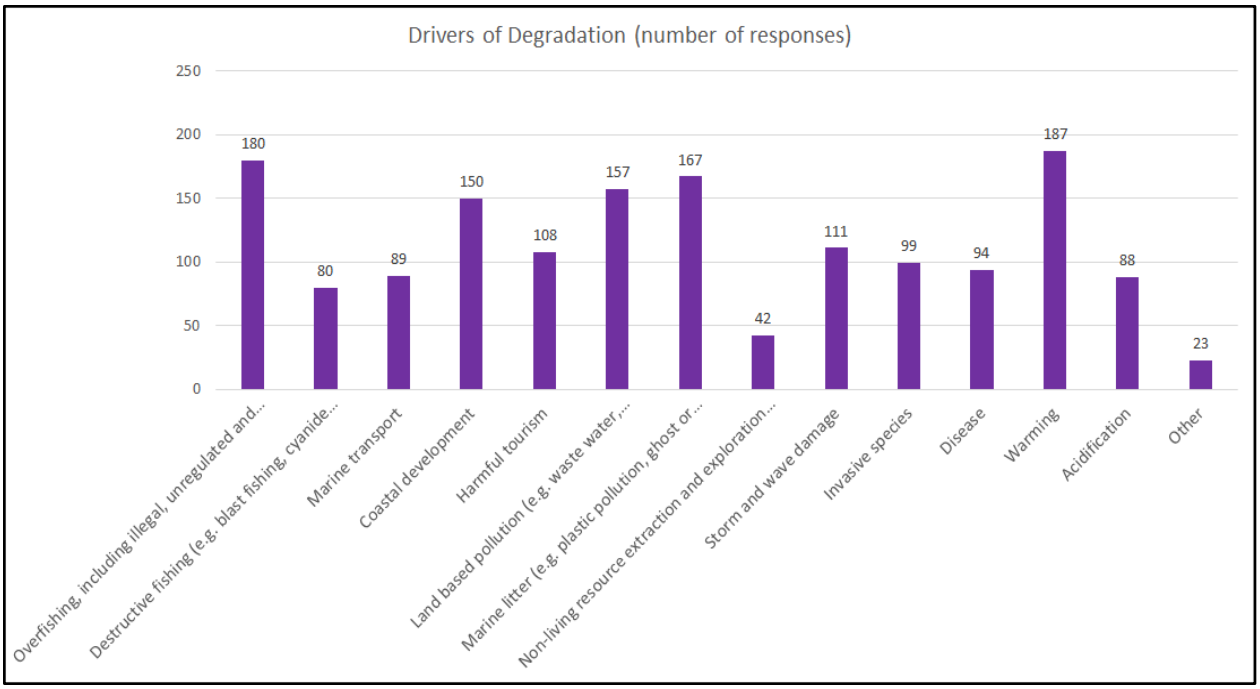


Figure 13 Drivers of Degradation (number of responses)

4.2 Business Model Results

Overall, there were 131 complete responses to the Business Model RFI. The responses fell into the following categories.

Table 7 Distribution of self-reported categorizations (note: multiple responses allowed[27])

Category of Initiative	#
Coral Restoration	84
Ecotourism	79
Research and Monitoring	75
Marine Protected Areas	75
Sustainable Wild Fisheries	49
Enhanced Governance	46
Green Finance	38
Sustainable Aquaculture	36
Plastics Reduction, Recycling & Circular Economy	29
Technical Assistant Facility or Incubator	28
Other	28
Blue Carbon	27
Responsible Supply Chains	24
Waste Management and Wastewater Treatment	23
Micro and Small Infrastructure	21
Sustainble Near-Shore Agriculture	19
Sustainable Marine Transport and Related Infrastructure	12
Clean Energy	8
Pharmaceuticals	3

The most common categories were 1) coral restoration, 2) ecotourism, 3) research and monitoring and 4) Marine Protected Areas (MPAs, Table 7). The high prevalence of research and monitoring is a combination of that fact that many initiatives include a research or monitoring component even if that was not the main focus of the business model. Ecotourism and Marine Protected Areas certainly have revenue potential including financial instruments. Some of the more clearly financial or business-related common responses included Sustainable Wild Fisheries, Green finance, Aquaculture, Plastics, Blue Carbon, Responsible Supply Chains and Waste Management and Wastewater Treatment. There were also more responses than expected for Technical Assistant Facility or Incubator.

In general, the submitted responses claimed to address the four (4) stated outcomes of the GFCR with only a slightly higher number addressing outcome 1 – Protection. The outcomes are the following:

1. Protect priority coral reef sites and climate refugia
2. Transform the livelihoods of coral reef-dependent communities
3. Restoration and adaptation technology
4. Recovery of coral reef-dependent communities to major shocks

[27] Respondents were allowed to provide multiple responses to certain questions, and these are identified in the figure captions

Table 8 Alignment with 4 stated outcomes of the GFCR

Protection		Transformation		Restoration		Resilience	
Yes	118	Yes	111	Yes	86	Yes	102
No	7	No	10	No	20	No	10
Unsure	3	Unsure	6	Unsure	11	Unsure	12
No Response	3	No Response	4	No Response	14	No Response	7

Overall, the organizations submitting responses have experience working with their business models with over 60% having been operating for 2 or more years (including almost 40% operating for 5 years or more, Figure 14. It is important to note that a quarter of respondents have less than a year of experience. These results highlight the need for pipeline development and support to "coral positive" enterprises.

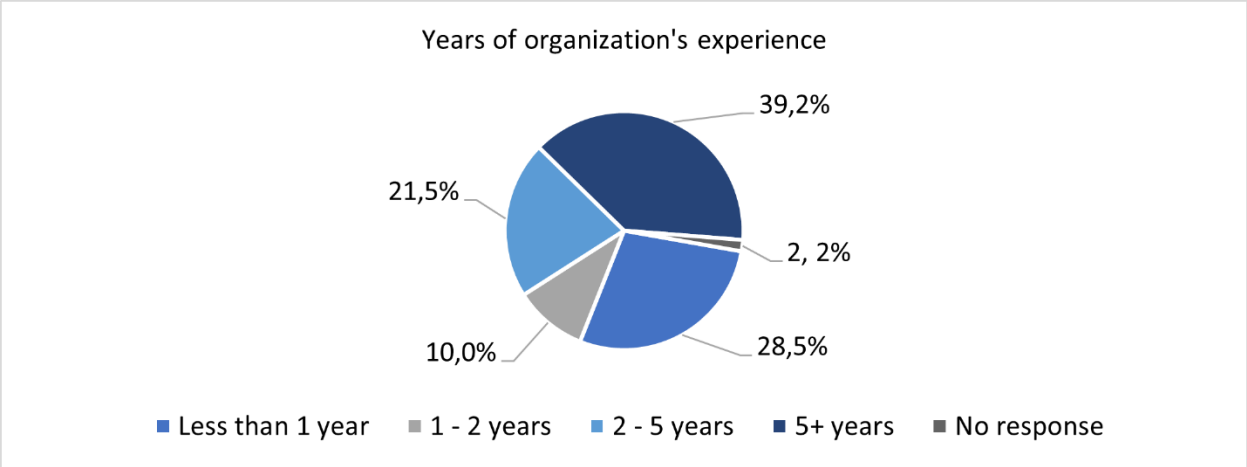


Figure 14 Years of experience with the business model or financial instrument

About half of the submissions stated that they were currently generating revenue (48% of respondents). This is a promising outcome in that revenue is essential for successful business models or finance instruments. On the other hand, the half that do not currently have revenue indicates a combination of projects that are not likely to generate revenue at all (still potential grant recipients) and other projects that will need technical and financial support to be investment ready. Several of the submitted responses contained ideas or concepts that had not been formalized yet or developed beyond a conceptual stage. In addition, several responses contained on-going projects focusing primarily on coral reef conservation, thus the revenue-generating mechanisms were not fully developed.

A second question on revenue was more precise and consistent with the findings from the previous question (Q8). The number of responses that included at least some revenue was 37 or 28% (N=131). Most responses indicate no revenue for the most recent year on record or no given data (likely indicating no revenue).

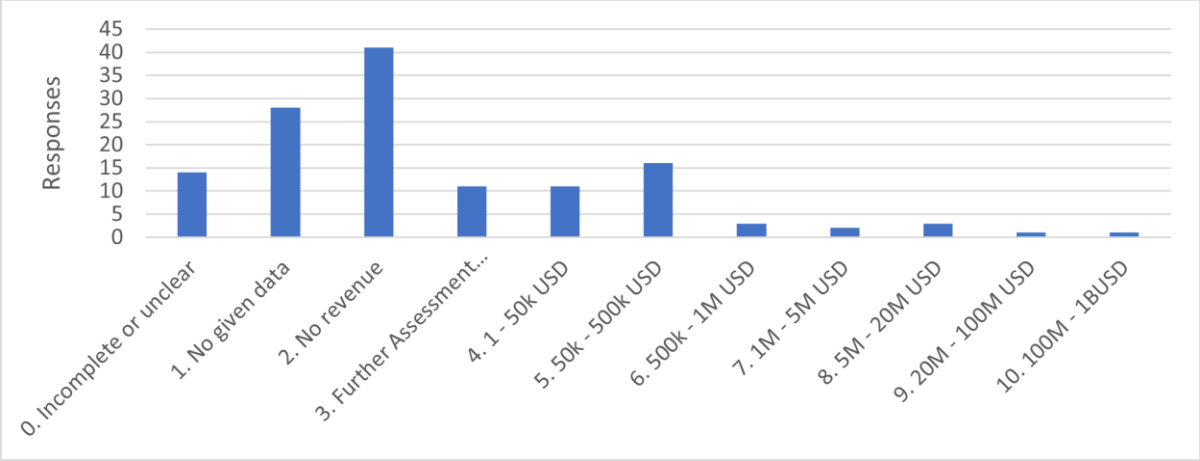


Figure 15 Most Recent Year's Revenue

In terms of expected future revenue, Figure 16 shows that this was a difficult question for many respondents and that, of the majority of submissions that provided estimates, more than half were not expecting to produce more than $1 million in annual revenue.

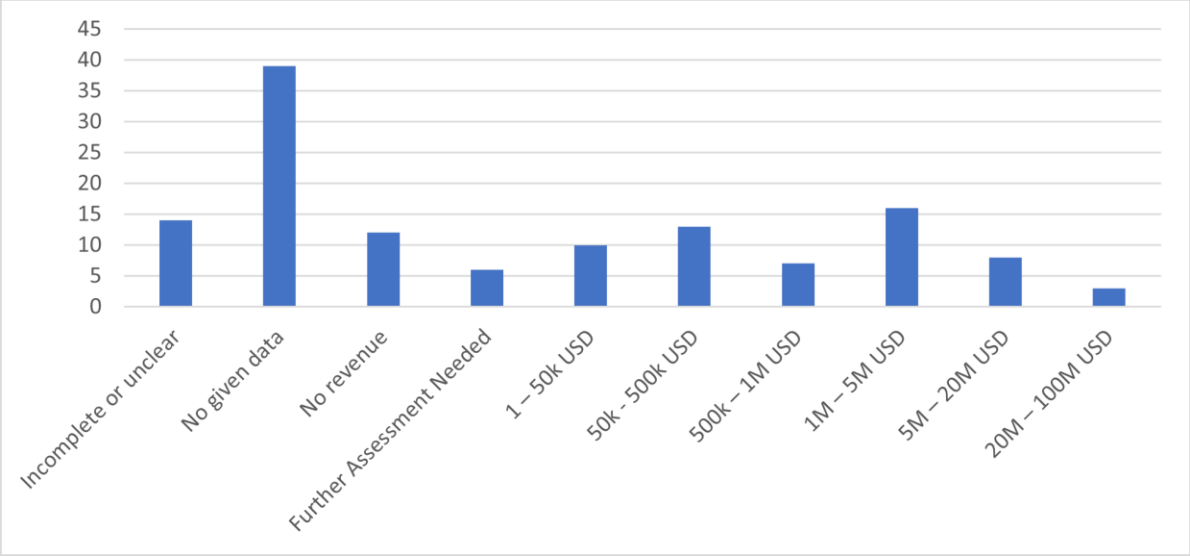


Figure 16 Projected Revenue in 5 Years

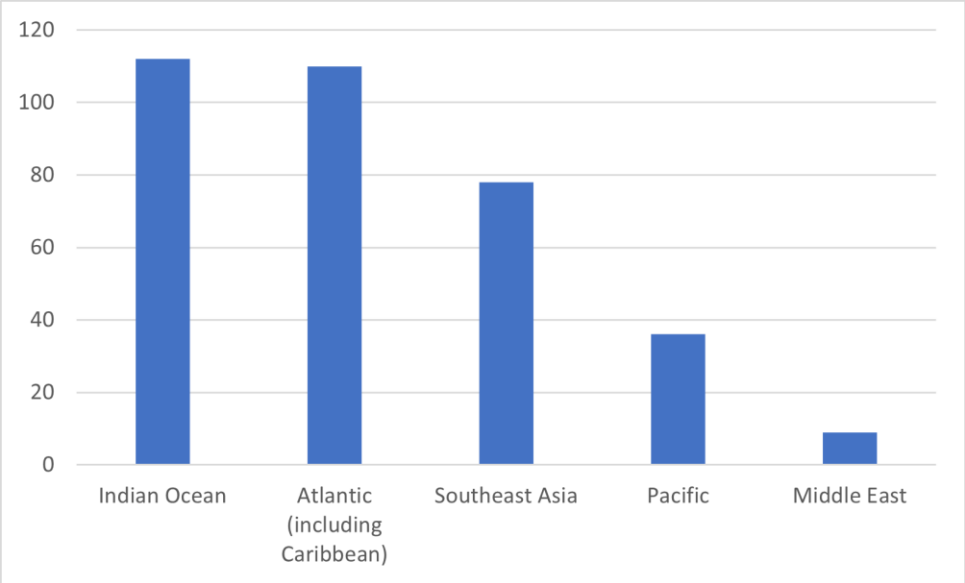


Figure 17 Number of Business Model submissions received by region (Not: The submissions from the following countries could be included under "Atlantic (incl. Caribbean)" or "Pacific" – Mexico, Panama, Colombia, Nicaragua.)

A high number of responses came from the Caribbean and Indian Ocean regions, with noted underrepresentation from the Pacific and Coral Triangle regions. This disparity was considerable given that there was a direct outreach made to a range of partners and groups in these regions including the Coral Triangle Initiative that shared the RFI with all 6 Coral Triangle countries.
Financing needs were also requested from respondents and the results are presented in Figure 18.

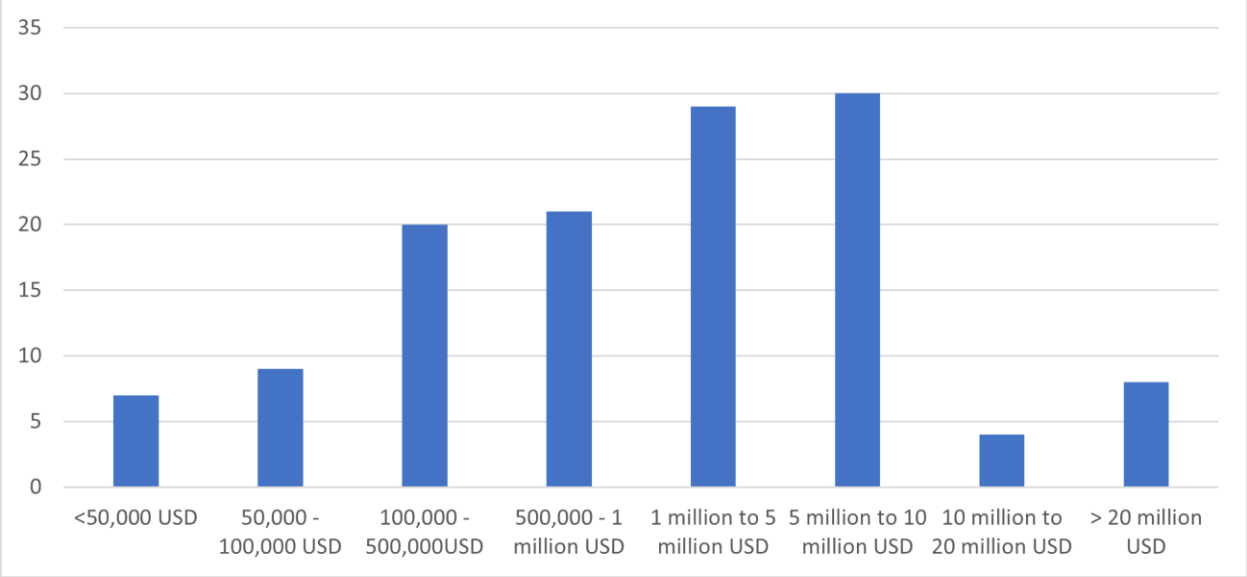


Figure 18 Anticipated Financing Needed

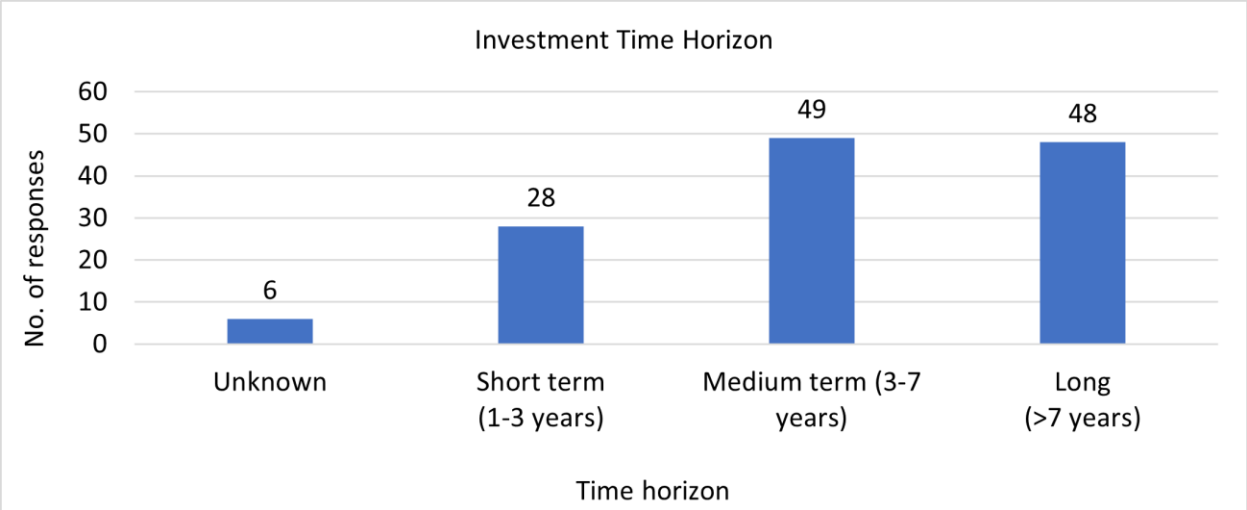
The drivers of degradation that the business models were addressing were diverse and presented in Table 9

Table 9 Targeted Threats for Coral Reefs (multiple responses included)

Category	No. Of Responses
Harmful Tourism	82
Coastal Development	68
Overfishing, Including Illegal, Unregulated and Unreported (IUU)	57
Storm and Wave Damage	57
Marine Litter	52
Warming	52
Destructive Fishing (e.g. Blast Fishing, Cyanide Fishing)	47
Invasive Species	42
Acidification	39
Disease	36
Land Based Pollution	35
Marine Transport	19
Non-Living Resource Extraction and Exploration	18
Other	6

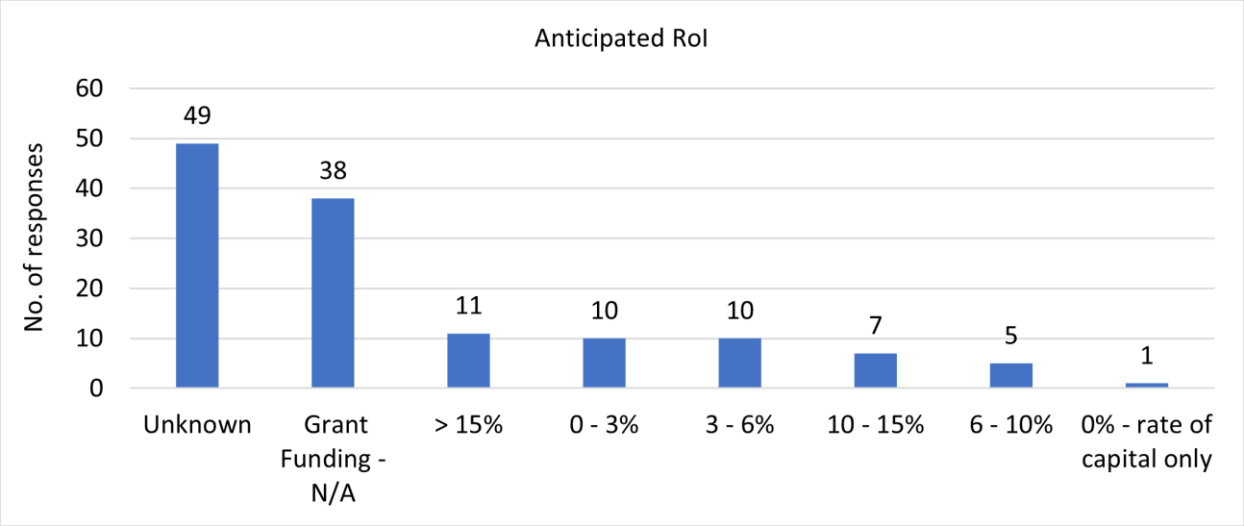
This question was asked in both the Business Model and Site Selection RFIs. It is interesting to note that there appears to be good correlation between the threats of degradation addressed by the submitted business models and the those identified at the sites. Additional information on the business model responses is provided in the Appendices.

Q21 - Investment time horizon?



Q22 - Initiative, Project, or Instrument's anticipated return on investment?

Anticipated ROI	No. of responses
Unknown	49
Grant Funding - N/A	38
0% - rate of capital only	1
0 - 3%	10
3 - 6%	10
6 - 10%	5
10 - 15%	7
> 15%	11



4.3 Limitations and Initial Conclusions

The total number of complete responses to the RFI was adequate for its purpose but inadequate for generating the robust pipeline that will be required for the Fund. Many responses to the RFI originated from large Conservation NGO's and UNDP Country Offices, and responses from the private sector were limited. This is likely due to a combination of factors including the way the RFI was distributed – primarily through the partners' networks – heavily dominated by international organizations, NGOs and their networks. A more general issue might have been language barriers. The survey was conducted in English and some respondents may have been discouraged even with internet-based translators. It would be beneficial to consider more languages for the future, particularly seeking global reach.
It should also be noted that the way businesses look for financing opportunities is usually not through an RFI or even a Request for Proposals (RFP). When the Fund is ready to begin actual financing activities, a well-designed communication plan should be implemented to attract numerous high-quality investment opportunities. The call, or outreach, should come from the Fund's private sector partners for better visibility in the business community. This will be most effective once the Investment Plan is prepared with multiple examples of target business models and finance instruments.

The goal of the RFI was to generate a list of ideas, companies, and contacts, not to provide all the information needed to evaluate a business opportunity or finance instrument. The CFA is in the process of reaching out to many of the RFI proponents that show promise to gather additional information needed to determine if the projects should be included in an initial proposed portfolio for review by the project partners.

It should be noted that for a number of respondents, there is clearly still limited understanding and awareness regarding conservation finance in general and blended finance in particular. Many of the approaches of the Fund are novel to conservation practitioners and most businesses – there will be a period of awareness raising necessary to attain the desired scale.

4.4 Additional Information – Site Selection RFI Results

Governance - Marine Conservation and Site Designation

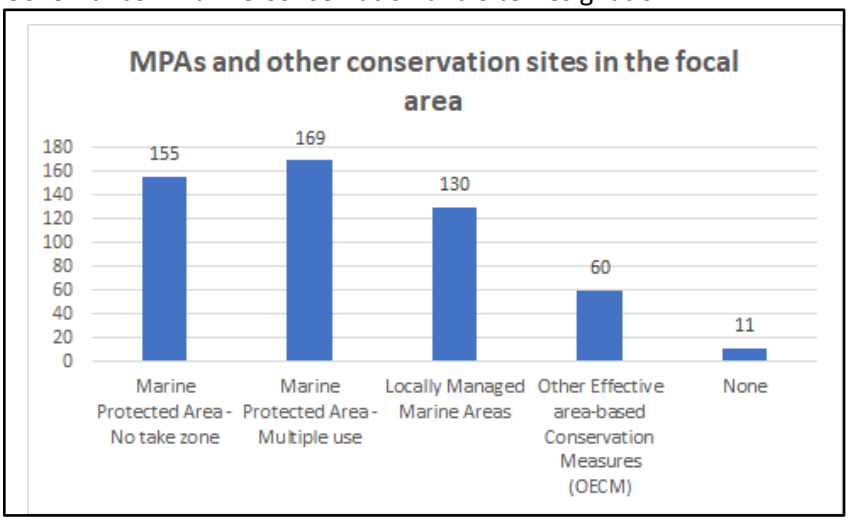


Figure 39 Marine Conservation

As noted above, 75% of the submissions contained Marine Protected Areas. These areas constitute a range of management arrangements, including no-take zones (155 responses), multiple-use zones (169 responses, the most frequent), Locally Managed Marine Areas (130 responses) and Other Effective Conservation Measures (60 responses). The large number of multiple-use zones may help indicate investment potential, as multiple-use areas may pose opportunities for user fees and tourism activities. Additionally, the respondents indicated what international designations are present at the proposed sites. Far more than any other designation, respondents labelled the sites as Key Biodiversity Areas (124 responses), but also included designations such as Important Bird Areas (72), Ramsar (66) and World Heritage Sites (49). Interestingly, 60 responses cited “other” designations, including “Coral Triangle Region” and “Meso-American Reef Region,” to name a couple of examples.

Table 16 International designations in the focal area

International designations in the focal area	
World Heritage Site	49
Ramsar	66
Important Bird Area	72
IUCN Green List	9
Key Biodiversity Area	124
Man and the Biosphere (MAB)	34
Unknown	21
None	46
Other	60

Ecology

Current condition of the reefs within the focal area (on average)

Table 17 Reef Condition

Condition	Responses
Pristine, minimal disturbance	14
Healthy coral and diverse fish population including apex predators, minor disturbance	83
Moderate, partially disturbed, incomplete reef community	120
Poor, heavily disturbed, low diversity	19
Dead, very heavily disturbed reef	1

According to the respondents, the large majority of the reefs (91.6%) in the focal areas are in a moderate state of health or better. This is especially important given the nature of coral reef ecosystems and related tipping points beyond which interventions and investments will struggle to have a positive impact.

Coral Species and Fish Species Richness

Table 18 Species Richness

Species Richness	Corals	Fishes
High	100	112
Medium	100	94
Low	18	16
NA/Blank	40	36

The species richness of corals and fishes in the focal areas correspondingly reflects the coral reefs` general state of health with most of the respondents referring to both as high or medium and only a small minority citing their richness as low. However, a large number of blanks indicates that many respondents simply did not know enough about the reef systems in question to answer accurately.

Sharks (and other apex predators) and Herbivorous Fish

Table 19 Abundance of Sharks (and other apex predators) and Herbivorous Fish

Abundance	Sharks and other apex predators	Herbivorous fish
Highly Abundant	21	45
Abundant	111	149
Uncommon	29	10
Rare or non-existent	45	4
Unsure	29	22

Finally, the questions regarding the abundance of sharks (and other apex predators) and herbivorous fish produced mixed results. Many respondents (47%) said sharks (and other apex predators) were uncommon, rare or non-existent, or were unsure. These animals regulate the entire ecosystem from the top downward, so their absence is of concern. Alternatively, 15.7% of respondents rated herbivorous fish as uncommon, rare or non-existent, or were unsure. The remaining 84.3% said they were abundant or highly abundant.

Site Communities

The GFCR's priorities include generating positive community impact, and the size of nearby communities may indicate opportunities for potential investment. This section therefore includes data related to proposed sites' human populations and the tourism and fishing sectors, two of the most common sectors related to coral reefs.

Human Populations

The majority of the site submissions (62.1%) included small or isolated settlements and towns or municipalities. 16.7% of submissions contained small urban areas, and 9.6%, medium to large urban areas. Finally, 11.6% contained no permanent residents. Regarding investment potential, focal areas or sites with little to no population may be less promising.

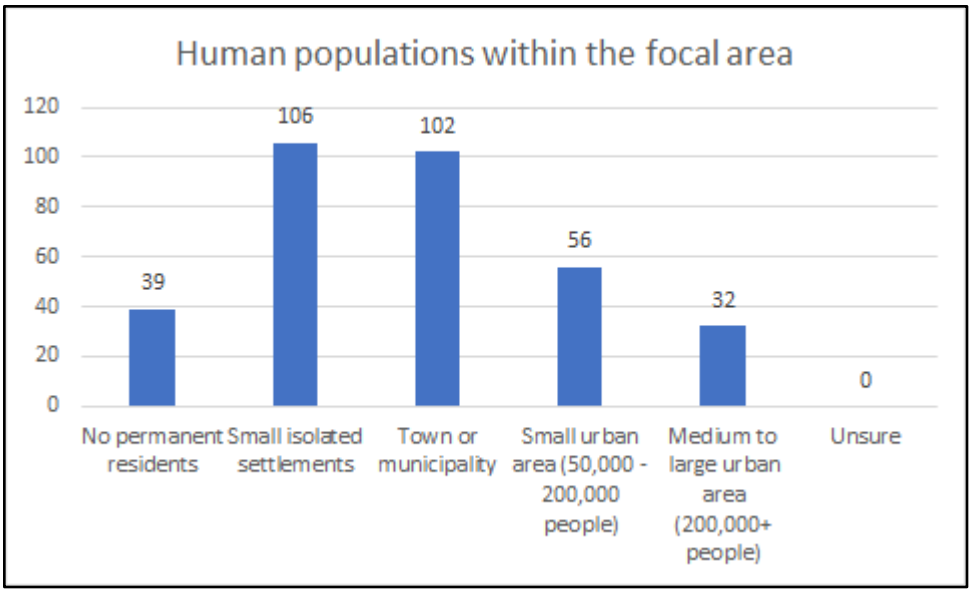


Figure 40 Human Populations with the Focal Area

Tourism

Tourism is one of the main sources of funding for conservation initiatives and drives economic activity in nearby populations. Several site submissions see more than a million tourists every year while others number in the hundreds. The average annual number of tourists was 39,229 with an average of 11,217 individuals employed in tourism within the focal area. The median number of dive operators was 4.

Table 20 Tourism Activity in Focal Areas. 'Count' refers to the number of responses that were correctly

	Annual number of tourists in proposed focal area	Number of dive operators in the focal area	Number of individuals employed in the tourism sector within the focal area
Count	37	104	60
Average	39,229	1,194	11,217
STD	114,292	6,913	46,252
Median	3,000	4	300
Max	500,000	43,864	323,000

'Count' refers to the number of responses that were correctly formatted for inclusion in this descriptive analysis, and the analysis is therefore interpreted as a representative sample of responses as a whole.

Fishing

In terms of community impact, reef-related fishing is crucial for income generation and food security, especially artisanal subsistence fisheries, which were most frequently rated as the predominant type of fishery in the focal area submissions (87), followed by artisanal commercial fisheries (47) and industrial fisheries (4).

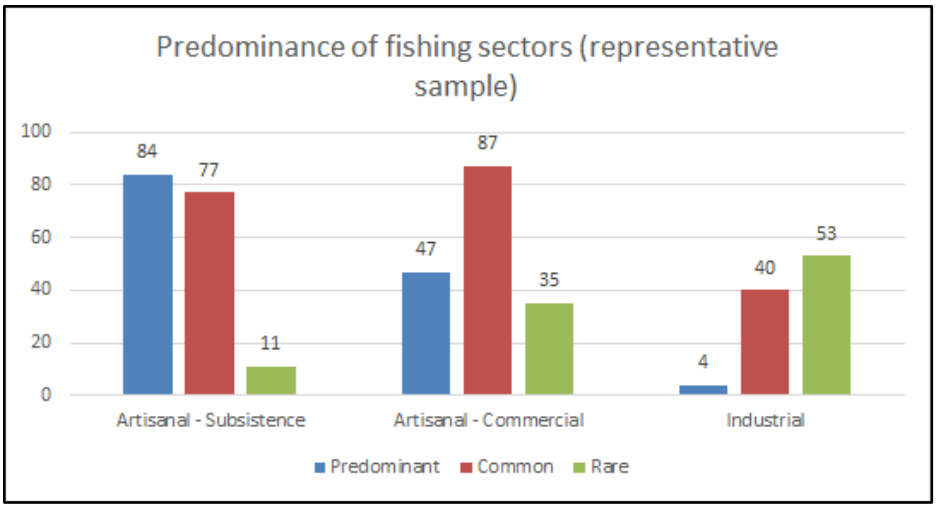


Figure 41 Predominance of Fishing Sectors (representative sample)

In addition to the type of fishery, other factors such as the presence of fishing cooperatives, sustainable fishery certifications, and the presence of aquaculture help to determine what enabling conditions exist. For example, more than half of responses indicated the presence of fishery cooperatives, while only 11.8% referenced sustainable fishery certifications. Aquaculture, if implemented sustainably, can provide an alternative source of food and income, relieving pressure on fishery resources. 36% of responses included aquaculture. The predominance of certain practices may also inform opportunity for potential investment. For example, the relative lack of sustainable fishery certifications may indicate that such programs could be enhanced across coral reefs on a global scale.

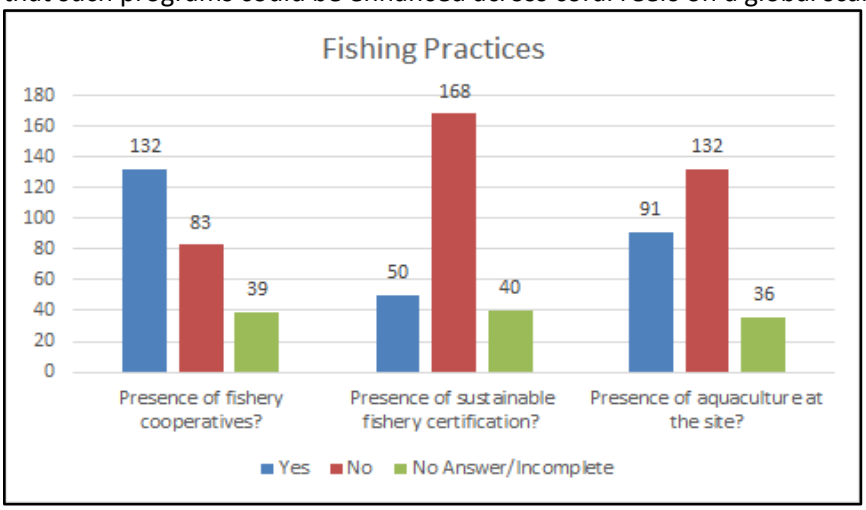


Figure 42 Fishing Practices

Limitations

Site or focal area definition: Of particular importance is the varying conception of a site or focal area. Respondents proposed sites ranging from single Marine Protected Areas of a few square kilometers to vast areas such as “The Region of Micronesia.” Each person’s vision of a focal area or site differs dramatically, though the RFI had provided respondents with an example definition.

● Redundancy: Many proposals contained the same sites with only minor variations, so there is a high level of redundancy, and several respondents duplicated their responses with both direct submissions and online survey submissions.

● Language: In several cases, a language barrier led to apparent mistakes in or a lack of answers. This barrier was due to different spoken languages and perhaps the survey's terminology regarding ecological factors and economic activities.
● Data collection: Approximately 20% of respondents sent direct submissions via email, instead of the online survey tool, and many provided multiple answers for questions that allowed for only one response in the online format, complicating analysis. Additionally, several RFI questions were open-ended, meaning that the corresponding answers may need to be coded in order to inform the GFCR site selection process.

Economic Activities

The RFI surveyed respondents on a large variety of economic activities taking place within the proposed site or focal area. The large majority included ecotourism (78%), research and monitoring (75%), and Marine Protected Areas (75%). The next most common activity was fishing (62%) followed by coral restoration (53%) and waste management and wastewater treatment (45%). Less frequent but still significant were plastics reduction, recycling, and circular economy; enhanced governance; aquaculture; near-shore agriculture; and micro and small infrastructure at below 30% of responses. This information may be useful for identifying different sites' investment potential.

Table 21 Economic Activities – Number of Responses and Percentage

Economic Activity	Site	Site (%)
Ecotourism	200	78%
Sustainable wild fisheries	160	62%
Sustainable aquaculture	69	27%
Sustainable near-shore agriculture - to reduce harmful runoff	69	27%
Waste management and wastewater treatment	117	45%
Sustainable marine transport and related infrastructure	69	27%
Coral restoration	138	53%
Pharmaceuticals	11	4%
Plastics reduction, recycling, and circular economy	97	38%
Research and monitoring	193	75%
Green Finance	47	18%
Enhanced Governance	89	34%
Blue Carbon	64	25%
Clean Energy	28	11%
Responsible supply chains	57	22%
Micro and small infrastructure	70	27%
Marine Protected Areas	193	75%
Technical Assistant Facility or Incubator	42	16%
Other (please specify)	19	7%

Annex 5 Potential Focal Areas

The GFCR has selected a broad array of countries (34 in total) as noted above. Within these countries, the GFCR will seek to concentrate efforts on "Focal Areas" where interventions can be effectively carried out. Climate change resilience is considered as the main factor for focal area selection following the purpose of the Fund to guide blended financing towards coral reefs of highest resilience. This requires basing the selection on both Bioclimatic Units (BCU's) identified by "50 Reefs" and sub-regions determined by "UNEP Coral Bleaching Futures" to be more resilient to climate change.
In doing so, the set of 43 countries can be classified into the following categories:

- Countries largely enveloped by resilient BCU's or sub-regions

These countries tend to be Small Island Developing States with coastlines that are largely surrounded by one or several BCU's. For this category, due to the relatively small size of the domestic economy and the large coastal coverage by BCU's, the entire country could potentially be a "focal area" in which the Fund can focus its intervention efforts.

- Countries containing single or dispersed, uniform climate change resilience coverage

This category of countries contains either one or several BCU's that do not cover a significant portion of the governed marine area (or a singular sub-region as determined by "UNEP Coral Bleaching Futures"). In the case of countries containing only a single BCU, the focal area would be centered around that BCU (as an example, this is the case with Malaysia). However, in the case of countries containing several dispersed BCU's, such as India, other selection criteria would be applied to narrow the focal area down (such as political stability, economic activity, or reef dependence).

- Countries containing a multitude of BCU's throughout the EEZ

This category includes Philippines and Indonesia, which contain 8.8% and 17.95% of the world's total coral reef area, respectively. Due to their importance, it is likely that the GFCR will select more than one focal area for each country. To do so, selecting focal areas based on marine ecoregions for ecological connectivity, coordination with a broad range of actors in a common area, and the clustering of BCU's is recommendable (if one BCU proves to be less resilient than expected, other nearby BCU's may compensate).

- Countries only identified through the UNEP Coral Bleaching Future

The 9 countries that are included in the country list but do not have priority BCUs will be assessed individually to determine potential priority Focal Areas. This work is ongoing.
A table of existing BCU's and proposed initial Focal Areas can be found below (Table 5).

Table 5 Existing BCUs and Potential Focal Areas

Country	BCU Name	Notes
Indonesia	23 BCUs	Probable focal areas in Raja Ampat and Lesser Sundas/Flores region
Phillippines	6 BCUs	Probable focal areaas around Palawan Island and
Eritrea	SW Red Sea	As all BCUs are located in the southern region of the country, this would be the probably focal area
	SE Red Sea	
	Southern Red Sea	
	Sudan II	
India	Lakshadweep	Prioritization Ongoing. Likely Sri Lanka BCU shared with Sri Lanka
	Sri Lanka	
	Lankshadweep North	
	Nicobar Islands	
Bahamas	Bahamas	The entire country can be considered a focal area as the BCU's envelope a large majority of the coastline
	Bahamas	
	Cuba North/Bahamas	
Tanzania	Southern Tanzania	The Kenya/Tanzania Trans-boundary region has been identified as the focal area
	Tanzania/Kenya	
	Central Tanzania	
Malaysia	Sabah	
Brazil	Abrolhos Bank	Prioritization ongoing. Two BCUs in same adminstrative unit
	Salvador	
	Macelo	
Maldives	Maldives South Reef	The entire country can be considered a focal area as the BCU's envelope a large majority of the coastline
	Maldives North Reef	
Kenya	Tanzania/Kenya	The Kenya/Tanzania Trans-boundary region has been identified as the focal area
	Kenya/Somalia	
Thailand	Gulf of Thailand	The entire country can be considered a focal area as the BCU's envelope a large majority of the coastline
	Tanintharyi/Phuket	
Fiji	Vanua Balavu - NE Fiji	The entire country can be considered a focal area as the BCU's envelope a large majority of the coastline
	Vatu-I-Ra	
Solomon Islands	Solomon Islands	The entire country can be considered a focal area as the BCU's envelope a large majority of the coastline
Mozambique	North Mozambique	
Comoros	Comoros/Mayotte	
Papua New Guinea	Milne Bay	
Madagascar	Northwest Madagascar	
Vietnam	Gulf of Thailand	
Sri Lanka	Sri Lanka	This BCU occupies the region between India and Sri Lanka
Haiti	Hispaniola	This BCU is shared with the Dominican Republic. The entire country can be considered a focal area as the BCU envelopes a large portion of the coastline
Cambodia	Gulf of Thailand	
Djibouti	SW Red Sea	
Dominican Republic	Hispaniola	This BCU is shared with Haiti. The entire country can be considered a focal area as the BCU envelopes a large portion of the coastline.
Timor Leste	Flores/Timor	A significant portion of this BCU is shared with Indonesia

Annex 6 RFI Questions

6.1 Site Selection RFI

Estimated time to complete survey: 45 minutes

Please note: This is not a Request for Proposals. Requests for Proposals can be expected in 2021. This survey will introduce your sites to the GFCR and the information will be used to develop a landscape analysis.

Brief descriptions where requested are adequate as we will do a more in-depth analysis as a second step, during which we may contact you.

Questions marked with * require answers

Part 1: Contact Information

1*. Your name:

2*. Name of your organization:

3*. Job title:

4*. Your email address:

5. (+) Country code - Telephone number

6*. Would you like to be kept informed of the progress of the Fund and future opportunities via the email provided?

☐ Yes

☐ No

Part 2: General Information

The GFCR considers 'focal area' to be a geographic unit of operation where one or multiple investments could occur targeting the Fund's objectives. A focal area could contain no, one or multiple MPAs and multiple coral reefs and it is unified either ecologically (i.e. biological corridor, reef systems) or administratively (i.e. province, municipality).

7*. Name of country where focal area is located:

8*. Name of focal area (if the area does not have a formal name, please use a descriptive name):

In case of no unique name, please repeat the name of your organization or company

9. How would you define the limits to the focal area? (ecological or administrative)

10. Surface area of the entire focal area (square km):

☐ 1 - 5

☐ 5 - 15

☐ 15 - 30

☐ 30 - 100

☐ 100 - 1000

☐ 1000+

11. Do any Protected Areas or conservation sites exist within the larger focal area? Please check all that apply:

☐ Marine Protected Area - No take zone

☐ Marine Protected Area - Multiple use

☐ Locally Managed Marine Areas

☐ Other Effective area-based Conservation Measures (OECM)

☐ None

☐ Other (please specify)

12. What international designations do sites within the focal area hold, if any?

☐ World Heritage Site

☐ Ramsar

☐ Important Bird Area

☐ IUCN Green List

☐ Key Biodiversity Area

☐ Man and the Biosphere (MAB)

☐ Unknown

☐ None

☐ Other (please specify)

13. If you would like to add additional context on international designations, please add it here.

14. If possible, please list the names of MPAs or other protected areas within the focal area.

15. Are there on-going coral reef monitoring efforts in the focal area?

☐ Yes

☐ No

☐ Unsure

16. Entity primarily responsible for conservation or management of the reef area/MPA:

☐ National government/agency

☐ Sub-national government/agency

☐ International Non-Government Organization

☐ Local Non-Government Organizations

☐ Community-based organizations

☐ Traditional management

☐ Public Private Partnerships

☐ Privately owned

☐ Unknown

☐ Other entity or additional information as needed

_____

_____

Part 3: Detailed Information

17. Describe the current condition of the reefs within the focal area (on average):

☐ (5) Pristine, minimal disturbance

☐ (4) Healthy coral and diverse fish population including apex predators, minor disturbance

☐ (3) Moderate, partially disturbed, incomplete reef community

☐ (2) Poor, heavily disturbed, low diversity

☐ (1) Dead, very heavily disturbed reef

18. General estimate of coral species richness within the focal area:

☐ High

☐ Medium

☐ Low

☐ Unsure

19. General estimate of coral fish species richness within the focal area:

☐ High

☐ Medium

☐ Low

☐ Unsure

20. Abundance of sharks and other apex predators within the focal area

☐ Highly Abundant

☐ Abundant

☐ Rare or non-existent

☐ Unsure

21. Abundance of herbivorous fishes within the focal area:

(e.g., Parrot Fish)

☐ Highly Abundant

☐ Abundant

☐ Rare or non-existent

☐ Unsure

22. List flagship or charismatic species within the focal area (e.g. marine mammals, sharks and rays):

23. List notable threatened or endangered species and include their IUCN Red List status within the focal area

24. Describe human populations within the focal area:

☐ No permanent residents

☐ Small isolated settlements

☐ Town or municipality

☐ Small urban area (50,000 – 200,000 people)

☐ Medium to large urban area (200,000+)

☐ Unsure

25. What drivers of degradation of coral reef, mangrove, or seagrass ecosystems are present in the focal area?

Select all that apply

☐ Overfishing, including illegal, unregulated and unreported (IUU)

☐ Destructive fishing (e.g. blast fishing, cyanide fishing)

☐ Marine transport

☐ Coastal development

☐ Harmful tourism

☐ Land based pollution (e.g. wastewater, agriculture runoff)

☐ Marine litter (e.g. plastic pollution, ghost or derelict fishing gear)

☐ Non-living resource extraction and exploration (e.g. mining, oil and gas)

☐ Storm and wave damage

☐ Invasive species

☐ Disease

☐ Warming

☐ Acidification

☐ Other (please specify)

26. Please expand on the causes of these drivers in the focal area:

100 words max

27. Has there been a significant bleaching event within the last 10 years?

28. List current conservation initiatives in the focal area (include name of lead organizations):

100 words max

29. Are there any unique or remarkable governance issues or policies that impact marine resources in the focal area?

100 words max

Part 4: Economic Potential of the Focal Area

30. If you have the following information, please provide estimates for:

Annual number of tourists in proposed focal area	
Number of dive operators in the focal area	
Number of individuals employed in the tourism sector	

31. Most common type of tourism within the focal area:

For example, within 30 km

Select all that apply

☐ Specialized/advanced/niche eco-tourism

☐ Nature-based / Ecotourism

☐ General ecotourism

☐ Luxury tourism

☐ Mass tourism

☐ Cruise ship

☐ Other (please specify)

32. Describe fishery sector on the reef and surrounding waters:

Write in one of the following three options for each category: **Predominate, Common, Rare, None**

Artisanal - Subsistence	
Artisanal - Commercial	
Industrial	

33. Presence of fishery cooperatives?

☐ Yes

☐ No

34. Presence of sustainable fishery certification?

☐ Yes

☐ No

35. Presence of aquaculture at the site?

☐ Yes

☐ No

36. Sectors with impacts or dependencies on the reef at or near the site?

For example, within 30 km

Select all that apply

☐ Ecotourism

☐ Sustainable wild fisheries

☐ Sustainable aquaculture

☐ Sustainable near-shore agriculture - to reduce harmful runoff

☐ Waste management and wastewater treatment

☐ Sustainable marine transport and related infrastructure

☐ Coral restoration

☐ Pharmaceuticals

☒ Plastics reduction, recycling, and circular economy

☐ Research and monitoring

☐ Green Finance

☐ Enhanced Governance

☐ Blue Carbon

☐ Clean Energy

☐ Responsible supply chains

☐ Micro and small infrastructure

☐ Marine Protected Areas

☐ Technical Assistant Facility or Incubator

☐ Other (please specify)

6.2 Business Model RFI

GFCR Request for Information
Business Models

Estimated time to complete initial section: 15 minutes (additional section: 20 minutes)

Questions marked with * require answers

1*. Organization or company name:

2*. Name of initiative, project or instrument?

In case of no unique name, please repeat the name of your organization or company

3*. Short pitch - Summary paragraph of concept, business, or financial instrument:

Address each of the following with one sentence each: context, opportunity, specific description, key steps, expected outcomes

250 words max

4*. How would you categorize this initiative?

Select all that apply

- ☐ Ecotourism
- ☐ Sustainable wild fisheries
- ☐ Sustainable aquaculture
- ☐ Sustainable near-shore agriculture - to reduce harmful runoff
- ☐ Waste management and wastewater treatment
- ☐ Sustainable marine transport and related infrastructure
- ☐ Coral restoration
- ☐ Pharmaceuticals

GFCR Request for Information
Business Models

☐ Plastics reduction, recycling, and circular economy

☐ Research and monitoring

☐ Green Finance

☐ Enhanced Governance

☐ Blue Carbon

☐ Clean Energy

☐ Responsible supply chains

☐ Micro and small infrastructure

☐ Marine Protected Areas

☐ Technical Assistant Facility or Incubator

☐ Other (please specify)

5*. Alignment with 4 stated outcomes (refer to GFCR - TOC for more information)?

	Yes	No	Unsure
Outcome 1: *Protect priority coral reef sites and climate change resilient refugia*	☐	☐	☐
Outcome 2: *Transformation towards*	☐	☐	☐

sustainable livelihoods of reef-dependent communities			
Outcome 3: *Coral reef restoration and adaptation technologies*	☐	☐	☐
Outcome 4: *Recovery of coral reef-dependent communities to major shocks*	☐	☐	☐

6. Where appropriate, provide additional detail on how the concept addresses each of the four GFCR Outcomes.

100 words max

Outcome 1: Protect Coral Reef Sites and Refugia

Outcome 2: Transform Livelihoods

Outcome 3: Coral Reef Restoration and Adaptation Technologies

Outcome 4: *Community Recovery and Resiliency to Major Shocks*

GLOBAL FUND FOR CORAL REEFS

GFCR Request for Information
Business Models

7. Years of organization's experience implementing the business model:

☐ Less than 1 year

☐ 1 - 2 years

☐ 2 - 5 years

☐ 5+ years

8. Is the initiative, project or instrument currently generating revenue?

☐ Yes

☐ No

9. Describe current revenue mechanisms and associated types of clients.

For example: Tourism entrance fees for international and domestic tourists, seafood sales, purchase of carbon credits, etc.

100 words max

10. What was your most recent year's revenue?

11. What is the projected revenue in 5 years' time?

For questions 12-16, please indicate at minimum one (1) location where the business model is currently being implemented, and if possible list other current and potential locations.

12*. Location 1

Country:

GFCR Request for Information
Business Models

Site Name:

Existing or Potential:

13. Location 2

Country:

Site Name:

Existing or Potential:

14. Location 3

Country:

Site Name:

Existing or Potential:

GFCR Request for Information
Business Models

15. Location 4

Country:

Site Name:

Existing or Potential:

16. Location 5

Country:

Site Name:

Existing or Potential:

17. What are your estimated financing needs (over the next 5 years):

☐ < 50,000 USD

☐ 50,000 - 100,000 USD

☐ 100,000 - 500,000 USD

☐ 500,000 - 1 million USD

☐ 1 million to 5 million USD

☐ 5 million to 20 million USD

☐ > 20 million USD

18. If the business model mitigates threats to coral reefs and related mangrove or seagrass ecosystems, which threats are targeted?

Select all that apply

☐ Overfishing, including illegal, unregulated and unreported (IUU)

☐ Destructive fishing (e.g. blast fishing, cyanide fishing)

☐ Marine transport

☐ Coastal development

☐ Harmful tourism

☐ Land based pollution (e.g. wastewater, agriculture runoff)

☐ Marine litter (e.g. plastic pollution, ghost or derelict fishing gear)

☐ Non-living resource extraction and exploration (e.g. mining, oil and gas)

☐ Storm and wave damage

☐ Invasive species

☐ Disease

☐ Warming

☐ Acidification

☐ Other (please specify)

GFCR Request for Information
Business Models

19. Please expand on how the concept addresses drivers of coral reef degradation or ecosystem recovery and restoration at this site. *150 words max*

20. Describe the socio-economic conditions and opportunities for local stakeholders, beneficiaries, and disadvantaged populations.

For example: Youth, indigenous groups, women, etc.

100 words max

21. Investment time horizon?

☐ Short term 1-3 years

☐ Medium 3-7 years

☐ Long (>7 years)

☐ Unknown

22. Initiative, Project, or Instrument's anticipated return on investment:

☐ Grant funding - not applicable

☐ 0% - rate of capital only

☐ 0 - 3% return

☐ 3 - 6% return

☐ 6 - 10% return

☐ 10 - 15% return

☐ > 15%

☐ Unknown

GFCR Request for Information
Business Models

23. List your key financial partners, including main sources of financing.

For example: Investors, lenders, donors, government subsidies, MFIs, DFIs etc.

24*. Contact name:

25. Job title:

26*. Email address

27. (+) Country code - Telephone number

28*. Do you require that this information remain confidential?

☐ Yes

☐ No

29*. Would you like to be updated on the progress of the GFCR, including any future Calls for Proposals?

☐ Yes

☐ No

Annex 7 Country Profiles

The following section gives detailed information for the countries selected for Track I Programming. Introductory information is provided for each country, followed by the presentation of notable Business Model RFI responses. Each country profile then presents business models and sites of interest that will be investigated through interviews and additional research to determine if they should be part of the Fund's pipeline.

7.1 The Bahamas

7.1.1 Introduction

7.1.1.1 Reefs

The Bahamas contains one of the most extensive networks of climate resilient coral reefs in the Caribbean, containing two priority BCUs that contain nearly all the country's 3,150 km^2 of coral reefs. Reefs in the country have also been highlighted by the UN Coral Futures project for resilience. There are also 3 Blue Hope Spots associated with Bahaman coral reefs. One of these reefs is the Andros Barrier Reef that is the 3rd largest barrier reef in the world. The main drivers of degradation of the reefs are warming, disease, storm and wave damage, invasive species, and marine transport (see figures below).

7.1.1.2 Policies

The Bahamas received a score of 0/5 for supportive reef policy framework as they have not signed on to any of the global organizations or initiatives that were used to calculate this metric. However, it should be noted that the Bahamas is close to achieving SDG 14.5 having protected 8% of marine and coastal ecosystems in its EEZ. The Bahamas is also part of the Caribbean Challenge Initiative (CCI) that aims to protect 20% of nearshore and coastal environments within each participating country. As such, while the Bahamas received a low score in our reef policy framework index, there are other notable initiatives that demonstrate a strong political engagement for coral reef conservation in the country.

7.1.1.3 Investment Environment

The Bahamas scored the highest of all countries for Investment Environment according to our criteria of Enforcing Contracts and Control of Corruption. Investment Environment is therefore considered very positive and presents a strong argument overall for focusing investment efforts in the country.

7.1.1.4 Business Models and Other Opportunities

The RFI generated a high degree of interest for both business models (8 responses, 4 of interest highlighted here) and sites (11). There is an active investment opportunity to support a debt-for-nature swap and blue bond program headed by The Nature Conservancy (see details elsewhere in report). Aside from specific outlined opportunities, the Fund could also have a particularly high degree of impact in the Bahamas considering the socio-economic dependence on reefs (tourism, fisheries, and storm protection) and vulnerability to climate change impacts including extreme hurricanes among other threats. These factors lead the Bahamas to be the only priority country in our assessment that achieved a maximum score of 12/12 for Reef Dependence, which may indicate substantial opportunities for investments that may support reef conservation and communities that rely on them.

7.1.2 Request for Information and Independent Research

The Bahamas contains one of the most extensive networks of climate resilient coral reefs in the Caribbean, containing two priority BCUs that encompass nearly all the country's coastline. The Fund could also have a particularly high degree of impact in the Bahamas considering the socio-economic dependence on reefs (tourism, fisheries, and storm protection) and vulnerability to climate change impacts including extreme hurricanes among other threats.

7.1.2.1 Business Models

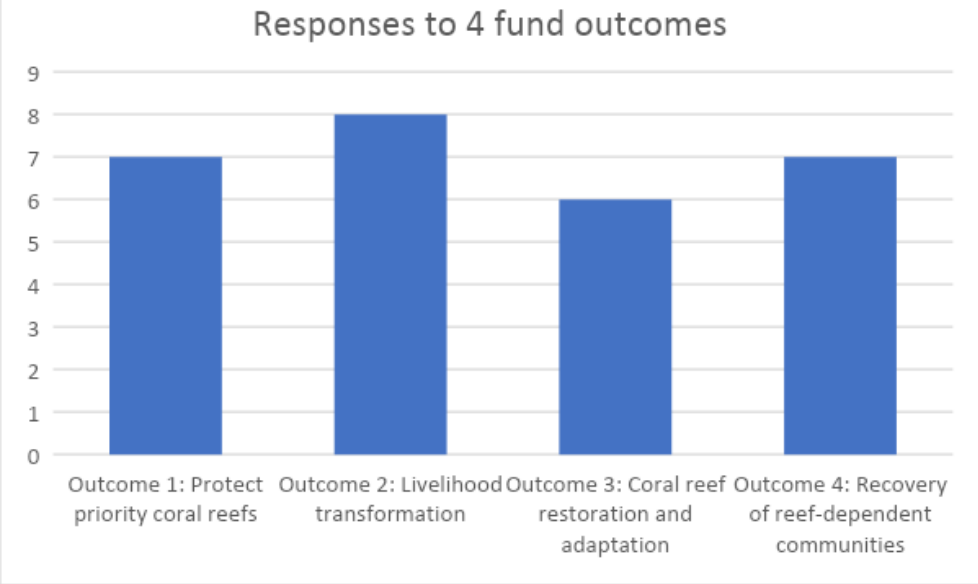
Total Responses: 8
Responses of Interest: 4

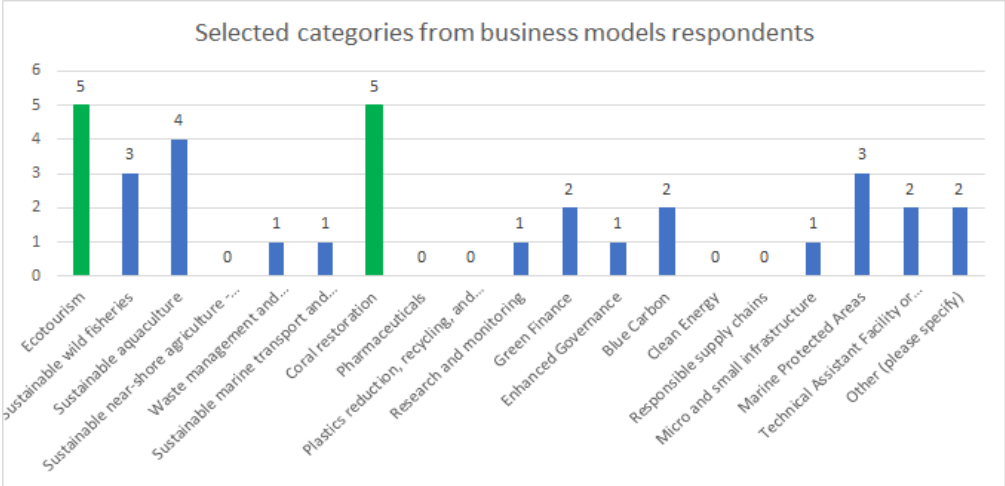
Respondents:

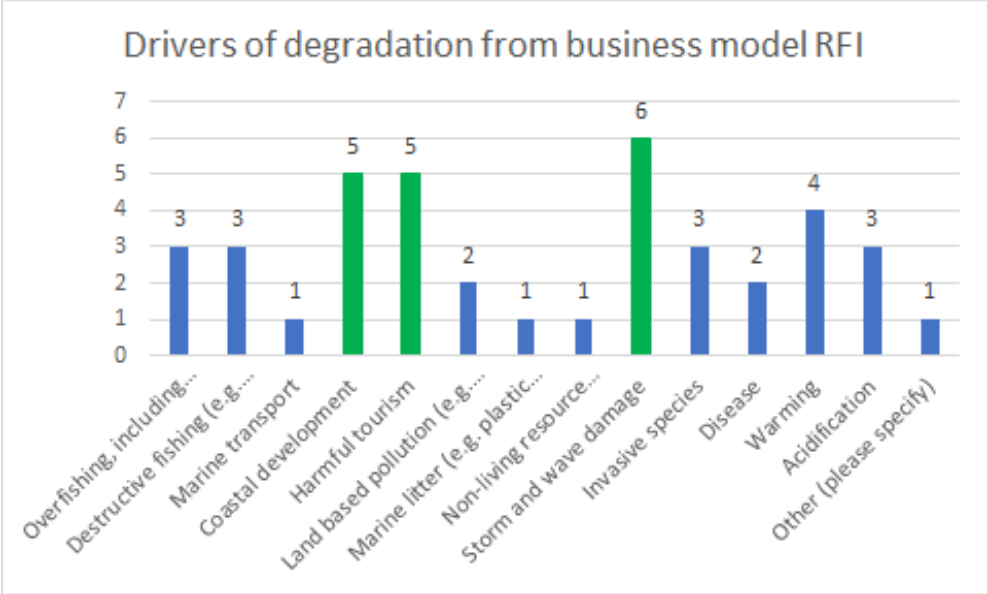
- Reef Rescue Network
- Atlantic Lionshare Ltd
- Coral Vita
- Blue Finance
- Plant a Million Corals Foundation
- The Nature Conservancy (n = 3)

Other Strategic Partners:

- Cruise lines
  - Disney, Norwegian, MSC
- Resorts, hotels and tourism operators
  - Large e.g., Atlantis
  - Small e.g., Stuart Cove's Dive, Small Hope Bay Lodge
  - Lindblad
- Boost VC
- MaSa Impact
- AXA AL
- Multi/bilateral
  - USAID, German Ministry for the Environment







Highlighted Business Model 1
Organization: Coral Vita https://www.coralvita.co/
Program: Coral Vita
ID#: 1042
Summary: See Coral Vita – Land Based Coral Reproduction and Restoration
Most Recent Revenue: $273,144.64 USD
Projected Revenue in 5 years: $6,807,500 USD
5-year financing needs: $5 - $10 million USD
Projected IRR: 3-6%
Investment Horizon: 3-7 years

Countries: 1. Bahamas, Grand Bahama, (Existing), 2. Fiji, 3. Maldives, 4. Mexico, 5. British Virgin Islands, (Potential)
Highlighted Business Model 2
Organization: Blue Finance http://blue-finance.org/

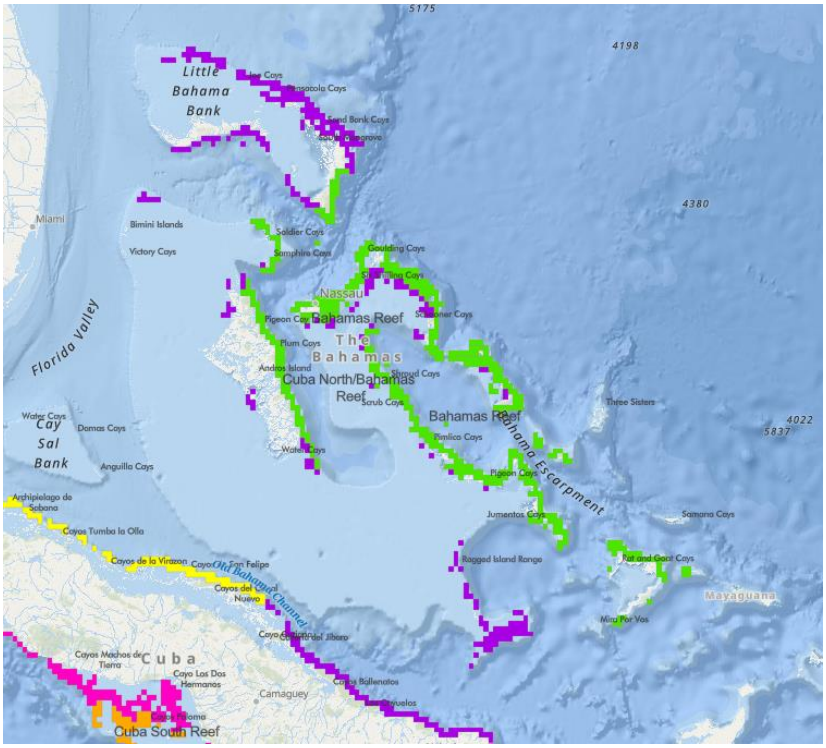
Summary: See Blue finance – Public Private Partnerships and Impact Investing for Marine Protected Areas
ID#: 1078
Most Recent Revenue: $50,000 USD
Projected Revenue in 5 years: $4 million USD
5-year financing needs: $5 - $10 million USD
Projected IRR: *3-6% return*
Investment Horizon: *>7 years*
Countries: **1.** Philippines, Existing (Oriental Mindoro MPA Network) 2. Dominican Republic, Existing 3. Belize, Existing 4. Indonesia, Potential 5. St. Lucia, Potential, **6. Bahamas, Existing,** 7. Cambodia, Existing 8. Mozambique, Existing 9. Cape Verde, Existing.
Highlighted Business Model 3
Program: Reef Rescue Network http://www.perryinstitute.org/reef-rescue-network/
Organization: The Perry Institute for Marine Science
ID#: 1027
Summary: The Reef Rescue Network is a partnership between scientists, NGOs and for-profit businesses to collaborate on coral restoration efforts that measurably improve the condition of coral reef ecosystems and prevent loss of species and genetic diversity among corals, while at the same time supporting local communities and promoting sustainable tourism. The program generates income from tourism fees for PADI specialty diver course and special packages for coral restoration, donations and grants.
Most Recent Revenue: $500,000 USD
Projected Revenue in 5 years: $2.5 - 5 million USD
5-year financing needs: $5 - $10 million USD
Projected IRR: *Unknown*
Investment Horizon: *>7 years*
Countries: **1. Bahamas; Bond Reef/Stuarts Cove, Andros Reef, and Great Stirrup Cave, Existing.** 2. St. Lucia, Existing. 3. Aruba, Existing.

Highlighted Business Model 4
Program: Blue Carbon Resilience Credits
Organization: The Nature Conservancy
ID#: 1122
Summary: TNC is working with industry leaders in the insurance sector to develop the first-ever credit to value coastal wetlands' combined ability to sequester carbon and increase resilience called the Blue Carbon Resilience Credit. Two blue carbon verification systems for calculating carbon stocks and emissions reductions have been approved, most notably the Verified Carbon Standard Methodology for Tidal Wetland and Seagrass Restoration, which provides GHG accounting procedures for marsh, mangrove, tidal forested wetland, and seagrass systems across a diversity of geomorphic conditions and restoration techniques. In addition, TNC is developing 'The Resilience Credit.' It will be a new methodology to advance the United Nations Sustainable Development Goal 13: Climate Action. TNC is building a framework, so projects that restore or conserve coastal wetlands will receive a credit based on reduced flood impacts to vulnerable coastal communities and assets. The opportunity to stack carbon and resilience credits increases the financial outcomes of protection and restoration projects. TNC is working to create a pipeline of blue carbon resilience credit projects supported through a blended finance approach that 'de-risks' individual pilot sites. Philanthropic and public funding will pool together resources to develop site-based projects while the investment capital supports the long-term financing of restoration and conservation activities, which can help to support the entire coastal

ecosystem and scale coastal restoration at a global scale. Three-year outcome: A fully operational, growing and sustainable BCRC program.
Most Recent Revenue: Not reported
Projected Revenue in 5 years: >$1 million USD in offsets
5-year financing needs: $5 - $20 million USD
Projected IRR: *Unknown*
Investment Horizon: *>7 years*
Countries: 1. USA, developing. 2. Belize, developing. **3. Bahamas, Andros and Grand Bahama, early feasibility.** 4. Papua New Guinea, potential. 5. Dominican Republic, potential.

7.1.2.2 Site Selection

Total Request for Information responses: 11
Organizations: MSC Foundation, The Bahamas National Trust (n = 9), Perry Institute for Marine Science



<u>Vibrant Ocean Reefs (and associated RFI responses):</u>

1. **Cuba North/Bahamas Reef (Purple)**

1.1. The Bahamas National Trust

<u>1.1.1. Walkers Cay National Park</u>

Walkers Cay National Park is a no-take MPA in the greater Abaco region that is part of the Bahamas National Trust network that protects a variety of important marine habitats around Walkers Cay, the northernmost island in the Bahamas. The MPA is a total of 38 km^2 and the coral reefs are a reported 5 - 15 km^2 in size. The reefs are described as healthy with medium levels of coral and fish species richness. Both herbivorous fish and large predators are considered abundant. Flagship species in the area include an array of marine mammals (dolphins, whales, and manatees), sharks, rays, and sea turtles. There are no permanent residents in the region, though the island has been called a “mecca” for diving.

Drivers of degradation: Storm and wave damage, invasive species, disease, and warming. Mass bleaching has been observed regularly off Abaco during the summer and early autumn over the past 10 years with major events in 2015 and 2016.
Economic activities: Ecotourism, sustainable wild fisheries, coral restoration, research and monitoring, and marine protected areas.

1.1.2. Peterson Cay National Park

Peterson Cay National Park is a small multi-use MPA that is also a designated Important Bird Area and Key Biodiversity Area. The reef is described as in moderate condition with medium coral species richness and high fish species richness. Large apex predators and herbivorous reef fish are both considered abundant. Flagship species in the area include an array of marine mammals (dolphins, whales, and manatees), sharks, rays, and sea turtles. There are no permanent residents in the vicinity.
Drivers of degradation: Marine transport, land-based pollution, marine litter, storm and wave damage, invasive species, disease, and warming.
Economic activities: Ecotourism, sustainable wild fisheries, waste management and wastewater treatment, coral restoration, research and monitoring, and marine protected areas. there are also oil storage facilities near the site, in addition to transport via tankers.

1. Bahamas Reef (Green)

2.1. *The Bahamas National Trust*

2.1.1. West Coast Marine Park

West Coast Marine Park is a multi-use MPA that protects marine ecosystems around San Salvador Island, including, "some of the most dramatic and breathtaking coral wall formations in The Bahamas." The focal area is around 30-100 km^2 in scale and is a designated Important Bird Area and Key Biodiversity Area. The reefs are described as healthy with medium species richness (coral and fish) and abundant predators and herbivorous fishes. Flagship species in the area include an array of marine mammals (dolphins, whales, and manatees), sharks, rays, and sea turtles. This includes the critically endangered hawksbill turtle, and the deep-water passages within the park are known migratory corridors for humpback whales, among other species. There are small, isolated settlements in the vicinity, and the park is a well-known diving destination.
Drivers of degradation: Overfishing and IUU fishing, marine transport, coastal development, marine litter, storm and wave damage, invasive species, disease, and warming.
Economic activities: Ecotourism, sustainable wild fisheries, waste management and wastewater treatment, and marine protected areas.
Other: The Bahamas National Trust has begun discussions with a local group for co-management of this site. (1st for the country)

2.1.2. Moriah Harbour Cay National Park

Moriah Harbour Cay National Park is a multi-use marine protected area that encompasses 168 km^2 of marine and coastal ecosystems, the reef areas being 30-100 km2. The ecosystems are described as healthy, with medium species richness (fish and coral) and abundant predators and herbivorous reef fish. Flagship species include various species of sharks, rays, and sea turtles. There are no permanent residents within the park, but it is adjacent to communities in Exuma and acts as a natural barrier against wave energy for the region.
Drivers of degradation: Marine transport, harmful tourism, marine litter, storm and wave damage, invasive species, disease, and warming.
Economic activities: Ecotourism, sustainable wild fisheries, waste management and wastewater treatment, research and monitoring, and marine protected areas.

2.1.3. Conception Island National Park

Conception Island National Park is a 300 km^2 no-take marine protected area that protects, "the most beautiful island in The Bahamas." The coral reefs within the MPA encompass an area of 1-5 km^2 in scale,

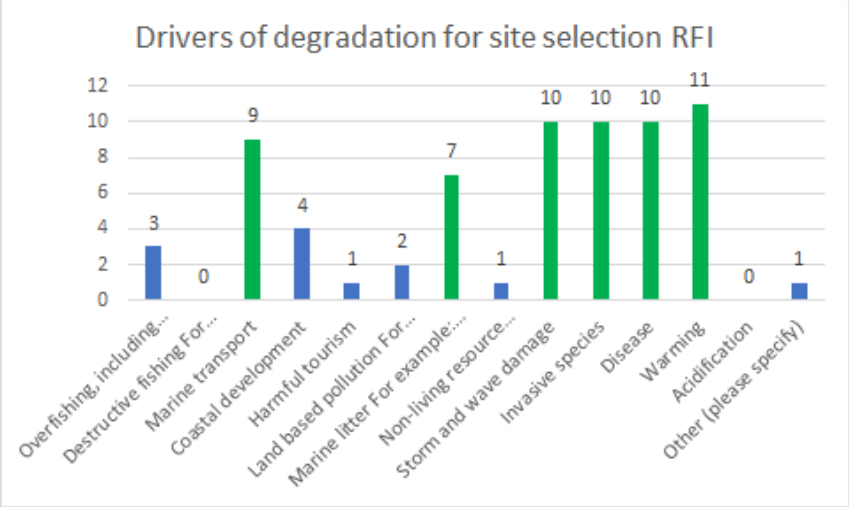
and the island is also an Important Bird Area and Key Biodiversity Area. The reefs are described as pristine, with medium species richness (fish and corals) and abundance of both large predators and herbivorous fishes. Flagship species include various sharks, rays, and sea turtles. There are no permanent residents on the island, and it has not been inhabited for over 100 years.
Drivers of degradation: Marine transport, storm and wave damage, invasive species, disease, and warming.
Economic activities: Ecotourism, sustainable wild fisheries, waste management and wastewater treatment, research and monitoring, and marine protected areas.

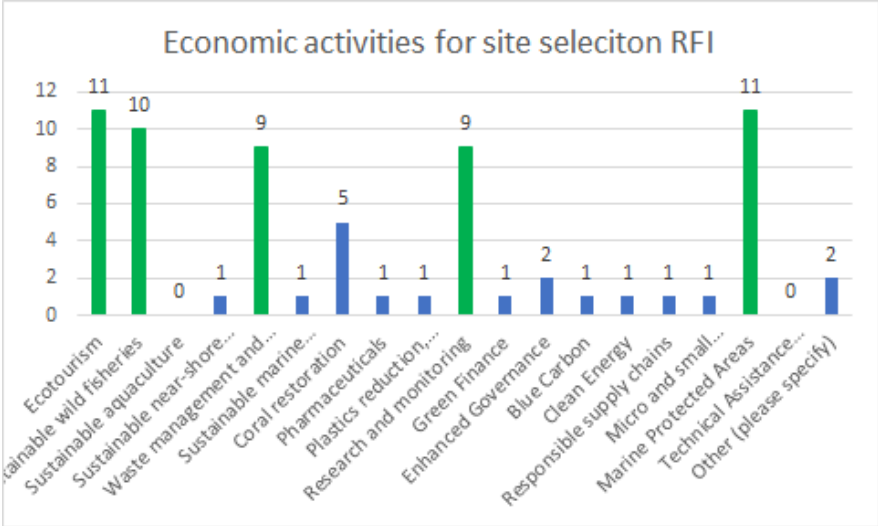
2.1.4. Andros North & South Marine Park (*answers from two responses were consolidated)

Andros North and South Marine Parks protect a combined 85 km^2 of the healthiest parts of the Andros Barrier Reef, the third largest barrier reef in the world. Both parks are no-take. The reefs in the parks have been described as healthy with medium species richness (fish and coral) and abundant apex predators and herbivorous fishes. Flagship species include various species of sharks, rays, and sea turtles. There are no permanent residents within the MPA, and neighboring Andros Island has a total population of under 10,000 people.
Drivers of degradation: Marine transport, marine litter, storm and wave damage, invasive species, disease, and warming. Past bleaching is likely, but unconfirmed.
Economic activities: Ecotourism, sustainable wild fisheries, waste management and wastewater treatment, research and monitoring, and marine protected areas.

2.1.5. Pelican Cays Land and Sea Park

Pelican Cays Land and Sea Park is a 21 km^2 no-take marine protected area that protects about 5-15 km^2 of coral reefs and is also an Important Bird Area. The reef has been described as healthy with medium species richness (fish and coral) and abundant apex predators and herbivorous fishes. Flagship species include various species of marine mammals (dolphins, whales, manatees), sharks, rays and sea turtles. There are no permanent residents within or bordering the park, and it is approximately 5 miles east of Great Abaco Island which has a population of under 20,000 people.
Drivers of degradation: Marine transport, coastal development, land-based pollution, storm and wave damage, invasive species, disease, and warming. Mass bleaching has occurred in the waters off Great Abaco during the summer and early autumn of 2015 and 2016.
Economic activities: Ecotourism, sustainable wild fisheries, coral restoration, research and monitoring, and marine protected areas. The Perry Institute and other local partners have established coral nurseries in the park as part of the Reef Rescue Network.





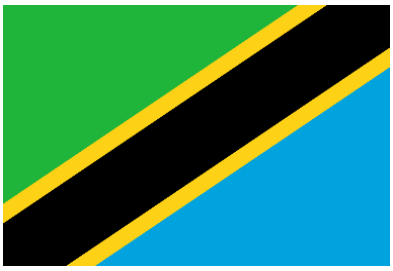
7.1.3 Conclusions

The Bahamas has a relatively low population and small EEZ, and nearly all of the country's coral reefs are within the two priority BCUs. This enables the GFCR to take a country-wide approach for a Focal Area. Tourism and sustainable fisheries are particularly prominent in the country and can provide areas for investment. There are also extensive mangrove networks and seagrass beds around some islands in the country that could be opportunities for Blue Carbon. Other potentially viable business models include debt conversions and the coral farming company Coral Vita. Recent impacts from hurricanes, including Hurricane Dorian in 2019, also suggest the possibility for a range of insurance products.

The current proposal for priority programming is based on an RFI received from The Nature Conservancy (TNC).

> Bahamian coral reefs encompass the most expansive coral reef system in the Insular Caribbean. These reefs are threatened by unsustainable fishing practices; illegal, unreported, and unregulated (IUU) fishing; coastal development; climate change; and emerging diseases. Increased marine protection, threat abatement, strengthened fisheries management and scaled up reef restoration are among the actions that can help to address these threats. These actions require additional, long-term investments. To meet this urgent need, The Nature Conservancy (TNC) is pursuing an innovative debt conversion mechanism that would provide large-scale, sustainable finance for coral reef protection, conservation and management, with a focus on the most vulnerable, high biodiversity value coral reefs across The Bahamas. The proposed debt swap envisions purchasing commercial sovereign debt at a discount on the market, and restructuring a portion of that debt into a Conservation Note that provides annual funding to an existing Conservation Trust Fund (CTF), and funds an endowment that reverts to the CTF for perpetual conservation funding starting in year 21. While the CTF is expected to fund a portion of annual MPA costs, it is expected that additional funding will be required from other sources.

7.2 Kenya + Tanzania Trans-border region (including Pemba)



7.2.1 Introduction

7.2.1.1 Reefs

The Tanzania/Kenya coral reef BCU (Bioclimatic Unit), stretches from the north of Malindi in Kenya to Dar Es Salaam in Tanzania *(*Note: Pemba Island, despite being surrounded by another BCU is grouped with this note due to the island's location)*. This reef has received increased attention recently with the release of a study that established additional documentation for being a climate refuge for coral reefs. Labeled a jewel of biodiversity by researchers, the reef complex is located in a rare ocean cool spot that is helping to protect large populations of corals and marine mammals from the devastating impacts of climate change. Due to a deep coastal basin formed thousands of years ago during deglaciation by runoff from Mt. Kilimanjaro and the Usambara mountains, deep water channels now help provide thermal stability to marine ecosystems, shielding them from the worst of global warming in a pocket of cool and calm waters (Rare climate refuge for coral reefs discovered off the coast of Kenya and Tanzania).

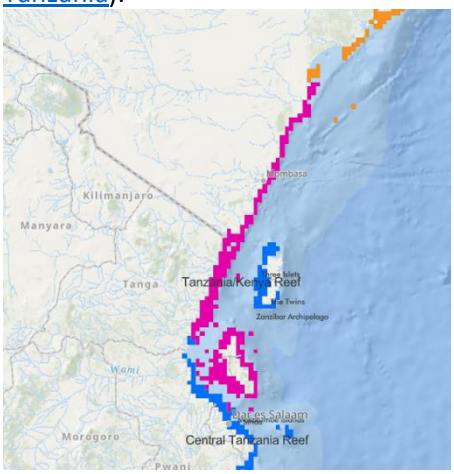


Figure 22 The Kenya/Tanzania BCU is pink

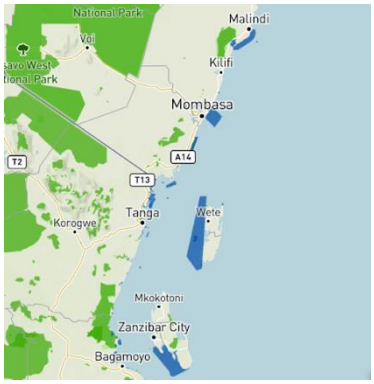


Figure 23 Marine Protected Areas in the region (in blue)

7.2.1.2 Biodiversity /heritage value

The region is rich in biodiversity and is characterized by fringing reef, mangroves, rocky shores, seagrass beds, intertidal reef flats, muddy or sandy flats, and coastal forests. The area is also important as a habitat for East Africa's unique marine life. This includes threatened sharks and rays, dolphins and various sea turtles, amongst many other species. The elusive and very rare dugong is also known to inhabit the area but is said to be present in small numbers.

Multiple MPAs already exist and are presented in Figure 23 as blue areas (Marine Protection Atlas) though the map is not necessarily exhaustive as it excludes community conservation areas. As per the Marine Protection Atlas, only 7 MPAs are categorized as "fully/highly protected" covering a combined area of 87 km^2 and include Malindi Marine National Park; Watamu Marine National Park; Mombasa Marine National Park (distinct from the Mombasa Marine National Reserve, much larger but is classified as less protected); Kisite Marine National Park; Maziwe Island Marine Reserve; Chumbe Island Coral Park and Dar Es Salaam Marine Reserve.

7.2.1.3 Policy Framework

Multiple relevant international agreements, conventions and policies related to environmental issues have been signed by both Kenya and Tanzania. Some of these are listed here:

- UNCLOS (United Nations Convention on the Law of the Sea)
- CBD (Convention on Biological Diversity)
- UNFCCC (United Nations Framework Convention on Climate Change)
- Kyoto Protocol
- Paris Agreement
- Ramsar Convention (Convention on Wetlands of International Importance)
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)
- London Convention (Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter)
- MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships)
- Stockholm Convention (Convention on Persistent Organic Pollutants)
- CMS (Convention on the Conservation of Migratory Species of Wild Animals)
- Nairobi Convention

At the national level, Kenya's Blue Economy Strategy prioritizes the sustainable use of marine resources. The national "Vision 2030" specifically mentions the '*creation of more marine reserves and the protection of Kenya's fish stocks by enforcing fishing regulations and more effective policing of marine parks and reserves.*' Kenya was also a host for the Blue Economy Conference which took place in 2018 in Nairobi, in addition to being one of the 14 countries that recently endorsed the commitment to a 100% Sustainable Ocean (oceanpanel.org).

For Tanzania, due to the historical distinction between Tanganyika (now mainland Tanzania) and Zanzibar (the islands of Pemba and Unguja), there is a certain level of separation in legislation and administrative authorities governing environmental issues and marine fisheries. There has been a clear desire to advance the blue economy especially in Zanzibar. Dr. Hussein Mwinyi (President of Zanzibar) has affirmed his support for blue economy projects (Why Hussein Mwinyi is rooting for Blue Economy). Both Kenya and Tanzania are members of IORA (the Indian Ocean Rim Association) which focuses on sustainable fisheries management and the blue economy. Zanzibar hosts WIOMSA (the Western Indian Ocean Marine Science Association) which aims to advance regional co-operation in all aspects of coastal and marine sciences and to support sustainable development in the Western Indian Ocean Region. In Kenya, CORDIO EA has a strong research presence not only in Kenya but in the wider Western Indian Ocean (WIO).

There is an ongoing project to create a transboundary conservation area. This speaks to their potential to work jointly in tackling transboundary socio-environmental issues affecting the coastal and marine ecosystems.

7.2.1.4 Ecosystem service value of coral reefs

The Tanzania/Kenya reef is of key importance to the livelihoods of the region's coastal populations providing a source of nutrition and income to many population centers including Zanzibar, Mombasa and Dar Es Salaam whose metro areas respectively have populations of 735,000, 1,296,000 and 6,702,000 people (macrotrends.net). Like in other coastal countries, the livelihoods of many are closely linked to the reefs for food and tourism revenue.

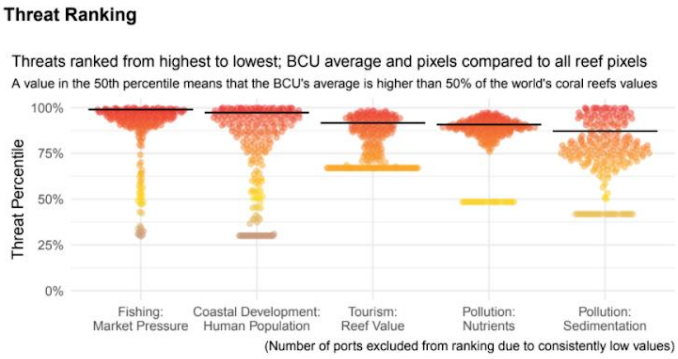
Reef-associated Visitor Expenditure, USD (Spalding et al. 2017): Kenya - 84,152,000, Tanzania - 131,076,000

Value of Reef Fish Harvest, USD (Teh et al 2013): Kenya - 5,338,532, Tanzania - 28,586,374

Population Protected by Reef (Source): Kenya - 521,948, Tanzania - 1,612,870

7.2.1.5 Drivers of degradation

Threats to reefs are ever present with fishing pressure and coastal development being deemed the most pressing issues for this specific BCU (see figure below extracted from the vibrant Oceans BCU report cards).



The Coral reef status report for the Western Indian Ocean (2017) underlines various threats to coral reefs. For Kenya, it highlights over exploitation, destructive fishing practices, habitat degradation, uncontrolled development, and nutrient pollution from sewage disposal as well as climate threats. For Tanzania, issues include climate change associated coral bleaching, destructive fishing (specifically dynamite fishing and drag nets) and sedimentation near the river mouths. Finally, though more information is required, concern has been raised over the prospective development of new port projects, particularly in Bagamoyo and Tanga (both located within the relevant BCU).

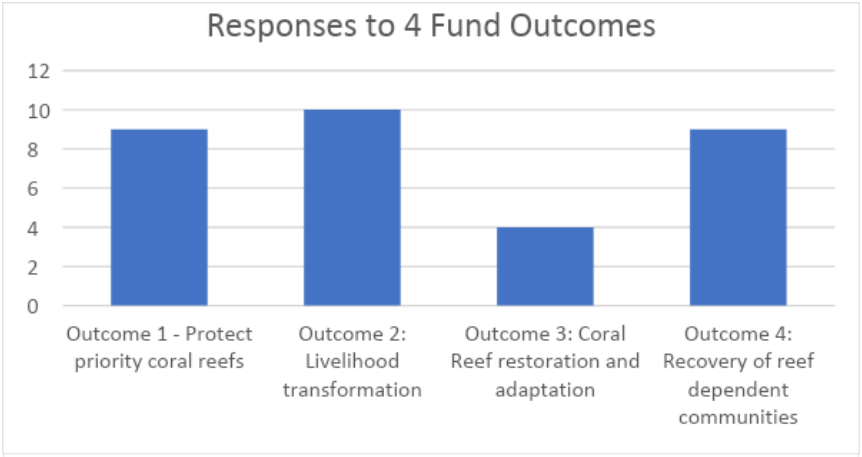
7.2.1.6 Investment environment

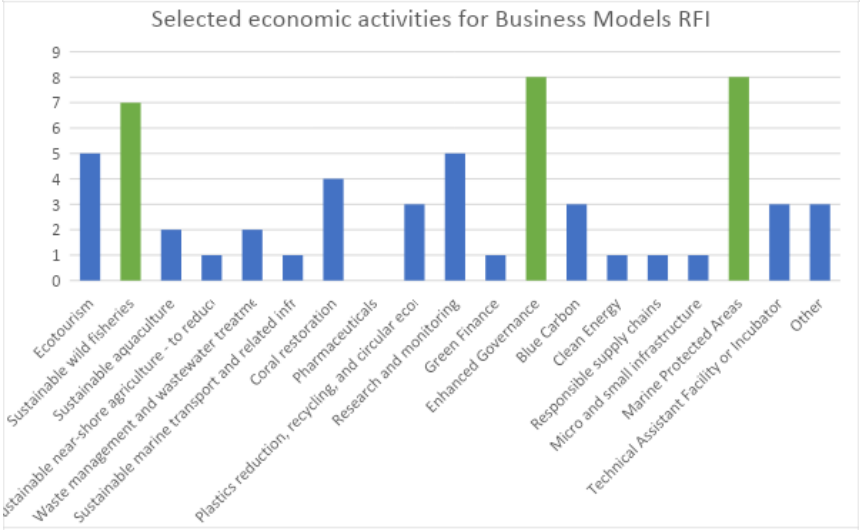
Though neighboring nations, Kenya is categorized as a Lower Middle-Income Country whilst Tanzania is listed under Least Developed Countries. The countries respectively have a total population of over 52 and 58 million with GDPs worth USD 95.503 and 63.177 billion (World Bank, 2019). Investment opportunities exist in various sectors such as ecotourism, blue carbon, fisheries improvements and aquaculture. Both counties receive a credit rating of "B2" by Moody's which signifies that investment is considered speculative or subject to high credit risk. Kenya and Tanzania respectively received scores of 24.5 and 39.4 for control of corruption and 58.3 and 61.7 for enforcement of contracts (World Bank, 2019). Although Kenya scored lower than Tanzania for the two previous categories, ease of doing business seems to be higher in Kenya which scores 73.2 versus Tanzania which received a score of 54.5.

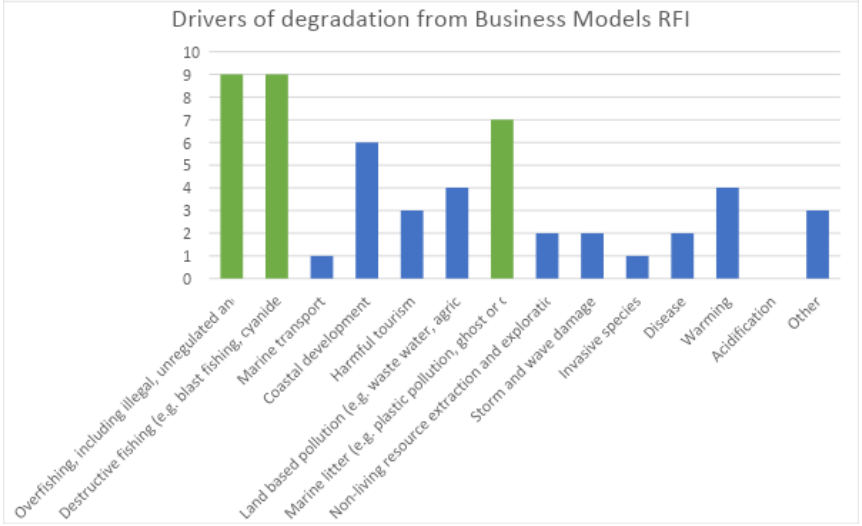
7.2.2 Request for Information and Independent Research

7.2.2.1 Business Models

Total Responses: 10, Responses of Interest: 8







Highlighted Business Model 1

Programs: Vanga Blue Forests & Seagrass (Kenya); Mkinga Mangrove & Seagrass Blue Carbon

Organization: Wildlife Conservation Society

ID#: 1045
Website: Mikoko Pamoja pilot - https://www.equatorinitiative.org/2017/06/28/mikoko-pamoja/
Summary: WCS is working with the Kenya Marine Fisheries Research Institute to help communities in southern Kenya and northern Tanzania protect and restore mangrove and seagrass areas in locally managed marine areas (LMMAs), assess the amount of carbon stored, develop project documents needed to validate the carbon and enter blue carbon international markets, and bring in independent validators to assess the carbon. They are replicating a proven model conducted in Gazi, Kenya called Mikoko Pamoja (https://www.planvivo.org/project-network/mikoko-pamoja-kenya/) and are working to expand the Vanga Blue Forest initiative (focused on mangroves) to seagrass areas adjacent to coral reefs. Communities will set aside fisheries closures in seagrass and stop using harmful beach seines. Benefits to communities include increased fish biomass and marketable carbon, thus providing sustainable livelihoods. In Mikoko Pamoja, this has been ~$30,000 USD/year. In addition, the protection of seagrass and mangrove habitats will benefit coral reefs through sediment retention and better habitat linkages (e.g., protection of nursery habitat).
Most Recent Revenue: This project has not kicked off in the Vanga community. However, in the pilot site Mikoko Pamoja, the communities are making ~$30,000 USD/year from blue carbon.
Projected Revenue in 5 years: $30,000 USD/year
Countries: 1. **Kenya, Vanga, potential (currently under development) 2. Kenya, Gazi, Existing (Mikoko Pamoja project)**
5-year financing needs: 50,000 - 100,000 USD
Projected IRR: *3 - 6% return*
Investment Horizon: *Medium 3-7 years*

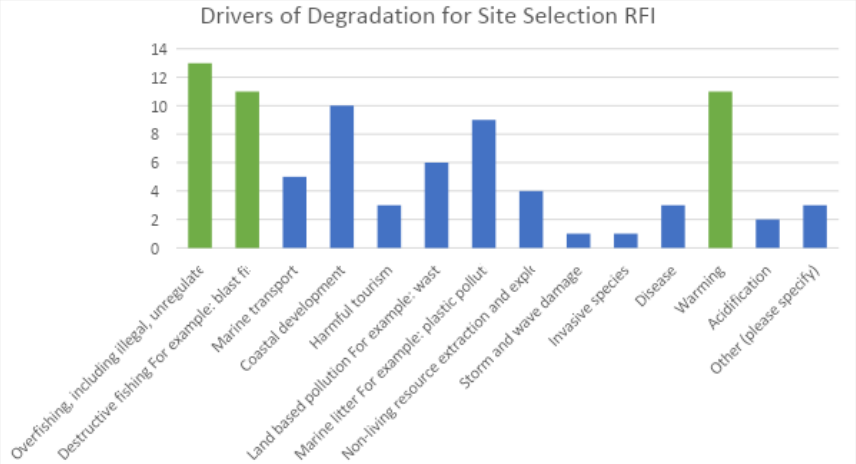
Highlighted Business Model 2
Program: Mombasa Marine Park Community Plastic Recycling
Organization: Wildlife Conservation Society
ID#: 1046
Website: Only website found presenting the marine park - http://www.kws.go.ke/content/mombasa-marine-national-park-reserve
Summary: The Mombasa Marine Park and Reserve is a marine protected area (MPA) that sits in an urban area just outside the Kenya's second largest city, Mombasa. The beaches adjacent to the MPA thus typically have over 10,000 visitors per week who are largely local people and domestic tourists enjoying Kenya's beaches. However, these visitors deposit large quantities of plastic trash on beaches that harms adjacent coral reefs, disrupts sea turtle nesting grounds, and become micro-particles ingested by fishes and other organisms. Over the past 20 years, various initiatives have worked with the MPA (run by the Kenya Wildlife Service) to collect plastic trash, educate the public, and provide waste receptacles. However, though there is an ongoing monthly beach cleanup, there are no county or municipal programs to remove waste, and collected waste ends up being put in dumping areas close to beaches, leading to recirculation of trash. Recyclable plastic items are marketable in Kenya and can be redeemed for money if processed correctly. There is thus a major opportunity to collect and recycle trash, which will create incentives for communities to clean the beaches and provide sustainable income.
Most Recent Revenue: No revenue yet – Early stages
Projected Revenue in 5 years: USD 10,000+ /year
Countries: 1. **Kenya, Mombasa Marine Park & Reserve, potential**
5-year financing needs: < 50,000 USD
Investment Horizon: *Short term 1-3 years*

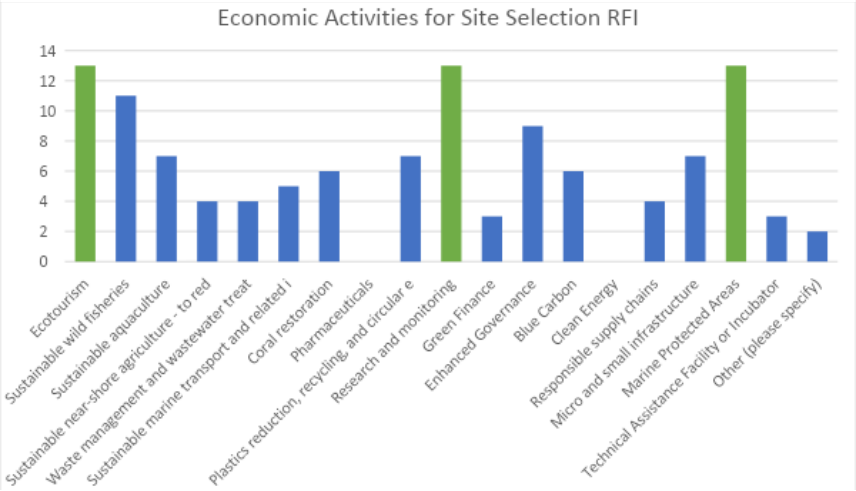
Highlighted Business Model 3
Program: Shimoni-Vanga project
Organization: Wildlife Conservation Society
ID#: 1130
Website: https://www.wcs.org/
Summary: Small-scale fishing is the mainstay of livelihoods and food security for coastal communities on the Kenyan coast. Fishing also has one of the largest impacts on coral reefs in Kenya. WCS has been working with local fishing communities to build capacity in fisheries management in the Shimoni-Vanga coral reefs, that WCS scientists have identified as a climate refugia. Fisheries policy reforms in Kenya have created a new enabling environment, which empowers communities to co-manage their fishing grounds through the Beach Management Units (BMUs) legislation. BMU are much larger than tengefu and have the potential to provide not only subsistence level fish biomass but financially viable yields. WCS will work with the BMUs that have established tengefu in the Shimoni-Vanga area, the State Department of Fisheries and Blue economy, the Kwale county fisheries department and 1) Build the capacity for fisheries management of BMUs, 2) monitor and estimate the improved yields and ecological restoration, and 3) access the fisheries value and develop a business model that has the potential for providing sustainable livelihoods. Improved fisheries management will also reduce impacts on coral reefs and associated seagrass beds hence restoring reefs and the ecosystem services they provide and that these communities depend upon.
Countries: 1. Kenya, Shimoni-Vanga, Potential
5-year financing needs: 50,000 - 100,000 USD

Highlighted Business Model 4 (Independent Research)
Program: Eco-World
Organization: Watamu Marine Association
Website: https://www.watamumarine.co.ke/
Summary: The initiative deals with solid waste pollution in Watamu Marine Park and Reserve beaches and nearby villages. By combining environmental welfare and conservation tasks with community empowerment, employment and alternative income generation, the initiative sets an example for community-based waste management. The initiative creates income opportunities for the community through employment and waste recycling. The income generated from plastic recycling operations helps the initiative to remain operational and sustainable. In addition, art and other interesting objects produced from the waste collected will be sold at tourist outlets. Plastic waste can be processed and sold to recycling businesses throughout Kenya. Local firms support the initiative through their corporate social responsibility (CSR) sponsorship activities, enabling community members to turn plastic waste into a saleable commodity.

7.2.2.2 Site Selection

Total responses: 13





Central Tanzania (Blue)

1. ***Fauna and Flora International, in partnership with Mwambao CCN***

Location: Pemba Channel Conservation Area (PECCA)

FFI began work at the end of 2014 and, through partnership with local NGO Mwambao and several mobilized local communities, has implemented the island's first temporary octopus-fishing closed areas in 2016. These were established in order to improve octopus stocks, build support for local marine conservation, and to contribute to the successful management of the sea-scape level Pemba Channel MPA (PECCA). Building on these first local successes and with an enhanced partnership, FFI has started to expand these activities to other communities on the island while empowering fishing committees and institutions at several levels, with the aim of more effective marine management across Pemba supported by community access to better and fairer markets for their catch.

Source: https://www.fauna-flora.org/projects/implementing-effective-marine-resource-co-management-pemba-channel-conservation-area

1. The Kwanini Foundation

Location: Pemba Channel Marine Conservation Area (PECCA)

In late 2013, the potential for a community-based marine conservation effort on the reef at the Manta Resort was reviewed. Consultations were held with local community members and fisheries stakeholders. With the support of local communities and the government, 1km of coastline was turned into a no-take zone called the Kwanini Marine Protected Area (KMPA) where all forms of fishing are prohibited. The area has seen an important increase in fish populations and the fishermen are beginning

to recognize the value of setting aside small areas. These efforts are supported and funded through tourism.
The challenge is to create a series of similar protected areas in key locations along the east coast of Pemba, with the full cooperation of the local communities, government and tourism enterprises, focusing on areas with the most intact corals, the coral biodiversity hotspots and the fish nursery/breeding areas.
Source: http://kwaninifoundation.org/marine-conservation/

Tanzania/Kenya (Pink)

1. Oceans Alive Trust (OAT)

Location: Kilifi county seascape
Oceans Alive Trust (OAT) was set-up in 2016 as the next logical step in extending the influence of the global LMMA movement in Kenya. OAT aims to share experience with other coastal fishing communities to help safeguard biodiversity and ensure sustainability of ecosystem services while protecting fisheries and key Ecologically Sensitive Areas (ESAs). OAT draws on 17 years of practical, hands-on experience implementing the KCWA (Kuruwitu Conservation and Welfare Association). Alongside Kuruwitu, OAT has piloted various value- added income initiatives in eco-tourism, organic and climate smart farming, beekeeping, aquaculture, blue carbon credits and value chain improvements (e.g., in fish marketing with sales in Nairobi), all targeted at improving community welfare while maintaining sustainable resource use. Ultimately, OAT intends to roll out to 17 members of the Kilifi County BMU Network. The targeted BMUs include Mtwapa; Kanamai; Takaungu; Mnarani; Central; Bofa; Roka; Wesa; Uyombo; Watamu; Mayungu; Shella; Gongoni; Marareni; Kichwa cha Kati; and Ngomeni.
Website: https://oceansalivekenya.org/

7.2.2.3 Key Partners

Identified in the RFI responses

- Wildlife Conservation Society
- CORDIO EA
- REEFolution Foundation
- Women against poverty (WAP) -Mikoko Ujamaa Community organization
- The International Pole & Line Foundation (IPNLF)
- KMRFI (Kenya Marine Fisheries Research Institute)
- WIOMSA
- WWF
- County agencies (e.g., Kwale)
- WIOMSA
- WWF
- Oceans Alive Trust (OAT)
- Beach Management Units (BMUs)
- Marine Parks & Reserves Unit of Tanzania
- Wetlands International
- Seacology
- Plan Vivo
- State Department of Fisheries and Blue Economy
- KWS - Kenya Wildlife Service
- Mwambao Coastal Community Network

Identified from Independent research

- TANAPA (Tanzania National Parks)
- Ministry of Livestock and Fisheries, Tanzania
- TAFIRI (Tanzania Fisheries Research Institute)

- Blue Ventures
- Coral Reef Care
- University of Dar Es Salaam - Institute of Marine Sciences (IMS)
- Tourism organizations (Tanzania Tourist Board, Kenya Coast Tourism Association – KCTA, Kenya Association of Tour Operators-KATO)
- IUCN ESARO
- UNEP Nairobi
- Local Ocean Conservation (LOC)
- COMRED (Coastal and Marine Resources Development)
- NEMA (National Environmental Management Agency), Kenya
- Ministry of Tourism and Wildlife, Kenya
- Watamu Marine Association /EcoWorld Watamu Recycling

7.2.3 Conclusions

The initial focus for Kenya and Tanzania will revolve around the Tanzania/Kenya BCU which has been prioritized by 50 Reefs and recent research has identified a valuable coral reef climate refugia. With many key activities in the area being community-based, priority programming will require a consortium of partners on the ground, particularly those with previous experience with community-based fisheries and conservation in the area. It is recommended that the Wildlife Conservation Society put together a consortium of partners to aggregate and replicate successful approaches. The portfolio will most likely include blue carbon initiatives, ecotourism enterprises, plastic collection and recycling, aquaculture and reef fisheries sustainability solutions.

7.3 Indonesia

7.3.1 Introduction

7.3.1.1 Marine Conservation Policy Framework

Indonesia is a member of ICRI, the Action Group on Coral Reef Restoration, and the High-Level Panel for a Sustainable Ocean Economy. In 2018, the Ministry of Marine Affairs and Fisheries updated its targets for Marine Protected Areas in the country with its MPA Vision, including "(1) By 2024, the existing MPAs in Indonesia covering ~20 million ha. managed effectively; and (2) By 2030, the coverage of the MPAs in Indonesia expanded to 32.5 million ha. and all managed effectively." This vision involves more than 1,400 stakeholders, and seven Areas of Work, one of which is "Sustainable Financing for MPAs." This complements previous commitments to a policy of decentralized resource management, including LMMAs and Sasi traditional management. An array of actions is underway to improve fisheries' sustainability, including but not limited to a "Fish for Good (an MoU with MSC)" to identify how the country's fisheries can meet MSC standards, various other certifications, and fisheries management councils. Additionally, Indonesia, the largest supplier of coral and ornamental fish for the aquarium industry, is host to ongoing efforts to make coral and ornamental fish suppliers more sustainable. In terms of waste management, the country has developed a Multi-stakeholder Action Plan to reduce by 70% the amount of plastic entering the ocean by 2025. Indonesia will also invest nearly 2 billion USD in

water supply and wastewater treatment projects in 2021. Finally, Indonesia has embraced sustainable tourism as a long-term development strategy, and the Global Sustainable Tourism Council has granted Indonesia "GSTC-recognized" status as part of the Sustainable Tourism Destination Standard, acknowledging its commitment to sustainable tourism. This commitment has led to the designation of Sustainable Tourism Destinations throughout the country with observatories to track progress.

7.3.1.2 Biodiversity, Heritage and Coral Reef Resilience

Indonesia, with nearly 18% of the world's coral reef area, is both a terrestrial and marine biodiversity hotspot in the heart of the Coral Triangle, and home to various Ramsar and World Heritage sites containing coral reefs. The country is also host to multiple Blue Hope and Bright Spots which further highlight its importance for marine biodiversity and millions of reef-dependent livelihoods.

Fig. 1.: Coral species and distribution (Indonesia in black (600 species) and dark red, Source: Corals of the World)

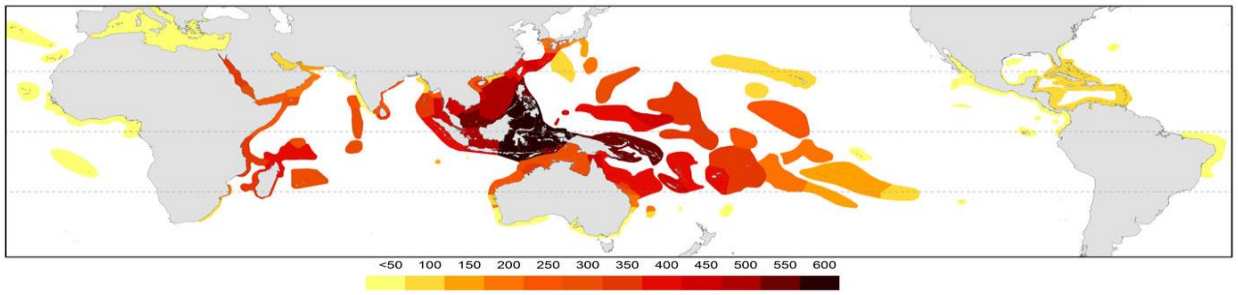


Figure 32 Coral species and distribution (Indonesia in black (600 species) and dark red, source: Corals of the World)

This diversity contributes in large part to Indonesia's status as a vital refugia in terms of climate-resilient coral reef areas as recognized by both 50 Reefs (and related analyses) and UNEP Coral Bleaching Futures (2020), the two leading studies on coral reefs and climate resilience. More than 20 of 50 Reefs' "Bio-Climatic Units (BCUs)" dot the country, indicating key areas for coral conservation investments.

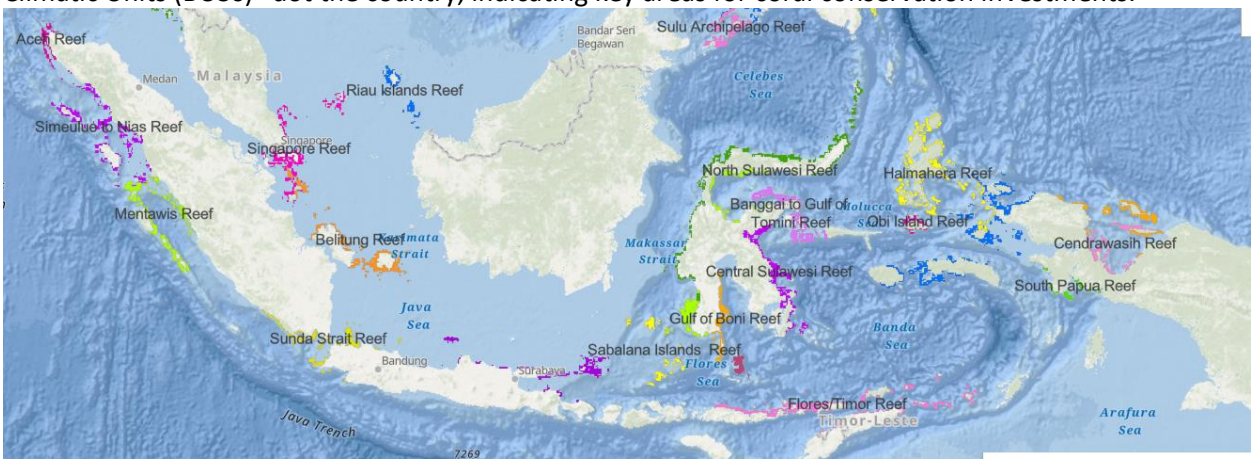


Figure 33 Indonesia BCUs, source Vibrant Oceans

7.3.1.3 List of BCUs and sites grouped by Vibrant Ocean BCUs

- Aceh
- Simeulue to Nilas
    - Simeulue Island & Banyak Islands (FFI)
- Mentawis
- Sunda Strait
- Singapore, Belitung, Riau Islands

    - Sunda Shelf/Java Sea Seascape (WWF - Indonesia)
- Flores/Timor
    - Lesser Sunda Seascape (WWF-Indonesia)
- Sabalana Islands, Karimunjawa to Kangean, Makassar, North Sulawesi
    - Sulu-Sulawesi & Makassar Strait Seascape (WWF-Indonesia)
- Bird's Head and Flores/Timor
    - Inner Banda Arc Seascape (WWF-Indonesia)
    - Banda Arc (Yayasan Konservasi Alam Nusantara, an Indonesian affiliate of The Nature Conservancy)
- North Sulawesi
    - (1) Bunaken Marine Park (2) Tatoareng coastal & small island conservation area (3) North Minahasa conservation area (Sam Ratulangi University)
- Makassar
    - Spermonde Archipelago (Mars)
    - Kapoposang Island (Universitas Hasanuddin)
- Halmahera, Bird's Head, Cendrawasih, North Papua
    - Eastern Indonesia (Indonesia LMMA Network)
- Central Sulawesi
    - Wakatobi NP (Indonesia Destructive Fishing Watch)
- Bird's Head
    - Misool Marine Reserve (Misool Resort and Foundation)
- Halmahera
    - Rao Island (WCS-Indonesia)

7.3.1.4 Ecosystem Service Value of Coral Reefs

These coral reef ecosystems support millions of Indonesians with livelihoods in tourism, fisheries, organism collecting, in addition to protecting coastal cities' businesses and residential areas from storm surges and wave force. The following figures demonstrate coral ecosystems' value to the country:

- Reef-related tourism expenditures: $3,097,453,000 USD per year
- Fisheries: $107,542,434 USD per year, supporting 1,657,757 fishers, not including post-harvest livelihoods not included.
- Coastal protection: 12,198,508 people protected, or approximately 4.5% of national GDP.

7.3.1.5 Drivers of Degradation

According to Bloomberg Vibrant Oceans' threat analyses: The BCUs in above face a variety of threats, including nutrient and sedimentation pollution, destructive tourism practices, coastal development, and high fishing pressure. The GFCR's call for site submissions also revealed the main drivers of degradation (Fig. 3.), namely, fishing, coastal development, pollution and litter, and warming.

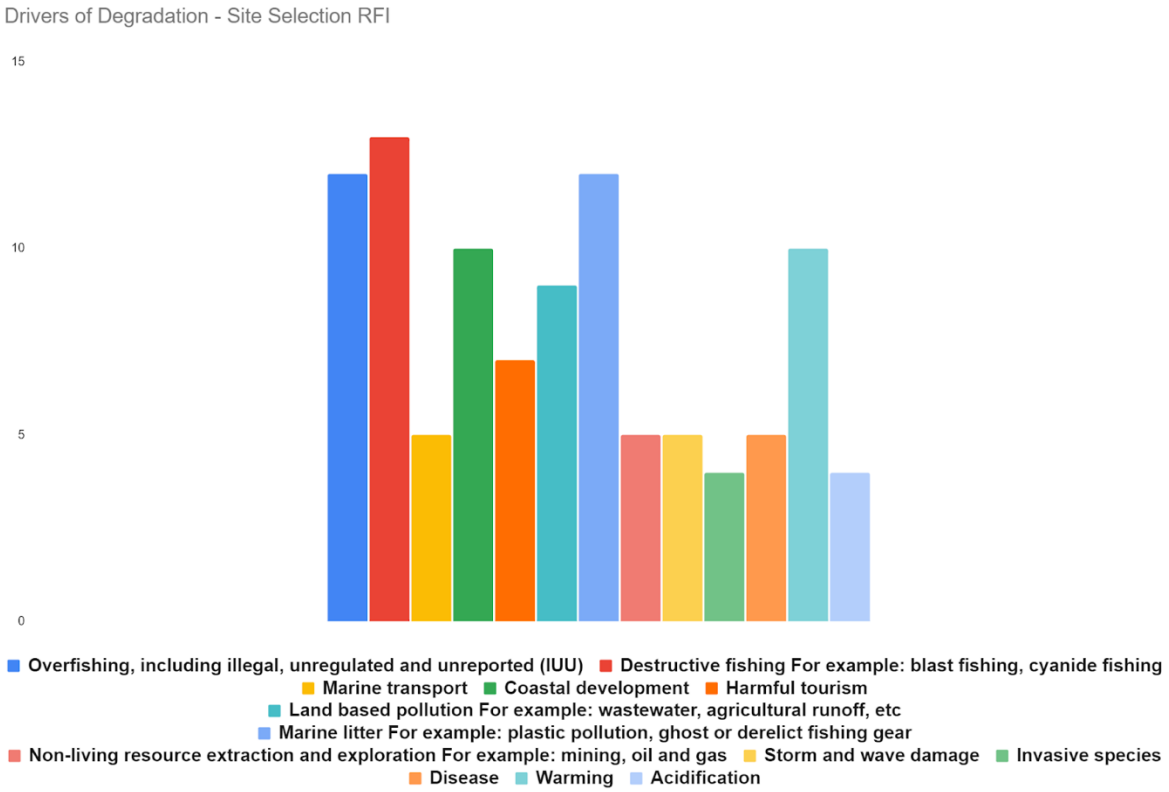


Figure 34 Drivers of Degradation - Indonesia RFI Site Selection Submissions

7.3.1.6 Investment Environment

Investment is required to address these threats and drivers of degradation. As a lower middle-income country with more than 270 million people, Indonesia's USD 1.119 trillion dollar economy (World Bank, 2019) contains a vast array of investment opportunities across a wide variety of sectors related to coral reefs. However, its BBB (medium-quality) credit rating, scores of 38 and 49.1 on the World Bank's Corruption and Contract Enforcement indices, respectively, indicate a moderate level of risk.

7.3.2 Request for Information and Independent Research

7.3.2.1 Business Models

1. **The Misool Marine Reserve and South Misool Marine Protected Area:** The Misool Marine Reserve is a 300,000-acre area, which encompasses nine islands and multiple surrounding islets. The formal boundaries are defined in a lease agreement with the local landowners and ratified by the local government. The boundaries of the South Misool Marine Protected Area are defined in a management plan, ratified by the Ministry of Maritime Affairs and Fisheries.

- RFI submission
- Blue tourism (diving, snorkeling, etc.)
- Concession (area leased from nearby communities)
- Most highly protected MPA in Indonesia: https://mpatlas.org/zones/9240
- Within Raja Ampat MPA Network (as of 2019, only MPA Network with BLUD instrument to revert user fee revenue to both management and local communities)

1. **Seafood Savers and Signing Blue - WWF Indonesia**: Combination of Signing Blue membership system for sustainable marine tourism and Seafood Savers certification for sustainable fishery and aquaculture production to change practices and behavior in key MPAs for healthy marine ecosystems.
    - RFI submission (ID# 1021)
    - Expected 3-6% return on investment
    - Protection of more than 226,850 Ha of coral reef within 12 MPAs in 4 Bio-Climatic Units
    - https://www.seafoodsavers.org/gabung-dengan-kami/?lang=en#keuntungan
    - https://www.signingblue.com/

1. **GEF Project - PPP for Reef Parametric Insurance**
    - Concept approved in 2020
    - Implementing agency: Asian Development Bank
    - Candidate Sites: Derawan, Wakatobi, Rote, Gili Terawangan (in Lombok West Nusa Tenggara), Nusa Lembongan in Bali, 1000 islands in Jakarta (coastal and islands), Mandalika in West Nusa Tenggara (coastal), and Tanjung Putting in Banten (coastal)
    - www.thegef.org/project/public-private-partnerships-ppps-coral-reef-insurance-asia-and-pacific
    - https://www.thegef.org/project/public-private-partnerships-ppps-coral-reef-insurance-asia-and-pacific
    - http://en.industry.co.id/read/6983/finance-minister-sri-mulyani-indrawati-said-indonesia-would-propose-coral-reef-insurance-at-the-annual-meeting-of-the-international-monetary-fund-imf-and-the-world-bank-in-nusa-dua-bali-8-14-oct
    - https://www.adb.org/news/features/qa-how-adb-assists-sustainable-recovery-indonesia-country-director-indonesia-winfried-wicklein
    - https://newsbeezer.com/indonesiaeng/sri-mulyani-wants-to-make-coral-reef-insurance/
    - https://impactalpha.com/the-brief-faith-based-and-place-based-indonesias-inclusive-fintech-reef-insurance-tech-philanthropy-blending-billions/

1. **Biorock - Mineral Accretion via Electrolysis for Accelerated Reef Restoration**
    - Uses electricity to stimulate growth
    - Successful and expanding model based on reefs installed as underwater trails in front of hotels and dive centers
    - https://giliecotrust.com/biorock/
    - https://www.trawangandive.com/eco-diver/reef-restoration-program/
    - https://www.projectsforgood.org/projects/biorock-indonesia/story
    - https://womensearthalliance.org/2019-indonesia-womens-earth-alliance-accelerator/tasya-karissa/
    - https://www.jfe-steel.co.jp/en/research/report/019/pdf/019-23.pdf
    - Highly successful and expanding use of Biorock in Pemuteran:
        1. http://www.gobali.travel/pdf/bali-coral-reef.pdf
        2. https://link.springer.com/article/10.1007/s11852-017-0553-1
        3. https://tamansaribali.com/coral-restoration-project/
        4. https://www.ser-rrc.org/project/indonesia-bali-pemuteran-coral-reef-restoration-project

1. **MARRS - Innovative Structure for Artificial Reefs**
    - RFI Submission

- Mars Assisted Reef Restoration System is an artificial reef that resembles spider webs and has been implemented in several regions of Indonesia
- Currently in the research phase, partnering with JC Univ.
- https://iopscience.iop.org/article/10.1088/1755-1315/370/1/012080
- https://www.mars.com/news-and-stories/articles/coral-reef-restoration-efforts
- https://www.prnewswire.com/news-releases/reef-futures-looking-up--large-scale-coral-reef-restoration-is-possible-300704909.html
- https://www.triplepundit.com/story/2014/mars-coral-reef-restoration-empowers-indonesian-islanders/43061
- https://www.mars.com/news-and-stories/articles/coral-reef-rehabilitation

1. **Ocean Gardener - Coral Farming for Aquarium Trade**
   - RFI submission: ID# 1090
   - 5 locations across Indonesia
   - Coral aquaculture to create alternative livelihoods for coral collectors and reduce pressure on wild sources
   - Visitors pay to dive on "farms" to see process
   - Coral adoption online
   - https://oceangardener.org/
   - https://indonesiaexpat.biz/featured/mariculture-industry-a-win-win-solution-for-indonesian-corals/

1. **Waste Banks (map below) - Money for Waste Deposit Centers**
   - Expanding exponentially, in all provinces (34), 5,244 banks as of 2017.
   - 1 bank per 1000 people
   - Whole communities participating
   - Payments for waste deposits online or in person after certain period
   - Gather material for subsequent sale to recycling companies
   - Supported by EC
   - Presentation with map of locations: https://ec.europa.eu/environment/international_issues/cem_presentations/Novrizal%20Tahar%20-%20EIBD%202018.pdf
   - https://www.channelnewsasia.com/news/asia/indonesia-jakarta-recycling-gold-for-trash-recyclables-waste-11988572
   - https://giliecotrust.com/waste-management/

1. **Chandra Asri Petrochemical - Roads from Plastic to Save Oceans**
   - Asphalt plastic for 40% more resistant roads, less maintenance, longer lifetime.
   - Every 1 KM of asphalt plastic needs 3MT plastics, equal to 2 million pcs. of plastic waste
   - Could purchase material from waste banks (above)
   - https://kkp.go.id/an-component/media/upload-gambar-pendukung/kkp/DATA%20KKP/Materi%20Paparan%20OOC%202018/Stage%202%20-%2029%20Okt%202018/CAP_Asphalt%20Plastic%20Successfully%20Implementation%20(PT.%20Chandra%20Asri).pdf

1. **Evoware - Alternative Packaging**
   - Edible alternative (seaweed) to plastic sachets
   - Compostable damar resin package for liquids

- Supported by MacArthur Foundation
- https://www.newplasticseconomy.org/innovation-prize/winners/evoware

7.3.2.2 Site Selection

The GFCR has begun to specify possible focal areas in which to concentrate further research and eventual investments. Firstly, several of the RFI site selection submissions pointed to Indonesia's marine ecoregions as possible focal areas. Because these marine ecoregions reflect ecological connectivity and synergies among stakeholders and actors in a given area, they have helped guide initial focal area research. To define the focal areas further, the following criteria have been considered:

1. Climate Resilience: Clusters of BCUs to spread risk, as resilience analyses results change over time
2. Political Stability: Lack of unrest, violence, terrorism, etc. in regions surrounding BCUs
3. Investment Potential: Diversity and scale of coral-related investment opportunities - Based on diversity of threats (Bloomberg Vibrant Oceans) and research on Payments for Ecosystem Services, ecotourism, aquaculture, fisheries, coral restoration technology, etc.
4. Resource Governance: Partners, existing conservation initiatives, and enforcement level of MPAs, LMMAs, OECM
5. Average Reef Dependence: How much populations near BCU clusters depend on reefs (based on Bloomberg Vibrant Oceans' analysis)
6. Exceptional reef value (World Heritage and Ramsar Coral Sites, Blue Hope and Bright Spots)
7. Positive Spillover: Possible synergies with neighboring countries based on cross-border BCUs.

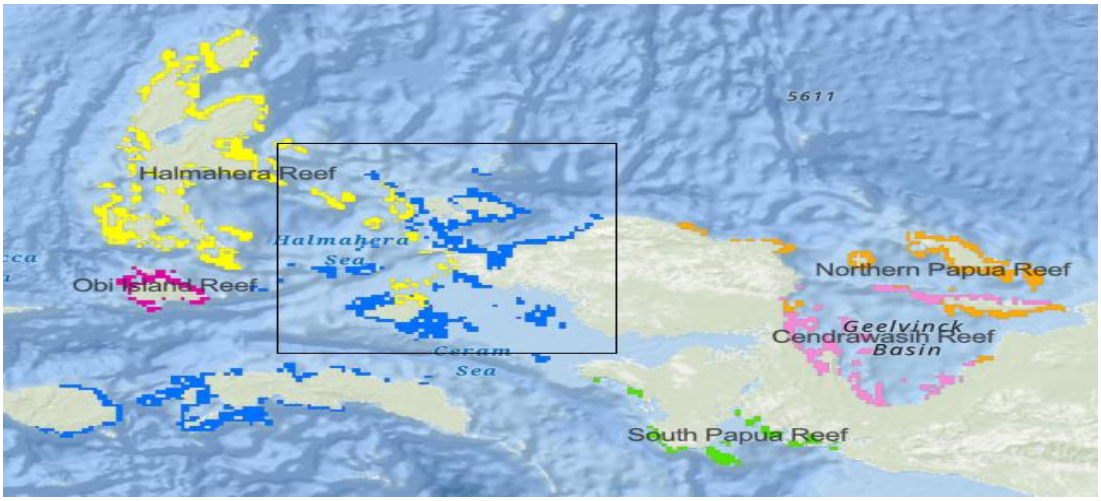


Figure 35 Approximate Focal Area 1: Raja Ampat/Bird's Head (6 BCUs in surrounding region)

The priority area is the inner square. If a greater diversity of investment opportunities is needed, or climate resilience analyses change, the focus can expand outward.

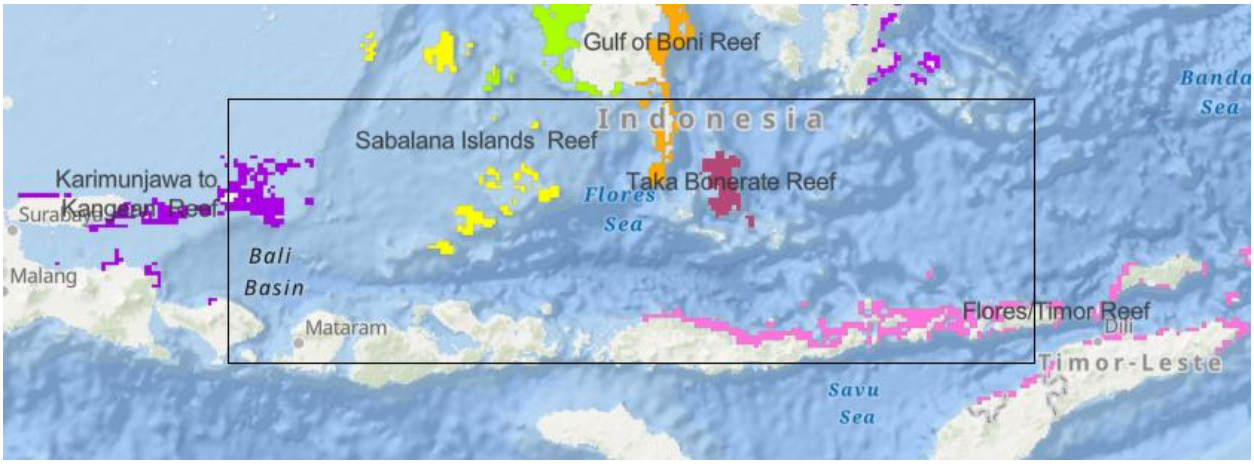


Figure 36 Approximate Focal Area 2: Lesser Sundas/Flores

Generally centered on the Lesser Sundas/Flores region (southern island chain) with the focus to expand outward as climate analyses change or investment diversity is required. 6-7 BCUs in the region.

7.3.3 Conclusions

Raja Ampat/Bird's Head: The GFCR's confidence level for selecting Focal Area 1 is high. Raja Ampat is already well known for high-end ecotourism and has recently been declared a priority Sustainable Tourism Destination by the Indonesian government. It is also host to many of the country's Locally Managed Marine Areas, the country's most highly protected MPA (Misool Reserve), and the Raja Ampat MPA Network, the only MPA network in the country whose user fee revenue reverts directly to both local communities and MPA management. The World Bank and Asian Development Bank have recently allocated more than USD 10 million[28] in grants for coral conservation in both Raja Ampat and the Lesser Sundas region (probable focal area 2). The GFCR will seek to complement these positive trends with a diversified investment portfolio that balances ecotourism with sustainable fisheries, Blue Carbon, circular economy projects, and coral farming and restoration enterprises.

Lesser Sundas/Flores: The GFCR's confidence level regarding Focal Area 2's exact limits is moderate at this stage. The region is also known for ecotourism, containing dozens of dive resorts and centers spread across the Lesser Sundas, 40 MPAs and parks (for which WWF is helping to establish user fees), including the famous Komodo National Park. The West Lombok Regency has also been declared a Sustainable Tourism Destination priority. UNDP and partners also are implementing a marine resource governance project in the region using Blue Sukuk (Islamic investing bonds) and other sustainable finance mechanisms to improve protected area management, fisheries and aquaculture in the region. The GFCR will construct a diversified investment portfolio combining ecotourism with sustainable fisheries, circular economy projects, and coral farming and restoration enterprises, and reef parametric insurance, among other possibilities.

Possible Partners: WWF Indonesia, Rare Conservation, The Nature Conservancy, Conservation International, Wildlife Conservation Society, Ministry of Marine Affairs & Fisheries, ILMMA Network, Blue Sukuk, UNDP, Asian Development Bank, World Bank, Yayasan Konservasi Alam Nusantara, Kehati, and others.

[28] https://en.tempo.co/read/1370872/world-bank-adb-grant-indonesia-millions-for-coral-reefs-program

7.4 The Philippines

7.4.1 Introduction

7.4.1.1 Reefs

The Philippines is one of the most important countries in the world for climate change resilient coral reefs. Located within the Coral Triangle, the Philippines contains 25,060 km^2 of coral reefs, including 6 reefs within the Vibrant Oceans Bioclimatic Units (BCUs). 5 of these BCUs are located exclusively within the Philippines (1 is shared with Malaysia), and 4 are priority BCUs according to the 50 Reefs analysis. The country is also home to a UNESCO World Heritage Site, RAMSAR Sites, and Blue Hope Spots. The main drivers of degradation are overfishing and IUU fishing, destructive fishing, and warming (see figures in section C).

7.4.1.2 Policies

On a political level, The Philippines scored only 1/5 in our assessment of supportive reef policy frameworks. The country is an ICRI member, but lacks membership or pledges to other coral reef related political actions. Furthermore, the Philippines is short of achieving UN SDG 14.5, having only protected 1% of its EEZ (WDPA). While the Philippines is well known for its network of LMMA's, there may be significant opportunities to expand upon area-based conservation for coral reefs in the country.

7.4.1.3 Investment Environment

The investment environment in the Philippines is by no means disqualifying, but has room for improvement, specifically for Control of Corruption and Enforcing Contracts, for which the Philippines is below neighboring peers like Indonesia and Fiji. There are also known areas of ongoing civil conflicts in some parts of the country where investment opportunities are unlikely. These regions have been noted as relevant to business models and site evaluations.

7.4.2 Request for Information and Independent Research

7.4.2.1 Business Models

Despite shortfalls in political and investment environments, there may be ample investment opportunities across a variety of sectors in the country. The Philippines was one of the most popular locations among business model responses, with 16 responses total to the RFI of which 6 are highlighted here as of interest for further investigation. There may also be a specific opportunity prime for investment titled, "Development Facility for Blue Economy projects within/around Coral Reef Marine Protected Areas in the Philippines" which could provide an opportunity for the fund to invest up to USD 6.4 million (and USD 2.4 million of grants) for establishment of an impact investment development facility (see description below).

As one of the most important coral reef countries, as well as a country with significant opportunities for potential investment, the Philippines should be a priority country for the fund.

Total Responses: 16

Responses of Interest: 6

Key Partners:

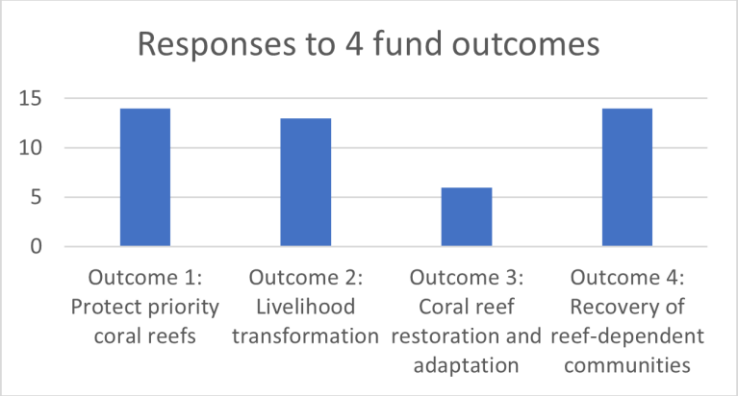
<u>Respondents:</u>

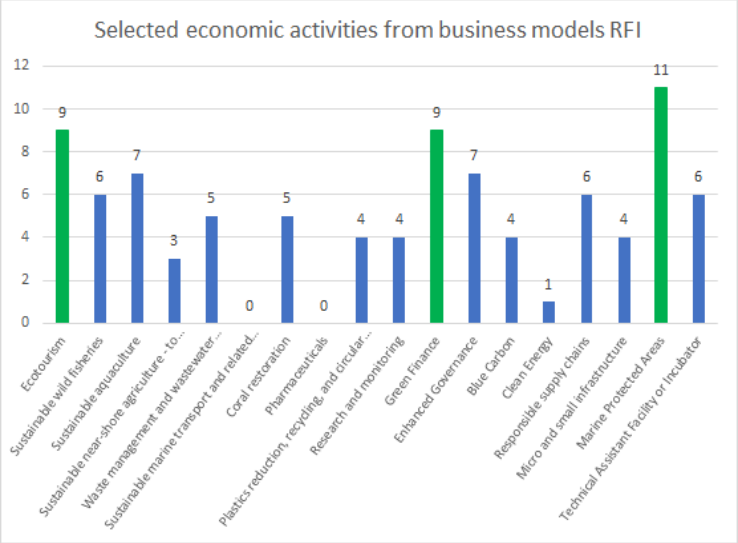
- Rare
- UNDP – Philippines
- Coral Reef Consultants LLC

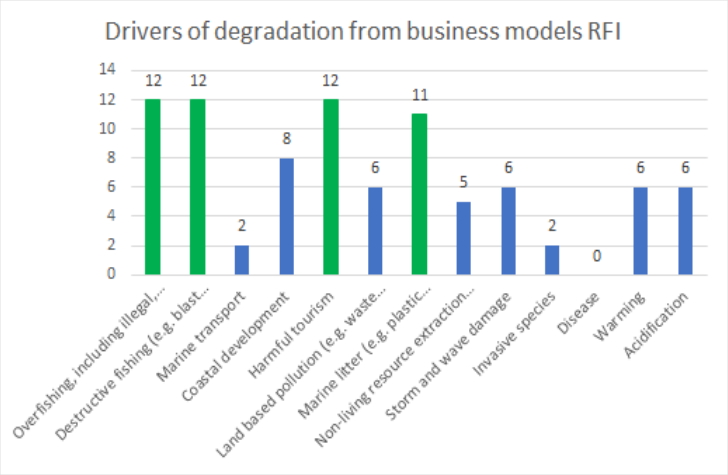
- Seadling
- Blue Finance
- Coralive.org
- Karang

<u>Other Strategic Partners:</u>

- Dive industry and local dive operators
- Other local tourism operators including hotel owners
- Scientists
- MPA managers
- Development banks
- Philanthropic foundations
- GCF
- Philippines government agencies including; Biodiversity Management Bureau (BMB), Department of Environmental and Natural Resources (DENR), Bureau of Fisheries and Aquatic Resources (BFAR), Department of Agriculture (DA).







7.4.2.1.1 Highlighted Responses from the Business Models RFI

Highlighted Business Model 1

Program: Fish Forever, https://rare.org/program/philippines/

Organization: Rare, Inc.

ID#: 1008

Summary: Fish Forever delivers a new management paradigm with measurable benefits to fishery value, empowering networks of fishing villages and local governments to balance marine conservation with sustainable fishing at scale. The approach links the establishment of fully protected reserves with the rights to fish in surrounding waters through a model called Managed Access with Reserves (MA+R), connecting the benefits of reserve protection to local communities to align incentives for the conservation of critical fish habitat. This is achieved through a replicable set of key activities, which include: 1. Use participatory approaches combined with scientific support to help communities design fully protected reserves; 2. Ensure local fishers have exclusive rights to fish in areas with established limits and fishing regulations; 3. Establish and build capacity of effective local management bodies; 4. Apply behavioral insights to help shape community norms and promote key behaviors of responsible fishing; 5. Develop pathways to formalize the small-scale fishing sector and build capacity of microbusinesses. Expected Outcomes: Healthier and more resilient reefs; Sustainable livelihoods and improved food security; Improved resilience to natural disasters, pandemics, and other shocks; Improved ecosystem value over time, measured by value of reef-associated fish caught by community-based fishers and value of fish in the water.

Partners

"Rare partners in the Philippines include national government ministries (Department of Environment and Natural Resources, Department of Agriculture–Bureau of Fisheries and Aquatic Resources, Philippines' Climate Change Commission, Department of Finance–Bureau of Local Government Finance); provincial and municipal governments (in Cebu, Negros Oriental, and Negros Occidental); multilateral development agencies (UNDP, GEF); national and state universities (the University of the Philippines Marine Science Institute–Marine Environment Resources Foundation); and other civil society groups." (From website)

"Angell Foundation, Becht Family Charitable Trust, Bloomberg Philanthropies, Blue Action Fund, The DN Batten Foundation, BMU-IKI, Global Environment Facility, The Grantham Foundation, Hunter Family Foundation, Humanize Institute, Margaret A. Cargill Philanthropies, McNulty Foundation, Dutch Postcode Lottery, Oak Foundation, Oceans 5, Paradise International Foundation, The Summit

Foundation, Swedish International Development Cooperation, USAID, and Walton Family Foundation." (From RFI)
Other likely partners: Local fishers and associated organizations within the community (e.g. fishing cooperatives etc.)
Most Recent Revenue: $94 million USD (revenue is defined by the respondents as the value of the fishery based on the dockside value of reef-associated fish caught by community-based fishers at the first point of sale.)
Projected Revenue in 5 years: $135 million USD (revenue is defined by the respondents as as the value of the fishery based on the dockside value of reef-associated fish caught by community-based fishers at the first point of sale.)
5 year financing needs: USD 10-USD 20 million
Projected IRR: *>15%*
Investment Horizon: *3-7 years*
Countries: 1. Indonesia, Existing **2. Philippines, Bicol, Caraga, Central Visayas, Mimaropa, Western Visayas, Zamboanga Peninsula Palawan, Existing** 3. Mozambique, Existing 4. Brazil, Existing, 5. Honduras, Existing
Locations in the Philippines*:*

1. Bicol.
    a. Scale: Region, southern part of Luzon Island
    b. Reefs: Adjacent to the Vibrant Oceans BCU "Central Philippines"
    c. Safety and development: Good, tourism healthy and growing (pre-covid)
    d. Economy: Commercial fishing, thirteen major fishing grounds that sell to markets around the country including Manila. Economy primarily agriculture (Coconuts, abaca, banana, coffee, and jackfruit. Also rice and corn). Coal mining also important.
2. Caraga
    a. Scale: Administrative region, northeastern Mindanao
    b. Reefs: Adjacent to the Vibrant Oceans BCUs "Mindinao to Cebu Reef" and "Eastern Mindinao Reef"
    c. Safety and development: There remain concerns for instability and violence in Mindinao at large, though the northeastern part of the island has been less prone than other regions. There remain considerable tourism activities within Caraga, which includes Siargao which is off of the mainland. But this business model is not tourism based.
    d. Economy: Primarily natural resources (iron, gold, silver, others minerals) and agricultural (palay, banana, and coconut). Some noted fishery resources include prawns, milkfish, crabs, and seaweed.
3. Central Visayas
    a. Scale: Administrative region in the central part of the country that includes Cebu, Lapu-Lapu, and Mandaue.
    b. Reefs: Adjacent to the Vibrant Oceans BCUs "Mindinao to Cebu Reef" and "Central Philippines Reef"
    c. Safety and Development: There remains a travel advisory for Central Visayas which is of concern, however this model does not rely on tourism. It is not a region that has been subject to major civil conflicts in the country.
    d. Economy: Fairly urbanized economy with three major cities including Cebu.
4. Mimaropa:
    a. Scale: Administrative region, one of only two with no land borders with other regions.
    b. Reefs: Adjacent to Vibrant Oceans BCUs "Palawan Reef" ans "Sabah Reef"

   c. Safety and Development: Within one of the provinces around the Sulu Sea which have historically been prone to conflicts, and there have been some travel advisories and concerns about kidnapping and terrorism in Palawan, though it remains generally safe for tourists and 1.8 million tourists visited Palawan in 2018.
   d. Economy: Agriculture, forestry, and fishing contributes to 42.1% of the regional economy. Fishing in particular has contributed to growth in recent years.
5. Western Visayas:
   a. Scale: Administrative region, fairly urbanized.
   b. Reefs: Adjacent to the "Central Philippines Reef" and the "Mindanao to Cebu Reef"
   c. Safety and Development: It is not a region that has been subject to major civil conflicts in the country.
   d. Economy: Fairly urbanized.
6. Zamboanga Peninsula:
   a. Scale: Administrative region, previously known as Western Mindanao.
   b. Reefs: "Mindanao to Cebu Reef"
   c. Safety and Development: Western and southern mindanao have generally seen the most consequences and remain the greatest concern for violent civil conflicts.
   d. Economy: Primarily farming and fishing, both wild caught and aquaculture based.

Highlighted Business Model 2
Program: Blue Finance http://blue-finance.org/
Organization: Blue Finance
ID#: 1078
Summary: Blue finance has developed several impact investment solutions for the effective management and sustainable financing of MPAs in the Dominican Republic and the Philippines. Blue finance seeks to upscale the approach to other 5 MPAs by 2021 in developing countries (with a final aim to 20 MPAs by 2030). The 5 MPAs have relevant works already underway. The approach, developed with local and global partners, relies on an innovative long-term management lease for Marine Protected Areas (MPAs) with tangible revenue models, leveraged by blended finance, while empowering local communities and sustainable use of marine resources. The project will yield both development and commercial returns. Expected positive outcomes include (i) increased protection of coral reef ecosystems from local threats, (ii) improving economic opportunities and food security for vulnerable coastal communities through sustainable fisheries (food and income), new income generating activities and nature tourism, (iii) increasing climate change resilience, and contributing to climate mitigation, through shoreline protection for coastal communities and enhancement of carbon sinks, (iv) mobilizing USD 50M towards natural resource management. The solution targets SDGs 14 ('life below water'), 1 ('end poverty'), 8 ('decent work') and 13 ('climate action') as a priority. It presents an innovative and scalable approach that uses catalytic and development finance to mobilise commercial impact finance into Marine Protected Areas (MPAs).
Most Recent Revenue: $50,000 USD
Projected Revenue in 5 years: $4 million USD
5 year financing needs: $5 - $10 million USD
Projected IRR: *3-6% return*
Investment Horizon: *>7 years*
Countries: **1. Philippines, Existing (Oriental Mindoro MPA Network)** 2. Dominican Republic, Existing 3. Belize, Existing 4. Indonesia, Potential 5. St. Lucia, Potential
Locations in the Philippines*:*
1. Oriental Mindoro

a. Scale: Province on Mindoro island in the Mimaropa region of Luzon.
b. Reefs: Not adjacent or near to any Vibrant Oceans BCUs
c. Safety and development: In Luzon which is generally safe and free of conflict.
d. Economy: Agriculture, emerging eco-tourism as well.

Highlighted Business Model 3
Program: Seadling https://seadling.com/
Organization: Seadling
ID#: *1049*
Summary: Community farming of high growth seaweed seedlings to produce high value, natural animal and aqua feed additives while reviving marine ecosystems and coastal communities.
Most Recent Revenue: Projected USD 10,000 for 2020
Projected Revenue in 5 years: USD 50 million
5 year financing needs: 1 million to 5 million USD
Projected IRR: *10 - 15% return*
Investment Horizon: *Medium 3-7 years*
Countries: 1. Malaysia, Kota Belud, Existing 2. Malaysia, Semporna, Potential 3. Indonesia, Kalimantan, Potential 4. Indonesia, Suluwesi, Potential **5. Philippines, Palawan, Potential**
Locations in the Philippines*:*

1. Palawan
   a. Scale: "Archipelagic" province within Mimaropa.
   b. Reefs: "Palawan Reef"
   c. Safety and development: In Luzon which is generally safe and free of conflict.
   d. Economy: Mostly agricultural, mining, and logging. Palawan also has the richest fishing grounds in the Philippines, supplying 45% of fish in Manila. Tourism is also important, and Palawan received 1.8 million tourists in 2018.

Highlighted Business Model 4
Program: Mapping Seagrass to Ensure its Preservation
Organization: Seacology https://www.seacology.org/
ID#: *1117*
Summary: Last year, Seacology embarked on an initiative that leverages new technologies to accurately map seagrass in critical marine areas and make the results available through a free phone app, so that boat crews can avoid damaging seagrass beds. This project is already highly successful in Formentera, Spain. We plan to replicate it in other critical areas such as the Verde Island Passage in the Philippines, a biodiversity hotspot in the Coral Triangle. The mapping, done with SideScan high-definition technique, is remarkably accurate. The app is free and easy to use. Seagrass meadows comprise tens of thousands of plants, which teem with fish, mollusks, echinoderms, foraminifera, crustaceans, and plankton. The meadows protect the coast and beaches against erosion and keep the water clear. Local people depend on them because they are crucial to the fishing and tourism sectors, and all of us depend on seagrass because seagrass ecosystems are the most efficient carbon sink of any ecosystem on the planet. However, they are under threat globally, with a loss rate of approximately 1.5 percent per year. This catastrophe has multiple causes, but trawling and anchoring are the most destructive of the human-caused factors. In many instances, boat crews don't realize that they are dropping anchors on seagrass, which may not be visible in deeper water.

With the new app Seacology is funding in Spain, boat crews will know exactly where seagrass is so they can avoid it. The app, which works with the GPS on smartphones, is free and available for Android or Apple phones. It relies on exquisitely accurate (within one meter) maps of the seagrass beds, made from data collected by lateral-scan sonar, drones, and human divers. The mapping allows ships to

avoid anchoring in seagrass beds. Because of its ability to store carbon, protecting seagrass presents a robust blue carbon opportunity. Launched in 2018, the app has already been downloaded more than 4,000 times even though it currently only contains seagrass information for the small island of Formentera, Spain. The ongoing costs for the app will be supported by daily dive fees.
Most Recent Revenue: No response
Projected Revenue in 5 years: No response
Countries: 1. Spain, Formentera, Existing **2. Philippines, Verde Island Passage, Potential**
Locations in the Philippines*:*

1. Oriental Mindoro
    a. Scale: A strait between Luzon and Mindoro Islands, within the general region of Luzon
    b. Reefs: Not adjacent or near to any Vibrant Oceans BCUs
    c. Safety and development: In Luzon which is generally safe and free of conflict.
    d. Economy: Well known for ecotourism and diving, especially Verde Island.

5 year financing needs: 50,000 - 100,000 USD
Projected IRR: *Grant funding - not applicable*
Investment Horizon: *Short term 1-3 years*

Highlighted Business Model 5
Program: Meet the Reef
ID#: 1039
Organization: Coral Reef Consultants LLC
Summary: "Meet the Reef" is a for-profit education program that will target the >40 million recreational snorkeler market (versus 4 million divers), especially families. The initial goal is to connect 1 million snorkelers who have personally experienced reefs and give them pathways to demand coral conservation. "Meet the Reef" is an inexpensive short-course (1 hour classroom + 1 hour in water) that will be offered at resorts worldwide. It will use new proprietary in-water technology to excite the imagination of kids and adults alike as they experience reefs and learn in their own languages. Preliminary projections indicate that when tourism returns to near-normal, sales will be >USD 1 million in the first year from the Dominican Republic alone. Hawai'i, Australia, Thailand and the Philippines will generate more. Meet the Reef is a for-profit business that will give a significant percentage of profits back to local conservation programs. One million snorkelers will stay connected to local conservation activities and will be empowered to demand that we "Save the Reefs." Management and training for the program will be operated by local community members in each country, an income will be generated from sales of the class.
Most Recent Revenue: None to date
Projected Revenue in 5 years: Assuming that tourism returns to near normal, Meet the Reef is expected to generate at least USD 10 million in profits annually.
5 year financing needs: 500,000 to 1 million USD
Projected IRR: *> 15%*
Investment Horizon: *Short term 1-3 years*
Countries: 1. Dominican Republic, 500 coastal resorts, Potential for all the major tourist zones like La Romana **2. Philippines, All major resort areas in Cebu, Bohol, Palawan, Batangas etc., Potential** 3. Australia, All major resort sites on the GBR and south Lizard to Heron, Potential 4. Thailand, All major coastal tourism resorts e.g. Phuket, Krabi, Ko Tao, Potential 5. United States, All major coastal tourism sites e.g. Waikiki, Maui, Kauai, Big Island, Potential
Locations in the Philippines*:*

1. Cebu/Bohol/Palawan/Batangas
    a. Scale: Islands/regions

b. Reefs: “Palawan Reef”, “Mindinao to Cebu Reef”, and “Central Philippines Reef”.
c. Safety and development: Generally, outside of zones of known conflict.
d. Economy:

5 year financing needs: 500,000 to 1 million USD
Projected IRR: *> 15%*
Investment Horizon: *Short term 1-3 years*

Highlighted Business Model 6
Program: Parametric Insurance in the Philippines
Organization: United Nations Development Programme (UNDP) Philippines
ID#: 1015
Summary: The vulnerability of the coastal communities in the Philippines to impacts of climate change can be reduced by increasing the resilience of coastal ecosystems, including coral reefs, mangroves and seagrasses, through innovative climate risk insurance solutions. This project will aim to develop and pilot-test a parametric insurance system for coral reefs with the end in mind of scaling this up to cover biologically and economically significant but vulnerable reef systems in the country. Key Steps: The following will be undertaken to carry-out the Project objective: (i) Assessment and creation of enabling environment, including policy, institutional and financing requirements, for parametric insurance for coral reefs; (ii) Research and development of sound coral reef restoration methodologies; (iii) Development of appropriate insurance package/product for coral reefs for pilot-testing; (iv) Conduct of capacity-building among concerned stakeholders, including government, potential financial institution partner and private sector; (v) Implementation of coral reef management and restoration interventions; (vi) scaling-up insurance system for coral reefs by developing feasible packages and identification of additional demonstration models. Expected outcome of the project are: (i) reduced loss of lives and properties resulting from enhanced resilience of coral reef systems; (ii) improved resilience of biologically and economically significant reef systems; (iii) insurance market for coral reefs developed and sustained by appropriate enabling environment.
Most Recent Revenue: Needs further assessment
Projected Revenue in 5 years: Needs further assessment
5 year financing needs: 5 million to 10 million USD
Projected IRR: *Unknown*
Investment Horizon: *Medium 3-7 years*
Countries: 1. Mexico, Quintana Roo **2. Philippines, Camarines Sur Province Municipalities of Caramoan and Garchitorena 3. Philippines, Siargao Protected Landscape and Seascape (SIPLAS), All nine municipalities within SIPLAS**

1. Camaroan and Garchitorena
    a. Scale: Island within Siargao del Norte province
    b. Reefs: “Eastern Mindinao Reef”, small parts of the “Central Philippines Reef
    c. Safety and development: Known tourism regions, generally safe and free of conflict.
    d. Economy: Agriculture, Tourism
2. Siargao protected landscape and seascape
    a. Scale: Municipalities
    b. Reefs: None
    c. Safety and development: Siargao is within Mindinao which has historically had violent conflicts, but Siargao is generally separated from this as an island away from the mainland and a popular tourism destination.
    d. Economy: Agriculture, Tourism

7.4.2.1.1.1 Other Business Models

Project/Initiative: Development Facility for Blue Economy projects within/around Coral Reef Marine Protected Areas in the Philippines
Key Partners: Blue Finance (lead), Blueyou, UBA Sustainability Institute, UNDP Philippines
Description: The project seeks to create an impact investment development facility to accelerate successful implementation in Blue Economy projects within/around Marine Protected Areas (MPAs) in the Philippines. The Facility will unlock private and public investment capital (USD 50M target by 2030) for coral reefs and the communities that rely on them. During the next 3 years, the development facility will structure a pipeline of bankable projects supporting/generating critical finance for 3 networks of MPAs under a co-management lease with Special Purpose Entities (SPEs). Projects will contribute to the effective management and financial sustainability of the 3 networks of MPAs (summing 80 MPAs), protect over 75 000 ha of coral reefs and mangroves, benefit +80,000 vulnerable coastal communities and unlock private investment capital (USD 10M by 2023). Initial business models include reef-first businesses such as eco-tourism, blue carbon credits from mangrove restoration and sustainable aquaculture and fishery. Other sectors such as waste management and coastal protection will be explored.

A pipeline of 2 projects is already close to investment readiness with an anchor impact investor already confirmed (the Sustainable Ocean Fund) with USD 1.4M soft committed for 2021 for these 2 projects.

Finance Needs: USD 3.4 million (grant) and USD 4.9 million (investment) for 2021-2023 from the GFCR. USD 3.8 million in additional financing from other investors for a total of USD 12.1 million for the pilot phase.

7.4.2.2 Site Selection

Responses from Site Selection RFI

Total responses: 10

Organizations: WWF Indonesia, UNDP Philippines (n = 4), Coral Reef Consultants LLC, Conservation International, Sangkalikasan Cooperative, ReefScan, U. of the Philippines Los Banos

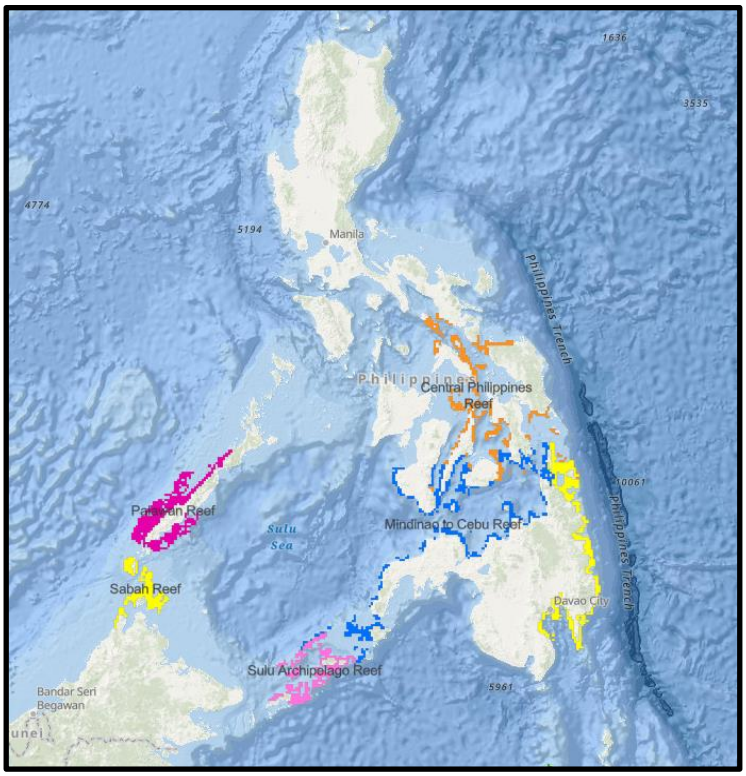


Figure 24 Philippines Priority BCUs

1. **Palawan Reef (Purple), no site selection responses for this reef**
    a. **No site selection RFI's received for this BCU, but there was at least 1 business model response.**
2. **Central Philippines Reef (Orange)**

2.1. UNDP Philippines

2.1.1. Camarines Sur Province

The RFI response for this site specifies the municipalities of Caramoan and Garchitorena at a scale of 100-1,000 km^2 in area. It contains MPAs, LMMAs, and OECMs, including the Caramoan National Park and Malabungot Protected Landscape. The quality of the environment is described as high and charismatic megafauna include several species of cetaceans including Sperm whales, Dwarf sperm whales, and various species of dolphins.

Drivers of degradation: Overfishing and IUU, destructive fishing, coastal development, harmful tourism, land-based pollution, marine litter, storm and wave damage, and warming.

Economic activities: Ecotourism, sustainable wild fisheries, sustainable aquaculture, sustainable near-shore agriculture, waste management and wastewater treatment, sustainable marine transport, responsible supply chains.

2.2. Conservation International

2.2.1. Los Gigantes Islands, Carles, Iloilo

This focal area is on a scale of 30 - 100 km2, containing multi-use and no-take MPAs and is designated as a Key Biodiversity Area. Conservation in the area, including the MPAs, are managed at the sub-national level and the MPAs are considered paper-parks. Environmental quality was described as moderate and flagship species include dugongs, sea-turtles, and scallops. Relevant surrounding communities include small towns and small urban areas of 50,000 - 200,000 residents.

Drivers of degradation: Overfishing and IUU, destructive fishing, marine transport, coastal development, harmful tourism, land-based pollution, storm and wave damage, and typhoons.

Economic activities: Ecotourism, coral restoration.
Other: Conservation International is launching a "green-gray" infrastructure climate adaptation solution that will pair the restoration and conservation of coral reef, sea grass and mangrove ecosystems with the installation of conventional engineering structures. This first-of-its-kind multi-ecosystem green-gray project is being piloted in Islas de Gigantes to reduce their extreme exposure to storm surges and sea level rise. The results can promote climate resilience in the Philippines and around the world by demonstrating pragmatic and cost-effective approaches that restore and conserve mangroves, sea grasses, and coral reefs while recognizing a spectrum of potential infrastructure options from green to gray.

2.3. ReefScan

2.3.1 Monad shoal

This focal area is 1-5 km^2 in size, with no reported area-based conservation initiatives nor key designations, and conservation activities are primarily community based. Health of the ecosystem is described as moderate with abundant fish and coral species richness, including apex predators and herbivorous fishes. The area contains numerous flagship species including whale sharks, the Pelagic thresher shark, scalloped bonnethead shark, Tiger sharks, Manta rays, sea turtles, dolphins, and tuna. Human populations range from small settlements to medium sized urban areas of 200,000+ people.

Drivers of degradation: Overfishing and IUU fishing, destructive fishing, coastal development, harmful tourism, storm and wave damage, warming, and supertyphoons. In addition to harmful fishing, the dive industry in particular has inflicted significant damage to the original dive site since its discovery 20 years ago. Bleaching has also contributed to approximately 30% of the reef's degradation since the significant warming of 2003/04 with further reduction in cover in 2008.

Economic activities: Ecotourism, sustainable wild fisheries.

3. Mindanao to Cebu Reef

3.1. Coral Reef Consultants LLC* This organization also submitted a highlighted business model, "Meet the Reef"

3.1.1. Surigao del Norte and Surigao del Sur

This focal area consists of two islands of off mainland Mindanao that encompass an area of 100 - 1000 km^2 in scale. The area includes both multiuse and no-take MPAs, LMMAs, and OECMs. Though the entities primarily responsible for conservation in the area are locally operating NGOs. The reefs in this area have been described as in moderate condition, with high species richness (corals and fish), highly abundant herbivorous fish, and abundant apex predators. Populations range from small isolated settlements to small urban areas of 50,000 - 200,000 people.

Drivers of degradations: Overfishing and IUU fishing, destructive fishing, coastal development, and warming. Pressure from rapid development has been a particular concern in the last 40 years. Bleaching has been mild in this area, and it is adjacent to deeper cooler waters that respondents claim helps enhance long term resilience.

Economic activities: Ecotourism, sustainable wild fisheries, sustainable aquaculture, sustainable near-shore agriculture, waste management and wastewater treatment, sustainable marine transport and related infrastructure, coral restoration, pharmaceuticals, research and monitoring, green finance,

enhanced governance, blue carbon, responsible supply change, micro and small infrastructure, marine protected areas, technical assistance facility or incubator.

3.2. Sangkalikasan Cooperative

3.2.1. Camiguin Island

This focal area consists of two no-take MPAs in Camiguin Island, the Cabuan and Tupsan MPAs, that are a combined 5 - 15 km^2 in scale. It is also a key biodiversity area. Conservation efforts are primarily governed by NGOs in the area. The coral reefs are described as in moderate condition with high species richness and herbivorous fish abundance, but large apex predators are reportedly rare. Populations in the area are primarily towns and small municipalities.

Drivers of degradation: Land based pollution, marine litter, warming, acidification. Land based pollution is of particular concern. Corals have also experienced bleaching around the island, and typhoons have caused damage as well.

Economic activities: Ecotourism, waste management and wastewater treatment, coral restoration, research and monitoring, enhanced government, marine protected areas.

4. Eastern Mindinao Reef

4.1. UNDP Philippines

4.1.1. Philippine Eastern Seaboard

This focal area encompasses the east coast of the Philippines. The region includes all included forms of spatial protection including no-take and multi-use MPAs, LMMAs, and OECMs. Protected areas include the Biri-larosa Protected Landscape and Seascape in eastern Visayas and the Siargao Protected Landscape and Seascape in Caragar. Conservation throughout the region is managed on the national, subnational, and NGO levels. Reefs in the region have been described as healthy, with flagship species including various marine mammals (whales, dolphins, dugongs) and nesting areas for sea turtles. Most of the populations in the regions are small towns and municipalities.

Drivers of degradation: Overfishing and IUU fishing, destructive fishing, coastal development, harmful tourism, land-based pollution, marine litter, non-living resource extraction, storm and wave damage, and warming.

Economic activities: Ecotourism, sustainable wild fisheries, sustainable aquaculture, sustainable near-shore agriculture, sustainable marine transport and related infrastructure, research and monitoring, green finance, and marine protected areas.

4.2. Coral Reef Consultants LLC* This organization also submitted a highlighted business model, "Meet the Reef"

4.2.1. Surigao del Norte and Surigao del Sur

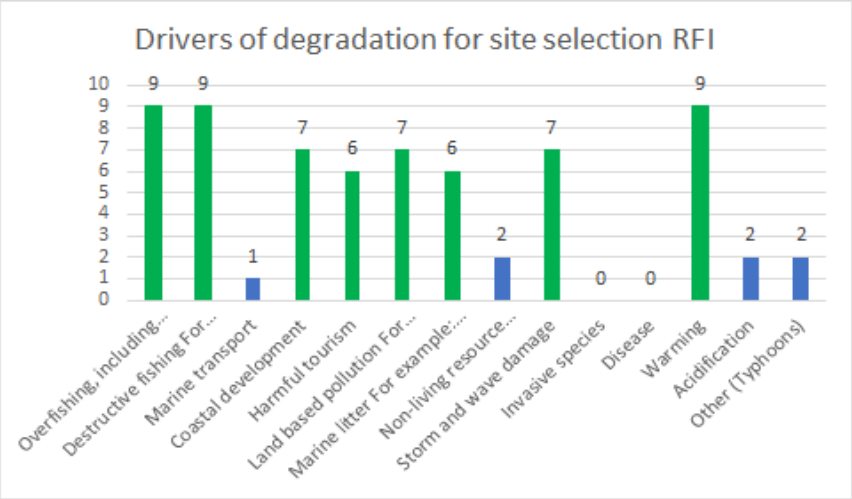
This focal area consists of two islands of off mainland Mindanao that encompass an area of 100 - 1000 km^2 in scale. The area includes both multiuse and no-take MPAs, LMMAs, and OECMs. Though the entities primarily responsible for conservation in the area are locally operating NGOs. The reefs in this area have been described as in moderate condition, with high species richness (corals and fish), highly

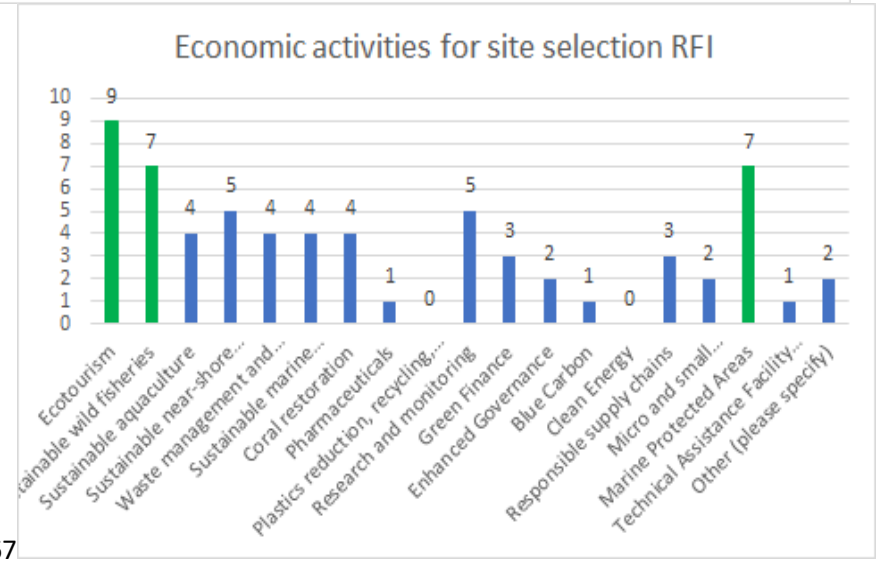
abundant herbivorous fish, and abundant apex predators. Populations range from small isolated settlements to small urban areas of 50,000 - 200,000 people.

Drivers of degradations: Overfishing and IUU fishing, destructive fishing, coastal development, and warming. Pressure from rapid development has been a particular concern in the last 40 years. Bleaching has been mild in this area, and it is adjacent to deeper coole rwaters that respondents claim helps enhance long term resilience.

Economic activities: Ecotourism, sustainable wild fisheries, sustainable aquaculture, sustainable near-shore agriculture, waste management and wastewater treatment, sustainable marine transport and related infrastructure, coral restoration, pharmaceuticals, research and monitoring, green finance, enhanced governance, blue carbon, responsible supply change, micro and small infrastructure, marine protected areas, technical assistance facility or incubator.

5. **Sulu Archipalgo Reef (Purple), no site selection responses for this reef. The reef is located within an area suffering from civil unrest and violent conflicts.**





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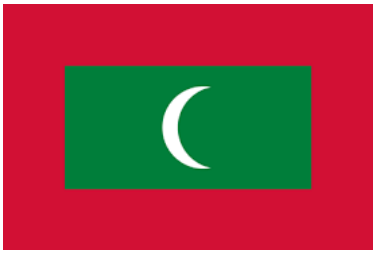
7.4.3 Conclusions

There is a dramatic need for investment in coral reef conservation in the Philippines due to the combination of priority BCU's in the country as well as threats including overfishing, IUU, and destructive fishing, among several others. There is likely a wealth of opportunities for investment in this country of 100 million people in sectors to abate the threats primarily affecting the reefs, some of which have been outlined here. Potential areas of interest for investment may include sustainable small-scale fisheries, investment in reef-friendly tourism practices, and alternative livelihoods including tourism development opportunities. There may be significant opportunities for parametric insurance as well considering the impacts of typhoons on the region in recent years. As the fund investigates such opportunities, care should be taken to consider the potential of local-scale violence and civil conflicts that have affected some areas of the Philippines.

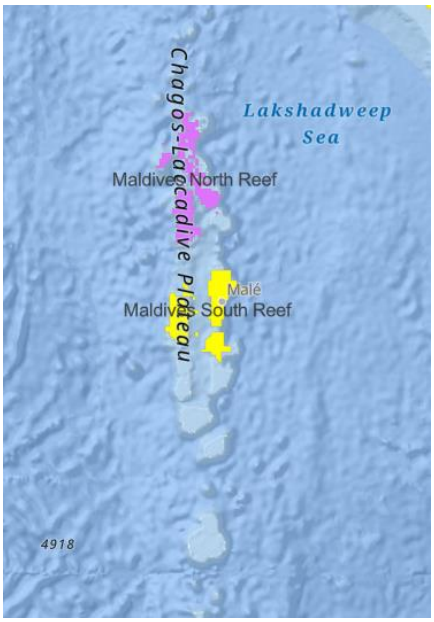
7.5 Maldives



7.5.1 Introduction

7.5.1.1 Reefs

The Maldives is home to two Bioclimatic Units (BCU's) as highlighted by the 50 Reefs report. As illustrated in the image below, the two BCU's are known as "Maldives North Reef" and "Maldives South Reef", and they are both located in generally the northern half of the Exclusive Economic Zone of the country.



7.5.1.2 Biodiversity

Maldives is an archipelago in the Indian Ocean with more than 1192 islands that are geographically distributed into 26 natural atolls spread over 820 km from North to South and 80 to 120 km East to

West. With an estimated land area of less than 300 km^2, the total land area covers less than 1% of the entire area of the country. About 90% of the 1192 islands have an area less than 0.5km^2, with the largest island being approximately 6 km^2. As a result, Maldives has limited, but diverse terrestrial biodiversity of the coast, and abundant marine and coastal biodiversity. The Maldives represents the 5th richest reef biodiversity and the 7th largest reef ecosystems in the world. At least 200 species of stony corals and many associated species have been identified in the reefs of the Maldives.
In terms of Marine biodiversity, the Maldives is characterized by the large megafauna found in its waters. Over 20 species of whales and dolphins, and 40 species of sharks have been identified. Maldives is also characterized by mangroves, one of the unique coastal ecosystems that serves as significant carbon sinks as well as providing coastal protection. Fourteen species of mangrove plants and many more associated species have been identified in the Maldives.

7.5.1.3 Policy development

The Maldives has successfully developed and implemented an initial National Biodiversity Strategy and Action Plan (NBSAP) in 2002. Since its preparation, the 2002 NBSAP was widely used as guidance for other national policies, work plans and regulations on biodiversity. However, after 10 years, the status, trends and threats to biodiversity have changed within the country. Thus, the Maldives recently formulated an updated NBSAP in 2016, with the expectation that it will be used for further policy making, work plans and additional regulations through to the year 2025. The 2016 - 2025 NBSAP of the Maldives has three guiding principles:

1. The People of this generation and the generations to come reserves the right to access and share benefits of rich biodiversity and ecosystem services.
2. Responsibility of conserving and sustainably using biodiversity lies on everyone's shoulders and shall be taken as a shared responsibility.
3. Biodiversity shall be mainstreamed into all sectors and in a manger whereby monitoring progress and accountability is ensured

The 2016 – 2025 NBSAP is designed to address 6 broad areas of concern (strategies):
Strategy 1: Strengthening Governance, Policies and Strategies for Biodiversity
Strategy 2: Enhancing communication and outreach through awareness programmes and capacity building
Strategy 3: Work together globally for biodiversity conservation
Strategy 4: Ensure sustainable use of biological resources
Strategy 5: Address threats to conserve biodiversity
Strategy 6: Strengthen information management and resource mobilization

Coupled with the formalization of environmental protection as stated in Article 22 of the Constitution of The Maldives (adopted in 2008), which states *"The State has a fundamental duty to protect and preserve the natural environment, biodiversity, resources and beauty of the country for the benefit of present and future generations. The State shall undertake and promote desirable economic and social goals through ecologically balanced sustainable development and shall take measures necessary to foster conservation, prevent pollution, the extinction of any species and ecological degradation from any such goal."* The Maldives has shown strong interest in passing legislation with regards to the conservation of natural capital found within the Small Island Developing State (SIDS).
Building off the 2002 NBSAP, several development plans and pledges relevant to biodiversity were announced such as: National Adaptation Plan of Action (NAPA), Third National Environmental Action Plan (NEAP III), and the Strategic Action Plan of a Biosphere Reserve by 2017.

Additional legislations that ensure conservation of biological resources in The Maldives include, amongst others: Liability Regulation of 2011, Uprooting of Trees Regulation, Tourism Act, The Law on the Maldives Fisheries, Plant Protection Act, and Coral and Sand Mining Regulation.
The Maldives has also made strides towards increasing the number of protected as well as managed areas. Under the Environmental Protection and Preservation Act (Law No. 4/93) (1993), 42 areas, 103 bird species and 14 marine species have been declared protected. The total declared protected is over 242 km^2 (however, out of the 42 protected areas, only one area is managed with an effective management regulation). The most notable achievement for biodiversity conservation and sustainable use is perhaps the declaration of Baa Atoll as a UNESCO Biosphere Reserve in 2011. Subsequently a Conservation Fund was established to regulate the biosphere reserve and to promote sustainable livelihood, conservation, education and research in Baa Atoll. The Fund has already awarded 7 grant projects for the atoll. As a result of the success of this project, the government of Maldives has pledged to make the entire Maldives a UNESCO Biosphere Reserve by the end of 2017.

7.5.1.4 Ecosystem Service value of reefs

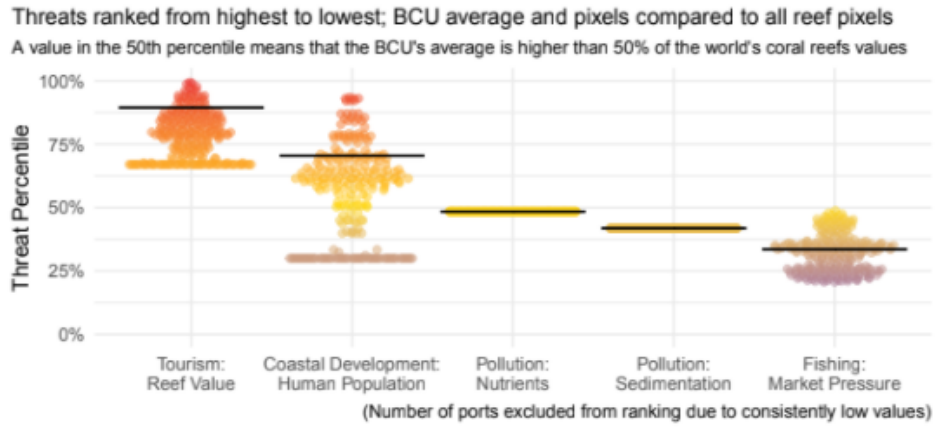
According to the Valuing Biodiversity Report (2009), biological diversity of Maldives contributes to 71% employment, 89% of GDP and 98% of exports. (Valuing Biodiversity, The Economic Case for Biodiversity Conservation in Maldives, Ministry of Housing Transport and Environment, 2009)
As recently as 2013, 5.9% of Maldives GDP was attributable to fisheries, with 30.6% of GDP attributable to tourism which is entirely dependent on biodiversity (Statistical Yearbook of Maldives, 2014).

7.5.1.5 Drivers of Degradation

General Drivers of Degradation
According to the 2016 – 2025 NBSAP, there are several major emerging threats to coral reefs and marine areas within the Maldives.
One of the major threats is the destruction of habitats (including reefs, lagoons, beaches and mangroves) due to land reclamation, harbour building, channel construction, seawall construction and other related infrastructure development activities. It is estimated that 202 artificial harbors have been constructed and over 10km^2 of lagoon and reef area has been modified for land reclamation purposes.
Rising sea temperatures associated with climate change has also had a negative impact on coral reefs located in the SIDS. Ocean acidification and increased frequency of extreme weather events such as storms results in severe impacts on biodiversity, livelihoods and consequently the adaptive capacity of people to climate change.
Population growth and an increase in economic growth has led to over-exploitation of biodiversity, decline in certain species such as turtles and tuna catch and the clearance of vegetation to meet the demands of development. In addition to the aforementioned pressures caused by population increase, there has been an increase in unsustainable agricultural practices with an increase in chemical based fertilizers and pesticides.
Furthermore, improper waste management throughout the country results in disposal of dangerous chemicals, oils and non-biodegradable waste into the surrounding sea threatening the biodiversity of the reefs, lagoons and other habitats.
Drivers of Degradation – individual BCU's
According to the Vibrant Ocean's Initiative, 50 Reefs, the following threats are specific to each of the BCU's located in the Maldives:
Maldives North Reef:
Top two threats:

1. Tourism
2. Coastal Development

Threat Ranking

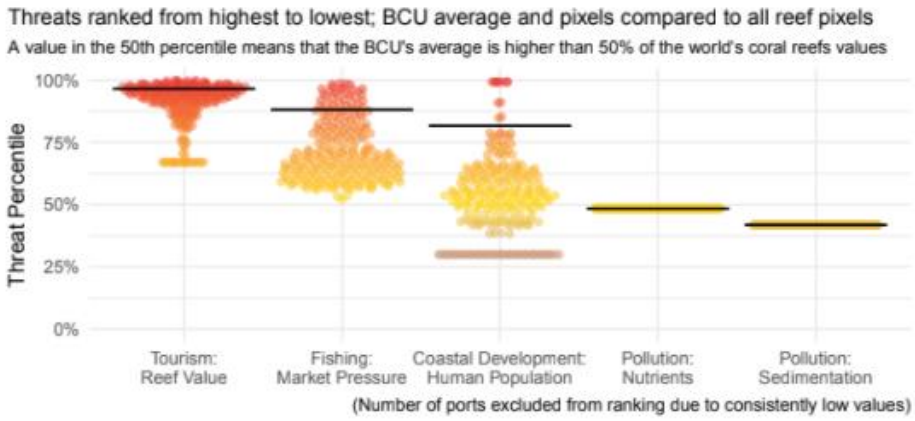


Maldives South Reef:

Top two threats:

1. Tourism
2. Fishing

Threat Ranking



7.5.1.6 Investment Environment

Tourism is the main source of economic activity for the Maldives, contributing 28 percent of GDP and generating more than 60 percent of foreign currency earnings. The tourism sector has experienced impressive growth over the past 10 years, growing from 655,852 arrivals in 2009 to 1.7 million in 2019. This growth is mainly fueled by Chinese tourists. Tourism will likely continue to drive the economy, however, following the COVID-19 outbreak, the government plans to introduce measures to diversity the economy, with a focus on the fisheries and agricultural sectors.

GDP growth averaged 6% during the past decade and has helped lift Maldives to middle-income country status. Per capita GDP is estimated at USD 11,890, the highest in South Asia. Following the COVID-19 outbreak, the Government revised its forecast GDP growth of 7.5 percent for 2020 to decrease to between 0.5 percent and -5.6 percent, representing a significant contraction.

Maldives recently transitioned from a long-time autocracy to a democracy, with the ratification of a new constitution in 2008 that provided for the first multi-party presidential elections.

Corruption across all sectors, including tourism, was a significant issue under the previous governments, though in 2008 Ibrahim Mohamed Solih of the Maldivian Democratic Party was elected president on a platform of economic and political reforms and transparency. Concerns have significantly increased

about a small number of violent Maldivian extremists who advocate for attacks against Maldivians and are involved with transnational terrorist groups.
Maldives' debt-to-GDP ratio increased from 58.5 percent in 2018 to an estimated 61.8 percent in 2019 according to the World Bank. In June 2019, the International Monetary Fund recommended Maldives adopt a measured tightening of policies to safeguard macroeconomic and external stability.

Table 11 Maldives: Key Metrics and Rankings

Measure	Year	Index/Rank	Source
TI Corruption Perceptions Index	2019	130 of 198	Transparency International (2021) *Corruption Perceptions Index*
World Bank's Doing Business Report	2019	147 of 190	World Bank (2021) *Ease of Doing Business Ranking*
World Bank GINI per capita	2018	USD 9,280	World Bank (2021) *World Bank Open Data*

7.5.2 Request for Information and Independent Research

7.5.2.1 Business Models

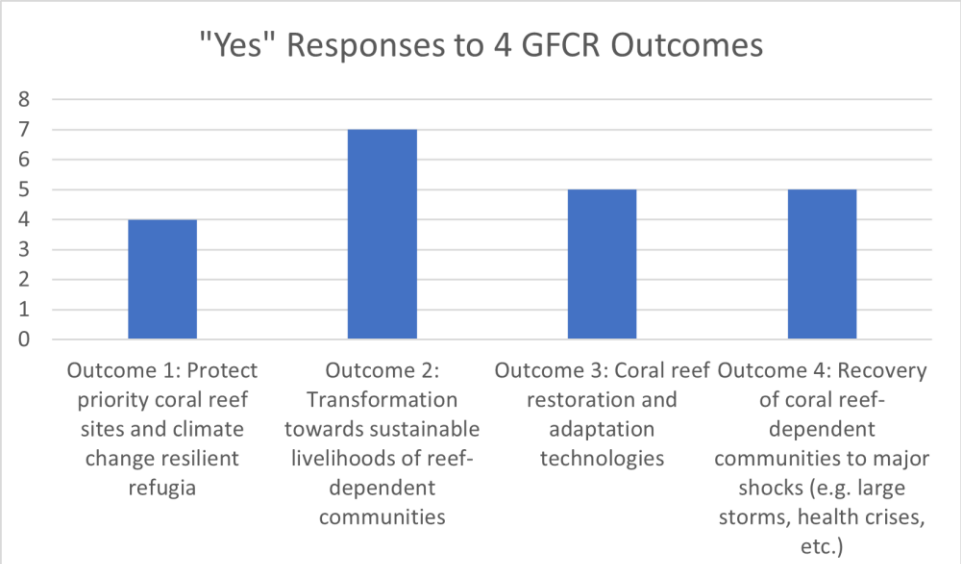
Though the Maldives has a relatively small economy and a small population size, the dependence on coral reefs and nature-based tourism offers opportunity for investment for Fund. Only two RFI responses specifically focused on the Maldives, with one response coming from the UNDP Maldives country office and the other coming from a coral reef restoration enterprise. Both opportunities are highlighted below.
Total Responses: 7
Responses of Interest: 2
Key Partners:

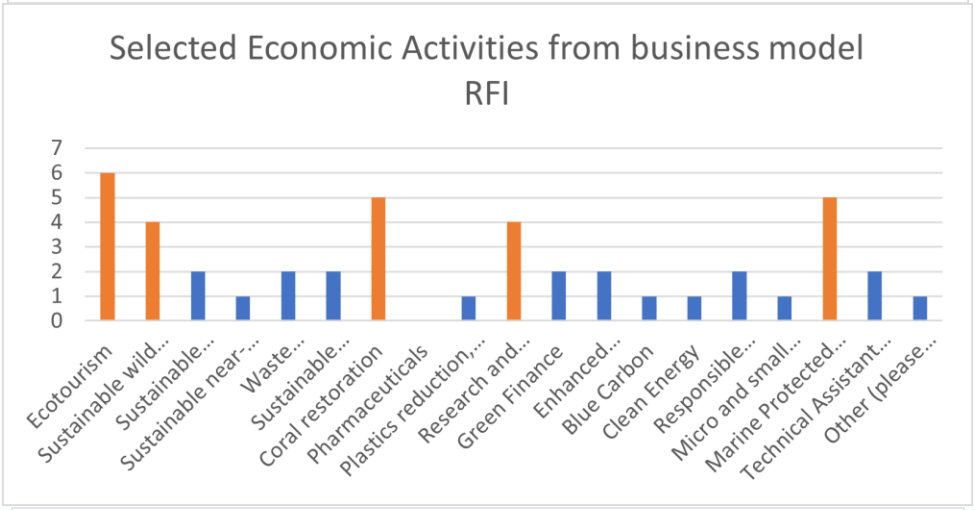
Respondents:

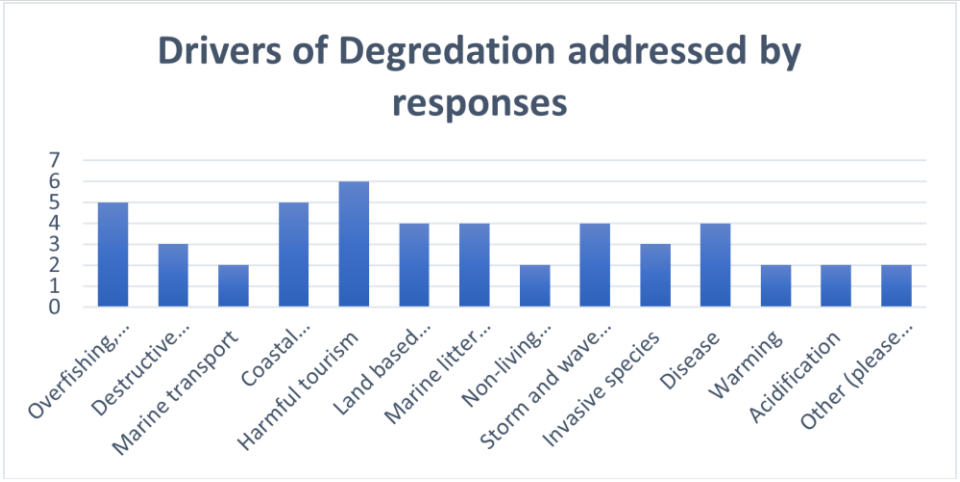
- UNDP Maldives country office
- Corales de Paz
- The International Pole & Line Foundation (IPNLF)
- Coral Shades Pvt Ltd
- Okavango Capital Partners
- RRReefs – Rethinking, Rebuilding, Regenerating Reefs
- The Nature Conservancy

Other Strategic Partners:

- Common Seas
- Government Biosphere Reserve Conservation Fund







Highlighted Responses from the Business Models RFI

Highlighted Business Model 1
Program: Addu Coral Reef Rehabilitation Programme
Organization: Coral Shades Pvt Ltd
ID#: 1089
Summary: This initiative is aimed at restoring corals and rehabilitating the coral reefs of Addu Atoll in Maldives which will soon be a protected area in the Maldives. This initiative is also intended to promote local tourism in the Atoll aiming to educate the local community and the tourist community on these important critical ecosystems and ensure community-based protection is achieved.
Most Recent Revenue: N/A
Projected Revenue in 5 years: USD 800,000
5 year financing needs: 500,000 to 1 million USD
Projected IRR: 6 – 10%
Investment Horizon: 3 – 7 years
Countries: Maldives, Addu Atoll, Potential site
Highlighted Business Model 2
Program: Blended financing for Marine Protected Area management that promotes economic growth and recovery in the Maldives
Organization: United Nations Development Programme in the Maldives
ID#: 1012
Summary: Maldives is heavily impacted by Covid-19. The World Bank estimates growth rate to shrink by 19.5% and debt to GDP levels to reach 128% by 2022 leaving the Government of Maldives (GoM) in an extremely vulnerable position to channel capital towards recovery efforts while servicing its debt. Maldives' "natural assets" holds potential for nature conservancy. The Government can gear its financing strategy towards novel financing strategies. The Government through its Strategic Action Plan 2019-2023 has committed to promote blue economy in Maldives and is taking great strides in declaring 10% of the country as protected areas.
The government's ongoing marine mapping across the country provides data to inform policymakers in marine spatial planning efforts to designate ocean zones, devising ways of preserving fish stocks, and; helping to implement sustainable tourism that can improve ocean livelihoods and economies without compromising ocean health. Under a debt for nature swap creditors whose investments are closely aligned with nature-based solutions provide debt relief in exchange for commitments to protect nature. This is provided through the reduction of principal, interest payments and converting part of debt to local currency helping the debt-distressed recipients ease pressure on limited foreign currency reserves available. Repayment proceeds are to be used to boost ecotourism in the country and to create conservancy funds which could be used to re-direct funding for scaling up MPA management in line with the marine spatial plans. This can in turn create greener jobs, support green governance frameworks and capacity building, long after the debt has been repaid.
Most Recent Revenue: N/A
Projected Revenue in 5 years: N/A
5 year financing needs: > 20 million USD
Projected IRR: Unknown
Countries: Maldives

7.5.2.2 Site Selection

Responses from Site Selection RFI
Total responses: 2
Organizations: Maldives Ministry of Environment, United Nations Development Programme in the Maldives, Small Island Research Centre

1. **Maldives North Reef (Pink)**

1.1 Ministry of Environment

Baa Atoll

The RFI response for this site that is located in the North Reef is a Biosphere Reserve that has a surface area of 1000+ kilometers. It contains a MPAs (No-take zones as well as Multiple Use), LMMAs and OECMs. It has the designation of a Key Biodiversity Area and a Man and the Biosphere (MAB). The MPAs within this site include the following: Ohugiri PA, Dhigali Haa, Dhigali Giri, Hanifaru, Angafaru, Bathalaa Region PA, Goidhoo Mangroves, Maahuruvalhi Reef, and Mendhoo Region. The reefs within the site are categorized as having healthy coral and a diverse fish population including apex predators, with a high coral and fish species richness. The flagship species that have been sighted within the area include: Manta Rays, Whale Sharks and Turtles.

Drivers of Degradation: Marine transport, Coastal Development, Land based pollution (wastewater, agricultural runoff), Marine Litter (plastic pollution, ghost or derelict fishing gear), storm and wave damage, Invasive Species, Warming.

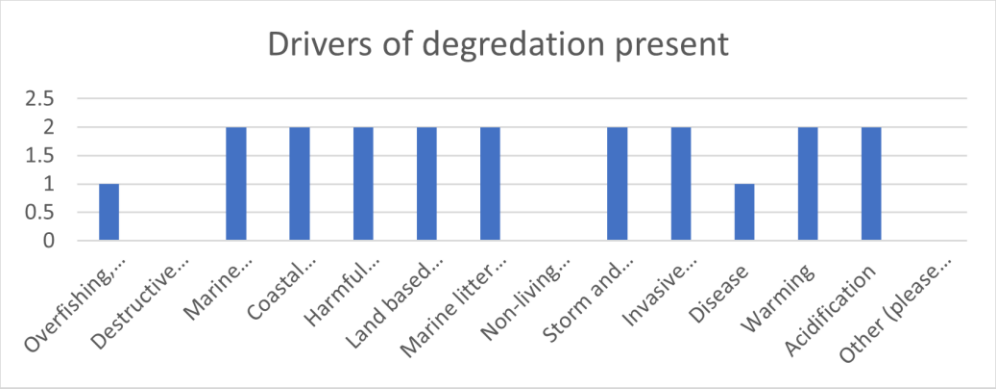
Economic activities: Ecotourism, Sustainable wild fisheries, Waste management and wastewater treatment, Sustainable marine transport and related infrastructure, Coral Restoration, Plastics (reduction, recycling and circular economy), Research and monitoring, Green Finance, Enhance Governance, Blue Carbon, Clean Energy, Marine Protected Areas.

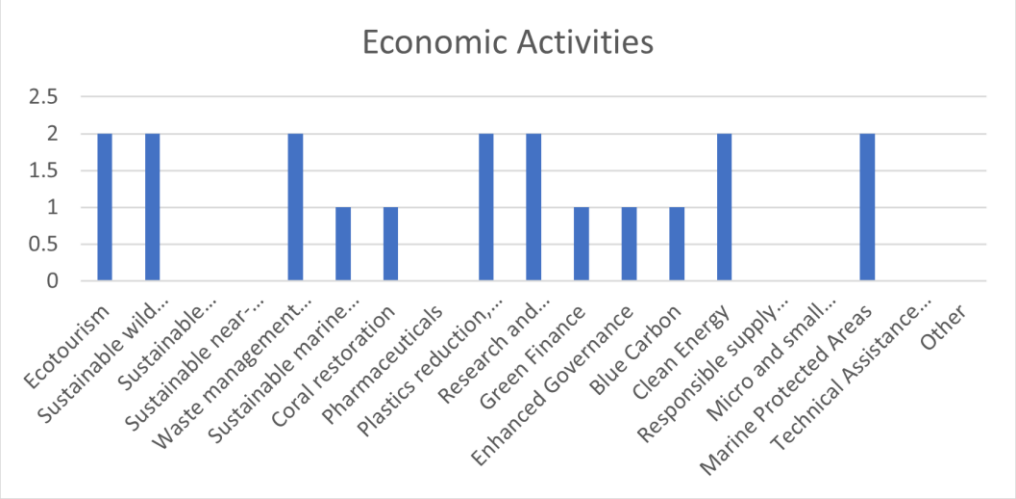
1.2 Small Island Research Centre

This focal area is on the scale of 5 – 15 km2, containing multiple-use and no-take MPAs and is designated as Key Biodiversity Area and on the IUCN Green List. The site is designated to have healthy coral and a diverse fish population with medium coral species richness and high fish species richness. Sharks and other apex predators are abundant in the area, and flagship specie such as Manta Rays and Napoleon Wrasse are present.

Drivers of degradation: Coastal Development, Land based pollution, Warming, Wastewater runoff and Acidification.

Economic Activities: Sustainable wild fisheries, Waste management and wastewater treatment, Plastic (reduction, recycling and circular economy), research and monitoring, clean energy, and marine protected areas.





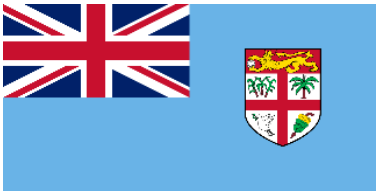
7.5.3 Conclusions

Maldives has a relatively small domestic economy, is highly dependent on coral reef and marine tourism, and its large coastline is covered by two priority BCU's. GFCR programming will be potentially include the entire country. The current initial concept note proposed by the UNDP Country Office aims to:

(a) create a blended financing vehicle that will evolve into a national finance provider, through which to provide sustainable funding for priority ocean conservation and climate change adaptation activities;
(b) support initial development and implementation of a comprehensive multi-use marine spatial planning framework, with a focus on conservation and management of coral reef ecosystems; and
(c) build capacity to mobilize private and public investment capital for a pipeline of initiatives that positively impact on Maldives coral reefs and associated livelihoods.

A diversified blended finance portfolio will likely include ecotourism models, public sector financing for coastal development projects, coral reef restoration operations, sustainable fisheries, and circular economy enterprises with a focus on reducing plastic waste, among others.

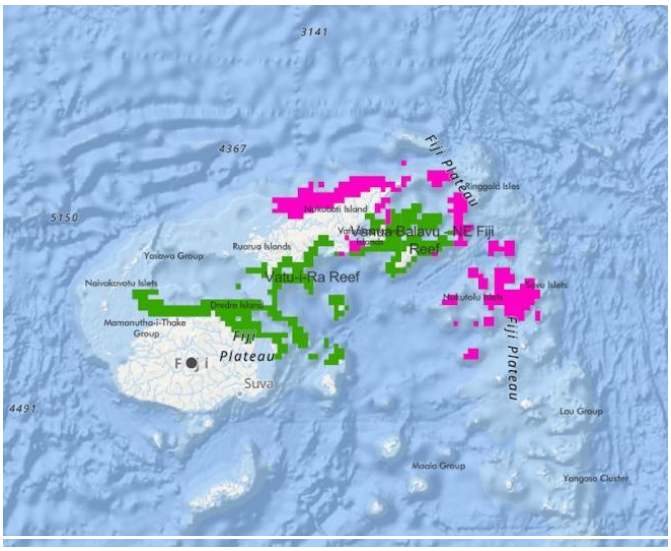
7.6 Fiji

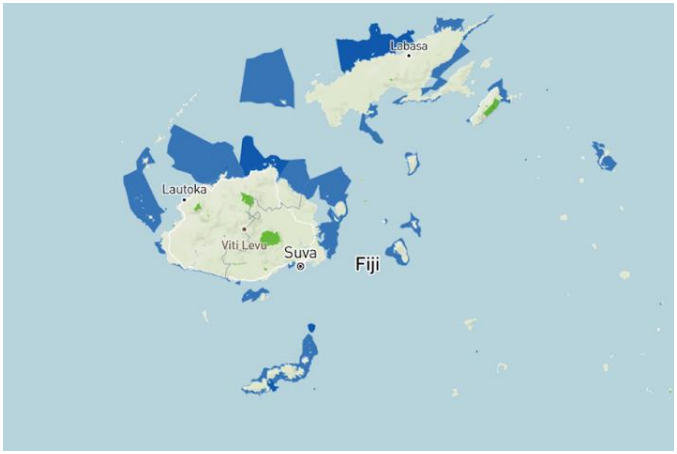


7.6.1 Introduction

Fiji is an archipelago of hundreds of islands in the Pacific and a biodiversity hotspot for corals with diverse reef formations estimated to cover approximately 6,704 km^2 (GCRMN, 2018, report on the status of Pacific coral reefs). Fiji has two coral reef Bioclimatic Units (BCUs), namely Vanua Balavu NE- Fiji and Vatu-i-Ra. The estimates provided in the GCRMN (2018) report show 50% live coral cover (which is above the global average). Marine protected areas cover 11,959 km^2 out of a total of 1,293,035 km^2 of

marine and coastal areas (protectedplanet.net). It is interesting to note that, as per the Marine Protection Atlas, only <1% of ocean area is in implemented and fully / highly protected zones.
As is the case in many SIDS, coral reefs are fundamental to Fijian community livelihoods with a high percentage of the population relying on small-scale commercial and subsistence fishing. Indeed, it is estimated that about 75% of the dietary protein comes from the ocean (GCRMN 2018). The fisheries sector is also the third largest natural resource sector, contributing over USD 65M to national GDP in 2015 (FAO). To add to this, the major source of the county's foreign income is tourism, with most tourist activities concentrated particularly on beaches and coral reefs. Naturally, these very same ecosystems





provide numerous other benefits, not the least being shoreline protection safeguarding infrastructure and communities from storms, large waves and soil erosion.
Despite the clear importance of such ecosystems, Fijian reefs remain under threat. The main drivers of coral degradation noted are the impacts from overfishing and coastal development along with climate change related pressures (reefresilience.org). Other reported threats include destructive fishing, coral harvesting for the aquarium trade, and degradation due to natural events (often exacerbated by human activity) including cyclones, coral bleaching and predator outbreaks such as crown-of-thorns starfish. The toxicity of run-off from agricultural fertilizers is equally having a negative impact on coral reef ecosystems in Fiji (WWF 2019, University of Newcastle Australia 2019). Based on the Vibrant Ocean BCU threat report cards, it is interesting to note that tourism and pollution by sedimentation are the top two threats for the Vatu-i-Ra reef whilst for the Vanua Balavu reef it is nutrient pollution followed by sedimentation.

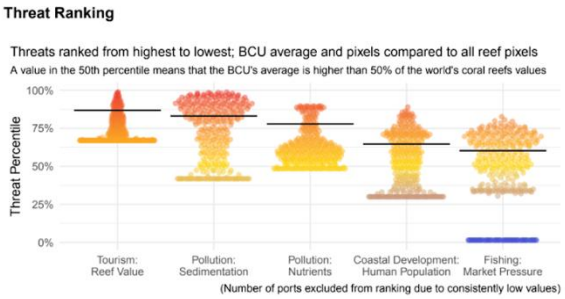


Figure 28 Vatu-i-Ra Threat Ranking

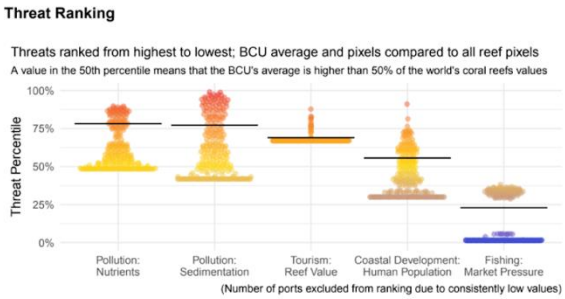


Figure 29 Vanua Balavu Threat Ranking

Sustainable finance and the mobilization of additional funds is imperative if Fiji is to safeguard these fragile yet key ecosystems. Moreover, it should be noted that Fiji has shown clear interest in a sustainable future for its marine and coastal resources. In 2020, the nation hosted the Regional Conference and Policy Dialogue on Blue Economy, Ocean Tourism, and Sustainable Blue Financing. The country has also shown concern regarding coral reefs with the Ministry of Fisheries, and partners, launching the "One Million Coral Planting program" in the fourth quarter of the last year, amongst other ongoing initiatives.

7.6.2 Request for Information and Independent Research

7.6.2.1 Business Models

Key Partners

Respondents to Business Model RFI:

- Conservation International
- Ministry of Fisheries Fiji Islands
- Coral Vita
- ADE (Aquaculture Development for the Environment)
- Counting Coral
- WWF
- Corals for Conservation
- The Nature Conservancy
- Wildlife Conservation Society (WCS) Fiji Country Program

Selected Strategic Partners from RFI:

- Walt Smith International Ltd
- J Hunter Pearls
- Fiji Climate Change Division

Other potential strategic partners (This list is not exhaustive):

- Local tourism organizations (e.g., Fiji Hotel and Tourism Association FHTA)
- Ministry of Waterways & Environment
- Coral Reef Alliance
- Fiji Locally Managed Marine Area (FLMMA)
- Women in Fisheries Network- Fiji
- University of the South Pacific – Institute of Marine Resources
- Marine Ecology Consulting Fiji
- IUCN Oceania

- National Trust of Fiji
- Swiss Re Foundation
- Asian Development Bank
- Global Environmental Facility (GEF)

Highlighted Business Model 1
Program: Lau Seascape Initiative
Organization: Conservation International
ID#: 1007
Website: https://www.pacificbluefoundation.org/projects/the-lau-seascape/
Summary: The Lau Seascape is a multi-partner initiative comprised of community and traditional representatives from the islands of Lau, non-governmental organizations, government, and private sector stakeholders. Coordinated by Conservation International (CI), the Lau Seascape aims to strengthen local stewardship and management of Lau's rich marine resources, together with government, to ensure long-term food security and community well-being, while pursuing blue economy opportunities. Since 2016, CI and partners have worked with Lau's traditional leaders and technical partners to craft the Lau Seascape Strategy 2030, which was launched in November 2019 with resounding endorsement. At present, the Lau Seascape has limited resources to conserve and protect its unique and pristine coral reefs to current and future threats, as beacons of overall human well-being across the Seascape. CI recognizes the need for additional investment to implement the Lau Seascape at scale, as well as to devise sustainable financing strategies to fund large-scale ocean management, while improving livelihoods for Lau's people as reef dependent communities and engaging private sector operators. To date, the Government of Fiji has directed resources from the Global Environment Fund to support conservation actions in the Lau Seascape. Garnering additional co-investment will be critical for monitoring of future offshore MPAs across the Seascape, to manage fishing and other activities in high protection zones, as well as support community livelihoods and climate change adaptation needs. The Lau Seascape Initiative aims to develop a blended finance mechanism to capture revenue in the Seascape, such as from yacht tourism.

Highlighted Business Model 2
Program: Gazettement of Marine Protected Areas in Fiji
ID#: 1017
Organization: Ministry of Fisheries, Fiji Islands
Website: General website for Ministry of Fisheries - https://www.fisheries.gov.fj/
Summary: In 2005, at the second Small Island Developing States (SIDS) conference in Mauritius and again in 2014 in Samoa, the Fiji Government made a commitment to protect 30% of its seas by 2020. To date, approximately 1.7% of Fiji's exclusive economic zone (EEZ) is under some form of management, and this protection is exclusively from community efforts in inshore managed areas. About 0.0081% of the 30% national commitment is regulated or gazetted as marine reserve areas. There is a need to significantly expand Fiji's MPA network through the establishment of the offshore marine protected areas to achieve the target. The establishment of gazetted marine protected areas in the inshore areas promotes government and stakeholders' partnership, particularly the promotion of marine ecotourism, mariculture and sustainable fishing that helps generate income for rural communities. The key steps undertaken to gazette a marine protected areas are: (1) conduct a biological survey in the proposed area to determine the marine resources status (2) socio-economic fisheries surveys in communities that fish and are traditional custodians of the area (3) public consultations (4) scientific compilation (5) compile cabinet paper (6) submission to cabinet for endorsement (7) official ceremony to formally established and recognized the area (8) biological monitoring (9) Monitoring Control and Surveillance (MCS) in the gazetted area to protect the area from poachers and illegal fishing.

***Sites**:* 1. Fiji, Shark Reef Marine Reserve), Wainiyabia, Serua, Existing 2. Fiji, Wakaya Marine Reserve, Wakaya Island, Existing 3. Fiji, Kiuva Marine Reserve, Tailevu, Viti Levu, Existing 4. Fiji, Naiqoro Passage Spawning Aggregation Marine Reserve, Kadavu Island, Existing 5. Fiji, Tavarua Island Marine Reserve, Potential.

Highlighted Business Model 3

Program: Plant 1,000,000 corals in one year

ID#: 1055

Organization: ADE (Aquaculture Development for the Environment)

Website: ADE's website - https://www.adeproject.org/ , Press release - https://www.pressreader.com/

Summary: The ADE project is based on a model that the founder, Walt Smith, developed in 1998. ADE is positioned to be the largest Coral Reef Restoration project in the world, currently producing up to 60,000 farmed corals per year for Fiji reef restoration projects and for the aquarium trade, as well as for tourism enhancement programs. It also provides employment opportunities for local Fijian villagers.

***Locations**:* 1. Fiji, Vitogo, Yasawas Islands, existing 2. Fiji, Treasure Island, Mamanuta, existing 3. Fiji, Druadrua, Vanua Levu, existing 4. Fiji, Vunivutu, Vanua Levu, existing 5. Fiji, future potential 20 new sites added with funding

Highlighted Business Model 4

Program: Blended finance facility for effective management of LMMA networks

Organization: UN Joint SDG Fund (Blue Finance)

Website: https://sdginvest.jointsdgfund.org/proposals/investing-coral-reefs-and-blue-economy-0

Summary: The project will co-finance the development of eco-tourism facilities and blue carbon solutions for the effective management of Locally Managed Marine Areas. The project will invest in an aggregation of Special Purpose Entities (SPEs) formed by local communities, local NGO partners and Blue finance. Members of the SPE have a recognized long term management lease for MPAs. The SPEs are expected to contribute to the following MPA activities: Monitoring marine habitats, Improvement of ecosystems, Community engagement, Community livelihood enhancement, Zonation and compliance, Support to tourism activities, Maintenance and Management.

Critical finance will be generated through wildlife eco-tourism enterprises, digital visitor center, nature fees and mangrove conservation. For all of them, the capacities of the SPE team to implement the mechanisms will be strengthened. In particular, social entrepreneurship skills (e.g., marketing, strategic planning, management and conservation) will be prioritized. Project will contribute to sustainable financing of community conservation efforts, coral reef protection and economic development opportunities for vulnerable coastal communities. The project's design addresses the global challenge of degradation of marine and coastal natural capital and will drive a transformation in the management effectiveness of existing MPAs in Fiji. A pipeline of >30 potential opportunities has been identified in the Country, and MPAs will be selected with Government based on the positive ecological and social impacts that can be achieved. Whilst the initial sectoral focus will be revenue streams associated with tourism and ecosystem service payments (particularly blue carbon), other sectors capable of driving sustainable income into MPAs can readily be bundled within the structure of site-level projects. Investment projects are being structured and implemented by Blue Finance, a non-profit JP partner specialized in developing impact investment solutions for MPAs globally.

Highlighted Business Model 5

Program: Western Sanitary Landfill

Organization: UN Joint SDG Fund

Website: https://sdginvest.jointsdgfund.org/proposals/investing-coral-reefs-and-blue-economy-0

Summary: Involves the establishment of a sanitary landfill with simultaneous establishment of Regional Transfer stations and second phase Materials Recycling Facility. Sanitary landfill network of refuse transfer stations and GPS-tracked trucks in the first stage, with progressive build-in of a materials

recovery facility and ancillary recycling and upcycling businesses. The venture will lay the foundation for large scale recycling which currently does not take place in the Pacific region.
Western Division (second largest of four provinces) is served by a 16ha open dumpsite with no sanitary engineered landfill or leachate control and is situated on mangrove. Western division is adjacent to the Great Sea Reef, hosting 700k tourists annually. The Western Landfill initiative is of political importance with improved environmental outcomes and consistent with the Fijian Environmental Act. The Landfill will serve as a platform for regional hub and/or other waste businesses (material recovery & recycling, upcycling). It will be constructed and operated by the only company with in-country experience: HG Leach with 15 years DBO&M experience at the Naboro Landfill, Suva, Fiji.
The business will generate revenues from gate fees, premium gate fees and service fees to producers of waste (households and businesses) for whom the collection services are provided.

Highlighted Business Model 6

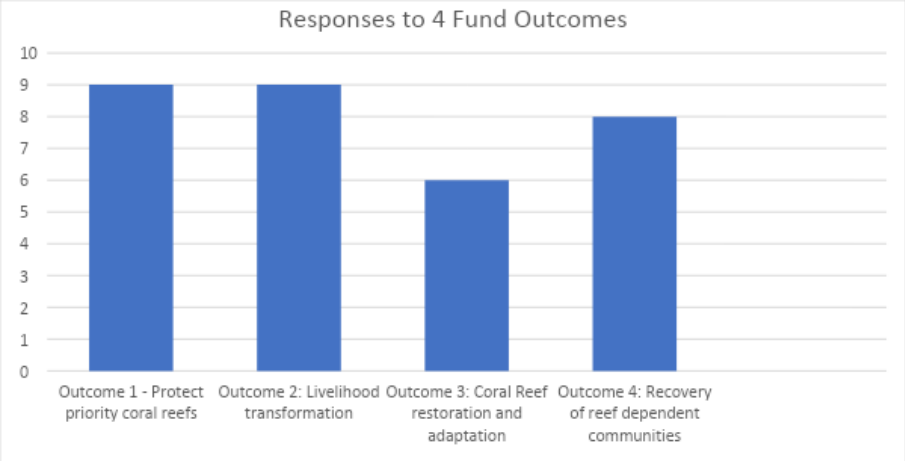
Program: Fertile Factory
Organization: UN Joint SDG Fund
Website: https://sdginvest.jointsdgfund.org/proposals/investing-coral-reefs-and-blue-economy-0
Summary: Will establish locally produced non-synthetic fertilizers that can service significant local demand and create ecosystem benefits across the sugar industry. Currently the industry utilizes nonorganic fertilizer which is subsidized by the government. The toxic run-off from this fertilizer has been shown to have ongoing and long duration deleterious effects on the coral reef area where this run-off is concerned (in particular the Driketi river entry point).
This business has established a proprietary formula to produce a cost-competitive, locally made non-chemical fertilizer, which when paired with farmer training, can significantly increase yields, soil quality and contribute to reef health:
1. Land based pollution (siltation and nutrient fertilizer runoff) pose a significant risk to reefs around Viti Levu and Vanua Levu)
2. Deforestation and agricultural conversion close to watersheds are major drivers of siltation

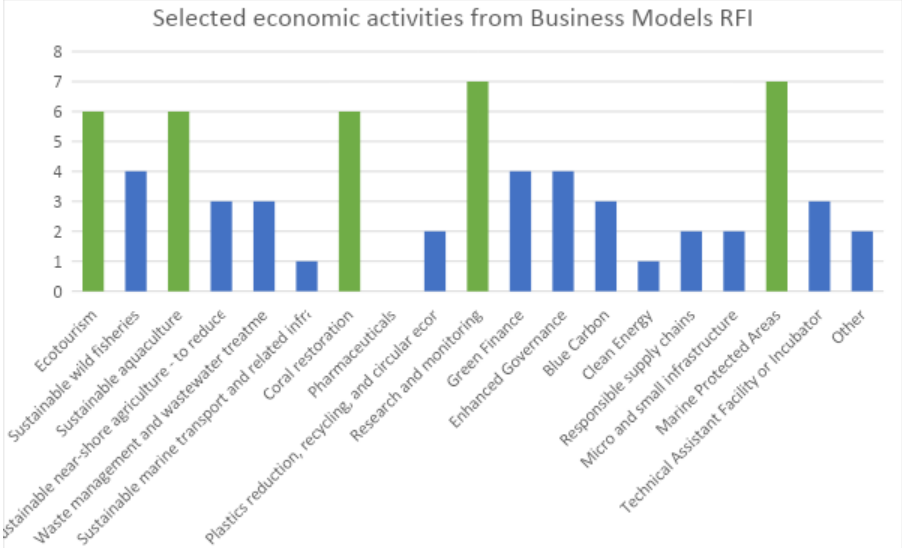
Highlighted Business Model 7

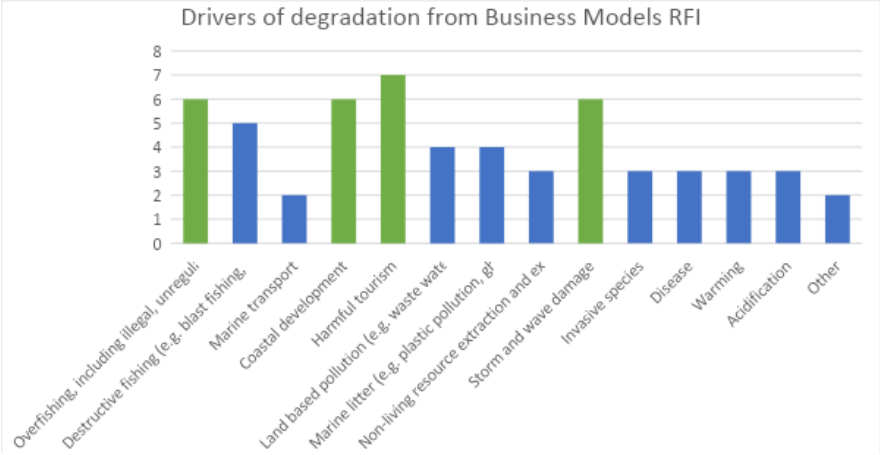
Program: Technical Assistance Facility (Matanataki-Blue Finance)
Organization: UN Joint SDG Fund
Website: https://sdginvest.jointsdgfund.org/proposals/investing-coral-reefs-and-blue-economy-0
Summary: Focused on the establishment of a Technical Assistance Facility. The facility will be managed by Matanataki, a local private investment manager for all blue economy projects and by Blue finance, a global investment developer for all new LMMA projects. Supported by UNCDF, the objective of this intervention is to develop a pipeline of investment ready reef-positive sustainable businesses with an emphasis on employing local community members, especially women and youth. Pipeline development will be achieved through scoping, technical assistance and training to upskill local businesses operating in the blue economy on social entrepreneurship, sustainable business and financial management. Currently Matanataki has pre-identified over 30 projects with an investment need of over USD75M. (The fertile factory and sanitary landfill stem from this pipeline). The TAF will focus on improving the readiness and the financial structuring of those businesses in order to make them attractive to impact investors. A financial support facility will be created by UNCDF to provide concessional capital.

Summary statistics - Business model RFI survey

Total Responses: 9, Responses of Interest: 8







7.6.2.2 Site Selection

Responses from Site Selection RFI

Total responses: 8

Organizations: Conservation International, WWF – Pacific (Fiji), Ministry of Economy Fiji (n = 2), Coral Coast Conservation Center, Corals for Conservation, WWF.

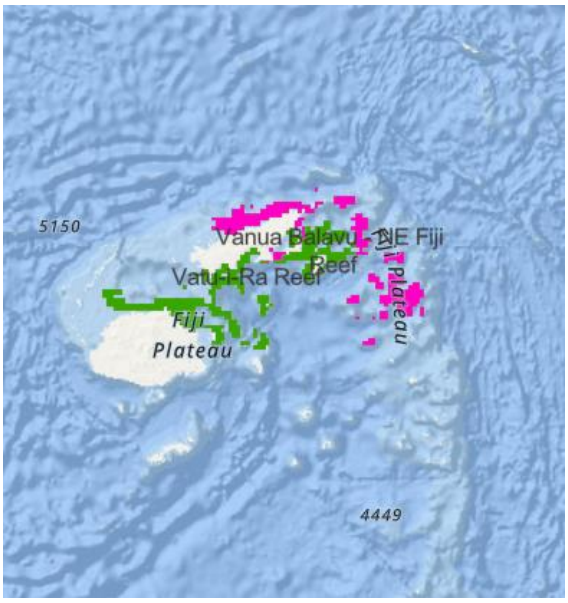


Figure 28: Fiji priority BCU's

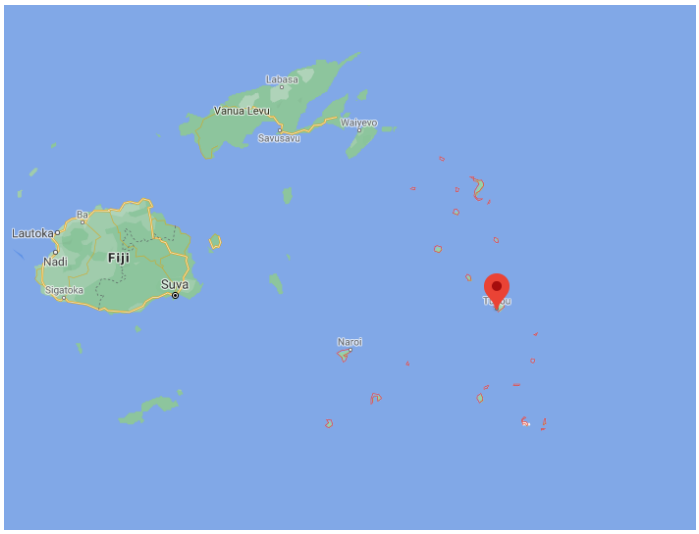
Vanua Balavu (Pink)
1.1 Great Sea Reef (n = 2)
WWF – Pacific (Fiji), Ministry of Economy Fiji
This focal area is quite large – roughly 1000+ square kilometers and contains multiple-use and no-take MPAs as well as LMMAs and OECMs. The site is designated as a Key Biodiversity Area and boasts healthy coral and a diverse fish population. Coral species richness and fish species richness are considered moderate and high, respectively. Flagship species within this area include Turtles, Sharks and Rays. Mangroves and Sea Grasses can also be found within this area. Roughly 50,000 to 200,000 people reside around the site in small, isolated settlements, small urban areas, and within towns and municipalities.
Drivers of Degradation: Overfishing, Destructive Fishing, Marine transport, coastal development, harmful tourism, land-based pollution, marine litter, non-living, storm and wave damage, warming and acidification.
Economic Activities: Ecotourism, Sustainable wild fisheries, sustainable aquaculture, Sustainable near-shore agriculture, Waste management and wastewater treatment, sustainable marine transport, coral restoration, pharmaceuticals, plastics (reduction, recycling, and circular economy), Research and monitoring, Green Finance, Enhanced governance, Blue Carbon, Responsible Supply chain development, Micro and small infrastructure, Marine Protected Areas and Technical Research Assistance Facility.

Vatu-i-Ra Reef

No site selection submissions for this BCU.

Though there were 8 total responses, only one response highlights a site that is within a larger BCU. However, there are other responses that may be of interest. Please see below for additional details regarding the site: Lau Seascape.

Site Name: Lau Seascape



The Lau Seascape is located to the east of the two large islands. It is a collection of small, sparsely inhabited islands.

Conservation International

The Lau Seascape is quite large – roughly 1000+ kilometers squared – and contains no-take and multiple-use Marine Protected Areas, LMMAs and OECMs. The site is a Key Biodiversity Area boasting healthy coal and diverse fish population. Both coral species and fish species richness can be described as High with an abundance of keystone species such as Whales, Turtles and Mantas.

Drivers of Degradation: Overfishing, Destructive fishing, Marine transport, Coastal Development, Land based pollution (wastewater, agricultural runoff, Marine Litter, Storm and wave damage, invasive species, disease and warming.

Economic Activities: Ecotourism, Sustainable wild fisheries, Sustainable near-shore agriculture, Sustainable marine transport, Coral restoration, Research and monitoring, Enhance Governance, Blue Carbon, Clean Energy, Responsible Supply Chains, Marine Protected Areas and Technical Assistance Facility or Incubator.

7.6.3 Conclusion

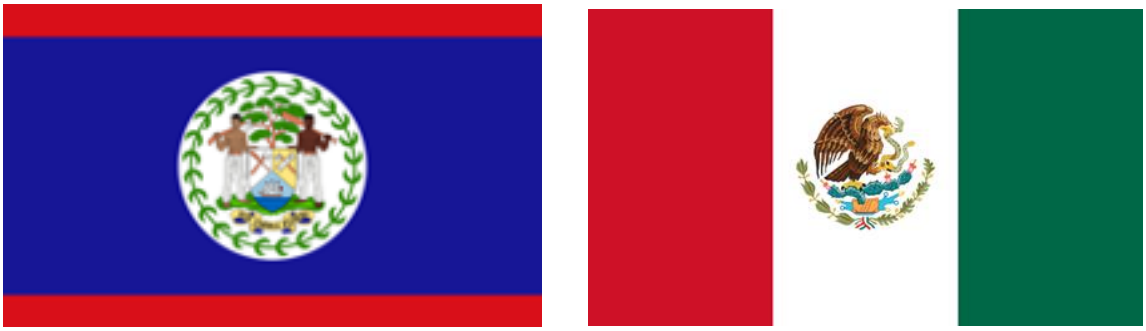
Fiji is highly dependent on coral reef and coastal tourism and fisheries and has a large coastline with strong coverage of two BCU's. The priory programming proposal (submitted as a UN Joint SDG Fund proposal) seeks to create a blended finance facility and to build capacity to mobilize private and public investment capital for initiatives that have a positive impact on Fijian coral reefs and the communities that rely on them. The initiative will construct a pipeline of bankable projects providing a blend of technical assistance, performance grants and concessional capital for derisking investments. Projects will leverage finance from private investors and other financing facilities. Expected results include:

1) Private sector investment in a USD 10M blended finance facility for effective management of 30 Locally Managed Marine Areas (LMMAs) in Fiji. The initiative will accelerate the short-term investment readiness of a pipeline of 10 LMMA projects (USD 3.1M target) and bring the wider pipeline to market (USD 10M target). Business model include reef-first businesses such as eco-tourism, visitor center, sustainable fisheries and blue carbon credits.
2) Private sector investment in a USD 14M blended finance facility for a sanitary landfill project before replicating the approach to other landfill projects in the country.
3) Private sector investment in an eco-fertilizer factory before replicating the approach to five (5) other reef-first Small-Medium Enterprise (SME) projects in the pipeline.
4) Established and operational gender responsive Technical Assistance Facility (TAF) for blue economy SMEs and financial instruments. The TAF will:

a) Bring expertise during the pre-investment and post-investment life cycle of the Blue Economy SMEs
b) Aggregate and pool the investments and other financial instruments reducing transaction costs for outside investors and reducing risk profile
c) Work with Government to improve the regulatory framework
d) Fundraise for development and private finance.

5) A total USD 50M in public and private investments leveraged in reef-first SMEs and financial instruments.
6) Measurement and verification of positive economic and environmental impacts to vulnerable coastal communities (>70,000 beneficiaries) and coral reefs, of which 50% will be women or youth.

7.7 The Mesoamerican Reef – Mexico and Belize



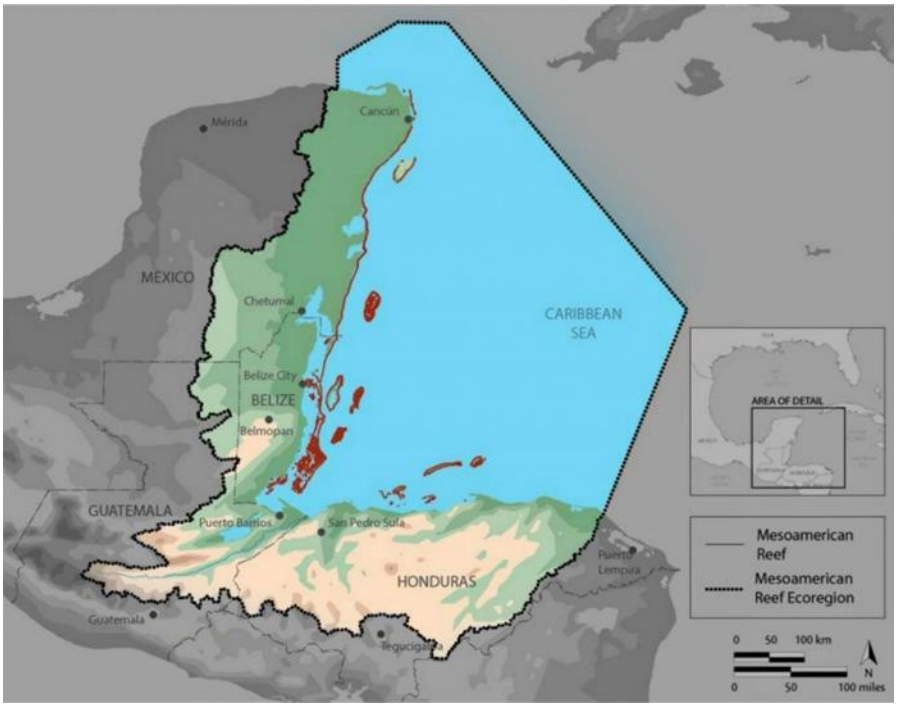
7.7.1 Introduction

7.7.1.1 Reefs

The Mesoamerican Reef is one of the most important reef areas in the Caribbean, and the second largest barrier reef in the world. It extends over 600 miles across four countries including (from north to south/east); Mexico, Belize, Guatemala, and Honduras. Track I efforts from the fund will primarily focus on Mexico and Belize as the regions with the most significant area of reefs and with the highest potential for climate change resilience, though opportunities in Guatemala and Honduras may also be considered in the future.

The UNEP Coral Futures report has indicated the potential for resilience at a local level along the reef. Proximity of much of the reef to deep, cooler waters, such as the Cayman Trench may also promote resilience. The reef also been found to contain resilient genotypes of some corals including Acropora, an important reef building species that has declined by 98% across the Caribbean (WWF)There may also be significant connectivity with other reefs in the Caribbean, including Cuban reefs that have among the highest ratings for climate change resilience but were not eligible for investment.

Furthermore, the Mesoamerican Reef is a critically important part of the coastal economy in these countries, producing USD 6.2 billion in financial benefits to the local area mostly from tourism. An additional USD 35 billion in benefits could be unlocked between now and 2030 with impactful conservation (UNEP & ICRI, 2018). The reef is also critical to storm protection in the region, and the first insurance fund for coral reef conservation in the world was implemented for reefs off of Quinatana Roo, Mexico.



The Mesoamerican Reef (red) and Mesoamerican Reef Ecoregion (colored area), sourced from https://aquaworld.com.mx/en/blog/dive-in-the-second-largest-coral-reef-in-the-world

7.7.1.2 Biodiversity

The Mesoamerican Reef is a "hotspot for biodiversity" with more than 60 species of corals and 500 species of fishes. The reef and its surrounding is also home to important populations of megafauna including endangered species of sea turtles and the largest congregation of whale sharks in the world (WWF).

7.7.1.3 Policy framework

Multiple relevant regional and national and strategic initiatives have been adopted by the Mesoamerican Reef region and Belize and Mexico, including:

- Central American Commission for Environment and Development
- MAR2R by the Global Environment Facility
- The Central American Commission on Environment and Development (CCAD)
- The National Adaptation Strategy to Address Climate Change in the Agriculture Sector of Belize
- Mangrove Protection Legislation (Belize)
- Belize Entrepreneurship Strategy
- The National Strategy for the Implementation of the 2030 Agenda (Mexico)
- The National Strategy for Climate Change (Mexico)
- The Plan for Sustainable Tourism of Quintana Roo (Mexico)

7.7.1.4 Ecosystem service value of coral reefs

All values are USD
Total economic benefits: USD 6.2 billion/year (UNEP & ICRI, 2018)
Total tourism benefits: USD 4.3 billion/year (UNEP & ICRI, 2018)
Reef-associated Visitor Expenditure: USD 3.0 billion/year (Mexico), USD 80.6 million/year (Belize), (Spalding et al. 2017)
Value of Reef Fish Harvest: USD 231 million/year (Mexico), USD 7.7 million/year (Belize) (Teh et al. 2013)

Population Protected by Reef: 425,711 (Mexico), 98,020 (Belize) (Comte 2018)

7.7.1.5 Drivers of degradation

Drivers of degradation in the Mesoamerican Reef region include wastewater pollution, land based pollution, harmful fishing, storm damage, and harmful tourism.

7.7.1.6 Investment environment

In our analysis of national characteristics for investability, Mexico and Belize both scored equal to or above the median and means for non-Annex I coral reef countries. The Mesoamerican Reef region has also been an historic testing ground for innovative financial mechanisms for marine conservation including coral reef insurance.

7.7.2 Identified investment opportunities

7.7.2.1 List of initial opportunities

Opportunities from CFA team research

1. MPA Finance – Blue finance
2. Blue Carbon Resilience Credits
3. Coral Reef Alliance – waste water treatment upgrades
4. Belize Wastewater Treatment ltd.
5. Belize Development Finance Corporation

Preliminary opportunities from MAR Fund

1. Reduction of effluents from shrimp farming in Belize
2. Seaweed farming in Belize, Honduras, and Guatemala
3. Spiny Lobster in Belize
4. Community Tourism – Mexico and Guatemala
5. Caribbean King Crab – mariculture and reef restoration in Mexico and Belize
6. Small scale sugar cane farming in Belize, reduction of effluents
7. Blue Carbon in Quintana Roo

MPA Finance – *Blue finance*
Program: Turneffe Atoll
Description: Blue finance has developed several impact investment solutions for the effective management and sustainable financing of MPAs in the Dominican Republic and the Philippines. Bf seeks to upscale the approach to other 5 MPAs by 2021 in developing countries (with a final aim to 20 MPAs by 2030). The 5 MPAs have relevant works already underway. The approach, developed with local and global partners, relies on an innovative long- term management lease for Marine Protected Areas (MPAs) with tangible revenue models, leveraged by blended finance, while empowering local communities and sustainable use of marine resources. The project will yield both development and commercial returns. Expected positive outcomes include (i) increased protection of coral reef ecosystems from local threats, (ii) improving economic opportunities and food security for vulnerable coastal communities through sustainable fisheries (food and income), new income generating activities and nature tourism, (iii) increasing climate change resilience, and contributing to climate mitigation, through shoreline protection for coastal communities and enhancement of carbon sinks, (iv) mobilizing USD 50M towards natural resource management. The solution targets SDGs 14 ('life below water'), 1 ('end poverty'), 8 ('decent work') and 13 ('climate action') as a priority. It presents an innovative and scalable approach that uses catalytic and development finance to mobilise commercial impact finance into Marine Protected Areas (MPAs).

In addition to the program in Turneffe Atoll, Belize, MAR TAF has referenced additional opportunities for this model elsewhere in Belize, Mexico, and Honduras.

Most Recent Revenue: $50,000 USD
Projected Revenue in 5 years: $4 million USD
Financing needs:
Turneffe atoll, Belize –
Honduras - USD 1 million, commercial loan
Quintana Roo, Mexico - USD 1 million, commercial loan
Projected IRR: *3-6%*
Investment Horizon: *>7 years*
Countries: Belize, Mexico, and Honduras

Blue Carbon Resilience Credit
Organization: Nature Conservancy
Program: Blue Carbon Resilience Credit https://www.climatefinancelab.org/project/blue-carbon-resilience-credit/
Description: Blue Carbon Resilience Credit (BCRC) is a blue carbon and resilience credit, where corporations seeking to offset their carbon footprint can buy credits to advance adaptation for vulnerable communities and fund coastal restoration and conservation projects. BCRC integrates mitigation metrics in the form of avoided CO2 equivalent emissions; and adaptation metrics in the form of flood protection benefits that a wetland provides nearby coastal communities. A third-party verified framework ensures purchaser confidence and offers purchasers the added benefit of quantifying their contributions to SDG Goal 13: Climate Action. Target pilot sites include Belize and Papua New Guinea

The idea proponent, The Nature Conservancy, expects BCRC to drive significant corporate demand, and to present solutions for nations seeking to leverage coastal wetlands to achieve their Paris Agreement commitments, also known as Nationally Determined Contributions and their Sustainable Development Goals. TNC has already identified pilot projects in Belize, Papua New Guinea, and other geographies, and expects to leverage tens of millions of dollars in the coming years. At scale, BCRC markets could mobilize as much as USD 320 million per year for coastal conservation and restoration projects.
Projected Revenue in 5 years: At scale, BCRC markets could mobilize as much as USD 320 million per year for coastal conservation and restoration projects
Financing needs: $5 - $20 million USD (5 years)
Investment Horizon: >7 years
Countries: Target pilot sites in Belize and Papua New Guinea, with project for Turneffe Atoll in Belize in development

Coral Reef Alliance – waste water treatment upgrades
Organization: The Coral Reef Alliance (CORAL) https://coral.org/
Program: Clean Water for Reefs
Description: Wastewater pollution is harming coral reefs in locations across the Mesoamerican reef. Recent research shows that nutrient pollution increases the susceptibility of corals to temperature stress. An opportunity exists to improve wastewater treatment to increase the resilience of coral reefs to climate change.
An opportunity exists for private investment to help unlock significant government and Overseas Development Agency funding to expand wastewater treatment improvements. Grants will support

creating the enabling conditions through water quality monitoring, establishing a scaled business model and partnership coordination. Private capital can help to leverage additional government funds. CORAL has already made significant headway in demonstrating the benefit to coral reefs of improved wastewater treatment as well as established key relationships with the Honduran government and Overseas Development Agencies (ODAs) to secure sustainable financing for improvements in wastewater treatment in Honduras. To date they have secured investment enabling improved management of a wastewater facility servicing 28.5 million gallons/year. They are laying the groundwork for expanding this effort across the Mesoamerican reef.

Key outcomes include improved coral reef health, improved public health and economic benefits through protected environmental assets that are critical to the tourism economy.

Most Recent Revenue: Respondents to the RFI estimated the income was $220,000 USD and the expenses were estimated at $204,000 USD. Revenue is generated from utility bills.
Financing needs: $5 - $20 million USD (5 years)
Investment Horizon: 3-7 years
Countries: Currently established in Honduras, but potential to expand to Belize and Mexico

Belize Wastewater Treatment ltd.
Organization: Belize water services limited bws.bz
Program: Wastewater treatment
Description: Belize Water Services Limited (BWS) is the national water and sewerage utility that was vested with the Assets and Liabilities of the Water and Sewerage Authority (WASA) in March 2001. The company has issued share capital of forty million (40,000,000) shares with the Government of Belize (GOB), the majority shareholder, owning approximately 83% of the total shares; the Social Security Board holds 10% and the remaining 7% is held by some 1,400 minority shareholders. BWS is a regulated utility - the regulatory controls include a statutory regulator, the Public Utilities Commission, the Water Industry Act (2001) and related Statutory Instruments, an operating license issued by the PUC and a Codes of Practice which is agreed by the Regulator and BWS and updated periodically.

Belize Water Services Limited operates in licensed service areas, serving all the municipalities of the country as well as some 44 villages. As at March 2020, BWS serves over 62,000 connections or approximately 270,000 consumers, with a total average water demand of approximately 230 million US gallons per month. Over 60% of the water supplied is produced using conventional water treatment processes with rivers as the extraction sources. Satellite water wells are used for the majority of the other water systems; however, on the islands of Ambergris Caye and Caye Caulker, BWS distributes water which has been treated by Reverse Osmosis, an engineered process for converting sea water to drinking water.

Since its inception, BWS has continuously invested in improvement of assets and implementation of improved procedures and controls to increase its efficiency. In performing all the various investment projects, most of which are expansions or improvements to water systems, BWS focuses on the requirements of our stakeholders, including our Customers, Employees and Shareholders. Fundamental to meeting the company's vision, both in the short and long term, has been the initiation of a holistic strategic approach towards improving the Company's performance. This broad-based strategy, utilizing a structured approach to balance and align initiatives, provides the Company with a firm platform, which builds on achievements and aims to achieve further objectives in the coming years.

Countries: Belize; sewage systems in Belmopan, Belize City, and San Pedro Town. "None of the municipalities served by these sewerage systems enjoy 100% coverage. The systems came into operation in 1970, 1980 and 1996 respectively."

Other: "Improper raw sewage disposal in Belize threatens the Mesoamerican Reef" January 2020 https://earthjournalism.net/stories/improper-raw-sewage-disposal-in-belize-threatens-the-mesoamerican-reef

Belize Development Finance Corporation
Organization: Belize Development Finance Corporation https://www.dfcbelize.org/
Program: Finance programs that, among other sectors, includes the following relevant to the GFCR: tourism, renewable energy development, agriculture, commercial fishing, construction, infrastructure, real estate development, and others

Description: *From website. The Development Finance Corporation is Belize's only Development Bank. It's purpose is to support the strengthening and expansion of Belize's economy by providing developmental financing on an economically sustainable and environmentally acceptable basis to individuals, businesses and organizations. The Corporation accesses financing from larger regional and international lending institutions at attractive rates for lending to Belizeans Citizens, Residents, companies, cooperatives and other bodies with Belizean majority share interest.

Most Recent Revenue: Unknown. $195 million BZD invested over 8 years over 6,510 loan accounts.

1. Reduction of effluents from shrimp farming in Belize
Organization: The Belize Shrimp Growers Association (BSGA), provided via MAR Fund
Program: Finance programs that, among other sectors, includes the following relevant to the GFCR: tourism, renewable energy development, agriculture, commercial fishing, construction, infrastructure, real estate development, and others
Description: The shrimp aquaculture sector is clustered in the pine savannas in the Stann Creek District, plus one farm in northern and one in center Belize. In 2015, 90% of the shrimp farms attained the worldwide recognized Aquaculture Stewardship Council (ASC) shrimp certification, putting Belize as the sole country with a significant percentage of the production under a rigorous production standard as the ASC shrimp certification. Unfortunately, that same year an outbreak of a lethal disease severely affected the industry.

However, farms are fighting to recover, adopting new practices including introduction of new genetic lines, changing from semi-intensive to super intensive production systems and working to adopt a country wide biosecurity aquaculture zone. While in 2014 a producer required 600 ha to produce 3 million lbs, in 2020 they required 30 ha to achieve the same output.

The IDB has provided USD 400,000 to develop the Biosecurity Aquaculture Zone Management Plan, and the regional Mesoamerican Reef to Ridge Project (MAR2R-CCAD / GEF) has granted USD 80,000 to receive training on sustainable shrimp farm practices, particularly ASC principles and criteria standards and MSC Chain of Custody standards, to obtain the certifications once again. In addition, they will implement better management practices to reduce nutrients and effluents into the coastal lagoons and the Mesoamerican Reefs.

The BSGA has received local credits previously. They will require continued technical assistance and financing to carry out their sustainable farm practices to achieve and maintain certification and reduction of effluents into the lagoons and reef.
Most Recent Revenue: Unknown. $195 million BZD invested over 8 years over 6,510 loan accounts.
Financing needs: $10 million – commercial loan. With potential co-financing grants from WWF and the IDB
Investment Horizon: 3 – 6 years
Countries: Belize

2. Seaweed farming in Belize, Honduras, and Guatemala
Organization: MAR TAF, Placencia Producers Cooperative, and the Belize Women Seaweed Farmer's Association
Description: Seaweed farming has been carried out in Belize in the Placencia district, specifically Laughingbird Caye National Park, since 2010, initially supported by the GEF Small Grants Program and later by TNC. The local cooperative is Placencia Producers Cooperative. More recently, seaweed farming has begun to be developed in Turneffe Atoll and there is a Belize Women Seaweed Farmer's Association, formed in 2019.

The Placencia Producers Cooperative is currently shipping to California, Texas, Kansas, Illinois and Canada, but they are not able to meet demand. According to a representative of the cooperative, there is the potential for accessing USD 1 million in sales per year, however, they are only meeting about 10% of export demand. He added that they are getting premium price for the product: retail USD 20 + shipping per lb; wholesale USD 15 + shipping per lb. The cooperative, as well as producers in Turneffe and the women's association, want to scale up production, which involves obtaining materials, fuel, boats and capacity building, but this requires funding.

TNC together with Future of Fish, BelTraide and the Development Finance Corporation of Belize prepared a concept note to develop a blended finance platform to support the development of the seaweed industry in the country. Globally, the demand for seaweed has been rising exponentially, and is expected to reach USD 22B by 2022.

A loan fund was proposed as a core component of the finance platform, considering a revolving loan facility. They are looking for partners. They require funding for de-risking activities including training of prospective harvesters, monitoring of sustainable operations in accordance with best practices, providing capital for usage as collateral against which applicants can make a loan application, and potential "first-loss" capital that can bridge the gap between the lending institutions' risk profile and the risk-profile of seaweed farms
Projected Revenue in 5 years: Potential for accessing USD 1 million in sales alone for one location. Global market demand expected to reach USD 22B by 2022.
Financing needs: $6 - $8 million – commercial loans; $2 million grants. Co-financing in discussion with The Nature Conservancy
Countries: Belize, with potential in Honduras and Guatemala.

3. Spiny Lobster in Belize
Organization: MAR Fund, The Nature Conservancy
Description: Spiny lobster and queen conch are the most productive capture fisheries in Belize, with more than 90 percent of catch exported to the U.S. Fishermen harvest lobster from the shallow waters

of the barrier reef and offshore atolls with traps or shades (casitas) to attract lobster and harvest using either hand, hook stick or noose/lasso.
TNC is leading a Fisheries Improvement Project (FIP) in Belize for better management of this species, which was recently launched with the following objectives:

- To test the validity and potential of a FIP+ model (Environment, Social and Economic) as a way of enhancing the Belizean Lobster fishery and using this as a test case for other fisheries globally;
- To coordinate and continuously promote the collaboration of national and international stakeholders of the Belizean lobster fishery;
- To develop and test tools which can support this and other FIP+ projects globally;
- To create measurable change environmentally, socially and economically within the fishery;
- To build social and economic capacity within the Belizean fishing cooperatives, and
- To develop a blended finance approach for the long-term.

The two largest fisher's cooperatives of Belize participate in this initiative: National Fishermen Co-operative and Northern Fishermen Co-operative Society Ltd. Between both cooperatives, approximately 1,500 people stand to benefit. Some of the activities they are carrying out via the FIP include lobster trap inventory, tagging and registry program, and the implementation of the long-term VMS monitoring program.

After finalization of the FIP (projected for end of 2024), the cooperatives will need to provide continuity to these activities as well as traceability of their catch. Although it is not a condition at this time, cooperatives may decide to certify their fisheries.
Countries: Belize

4. Community Tourism – Mexico and Guatemala
Organization: MAR Fund
Description: There are several examples of small-scale tourism initiatives in different protected areas along the MAR, developed either directly by local communities or with the support and participation of MPA managers or co-managers. Most of them have been hard hit by the pandemic, but many groups continue to stay together, even operating at a very small scale, waiting for conditions to improve. Two examples:
Barra Cocolí, Río Sarstún Multiple Use Area, Guatemala. This project involves 12 families of the community. In addition to a restaurant managed by women, 18 young men were trained and certified as guides and offer manatee sighting canoe trips, sports fishing, snorkeling and bird-watching, among other nature-oriented activities.
Punta Herrero, Biosphere Reserve of Sian Ka'an, Mexico. This project is carried out by eight women of the community, who offer lodging services in wooden huts with a beautiful sea view for an authentic eco-tourism experience. They harvest rainwater to bathe, fish for food, cook with firewood and obtain electricity from solar panels or generators. They offer a boat tour that includes snorkeling on the reef and a nineteenth century sunken steamship with plenty of marine life. More information in https://marfund.org/en/wp-content/uploads/2020/12/Book-The-Women-of-the-MAR-English-Version-LD-Dic2020.V3b.pdf
Countries: Guatemala, Mexico

5. Caribbean King Crab – mariculture and reef restoration in Mexico and Belize
Organization: MAR TAF, Healthy Reefs for Healthy People Initiative (HRI)

Description: Herbivory is an integral component of a well-balanced reef ecosystem, and herbivores are key in maintaining fleshy macroalgae in the desired low abundance. Macroalgal proliferation remains a continually growing concern, affecting coral growth, recruitment, and health as macroalgae can harbor pathogens and serve as vectors of disease.

Based on previous research by Jason Spadaro and Dr. Mark Butler in Florida, the Healthy Reefs for Healthy People Initiative (HRI) and partners are currently exploring a new, adaptative and hands-on management strategy to reduce macroalgal proliferation on local reefs by increasing the density of naturally occurring herbivores, like the Caribbean King Crab. Building on small-scale crab mariculture techniques developed in the 1980's by Smithsonian researchers to enhance fisher livelihoods, HRI is exploring a program that directly benefits both reefs and people, as these large crabs are of high commercial value and are excellent candidates for mariculture (very short larval duration, rapid growth, herbivorous diet, high site fidelity).

HRI is still in the pilot phase of working out the details of a simplified mariculture system, for re-seeding on fully protected reefs. Ultimately, they envision having many fishermen-growers who can re-seed reefs with juveniles and later harvest them when they are mature / market size, greatly enhancing the scale of herbivory restoration and contributing to fisher livelihoods.

HRI has developed trials in Mexico and Belize with different partners and their results to date are promising. Regarding control of macroalgae, in a pilot study in the no-take zone of Gladden Spit Silk Cayes Marine Reserve, Belize, after five months it was determined that live coral cover increased 14.7% in the experimental patches and decreased by 5.3% in the control patches. In addition, fleshy macroalgae decreased by 24.1% in the experimental sites and by 0.6% in the control sites.

In Mexico, they have been successful reproducing the King Crab in conditioned tanks. To date, about 100 juveniles have been produced. Molts are still a very delicate moment and the team is adjusting needed handling, water quality, shelters and food to improve survival rates. They look forward to crab introduction into coral restoration sites in August 2021.

HRI's ultimate goal is to provide a solution mutually beneficial to both the reef and to communities through the avenue now created for increased stewardship by fishers. The trials will continue, as the results are encouraging. Funding will be required for further studies, replication, technical transfer to local communities and scaling of activities.
Countries: Mexico, Belize

6. Small scale sugar cane farming in Belize, reduction of effluents
Description: Transitioning small sugar cane farmers in Belize, reduction of effluents
Financing needs: $3 - $5 million – commercial loans. Co-financing in discussion with WWF
Countries: Belize

7. Blue Carbon in Quintana Roo
Program: Blue Carbon
Financing needs: $10 million (validation of feasibility study is required). $350k in grants
Countries: Mexico

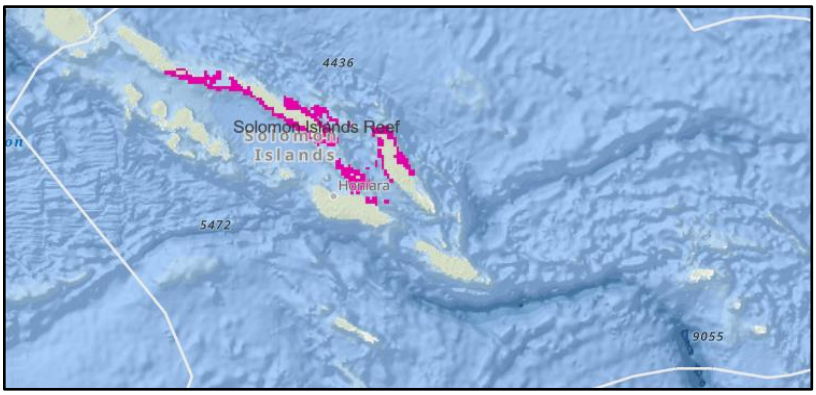
7.8 Solomon Islands

7.8.1 Introduction

7.8.2 Reefs

The Solomon Islands are on the Global Fund for Coral Reefs' list of investable countries due to its 1 Bioclimatic Unit (BCU), reference in UNEP Coral Bleaching Futures, non-annex I status, and lack of sanctions. It possesses 2.02% of the world's coral reef area[29] and approximately 550 species of coral.[30] It is one of six Coral Triangle (the global epicentre of coral and marine biodiversity) countries. The country is home to one UNESCO World Heritage Site containing reefs (Impacts of Climate Change on World Heritage Coral Reefs - A First Global Scientific Assessment), one Blue Hope Spot,[31] and four Bright Spots with high levels of reef fish biomass where such healthy populations are not expected.[32] The Solomon Islands are one of the priority sites for the Coral Reef Rescue Initiative (CRRI) spearheaded by WWF with a strong group of partners. The CRRI's objective is very similar to the GFCR and highly compatible in terms of approach and objectives.

7.8.3 BCU and Main Threats



7.8.4 Policies

The Solomon Islands scored a 0 for supportive reef policies, as it is not an active participant in major international reef associations or reef-related agreements. However, the country does have a somewhat successful policy of decentralized, community-based management with a couple notable examples discussed below.

7.8.5 Investment Environment

The country finds itself in 20th place out of 56 countries analysed in terms of investment conditions.

[29] http://coral.unep.ch/atlaspr.htm

[30] http://www.coralsoftheworld.org/page/overview-of-coral-distributions/

[31] https://mission-blue.org/hope-spots/

[32] https://www.nature.com/articles/nature18607

7.8.6 Reef Dependence

The Solomon Islands' reef dependence score was a 5 out of 12, or a moderate level of reef dependence, based on the population size protected by reefs (307,616 people) and reef-related tourism as part of the GDP (>2%). Reef fishing is also important for employment (58,390 fishers) and food security, but data are lacking on its contribution to GDP.

7.8.7 Business Models and other Opportunities

The main threats to Solomon Islands' BCU are (1) pollution from sedimentation (mainly from farming and logging-related deforestation[33]) and (2) tourism. Based on those threats and research, some of the main coral-positive investment opportunities are:

- Microfinance: Microfinance will be crucial for most coral-positive investments (including those listed below) in SI due to the low levels of access to banking services and borrowers generally lacking assets. Most current microfinance initiatives revolve around women's and village savings clubs.

Jorio Java Dovele Women's Association Savings Club

West Are'Are Rokotanikeni Association: A women-led savings club that gives women a space to gather, learn about finances and save their money.

Gizo Environment, Livelihood and Conservation Association (GELCA): The focus of the group is conservation and reliance on small activities to generate income and savings while teaching financial literacy. Gizo or Ghizo is an island of western SI and contains a locally managed marine area, one of several in SI, and has had major successes in managing its marine resources. This type of model is crucial for the GFCR's focus on microfinance institutions.

Ecotourism (primarily community-based or SMEs)
Oravae Cottage: recognised for its excellence at the 4th Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) Regional Business Forum, it is an eco-tourism initiative that runs on renewable energy and supports various local conservation projects.

Arnavon Islands Community Conservation Area: The first community-managed marine conservation area in the Solomon Islands, this initiative has attempted to diversify sources of income and nutrition for the villages' fishing communities, including making handicrafts for tourists, seaweed harvesting, and small-scale agriculture. Peer exchanges in the Arnavon Community Marine Conservation Area with elders and leaders from other communities have led to acceptance of Locally-Managed Marine Areas with more established in other provinces.

Tetepare Island and Ecolodge: Home to the one of the Solomon Islands' leading conservation projects and a unique, locally-owned and managed ecolodge, Tetepare's natural abundance attracts visitors from around the world:

[33] https://www.nationalgeographic.com/science/article/deforestation-in-the-solomon-islands

Fisheries: iFADs: Using lessons learned from micro-financing globally and across Solomon Islands, microfinancing and small business enterprises in coastal communities became the main tools for improving livelihoods, as well as sustaining the iFADs (inshore fish-aggregating devices).

Sustainable logging and watershed management: Kolombangara Forest Products Ltd: An FSC-certified timber company with a lease to 75% of the nation's forests, Kolombangara has maintained the upper watershed and riparian areas intact. There is an opportunity for them to improve their management with incentives from markets willing to pay premiums for sustainably sourced timber and wood products. WWF is currently discussing collaboration with Kolombangara to design a Sustainable Development Plan.

Debt conversion for nature and climate action: 10 points of maximum of 16 in scoring for feasibility of debt conversion: Tackling the Triple Crisis

7.8.8 Partners & Initiatives

WWF: Strong focus on Community Based Resource Management, a central strategy of the Solomon Islands government for ensuring benefits of marine and terrestrial resources under the National Plan of Action (NPOA).

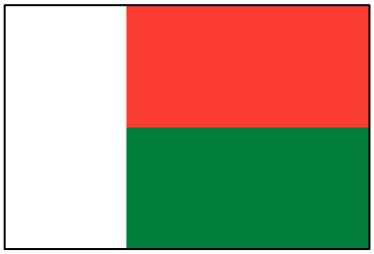
Coral Sea Foundation: The Sea Women of Melanesia program empowers indigenous women with diving and marine science so they can take an active role in creating and monitoring marine protected areas on their own coral reefs.

Technical Assistance Facility: FINANCING THE BLUE ECONOMY IN SMALL STATES: USD 33 million regional program to support select Pacific countries and institutions, including Solomon Islands.

Tetepare Endowment Fund 2010: Tetepare is home to the country's largest LMMA.

Mothers' Union: Focused on community development in areas such as: Training workshops (nutrition, vocational skills), Sunday School, Girls Friendly Society, Hospital visitation, Parenting Programme, Prison ministry, Adult literacy, Women's refuges, Mothers' Union, guesthouses.

7.9 Madagascar



7.9.1 Introduction

7.9.1.1 Reefs

The island of Madagascar has a significant reef area totaling 2,230 km2 with the Northwest Madagascar Reef BCU covering the northern tip of the island (stretching from Andrafialava in the west to Vohemar in the east). The reefs are mainly found west of the island between Androaka and Antsiranana and on the east from the Cap of Ambre (Antsiranana) in the north to Toamasina (Jadot et al., 2015) with 90% of

these found on the western coast (Allnutt et al., 2012). Indeed, it should be noted that Madagascar is one of the top 15 countries in terms of coral reef area (Burke et al., 2011). The reefs of North West Madagascar are part of the North Mozambique Channel ecosystem which is a priority zone for coral reef conservation, thought to be the 2nd richest globally in coral reef and tropical marine biodiversity (*Northern Mozambique Channel | CORDIO*, 2015). Lastly, it should be highlighted that Madagascar's reefs are of key importance for larval supply to downstream reefs in the WIO (*Marine World Heritage - North Madagascar*, n.d.).

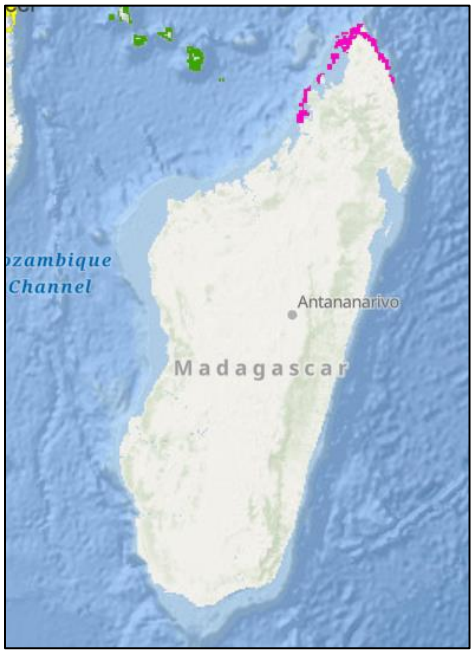


Figure 1 Madagascar's BCU (pink, Source: Vibrant oceans)

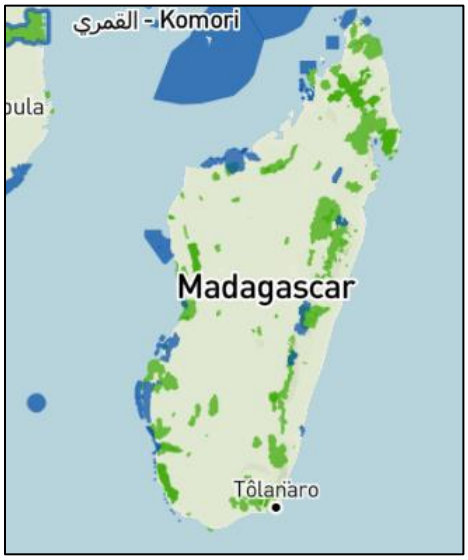


Figure 2 MPAs in blue (Source: Protected Planet)

7.9.1.2 Biodiversity

Madagascar is part of the "Madagascar and Indian Ocean Islands Hotspot" which is one of 36 identified biodiversity hotspots. The hotspot is home to rich marine biodiversity boasting high endemism (including corals, coastal species, and species found in ocean trenches) as well as importance for far ranging taxa such as cetaceans and marine turtles (*The Madagascar and Indian Ocean Islands Hotspot Ecosystem Profile Summary*, n.d.). Madagascar has been described as "a mosaic of rich ecosystems: coral reefs, coral banks, mangroves, and seagrasses, and volcanic, karst or coral islands and islets, bays"(*Marine World Heritage - North Madagascar*, n.d.). It is interesting to note that the marine ecosystems of Madagascar are home to an estimated 159 species of fish with 66% of them being endemic (*An Overview of WCS Madagascar Marine Program*, n.d.).

7.9.1.3 Policy framework

Multiple relevant international agreements, conventions and policies related to environmental issues have been signed by Madagascar. Some of these are listed here:

- UNCLOS (United Nations Convention on the Law of the Sea)
- CBD (Convention on Biological Diversity)
- UNFCCC (United Nations Framework Convention on Climate Change)
- Kyoto Protocol
- Paris Agreement
- Ramsar Convention (Convention on Wetlands of International Importance)
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)
- London Convention (Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter)
- Stockholm Convention (Convention on Persistent Organic Pollutants)
- CMS (Convention on the Conservation of Migratory Species of Wild Animals)
- Nairobi Convention

At the national scale, Madagascar also has various instruments in favor of conservation of natural resources. The "Charte de l'Environnement Malagasy" sets the foundation for the management of natural resources. Other policy instruments include law n°99-028 of 03 February 2000 on the revision of the Maritime Code which seeks to regulate pollution from land-based sources such as from rivers, estuaries, pipelines and landfills. One may also cite decree N° 2010-137 of 23 March 2010 that regulates Integrated Coastal Zone Management (ICZM) and lays the foundation for comprehensive, multi-stakeholder/multi-sector planning or yet decree N° 2015-1308 of 22 September 2015 which regulates the National Environmental Policy for Sustainable Development aiming for the development of sustainable funding streams. More information on Marine and Coastal Resources Governance for Madagascar can be found on the website of the Nairobi convention that offers an overview of various national (as well as international) instruments. As a final note, it is also interesting to note that customary law known as "dina" is practiced widely varying from one village to the next. Implemented by community councils, dina has traditionally been one of the more localized instruments regulating the use of natural resources. Indeed, one of the main strategies for marine protected area management has been the community-based approach with the creation of various locally managed marine areas (LMMAs).

7.9.1.4 Ecosystem service value of coral reefs

Reef-associated Visitor Expenditure, USD: 50,496.00

Value of Reef Fish Harvest, USD: 3,991,932.00

Population Protected by Reef: 833,698

7.9.1.5 Drivers of degradation

The top two pressures for the BCU are pollution from sedimentation and nitrogen pollution. These are followed by fishing (shown in the figure below). To provide some examples, a study that looked at Antongil bay and Western Madagascar showed corals near rivers displayed clear signs of disease and distorted growth patterns suggesting that changes in land use – primarily the removal of forests – and Madagascar's increased population density were key drivers of long-term reef sedimentation (See link to Mongabay news article, "*Deforestation Is Killing Madagascar's Coral Reefs*, 2012"). As an example of fishing pressure, a 2020 study by Gough et al. provides evidence that small-scale fisheries (with a focus on the Menabe region) are experiencing overfishing with fishing mortality exceeding natural mortality and many of the species analyzed being caught before they reached maturity. Similarly, market pressure is ever present and a recent article entitled "*An Export Boom Threatens to Put Madagascar's Mud Crabs in Hot Water*" highlights the level of market pressure faced by Madagascar's coastal ecosystems.

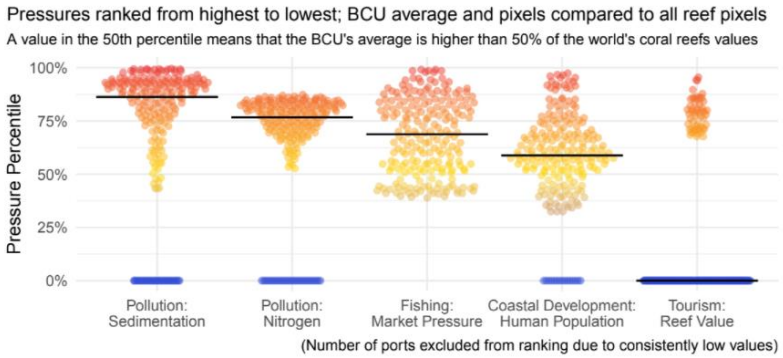


Figure 3: Top threats to Northwest Madagascar Reef

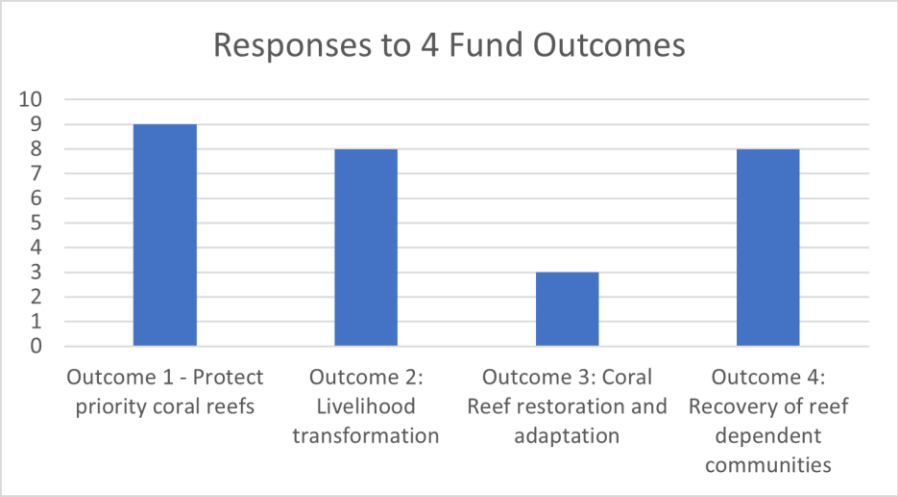
7.9.1.6 Investment environment

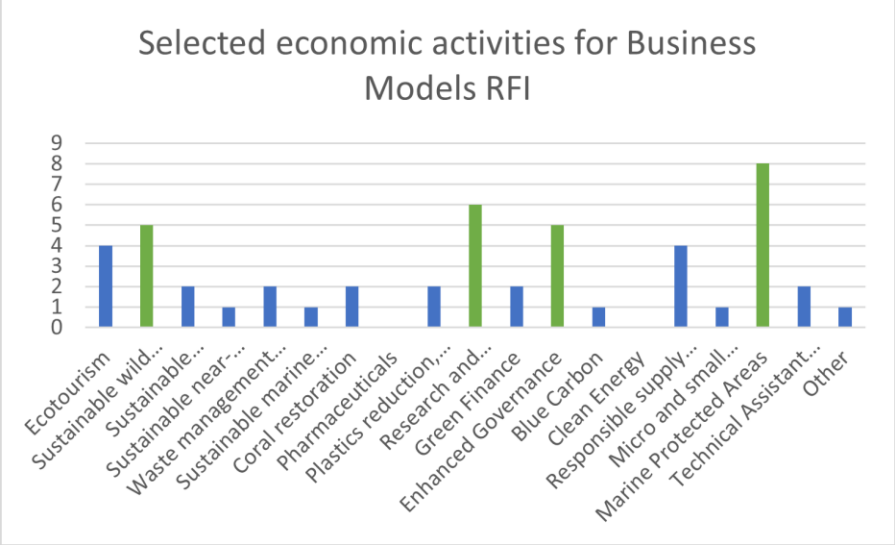
Madagascar is categorized by the United Nations as part of the LDCs (Least Developed Countries) as of as of 11th February 2021. The country has a total population of over 26,969,307 and a GDP worth 14.1 billion (World Bank, 2019). Though there is various opportunities that could be explored by the GFCR for developing a pipeline (examples provided in the following section) it is important to take stock of a few interesting facts. Madagascar does not have a credit reting from Moody's. It equally does not have one from S&P or Fitch. Also, the nation received a score of 15.9 for control of corruption and 50 for ease of enforcing contracts (World Bank, 2019).

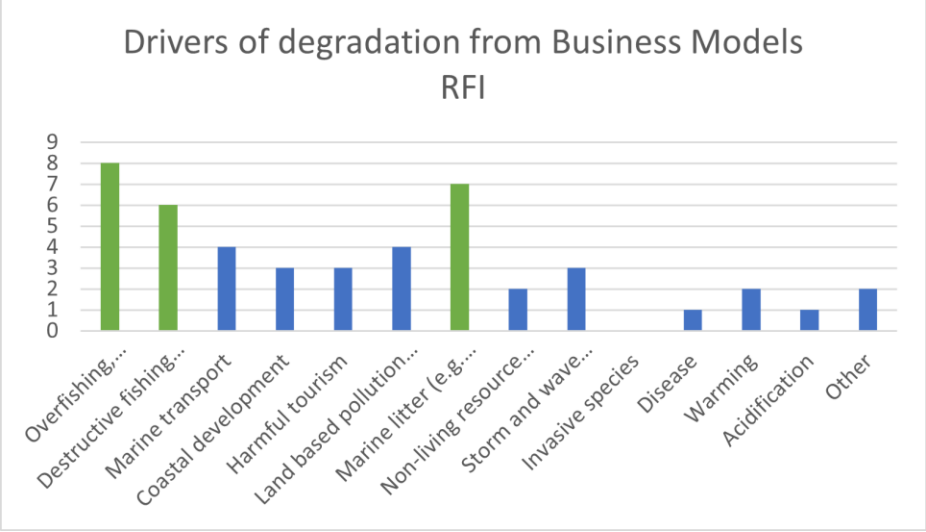
7.9.2 Request for Information and Independent Research

7.9.2.1 Responses to Business Model RFI

Total responses: 9


Responses to 4 Fund Outcomes
10
9
8
7
6
5
4
3
2
1
0
Outcome 1 - Protect priority coral reefs
Outcome 2: Livelihood transformation
Outcome 3: Coral Reef restoration and adaptation
Outcome 4: Recovery of reef dependent communities


Selected economic activities for Business Models RFI
9
8
7
6
5
4
3
2
1
0
Ecotourism
Sustainable wild...
Sustainable...
Sustainable near-...
Waste management...
Sustainable marine...
Coral restoration
Pharmaceuticals
Plastics reduction,...
Research and...
Green Finance
Enhanced Governance
Blue Carbon
Clean Energy
Responsible supply...
Micro and small...
Marine Protected Areas
Technical Assistant...
Other


Drivers of degradation from Business Models RFI
9
8
7
6
5
4
3
2
1
0
Overfishing,...
Destructive fishing...
Marine transport
Coastal development
Harmful tourism
Land based pollution...
Marine litter (e.g....
Non-living resource...
Storm and wave...
Invasive species
Disease
Warming
Acidification
Other

7.9.2.2 Potential opportunities

Archetype category: 2.2 Sustainable mariculture/aquaculture (2.2.1 Seaweed farming)

Name of initiative: Community-based aquaculture initiative

Organization: Blue Ventures

Website: https://blueventures.org/conservation/aquaculture/

Description: Working with the University of Toliara's Marine Science Institute (IHSM), local seafood exporter Copefrito and aquaculture company Indian Ocean Trepang (IOT), Blue Ventures is connecting isolated coastal communities with lucrative international markets for seaweed and sea cucumbers, enabling families to develop their own aquaculture businesses. Their aquaculture specialists have trained over 700 people to become farmers of sea cucumbers (Holothuria scabra) and red "cottonii" seaweed (Kappaphycus alvarezii). Sea cucumbers (known as trepang after processing) are in high demand in Asian markets where they are considered a delicacy, health food and aphrodisiac, while red seaweed is widely used in food and cosmetics industries as a texturing agent.

Supplementary information: Watch the webinar - https://reefresilience.org/sea-cucumber-farming/

Archetype category: 3.3 Blue Carbon (3.3.1 Carbon credits for mangrove conservation)

Name of initiative: Tahiry Honko

Organization: Blue Ventures

Website: https://blueventures.org/communities-in-madagascar-launch-the-worlds-largest-mangrove-carbon-conservation-project/

Description: "Tahiry Honko" means 'preserving mangroves' in the local Vezo dialect. The project site is located in southwest Madagascar at Bay of Assassins within the Locally Managed Marine Area Velondriake, and promotes locally led conservation, reforestation and sustainable use of over 1,200 hectares of mangroves. Tahiry Honko is the first carbon sequestration project in Madagascar focused on a mangrove ecosystem. The project aims to provide a long-term source income for the residents of the Bay of Assassins through the sale of Plan Vivo certificates generated by avoiding emissions of over 1,300 tonnes of carbon dioxide per year. The sale of carbon credits will establish a secure revenue flow offering communities the opportunity, where feasible, to support education, dig wells, provide community health services and other related services that will directly benefit community members of all ages which are expected to make an important contribution to poverty alleviation and biodiversity conservation in the area. The project has developed through a participatory approach to ensure that all people are engaged and empowered in decision making, including more marginalized groups such as women and young people.

Archetype category: 2.1 Sustainable fisheries (2.1.5 Supply chain traceability / Certification)

Name of initiative: Madagascar Fisheries Improvement Project

Organization: Blue Ventures

Website: https://blueventures.org/conservation/rebuilding-fisheries/

Description: The Marine Stewardship Council (MSC) eco-label guarantees that a fishery is managed sustainably. Octopus fisheries are a vitally important source of income for coastal communities throughout much of the western Indian Ocean, with the majority of catches sold and exported to overseas markets, predominantly in Europe. MSC eco-certification of the octopus fishery of southwest Madagascar would attract international interest in this fishery, further strengthen sustainable management practices, and potentially generate larger economic benefits for fishers and exporters. The octopus fishery of southwest Madagascar has undergone a pre-assessment for MSC certification and is currently implementing a Fisheries Improvement Plan (FIP) to reach the standards required to apply for full certification as a sustainable fishery. This FIP involves all stakeholders (fishers, the IHSM of the University of Toliara, the Ministry of Fisheries, seafood collection and export companies, and partner NGOs) working together to improve the fishery.

Archetype category: 1.1 Marine Protected Areas (1.1.1. Marine Protected Area (MPA) Ecotourism)

Name of initiative: Association to Protect and Enhance the Marine Environment

Organization: Reef Doctor

Website: https://www.reefdoctor.org/projects/conservation/coral-reefs/marine-reserves/

Description: FIMIHARA is an LMMA association of 13 villages in charge of managing the bay of Ranobe and its supported by the NGO Reef Doctor. It is the most developed area for tourism in the region and it's located about 30 kilometers north of the city of Toliara. FIMIHARA stands for Fikambanana Miaro sy Hanasoa ny Ranomasina and roughly translates to "Association to Protect and Enhance the Marine Environment". Its main mission is to provide a channel for small-scale fishers to express their needs and grievances, plan and implement development projects for the bay, promote and train on alternative fishing techniques, and protect the natural resources of the area. So far, the greatest success of FIMIHARA is the establishment of two marine reserves, "Massif des Roses" and "Ankaranjelita", which are both open to visitors and patrolled by guards who are paid by the association. The association operates on fees collected from visitors of the reserves, as well as on contributions from tourism operators in the region

Archetype category: 2.3 Ecotourism (2.3.3 Ecotourism within an MPA)

Name of initiative: Pirogue reef tours

Organization: Reef Doctor

Website: https://www.reefdoctor.org/projects/sustainable-livelihoods/tourism/

Description: One thing there is a lot of in the Bay of Ranobe is pirogues. Pirogues are the traditional boats used by Malagasy people. They are used for fishing, and transporting goods and people. In recent years a new market has opened up to piroguier. The sale of tourist pirogue trips to the two local marine reserves in the bay of Ranobe. As a result, many of the hotels in the area employ a piroguier to meet tourists needs and many other piroguiers work independently from the beach. Since piroguiers that work in full-term employment in the tourist sector no longer need to fish for a living. Since 2015, Reef Doctor has run training courses to train piroguiers in the popular tourist area of Ifaty-Mangily. The

courses aim to provide the piroguier with background knowledge on the marine reserves, the species of fish and invertebrates that can be found there, and how to respect the reef. They can then pass this knowledge onto tourists who visit the reef to snorkel so that they get more from the experience.

Archetype category: 2.4 Plastic waste management (2.4.2 Waste collection and Sorting, 2.4.3 Plastic recycling (incl. fishing gear))

Name of initiative: Waste management program for Ifaty Village

Organization: Reef Doctor

Website: https://www.reefdoctor.org/waste-management/

Description: With the support from individual donors and a grant from the Australian Embassy based in Mauritius, Reef Doctor has been able to provide the community with communal garbage bins and containers, and to start a recycling centre. A collection scheme will be put in place to empty the bins and containers, and bring the garbage to the sorting and storage location. The collected and sorted garbage will be re-used or recycled as much as possible. Plastic, for example, will be transported to the recycling centre in Toliara where the plastic will be melted and moulded into new shapes. This will produce materials that can go back into the community to be reused or sold, creating revenue which can be used to support community improvements. The aim is to work together with local associations to make sure the community is involved in activities like village and beach clean-ups, as well as emptying garbage bins and sorting the garbage. An important outcome of the project is to create sustainable livelihoods. The programme aims to contribute to healthy marine ecosystems in the Bay of Ranobe and ensure that the community can continue to rely on fisheries and other marine ecosystem services in the future.

Archetype category: 3.5 Conservation Trust Funds (3.5.2 Conservation and conservation management)

Name of initiative: Boeny Endowment Fund to Protect Madagascar's Biodiversity

Organization: Conservation International

Website: https://www.conservation.org/press-releases/2020/12/21/conservation-international-and-global-environment-facility-launch-endowment-fund-to-protect-madagascar%E2%80%99s-biodiversity

Description: The Boeny Endowment will be managed by the Madagascar Foundation for Protected Areas and Biodiversity (FAPBM), with support from Conservation International Madagascar and two government agencies: General Directorate of the Environment (DGE) and Directorate for the national System of Protected Areas (DSAP). A USD 4.5 million fund to ensure the long-term conservation of nature and biodiversity in the northwestern landscape of Madagascar, the endowment will provide sustainable financing, technical and other support to five protected areas, while also fostering sustainable livelihoods in the surrounding communities. The five protected areas that will receive support from the endowment are: Ankarafantsika National Park, Biocultural Site of Antrema, Mahavavy Kinkony Complex, Baly Baly National Park and Bombetoka-Beloboka.

Archetype category: 2.3 Ecotourism (2.3.2 Voluntourism)

Name of initiative: REEF EcoVolunteer Madagascar

Organization: R.E.E.F Madagascar

Website: https://reefmadagascar.com/

Description: R.E.E.F is a young Malagasy NGO. It was born as a joint initiative by people united by their love of scuba diving. An awareness regarding the dangers which are threatening the corals pushed them to find a scientific alternative to serve the conservation of the marine environment. Volunteers all across the globe are supporting this cause. R.E.E.F has set as its primary goal the prevention of the disappearance of coral reefs from the Nosy Be seascape. R.E.E.F has adopted the coral aquaculture as raison d'être. This aquaculture method consists in extracting pieces of corals from a site, propagating them and transplanting the corals back on the reef. Coral farming is an alternative method serving the purpose of restoring coral reefs. The team is involved in an interesting work with the prospect of regenerating corals. The NGO currently welcomes volunteers who, for a fee, can participate in a diverse range of coral reef positive activities. The NGO also offers training for PADI, CMAS and SSI.

Archetype category: 1.2 Coral Restoration (1.2.4. Restoration Technology - assisted evolution, propagation, other technology – diverse financing)

Name of initiative: ARMS to reefs: A new tool to restore coral reef biodiversity, fisheries yields, and human health in Madagascar

Organization: Aaron Hartmann, Harvard University, United States (Solution Owner)

Website: https://uplink.weforum.org/uplink/s/uplink-contribution/a012o00001OSlMGAA1/arms-restore

Description: Corals are the focus of most restoration projects because they build the reef's foundation. Often overlooked is that reefs require many more species to support large populations of harvested species and carry out critical ecosystem services. Many of these species are challenging to collect and move. We can overcome this issue using autonomous reef monitoring structures (ARMS). In just a year, ARMS secured to the seafloor can passively accumulate most reef biodiversity. The project will seed reef biodiversity onto ARMS on healthy Madagascar reefs then move them to artificial reefs. *As per uplink, this project is currently in the seed funding stage.

Archetype category: 2.2 Sustainable mariculture/aquaculture (2.2.2 Finfish, crustacean, mollusk mariculture)

Name of initiative: Menabe Crab Fishery Management Group (GGFC Menabe)

Organization: Blue Ventures

Website: https://blueventures.org/new-initiative-to-secure-madagascars-crab-fishery/

Description: In a positive stride forward for Madagascar's mud crab fishery, stakeholders from across the sector joined forces to work towards a more sustainable and secure future. In Morondava – a coastal town in western Madagascar and an important hub for the local mud crab fishing industry – crab fishers, government representatives, civil society organisations, commercial operators, financial partners, scientists, and non-governmental organisations (NGOs), all gathered for the first time in 2019 as part of a newly created management platform. The platform, known as the Menabe Crab Fishery

Management Group (GGFC Menabe), convened to set out its objectives, operating principles, and next steps. Its first main goal is to improve efficiency within the fishery, by reducing post-harvest losses and raising quality and traceability of the crab. It also plans to work towards the professionalisation of crab fishers, and to increase the area of well-managed mangrove forest to support a healthy crab population. Organised by MIHARI, Blue Ventures, WWF and the Ministry of Fisheries, these workshops also resulted in the establishment of a national crab fishery closure, and agreement on a new minimum catch size to help maintain a healthy crab population.

Supplementary Information: Demand spikes for live mud crabs, considered a delicacy in China, and so does the price the crustaceans fetch. This hunger for live crabs is fueling a boom in Madagascar's crab exports, now valued at nearly USD 10 million a year. But a recent decision by the Malagasy government to grant permits to export live mud crabs exclusively to five Chinese companies has sparked controversy and highlighted the country's struggle to sustainably manage an overexploited fishery. Civil society organizations like Southern African Regional Non-State Platform in Fisheries and Aquaculture (SANSAFA) Madagascar and the National Network of Women in Fisheries in Madagascar (RENAFEP) say the move harms local fishers and businesses. They are demanding the ministry cancel the permits. Issuing export permits to foreign companies will exacerbate the problem of unsustainable fishing, SANSAFA and RENAFEP said in a statement. In the short term, the export demand pushes up prices and leads to more harvesting; in the long term, a rush to satisfy overseas demand threatens the sustainability of the local fisheries, the groups said. (Link to news article: https://news.mongabay.com/2020/07/an-export-boom-threatens-to-put-madagascars-mud-crabs-in-hot-water/)

Archetype category: 2.2 Sustainable mariculture/aquaculture (2.2.2 Finfish, crustacean, mollusk mariculture)

Name of initiative: Project Oratsimba

Organization: SEED Madagascar

Website: https://madagascar.co.uk/the-big-five

Description: The Scalloped Spiny Lobster (Panulirus homarus) is one of the species found in Madagascar's south-eastern regional lobster fishery. The fishery consists of around 40 communities and directly employs 15,000 people. Lobsters are big business, because they are a high value commodity and catch from this region accounts for the majority of national catch and export. The Scalloped Spiny Lobster found here is red and does not have pincers. It is usually found near rocky reefs. Lobsters are important to this ecosystem because they maintain species diversity, so overfishing threatens biodiversity. Since 2013, SEED has implemented Project Oratsimba. The project supports three communities to sustainably manage their fisheries, and thus protect the Scalloped Spiny Lobster. In 2021, Project Oratsimba Phase III will come to an end, but an exciting next phase has already been designed. This will see continued support in Elodrato and Sainte Luce, and expansion to two new communities, as well as research to find out more about the habitat on which the Scalloped Spiny Lobster depends.

Archetype category: Various categories

Name of initiative: Coralive.org

Organization: Coralive.org

Website: https://coralive.org/

Description: Coralive.org is dedicated to the mission of protecting and restoring healthy oceans around the world and operates in various countries including Madagascar. Coastal areas and marine ecosystems around the world are facing significant and immediate threats. Overstressed by pollution, natural resource exploitation, climate change, habitat destruction, and the compounding of these forces, many regions are struggling to recover. Coralive.org provides global best practices to catalyze the healing process and increase the ecosystem resiliency of these areas against future disturbance by engaging in activities such as (1) Coral Reef Restoration Through Mineral Accretion Technology, (2) Mangrove Forest Gardening & Replanting and (3) Seagrass Bed Transplanting. Coralive.org also recognizes that alternative opportunities need to be developed to guarantee earnings as well as food security to divert fishing pressure away from the ocean. The organization has expertise in planning and implementing such projects to ensure all voices are heard and all needs are met e.g. Solid Waste Management Including Waste Hubs with Eco-Brick Production Facilities, Seaweed Farming, Low-Impact Aquaculture and Barrel-Ponics and Bamboo Planting, Harvesting & Processing.

Archetype category: 2.2 Sustainable mariculture/aquaculture (2.2.1 Seaweed farming)

Name of initiative: Sustainable algaculture

Organization: Ocean Farmers

Website: https://ocean-farmers.com/

Description: 2000 household-farmers spread over 40 villages covering 300km of coastline have signed an algaculture contract with Ocean Farmers. The algae cultivated by Ocean Farmers is red algae (Kappaphyccus alvarezii and Kappaphyccus striatum) from which carrageenan is extracted, a texturizer used by the food and cosmetic industry. The algae are cultivated on ropes or in tubular nets installed at sea according to two main techniques (1) The peg-rope or “off bottom” technique where the algae are anchored to the bottom in lines of 10 to 20 meters, sometimes organized in modules of up to 120 lines and (2) The semi-floating or “longline” technique consists of lines of 40 to 100 meters that are anchored at the ends and fitted with floats all the way, leaving the algae at a constant depth of about 1 meter whatever the tide. After 45 days during which the farmer maintains the lines and anchors by eliminating fouling and watches for the appearance of diseases and other pests, the lines are harvested. Part of the algae, ideally the youngest and smoothest shoots, is reused to reseed the lines which are reinstalled at sea for 45 days. Each line therefore produces up to 8 harvests per year, a good crop rotation system within the same farm allowing a harvest every 15 days. From 2018, Ocean Farmers is working alongside CARGILL in “The Red Seaweed Promise ™”. This new international standard that Ocean Farmers has helped to define integrates sustainability into all dimensions of algae production: traceability, good cultivation / harvest / post-harvest practices, improvement of the living conditions of farmers, support to communities and preservation of the environment. The program is independently evaluated by Proforest.

Archetype category: 3.5 Conservation Trust Funds (3.5.1 CTF associated Incubator or Technical Assistance Facility, 3.5.2 Conservation and conservation management)

Name of initiative: Madagascar National Park Investment Fund – Sustainable Coastal Fisheries
Organization: Madagascar National Parks (MNP)

Website: https://www.aht-group.com/dev/projects/africa/madagascar/madagascar-national-park-investment-fund-phase-iv-sustainable-coastal-fisheries-mnp-fi-iv-pcd

Description: The MNP FI-IV / PCD project consists of two components: **Component A: Fonds d'Investissement – Phase IV (Investment Fund – IV):** The objective of the FI-IV component is to consolidate and optimize the operations and management systems, especially co-management, within MNP, and to assist with financial sustainability strategies. The new business-oriented management strategy of MNP includes more partnerships and financial diversification. Being correlated to the PCD component, the FI-IV component also aims at (co-)financing opportunities of MNP's investments along internationally established sustainable management standards of Marine and Coastal Protected Areas (PA) and Locally Managed Marine Areas (LMMA) in particular. While the primary target group of FI-IV is MNP itself, downscaling benefits are also intended for the coastal communities in the (peripheral) zones of LMMAs. **Component B: Pêche Côtière Durable (Sustainable Coastal Fisheries):** MNP is in the process of integrating and implementing the concepts of "Locally Managed Marine Areas (LMMA)" in its mandated support for (co-)management of marine and coastal protected areas, which are part of the coastal national parks of Madagascar. PCD provides direct TA to MNP itself and, in cooperation with MNP and four NGOs, to six LMMAs in different regions throughout Madagascar. The objective of PCD is to contribute to the sustainable management of natural resources in Madagascar's coastal and marine areas as well as to increase the income of local communities, particularly within the six selected priority National Parks selected by MNP and other responsible institutions and authorities in the environment sector.

Supplementary information:
https://docs.google.com/document/d/1uExxhqC6EQUh6qqnZwTv6_a7yTm1Pt47/edit

Location: Madagascar

Archetype category:

Name of initiative: Revenue for Nature Program

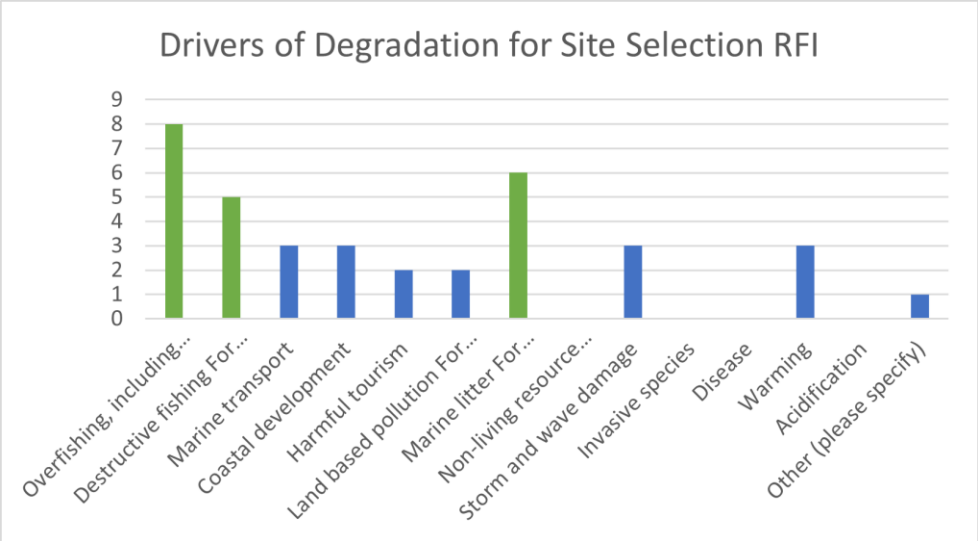
Organization: WWF

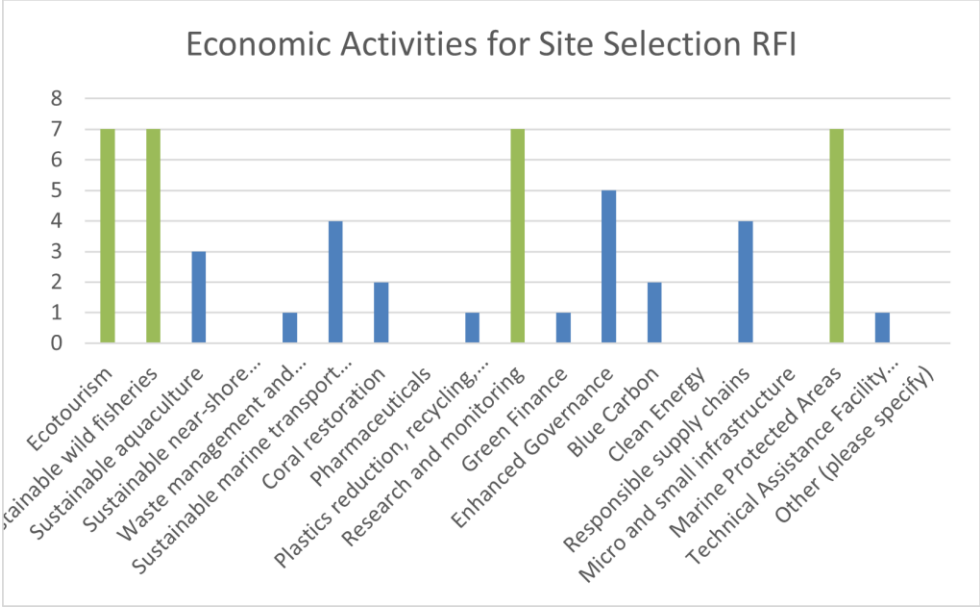
Website:
https://www.wwf.mg/en/our_news/latest_news/?uNewsID=997491&fbclid=IwAR2hkzXzVGQsUudcrCYJyuT363sUwxzGjIh3anvT-aqA1IIdXivycra2bAg

Description: The Revenue For Nature program is the illustration of a sustainable multi sectoral partnership that puts nature at the center of its concerns. It is a support program for communities managing natural resources in the Marojejy-Anjanaharibe Sud - Tsaratanana forest corridor (COMATSA), in northern Madagascar, to improve the resilience of populations and ecosystems. Among other things, the program links communities with the private sector to integrate them into sustainable value chains such as the vanilla sector. This initiative, which has been in place since 2017, has enabled communities to get certification for their products from a responsible agriculture (vanilla, ginger). The products are sold via a stable market, and the sale enables them to pay an environmental fund to contribute to the conservation of the natural forest. At the same time, companies benefit from products resulting from sustainable practices. "Now we aim to strengthen our partnerships with the private sector and scale up our conservation efforts for the sustainable and responsible management of Madagascar's natural resources," says Santatra Razafindratsimba from WWF. These partnerships can take several forms, such

as sustainable value chains (agriculture, fisheries, fuelwood, etc.), the implementation of sustainable practices within company operations or by supporting companies in their CSR approach. "In the end, the most important thing is that communities enjoy decent living conditions thanks to these partnerships, while preserving Madagascar's natural capital. "he adds.

7.9.2.3 Site selection

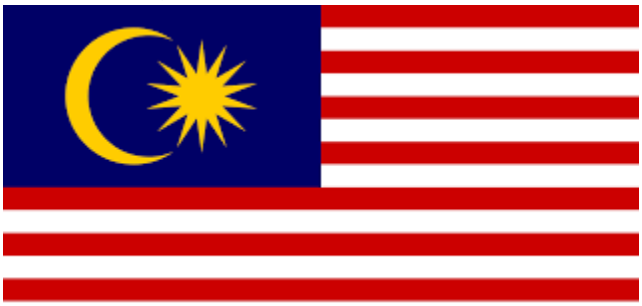




7.10 Brief Country Profiles

The following section provides brief country profiles for the additional Track I countries identified on Table 2 “Track I Target Countries”, page 26, for which priority programming has not been developed and presented to the Executive Board. These profiles briefly outline BCU’s present in each country, identifies drivers of degradation, and offers example existing opportunities for investment.

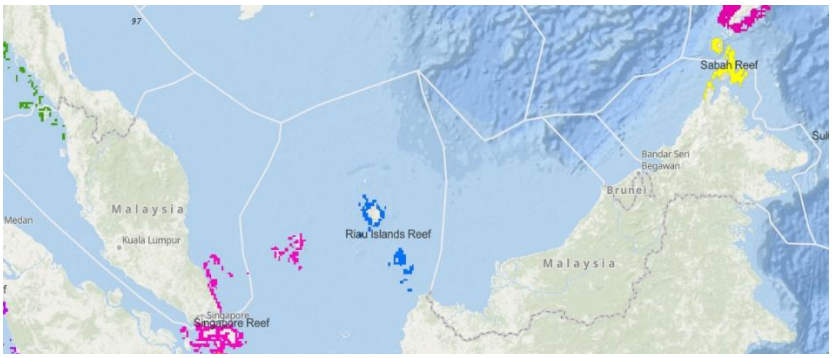
7.10.1 Malaysia



7.10.1.1 Introduction

Malaysia is on the GFCR's list of investable countries due to its three Bioclimatic Units (BCUs), non-annex I status, and lack of sanctions. It also located in the Coral Triangle and epicenter of marine biodiversity, possessing more than 550[34] species of coral and 1.27%[35] of the world's total coral reef area.

BCUs and Main Threats



Source: Vibrant Oceans

The main threats to these BCUs are (1) coastal development, (2) nutrient pollution, (3) tourism, and (4) fishing.

7.10.1.2 Main Opportunities

Based on the above threats and research, the following opportunities have been identified:

1. Ecotourism

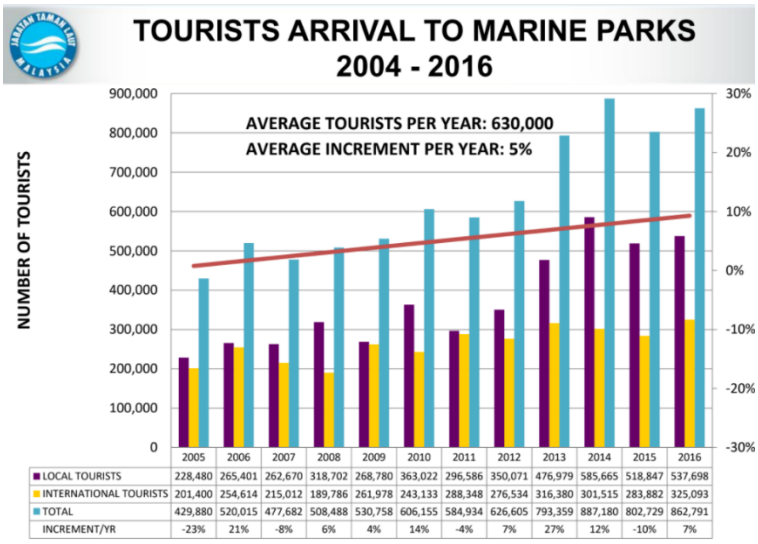
Malaysia has a large and growing marine tourism sector (see visitation in below image) with relatively well managed parks whose coral cover saw a maximum of 53.82% as of 2016, the most in at least 13 years[36]. This growing visitation, which reached 650,000 marine park visitors in 2018, is accompanied by a large number of dive centers, eco-resorts, and mass tourism establishments. The tourism sector therefore represents a very viable investment opportunity with a strong likelihood of positive impact on priority reefs. Entry and user fees are channeled to a Marine Park and Marine Reserve Trust Fund for management purposes[37].

[34] http://www.coralsoftheworld.org/page/overview-of-coral-distributions/

[35] http://coral.unep.ch/atlaspr.htm

[36] https://www.pemsea.org/sites/default/files/2b%20Ecotourism%20and%20marine%20Parks_Malaysia.pdf

[37] https://www.academia.edu/15592761/MALAYSIA_ISLAND_DEVELOPMENT_AT_THE_MARINE_PARK_IMPACT_TO_THE_CORAL_REEF



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
LOCAL TOURISTS	228,480	265,401	262,670	318,702	268,780	363,022	296,586	350,071	476,979	585,665	518,847	537,698
INTERNATIONAL TOURISTS	201,400	254,614	215,012	189,786	261,978	243,133	288,348	276,534	316,380	301,515	283,882	325,093
TOTAL	429,880	520,015	477,682	508,488	530,758	606,155	584,934	626,605	793,359	887,180	802,729	862,791
INCREMENT/YR	-23%	21%	-8%	6%	4%	14%	-4%	7%	27%	12%	-10%	7%

Source: PEMSEA

Tenaka (RFI submission): Tailor-made Corporate Social Responsibility opportunities that builds bridges between businesses and reef restoration. Located at three existing sites in Malaysia (Borneo, Tioman, Mantanani)
Ecoteer: Voluntourism and internships in turtle conservation, reef research and monitoring.
TRACC - Tropical Research and Conservation Centre: Voluntourism and diving for restoration, research, monitoring, community projects, and turtle conservation.
Ocean Quest - Coral Restoration Empire: Courses, training, voluntourism for reef restoration techniques (coral glue) and community involvement and development.

2. Aquaculture:
Borneo Green Aquaculture Sdn Bhd: 250,000 sea cucumbers produced per month
Greeny Aquaculture: CITES certified supplier of ornamental fish with Certificate of Excellence for eight consecutive years.

3. Fisheries:
Fisheries Improvement Project - WWF and Malaysian Government: 1st FIP in the country, protecting coral reef fish at Teluk Marudu which encompasses 900,000-hectare Marine Protected Area (MPA).

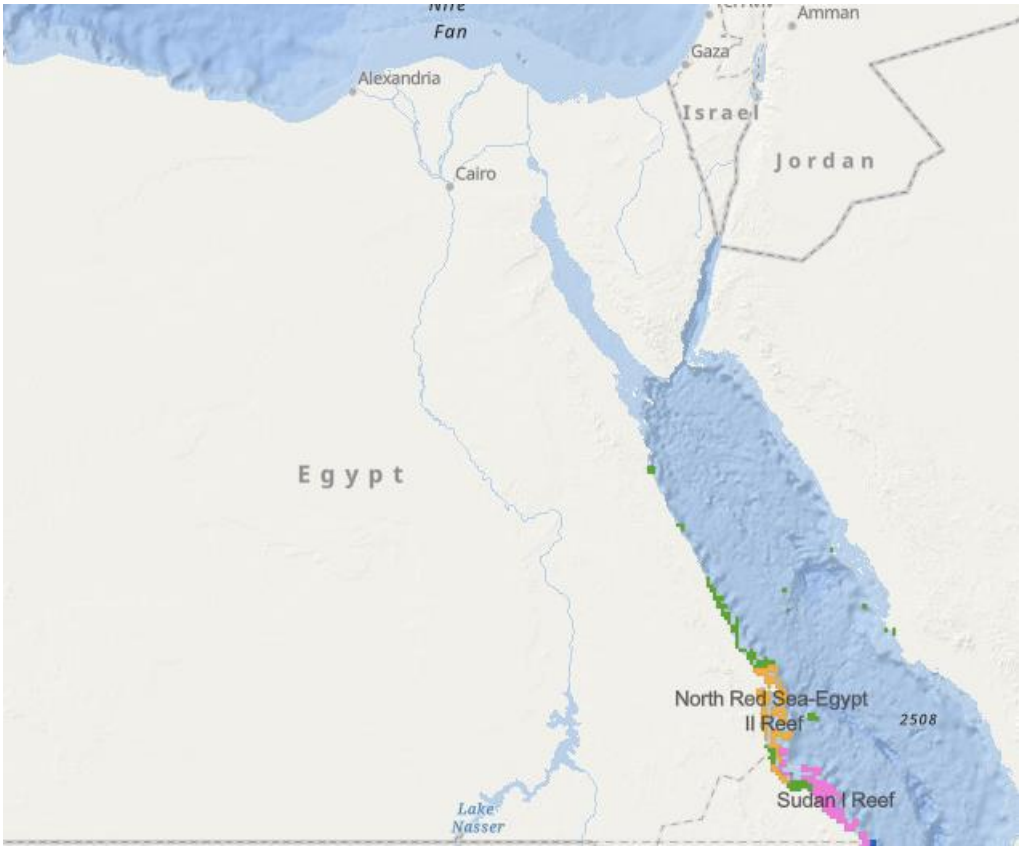
Partners & Initiatives: Funds, incubators, bonds of interest:
Malau Biobank: Sustainable forestry
Green Sukuk: Islamic financing
Aquaculture Incubator
Corals for Life Incubator
Kenyir for Life: Watershed protection
National Conservation Trust Fund
Circular Economy: Research Fund

7.10.2 Egypt

7.10.2.1.1 Introduction

Egypt has been included in the list of Tier I countries due to its three Bio Climatic Units (BCUs), it representing the only country from the Red Sea region, and its connectivity to other BCUs throughout the Red Sea

BCU's and Main Threats



Source: Vibrant Oceans

According to the 50-reef Report Cards underpinning the 50-Reefs report, the main threats to these BCU's are (1) Tourism, (2) Overfishing and (3) Pollution due to sedimentation. Additional independent research reveals coastal development and waste management as being additional threats.

7.10.2.2 Main Opportunities

Based on the above threats and research, the following opportunities have been identified.

1.Tourism

[Red Sea Diving Safari: The Eco-Diving Adventure]

Red Sea Diving Safari is the southern Red Sea's leading tourism & diving destination. It is one of Egypt's leading environmental activists and a pioneer of sustainable tourism development. Their destinations consist of 3 villages along the southern Red Sea coastline, and they have been involved in the declaration of national parks and protectorates. They engage with local stakeholders such as the Bedouins who call the coastline home.

Green Fins

Green Fins is a sustainable tourism certification and auditing system that charges an annual fee for audits paid for by operators. Over 100 dive businesses in Egypt are currently members of Green Fins, along with hundreds of hoteliers along the Red Sea.

2. Fishing, Aquaculture:

Skretting

As an aquaculture feed company with a global presence and based in Egypt, Skretting is ideally positioned to contribute towards the development of more sustainable food production. As part of their sustainability strategy, they practice sustainable sourcing and are focused on achieving the best results towards animal health and farm productivity.

3. Waste Management

HEPCA

HEPCA is responsible for the entire solid waste management strategy for a large portion of the Red Sea coastline – particularly between the cities of Hurghada and Marsa Alam. They are also responsible for the waste management of more than 195 hotels and resorts which equates to 153,000 guest rooms.

4. Organic Agriculture:

Bustan Aquaponics

Bustan Aquaponics is the first commercial aquaponics farm in Egypt. They provide the highest quality pesticide-free tilapia fish and aquaponic growth vegetables. Their pesticide-free produce is grown in a locally developed and ecologically balanced system using 90% less water than traditional farming practices.

5. Coral Restoration:

Fabrigate

Fabrigate engages in 3D printing of coral-like, porous structures to provide habitat for corals to grow. They are currently piloting the project in Sahl Hashish's Sunken City. Fabrigate is also experimenting with different colors and shapes, mainly the organic-looking replicas and the gyroid infill models, to better understand the behavior of different marine species.

7.10.3 Dominican Republic

7.10.3.1 Introduction

Dominican Republic has been included in the list of Tier I countries due to its Bioclimatic Unit (BCU) that covers the majority of its coastline, the connectivity its reefs have with nearby Cuba, and its growing and robust economy.

BCU's and Main Threats

Source: Vibrant Oceans

According to independent research, the Coral Reefs in the Dominican Republic face a variety of threats. Coastal development and waste-water, plastic waste, and land-based nutrient pollution are the primary drivers of coral degradation, followed by over-fishing and invasive species. Finally, climate change continues to lead to stronger hurricane events, threatening the corals in the Dominican Republic with increasing intensity.

7.10.3.2 Main Opportunities

Based on the above threats and research, the following opportunities have been identified:

1. Waste Management:

Clean Cities, Blue Ocean

USAID's Clean Cities, Blue Ocean (CCBO) program offers state-of-the-art international technical expertise and sustainable, locally-led solutions through its local grants programs. CCBO seeks to develop, test, and

implement new models that promote the 3Rs and enhance solid waste management; facilitate partnerships and investment around key needs, such as infrastructure; and strengthen local systems to build the nations resilience and self-resilience.

Solid Waste Management in Tourism Centers Project
The project intends to modernize and improve solid waste management in the region of Puerto Plata, Sosua, and Cabarete. The basic design of the program includes various environmental controls, such as drainage capture, construction of a buffer zone, and regular maintenance of the landfill area.

Cuidad Saludable
In 2013, Cuidad Saludable committed to support the integration of waste pickers to the formal sector through the launch and implementation of five solid waste management projects in the Dominican Republic and Haiti. Building on Cuidad Saludable's successful model in Peru, these projects will improve the working and living conditions of waste pickers by developing micro-enterprises, strengthening waste pickers' capacities, and creating a market for recycling materials.

2. Tourism:
Iborostar Dominican Republic
Wave of Change
Iborostar has multiple coastal luxury resorts in the Dominican Republic. The global tourism company recently launched a new commitment to the oceans and leading responsible tourism. Wave of Change aims to move responsible tourism towards a circular economy, promote the responsible consumption of seafood and improve coastal health.

3. Water Funds
Ridges to Reefs - TNC
The Nature Conservancy is helping the Dominican Republic introduce water funds, tools that are being applied for the first time on a Caribbean island to conserve freshwater throughout the nation. Through partnering with local groups, TNC has established two Water Funds to support four watersheds that supply water to more than 60 percent of the Dominican Republic's population.

4. Sustainable Fishing
The Nature Conservancy
TNC is working to promote sustainable fishing practices in order to protect the Dominican Republic's vital marine resources and ensure that the livelihoods that depend on them have a sustainable future. This includes initiating "no take" seasons to allow certain species breeding and recovery time and monitoring lobster and conch fisheries to gauge the health of marine habitats.

Annex 8 GFCR Country Data Table Description

There is a detailed Data Table provided in spreadsheet form that includes a range of additional indicators described below. The initial intent was to prioritize countries based on a range of criteria. However, the desire to maintain flexibility and diversity of options for the Investment Window especially, has led the Partners to keep a larger list as presented above. This information on the Data Table is thus provided elsewhere as additional supporting documentation but has not been used for prioritization beyond what was described above.

Data Table Summary

Figure 38 below contains scores from the main data table for country ranking criteria, standardized to a 0-1 scale. The table also allows the use of a weighting system (blue percentages) that would allow the user to alter weights to explore impacts on country prioritization as provided in the "Total Score Weighted" column. Only part of this summary information was used to determine inclusion in the list of 27 countries (which is explained above) and the complete table is provided for additional analysis. Details on the individual criteria are explained below.

	Main Filters and Ranking Criteria							
Weight	50%	10%	10%	15%	15%			100%
Country	CC Resilience Ratio	Exceptional Reef Value Ratio	Reef Policy Ratio	Investment Environement Ratio	Reef Dependence Ratio	BNP Paribas Restrictions (Y/N)	Non-Annex I	Total Score Weighted
Indonesia	1.00	0.75	0.60	0.44	0.33	N	1	0.75
Philippines	1.00	0.42	0.20	0.39	0.58	N	1	0.71
Bahamas	0.80	0.25	0.00	0.72	1.00	N	1	0.68
Fiji	0.60	0.17	1.00	0.64	0.75	N	1	0.62
India	1.00	0.25	0.20	0.44	0.08	N	1	0.62
Tanzania	0.80	0.08	0.20	0.51	0.33	N	1	0.55
Maldives	0.60	0.08	0.40	0.49	0.67	N	1	0.52
Egypt	0.80	0.00	0.20	0.34	0.25	N	1	0.51
Malaysia	0.60	0.08	0.20	0.63	0.33	N	1	0.47
Kenya	0.60	0.00	0.60	0.41	0.25	N	1	0.46
Brazil	0.60	0.42	0.00	0.53	0.00	N	1	0.42
Thailand	0.40	0.25	0.20	0.54	0.42	N	1	0.39
Solomon Islands	0.40	0.42	0.00	0.51	0.42	N	1	0.38
Madagascar	0.40	0.33	0.20	0.33	0.42	N	1	0.37
Mexico	0.20	0.75	0.80	0.45	0.17	N	1	0.35

Figure 37 Summary of Main Filters and Ranking Criteria

Climate Change Resilience Ratio and Bioclimatic Units

The Bioclimatic Units (BCUs) from 50 Reefs (Beyer et al. 2018[38]) can be considered ecosystems at a scale compatible with the Focal Areas concept for the Fund.[39] These Bioclimatic Units are derived from the original 50 Reefs study that identified potentially resilient reefs and they are an important selection factor ("CC Resilience Ratio" in Figure 38) for the GFCR. The data table for countries includes both presence/absence of prioritized BCUs and the number of BCUs per country.

The coastlines of several countries from the above list are almost completely enveloped by BCUs. In the case of larger countries, such as Indonesia, the GFCR team will need to select single BCUs or agglomerations of them as an area to focus research as depicted below.

[38] Beyer et al. 2018 also emphasized the major coral regions in its analysis.

[39] An ecosystem is the community of living organisms (biota) in an area and their associated, non-living elements, including climate, or a Bioclimatic Unit.

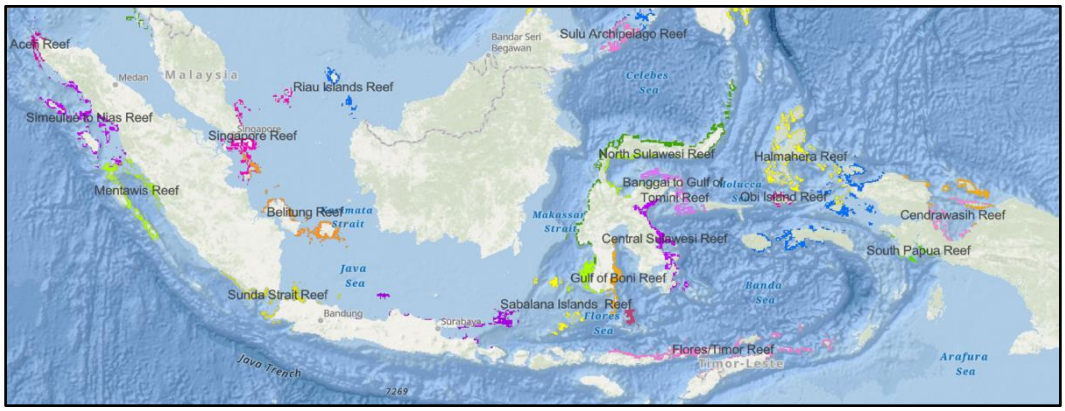


Figure 38 BCUs in Indonesia (23)

Exceptional Reef Value

The Country Selection Data Table includes the presence of coral-related (1) World Heritage Sites, (2) Ramsar Sites, (3) Blue Hope Spots, and (4) Bright Spots (table below). These sites indicate not only extraordinary natural heritage but also shows country commitments to coral protection and management success, especially for 'Bright Spots'. Note: links to the original data are provided in the excel file.

Table 12 Exceptional Reef Value

Country	UNESCO WHS (Impacts of Climate Change on World Heritage Coral Reefs - A First Global Scientific Assessment)	RAMSAR (sites with reefs, search with "reef" and country)	Blue Hope Spots with Coral Reefs (Mission Blue)	Bright Spots (Cinner et al. 2016
Indonesia	2	1	4	3
Philippines	1	2	2	0
Bahamas	0	0	3	0
Fiji	0	1	1	0
India	0	1	2	0
Tanzania	0	1	0	0
Maldives	0	0	1	0

Reef Policy

The reef policy section describes how national reef and ocean policies demonstrate commitment to coral reefs and general environmental management. The following table depicts the specific indicators, including engagement with ocean and reef commitments and an Environmental Performance Index (EPI) score - a measure of compliance with national environmental commitments.

Table 13 Reef Policy

Country	Member of High Level Panel for a Sustainable Ocean Economy	ICRI Member	Signatory of Coral Reef life declaration	Members of the Action Group on Coral Reef Restoration	Pledge for Nature	EPI (Yale)	Sub-score
Indonesia	1	1		1		37.8	3
Philippines		1				38.4	1
Bahamas						43.5	0
Fiji	1	1	1	1	1	34.4	5
India		1				27.6	1
Tanzania		1				31.1	1
Maldives		1			1	35.6	2

Investment Environment

The Investment Environment section merges two indices that have general impacts on the business environment. This score is currently calculated using World Bank indices for contract enforcement and control of corruption. Both scores range from 0 to 100 and were averaged to produce a composite score. Additional indices from Maplecroft may be added in the near future. The following table provides an example.

Table 14 Investment Environment

	Investment Environment		
Weight			
Country	Enforcing Contracts Score (WB 2019, sub-score of Ease of Doing Business Index)	Control of Corruption (WB 2019)	Average of Control of Corruption and Enforcing Contracts Scores
Indonesia	49.1	38	43.55
Philippines	46	31.3	38.65
Bahamas	59.1	84.13	71.615
Fiji	57.1	70.2	63.65
India	41.2	47.6	44.4
Tanzania	61.7	39.42	50.56
Maldives	52.5	46.2	49.35
Egypt	40	27.9	33.95
Malaysia	68.2	57.2	62.7
Kenya	58.3	24.5	41.4
Brazil	64.1	42.31	53.205
Thailand	67.9	39.4	53.65
Solomon Islands	43.5	57.69	50.595
Madagascar	50	15.9	32.95

Reef Dependence (% of GDP dependent on reefs)

One of the GFCR priority outcomes is community resilience to climate change. For Reef Dependence, the Data Table uses a combination of (1) reef tourism, (2) reef fishery catch, and (3) population protected by reefs, all as a percentage of total GDP to produce this score. This would help identify countries with a larger portion of the economy and population dependent on reefs, including Fiji, the Bahamas, and the Solomon Islands. For example, if these countries' reefs are damaged, their populations will be impacted relatively more through loss of income and livelihoods, food security, and protection against rising seas

and storms. The following table provides an example of these indicators.

*Table SEQ Table * ARABIC 15 Reef Dependence*

Country	Reef associated visitor expenditures as % GDP	Visitor Expenditure Score	Value of Reef Fisheries as % of GDP	Reef Fisheries Value Score	Value of population protected as % of GDP	Population Protected Score	Reef Dependence Score (out of total12)
Indonesia	0.34%	1	0.03%	1	4.51%	2	4
Philippines	0.55%	2	0.81%	3	11.99%	2	7
Bahamas	6.39%	4	3.15%	4	66.80%	4	12
Fiji	5.90%	3	1.14%	3	43.13%	3	9
India	0.03%	0	0.05%	1	0.48%	0	1
Tanzania	0.34%	1	0.22%	2	2.78%	1	4
Maldives	43.17%	4	0.11%	1	42.00%	3	8
Egypt	1.98%	2	0.03%	1	0.57%	0	3
Malaysia	0.37%	1	0.23%	2	3.58%	1	4
Kenya	0.17%	1	0.03%	1	0.99%	1	3
Brazil	0.02%	0	0.02%	0	0.59%	0	0
Thailand	0.61%	2	0.42%	3	0.34%	0	5
Solomon Islands	2.14%	2	NA	0	45.92%	3	5
Madagascar	0.51%	2	0.12%	2	3.09%	1	5

Annex 9 GFCRs Partnerships

Partnerships are an essential element of the GFCR. The Fund itself is a multi-partner endeavour and there are many key implementing partners and organizations that are key to the success of the Fund. Diverse actors will support the Fund for identifying or developing a blended finance pipeline, addressing essential underlying conditions, and other implementation actions that require effective, knowledgeable and efficient on-site actors. As well, lessons learned should be shared among the diverse actors through knowledge management efforts. Basic information is provided on a range of partners below. At present we can identify a wide range of strategic partners that are presented here under the following overlapping categories.

- Founding Partners
- Convening Partners
- Other Implementing Partners
- Vertical Funds
- Development Banks
- International Initiatives
- Financial Intermediaries
    1. Microfinance Institutions – MFI
    2. Incubators and Start up Support
    3. Technical Assistance Facilities - TAF

9.1 Founding Partners

Paul G. Allen Family Foundation

The Paul G. Allen Family Foundation was launched in 1988 by Microsoft co-founder and philanthropist Paul G. Allen and his sister Jody Allen and is dedicated to changing the trajectory of the world's toughest problems. During Mr. Allen's lifetime, he was often listed among the top 10 American philanthropists in Chronicle of Philanthropy's annual ranking of the country's top 50 givers. The Foundation supports ocean, climate and biodiversity projects, including the Allen Coral Atlas and research on human-assisted evolution of coral to develop stocks of climate resilient coral that can survive increases in sea temperature. The Foundation also partnered with Bloomberg Philanthropies and Tiffany and Co. Foundation on the 50 Reefs global coral reef action agenda, which seeks to identify the top key reef systems that offer the most hope in withstanding future changes in ocean conditions and developing conservation strategies to protect their ecosystems and re-populate lost reefs. A leader in the philanthropy sector, The Paul G. Allen Family Foundation has the influence to set priorities and mobilize resources for the GFCR.

Prince Albert II of Monaco Foundation

In June 2006, HSH Prince Albert II of Monaco decided to establish his Foundation to address our planet's alarming environmental situation. The Prince Albert II of Monaco Foundation (PA2F) is dedicated to the protection of the environment and the promotion of sustainable development on a global scale. The Foundation supports initiatives of public and private organizations, in the fields of research and studies,

technological innovation and socially-aware practices. The Foundation supports projects in three main geographical zones and focuses its efforts focus on three main areas.

The Prince Albert II of Monaco Foundation has long been active in marine conservation issues. The Foundation was established in 2006 and currently supports initiatives such as The Because the Ocean Initiative, Association Monégasque sur l'Acidification des Océans, and Beyond Plastic Med. The Foundation's projects revolve around the themes of conservation of endangered species, development of MPAs, ocean acidification, and studies on climate change and its effects. The Prince has also organized several high-profile events to promote awareness and mobilize collective action for ocean issues. For example, in 2017 he presented the Coral Reef Life Declaration at the Our Ocean Conference in Malta, which has been signed by more than 15 countries. Additionally, the Prince of Monaco hosts an annual Ocean Week bringing together Member States, the UN, NGOs and others to discuss proactive solutions to some of the most pressing ocean issues.

UN Multi-Partner Trust Fund Office (UN MPTF Office)
Established in 2003 and housed within the United Nations Development Programme (UNDP), the Multi-Partner Trust Fund Office (MPTF-Office) facilitates UN coherence and development effectiveness in addressing multifaceted issues—such as humanitarian crises, peacebuilding, recovery and development—and engages in collaborative international efforts on pandemics, climate change and biodiversity conservation.

These complex challenges demand the combined expertise and resources of multiple development partners. The MPTF Office assists the UN system and national governments in establishing and administering pooled financing mechanisms—multi-donor trust funds and joint programs—to collect and allocate funding from a diversity of financial contributors to a wide range of implementing entities in a coordinated manner. These funding mechanisms build on the principles of the aid effectiveness agenda, which calls for country-driven, coherent, timely, flexible and result-oriented assistance.

UN Environment – (Formerly UN Environment Programme, UNEP) Is the leading global environmental authority for setting the global environmental agenda, promoting coherent implementation of UN environmental projects for sustainable development, and serving as an advocate for the environment around the world. Its mission is to provide leadership and encourage partnerships by inspiring, informing, and enabling governments and citizens to improve their quality of life without compromising that of future generations. UN Environment is mandated to work on the sustainable management of coral reefs through its Coral Reef Unit, Governing Council decision 21/12, and United Nation Environment Assembly Resolutions 2/12 and 4/13. It will support the GFCR by providing strategic direction for Fund activities, technical advice/expertise on issues affecting coral reefs, and effective solutions to the coral reef crisis. Additionally, UNEP has been tasked with establishing the monitoring and evaluation (M&E) strategy for the Fund.

UN Development Programme (UNDP) is the leading United Nations organization working to end the injustice of poverty and inequality, and tackling climate and nature crises for achieving sustainable development. Working with a broad network of experts and partners in 170 countries, UNDP helps nations to build integrated and lasting solutions for people and planet. Through this on-the-ground presence, UNDP facilitates access to resources such as knowledge, skills, networks, technology, finance, and business opportunities—elements that can enhance private sector competitiveness while providing incentives and impetus for a bottom-up transformation towards sustainable business practices. Because UNDP has a convening role at all institutional and systems levels, it is well situated

to build multi-stakeholder engagements across public and private sectors, turning dialogue into action. UNDP efforts in the blue economy are critical for bringing actors together to deliver integrated development solutions that deliver SDG impacts, whether on the protection or investment side. UNDP's country level presence makes mapping potential markets, by simplifying and making it more feasible to identify and collaborate with local clients.

Furthermore, UNDP is situated to support deal flows, identifying those that are vulnerable but receptive, where government is on-board contractually to help, and where behavioral change and broader advocacy campaigns can support implementation. Through its networks and capacity for community awareness and outreach, UNDP is able to ensure appropriate financing instruments make it from theory to action—from marketing to education, investment monitoring and evaluation, UNDP communicates best practices to scale success. UNDP will be leading Track III – Knowledge Management and Partnership Facility and supporting other elements of the Fund.

UN Capital Development Fund (UNCDF) – The capital investment agency for the United Nations, UNCDF primarily focuses on initiatives for the world's 47 LDCs. With a capital mandate and instruments, the organization designs finance models to unlock public and private resources to reduce poverty and support local economic development. UNCDF attempts to reach pockets of poverty where available resources for development are scarce and financial markets are not fully developed, resulting in skewed benefits and excluding large segments of a population. Involved in advocacy, advisory services, and investments, UNCDF is most active in the thematic areas of financial inclusion and local development. UNCDF will provide technical assistance to GFCR and support the development of blended solutions at the local level. In the event that a donor such as a Member State would like to support the GFCR with public investment capital in addition to traditional grants, UNCDF will be able to issue debt instruments such as guarantees, concessional loans, and recoverable grants. Private investment and GCF capital will be managed solely by BNP Paribas as the Investment Manager. The UNCDF is working on elaborating their interventions for Track II and will be supporting all Tracks of the Fund.

BNP Paribas

BNP Paribas: will act as coordinator of the Investment Window of the GFCR with Pegasus as the asset manager and SYSTEMIQ as a technical partner. In addition, BNP Paribas will offer financial advisory services, custody and clearing services for the GFCR. BNP Paribas will use its expertise and network of investors and players in the ocean space to fundraise and support pipeline development for the GFCR. With more than 18,000 corporate clients in 85 countries, BNP Paribas is well positioned to identify and manage partnerships with both corporates and public organizations.

The GFCR will fall under the agreement BNP Paribas has signed with the United Nations with the aim of investing USD 10 billion of capital funding by 2025 in suitable commercial projects with measurable environmental and social impact in developing countries.

Pegasus Capital Advisors

Pegasus Capital Advisors is the GCF Accredited Entity proposing the GCF non-grant instrument. Since its founding in 1996, Pegasus has deployed more than $2.6 billion across five private equity funds, and is an experienced and recognised asset manager with an impact-driven approach to investment focused on sustainability, health and wellness. Pegasus, or one of its affiliates will also serve as the investment manager and general partner of the Investment Window, and in such capacity will be an Executing Entity. The legal structure of the Investment Window, including the identities of the Pegasus affiliates that will be Executing Entities, will be determined in consultation with the Secretariat.

Pegasus is an active member in a range of initiatives, partnerships and alliances that an environmental or sustainable development focus. Some of those initiatives, partnerships and alliances are described below:

1) Pegasus is a Signatory of the UN Principles for Responsible Investment ("PRI"), the world's leading proponent of responsible investment.
2) Pegasus is a Member of the Planet Pledge Alliance, a partnership with Planet Pledge. Planet Pledge is a non-profit network of top philanthropic, NGO and investment community members, advancing scalable, multi-benefit projects that significantly mitigate carbon emissions and lead to us a low-carbon economy.
3) Pegasus is a signatory of the Stockholm Declaration, reaffirming support for the United Nations Sustainable Development Goals (UN SDG's).

9.2 Convening Partners

9.2.1 Blue finance

Blue finance is a not-for-profit organization developing impact investment projects focused on sustainable finance for marine protected areas (MPA). Their approach is one of the most direct blended finance approaches for coral reef conservation and they have recently been awarded a design grant from Convergence for their work. They are active in multiple coral reef countries with priority BCUs (Indonesia, Philippines, Fiji, Bahamas, Dominican Republic and more) and their approach shows very strong promise.

9.2.2 Conservation International and CI Ventures

Conservation International is a large environmental NGO that works in the world's biodiversity hotspots. From their website, they describe themselves as, "for over thirty years, Conservation International has worked to spotlight and secure the critical benefits that nature provides to humanity. Combining fieldwork with innovations in science, policy and finance, we've helped protect more than 6 million square kilometers (2.3 million square miles) of land and sea across more than 70 countries. Today, with offices in more than two dozen countries and a worldwide network of thousands of partners, our reach is truly global." Additionally, Conservation International has a USD 25M conservation focused venture fund called CI Ventures. They partner with Althelia/Mirova and have a strong interest in blue economy investments. CI also plays a leading role in the Blue Nature Alliance (see below).

9.2.3 Mesoamerican Reef Fund (MAR Fund)

Recognizing the need for a regional funding and coordination institution, the Mesoamerican Reef Fund (MAR Fund) was established in 2004 as a private Conservation Trust Fund (CTF) by representatives from conservation funds in each country of the MAR region (Belize, Guatemala, Honduras, and Mexico). The mission of the MAR Fund is to drive regional funding and partnerships for the conservation, restoration, and sustainable use of the Mesoamerican Reef. The MAR Fund operates as an ecoregional planning and coordinating body which prioritizes projects and allocates funding. Some of the programmes include: Saving our Sanctuaries – supporting the establishment and protection of an interconnected network of priority coastal and marine protected areas in the region; Fishing for the Future - community participation in co-management of their fisheries; Climate Change - Monitoring climate change effects on the reef and supporting adaptation to climate change. They have also recently developed the Mesoamerican Reef Technical Assistance Facility (MARTAF), to provide financial and logistic support for development of conservation-oriented businesses in the region. Examples of initiatives have included a

conservation focused hotel (Isla Holbox, Quintana Roo, Mexico), and a wastewater treatment plant (West End, Roatán, Honduras). MAR Fund would be a key partner for any engagement in the Mesoamerican Reef region.

9.2.4 The Nature Conservancy (TNC)

The Nature Conservancy (TNC) was founded in the United States through grassroots action in 1951 and has grown to become one of the most effective and wide-reaching environmental organizations in the world. Currently staffed by over 400 scientists, TNC impacts conservation in 72 countries and territories through both direct conservation activities and partner programmes. With regards to marine ecosystems, TNC currently operates more than 100 marine conservation projects. There is significant scope for partnership opportunities and collaboration between TNC and the Global Fund for Coral Reefs. Several of the innovative financing mechanisms being developed by TNC have direct impacts on coral reefs and include an ambitious, global programme to develop Blue Bonds through Debt Conversions, reef insurance mechanisms and the development of novel Blue Carbon Resilient Credits.

9.2.5 Wildlife Conservation Society (WCS)

The Wildlife Conservation Society is one of the world's most established conservation organization that not only runs the five zoos and aquariums in New York but also has a very active global conservation programme operating in some of the most intact and resilient places on the planet. From their website:

> "WCS uses science to discover and understand the natural world. This knowledge helps us engage and inspire decision-makers, communities, and millions of supporters to take action with us to protect the wildlife and wild places we all care about. WCS scientists study what wildlife species need to thrive. With this knowledge we invest in abating threats to wildlife within their most important strongholds and the corridors that connect them. We target large, iconic, wide-ranging species because of their intrinsic value and because they are vital to ecosystem health. By saving them, we protect all other biodiversity that shelters under their conservation canopy."

WCS has active programmes in some of the most important GFCR focal areas including East Africa, the Coral Triangle, and more. The organization has supported business-based approaches to conservation in multiple landscapes.

9.2.6 WWF

The WWF and GFCR teams have identified synergies in likely cooperating countries and see potential for collaboration to accelerate project pipeline development and the financing for sustainable coastal resources management and blue economies for coral safe businesses. Under a project called the Coral Reef Resilience Initiative (CRRI) WWF is seeking GCF grant funding to provide the necessary institutional enabling conditions and technical assistance to develop pipeline projects and support reef-dependent communities. The GFCR is requesting a concessional loan of USD 100 million from the GCF to scale impact and address private investors' perceived risks of blue economy investments. Through strategic sequencing of GCF financing, WWF and the GFCR aim to leverage organizational competencies to catalyze the private sector's role in building the resilience of communities and marine ecosystems that are most threatened by climate change. Both WWF and GFCR are developing inaugural projects in Fiji, which provides the opportunity to showcase their collaborative and innovative approach to deploying GCF financial resources so that they effectively leverage investments that will contribute to the shared objectives of improving the resiliency of vulnerable coastal communities. The impact investor Vulcan Inc. is both a WWF partner under the CRRI and a principal investor in the GFCR.

9.3 Potential Implementing Partners

9.3.1 Blue Ventures

Blue Ventures is a science-led social enterprise that applies commercial strategies to marine conservation to maximize financial, social, and environmental wellbeing. Blue Ventures works in the Indian Ocean, Southeast Asia, and Caribbean to rebuild fisheries, create learning networks, establish blue carbon and aquaculture projects, and promote small-scale ecotourism to create alternative sources of income for fishery dependent families. The organization works with local communities to build their capacities to sustainably manage marine resources.

9.3.2 Blueyou

Blueyou is a consulting company with a mission to transform global seafood production in service of securing a more sustainable future. They provide direct access to consumer markets for small-scale fisheries and offer technical assistance and capacity building for sustainable fishery management. Blueyou empowers local fishery stakeholders and authorities. For the seafood business, they provide traceability assurance and supply chain integrity with direct sourcing access to selective small-scale fisheries. Their actions support the livelihoods of coastal communities, promote sustainable resource management, and deliver high quality seafood to buyers. Blueyou is a collaborative partner for the Fund's Philippines programme.

9.3.3 Matanataki

Matanataki is a private sector partnership of business developers, finance experts, conservationists and creatives who support the development of green and blue businesses in Fiji and the Pacific. They are a dedicated team with complementary backgrounds and skills working to catalyze high impact investments which address the acute nature of climate change and bring rapid solutions for the conservation and regeneration of land and seascapes. Matanataki is an implementing partner for the Fiji programme.

9.3.4 Rare Conservation

Rare Conservation - Fish Forever aims to improve fishing communities' practices by instilling pride in their way of life and surrounding environment and empowering them as managers of their own natural resources with Territorial Use Rights for Fisheries (TURF)+, also known as marine resource tenure. This approach has already shown remarkable success at reducing pressure on fish stocks and related coral reefs in the Philippines, and is being replicated across several other countries, including Indonesia, Mozambique, Brazil, and other GFCR priority countries. For example, Rare has various project sites in Indonesia including those located within potential GFCR focal areas. By establishing community defined and protected no-take zones and other sustainable fishing practices and management incentives (marine tenure), coral habitat and related fish species have begun to recover, improving fishing yields and livelihoods. This greater yield represents potential for return on investment-based business models. Within fifteen years, Rare expects the SE Sulawesi fishery to improve in value nearly eight-fold to more than USD 300 million. Read more about Fish Forever here. Rare Conservation is a collaborative partner for the Fund's Philippines programme.

9.3.5 Willis Towers Watson

Willis Towers Watson (WTW) is a leading global advisory, brokering and solutions company that helps clients around the world turn risk into a path for growth. With roots dating to 1828, Willis Towers Watson has 45,000 employees serving more than 140 countries and markets. Their experience in developing insurance programmes around the world places them at the forefront of innovative reef insurance programmes. There is significant scope for partnership opportunities between Willis Towers Watson and the GFCR. WTW are piloting or developing several reef insurance programmes alongside

strategic partners such as GEF, KfW and the ADB on both national and sub-national scales. Their areas of operation align very strongly with priority countries as identified by the CFA, including the MAR region, countries in the Coral Triangle and Pacific Small Island Developing States.

9.3.6 Swiss Re

The Swiss Re Group is one of the world's leading providers of reinsurance, insurance and other forms of insurance-based risk transfer, and works to make the world more resilient. The goal of the Swiss Re Group is to enable society to thrive and progress, creating opportunities and solutions for its clients.

9.4 Vertical Funds

9.4.1 Adaptation Fund

With over USD 778,000,000 allocated, the Adaptation Fund provides developing countries with full ownership of adaptation projects, from planning through implementation, while ensuring monitoring and transparency.

9.4.2 Blue Action Fund

Blue Action Fund recognises the ocean's fundamental role in ensuring the health of our planet and the wellbeing of humanity. Our vision is of a carefully managed and sustainably used ocean full of abundant, healthy marine life providing benefits to people and the environment. Our mission is to enhance the management and use of coastal and marine ecosystems to conserve marine biodiversity for future generations while improving the livelihoods and lives of local people today. We pursue that mission by making targeted grants to non-governmental organisations active in developing countries.

9.4.3 Blue Planet Fund – UK

The UK's global leadership on ocean protection has seen it on track to establish a 'Blue Belt' of marine protected areas spanning 4 million square kilometres across its Overseas Territories and a £500 million Blue Planet Fund.

9.4.4 Critical Ecosystem Partnership Fund (CEPF)

The Critical Ecosystem Partnership Fund (CEPF) enables civil society to protect the world's biodiversity hotspots essential to humanity, yet highly threatened.

9.4.5 Green Climate Fund

The Green Climate Fund (GCF) – a critical element of the historic Paris Agreement - is the world's largest climate fund, mandated to support developing countries raise and realize their Nationally Determined Contributions (NDC) ambitions towards low-emissions, climate-resilient pathways.

9.4.6 Global Environment Facility

The Global Environment Facility (GEF) was established at the 1992 Rio Earth Summit to help tackle our planet's most pressing environmental problems. Since, the GEF has provided more than USD 21.1 billion in grants and mobilized an additional USD 114 billion in co-financing for more than 5,000 projects in 170 countries. Through its Small Grants Programme, the GEF has provided support to more than 25,000 civil society and community initiatives in 133 countries.

9.4.7 UN Joint SDG Fund

The UN Joint Sustainable Development Goals (SDG) Fund is a multi-partner trust fund which seeks to incentivize the transformative policy shifts and stimulate the strategic investments required to get the world on track to meet the SDGs. The Joint SDG Fund's programme entitled "Investing in Coral Reefs and the Blue Economy" is of particular interest for the work of the GFCR as it seeks to address the blockage in flows of private and public capital to the blue economy and to operationalize capital-efficient models for reef-first solutions. At least one country has already received co-investment - Fiji.

9.5 Development Banks

9.5.1 Asia Development Bank – 5b Action Plan

The Oceans Financing Initiative supports ADB developing member countries to catalyze financing for projects that will help protect and restore marine ecosystems and promote sustainable blue economies. The initiative will leverage public sector funds to create investment opportunities able to attract financing from a range of sources, including the private sector. Technical assistance and funds from ADB and donors, along with innovative financing instruments such as revenue guarantees and credit-enhanced blue bonds, will be used to reduce project risks and make them "bankable". ADB will work with development and financing partners from around the world to accelerate the investment needed to meet the Sustainable Development Goals, including SDG 14: Life Below Water.

9.5.2 Inter-American Development Bank – Natural Capital Lab

IDB's Natural Capital Lab serves as a one-stop shop for the IDB Group to drive innovation in the conservation, landscape, regenerative agriculture, biodiversity, and marine ecosystem finance spaces. It seeks to bridge the gap between traditional environmental and financial actors from the public and private sectors to incubate, accelerate, and scale new solutions to pressing problems. The Natural Capital Lab is a risk-tolerant hub within the IDB Group. Given that the solutions to many natural capital problems are cross-cutting, it pursues an agenda of blended finance projects with all parts of the IDB Group (IDB, IDB Invest, IDB Lab), in addition to its own projects, knowledge, and strategic partnerships.

9.5.3 World Bank – PROBLUE

PROBLUE is a new Multi-Donor Trust Fund, housed at the World Bank, that supports the development of integrated, sustainable and healthy marine and coastal resources. With the Blue Economy Action Plan as its foundation, PROBLUE contributes to the implementation of Sustainable Development Goal 14 (SDG 14) and is fully aligned with the World Bank's twin goals of ending extreme poverty and increasing the income and welfare of the poor in a sustainable way. PROBLUE is part of the World Bank's overall blue economy programme, which is worth around USD 5.6 billion in active projects, as of March 2020. PROBLUE Focuses on Four Key Areas: The management of sustainable fisheries and aquaculture Addressing threats posed to ocean health by marine pollution, including litter and plastics, from marine or land-based sources The sustainable development of key oceanic sectors such as tourism, maritime transport and off-shore renewable energy Building government capacity to manage marine resources, including nature-based infrastructure such as mangroves, in an integrated way to deliver more and long-lasting benefits to countries and communities

9.5.4 African Development Bank

The overarching objective of the African Development Bank (AfDB) Group is to spur sustainable economic development and social progress in its regional member countries (RMCs), thus contributing to poverty reduction. The Bank Group achieves this objective by: mobilizing and allocating resources for investment in RMCs; and providing policy advice and technical assistance to support development efforts.

9.6 International Initiatives

9.6.1 Bloomberg Vibrant Oceans

Bloomberg Philanthropies partnered with Paul Allen Family Foundation and others for the 50 Reefs project and now are supporting a programme called Vibrant Oceans. One continuing focus is on coral reef conservation and resilience working on in collaboration with outside partners including the Wildlife Conservation Society (WCS). The Bloomberg website describes the initiative as the following:

"Bloomberg's Vibrant Oceans Initiative works with world-class partners to ensure ocean ecosystems survive and thrive despite the growing threat of climate change. Launched in 2014 with an initial commitment of USD 53 million in three countries – Brazil, Chile, and the Philippines – Vibrant Oceans partners with coastal communities, nonprofit organizations, local and national governments, policy makers, and academic groups to advance evidence-based conservation practices and implement data-driven fisheries management policies around the world.

In October 2018, Bloomberg Philanthropies announced Phase II of Vibrant Oceans – making an USD 86 million investment to expand work into 10 target countries – Australia, the Bahamas, Chile, Fiji, French Polynesia, Indonesia, the Philippines, Tanzania, Peru and the United States. Bloomberg selected these countries because they are home to priority coral geographies, are top fishing nations, or are countries where fish is a major food source – or all three.

Building on the successes of Phase I, Vibrant Oceans will focus on the following goals for Phase II:

1. Promote adoption of high-impact, science-based fisheries and marine protection policies in at least 10 countries.
2. Protect at least 50 reef geographies that are projected to be less vulnerable to long-term climate impacts and can repopulate other reefs over time.
3. Support at least 20 countries to achieve fishing activity transparency in their national waters."

9.6.2 Blue Nature Alliance

The Blue Nature Alliance (BNA) is a multi-partner initiative (Conservation International, PEW, GEF, and others) that is taking a holistic approach to conserving 40-60 specific "ocean conservation areas" totalling 5% of the ocean by 2025. Their multifaceted approach includes efforts to support protection, production, governance, and sustainable finance for these areas over the long-term. At this stage, BNA is engaged only in grant making, but partners are interested in incorporating sustainable finance and potential investment opportunities.

9.6.3 International Coral Reef Initiative (ICRI)

The International Coral Reef Initiative (ICRI) is an informal partnership between Nations and organizations which strives to preserve coral reefs and related ecosystems around the world. Although the Initiative is an informal group whose decisions are not binding on its members, its actions have been pivotal in continuing to highlight globally the importance of coral reefs and related ecosystems to environmental sustainability, food security and social and cultural wellbeing. The work of ICRI is regularly acknowledged in United Nations documents, highlighting the Initiative's important cooperation, collaboration and advocacy role within the international arena.

9.6.4 The Ocean Risk and Resilience Action Alliance (ORRAA)

The Ocean Risk and Resilience Action Alliance is a multi-sector collaboration between governments, financial institutions, the insurance industry, environmental organisations and stakeholders from the Global South. Our purpose is to build resilience in the regions and communities most vulnerable to ocean risk, by pioneering finance and insurance products that incentivise investment in nature-based solutions. Our aim is to drive USD 500 million of investment into nature-based solutions by 2030, and surface at least 15 novel finance products by 2025 that incentivise private and blended finance into coastal natural capital.

9.6.5 Resilient Reefs – Great Barrier Reef Foundation

Working closely with the Great Barrier Reef Marine Park Authority, we help to regenerate and restore the Great Barrier Reef, building its resilience in the face of major threats. With the landmark review and

implementation of the Reef 2050 Long-Term Sustainability Plan, we're helping to deliver practical solutions and actions for the Reef more quickly, more efficiently and more effectively.

Resilient Reefs Initiative - While the field of coral reef ecology has long recognized the impact human communities have on reef health, and likewise the essential services healthy reefs provide to human communities, the Resilient Reefs Initiative (RRI) is the first global programme to deliver integrated resilience planning for reefs and human communities at scale. RRI brings together local communities, reef managers, and resilience experts from many fields to develop new solutions for combatting the effects of climate change and other local threats. We are working to broaden how reef management authorities understand risk and resilience, partnering with new stakeholders, and designing and implementing new actions that advance the health of reef ecosystems and the communities that depend on them—together. RRI is piloting this novel approach to resilience-based management with five World Heritage-listed coral reef sites: Great Barrier Reef, Australia; Ningaloo Coast, Australia; Lagoons of New Caledonia; Belize Barrier Reef Reserve System; and Rock Islands Southern Lagoon, Palau. The RRI includes a range of partnership including the Great Barrier Reef Foundation, UNESCO World Heritage Marine Programme, The Nature Conservancy's Reef Resilience Network, Columbia University's Center for Resilient Cities and Landscapes, Resilient Cities Catalyst and AECOM. The project is enabled by the BHP Foundation. RRI is part of the Great Barrier Reef Foundation's Reef Recovery 2030 – a ten-year campaign to turn the tide on coral reefs.

9.7 Key Financial Intermediaries and Platforms

9.7.1 Microfinance Institutions

BirdLife and Burung Indonesia - developed the idea of Village Resource Management Agreements (VRMAs) in order to halt harmful activities to the island's biodiversity and forests. Working with 27 communities, they formed agreements on forest protection, fire prevention and water source management, the results of which are monitored regularly. Besides conservation, Burung Indonesia also helps communities to explore economic activities that will improve local earnings without damaging natural habitats. In 2010 there were only ten small businesses in the area, but now there are more than a hundred, including livestock and fish husbandry, tree nurseries, coffee processing, a bakery and shops. 22 microfinance units serve the small businesses, giving owners needed initial support.

Fish Forever and BPI BanKo - Fisher Savings Clubs - The Philippines is within the top three countries for microfinance, aided by government programmes such as the Agri-fishery Microfinance programme. Rare Conservation's Fish Forever programme and the Bank of Philippines Islands microfinance branch BPI BanKo have begun to build microfinance products aimed at climate adaptation for small fishers. The programme includes digital banking solutions for those lacking access to conventional financial services. Already more than 5,000 people have banded together in a Savings Club and pooled some 2.5 million USD. The programme incentivizes participation in Fish Forever fisheries activities and beach cleanups with access to additional financial tools and perks.

Kiva - Crowd-funded Microloans - More than 1.7 billion people around the world are unbanked and can't access the financial services they need. Kiva is an international nonprofit, founded in 2005 in San Francisco, with a mission to expand financial access to help underserved communities thrive. We do this by crowdfunding loans and unlocking capital for the underserved, improving the quality and cost of financial services, and addressing the underlying barriers to financial access around the world. Through Kiva's work, students can pay for tuition, women can start businesses, farmers are able to invest in equipment and families can afford needed emergency care. Kiva has 1.8 million borrowers in 77 countries and USD 1.55B lent with 95.9% repayment rate. Using revolving funds (interest paid in

country). Kiva Labs Social Enterprise Programme for medium-sized borrowers has 200+ Field Partner MFIs.

MKUBA - Fund to Care for the Sea, Tanzania - A collaboration between FFI, MWAMBAO and GreenFi - Borrowers have to commit to actions that contribute to effective implementation of local conservation measures; some join a daily patrol to increase surveillance efforts, others plant mangroves in areas suitable for recovery - actions well-suited to supporting the local management plan. Creating a community-run credit scheme has raised the profile of local marine management and demonstrated to many that it can translate into economic benefits, bringing new opportunities to an area where access to credit is usually difficult or costly. Consultation with the fishers committee ensures the proposed actions are well-suited to supporting the local management plan.

9.7.2 Incubators, Accelerators and Venture Funds

Hatch Aquaculture Accelerator - Hatch aims to achieve the least-possible footprint of farmed and alternative seafood for the benefit of the oceans, terrestrial ecosystems and future generations. The Hatch Accelerator programme is looking for Pre-Seed or See startups with innovative and scalable solutions for relevant aquaculture problems as well as alternative seafood/protein. The programme distributes a total of USD 130,000 in funding and requires 8% of the startups in the form of a convertible loan note.

Katapult Ocean – Katapult Ocean focuses on (1) Energy (Wave, Tidal), (2) Transportation (Shipping, Ferries, Tourism), (3) Ocean Health (Cleanup, Habitat protection and restoration, Acidification), (4) Harvesting (Aquaculture, Fishing, Medicine, Desalination), (5) New Frontiers (Exploration, Floating Cities, New ways to use the ocean). Katapult Ocean invests in and supports startups that have a positive impact on the ocean. (1) Invest: Katapult Ocean invests in startups that build profitable businesses with a positive impact on the ocean. (2) Catalyze: Katapult Ocean catalyzes capital, talent, companies and startups to accelerate the blue shift in the ocean industries. (3) Steward: Katapult Ocean stewards ocean tech startups to achieve the UN SDGs with a main focus on SDG-14 (Life Below Water).

OceanHub Africa - Tourism, Watersports, Shipping, Harvest, Marine Energies in Africa. Their mission is to provide a platform - digitally, physically and emotionally -- where entrepreneurs, investors, researchers, businesses and other stakeholders can connect, inspire, collaborate and access the resources they need to succeed. The accelerator seeks to support ocean-minded start-ups with the express aim of nurturing an environmentally conscious and profitable economy that effectively mitigates the effects of global warming as well as the overexploitation and pollution of the oceans.

Okavango Capital Partners - Eco-Tourism focused in South and East Africa. Okavango supports conservation businesses in East and Southern Africa to achieve their full conservation impact and commercial potential. The practice of Conservation-lens investing involves: (1) Identifying conservation businesses that lack the time, expertise or resources to fulfill their conservation potential; (2) providing specialized value-addition to steer them towards maximum profit, enhanced social and environmental impact, and minimum harm for priority ecosystems.

Sustainable Ocean Alliance – Ocean Solutions Accelerator - Historically, key impact areas that been considered include aquaculture and fisheries, new materials and packaging, and ocean data. The Sustainable Ocean Alliance focuses on supporting startups developing scalable solutions addressing the targets of UN SDG 14. The programme consists of four weeks of immersive content, hands-on

mentorship, and transformative relationship-building tailored to each cohort. Over the last 3 years, 29 companies from 12 countries have graduated and raised USD 20 million in follow-on funding.

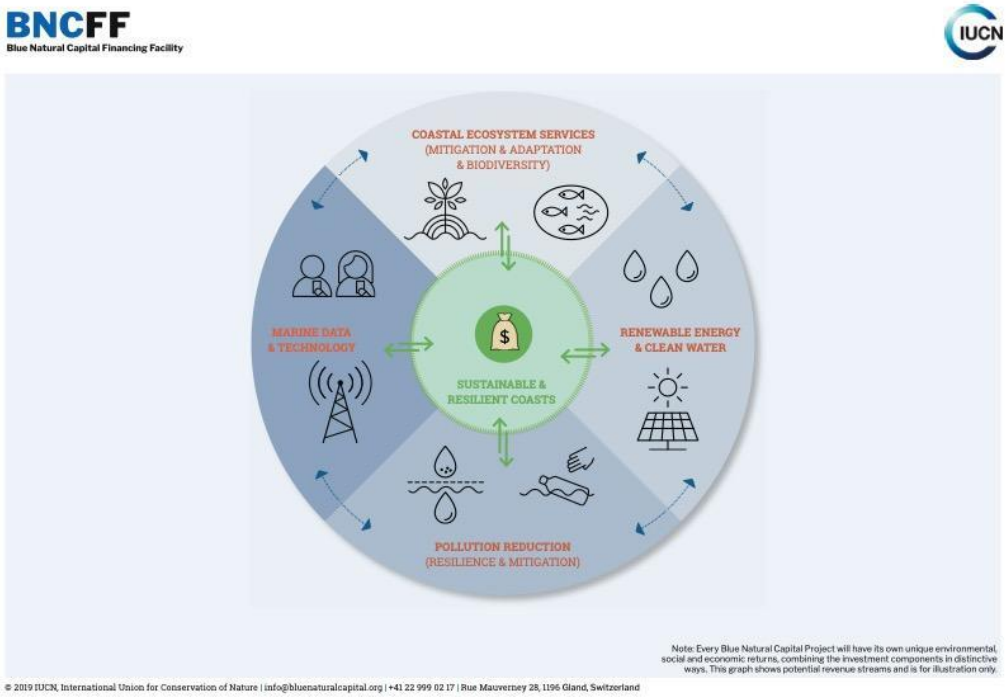
Sustainable Ocean Fund – Mirova - The Sustainable Ocean Fund creates investor value and social impact by providing growth capital to companies that harness the ocean's natural capital. The fund invests in scalable businesses in the real asset sector that build resilience in coastal ecosystems and create sustainable economic growth and livelihoods. In addition to strong financial returns, the fund's investments deliver substantial positive conservation impacts to the ocean and coastal habitats.

9.7.3 Technical Assistance Facilities

ANDE - Aspen Network of Development Entrepreneurs (Global) - A global network, ANDE comprises of more than 280 members in more than 150 countries. These members are of a variety of different types including: nonprofit investment funds, capacity development providers, research and academic institutions, development finance institutions, foundations, and corporations. Programme areas include: Advocacy and education, funding opportunities and resources, knowledge sharing and networking, metrics and evaluation, research, training and talent development.

Blue Natural Capital Finance Facility (BNCFF, IUCN)

IUCN's Blue Natural Capital Finance Facility was established to help build a pipeline of investable opportunities for blue natural capital globally. The following graphic provides an overview.



The BNCFF focuses on the following:

1. Nature-based solutions and ecosystem-centered sustainable business operations linking coastal ecosystem restoration and conservation to climate change adaptation and mitigation as well as sustainable resource management and use.
2. Modern data systems & marine technology supporting nature-based solutions (communication, planning and monitoring) and sustainable livelihoods (i.e. through availability of wireless networks).

3. Small-scale renewable energy and clean water solutions in coastal zones as new business and livelihood opportunities to reduce pressure on coastal ecosystems.

Tanzania - Anza - Enable businesses in Tanzania to grow by providing them with access to personalized and strategic capacity building, affordable capital and relevant networks. Anza offers a Business Foundations Accelerator - a 6 month intensive and tailored journey that ensures businesses have the foundations in place giving them the best opportunity for success. Through strategic consulting and hands-on skills training, we cover all areas of business including leadership, sales & marketing, bookkeeping, HR and more. The organization also offers an Investment Readiness Accelerator designed for later stage, high impact businesses with potential for large scale growth, a Growth Fund providing capital leases to entrepreneurs, giving them the necessary funding and tools they need to expand their businesses, access to a global network of experts & mentors, building a community to drive catalytic change and physical space for entrepreneurs to connect, collaborate and create at their "Anza Hubs".

The Challenge Fund - Part of the World Bank's Indonesia Sustainable Oceans Programme (ISOP), The Challenge Fund will work with potential investors on developing business plans for sustainable fisheries, promote private-sector investment opportunities in sustainable fisheries, share lessons learned from past investment successes, and build partnerships between fishing communities and sustainability-minded businesses.

Annex 10 Key Financial Intermediaries and Platforms

10.1 Microfinance Institutions

The second outcome of the GFCR is "transforming the livelihoods of coral reef-dependent communities." This outcome reflects the community elements of coral reef conservation and restoration; local communities dependent on coral reefs are perhaps the most important stakeholders for successful long term coral reef survival. The CFA team interviewed dozens of conservation and development practitioners across the priority coral reef countries, and those interviews have consistently pointed to the difficulty of conventional investments generating real positive impact for reef-dependent communities. There are multiple reasons for this situation described in the section on enabling conditions. Helping to transform community use of reef resources into more sustainable practices or alternatives livelihoods to reduce pressures on coral reefs also allows these communities to be more resilient to climate change. This section provides some background and explores ways to use microfinance institutions (MFIs) to support the transformation and resilience of coral reef dependent communities.

Microfinance focuses on small, non-conventional (low or zero collateral) loans for populations underserved by the traditional banking sector. It has been employed around the world to reach tens of millions of people in need of small loans for households, as individual entrepreneurs and to launch and grown micro, small and medium enterprises. MFIs have been shown to be effective at lifting individuals and communities out of poverty. Because many reef communities are often marginalized and lack access to formal employment and finance options, microfinance represents a key instrument to "localize" GFCR investments to these communities. Strategically employed, MFIs could help build sustainable livelihoods, resilience to climate-related disasters, help reduce environmental degradation, provide a buffer from economic shocks. In addition to the empowering effect of access to capital, the organizational effect of microfinance self-help groups can lead to greater self-advocacy in a variety of contexts, including among traditionally marginalized populations such as women and indigenous peoples.

Microfinance Institutions are extremely diverse and include for-profit entities committed to producing strong returns for their investors as well as non-profits with social missions, as well as government supported entities. For the socially driven organizations, their primary objective is providing access to capital at reasonable rates to underserved communities. Other social objectives such as women empowerment are also common. Environmental objectives are quite rare although many mission driven MFIs would consider environmental impact objectives if provided the technical or financial support to integrate that into their operations. Given, the GFCR's mission to invest in coral reef conservation in ways that enhance both community-resilience and coral-positive impacts, some type of "sustainable coral investment principles" and indicators would need to be developed and shared with MFIs and their borrowers.

Compensation or credit ratings could be tied to coral positive activities or enterprises as being explored by a range of partners including Rare Conservation and GreenFi. Depending on measurement of indicators, a given community could receive more, or less, favourable interest rates or access to credit. Funds generated from higher interest rates, or premiums, could be pooled and used by the community or MFI to pay for technical assistance to meet the community's sustainability targets. It is worth exploring the possibility of collaboration with Locally Managed Marine Areas (LMMA) networks as can be found in Indonesia, the Philippines, Madagascar, and elsewhere to implement a joint programme with MFIs as a means to encourage and finance sustainable activities.
Some promising MFI supported individual, or SME investments include the following:

- Sustainable small-scale fisheries
- Gleaning - octopus, sea cucumber, etc. especially financing no take periods
- Aquaculture - ornamental fish, coral farming, food fish, etc.
- Clean energy and refrigeration for improved supply chains and decreased charcoal-related deforestation
- Sustainable small-scale agriculture
- Community ecotourism

Examples of existing MFI associated conservation and sustainable use efforts are provided here.

Agri-Fishery Microfinance Programme - The Agri-Fishery Microfinance Programme (AFMP) is a joint programme of the Department of Agriculture (DA), the Agricultural Credit Policy Council (ACPC), and the Land Bank of the Philippines (LBP) to support farmers/fisherfolk engaged in the priority commodities of the DA. Created by virtue of ACPC Resolution No. 31-01 Series of 2007, the AFMP provides agri-fishery loans to qualified institutional borrowers and to small farmers and fishing households.

BirdLife and Burung Indonesia - developed the idea of Village Resource Management Agreements (VRMAs) in order to halt harmful activities to the island's biodiversity and forests. Working with 27 communities, they formed agreements on forest protection, fire prevention and water source management, the results of which are monitored regularly. Besides conservation, Burung Indonesia also helps communities to explore economic activities that will improve local earnings without damaging natural habitats. In 2010 there were only ten small businesses in the area, but now there are more than a hundred, including livestock and fish husbandry, tree nurseries, coffee processing, a bakery and shops. 22 microfinance units serve the small businesses, giving owners needed initial support.

Fish Forever and BPI BanKo - Fisher Savings Clubs - The Philippines is within the top three countries for microfinance, aided by government programmes such as the Agri-fishery Microfinance programme. Rare

Conservation's Fish Forever programme and the Bank of Philippines Islands microfinance branch BPI BanKo have begun to build microfinance products aimed at climate adaptation for small fishers. The programme includes digital banking solutions for those lacking access to conventional financial services. Already more than 5,000 people have banded together in a Savings Club and pooled some 2.5 million USD. The programme incentivizes participation in Fish Forever fisheries activities and beach cleanups with access to additional financial tools and perks.

Gizo Environment, Livelihood and Conservation Association (GELCA) Savings Group - conservation and reliance on small activities to generate income and savings while teaching financial literacy. Gizo or Ghizo is an island of western Solomon Islands and contains a locally managed marine area, one of several in the Solomon Islands, and has had major successes in managing its marine resources.

Karimunjawa Islandscape - Kota Kita - an NGO that is guiding the sustainable development of the Karimunjawa islandscape, an ecotourism hotspot in Indonesia threatened by increased mass tourism and unregulated development. The trust will use diversified funding and develop creative financial products, such as microloans, to incentivize investments in resilient village infrastructure and conservation, improving the resilience of the marine ecosystem through the development of sustainable tourism-based economy driven by the local communities.

Kiva - Crowd-funded Microloans - More than 1.7 billion people around the world are unbanked and can't access the financial services they need. Kiva is an international nonprofit, founded in 2005 in San Francisco, with a mission to expand financial access to help underserved communities thrive. We do this by crowdfunding loans and unlocking capital for the underserved, improving the quality and cost of financial services, and addressing the underlying barriers to financial access around the world. Through Kiva's work, students can pay for tuition, women can start businesses, farmers are able to invest in equipment and families can afford needed emergency care. Kiva has 1.8 million borrowers in 77 countries and USD 1.55B lent with 95.9% repayment rate. Using revolving funds (interest paid in country). Kiva Labs Social Enterprise Programme for medium-sized borrowers has 200+ Field Partner MFIs.

KOMIDA - KOMIDA manages 138 branches in 12 provinces which serve around 325,000 members (2016). It is considered one of the biggest MFI cooperatives in Indonesia. KOMIDA also offers savings products and a credit risk fund.

Microfinance for Non-manta Livelihoods - Following market research and community consultations, a sustainable fisheries cooperative was established. Members benefit from access to resources and capital for developing non-manta livelihoods, focusing on five business units: a mini purse seine fishing vessel, ice supply, microfinance loans, fish drying and a mini-market with basic provisions at discounted rates. Membership is contingent on signing a "no megafauna hunting" agreement, ratified by the local government, which links benefits to pro-conservation behaviour.

MKUBA - Fund to Care for the Sea, Tanzania - A collaboration between FFI, MWAMBAO and GreenFi - Borrowers have to commit to actions that contribute to effective implementation of local conservation measures; some join a daily patrol to increase surveillance efforts, others plant mangroves in areas suitable for recovery - actions well-suited to supporting the local management plan. Creating a community-run credit scheme has raised the profile of local marine management and demonstrated to many that it can translate into economic benefits, bringing new opportunities to an area where access

to credit is usually difficult or costly. Consultation with the fishers committee ensures the proposed actions are well-suited to supporting the local management plan.

Premiere Agence de Microfinance - Supports integrated rural development project in Sofia region of Madagascar with microfinance for urban and rural (agric.) enterprises.

10.2 Incubators, Accelerators and Venture Funds

Incubators, accelerators and venture capital funds (VCs) target start-up and early-stage companies with significant growth potential. There is an enormous diversity of types of incubators with some focused on social impact to others solely focused on niche aspects of technology – such as blockchain. Many incubators and venture support services could play a key role in pipeline development for the GFCR both on the local and global levels. For example, incubators (and accelerators, but going forward will only use the term "incubators") that operate on a global level can help develop technologies that could be applied at target priority reef sites. While the focus of the GFCR is primarily emerging markets, global incubators can also play a key role in identifying impactful projects with strong returns on investment in more developed markets and support the scaling or replication of these models in the GFCR's target countries. Incubators that focus on a local level can build capacity, knowledge and expertise among a local startups and entrepreneurs to develop highly impactful businesses and projects that benefit coral reefs and local economies.

The Global Fund for Coral Reefs can employ both the Grant and Investment Windows to support incubators in the development of robust coral-positive pipelines. Grant Window financing can be used encourage certain ocean focused incubators to develop coral-specific financing windows or programmes. This could be achieved through loans, financial guarantees or direct grant funding. The idea of a global startup challenge for coral reefs in association with the 1000 Ocean Startups network could be established by the Fund and winning applications could receive startup funding and a place in one of the participating incubators.

Venture capital funds and funds associated with incubators could also provide targeted investment in coral reef businesses with some support from the Fund. Support could be a simple as public declaration of partnerships, or some type of investment or financial guarantee that facilitates the VC in their financial raise. This is especially valuable for first time funds which are difficult to raise. A financial guarantee from the UNCDF (Grant Window) could greatly increase a first fund's ability to raise capital. In exchange, the fund would dedicate a certain amount of resources to coral reef business investments.

As with the MFIs described above, it will be essential for the GFCR to establish a set of investment principles that can be shared with partner incubators and VCs to assure that investments are targeting coral positive outcomes and avoiding any harm to communities or ecosystems.

Some examples Incubators are provided below.

Bahamas - Access Accelerator, the Small Business Development Center (SBDC) - The Government of The Bahamas has created an MSME policy and the Small Business Development Centre (SBDC) will take advantage of that policy to benefit those who want to get into business and those already in business who want to improve outcomes. Primary goals include: (1) improving the environment to enable small business to flourish; (2) increasing direct financing to MSMEs; (3) creation and promotion of innovative programmes to support MSMEs; and (4) fostering a culture of entrepreneurship and innovation, with a particular focus on marginalized groups. Partnership is a principal strength of the SBDC model.

Public/private partners include: University of The Bahamas (UB), The Bahamas Chamber of Commerce and Employers Confederation (BCCEC) and the Ministry of Finance.

Hatch Aquaculture Accelerator - Hatch aims to achieve the least-possible footprint of farmed and alternative seafood for the benefit of the oceans, terrestrial ecosystems and future generations. The Hatch Accelerator programme is looking for Pre-Seed or See startups with innovative and scalable solutions for relevant aquaculture problems as well as alternative seafood/protein. The programme distributes a total of USD 130,000 in funding and requires 8% of the startups in the form of a convertible loan note.

Katapult Ocean – Katapult Ocean focuses on (1) Energy (Wave, Tidal), (2) Transportation (Shipping, Ferries, Tourism), (3) Ocean Health (Cleanup, Habitat protection and restoration, Acidification), (4) Harvesting (Aquaculture, Fishing, Medicine, Desalination), (5) New Frontiers (Exploration, Floating Cities, New ways to use the ocean). Katapult Ocean invests in and supports startups that have a positive impact on the ocean. (1) Invest: Katapult Ocean invests in startups that build profitable businesses with a positive impact on the ocean. (2) Catalyze: Katapult Ocean catalyzes capital, talent, companies and startups to accelerate the blue shift in the ocean industries. (3) Steward: Katapult Ocean stewards ocean tech startups to achieve the UN SDGs with a main focus on SDG-14 (Life Below Water).

Kenya Climate Innovation Center (KCIC) - Climate Change (generally) in Kenya. KCIC offers incubation, capacity building and financing options to new, small and medium business ventures and Kenyan entrepreneurs that are developing innovations to address the challenges of climate change. They provide holistic and country-driven support to accelerate the development, deployment and transfer of locally relevant climate technologies. The vision of KCIC is to be a one stop shop supporting innovative climate change solutions and suitable development in Kenya.

Ocean Plastic Prevention Accelerator - Local Waste Management and Recycling Sector, Indonesia. The Accelerator aims to build a social innovation ecosystem to address ocean plastic leakage within Indonesia and implements business acceleration, networking and research activities for and with local and international innovators to create a community of stakeholders that enables innovative solutions for local waste management and recycling sector.

OceanHub Africa - Tourism, Watersports, Shipping, Harvest, Marine Energies in Africa. Their mission is to provide a platform - digitally, physically and emotionally -- where entrepreneurs, investors, researchers, businesses and other stakeholders can connect, inspire, collaborate and access the resources they need to succeed. The accelerator seeks to support ocean-minded start-ups with the express aim of nurturing an environmentally conscious and profitable economy that effectively mitigates the effects of global warming as well as the overexploitation and pollution of the oceans.

Okavango Capital Partners - Eco-Tourism focused in South and East Africa. Okavango supports conservation businesses in East and Southern Africa to achieve their full conservation impact and commercial potential. The practice of Conservation-lens investing involves: (1) Identifying conservation businesses that lack the time, expertise or resources to fulfill their conservation potential; (2) providing specialized value-addition to steer them towards maximum profit, enhanced social and environmental impact, and minimum harm for priority ecosystems.

Sustainable Ocean Alliance – Ocean Solutions Accelerator - Historically, key impact areas that been considered include aquaculture and fisheries, new materials and packaging, and ocean data. The

Sustainable Ocean Alliance focuses on supporting startups developing scalable solutions addressing the targets of UN SDG 14. The programme consists of four weeks of immersive content, hands-on mentorship, and transformative relationship-building tailored to each cohort. Over the last 3 years, 29 companies from 12 countries have graduated and raised USD 20 million in follow-on funding.

Sustainable Ocean Fund – Mirova - The Sustainable Ocean Fund creates investor value and social impact by providing growth capital to companies that harness the ocean's natural capital. The fund invests in scalable businesses in the real asset sector that build resilience in coastal ecosystems and create sustainable economic growth and livelihoods. In addition to strong financial returns, the fund's investments deliver substantial positive conservation impacts to the ocean and coastal habitats.

The &Green Fund - uses a "production, protection, and inclusion" model, and provides investments to improve agricultural productivity while protecting forests. It does this with a criterion that for any project financed, the area of land that the project commits to protecting must be 5 times as much as the area of land used for agricultural production. In return, the fund offers financing with highly favorable conditions. Loan tenor can be up to 15 years, and repayments only need to commence after the 10th year. The fund can offer large amounts of capital (200 million USD), with interest rates significantly below the market rate. The de-risking function is carried out by 400 million USD of grants donated by the Norwegian International Climate and Forests Initiative (NICFI), as well as other foundations and corporations. In total, the &Green Fund is targeting 2 billion USD of investments and the conservation of 5 million hectares of tropical forest, with Indonesia as one of several focus countries.

World Fish Incubator - Aquaculture productivity and efficiency - World Fish Incubator seeks to boost aquaculture productivity and efficiency and help communities reliant on fish as a major source of income and nutrition by assisting the development of small and medium enterprises (SMEs) that form a crucial element of global fish production. With demand for fish rising along with population growth, this programme supports starts SMEs in the adoption of sustainable technologies to help them achieve their potential. It provides the kinds of knowledge-sharing support they need to scale up: access to capital, business management expertise and the technical know-how to make a positive impact on local economies while fostering practices that preserve valuable ecosystems.

10.3 Technical Assistance Facilities

Many small-scale businesses or community-based initiatives have the potential to become agents of change for coral reef conservation if provided the right tools including technical and financial support. These models can have direct and indirect positive impacts on both the coral reefs and coastal community livelihoods that are intricately linked. As described above, most of these business models are hard to support with a global Fund as they provide moderate return on investment, are small scale, and many are operating in the informal economy. Technical Assistance Facilities (TAF) could be a replicable solution to these challenges and many of the Track I programmes are seeking to establish TAFs as part of their implementation strategy.

A Technical Assistance Facility (TAF) refers to a facility offering a set of services that serve to accelerate investment and enhance the commercial viability of businesses or finance instruments. Technical assistance can help increase investment readiness, mitigating some level of risk and increasing the probability of successful investment and implementation. They can also function as an aggregator – pulling together a range of investment deals into one entity for financing. This can be achieved by providing targeted technical support and by providing funding. For example, TAFs can improve governance, financial planning, management, technology, and strategic planning all of which can prove

essential for attracting of capital (Divakaran et al., 2014). Overall, TAFs can considerably improve the success of the GFCRs support to SMEs. The figure below extracted from Divakaran et al., (2014) serves as a mental model showing at what stages TAFs could come into play assisting SMEs to reach investability.

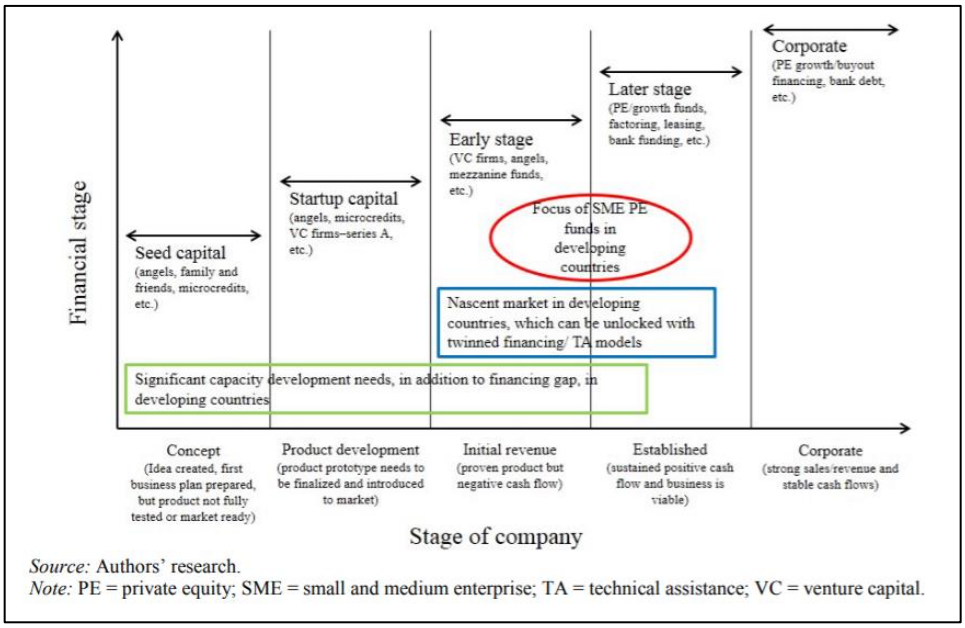


Figure 3 Financing Start-up cycle Divakaran et al. (2014)

Examples of Technical Assistance Facilities

ANDE - Aspen Network of Development Entrepreneurs (Global) - A global network, ANDE comprises of more than 280 members in more than 150 countries. These members are of a variety of different types including: non-profit investment funds, capacity development providers, research and academic institutions, development finance institutions, foundations, and corporations. Programme areas include: Advocacy and education, funding opportunities and resources, knowledge sharing and networking, metrics and evaluation, research, training and talent development.

Access Accelerator – Small Business Development Center (Bahamas) - The primary goals of the Access Accelerator are to: improve the environment to enable small businesses to flourish, increase direct financing to MSME's, the creation and promotion of innovative programmes to support MSMEs, and to foster a culture of entrepreneurship and innovation (with a focus on marginalized groups).
Public/private partners include: The University of the Bahamas (UB), The Bahamas Chamber of Commerce and Employers Confederation (BCCEC) and the Ministry of Finance.
An initiative of the DTI (Department of Trade and Industry) and the Philippine Center for Entrepreneurship (PCE) to help the country's micro and small enterprises (MSEs) through three key components: (1) the Mentor ME (micro entrepreneurs) programme, a coaching and mentoring approach where large corporations teach MSEs on different aspects of business operations; (2) the Adopt-an-SSF (Shared Service Facility) programme, which aims to help micro entrepreneurs by providing them access to SSFs in their community; and (3) the Inclusive Business (IB) model where MSEs are linked into large companies' value chains.

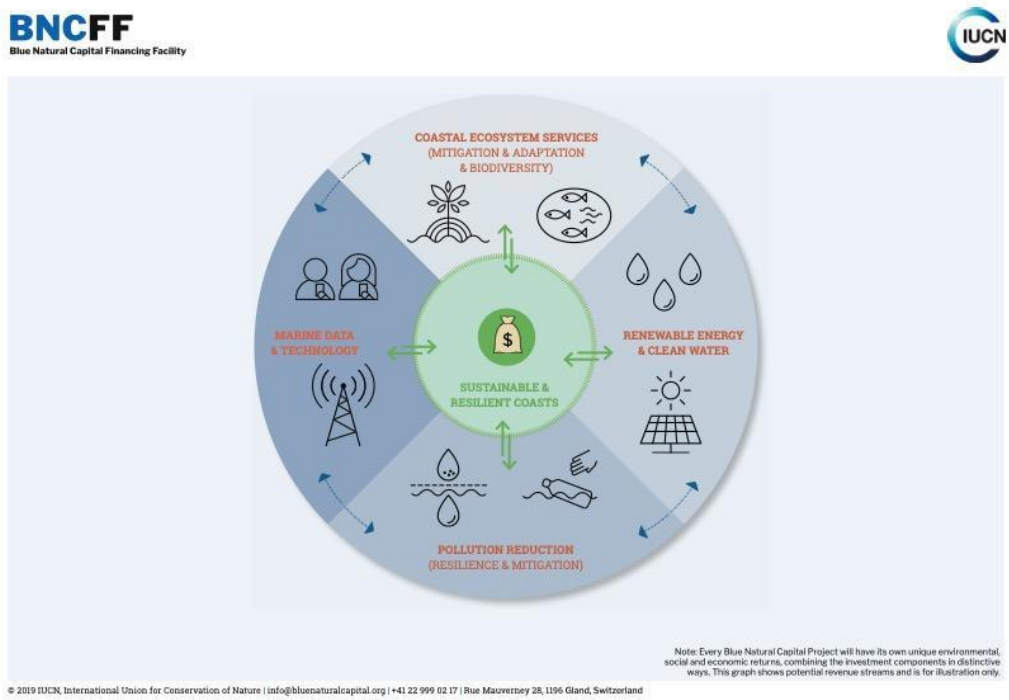
ANZA - ANZA enables businesses in Tanzania to grow by providing them with strategic capacity building, affordable capital and relevant networks. ANZA has various elements and activities including: Business

Foundations Accelerator (leadership, sales & marketing, bookkeeping, etc.), Investment Readiness Accelerator (later stage, high impact businesses with potential), Growth Fund (providing capital leases to entrepreneurs), a global network (access to experts and mentors), ANZA Hubs (physical space for entrepreneurs to connect, collaborate and create). ANZA are the ClimateLaunchPad lead for Tanzania. ClimateLaunchPad is the world's largest green business ideas competition.

Bahamas - Access Accelerator, the Small Business Development Center (SBDC) - The Government of The Bahamas has created an MSME policy and the Small Business Development Centre (SBDC) will take advantage of that policy to benefit those who want to get into business and those already in business who want to improve outcomes. Primary goals include: (1) improving the environment to enable small business to flourish; (2) increasing direct financing to MSMEs; (3) creation and promotion of innovative programmes to support MSMEs; and (4) fostering a culture of entrepreneurship and innovation, with a particular focus on marginalized groups. Partnership is a principal strength of the SBDC model. Public/private partners include: University of The Bahamas (UB), The Bahamas Chamber of Commerce and Employers Confederation (BCCEC) and the Ministry of Finance.

10.3.1 Blue Natural Capital Finance Facility (BNCFF, IUCN)

IUCN's Blue Natural Capital Finance Facility was established to help build a pipeline of investable opportunities for blue natural capital globally. The following graphic provides an overview.



The BNCFF focuses on the following:

4. Nature-based solutions and ecosystem-centered sustainable business operations linking coastal ecosystem restoration and conservation to climate change adaptation and mitigation as well as sustainable resource management and use.
5. Modern data systems & marine technology supporting nature-based solutions (communication, planning and monitoring) and sustainable livelihoods (i.e. through availability of wireless networks).

6. Small-scale renewable energy and clean water solutions in coastal zones as new business and livelihood opportunities to reduce pressure on coastal ecosystems.

Fiji, Solomon Islands - Business Link Pacific (BLP) - Provides Technical Assistance and other services to SMEs in the Pacific. Operates in Fiji, Vanuatu Samoa, Papua New Guinea, Solomon Islands and Cook Islands. BLP assists small and medium sized businesses across a range of sectors to access support in the following areas. BLP connects small and medium sized businesses in the Pacific to local advisory services. The BLP quality approved network of advisors offers accessible services for business growth. Private sector development programme funded by the New Zealand Ministry of Foreign Affairs and Trade (MFAT). They offer "Adaptation Grants" that target businesses that have been impacted by COVID-19 and have innovative ideas on how to adapt to the current business environment or want to take advantage of new business opportunities. Concessionary lending – BLP is working on building partnerships with financial institutions across the Pacific to improve SME access to loan financing. More information about the concessionary lending will be available in early 2021.

Indonesia - Bangga Buatan - A national initiative to support micro, small and medium enterprises (MSMEs) in Indonesia. The movement, called #BanggaBuatanIndonesia, which means Proud of Indonesian Products, is supported by Indonesian president Joko Widodo and launched by the Indonesian E-commerce Association (IdEA) together with its member companies in the country. The movement is aimed at encouraging MSMEs to go digital, and expand market reach, even to remote areas, by working with digital platforms like JD.ID, Lazada, Tokopedia, Gojek, and Grab. The digital platforms are expected to provide education and training for MSMEs who have difficulties starting businesses online.[40]

Indonesia - Pusat Layanan Usaha Terpadu (PLUT KUMKM) - MSME Support Center - PLUT KUKM was initiated by the Ministry of Cooperatives and SMEs in order to provide business support to MSMEs. Currently there are 42 PLUT KUKM centers in 16 provinces across Indonesia. The centers are financed by the state's budget. Services provided to enterprises under the programme are (1) Business consultation (HR development, product quality improvement, intellectual property rights, business management, among others.) Mentoring (providing business mentor) (2) Assisting MSME in obtaining financing (connecting with banks, assisting in preparing loan proposal, and so on.) (3) Marketing and promotion (product exhibitions, connecting with supermarkets, better packaging, among other things.) (4) Business training (technical training, accounting and bookkeeping, taxation, and other– business related activities.) (5) Networking (facilitating networking with larger companies and other institutions).

Kenya - Emerging Leaders Foundation - The Emerging Leaders Foundation Africa (ELF-Africa) exists to empower, support and accompany young women and men to achieve meaningful, dignified and impactful participation in governance, economy and public affairs at all levels of society. Anchored on our foundational values-based approach to leadership as service. ELF's vision is pursued through three programme pillars namely the Governance & Civic Engagement, Economic Empowerment, Livelihoods & Opportunity, and our signature Leadership Development Programme. Through life skills training and mentorship, grounding in civic consciousness and responsibility, professional development and practical exposure to the world of work, the three programme pillars collectively provide platforms, tools and linkages to discover, inspire and empower the young women and men to transform their communities even as they thrive individually.

[40] https://jdcorporateblog.com/jd-id-joins-national-initiative-to-support-msmes-in-indonesia

Maldives - Ministry of Economic Development - The Maldives government's SME Policies are (1) Provide SMEs with subsidies to minimize the difference between the rich and the poor and to encourage a business environment that will extend more economic benefits to the public. (2) Establish an institution and develop human resources required for the development of SMEs within the Food Security sector. (3) Create more opportunities for SME participation in the three main industries, tourism, fisheries and agriculture, through the formulation of relevant policies. Assist and facilitate SME participation in agriculture and transport and infrastructure development sectors. (4) Provide technological capacity for SMEs to expedite the growth and development, given that the development of SMEs is crucial to economic progress.

Philippines - Kapatid Mentor Me Project - An initiative of the DTI (Department of Trade and Industry) and the Philippine Center for Entrepreneurship (PCE) to help the country's micro and small enterprises (MSEs) through three key components: (1) the Mentor ME (micro entrepreneurs) programme, a coaching and mentoring approach where large corporations teach MSEs on different aspects of business operations; (2) the Adopt-an-SSF (Shared Service Facility) programme, which aims to help micro entrepreneurs by providing them access to SSFs in their community; and (3) the Inclusive Business (IB) model where MSEs are linked into large companies' value chains.

Talanoa Consulting - Multi-disciplinary consultancy firm based in Suva, serving Fiji and the Pacific Islands. Their work focus includes climate change, disaster risk reduction and resilience, women's economic empowerment and environmental conservation. Talanoa provides expertise in research, social and economic analysis, monitoring and evaluation, as well as other targeted aid to firms to promote private-sector investment opportunities.

Tanzania - Anza - Enable businesses in Tanzania to grow by providing them with access to personalized and strategic capacity building, affordable capital and relevant networks. Anza offers a Business Foundations Accelerator - a 6 month intensive and tailored journey that ensures businesses have the foundations in place giving them the best opportunity for success. Through strategic consulting and hands-on skills training, we cover all areas of business including leadership, sales & marketing, bookkeeping, HR and more. The organization also offers an Investment Readiness Accelerator designed for later stage, high impact businesses with potential for large scale growth, a Growth Fund providing capital leases to entrepreneurs, giving them the necessary funding and tools they need to expand their businesses, access to a global network of experts & mentors, building a community to drive catalytic change and physical space for entrepreneurs to connect, collaborate and create at their "Anza Hubs".

The Challenge Fund - Part of the World Bank's Indonesia Sustainable Oceans Programme (ISOP), The Challenge Fund will work with potential investors on developing business plans for sustainable fisheries, promote private-sector investment opportunities in sustainable fisheries, share lessons learned from past investment successes, and build partnerships between fishing communities and sustainability-minded businesses.

Annex 11 GFCR – Pipeline Scoping Analysis (see PDF)

Please see attached PDF document titled "Annex 11: GFCR – Pipeline Scoping Analysis"