# IMPACT INVESTMENT IN MARINE CONSERVATION

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# IMPACT INVESTMENT IN MARINE CONSERVATION

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**Abstract:** Threats to our ocean are climbing both public and political agendas. Marine protected areas (MPAs) are a promising example of Nature-Based Solutions that can protect diversity while delivering ecosystem services when used with a rigorous evidence-based approach, effective management and the right investment. However, insufficient funding for expansion and effective management of MPAs remains a challenge; one that particularly affects developing countries. During the last ten years, a community of investors seeking positive social and environmental returns in addition to financial, have stepped in to fill the marine conservation financing gap. Innovative governance and financial mechanisms must be explored at all levels to provide adequate, flexible and timely funding for MPA operations. Collaborative management partnerships are proven vehicles through which this challenge can be addressed, by creating a more investable ("bankable") structure around MPAs. The main advantages of these partnerships are to improve entrepreneurial approaches to the management of Protected Areas and, for Governments, to reduce the financial burden on Public Budgets.

An innovative and scalable collaborative management approach has been recently implemented in the Dominican Republic for the South East Coral Reef Marine Sanctuary. Blended finance solutions have been used to cover the up-front capital needs and MPA revenues are being generated for MPA management and investor returns, via a range of sustainable finance tools including fees paid by visitors and sales of blue carbon credits. Beyond protecting biodiversity, potential benefits include supporting ocean ecosystems, enhanced resilience to climate change, and providing food and income for local communities by supporting sustainable fisheries and tourism. This approach is expected to be transformative for MPAs, and precedent-setting for marine conservation worldwide. After presenting in detail the context of marine impact investment, the enabling conditions to scale up the Dominican Republic approach is discussed.

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The solution can be scaled-up + is very attractive for impact investors. For some MPAs: ok, re finance and improved management capacities. BUT for most MPAs it is an expensive solution – financial burden. Find other solutions: Blended finance solution, impact bonds, redistribution.

## I. INTRODUCTION

### Marine conservation and the financing gap

Threats to our ocean are climbing both public and political agendas (Claudet et al. 2020). The UN 'Decade of Ocean Science for Sustainable Development' begins in 2021; special ambassadors and envoys have been appointed to mobilise action. But for real impact, positive intentions must deliver concrete initiatives that protect the ocean and involve the coastal communities whose livelihoods depend on it (Gurney et al. 2015; Bennett et al. 2019). Marine protected areas (MPAs) are a promising example of Nature-Based Solutions that can protect diversity while delivering ecosystem services when used with a rigorous evidence-based approach, effective management and the right investment (Gill et al. 2017; Claudet 2018). Potential ecosystem services include enhanced resilience to climate change, and food and income provision for local communities by supporting sustainable fisheries and tourism (Roncin et al. 2008; Leenhardt et al. 2015). Several international bodies have adopted MPAs as a tool to achieve national biodiversity targets and multiple Sustainable Development Goals.

However, insufficient funding for expansion and effective management of MPAs remains a challenge (Gill et al. 2017); one that particularly affects developing countries (Marinesque et al. 2012).1 Worldwide, 65% of MPAs are estimated to have inadequate management budgets and 91% to have inadequate staff capacity (REF). Rapid expansion without the necessary investment could see an explosion of 'paper parks', which fail to meet social or ecological goals and cannot financially sustain themselves (REF).

### Impact investing: strong growth not yet reaching marine conservation

#### Background & Definition

The concept that economy and ecology can be mutually beneficial has its roots in the 1970s and evolved in the 1980s to include discussions about sustainable development (REF). Businesses began reducing environmental damages by engaging in "corporate social responsibility." (REF) In the 1990s, the term "triple bottom line" to denote economic, ecological, and social performance became a popular catchphrase among businesses that aimed for more than just financial profits (REF). Economists refer to the triple bottom line as "utility maximization," where utility can include economic, environmental, and social targets (REF). Emerson describes blurring the lines between natural, financial, and social capital and aiming for "blended value." (REF)

The latest iteration in this trend is "impact investing," which has been defined by the Global Impact Investing Network (GIIN) as "investments made into companies, organizations, and funds with the intention to generate social and environmental impact alongside financial return." (REF) In this definition and in this article, the term "impact" refers to positive impacts or benefits such

as cleaner water, more jobs, or greater protection for species. Unlike corporate social responsibility, which tries to reduce negative impacts of firms' economic activity, impact investing is characterized by the intent to produce net positive environmental or social outcomes.
Impact investment is growing rapidly as private investors seek positive, measurable social and environmental gains alongside financial returns. The Global Impact Investing Network (GIIN) reported deals worth US$35 billion in 2017; up 17% from 2016. At the close of 2018, the industry was worth an estimated US$502 billion.3 Investments concentrated on energy (15%), microfinance (13%) and other financial services (11%). But conservation projects, particularly around marine ecosystems, are not attracting impact capital at this pace, largely due to a shortage of attractive opportunities with track records.

### Marine conservation impact investment: track record and challenges

#### Impact investment in conservation

To be updated – GIIN, forest trends, Credit Suisse A small but growing proportion of impact investments focus on environmental impacts. For example, a recent study backed by JP Morgan and The Nature Conservancy estimated that US$8.2 billion has been invested in conservation efforts since 2004 (REF). A 2016 report by Credit Suisse and McKinsey Center for Business and Environment estimated that up to US$200-400 billion between 2016 and 2020 might be invested in conservation finance (REF).
Presentation of the paper
Conservation projects, particularly around marine ecosystems, are not attracting impact capital at the same pace as the rest of the impact investment market (GIIN, 2018), largely due to a shortage of investment-ready projects and organisations developing future opportunities. Development finance being a scarce and precious resource, the mobilization of additional funds from commercial investors into marine conservation is indispensable for the meeting of financing needs of Agenda 2030.

## II. THE DOMINICAN REPUBLIC PROJECT

### Context

The MPA "Arrecifes del Sureste" in the Dominican Republic is almost 8000km2, covering just around 100 km coast and encompassing coral reef ecosystems, several major urban centers and 2 of the country's primary tourism centers (receiving >4M visitors annually).
The MPA was designated in 2009 and has been mostly inactive since, hence could be considered a "paper park".
On demand on Government, an agreement to co-manage the MPA with a consortium of non-profit entities was designed. The agreement was signed in 2018 and memorialized in a contract that outlines the responsibilities of each party and clearly allocates risk.
**Figure 1.** The Blue finance collaborative management model

### Parties

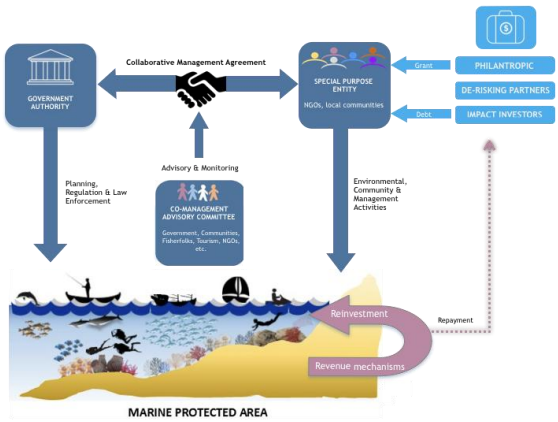
The government will maintain its core functions and be responsible for regulation and enforcement of uses and zonation, the set-up of user fees and maintenance of specific on-shore facilities. The functions and staff of public agencies (e.g. Coast Guard, Marine Police, Fisheries, Environment and other government agencies) will be maintained and their work continued.
A non-profit 'Special Purpose Entity' (SPE) to manage day-to-day operations was established. The SPE is comprised of local conservation NGOs, local foundations of the major tourism holdings in the country and other associations.
A Stakeholders Advisory Committee (SAC) was established to participate in the co-management, which provides regular inputs into the zoning, management, uses and enforcement process. Its membership includes government agencies, tourism associations, local communities, fisherfolk, hoteliers, developers, research institutions, NGOs, civil society and the boating community.

### Enforcement

The proposed plan for enforcement in the Sanctuary will see "soft enforcement" from the MPA staff and "hard enforcement" from the regulatory agencies. In DR, the legislation allows the agencies to appoint non-government officers with various powers of searching and detaining for marine infractions. In addition to these measures, self-enforcement from Fishers and other stakeholders will be encouraged via education and financial incentives.

| Activities | Operator | Government | Entity |
|---|---|---|---|
| Enforcement | ● | ● | NCC, Coast-guard |
| Education | ● | | |
| Marketing | ● | | |
| Monitoring | | ● | CZMU |
| Maintenance | ● | | |

Figure 1: Distribution of activities between the BMMA operator and the government




### Monitoring

A common set of Key Performance Indicators (KPIs) and result metrics has been developed with and for all partners, while specific reporting arrangements have been set-up to guarantee that the SPE is implementing activities as expected. An initial list of KPIs of conservation impacts (e.g. biodiversity metrics), social impacts (e.g. livelihood improvement, gender equity) and management impacts (e.g. MPA indicators of performances) have been agreed with partners. Initial data will be collected to produce a baseline in terms of indicators. Environmental, Socio-economic and Management audits will be carried out annually by the

SPE to assess the KPIs, supplemented by external audits, biennially carried out by independent members.
Management audits (which have also social and environmental elements) are proposed to be based on the WWF´s Management Effectiveness Tracking Tool (METT). This is a generic system developed to assess protected area management effectiveness.
Regular reporting will be submitted to the Government, the co-management advisory Committee and the investors. Reports will describe progress, issues, recommendations, financial status and variance in the KPIs.
Environmental and Social Action Plans (ESAP) has been agreed to with the Impact Investors. Based on IFC´s Performance Standards, the ESAP outline the actions required for positive Environmental, Social and Governance (ESG) impacts of the investment. Within this framework, both ESG standards and Key Performance Indicators (KPIs) will be track changes in both environmental and social parameters.

### Activities

With the approval and guidance of Government (through the MMA secretariat) and in consultation with local key stakeholders (through the MMA advisory committee and the Stakeholder Advisory Committee), the Blue Watch will develop and implement annual work plans with the following 7 primary activities:

- MMA Environmental Protection and Management (incl. reducing anthropogenic nutrients, Sewage and storm water managemen, mooring & demarcation buoys; Erosion/sediment reduction; Reduction of the Invasive Lionfish; Reduction of Solid Waste
- Livelihood Enhancement for Fishers;(incl. Support income generating activities for Fishers that might be displaced; Train local communities members as tourism service providers for eco-tours and fish to table businesses; Train and hire selected fishers in fishery monitoring and coral gardening;
- Stakeholder Engagement (incl. Actions to recognise, respect and utilise local knowledge for management; Collaboration with Existing Institutions and Private Sector
- Communication, Education, Awareness and Visitor Experience (incl. Increased awareness, understanding and support for the BMMA, Provide products and services for visitors and residents, that will enhance their experience with and knowledge of marine life, in an enjoyable manner, Encourage Visitation of the BMMA, Educational Programmes and Training, Marketing of the MMA, Public – Discovery Programmes, Tourism and Visitor Experiences);
- Monitoring & Science (Coral Health, Water quality, ;
- Compliance (incl. To ensure that marine management area users comply with the rules; Design of a Marine Protection System, Training & Engagement, Fish Warden Programme
- MMA Administration and Revenue Generation (inc. maintenance, fee management, visitor centre management);

The scope of activities of both The Blue Watch Operator and MABE will be clearly established in a Co-Management Agreement, which is expected to be a formal agreement between both parties that will set out terms for sharing responsibilities within the BMMA. A template of such an agreement can be provided if needed.

The company will also receive long term technical support to the company in order to improve both environmental management and entrepreneurial skills.

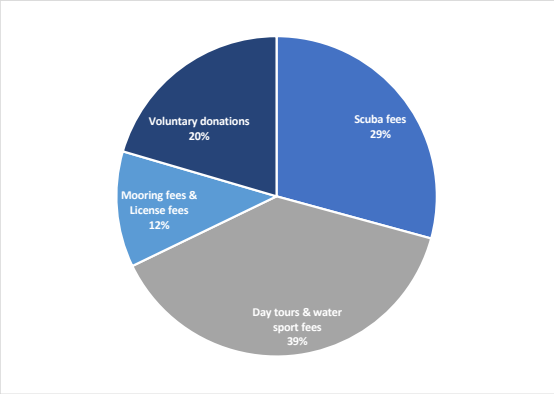
### Financial aspects:

All financial risks are supported by the co-management SPE, with no increase in public debt, nor on-public budget allocation.

### Revenues:

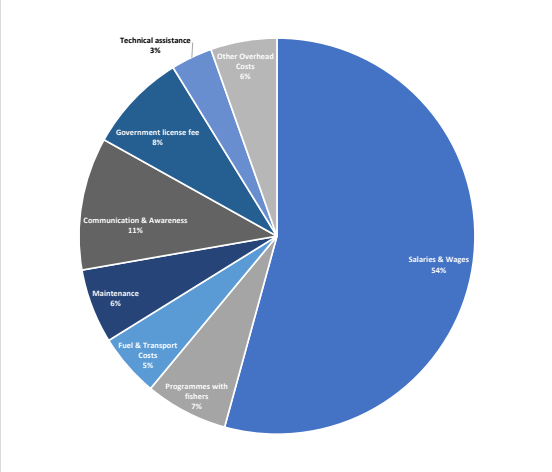
Revenue streams will be generated mainly from statutory visitor fees and innovative tourism activities. The SPE has received an irrevocable mandate to charge user fees and receives major financing for initial capital expenditures from impact investors and donors. The special purpose vehicle will charge park users between US$3–10, depending on chosen activities. Annually, with around 260,000 visitors, this should generate revenues of USD 1.5M. Revenues will be generated for MPA management and investor returns.
Concerns re carrying capacities have been considered in the projections. The number of dive sites and the large choice of day-tour stop-overs allows for the reduction of visitor impacts to below recommended carrying capacity

Carrying capacity




### OPEX

The activities expected to be undertaken by the BMMA have been categorised under the following programmes
the implementation of the various activities and services will be guided by the annual work plans and budgets.
Annual operating costs are expected to total US$1.4 million.
The main costs are personnel (almost 55% of the total Opex), livelihood programmes with fishers, communication and BMMA compliance. The management team will include 18 permanent staff progressively recruited during the 2 years following the start of operations.




CAPEX

The up-front investments of the BlueWatch are estimated at US$1.4M. The investment will be spread over a 2-year period and includes:

• US$1M approx.. for the purchase of the physical assets of the BMMA such as vessels, moorings, equipment, underwater facilities, etc. and preliminary studies

6 The concept of carrying capacity is the number of visitors an ecosystem can tolerate without suffering irreparable damage (Wielgus et al., 2002)

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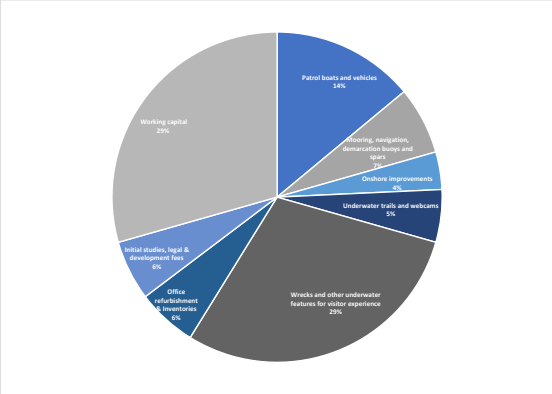
• US$0.4M as working capital (corresponding to the period of preliminary activities without incomes).




Impact investment Financing

A US$2.5 million bond was secured from impact investors with an eight-year term, for equipment and staff. This covered about 70% of initial funding; grants cover the rest. Principal repayment will start in 2021 if specified environmental and economic objectives are met. Capital is now being used to hire staff and purchase the required equipment. The development of the Management and Marine Spatial Plan is also in process.

Details on SOF

- An Investment facility providing financing for SPE's up-front capital needs (vessels, infrastructure, equipment, etc.) through:
  - Series-A debt (with different IRR objectives) from impact investors, asset managers and family offices. The Sustainable Ocean Fund will act as the main anchor investor with US$4M soft committed to the Facility for the first 4 projects. The Meloy fund has confirmed initial interest for projects in Philippines and Indonesia.
  - Concessionary loans from Development Financial Institutions (DFIs) and climate funds.
- A Technical Assistance Facility providing grants from Philanthropic institutions and DFIs. The facility will provide technical assistance during the pre- and post-investment phases to improve quality in the design and execution of the projects, strengthen environmental and social positive impacts, reduce risks and enable the projects to meet the investor's criteria.
- De-risking partners providing loan guarantees to mitigate credit risk. One potential de-risking partner is USAID, through its first loss guarantee facility, which Althelia-Mirova secured for both the Sustainable Ocean Fund and the Land Degradation Neutrality Fund. SIDA - Guarantee Units has been approached also.

Financially, the projects will offer a minimum internal rate of return (IRR) to impact investors. Returns are based on income projections and target market size estimates.

De risking

The Investors take the following risk: market risk (e.g. tourism cycles), management risk (e.g. mismanagement) and environmental risks (e.g. major climate adverse events).

No collateral guarantee is asked to the SPE investee to secure debt payback. A guarantee is an agreement from a third-party lending institution or insurer which guarantees that losses will be recovered in the event of the borrower failing to pay back the debt also known as defaulting on the loan.

Investors benefit from a USAID Development Credit Authority (DCA) guarantee which provides a 50% shared loss facility on invested capital.

## III. Discussion

### Potential to scale-up the project?

By demonstrating proof-of-concept at scale, can this project serve to build confidence and catalyse wider growth in the natural capital impact investment market globally?

The approach relies on 3 main pillars: a management lease for Marine Protected Areas (MPAs), tangible revenue models with positive impacts, and up-front blended finance solution. Can these 3 pillars be effectively tailored to the contexts and needs of different sites?

### Co-management of MPAs: a common approach

Some governments have addressed a lack of funding for protected areas — both individual parks and national networks — by establishing 'collaborative management' arrangements with private partners (mainly non-profit enterprises, NGOs and community groups). Entrepreneurs and community groups have also set up co-managed protected areas, gaining recognition and support from governments and local people (Jupiter et al. 2014). A large body of evidence from marine and terrestrial protected areas shows that, when collaborative management is viable and appropriate, it can both redistribute the financial burden on states and attract the long-term economic and technical support needed for effective management (REF).

Collaborative management is inherently consultative, but possible structures vary: governance and management responsibilities might be shared ('co-management'); a partner might assist the state with aspects of management, without formal decision-making authority; or the state might completely delegate management (Berado et al. 2016; Bodin et al. 2017; .

Compared to solely state-run MPAs, collaborative management tends to operate more participative decision making, helping to achieve better social and ecological outcomes (Guidetti et al. 2010; Cinner et al. 2012). Non-public partners bring further advantages, including:

• A business approach: establishing revenue streams around ecosystem services, most commonly nature tourism; greater capacity and expertise to develop, market and manage commercial operations and maximise revenues

• Greater freedom to retain and reinvest profits than government agencies, giving managers incentives for cost saving, accountability and improved management

• Greater ability to raise capital (including impact investments) to cover start-up costs, such as restoring the ecosystem, purchasing equipment and developing visitor facilities.

Pascal , Duke presented a list of protected areas co-managed with the private sector, with discussion of a select few. , there is a large body of evidence from both marine and terrestrial systems showing that it can redistribute the financial burden on states while facilitating long-term financial and technical support to deliver effective management. Many protected areas under collaborative management have succeeded in becoming financially sustainable while also demonstrating positive social and ecological impacts.

➔ Scalable ? Although collaborative management will not always feasible or appropriate, exploring its potential seem a priority to address the paper park issue

## Business and ESG model

A well-thought-out business model for the MPA to become financially self-sufficient over time as well as tangible environmental & social targets based on a clear scientific management approach are key aspects of the approach.

➔ Capacities to pay-back debt = tangible revenues in the short term.

### *Business model based on user fees: tangible*

Studies show that most visitors would be willing to pay an entrance fee to marine sanctuaries if their expectations are fulfilled (Wielgus, Balmford et al. 2010). Acceptance and size of entrance fees in MPA will depend on visitors' income, level of education, environmental awareness, residency and desire to provide a legacy to future generations. However, there are also aspects that can deter including trust in the fee collection agency and openness re how the money is spent (Peters & Hawkins 2009).

From the tourism businesses' perspective, Green (2003) conducted surveys with dive operators in 30 countries for their use of MPAs. He found the majority are located within 20 km of at least one MPA and 46% conduct at least 80% of their diving within a MPA.(Green & Donnelly 2003)

Several studies (Bacci 1998, Ahmad 2009, Peters & Hawkins 2009, Uyarra et al. 2010, Wielgus et al. 2010, Wang & Jia 2012, Imran et al. 2014) have shown that, for most visitors, MPAs are the trademark of an ideal marine environment. Thereby, from the visitors' perspective, MPAs are expected to contain one or all of the following characteristics (Bacci 1998): cleanliness of water and beaches, no fishing, lots of fish, healthy reefs, trained park rangers, visitor information services, environmentally-oriented facilities, etc.

Past experiences have shown that a fee not properly introduced can be a cause for major fee evasion as well as lack of stewardship from the marine stakeholders (REF). Usual issues concern fee too high, lack of transparency in the use of funds and/or inefficient fee collection system. It is usually hard to correct these issues once they have been experimented by users.

In DR, no major concerns were raised by local service providers in charging user fees to their divers and snorkelers. The user fee price has been sized to the price paid by the client. Same businesses agreed that clients will not have an issue in accepting an increase in the tour price if tangible "value for money" is provided. Vibrant biodiversity, clear communication, adequate facilities and moorings, clean beaches, UW trails, multimedia apps and eco-activities were recognized as valuable arguments for price increases.

### *Other revenue models based on tourism*

Mooring fees: Commercial and leisure vessel owners will pay a fee to use the moorings in the MPAs. Initial investments in the MPAs will improve the number of moorings and the services offered by the MPAs, as well as increasing compliance to the fee payment.

License/permits fees: Another potential income source is the implementation of license/permits fees with service providers. These fees are typically collected from companies that are granted permits for providing a service to visitors within a site. Companies providing services within MPAs, such as diving, turtle watching and day tours, can be charged fees to operate such business concessions.

Entrance fees to visitor centres. High-tech "edu-tainment" visitor centers will complement MPA revenues in the MPAs. The centers are designed as a media-rich, walk-through experience that will put the visitors in touch with fascinating marine life in new and exciting ways. They will be located in prime tourism locations and are expected to become new "must-see" attractions for visitors. The Visitor Centres will be also used as awareness & education tools for residents, schools and visitors.

### *Other Revenue models for the MPA not based on tourism*

Whilst the initial sectoral focus are revenue streams associated with tourism, other sectors are capable of driving sustainable income into MPAs and be bundled within the structure of site-level projects.

a. Blue carbon credits: The credits are generated and sold to organizations seeking to meet voluntary or regulatory climate mitigation targets. MPA Carbon credit buyers will benefit from the emission reductions provided, as well as the co-benefits associated with MPA projects (e.g. community livelihood enhancement).

b. Nature Based solutions to mitigate or help adapt to against beach erosion. Payers would be coastal real estate and beach owners (e.g. Hotels, local HNWI, Government) financing through the MPA and local NGOs the conservation and restoration of the coral reefs that largely provides the ecosystem services. Many issues regarding fund management, implementation of the instrument, the choice of activities, progress indicators, as well as equity aspects have to be addressed (Naeem et

al., 2015; The Katoomba Group and Marketplace, 2010), in order to ensure the success of this innovative mechanism. In that sense, experts planned expected incomes for the MPA on a mid-term horizon (3-5 years) (pers. comm.)

c.. Biodiversity offset credits (habitat banking): It corresponds to payment received by the MPA in compensation for damage caused by development projects which impact coral reefs and other marine habitats(Bovarnick et al., 2010; Pinault et al., 2016; Pioch, 2015). The MPA is the guarantor that the habitats are protected and could offer habitat "credits". Permitted impacts are generally associated with beach nourishment, channel dredging, tourism infrastructure (hotels), private docks and piers, private and commercial ports or marinas, laying energy and communication cables, pipelines, and coastal protection projects. Most countries have developed a legal framework based on the mitigation hierarchy to ensure that impacts of a project will be, as far as possible avoided and/or reduced, following Environmental Impacts Assessments (EIAs). The remaining impacts must be compensated in the form of restoration, rehabilitation, replacement, and/or acquisition to the equivalent of the habitat impacted. The aim of the mitigation hierarchy is to achieve No Net Loss (NNL) of biodiversity, and preferably a net gain for currently threatened biodiversity and ecosystems (Quétier and Lavorel, 2011). The legal systems strongly favor on-site compensation, using the same type of ecosystem as was impacted.

Nonetheless, although simple in principle, compensation policies for coral reefs are difficult to implement due in particular to the complexity of the ecosystems, potential large number and heterogeneity of impacts, and costs and delays in assessing damage (François and Pascal, 2012; Groot et al., 2013; Levrel et al., 2012; Pinault et al., 2016). The quality of the implementation of these policies is still to be proven. Methods have been inadequately applied, monitoring of the restoration actions has been lacking, and most small projects have been exempted. Using off-site mitigation such as mitigation banking of the habitats managed by the MMA is proposed as an option. The medium-term/long term potential shall be explored.

*d. Others generate revenues through ecotourism resorts, such as Misool Eco-Dive resort in Indonesia and Chumbe Island Coral Park in Tanzania*

*Business model based tourism based revenue streams: limited scalability*

Several MPAs generate most or all revenue through user fees and/or mooring fees, such as the Bonaire National Marine Park, the St Lucia Marine Management Area or Belize Marine Protected Areas (Pascal, Duke).

Most examples of protected areas that have raised significant funds from tourism, focus on sites with well-established infrastructure and tourism markets. These sites are exceptional in various ways and not necessarily relevant to many protected areas (especially in developing countries). MPAs can fall into three categories (Font, Cochrane et al. 2004): Sites already with high levels of visitation, sites with high tourism potential but with low level of visitations and sites with low tourism potential, or be subject to restricted access for conservation reasons.

In all cases, priority is to ensure that tourism is sustainably managed so that it does not harm attainment of conservation goals, and second that it generates sufficient revenues for MPA management. For the first category, the priority may not be to raise revenue from tourism, but to reduce the impacts. In the third case, tourism will be limited to very low-level, specialist groups of visitors. Several authors (Font, Cochrane et al. 2004) recognize that MPAs need also to be realistic about the potential to raise funds from tourism. Many sites tend to overestimate the benefits and underestimate the costs of tourism: in part, this is because they often fail to establish proper management for tourism, and to understand the business realities of tourism.

For the present model, MPA sites under the first category are the main priority. Tourism is already consolidated and revenues can be generated in the short term for the MPa management and to pay-back the investors.

The potential to upscale this model where MPA generates most or all revenues through user fees therefore seems limited to these MPA sites. The NGO Blue finance has been working on replicating the DR model during the last 2 years and has identified a limited number of MPA sites in the Caribbean, SE Asia and Western Africa. with potential to become financially sustainable.

For the other MPA sites, 2 solutions shall be explored: (i) Redistribution of incomes: MPAs can join together to pool their resources to market the tourism they offer, and through this to try to direct tourism to lesser visited sites and away from areas that are already saturated by visitors. Some heavily visited sites may also allocate a portion of the revenues generated by tourism to assist conservation and tourism projects at less visited sites. This is done only in attractive locations that are potential "honey-pots" for tourists; (ii) Impact bonds as a solution to finance MPAs with inexistent but potential revenues. Impact bonds will allow more patient capital for the MPAs and the obligation to pay-back will be transfered to a third party.

- ➔ Capacities to pay-back debt with tangible revenues in the short term seem a privilege to a few MPAs worldwide. This can be improved through redistribution or impact bonds

### Blended finance potential

The report also revealed at least US$3.1 billion in committed capital, still on the sidelines, awaiting attractive deals in food and agriculture, habitat protection, clean water initiatives, and other conservation projects.

Private investment in marine biodiversity and ecosystem services is in an early stage of development, and practical experience is very limited with initiatives focusing on marine ecosystems rare and not well documented.

Update . Impact investments are following the early-stage development of several sectors of the "blue economy" (ref). Adapt sectors sustainable fisheries, aquaculture, waste management, transport, Marine Protected areas have been identified as primary candidate industries for impact investments.

## Are they good for MPAs? Precautions & Limits

*Carrying capacity and Revenue with purpose*

For tourism, the concepts of carrying capacity, maximum load capacity and limits of acceptable change (LAC) are the most commonly used to reflect ecological sustainability (McElroy, 2003; Spurgeon, 2004; Stoeckl

et al., 2010). Like any ecosystem, coral reefs have capacities of regeneration from minor impacts from natural and human origin. However, the cumulative effect of thousands of these minor impacts can create often irreversible damage when threshold levels are exceeded. The concept of carrying capacity is the number of visitors an ecosystem can tolerate without suffering irreparable degradation (Wielgus et al., 2002). The concept of acceptable limits of change sets standards for minimum acceptable conditions (which may differ from the desired conditions). This involves defining the limits of ecological and sociological changes that could cause some degradation, but that would still be allowed on site. The focus is placed more on the desired conditions of the site than on the amount of usage that the site can tolerate (Stankey et al., 1985).

Other tools such as Mc Elroy's tourism penetration index (TPI) and Butler's tourist destination product life cycle are useful in analysing how sustainable the current level of tourism is (Butler, 1980; McElroy, 2003). These tools take into consideration factors such as the number of days the average visitor stays and the amount of environmental resources used by guests. The TPI is designed for destinations, as an indicator that they may be going over carrying capacity.

For diving activity, the literature gives us quite different carrying capacities. For Hasler et al (Hasler and Ott, 2008), a total of 500 dives per site per year is sufficient to cause substantial damage to the sites. Dixon et al (1993) suggest a much larger number from 4 000 to 6 000 dives per site per year to cause prolonged damage to the environment. In practice, sites are not frequented in the same manner and only communication from dive clubs would identify the problem sites.

In other research studies, users were asked questions aimed at determining how "the quality of their visit" could be impacted by overcrowding (Barker and Roberts, 2004; Fau et al., 2008; Park et al., 2000). Results showed the importance of this criteria.

- ➔ Tourism management plans will be needed to integrate the business realities of tourism with the sites conservation goals. The following guidelines can be followed for the design of the marketing strategy (Bacci 1998):

• Quality over quantity: numbers are not the objective per se but rather ensuring that the profile of the tourist is appropriate for protected area objectives and beneficial to host communities.

• Diversification of the product: this involves the use of other natural and cultural resources located in the MPAs or in their vicinity in order to give the visitor an experience of quality and at the same time to release the pressure of use within the diving and snorkelling sites. It includes the use and interpretation of the cultural and historical resources in order to enrich the visitor's experience and contribute to their education on the marine environment.

• Community involvement through education and training: marketing and promotion of MPAs must involve the participation of the host community in areas such as product development, interpretation, image creation and operational activities. Tourism development in MPAs must meet the priority needs of host communities. Marketing of these areas must contribute to the strengthening of cultural identity and self-esteem.

### Legitimacy of the SPE: Contractual governance-:

Private and public involvement in MPAs complement each other at the institutional framework level (i.e. the rules of the game). However, having the mechanisms permanently entrenched in law, with no possible provision for regression is an important issue and needs to be seriously investigated if these tools are to be scaled up. One of the risks of not doing this, is that changes in governments and policies might result in an environment less conducive to ecological and financial returns.

Contractual governance requires public legitimacy and a strong rule of law, so conditional contracts need to be backed by the judiciary. Ad hoc Special Purpose Entities need to be lawfully recognised and their prerogatives respected by the state. In all cases, private and civil society actors need to be assured that their contractual rights, and therefore their investments, are secure.

This in turn means that the state needs to clearly define and defend the boundaries of MPAs, whether public, private or community-owned, and determine the respective responsibilities of all stakeholders vis-à-vis the PA in question.

On behalf of Government, the co-management entity will face the challenge of setting varying degrees of exclusion to public goods through the development and enforcement of new access arrangements (Bennett and Dearden, 2014). The extent of exclusion may vary from full enclosure of a habitat with state support, to partial or seasonal exclusion established through usufruct rights agreed upon between the SPE and existing resource users.

It is equally important to ensure that all stakeholders have an active role in determining how the park is established and operates and should also have an active participation in the economic and the environmental returns from implementing MPAs.

Where concessions are concerned, the link between tourism earnings and conservation of the protected area must be made very strongly. In situations where this is not the case, local people will be much less inclined to protect the area. For example, a study in Komodo National Park, in Indonesia, found that although residents had positive attitudes towards tourism and that there was support for conservation, there was no positive connection between the two (IUCN and UNEP, 2014).

Describe the communication strategy with government (at different level), local stakeholders (gain confidence in the conservation area and its management) and investors (risk analysis).

New governance arrangements are drawn up whereby public, private and civil society actors join forces to co-ordinate their efforts and increase PA management effectiveness.

Here the government is "steering, not rowing", using market and quasi- market mechanisms to deliver public services, and maintains a distance between politics and the management of public services. Thus, the traditional boundaries of the state have been modified (Birner and Wittmer, 2004) and a new principal agent relationship has been introduced whereby the SPE is responsible for reaching a set of negotiated objectives.

Overall, these public-private independent entities are more efficient and service-oriented than single, public actors, and in end the contractual approach is effective in improving PA management.

*Tourism industry engagement*

Project shall adopt a two-pronged approach to engagement with the tourism industry, combining: (i) Negotiations with government to establish legal requirements and mandate for collection of user fees for MPA conservation, to establish the regulatory lever; (ii) Direct engagement with tourism operators in the relevant seascapes, regarding the business case to invest in the natural environment, making use of cutting-edge communications technology to engage their customers directly, and incentivize private sector support.

*A multi-stakeholder approach*

is central to successful project development and management, including government, an engaged and experienced NGO, and partners with skills in social entrepreneurship, financial planning, and/or marine conservation. Intermediaries like Blue finance are essential to bridge the gap between investors and marine conservation. Community involvement in management, monitoring and awareness campaigns can generate buy-in that weathers changes in government and supports project durability.

*Length of the concession*

A significant issue is the length for which a concession is granted. The private sector will generally want a long licence period in order to ensure sufficient return on initial outlay. The risk for the protected area agency with a long concession is that the business may fail, decline or attempt to change its mode of operation. Thus, safeguards such as an outline of rights and responsibilities, monitoring processes and 'break-points' in the event of unsatisfactory performance, need to be written into contracts.

➔ Needs of legitimacy

### Non-profit, non-stock co-management entities : Balance between resource protection and financial returns

All stakeholders in DR agreed that they consider a non-profit entity as the most trustworthy organization to co-manage the MPA and collect entrance fees. In a similar way, scientific studies have shown that trust in protected area authorities significantly affected WTP (Wang & Jia 2012). Most tourists interviewed preferred NGOs to the Government as the most trustworthy organization type to collect and manage entrance fees (Buckley 2003).

Co-management agreements necessitate a balance between resource protection, economic development and the financial bottom line. Government policy and regulations may require that management of visitor services provided by non-public entity consider public opinion, provide employment for local people and other elements of benefit to local communities, and include regular monitoring of environmental impacts.

*Clear and transparent communication*

about the co-management arrangement between government, the co-management partners, society and visitors (table XX). Ongoing investment in informed communities and stakeholders will allow for a powerful "backbone" that can weather changes in government. It will be crucial to have a Marine Park Manager, who can communicate effectively both with governments and communities, to ensure that support for the MMA continues.

### Building of local capacity for improved management and financial sustainability

in social and conservation entrepreneurship, to successfully introduce a business approach to MPA management that serves to underpin and drive effective site management, and the resulting environmental and social benefits;

*Capacity building*

Intermediaries provide capacity building and technical assistance to help bridge market gaps (Richter 2014). Sometimes the technical assistance is provided by investors along with funding, and sometimes technical assistance is provided by intermediaries through training sessions, workshops, and singular consulting engagements (Tuan 2014). Technical assistance is often necessary for entities that are expanding from more traditional non-profit programs to innovative for-profit models (Bugg-Levine and Emerson 2011). Providing technical assistance alongside investment, reduces the risk of providing capital to "inexperienced investees" (Richter 2014). Capacity building can include advice on business planning, marketing, management, access to professional networks, and specialized expertise (Richter 2014). One of the biggest challenges for capacity building is to ensure that there is a "cultural fit" between the capacity provider and the investee, as this affects the trust, power imbalances, and other relational dynamics (Tuan 2014). Mechanisms can be smoothly implemented when capacity building takes place at the operational level. Park managers, agency managers, local administration officers and NGO employees, local communities and individual fishers need to clearly understand the mechanism and its contractual approach (Lapeyre and Laurans 2016). Without such common perception, resentment and conflicts can emerge.

*Adequate enforcement*

Inadequate enforcement results in poor performance of the MPA's marine conservation objectives. Ongoing training and financial incentives should result in increases in the number of enforcement personnel with regulatory abilities. The proposed plan for enforcement in the Sanctuary will see "soft enforcement" from the MPA staff and "hard enforcement" from the regulatory agencies. In DR, the legislation allows the agencies to appoint non-government officers with various powers of searching and detaining for marine infractions. In addition to these measures, self-enforcement from Fishers and other stakeholders will be encouraged via education and financial incentives.

### Reduce financial burden for MPAs: Appropriate blends of finance

adapted to the MPA financial capacities avoiding any financial burden;

Balanced

Collateral or securities to hold against loans in case of failure to repayor default. *To be completed* .

### Are they good for impact investors? Addressing challenges of impact investment (merge with scaling-up)

One of the main challenges of marine impact investment is finding a project with an adequate scale and size of returns as well as an acceptable profile of risk (see also next section on enabling conditions). The investment life and risk-return profile as well as environmental impacts must be properly assessed in order to address investors' needs. The environmental objectives must be stated clearly and performance metrics/targets related to these objectives must be set using standardized metrics. For each project, a preliminary business plan with a first description of the business model, the market opportunity and the management structure is drawn as well as a

financial plan. The business plan shall focus also on exit strategy and, when necessary, risk reduction strategies shall be proposed (e.g. stage disbursement, net asset granting, monitoring) (Huwyler, Käppeli et al. 2014).
Ready-to-invest opportunities in MPAs are relatively scarce. Therefore, the intermediary may also assist local stakeholders to design the vehicle for the investment in the MPA. For example, they might be implicated in the early negotiations with government for the PPP.
Deal sourcing for marine impact investments can be more difficult than for traditional investments for three reasons. In the first case, investment levels tend to be small (< US$5 million) which is less than the normal threshold for most investors (O'Donohue, Leijonhufvud et al. 2010). Second, impact investment deals tend to be more complex and require expert knowledge in technical subject areas, that most investors do not have the capacity to assess (Bugg-Levine and Emerson 2011). Third, there are more impact investors than there are "investible deals" often termed the "supply side issue"(Bugg-Levine and Emerson 2011, Richter 2014). From the perspective of investees, it is very difficult to find the impact investors willing to take risks and invest in high environmental impact with concessionary financial returns (Nee 2013). Hence, intermediaries play a crucial "matchmaking" role to source deals and bring investors and investees together (Brest and Born 2013). For private equity and venture capital firms, deals are most often found through personal and professional networks, and the use of paid and unpaid intermediaries is common (Tetan and Farmer 2010).
A pipeline of investable projects focused on protection and enhancement of marine and coastal natural capital will accelerate flows of impact investment into such projects.

*Investment sizes:*

Investment sizes are typically smaller than institutional investors' minimum investment size, but larger than many individual impact investors' desired allocation. In the same way, there is a lack of innovative deal/fund structures consolidating projects and accommodating investors' needs.

*Scale and size of MPA.*

Both scale and size are important factors for achieving an integrated approach. Not only does a larger project cover a network of habitats and species, but it also supports a sustainable financial model that ensures the MPA is self-sufficient and has a long-term future.

*Shortage of high quality investment opportunities with track records:*

Many NGOs are doing credible work around policy and capacity-building, but few of these organizations are developing a pipeline of investment opportunities.

*Common Standards and Metrics:*

Shifting from "anecdotal stories" to standards is necessary to make results more transparent and accountable, benchmark projects against one another, and attract a wider audience of investors.
Risk Mitigation Approaches: The risk-return relationship of conservation projects must become more attractive for investors through a combination of strategies to de-risk investments.

Transaction costs: too high?

PPP for marine park management, as illustrated in Barbados are complex and involve a high number of steps and agreements . This kind of innovative PPP mechanisms have been coined a type of art form by several experts of the industry. However, art is generally very expensive and such tools are no exception (Lapeyre and Laurans, 2016).
The transaction costs should be taken into account when evaluating the efficiency of the best management governance scenario for the MPA (see annex on the type of management)

Financial under performance

Financial under performance in the DR project (and potentially payment default) might occur from insufficient incomes to cover an elevated operational expenses (Opex). Main project risks must be examined in advance during a thorough due diligence process, using a risk matrix and third-party consulting firms. In the same way, internal controls and support functions must be implemented in the co-management entity during the lifetime of the agreement.
Regarding the level of tourism incomes, financial modelling must use very conservative projections. Models in DR were based on observed and estimated annual number of users in the MPA (e.g. diver, snorkeler, day-tour passenger) less a 25% to reflect market risks (e.g. hurricanes, tourism crisis, etc.).

Risk

Nature tourism is currently the most viable revenue source for MPAs but relies on tourist volume. Grouping projects can improve risk-return profile; the special purpose vehicle helps isolate risk by separating project-related liabilities, tax and regulations from core business. An environmental and social action plan that meets international risk management standards (such as the International Finance Corporation's Performance Standards) is also key to delivering development goals.

Deal Sourcing

MPA sites are chosen via a scoring matrix that incorporates ecological, legal, management and business feasibility criteria, through desk study and preliminary consultations with local stakeholders. Based on these scores, priority MPA(s) are more rigorously screened (including site visits) and selected in collaboration with governments, UNDP and local partners.
The assessment is based on a Decision Scoring Matrix tool screening. The Scoring Matrix has three major 1 components – Impact Feasibility, Legal Feasibility, and Business Feasibility with a total of 54 indicators . A decision tool describing the rationale for site prioritization will be shared with all participating sites.
DR addresses Recent several challenges identified by recent works on impact investment:

Niche and Boutique Strategies:

Even if the investment market is seeking consolidated projects that can be scaled with attractive risk-return profiles, a market for niche and boutique investment projects should be considered.
Co-management agreement + de risking partners
Confidence for investors – PPP framework

*Expansion and intermediaries*

"Fundamentally, in developing a market-based solution, the problem is not a lack of capital. It is that the capital does not have a path into financing projects," Healey said. "The capital markets just want to make big decisions and allocate large sums. You make projects simple, replicable, scalable. That's the intermediaries'

job. They can take the risk on the front end and then move it forward." As the go-between for capital and projects, intermediaries also work at the project level. Godschalk said, "Market-serving intermediaries provide capital to the second level of intermediaries, community-serving intermediaries. Community-serving intermediaries offer products to serve businesses operating on the ground in communities." "At this level, intermediaries are closer to the community and the science, and understand the… risk that the capital takes," said Healey. Intermediaries are able to de-risk and standardize projects to connect them to the waiting capital markets. According to Godschalk, intermediaries serve a variety of functions at this on-the-ground level; they provide upfront venture and risk capital showing they have a stake in the outcome, advise and guide project developers, and help structure projects to make them more attractive to investors.

Because intermediaries have deep familiarity with their investment ecosystems, they are well-positioned to design investable products that meet their clients' needs. Market-serving intermediaries know what capital markets require in terms of risk-adjusted returns. Community-serving intermediaries know what the project on the ground needs.

Healey went further. "The capital markets need to see some kind of package. That package can only be sold by [an] expert. Ben Healey, director of clean energy finance at Connecticut Green Bank

*Roles*

While there are growing numbers of impact investors, investees, and mechanisms, there are many problems in executing successful impact investment "deals," and therefore "intermediaries", which are organizations and individuals that work between investors and investees , are essential (Bugg-Levine and Emerson, 2011; Richter, 2014; Salamon, 2014).

Most conservation professionals will benefit from connecting with impact investing intermediary professionals directly (Dent et al., 2017). Many mid-size to large conservation organizations (e.g., RARE, African Wildlife Foundation, The Nature Conservancy, WWF) now employ impact investing staff. There is also an increasingly diverse array of impact investing expertise associated with financial institutions (e.g., JP Morgan, Goldman Sachs, etc.), with government (e.g., the UK Social Impact Investing Taskforce), and with independent organizations (e.g. Mission Markets, LLC., Social Enterprise Associates, Fondo Accion, Shell Catch, Inc, Verde Ventures, Ecosystem Investment Partners, Beartooth Capital, Encourage Capital, Community Capital Management, Social Ventures Australia, and Althelia Capital).

Deal sourcing (identifying potential investments), due diligence (assessing the risks and returns of the potential investments), impact measurement (monitoring and evaluating the social and environmental benefits of an investment), and technical assistance (building capacity of investees and investors) are four of the biggest challenges which require intermediaries (Bugg-Levine and Emerson, 2011; O'Donohue et al., 2010).

One must recognize when to pass responsibility to others. NGOs or government can play a valuable role in the deal sourcing, networking and community engagement. They must recognize, however, the areas in which they have limited expertise. In these situations, they should seek alternative support. Private sector partners in various countries have reported that some NGOs are ill equipped to be providing advice to the community—specifically, in relation to the nuances of a business deal—and that sometimes their predisposed mistrust of the private sector is transferred to communities (The World Bank and WWF 2014).

### Performance indicators

*Impact Measurement*

Unbiased monitoring, reporting, and benchmarking of results must be reported to impact investors and donors (Brest and Born 2013, Tuan 2014). In 2009, the GIIN was launched as an intermediary organization to address some of these issues. There are numerous intermediaries with more limited geographic ranges including community development finance institutions, consultants, and non-profit organizations, e.g., Impact Assets in the United States (Bugg-Levine and Emerson 2011). Appropriate performance indicators must be identified with stakeholder input. Standard metrics (such as GIIN's Impact Reporting and Investing Standards) will not capture an MPAs' key social and environmental impacts. For example, indicators of ecological impacts in a coral reef ecosystem may include enhanced live coral cover and water quality. Indicators of the socioeconomic impacts of an MPA might include local employment in tourism businesses and improved fishery productivity.

A common set of Key Performance Indicators (KPIs) and result metrics has been developed with and for all partners, while specific reporting arrangements may be tailored to context. Indicators of conservation impacts (e.g. biodiversity metrics), social impacts (e.g. livelihood improvement, gender equity) and management impacts (e.g. MMA indicators of performances) will be agreed with partners. Initial data will be collected to produce a baseline in terms of indicators. Developed in collaboration with SPE members and Government agencies.

## VI. CONCLUSION

*A checklist for ocean-loving impact investors*

The Dominican Republic project presents an innovative and scalable approach that uses catalytic and development finance to mobilise commercial impact finance into Marine Protected Areas (MPAs) to strengthen natural resource management. This blended finance approach could be transformative for MPAs, and precedent-setting for impact investment in marine conservation and economic development worldwide.

It will provide an opportunity for other project developers, MPA managers and investors to acquaint themselves with method & quality standards in this unfamiliar market of marine natural capital and assist in closing the knowledge gap of marine resource practitioners in attracting finance from these non-traditional sources.

The project will contribute to draw new investors into this critical but underfunded area of protecting natural capital, and, by demonstrating proof-of-concept at scale, will serve to build confidence and catalyse wider growth in the market globally.

The marine environment has very few practical experiences with mechanisms to finance biodiversity through impact investment. As such, one of the primary

priorities for the near future is to provide empirical evidence of how non-public funding mechanisms can support marine conservation.

PPPs can be part of the solution. By linking government and private sector finance through agreements that allow sharing of funding, expertise, and access to technology and resources, PPPs can leverage significant new funds for, and interest in, marine conservation. The Blue Finance initiative provides one model of a PPP agreement for marine conservation that outlines the responsibilities of each party and clearly allocates investment and risk. This approach, though still in proof of concept, is expected to reduce the financial burden on the public sector and bring an entrepreneurial approach to managing MPAs.

The Blue finance initiative's primary activity is to design and implement impact investments for the conservation of marine biodiversity. A suite of investments is being developed in the Caribbean (Antigua & Barbuda, Bahamas, Barbados, the Dominican Republic, and St. Kitts & Nevis) where Blue Finance is partnering with government, key actors, and investors to ensure sustainable financing and efficient management for MPAs. The MPAs are expected to restore the coastal biodiversity of the islands and bring green opportunities for economic development to the countries.

Blue Finance is a collaborative initiative between the NGO Economics for Coral Reef Ecosystems (ECRE) and the United Nations Environment Program (UNEP) through its Global Coral Reef Partnership. In the Caribbean, the Regional Activity Centre for the Protocol on Specially Protected Areas and Wildlife for the wider Caribbean (SPAW-RAC) of the Caribbean Environmental Program (CEP) is the main implementing agency.

Generating a financial return (ranging from concessional to competitive rates) is typically the major challenge for many proponents of impact investment projects. It is also difficult to demonstrate positive impacts of many management strategies as there are often inadequate baseline data associated with the social and environmental benefits they target.

### Is a PPP right for your MMA? (to be completed)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