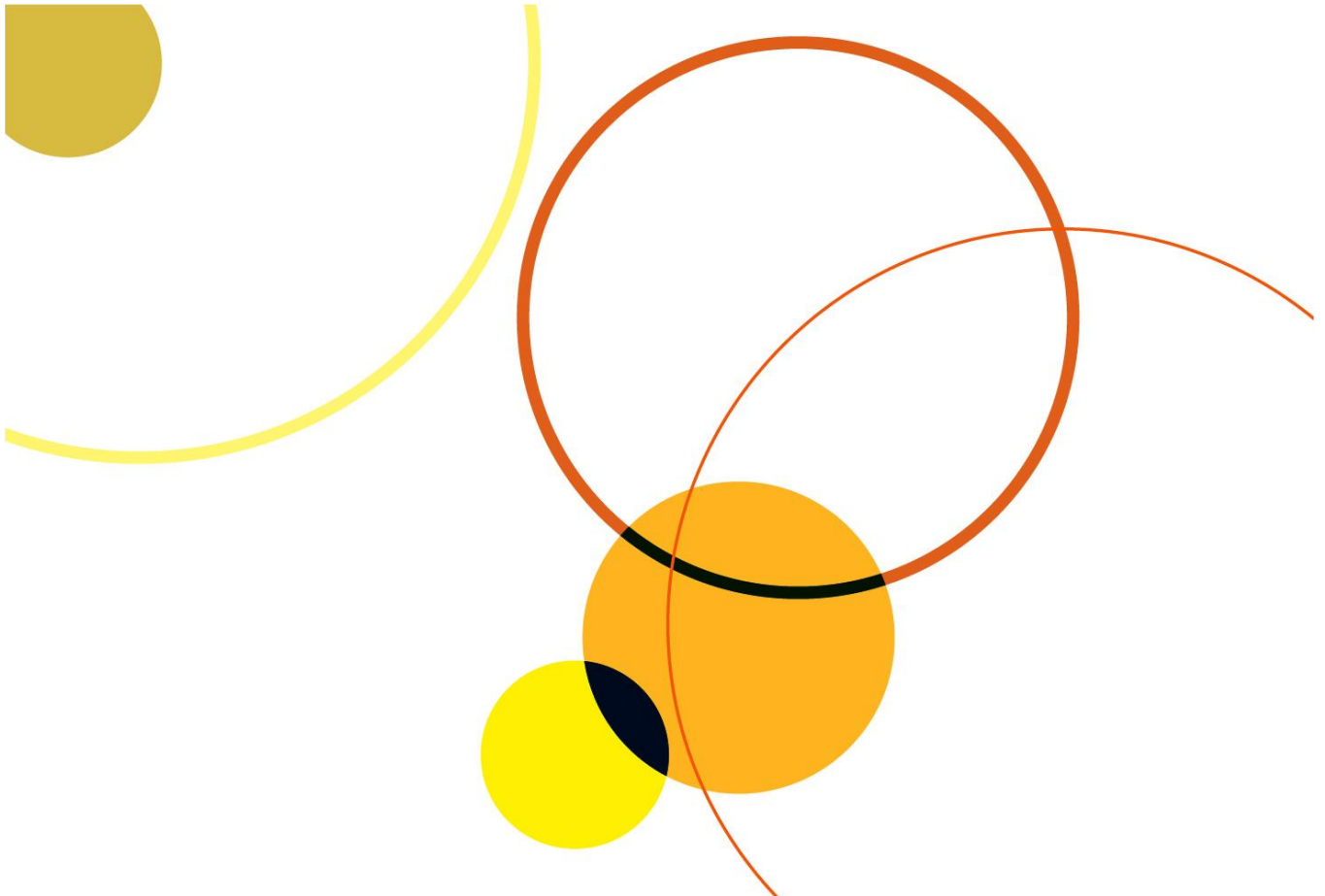


Sustainable financing mechanisms for Marine Protected Areas in North Devon

Report prepared for WWF-UK

Final report
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Working together to safeguard
Marine Protected Areas

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Glossary

Term	Definition
Biodiversity offsets	Measurable conservation outcomes resulting from actions designed to compensate for biodiversity impacts associated with development. See 'Developer offsets'.
Blended funding	The complementary and strategic use of public or private funds, including concessional tools, to mobilise additional capital flows (public and/or private) to emerging markets.
Blue carbon	'Blue carbon' refers to the carbon captured by the world's oceans and coastal ecosystem
Charitable Trust	A trust designed for the benefit of the general public, for educational or other charitable purposes.
Concessional loan	Loans that are extended on terms substantially more generous than market loans, achieved either through below market interest rates and/or by grace periods.
Conservation Trust Fund	Multi-source funds managed by non-governmental, independent boards or finance managers to generate interest payments to support conservation activities.
Developer offsets	Payments for conservation or restoration activities to compensate for unavoidable environmental damages that occur during development.
Ecosystem services	Benefits obtained by people from ecosystems, such as food, water, flood and disease control, pollution removal and nutrient cycling.
Endowment	A permanent fund that is placed in an investment pool where it is managed for long-term growth, and income generated is used to support conservation activities.
Finance model	A structure to generate cash flows which can be used to raise investment capital against
Financial vehicle	A security or product used by investors with the intention of gaining positive returns.
MRV	Monitoring, reporting and verification procedures.
Natural capital	The world's stocks of natural assets including geology, soil, air, water and all living things.
Nutrient trading	Method for managing nutrient use by placing a cap on total nutrient runoff losses within an area or catchment and introducing a system of nutrient allowances that can be bought and sold.
Opportunity costs	Cost of choosing one alternative over another and missing the benefit offered by the forgone opportunity.
Project developers	Organisations that develop natural capital project opportunities.
Section 106 planning obligations	Planning obligations under Section 106 of the Town and Country Planning Act 1990, commonly known as S106 agreements, are a mechanism which make a development proposal acceptable in planning terms, that would not otherwise be acceptable.

Social enterprise	An organisation that is directly involved in the sale of goods and services, but also has specific social objectives that serve as its primary purpose. It seeks to balance activities that provide financial benefit with social goals.
Sustainable finance	Provision of finance to invest in projects that provide a long-term source of revenue whilst delivering positive social and environmental impact.
Technical assistance	Assistance with technical, legal and financial matters to develop projects, tailoring them to investor expectations and aid investor understanding.
Transaction costs	The costs incurred in making an investment.

Executive Summary

This report identifies potential Marine Protected Areas (MPA) financing mechanisms, and appraises their feasibility and suitability in the UK in general, and in North Devon in particular. It has been prepared in support of WWF-UK's SEAS (Sustainable Environments at Sea) project, the aim of which is to help increase the effectiveness and sustainable management of UK Marine Protected Areas (MPAs), and which is being conducted as part of the UK government's Marine Pioneer project.

MPAs have a wide range of ecological, social and economic functions, which include biodiversity conservation, protection of sensitive habitats and species, carbon sequestration, and the provision of opportunities for recreation and tourism. One of the most important factors in establishing and managing effective MPAs is ensuring that sustainable, long-term funding is available. In the context of government budget cutbacks, this means new funding sources, and where investment is needed, finance.

A review of the literature suggests that, in addition to more traditional sources of funding, such as government funds, grants, funding from NGOs, and business and private donations, several of the benefits and ecosystem services provided by the UK's marine and coastal assets could be monetised into revenues streams, which could cover at least part of MPAs' management costs. As for natural capital assets, this monetisation requires three elements: the identification and quantification of these ecosystem services, a methodology for their valuation and a framework for their beneficiaries to pay for them. The evidence presented in this section comes from established and emerging sustainable financing examples implemented in MPAs around the world. Specific to the North Devon MPAs, the following areas show potential to generate funds that could contribute towards the costs of MPA management and help meet MPA objectives:

- traditional sources of finance, such as government budget allocations, grants from philanthropic foundations and NGOs and corporate donations;
- restoring and sustainably managing fish/shellfish stocks, and improving fishery infrastructure (e.g. lobster hatcheries, community access cold storage facilities, herring smokery), leading to enhanced long-term fishery yields and associated revenues;
- boosting sustainable tourism, via development of new tourism-related infrastructure and capture of revenues via licenses and/or user fees for water sports and wildlife-watching, charges or levies for boat launching, anchorage or mooring; commercial income from car parks and beach services; levies or opt-out donations on hotels, restaurants, local businesses;
- collection of levy/license fees for aggregates and navigational dredging schemes;
- sale of blue carbon offsets from salt marsh restoration/creation schemes;
- sale of biodiversity offsets, funded from a similar scheme to S106 planning obligations, but for marine and coastal developments (and perhaps terrestrial developments too, such as housing);
- water quality improvement schemes with farmers, allowing subsequent investment in shellfish aquaculture.

Well-designed financing models can both bridge initial negative cashflows of investment projects and introduce the discipline and due diligence of planning for long-term financial viability. Six candidate financing models show the variety of financial structures that might be suitable and the process of matching them to investment opportunities (such as the ones listed above). Some of these could be taken forward as pilots within the UK-SEAS project, with the

aim of building of track record and of developing arrangements for institutional, policy and stakeholder participation. The aim would be to attract private investors and ensure a more diverse and resilient funding base for UK MPAs.

The six financing models which are presented in this report are:

- a place-based portfolio model, in which the MPAs would be transferred, typically via a long-term lease, to a charitable trust (or any asset locked entity e.g. a community benefit society), with the principal activities managed by a dedicated social enterprise;
- a Marine Improvement District (MID) model, in which a voluntary levy from businesses operating in the local area would be earmarked to maintain and improve the quality of MPAs;
- a Blue Impact Fund, which would invest in a wide range of business opportunities within MPAs to enhance the sustainability of human activities based on marine ecosystems;
- a marine biodiversity net gain fund which could take the shape of a Conservation Trust, and which would use the proceeds from mitigation fees obtained from planning obligations to invest in the conservation or restoration of marine habitats and thus generate biodiversity offsets.
- a blue carbon fund, which would provide funding for the conservation and restoration of coastal and marine habitats through the sale of carbon offsets;
- a nutrient offsetting scheme which would provide a cost-effective strategy to reduce nutrient discharge in the catchment/estuary area; by improving water quality, such a scheme can then open up new opportunities such as investments in shellfisheries or wildlife-watching activities .

Among these, the place-based portfolio model and Marine Improvement District (MID) model appear most likely to be feasible and beneficial to trial in North Devon. The place-based portfolio model is a flexible structure with enhanced governance, offering skills and capacity to deliver additional MPA services and access to new funding sources. A MID has potential to enhance business opportunities available in MPAs, by taking forward projects with collective business benefits. Both could be linked, with the charitable trust dedicated to the management of the portfolio of MPAs taking charge of implementing the levy and the social enterprise responsible for using its proceeds to finance conservation activities.

The testing and implementation of these two models in the case study area would require the following next steps:

- for the place-based portfolio model, the first step would be the appointment of a project manager who would be in charge of engaging stakeholders to explore the feasibility of transferring the ownership or management of assets into a charitable trust; then, a project team would explore and carry out financial planning, legal structuring and stakeholder management. Advice could be taken from initiatives currently underway, such as Newcastle-upon-Tyne's 'People's Parks Trust'.
- for the MID model, the first step would be for the project team to consult with other Business Improvement District (BID) bodies in the UK and to assess the level of support for the scheme from local businesses and other stakeholders; once the scope and priorities have been agreed upon, the implementation should be based on the Government's guidance on setting-up BIDs.

Beyond individual financing schemes, a programmatic approach could be taken at national level. At a national scale, cross-government and agency support may be necessary to create revenue-generating property rights, assurance and governance frameworks. Some of the potential investments depend on revenue streams arising from new property rights which can only be set up by central government. This may even involve changes in national legislation, perhaps

as part of a Fisheries Act or Environment Act, both of which are under consideration but have not yet been placed before Parliament. In addition, placing the 25 Year Environment Plan on a statutory footing would strengthen investor confidence in the future market size and in the policy commitment of future administrations, and could establish marine and coastal assets as a component of the UK's national infrastructure. Finally, a framework to regularly monitor and assess the condition of UK MPAs would facilitate the evaluation of the impact local policies and initiatives and would create the conditions for private investors to enter the market.

Two specific changes in national legislation would help to create revenue streams for MPAs. First, the extension of a biodiversity net gain requirement on housing, infrastructure and commercial developers to coastal and marine development, which is mostly commercial and infrastructure, would provide revenue source which could be hypothecated to local offsets and mitigation, where appropriate under the governance of MPAs. A biodiversity metric for marine habitats would facilitate mitigation and offset measurement as it already does on land. Second, the fungibility of carbon credits from blue carbon ecosystems with statutory emissions trading schemes would create demand for those credits in higher volumes and firmer prices than the voluntary market. This would require changes in national and international legislation but as more countries agree to reduce carbon emissions, regulatory carbon markets are expected to expand and incorporate more blue carbon projects. Examples of blue carbon offsets are seagrass meadows and salt marsh restoration.

The implementation of financing models for North Devon MPAs may involve integrated planning between marine and terrestrial areas, as well as engagement with local stakeholders. It would be wise to further test the models with local stakeholders before they are taken forward.

There is no easy solution to the challenge of ensuring the sustainability of MPAs' conservation activities over time. However, the economic tools, financing models and policy measures presented in this report represent promising opportunities to secure the funding and finance which would enable MPAs to deliver on their objectives over the long-term.

1 Introduction

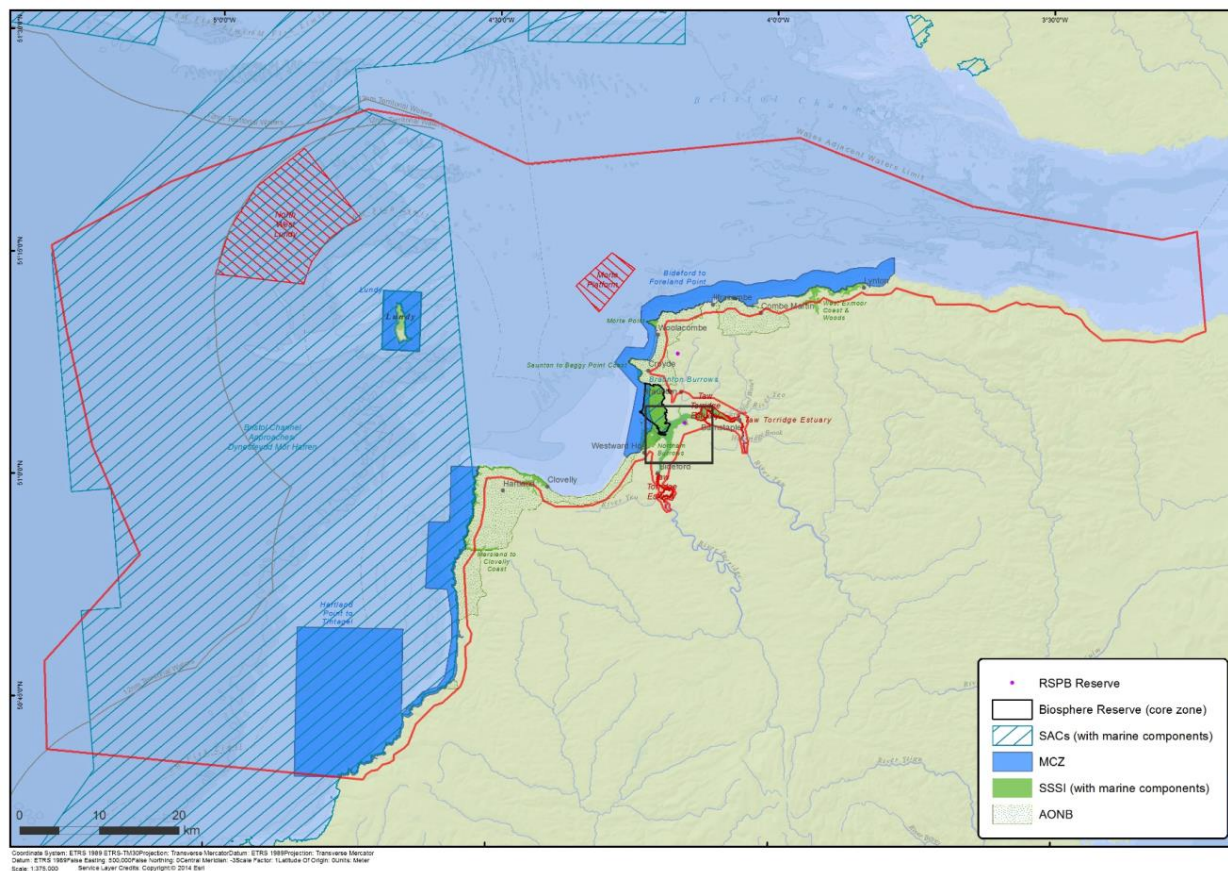
1.1 Background

MPAs have a wide range of ecological, social and economic functions, which include biodiversity conservation, protection of sensitive habitats and species, carbon sequestration, and the provision of opportunities for recreation and tourism. For these reasons, one of the most important factors in establishing and managing effective MPAs is ensuring that sustainable, long-term funding is available. In the context of government budget cutbacks, this means new funding sources, and where investment is needed, finance.

There is also increasing recognition that this needs to take place within the context of a wider effort to put MPAs on a more sustainable financial footing, particularly by addressing the wider drivers/threats affecting them (thereby helping to reduce MPA management costs) and addressing the opportunity costs they generate (thereby overcoming a key barrier to achieving MPA objectives).

This report identifies potential Marine Protected Areas (MPA) funding and financing models, and appraises their feasibility in North Devon in particular. It has been prepared in support of WWF-UK's SEAS (Sustainable Environments at Sea) project, the aim of which is to help increase the effectiveness and sustainable management of UK Marine Protected Areas (MPAs), and which is being conducted as part of the UK government's Marine Pioneer project.

Figure 1. Map of case study area



Source: Plymouth University for WWF-UK (Rees, Ashley, & Cameron, 2018)

Note: The red line indicates the Marine Pioneer boundaries

1.2 Objectives

WWF-UK commissioned this report to:

- synthesise emerging and established best-practice for MPA financing;
- identify MPA financing models that might be suitable for the UK; and,
- recommend models for the North Devon case study area; and
- summarise relevant case studies from around the world.

1.3 Approach

The evidence for this work comes from a wide variety of academic and grey literature and from interviews and workshops with representatives from a wide range of organisations, including Natural England, Defra, the Marine Management Organisation (MMO), the Inshore Fisheries and Conservation Authority (IFCA), the North Devon Marine Pioneer, the Landscape Pioneer, the North Devon UNESCO Biosphere Reserve, the North Devon Council, the Devon & Cornwall Business Council, the South West Partnership for Environmental and Economic Prosperity (SWEEP), the Crown Estate, Plymouth University, the Blue Marine Foundation, the World Ocean Initiative and the Gulbenkian Foundation.

1.4 Structure

The structure of this report is as follows:

- a synthesis of best practice relating to sustainable financing of MPAs is provided in Section 2;
- a review of potential investment projects and sources of finance is displayed in Section 3;
- potential candidate financing models are described in Section 4;
- conclusions and recommendations are offered in Section 5.

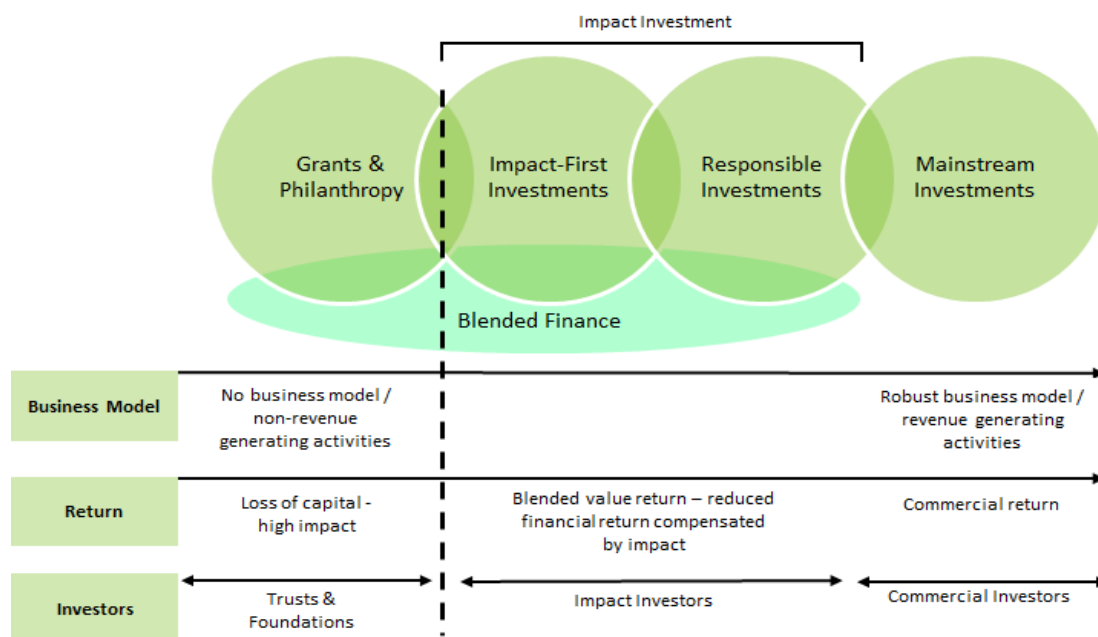
2 Review of best practice related to sustainable financing of MPAs

2.1 Emerging and established best practice from around the world

There is already quite a significant literature on the various instruments which can be used to finance MPAs, with these ranging from government budgets and philanthropy to user fees, licenses, crowdfunding, taxes, fines and payments for ecosystem services. The selection below builds on this existing literature and is based on the following criterion: which of these instruments would be feasible in UK MPAs, given the local natural, political and regulatory environments? This criterion explains why existing instruments such as debt-for-nature swaps are not presented here.

However, choosing the right instruments is not enough to ensure the sustainable *funding* of MPAs. This is why the current focus is increasingly on MPA *finance strategies* (OECD, 2017). Whereas the term ‘funding’ simply refers to securing an amount of money, ‘finance strategies’ include an assessment of the different finance sources and how these can be combined to provide a sustainable source of revenue in the long term. MPA finance strategies are still relatively scarce but are rapidly becoming best practice.

Given the relative immaturity of most MPA-related investment projects, MPA finance strategies are expected to also make full use of ‘blended finance’ (see Figure 2). Indeed, this term refers to the ‘blending’ of private and public/philanthropic capital which is specifically aimed at projects with uncertain returns and no track record, by supporting up-front capital expenditure and capacity building, and de-risking opportunities. As such, blended finance could be used to facilitate and accelerate project development in the context of UK MPAs, in order to pave the way for more risk-averse investors to enter the market.



6

Figure 2. The role of blended finance in the project maturity cycle

Source: Vivid Economics, *Environmental Finance*

Potential finance models have been identified within the Pioneer work, but these are generally at concept stage and conclusions cannot yet be drawn over best practice for MPA financing. Defra have identified that the natural capital investment market in the UK is underdeveloped, and is currently exploring the potential to raise private investment into natural capital projects as part of its 25-year environment plan objectives.

The following sub-section (section 2.2) presents sources of funding which are theoretically applicable to UK MPAs. The models presented in the next section will illustrate how these sources of funding can be developed, combined and structured in order to be the most beneficial to the MPA.

2.2 Examples of funding and finance sources used elsewhere

The examples listed below are either active and contributing to the resources used in MPAs or are under consideration:

User fees

Resource user fees are payments made by those wishing to use the MPA directly, often through tourism and recreation, which are then used to fund the management of the MPA. Entrance fees to marine national parks are being used in a number of countries, including Belize, Mexico, Thailand and the Galapagos Islands in Ecuador (OECD, 2017). In Croatia, Brijuni National Park collects a visitor fee of €27, which includes a ferry ride, a guide for four hours, a tourist train ride, and entrance to museums on the main island; other income is generated through boat moorings,

diving fees, boat trips by private agencies and selling of goods. Self-generated revenues amounting to around €7.91m in 2009 allowed the park to be self-sufficient (MedPAN, 2015).

Fishery revenues

Financing mechanisms for marine conservation include: tradable fishing quotas, fishing licenses, revenues from certification and eco-labelling. In Australia, revenue from the sale of seahorses from seahorse aquaculture goes toward supporting sustainable aquaculture and educational programming about the dwindling wild sea horse populations¹.

Taxes and levies

Taxes can be levied on visitors at hotels, cruise ports and other collection points and a portion may be earmarked for use within the MPA. In the US, a 10% federal excise tax on sales of sports fishing equipment and motorboat fuel is used to finance the US Aquatic Resources Trust Fund (OECD, 2017). In Israel, a marine environmental protection fee is levied on ships calling at Israeli ports and oil unloading platforms, with the revenues going to the Marine Pollution Prevention Fund (OECD, 2017). In France, the 1995 Barnier Act set up a tax which applies to maritime transport passengers when they purchase a ticket to travel across the Port-Cros and Calanques National Parks. The tax amounts to 7% of a 'one-way' ticket price before tax (OECD, 2017). Belize takes a 20% commission on all cruise ship passenger fees which goes into the Protected Areas Conservation Trust (OECD, 2017). In San Francisco, a \$12 per year parcel tax measure with revenue earmarked for the restoration of wetlands surrounding the San Francisco Bay was approved in 2016. It is expected to produce around \$500m in revenue over 20 years (Ballotpedia, 2016).

Private donations

Individuals, companies and philanthropic foundations provide funding to marine conservation initiatives. The Global Ocean Legacy Project launched by The Pew Charitable Trusts and several partners has aided in the creation of nine major marine reserves and has helped safeguard more than 6.3m square kilometres of ocean². At the individual level, a survey conducted among visitors of the German North Sea region showed that 36% of the participants would be personally willing to support nature conservation at their holiday destination with a small financial input (WWF Germany, 2014). Unfortunately, donor funding does not generally support ongoing, long-term expenses of MPAs.

Competitive government grants and funding

Financial assistance received from government agencies supports a wide range of activities. In the United States, NOAA's National Sea Grant Program has provided US\$2.1m for MPA support, primarily in the form of research, since 2001, with an additional US\$1.1m contributed in matching dollars. The program requires a 50% matching requirement from the applicant.³

Fines for environmental damage

¹ More information can be found at www.seahorse-Australia.com.au

² More information can be found at www.pewstrusts.org

³ More information can be found at www.seagrant.noaa.gov

Fines collected for pollution damage finance long-term conservation programs that are not limited to cleaning up the specific damage caused by the polluter. In Canada, an environmental protection fund was created for the Gilbert Bay MPA through proceeds of fines imposed on business following an oil spill (OECD, 2017).

Marine biodiversity offsets

Contributions are made by industries such as petroleum exploration, offshore renewable energy and seabed mining. To offset the impacts of the area covered by the Gorgon gas fields in Australia, the companies involved have funded the North West Shelf Flatback Conservation Program which is a A\$32.5m, 30-year program administered by the Australian Department of Parks and Wildlife (Department of Biodiversity, Conservation and Attractions, 2016). The New South Wales (NSW) Fisheries department in Australia has a policy of 'no net loss' for developments that damage aquatic habitat through which developers can compensate for damage by transplanting seagrass or constructing fishways, or making payments into a Conservation Trust Fund used for strategic rehabilitation projects throughout NSW waters (NSW Department of Primary Industries, 2014).

Payments for ecosystem services

Payments for ecosystem services are beginning to be introduced to marine and coastal ecosystems management. In Tanzania, the NGO Sea Sense provides performance payments to individuals on Mafia Island who report and agree not to poach sea turtle nests (Gjertsen & Niesten, 2010). In Mexico, the Luis Echeverria community is protecting 48.5km² of grey whale habitat in exchange for US\$25,000, used to finance small-scale development and alternative income generation (OECD, 2017).

Bioprospecting

Pharmaceutical companies licence property rights over useful compounds contained in the country's biodiversity. The companies acquire exclusive rights to screen the biodiversity for pharmaceutical compounds and profits are shared if a major drug is developed. In Costa Rica, INBio's formal agreement with the Costa Rican Ministry of the Environment and Energy allows it to prospect for biodiversity in government protected areas in collaboration with research centres, universities, and private companies. The agreements require that 10% of the research budgets and 50% of future royalties be donated to the ministry to be reinvested in conservation (OECD, 2017).

Crowdfunding

Online platforms, such as Kickstarter, Indiegogo and Crowdfunder, can be used to raise funds from private individuals. Two organisations started a program that uses crowdsourcing to raise money and low-cost technologies to locate, document, monitor and report pollution violations in Morro Bay, California (Marine Protected Areas Federal Advisory Committee, 2017).

Blue carbon offsets

Carbon offsets pay for conservation/protection of coastal carbon sinks such as mangroves, salt marshes, seagrasses and, potentially, algae. Katic MPA in Montenegro plans to investigate the opportunity of blue carbon offsets from *Posidonia oceanica* meadows (Mediterranean Center for Environmental Monitoring, 2012). The Ocean Foundation has launched a voluntary blue carbon offset programme, SeaGrass Grow, to restore seagrass meadows⁴.

⁴ More information can be found at www.oceanfdn.org

In Kenya, the local community and the Kenya Marine and Fisheries Research Institute have started a blue carbon offsets project which pays for the conservation of mangrove forests. The project, located in Gazi Bay, has been accredited by Plan Vivo and expects to sell 3,000tCO₂/year over the next 20 years⁵ (Plan Vivo, 2013, 2017).

Nutrient trading schemes

Nutrient trading is a method for managing nutrient discharge by placing a cap on total nutrient losses within an area or catchment and introducing a system of nutrient credits which can be bought and sold. In order to protect the Chesapeake Bay and its tidal rivers from agricultural runoff and urban runoff, the US Environmental Protection Agency has implemented a comprehensive 'pollution diet' which sets limits on nitrogen, phosphorus and sediment pollution (Chesapeake Bay Commission, 2012). Watershed Implementation Plans detail how and when the six Bay states and the District of Columbia will meet their pollution allocations. Water quality trading in the Chesapeake Bay watershed has enabled regulated entities to meet permit requirements at a reduced cost than under traditional command and control approaches, and credit generators, such as farmers, have earned additional revenue through the sale of credits. Due to long ecosystem response-time delays associated with nutrient reductions, the exploration of how the watershed is responding to the partnership's protection and restoration efforts is still under way (Chesapeake Bay Commission, 2017).

Regional cooperation

Regional networks are used to pool resources and reduce efforts/costs of developing monitoring methodologies. The MedPAN North Project provides managers of MPAs in the Mediterranean with a harmonised methodology to assess the effectiveness of their management (MedPAN, 2015).

Scientific partnerships

Partnerships with universities and research centres offer cost-effective information to MPA managers for long-term monitoring programmes. The Scandola reserve in Corsica (France) is able to attract scientists that are prepared to carry out studies for lower costs: €3,000-€5,000 compared to usual costs of €30,000-€50,000 (MedPAN, 2015).

Citizen partnerships

Local residents and users of the MPA are furnished with protocols and frameworks for collecting monitoring data. In the Strunjan Park in Slovenia, local fishermen help with fish monitoring; in exchange for their time and the use of their boat/fishing gear; they are paid €500 per day. This reduces the MPA management costs and builds confidence between the MPA team and local fishermen (MedPAN, 2015).

⁵See Case Study 6 in Section 4.6

3 Potential sources of funding and finance to support North Devon MPAs

3.1 Introduction

This chapter identifies potential sources of funding and finance that could be sought to help North Devon's MPAs meet their objectives by putting them on a more sustainable financial footing. Sources were identified based on a review of global experience, including lessons learned from other contexts (e.g. health, arts, planning etc), and also draw on findings from consultation with a range of stakeholders.

The primary focus is on identifying potential new sources of funding and finance – from government and non-government sources – to help support MPA management (e.g. to cover the costs of designation, monitoring, research and enforcement), as this is an immediate priority (see Box 1). This included sources of funding and finance could be used directly for MPA management-related projects/activities, and sources that could be used to establish other projects that generate a financial surplus that can be used to top up MPA management budgets.

Box 1: Management costs of North Devon MPAs

MPAs require investment for effective management, for example for designation, monitoring, research and enforcement. Based on research during this study, the following is an estimate of the approximate management costs needed for North Devon MPAs:

Cost type	Estimated annual cost (£000s)	Source of cost estimate	Uncertainties
Marine management schemes	46	<ul style="list-style-type: none"> Full time Project Officer (£40k per annum) 6 days of RA officer time per year (£175 per day) (Defra, 2012) 	<ul style="list-style-type: none"> Site size, management complexity, type of scheme Costs considerably lower if Project Officer is not employed full time and scheme run through management collaboration across MPAs
Statutory management measures	29	<ul style="list-style-type: none"> MMO cost for North Devon fisheries enforcement (NE, 2012) 	<ul style="list-style-type: none"> Site specific enforcement requirements, current level of compliance
Voluntary measures	17	<ul style="list-style-type: none"> MMO cost for North Devon fisheries enforcement (NE, 2012) 	<ul style="list-style-type: none"> Site specific enforcement requirements, current level of compliance
Site monitoring	21	<ul style="list-style-type: none"> Northern Cardigan Bay SPA monitored on 6 year cycle at £126,000 per cycle (JNCC, 2015) 	<ul style="list-style-type: none"> Location, type of monitoring required e.g. field survey, modelling etc.
Condition assessment	Unavailable	<ul style="list-style-type: none"> NE staff time cost (lead/senior advisor - £122/£155 per day) 	<ul style="list-style-type: none"> Site specific features, staff experience
Management planning	~10	<ul style="list-style-type: none"> External consultant cost estimate Mostly covered by Project Officer 	<ul style="list-style-type: none"> Time and skillset required (may need external consultants/NE input)
Conservation advice	Unavailable	<ul style="list-style-type: none"> NE staff time cost (lead/senior advisor - £122/£155 per day) 	<ul style="list-style-type: none"> Site specific features, staff experience
Promotion of public understanding	~2	<ul style="list-style-type: none"> Negligible costs (website, printing costs) Staff costs within Project Officer role 	<ul style="list-style-type: none"> Type of work involved
Regulatory and advisory costs - licensing	Unavailable	<ul style="list-style-type: none"> ~ 10% of the cost of preparing HRAs (JNCC, 2015) 	<ul style="list-style-type: none"> Number of applications reviewed pa., review time

Source: Vivid Economics and Environmental Finance

Notes: Costs are estimated from historic, high-level MPA cost analysis reports. A full cost evaluation has been commissioned as part of the UK-SEAS project. This project will use site-specific evidence to produce an accurate assessment of the total costs of North Devon MPAs management.

In addition, consideration is given as to whether any of these funding/finance sources could help MPAs meet their objectives more cost-effectively in other ways, for example, by addressing wider drivers/threats affecting MPAs (e.g. reducing fishing pressure or nutrient loads in rivers) or addressing MPA opportunity costs (e.g. helping fishers and upstream farmers adapt).

A key concept used during the study was the identification of ways to 'monetise' the ecosystem services provided by MPAs, in order to help generate funds for MPA management. For example, this could be through the use of charges levied on users of MPA services (e.g. tourists fees, fishing licenses) and on those undertaking activities that damage or degrade MPAs (e.g. via developer permits, mitigation/offsetting investments, restoration projects). Such charges are commonly used around the world to help top up MPA management budgets, as well as to incentivise less damaging activities (in accordance with the polluter pays principle).

The study also explored potential to secure additional funding and finance from investors that are interested in some kind of return. Again, the concept of monetising ecosystem services can help here, as investments in projects/activities that lead to healthier and more productive MPAs can generate a range of benefits. For example, targeted investment in MPAs can increase revenues (e.g. through enhanced sustainable tourism/fishing opportunities for local communities) and reduce costs (e.g. for local authorities due to avoided job losses, coastal deprivation and associated socio-economic impacts). Identifying 'investible projects' (see Box 2) that can satisfy both investors and help meet MPA objectives (e.g. generating a financial surplus that can be used to fund MPA management), and overcoming the barriers to securing such investments, is a key issue that this project aims to help address.

Box 2: What makes an 'investible project'?

Whether a government allocating public funding, a philanthropic foundation committing funds, or a company investing financial capital, all 'investors' generally expect a return of some kind. For example, governments will typically want to see cost-effective delivery of policy outcomes; companies are motivated by increased revenues and cost savings, and philanthropic foundations will seek specific outcomes aligned with their mission/objectives.

MPAs can potentially deliver for a wide range of investors, and MPA managers are increasingly taking a creative and more business-like approach to attract them. Such investments could be both in the form of contributing additional financial capital (e.g. new investment in restoration of habitats or fishing infrastructure) and/or foregoing financial returns currently being enjoyed (e.g. accepting reduced fishery yields while stocks recover to levels where they can be fished more sustainably).

However, there are many barriers to securing these investments in practice – in the context of UK MPAs, these issues are three-fold. First, the identification of a business case, i.e. of an activity related to the MPA which could provide sustainable revenue streams. Second, an assessment of the expected returns and of the risk profile of the investment. Finally, finding investors who correspond to this risk/return profile and putting in place the right framework to mobilise investments: this is likely to include the exploration of the appropriate financial structure (for instance, through the use of blended finance) and the design of monitoring, reporting and verification procedures.

3.2 Potential sources of funding and finance for North Devon MPAs

Based on an understanding of the key ecosystem services provided by MPAs, this study has identified a wide range of potential funding and finance sources that could be secured for North Devon MPAs. A list of these is listed in Table 1, which also shows their association with specific ecosystem services provided by MPAs (the benefits provided by which, in effect, would be monetised by capture of the funding/finance source).

Table 1. Potential funding and finance sources for North Devon MPAs

Ecosystem service	Funding and/or finance source	Expected scale of funding source
Recreation and Tourism	— Licenses and/or user fees for activities such as seal watching, scuba diving, snorkeling, coasteering, surfing, kayaking and sightseeing	High
	— Charges or levies for boat launching, anchorage or mooring	
	— Commercial income from beach services such as car parks, beach huts, sun beds, campsites, picnic areas, events, equipment hire	
	— Levies or opt-out donations from hotels, restaurants, local businesses	
	— Contribution from stamp duties raised on sea-front/coastal properties	
Fisheries	— Fishing licenses, premium branding/certification, lobster hatcheries	Medium
Aggregates	— Levy/license fees for aggregate extraction	Low
Energy	— Levy/license for marine energy installations (wave, wind etc)	Medium
Navigation	— Levy/license fees for navigational dredging, port development etc	Medium
Climate regulation and carbon sequestration	— Sale of carbon offsets from saltmarsh restoration to the voluntary or statutory markets)	Medium
Water purification	— Trading of nutrient discharge rights between local sources of pollution to help attain target total nutrient load	Low
	— Payments for aquaculture bioremediation services	
Biodiversity	— Central/local government core funding to help meet conservation objectives	Medium
	— Charges on single-use plastics	
	— Licenses and/or fees for development in MPAs or marine areas	
	— Investment in mitigation of environmental impacts for terrestrial/marine developments	
Grants/donations	— Sale of biodiversity offsets for terrestrial/marine developments	Low
	— Research grants/funding	
	— Philanthropic or private sector donations	
	— Government budget allocations	

Source: Vivid Economics and Environmental Finance

3.3 Investment projects to capture new funding and finance in North Devon MPAs

A number of potentially feasible investment projects have been identified, through which new forms of funding and finance could be captured, in order to support North Devon MPAs. In all cases, these projects have the potential to generate a financial surplus that could be used to top-up MPA management budgets, or help to achieve MPA objectives in some other way (e.g. addressing drivers/threats or opportunity costs), or a combination of these. Projects currently being trialled in North Devon are at a relatively early stage in their development and, despite the potential for revenue generation, identifiable returns are insufficient to attract investment at present. Further project development work is required to develop robust business cases for the projects identified to secure future investment.

The most promising, and potentially beneficial, candidates are briefly set out below, in the areas of: fisheries, tourism and recreation, aggregates/navigation, blue carbon, biodiversity, and water quality improvements and aquaculture. Traditional sources of funding (e.g. government budget allocations, grants, business donations) have been included as potential funding sources in the table above, but these are unpredictable, declining in scale and do not lead to best practice to build a resilient and sustainable funding base for MPAs.

3.3.1 Fisheries

An investment in fish stock at the MPA or regional levels, by temporarily closing specific fisheries (or temporarily reducing fishing effort), would allow stock recovery of specific local inshore fish/shellfish species, and fishing them at sustainable levels in the future (e.g. no use of mobile fishing gear). This would help to achieve MPA objectives, by enabling marine habitats/species to recover, as well as generating revenues that could be used to top-up MPA management budgets.

Possible candidates for stock recovery include shell fish (e.g. oysters, crabs, lobsters) and some specific fin-fish species (e.g. herring, skates, rays). Investment would be needed in the form of financial compensation for affected fishers (during fishery closures) and to help fishers adapt to new fishing management regimes (e.g. purchase of new gear). Once recovered, the fishery would be more productive in the future, having a more resilient stock, enabling repayment of investors due to greater yields (and revenues) and reduced fishing effort (and costs).

In addition, investment in fisheries infrastructure and in the supply chain could increase value add after primary fish production. Potential supply chain investments include community access cold storage (to increase product quality), a lobster hatchery (to boost local production, if economic), and a herring smokery. Assuming that these would benefit directly from the improved state of the local fishery, then part of the proceeds could be earmarked to cover some of the MPAs' management costs.

3.3.2 Tourism and recreation

Investment in the tourist sector could support agglomerations of tourist businesses, by continuing or extending current tourist board activities on marketing, accreditation and training, across the wide range of services in the market, such as tour boats, watersports schools, hospitality and museums.

Investments could be made in critical infrastructure to support tourism, where availability and condition are important, including footpaths, cycle paths and routes, car parking, seating and signage. There is also

potential for investment in specialist activities, such as the creation of permanent dive moorings by areas of cold water corals or wrecks. Options for acquisition of land for public access, or establishment of agreements with landowners for public access, in areas of outstanding natural beauty, historic or cultural interest, could also be explored.

Investment in litter picking along the inter-tidal zone, as well as local efforts to prevent litter entering the coastal/marine environment in the first place (e.g. litter bins, dockside waste disposal, recycling facilities), would help to improve visitation rates and experience for tourists. Litter, especially persistent plastic litter, has recently gained public attention but it has been a severe and growing problem for many years.

There are several ways through which investments in the tourism sector could provide revenue to help cover MPAs' management costs:

- If MPAs have an impact on the number of tourists in the area (e.g. divers, people coming to enjoy the beach, wildlife watchers, shellfish harvesters, etc.), then a levy, which would be earmarked for local MPAs, could be introduced on local businesses which benefit from an increase in tourist frequentation;
- Similarly, part of the proceeds from infrastructure (car parks, camping areas), services (mooring fees) or activities which are directly related to the MPA (wildlife watching, diving) could be used to cover some of the MPA's management costs.

3.3.3 Aggregates dredging

Aggregate dredging from English seabeds requires a license from the Marine Management Organisation (MMO) and separate permission from the landowner: most of the seabed is owned by the Crown Estate but in some cases, the land may be owned by the local council, a harbour authority or a private landowner. One of the ways through which aggregates dredging could be used to finance MPAs would be by requiring that the licensee pays a fee to the MPAs – this could be envisaged for instance when dredging takes places in the vicinity of an MPA.

3.3.4 Blue carbon

Blue carbon offsets could be obtained from an expansion of the programme of re-establishment of salt marshes. In a programme limited to suitable sites, sea defences would be reengineered to allow seasonal flooding and the sites managed as salt marshes. This would create biodiverse habitats and an increased take-up of carbon. Proceeds from the sale of these blue carbon credits corresponding to emission savings on the voluntary (most likely) or statutory (assuming regulatory changes) markets could be used to cover the investment cost (the costs of realigning sea defences and restoring saltmarshes); depending on the entity managing the investment, there could be a return-sharing agreement with the MPA.

A more speculative possibility is the planting or managed recovery of seagrass beds. Seagrass has high carbon storage potential and supports a wide range of fauna as well as acting as a nursery for commercial fish species. In areas of suitable depth and substrate, it may be possible to re-establish extensive seagrass beds. However, seagrass beds are often located in areas which are used for harbor activities or for mooring; therefore a careful exploration of the respective costs and benefits of each of the two options (restoring seagrass beds, which contributes to carbon sequestration, or allowing boats to moor in exchange for a fee, part of which could contribute to funding MPAs) would need to be undertaken on each site in order to assess the most beneficial option overall.

3.3.5 Biodiversity offsets

There is currently a growing momentum around the idea that unavoidable biodiversity losses associated with development should be quantified and compensated with comparable ('no net loss') or improved outcomes ('net gain'). Mitigation banking is well-established in some countries such as the United States and Australia but is still in the early stages in the UK. However, the emergence of market for biodiversity offsets could quickly gain traction, as one of the objectives stated in the 25 Year Environment Plan is to embed an environmental net gain principle for housing and infrastructure developments.

The most straightforward way in which biodiversity offsets could be used to finance MPAs would be through a biodiversity net gain requirement on new coastal and underwater infrastructure developments; in order to get the planning permission, developers would therefore have to do on-site compensation, and/or off-site offsetting. One of the modalities of off-site offsetting could be to finance restoration/conservation activities in local, regional or national MPAs. Potential extensions of the scheme to inshore developments located not far from the coast could also be considered.

3.3.6 Water purification

This is a category likely to be reformed by emerging government agri-environment policy. Potentially, there will be extensions of practices which reduce pollution from land to water courses, by investments such as interception of run-off through creation of buffer strips, use of winter cover crops, more scientific application of agrochemicals, improved handling of slurry, fencing off water courses from livestock, reduced drainage and the creation of wetlands (ponds). As water quality improves, there could be subsequent investment in shellfish aquaculture (mussel and oyster farming).

In addition, there is potential to secured investment in enhancing shellfish stocks in order to provide bioremediation services (bivalves are a cost-effective way of improving water quality in coastal waters). Farmers and water companies may be interested in supporting such schemes to mitigate and/or offset the impacts of their up-stream activities.

4 Potential financing models to help capture new sources of MPA funding

4.1 Introduction

New financing models are required to support the scale-up of investment in MPAs, enabling the efficient capture of a diverse range of funding and finance sources. A key priority is to unlock and establish revenue-generating opportunities and other sources of long-term funding for MPAs, with the aim of attracting increased external (i.e. non-government) investment in the long-term.

Six candidate financing models, which are potentially suitable to mobilise new funding sources and channel investment into the different projects identified in section 3, are presented in this section. These models are:

- a place-based portfolio model;
- a Marine Improvement District;
- a blue impact fund;
- a net gain fund;
- a blue carbon fund;
- a nutrient trading scheme.

A detailed description of each of these financial models is provided below, as well as an assessment of their feasibility, expected socio-economic impact, track record and robustness. The purpose of this assessment is to identify which of these models are likely to be most suitable to be piloted in North Devon in the near term. Not only do these financing models offer the flexibility to mobilise different sources of funding, including from the private sector, but the successful implementation of a pilot will provide the necessary track record to attract more external investments, in order to ensure the sustainability of UK MPAs in the long-term.

4.2 Place-based portfolio model

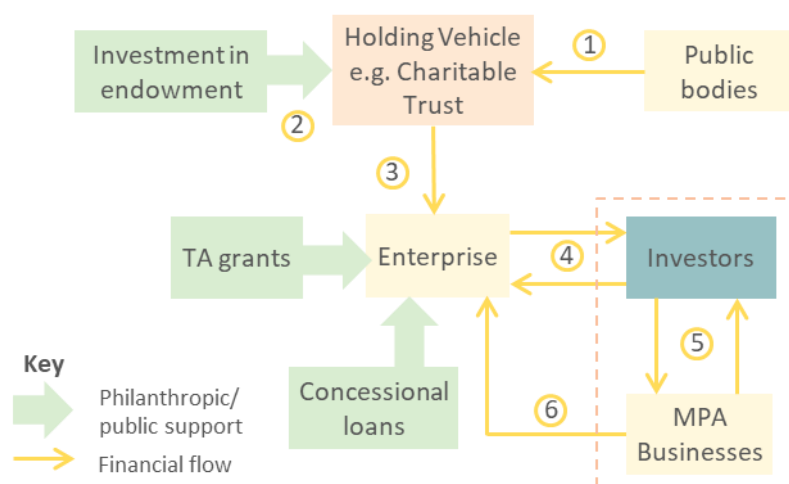
A place-based portfolio structure could provide a long-term sustainable funding source and empower local communities to enhance the value of their local MPAs. Under this model, the MPAs are transferred, typically via a long-term lease, to a charitable trust, with the principal activities managed by a dedicated social enterprise. The Trust is responsible for protecting the assets for public benefit, and the social enterprise is set up to receive income from the Trust, run the assets on the Trust's behalf and carry out commercial activities in accordance with the Trust's mission. The Trust will be an independent organisation made up of a board of stakeholders, who make the Trust's management decisions. This model provides a potential solution to the large number of stakeholders currently involved in implementing and overseeing MPA management measures in North Devon, as the social enterprise convenes all parties to coordinate management measures that are not required by statutory bodies. Funds are generated through an endowment (a permanent fund) raised within the charitable trust, which is placed in an investment fund where it is managed for long-term growth by generating returns independently of MPA activities. Income generated is used to cover the cost of MPA management and invest in new revenue generating opportunities within the MPAs.

The endowment could be raised (within 12-18 months) through collating multiple sources of finance from established and emerging sources (for example traditional business revenues, voluntary giving schemes, biodiversity offsets, nutrient trading schemes and so on). A key benefit of this model is that it provides the

revenue required to protect MPAs, whilst creating more opportunities for enhancing them, enabling a myriad of funding sources to sustain MPAs in the long-term. A more focused approach could be developed to nurture and train volunteers and provide the local community with an increased stake in their MPAs.

This model is relatively complex to set up, requiring funding to secure an endowment and a team with appropriate skills to ensure long-term sustainability. However, there are several examples of this model operating successfully terrestrially, for example, Milton Keynes parks were transferred into an independent charitable trust to become entirely self-financing and deliver enhanced community benefit. A similar framework is being developed to roll this model out at scale to parks in cities across the UK, with a pilot in Newcastle due to be launched in early 2019. In a marine context, Conservation Trust Funds have been implemented successfully in nearly all Caribbean islands to handle money from diverse sources and bring together stakeholders with varying capabilities and interests (JNCC, 2017). Figure 3 illustrates this financial structure below.

Figure 3. Place based portfolio model structure



Source: Vivid Economics, *Environmental Finance*

Model description

1 – Public bodies transfer assets/liabilities typically via a long-term lease from the MPA into a Holding Vehicle, for example a Charitable Trust, which is managed by a new social enterprise.

In this context, assets and liabilities are defined as the rights to license the MPA revenue opportunities and the cost of managing the MPA, respectively.

2 – Public and other funders contribute towards an endowment held in the charitable trust to secure public benefits.

3 – Charitable trust releases income from endowment to a social enterprise, which manages assets in the MPA, engages community, generate revenues and delivers benefits.

4, 5 – Investors invest into the enterprise (or third-party businesses operating in the MPA portfolio), which manages the MPA to deliver environmental benefits and generate financial returns to repay investors. This enterprise model is available only if the transferred portfolio includes opportunities to license revenue.

6 – MPA businesses pay a rent or a license fee to the enterprise.

Case study 1: The Caribbean Biodiversity Fund (endowment only)

The Caribbean Biodiversity Fund is a regional endowment fund established to disburse funds to Caribbean countries to support terrestrial and marine protected area management. It was launched in 2012 by The Nature Conservancy, the Global Environment Facility and The German Development Bank (KfW) with US\$34.4m available for sustainable financing, including \$2.4m in generated income. Achievements of the Fund include: establishment of five national trust funds to receive funds from CBF; water quality improvement and a methodology for protected area managers to use drones to collect special data on MPA; and a monitoring information database to track the impact of interventions in the marine environment.

Case study 2: The Milton Keynes Parks Trust (endowment and enterprise)

Milton Keynes Parks Trust is an independent charity created in 1992 to manage many of Milton Keynes' parks and green spaces in perpetuity. It was established with the vision that the city's parks and green spaces would be better managed independently from the local authority without having to compete with other council priorities and funds. The Trust was endowed with a substantial property and investment portfolio, which generates income to cover the annual maintenance costs. The Trust focuses on continually improving its parks, developing new enterprises and income streams, and delivering enhanced public benefits. It organises over 200 events each year, provides environmental education programmes for schools and supports a team of around 160 volunteers.

Source: World Bank (World Bank, 2017)

Source: Milton Keynes Parks Trust (Milton Keynes Parks Trust, n.d.)

Table 2 below provides a summary assessment of this financial model.

Table 2. Place based portfolio model assessment

Feasibility	Socio-economic impacts	Track record	Robustness of the model
<ul style="list-style-type: none"> — Solves local authority problem of lack of resources to manage assets. — Requires public bodies to contribute capital and funding to an endowment. Time and set up costs likely to be high. — Requires staff with technical expertise for effective management. 	<ul style="list-style-type: none"> — Supports communities to take responsibility for assets, leading to increased engagement and participation. — Allows the creation of balanced portfolio of assets and liabilities, supporting public goods with private services. 	<ul style="list-style-type: none"> — Conservation Trust Funds have been implemented in nearly all Caribbean islands, both regionally and in groups, e.g. the Caribbean Biodiversity Fund (2012) received a large principal endowment and works regionally to disburse funding to MPAs to supplement government funding. — The Milton Keynes Parks Trust (1992) manages parks independently from authorities using endowment income and revenues from operations. 	<ul style="list-style-type: none"> — Long-term blended funding solution and new strategic imperatives enables assets to be repurposed for revenue generation and delivery of impact. — An entirely new model requires transitional funding and may not be financially sustainable if funds run out prematurely or are mismanaged. — However, if the initiative fails, MPAs will likely have a partial endowment and/or more enterprise revenues than the current status quo.

Source: Vivid Economics, *Environmental Finance*

4.3 Marine Improvement District

A Marine Improvement District (MID) could achieve a new source of sustainable income to maintain and improve the quality of MPAs by securing a voluntary levy from businesses operating in the local area. The model builds on the terrestrial concept of a Business Improvement District (BID), which has been established successfully to improve the local trading environment in town centres and other localised areas across the UK. A MID would be established through securing a majority vote from businesses through a ballot process to invest collectively in local improvements in addition to services already being delivered by local statutory bodies. If a levy can be secured on business rates, this would enable a significant new source of income to pay for the annual costs and/or build a long-term endowment. This can be used to invest in MPA assets, coastal infrastructure and support other underlying revenue generating activities that will benefit businesses in the local area. The model is based on the idea that a group of aligned enterprises working together can benefit from having an improved local environment, through the encouragement of more visitors to the area and their associated additional spending.

The key challenge to implement this model is evidencing and educating enterprises about the collective benefits they receive from high quality MPAs in their area. The model requires leadership to engage with local enterprises and provide a clear rationale for agreeing to a voluntary levy. A potential alternative model could be to establish an Enterprise Zone, designed to strengthen economies in deprived areas through supporting businesses with government benefits, including business rate discounts and enhanced capital allowances. Another variant could be a voluntary visitor giving scheme or a tourism MID, where a levy is charged on a percentage of revenues generated by certain tourist services to support development of tourism in the local area. A tourism MID may be more feasible if it is difficult to align broader business interests, however, it may prevent the wider increase in the sense of community and the broad benefit that a business-led MID can achieve across the trading environment. Further consultation is required among businesses operating in North Devon to establish the most appropriate structure to implement. Figure 4 illustrates this financial structure below.

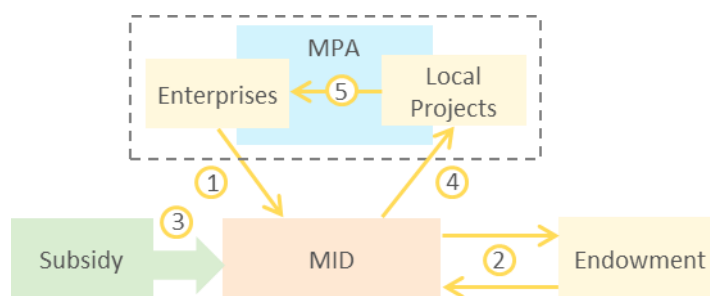


Figure 4. Marine Improvement District structure

Source: Vivid Economics, Environmental Finance

Model description

- 1 – A MID could be set up using Business Improvement District regulations to secure funding for MPAs from a levy charged on local businesses over a 5-year period.
- 2 – The levy can be invested in an endowment, thereby creating a provision to maintain MPAs.

- 3 – The MID can draw on other public and private funding streams.
- 4 – The levy is ring-fenced to develop local projects that provide improvements to the area.
- 5 – This increases tourism visits and spend, and benefits local enterprises.

Case study 3: Newquay Business Improvement District

The Cornish coastal town of Newquay voted to renew its BID for a second term, in which all eligible businesses within the geographic boundary contribute to a 1% levy. An estimated £750,000 is expected to be raised in the period 2016-2021. Before establishment of its first BID in 2011, Newquay was experiencing a decline in its reputation, footfall and business opportunities. During its first term, the Newquay BID created positive PR, an enhanced environment and supported new and existing businesses in the local area, in addition to leveraging in a further £67,000 of grant funding to be spent on additional projects. Newquay has realised that inward investment is crucial to preserve the vitality of the area and to be a leading destination for tourism and business.

Source: *Newquay Business Improvement District (Newquay BID, 2015)*

Table 3 below provides a summary assessment of this financial structure.

Table 3. Marine Improvement District model assessment

Feasibility	Socio-economic impacts	Track record	Robustness of the model
<ul style="list-style-type: none"> — Difficult to secure a majority vote from businesses in favour of the levy: businesses must see clear benefit from improvements made to MPAs. — Clear definition of geographical area required. — Skills and expertise in business engagement and BID management required. 	<ul style="list-style-type: none"> — Potential to improve MPA quality and expand range of activities and users to enhance economic vitality. — More engagement with potential supporters and sponsors. 	<ul style="list-style-type: none"> — >290 BIDs established in UK town centres with proven impact. — Bryant Park, New York (1988): Parks improvement district successfully funded the restoration of neglected green space. — Loch Ness and Inverness Tourism BID (2014): branding and promotion of the area as a tourist destination. — No track record of BIDs focused on MPAs. 	<ul style="list-style-type: none"> — Robust if the levy can be secured: provides a significant new source of income to enhance revenue-generating opportunities and to establish an endowment as a long-term funding source. — Development support may come from other grants/public funding. — BIDs take ~2 years to develop with a term of 5 year; risk that it will not be renewed after 5 years.

Source: *Vivid Economics, Environmental Finance*

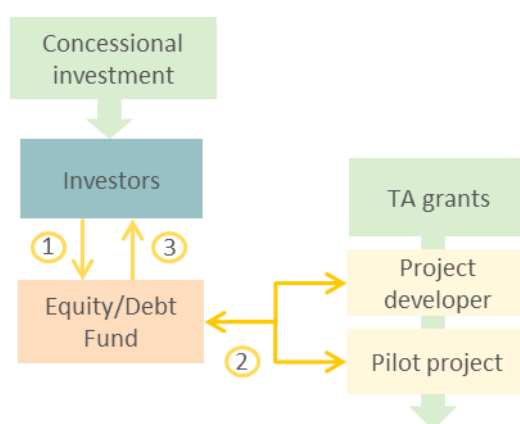
4.4 Blue impact fund

A blue impact fund is a flexible model that could invest in a wide range of business opportunities within MPAs to enhance the sustainability of marine ecosystems. This targeted fund could draw money from a blend of investors providing equity or debt investment into a broad range of assets and revenue generating activities within the MPAs that are not currently funded (such as the projects identified in the previous section). These investments could lead to an improved and more sustainable marine environment, while enhancing the economy for the North Devon coastal community.

The current pipeline of investible projects identified in North Devon may be too small to attract investment into a marine-focused fund. Although the projects identified are part of a relatively well-defined market with recognisable revenue streams, projects currently being trialled in North Devon are at a relatively early stage in

their development with insufficient returns to attract enough investment to support a marine-focused impact fund. Potentially investible projects have been identified, but further project development work is required to produce robust business plans that prove the revenue-generating capacity for these projects. As these projects become more established and once a track record of investible projects has been proven, a Blue Impact fund could become a suitable tool to seed investment into existing opportunities and catalyse further investment into new opportunities within MPAs over time. A number of funds focused on financing sustainable business models in marine areas have been raised overseas, such as Althelia Ecosphere's Sustainable Ocean Fund and the Meloy Fund, both of which provide debt investment to small-scale fisheries. These funds are relatively newly established, therefore there is limited track record to establish overall success rates. Figure 5 illustrates how this financial structure could be used.

Figure 5. Blue impact fund structure



Source: Vivid Economics, *Environmental Finance*

Model description

- 1 – Investors capitalise the equity fund/provide loan to a debt fund.
- 2 – Fund invests/provides loan to project developers or pilot projects. A local partner provides the necessary technical assistance.
- 3 – Investee pays returns from the project back to the fund/investor.

Case study 4: The Meloy Fund

The Meloy Fund for sustainable community fisheries is an impact investment fund that provides debt and equity investments into fishing-related enterprises, supporting the recovery of coastal fisheries in Indonesia and the Philippines. The Fund has raised US\$17.1m of a target of US\$20m through the Global Environment Facility, US Agency for International Development and other non-profits. It made its first investment in 2016, lending US\$1m to Meliomar to increase its processing capacity, improve logistics and develop additional product lines. The Fund's projected social and environmental impacts include improving the lives of 100,000 fishers and their household members, while placing 1.2m hectares of coastal habitats under better management.

Source: *The Meloy Fund (The Meloy Fund for Sustainable Community Fisheries, n.d.)*

Table 4 below provides a summary assessment of this financial structure.

Table 4. Blue impact fund assessment

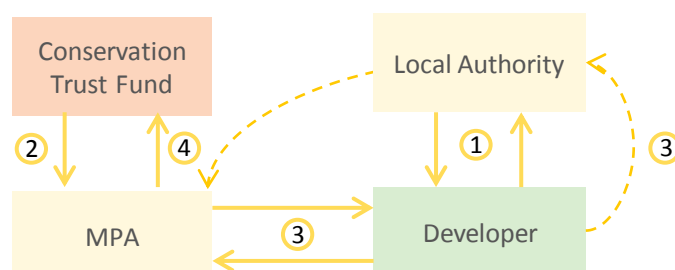
Feasibility	Socio-economic impacts	Track record	Robustness of the model
<ul style="list-style-type: none"> — Fund can be highly flexible depending on MPA project requirements. — Low pipeline of revenue-generating projects in MPAs – difficulty attracting investors to the market. — Lack of skills and capacity within project developers to create investible projects. 	<ul style="list-style-type: none"> — Increased and stabilised fish stocks and marine habitats. — Improved livelihoods and economic value for local stakeholders. — Biodiversity and conservation gain. 	<ul style="list-style-type: none"> — The Sustainable Ocean Fund (Althelia Ecosphere, 2016) provides debt investment in sustainable fisheries, aquaculture in developing countries. — 17.1m Meloy Fund (2016) invests debt and equity into sustainable fisheries in Indonesia and the Philippines. 	<ul style="list-style-type: none"> — Lack of stability of revenues and cash flows in marine projects may result in low demand for financing and/or high project failure rate. — Similar structures and funds in the adjacent social investment sector have grown over the last 10 years and developed moderately successful track records.

Source: Vivid Economics, Environmental Finance

4.5 Marine biodiversity net gain fund

A marine biodiversity net gain fund could take the shape of a Conservation Trust, which would use the proceeds from mitigation fees obtained from planning obligations to invest in the conservation or restoration of marine habitats and thus generate biodiversity offsets. Two main policy changes would be needed to support this financing model: the extension of the current system of Section 106 planning obligations to the marine environment, and the development of a biodiversity metric which could be easily applied to marine habitats and ecosystems. Figure 6 illustrates this financial structure below.

Figure 6. Net gain fund structure



Source: Vivid Economics and Environmental Finance

Model description

- 1 – The developer submits planning permission application to the local authority for a project with significant impacts on the local marine area, for example coastal developments, submarine cables and offshore wind turbines.
- 2 – The Conservation Trust invests in the MPA to create credits from conservation or restoration of marine habitats.
- 3 – The developer works with the local authority to create a project and pays mitigation fees (either directly to the MPA or indirectly through the local authority) to compensate for its environmental impact in return for credits.
- 4 – The MPA generates returns and pays back the Conservation Trust.

Case study 5: The New South Wales Biodiversity Offsets Policy for Major Projects

The NSW biodiversity offsets policy, which commenced on 1 October 2014, applies to all biodiversity including aquatic biodiversity and ensures that there is a 'no net loss' of key fish habitats affected by major projects. It allows for both site-based offsets to compensate for the loss of aquatic habitat type or compensation payments to the Fish Conservation Trust Fund. The policy requires a minimum 2:1 offset for certain key fish habitats and payments which are made into the Fund are ringfenced for use for site-based offsets and/or supplementary measures where site-based offsets are not fully achievable in the catchment area.

Source: NSW Department of Primary Industries (NSW Department of Primary Industries, 2014)

Table 5 below provides a summary assessment of this financial structure.

Table 5. Net gain fund assessment

Feasibility	Socio-economic impacts	Track record	Robustness of the model
<ul style="list-style-type: none"> — Lack of capacity and experience within local authorities to design and administer schemes. — Lack of metrics and methods of estimating gains and losses. — Currently no known marine or coastal developments in the pipeline in North Devon 	<ul style="list-style-type: none"> — Proceeds could be solely dedicated to funding the restoration or management of the MPA. — Benefits to biodiversity, wildlife and conservation of marine habitats through offsetting process 	<ul style="list-style-type: none"> — The NSW Fisheries department (Aus.) has a 'no net loss' policy for developments that damage aquatic habitat: developers can compensate for damage by transplanting seagrass or constructing fishways or making payments into a Conservation Trust Fund used for strategic rehabilitation projects throughout NSW waters — The State of Queensland (Aus.) has marine-specific offset requirements for coastal developments which affect marine fish habitat or protected plants — Large global market - \$4.8bn mitigation bank credits transacted in 2016 including \$3.3bn focused on wetland and stream offset credits. 	<ul style="list-style-type: none"> — One-off payment structure into an endowment provides cash up front to invest in MPA. — Biodiversity offsets could be accused of enabling developments which cause irreversible harm to the MPA.

Source: Vivid Economics and Environmental Finance

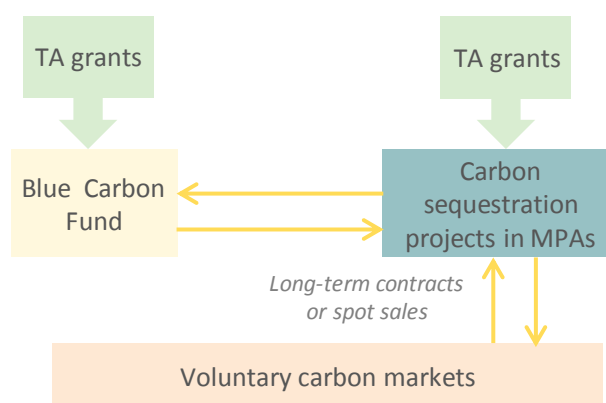
4.6 Blue carbon fund

Carbon sequestration and storage is increasingly recognised as a valuable service provided by coastal and marine habitats such as mangrove forests, salt marshes and seagrass meadows, which capture and store carbon within the plants themselves and in the sediment below them. The destruction of these habitats causes significant amounts of carbon to be released in the atmosphere and ocean, which explains why blue carbon ecosystem protection is becoming a greater priority in marine management.

In the UK, the most important coastal blue carbon sinks are salt marshes and seagrass beds: monetising these as blue carbon offsets on the voluntary carbon markets would enable sales proceeds to be used to fund the conservation and protection of coastal and marine vegetation to promote carbon sequestration.

However, the implementation of this financing scheme in the case study area would require careful consideration: first, an assessment of the technical feasibility of blue carbon schemes in North Devon MPAs (for example seagrass beds, kelp) would need to be undertaken. Then, estimates of the fund's expected financial returns would need to be provided *ex ante*. These will depend on future projections of the carbon price, which, in turn is likely to depend very closely on the stringency of climate change mitigation at the national and international levels. Other factors, such as whether policy measures have been put in place to support strong markets for domestic carbon offsets, will also play a significant role. 32A dedicated fund manager would be responsible for making investments into carbon sequestration projects within MPAs and generating sales of carbon credits to repay investors. Figure 7 illustrates this financial structure below.

Figure 7. Blue carbon fund structure



Source: Vivid Economics and Environmental Finance

Model description

- 1 – The Blue carbon fund invests in projects based on the restoration or the conservation of marine habitats which contribute to carbon storage.
- 2 – The emissions savings from these assets generate carbon credits which are then sold on the voluntary carbon markets, either through long-term contracts or spot sales.
- 3 – The proceeds from the sale of these carbon credits are used to repay the fund's investment in the MPA.

Case study 6: The Mikoko Pamoja project in Kenya

Mikoko Pamoja is a community-led mangrove conservation and restoration project in Gazi Bay, Kenya. The project consists in the protection of 107 ha of natural mangrove forest and 10 ha of plantation as well as planting an additional 4,000 trees annually over a period of 20 years. Carbon benefits are estimated at 2,500 tCO₂/year and are derived from a mix of avoided deforestation and degradation, and new planting. The proceeds from sales of carbon credits are invested in local projects determined through community consultation.

Source: *Plan Vivo (Plan Vivo, 2013, 2017)*

Table 6 below provides a summary assessment of this financial structure.

Table 6. Blue carbon fund assessment

Feasibility	Socio-economic impacts	Track record	Robustness of the model
<ul style="list-style-type: none"> — Requires the identification of key blue carbon habitats or the potential to create new habitats in the case study areas, and an evaluation of the costs and benefits of blue carbon projects. — Monitoring, reporting and verification procedures. 	<ul style="list-style-type: none"> — Uncertain appetite of voluntary markets for UK-based blue carbon offsets. — Opportunity costs could be significant, e.g. mooring, fishing, agriculture, navigation and ports. 	<ul style="list-style-type: none"> — The Ocean Foundation has launched a voluntary blue carbon offset programme to restore seagrass meadows. — The Mikoko Pamoja project in Kenya aims to use blue carbon offsets to finance mangrove conservation and restoration (Plan Vivo, 2013, 2017) 	<ul style="list-style-type: none"> — Estimates of the capacity of marine plants to store carbon vary significantly. Coastal blue carbon offsets from mangrove, salt marshes, seagrasses, and other restoration efforts have been approved by the Verified Carbon Standard (VCS) for integration into a new carbon trading category. Uncertain on future prices for blue carbon offsets.

Source: *Vivid Economics and Environmental Finance*

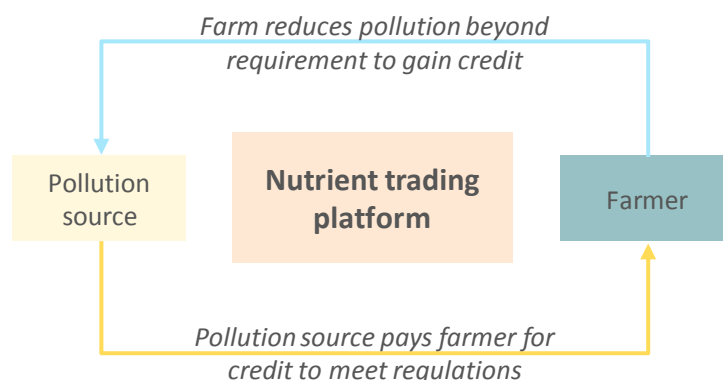
4.7 Nutrient trading scheme

Nutrient trading, which refers to a market-based strategy for meeting nutrient-related water quality goals, has emerged as a promising strategy to reduce nutrient discharge in a cost-effective way. Indeed, most sources of marine pollution (80%⁶) are land-based and often from nonpoint sources such as agricultural runoff. The cost-effectiveness of these schemes stem from the fact that trading allows those sources with relatively low costs to generate 'nutrient credits' by reducing load by more than is required; the combined result is therefore an overall achievement of pollution load reductions at a lower total cost.

Despite its apparent simplicity, the implementation of nutrient trading schemes is far from straightforward.

A critical requirement is the definition of a measurable and enforceable cap, which often requires significant investments in research and monitoring activities. Then, designing questions around the geographic boundaries of the scheme or the specific pollution sources also requires in-depth knowledge of the specifics of the catchment area, while political acceptability issues, notably around the concept of trading pollutants' emissions reductions, often require significant stakeholder engagement. Moreover, independent and rigorous verification is essential to ensure market integrity. Finally, due to the long ecosystem time-response delays, there is non-negligible uncertainty about the delivery of the scheme's outcomes. Figure 8 illustrates this financial structure below.

⁶ Source: Facts and Figures on marine pollution (UNESCO, n.d.)

Figure 8. Nutrient trading structure

Source: Vivid Economics and Environmental Finance

Model description

- 1 – A cap on total nutrient losses is placed within a catchment area and tradable permits will be allocated to individual pollution sources either by ‘grandfathering’ (that is, freely distributed based on the level of past emissions) or through auctions.
- 2 – A trading platform on which nutrient allowances can be bought and sold is introduced. This could take the shape of an online auction platform managed by aligned parties such as Water Utilities.
- 3 – Pollution sources buy allowances from farmers (or other pollution sources) which are able to obtain environmental improvements at a lower cost.

Case study 7: The Chesapeake Bay nutrient trading scheme

The Chesapeake Bay is especially vulnerable to nutrient overload as it drains an area of over 64,000 square miles and is on average 21 feet deep. After voluntary attempts at improving water quality had failed to deliver adequate results, the U.S. Environment Protection Agency established in 2010 the Total Maximum Daily Load (TMDL) to limit what pollutants could be added to the Bay: the goal of the TMDL was to have a 60% reduction in nitrogen, phosphorus and sediment by 2017, with full restoration by 2025. The results of the 2017 ‘mid-point assessment’ reinforced the conclusion that farmers’ engagement will be critical to achieving the 2025 TMDL pollution reduction goals: according to current estimates, the number of acres of farmland employing pollution reduction practices needs to increase by 28 to 135% depending on the state. A survey assessment also established that a ramp up in the amount of technical assistance available to farmers would be crucial to achieving clean water and restoring the Chesapeake Bay.

Source: Chesapeake Bay Commission (Chesapeake Bay Commission, 2012, 2017)

Table 7 below provides a summary assessment of this financial structure

Table 7. Nutrient trading scheme assessment

Feasibility	Socio-economic impacts	Track record	Robustness of the model
<ul style="list-style-type: none"> Requires the establishment of annual load limits for polluting nutrients such as nitrogen and phosphorus. Necessitates stakeholder involvement and buy-in to the concept of trading. 	<ul style="list-style-type: none"> The potential cost-savings from trading depend on how the program is structured. The sale of nutrient credits can support farm incomes. 	<ul style="list-style-type: none"> Chesapeake Bay: water quality trading has enabled regulated entities to reach requirements at a reduced cost than under traditional command and control approaches. NutriTrade: Baltic Sea-wide nutrient offset platform. 	<ul style="list-style-type: none"> Transaction costs can be high, for example, 10 and 50% of the costs of generating credits, (Chesapeake Bay Commission, 2012). The long ecosystem response-time delays associated with nutrient reductions mean that it might take a long time to verify water quality improvements.

Source: Vivid Economics and Environmental Finance

4.8 Model assessment

Table 8 below compares the six financing models presented in this section in terms of their attractiveness and scalability/replicability, with the attractiveness metric combining political/technical feasibility with the expected benefits for the MPA. The place-based portfolio model and the MID model seem to be those which are overall the most promising in the near-term.

Table 8. Model assessment comparison

Model	Attractiveness of the model	Scalability/replicability
Place-based portfolio model	✓✓ Would facilitate cost savings, knowledge spillovers and the establishment of new revenue sources. It can easily be combined with most of the other models.	✓✓✓ More assets could be easily added to the structure and the model could also be replicated in multiple regions.
MID model	✓✓✓ Requires strong stakeholder engagement but would provide a sustainable (5-year) revenue stream for the MPA. The structure to manage a MID model is also expected to be light.	✓✓ Would require strong engagement with local stakeholders every time but it should be easy to replicate the structure and to adopt similar arrangements (scope, level of the levy) in other coastal locations.
Blue impact fund	✓ Would provide support to local small business initiatives which might not be directly related to the MPA, but part of the fund's returns could be earmarked for the MPA.	✓ The same fund could cover a whole region/country and the structure could be easily replicated.
Marine biodiversity net gain fund	✓✓ Would require changes to national legislation, but once implemented, developer offsets for the marine environment could provide sustainable income streams to MPAs.	✓✓ The same fund could cover the whole region/country and the structure could be easily replicated.

Blue carbon fund	<p style="text-align: center;">✓</p> <p>Would require a detailed assessment of the technical and financial feasibility of the project and would depend upon market infrastructure for blue carbon offsets.</p>	<p style="text-align: center;">✓</p> <p>The same fund could cover the whole region/country and the structure could be easily replicated but each site would require a thorough feasibility assessment.</p>
Nutrient trading scheme	<p style="text-align: center;">✓</p> <p>Does not provide revenue to the MPA directly but constitutes a cost-effective way to improve water quality.</p>	<p style="text-align: center;">x</p> <p>Nutrient trading schemes require very detailed knowledge of the catchment area as well as strong stakeholder engagement.</p>

Source: *Vivid Economics and Environmental Finance*

5 Recommendations

The recommendations are listed in three groups: first, in Section 5.1, potential near-term investment opportunities within the North Devon area, linked to Marine Protected Areas; second, specific financing models, in Section 5.2; finally, the supporting local- and national-level policy changes, in Section 5.3.

5.1 Near-term investible projects

A key priority is to identify and develop immediate investment opportunities within or close to North Devon MPAs. A number of potentially investible projects have been found, but there is a considerable lack of information on potential investment projects, in terms of their specification, expenditure, revenue, societal benefits and location, and further discussion with local stakeholders and project developers is necessary to collect this information and identify the next steps for those projects. Financial and investment expertise could then be engaged to bring the projects up to investible stage, as well as to explore the potential for other, similar opportunities. This may be necessary to attract external funding, where greater scale, evidenced by a pipeline of potential projects, might be required. First, a structure is required as a counterparty to MPAs, either to direct surpluses through a levy mechanism or through establishing an aligned social enterprise that ensures project surpluses support MPAs.

Discussions with local stakeholders have helped to identify three categories of near-term investible projects (within 1-3 years) which could be linked to the local MPA: fisheries-related projects, saltmarsh restoration and opportunities in the tourism sector.

5.1.1 Fisheries-related projects

The main immediate investment opportunity in this area is a herring smokery. Reflecting the region's historic herring trade and local craftsmanship, it would help maintain a market for affordable and locally-sourced fish and could contribute to the development of a brand for North Devon fisheries. Events, such as the Clovelly herring market, could be integrated into a broader tourism strategy based on the specific products and activities of the region. The next steps would be to estimate the potential scale and investment return.

In the medium-term, a portfolio of fisheries-related projects might be created, including investment in stock recovery and other fishery-related infrastructure. For instance, as Lundy Island MPA in North Devon has been designated for spiny lobsters, investment in a lobster hatchery to help recover stock could enhance the productivity of the fishery and generate revenues for MPA management. Another example is securing investments to help recover herring stocks in North Devon, building on work being undertaken by the Blue Marine Foundation (which is exploring management/infrastructure requirements to support stock recovery).

5.1.2 Saltmarshes restoration

A number of local saltmarshes are suitable for restoration, with a project currently at the design stage. The South West Partnership for Environmental and Economic Prosperity (SWEEP), undertaken in partnership with

the University of Exeter, Plymouth University and Plymouth Marine Laboratory, is assessing the marketable elements of saltmarsh restoration, namely tourist access, flood defence and carbon sequestration.⁷

5.1.3 Development of tourism activities

Local stakeholders have suggested several tourism-related opportunities. Within a broader objective of establishing North Devon as a well-known tourist destination for water sports and wildlife, developing more tourist destinations and activities. Examples include: the development of Morte Platform for diving, and a more coordinated approach to facility and activity provision at public and private beaches and car parks. This is amenable to a place-based model, which is discussed in more detail in the next sub-section.

5.2 Financing model pilots

In implementing the candidate financing models, there are a number of common issues:

- time to develop the financing models;
- cost of developing the initiatives and funding their implementation;
- skills and capacity to develop and deliver the financing models and projects; and
- skills and capacity to deliver MPA services.

The place-based portfolio model and Marine Improvement District model have the most potential in North Devon in the near-term, based on the model assessment criteria. The place-based portfolio model is the most flexible structure, offers enhanced governance, and addresses the capacity to extend services and access new funding. It would require setting up a new charitable trust (and a new social enterprise to manage it), and an endowment which could then build up a range of activities and income streams over time. A MID has greatest potential to enhance business opportunities associated with MPAs, and could work in parallel to the place-based portfolio, through feeding the levy income into the endowment within the charitable trust, with a dedicated social enterprise responsible for managing the proceeds from a range of sources to finance conservation activities.

The integration of marine and terrestrial area plans could lead to funding models and governance arrangements which span both. The North Devon Biosphere Foundation is an established charity which could act as the charitable trust needed in the place-based model to coordinate effort, secure funding streams to support marine and terrestrial management, and report on outcomes. A social enterprise would need to be set up alongside the Trust to provide the flexibility to use income streams for investment purposes.

Further engagement with local authorities, local businesses and other key stakeholders can be used to test the models. This will reveal the level of support and will inform stakeholders of the potential value of the models.

5.2.1 Place-based portfolio model next steps

If the place-based portfolio model were to be taken forward, a project manager with appropriate skills and local knowledge could be tasked to engage stakeholders, including asset owners and managers, the Crown Estate and the Local Authority. Questions to explore include whether it would be feasible to transfer

⁷ According to a report by eftec, the benefit-cost ratios of saltmarsh restoration in the UK are between 2.0 and 3:1 (eftec, 2015).

ownership through a long-term lease or of the rights to manage the assets into a charitable trust, and the trust's principal activities and investments. Individuals from the North Devon Biosphere Reserve could be involved at this stage as a potential established Trust to take over the MPAs. Key stakeholders could co-author the business case and try to avoid management complexity.

Advice may be obtained from organisations with experience of place-based models. Discussions could be held with The National Trust, which developed a similar 'People's Parks Trust' model, which is due to be launched in 2019 in Newcastle-upon-Tyne.

A working group, including local stakeholders and third party consultants, would carry out financial planning, legal structuring and stakeholder management. Its tasks include:

- **Structure:** eliciting the public appetite for establishing a new model and support for a variety of structures. Public consultations to invite feedback and shape governance structures, systems and processes. Legal advice will be required early on to inform the optimum legal structure.
- **Enterprise:** developing an account of current income generation and expenditure within MPAs, together with scenarios for increased revenues, cost savings and funding requirements. This could be condensed into a financial model to assess the potential the MPA has to become financially self-sustaining.
- **Endowment:** the financial model will measure any residual funding gap and the size of any endowment to be raised, if that funding route is chosen. At this point, an assessment would be made of potential additional trading revenues. A fundraising scoping exercise would indicate how the endowment could be raised, from whom and over what timescale.

5.2.2 Marine Improvement District next steps

If the MID was taken forward, a preparation and testing phase would allow a project team to consult with BID bodies and Local Authorities that have established successful BIDs in similar regions of the UK. The research would solicit lessons learned, in particular on how to mobilise support and develop a project plan.

A MID will only be feasible if there is widespread support among stakeholders. Statements of need and objectives are prerequisites. Substantial engagement would be needed to raise support from businesses and local authorities, to build confidence, define the scope, estimate the liability and agree priorities. Alternatives, such as enterprise zones, can be considered.

With initial testing complete, the project team could follow the well-defined BID set-up guidance on the Government's website⁸. This would involve the following:

- develop a project plan setting out timescales and plans to secure funding to establish the MID;
- appoint a MID body to represent members that have a stake in the proposed MID to ensure effective decisions are made. Members could include individuals from the local authority, businesses, residents and community organisations;
- define the geographical area, the structure and how the levy will be calculated;
- establish governance structures, roles and responsibilities to ensure effective MID management and leadership;

⁸ Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/415988/BIDs_Guidance_and_Best_Practice.pdf

- develop a MID proposal and business plan to be submitted to the local authority, setting out how the MID will operate and the services to be provided;
- canvas support by driving engagement with local businesses; and
- hold a ballot for all businesses within the area subject to the proposed levy.

5.3 Policy recommendations

At the national level, the key priority is that Defra, HM Treasury and other departments develop new markets for marine and coastal assets. This is likely to require changes to the regulatory environment as well as the development of valuation tools and metrics. This will help identify economic opportunities to enhance these natural capital assets without relying solely on Government funding, grants and donations.

A substantial commitment would be to put the 25 Year Environment Plan on a statutory footing, supported by clear targets and an independent scrutiny body (or watchdog) to ensure that they are met, as recommended by Ministers' own advisory body, the Natural Capital Committee. This is critical to strengthen the confidence of investors in regard to political support.

A second step would be to include marine and coastal assets in the UK's national infrastructure portfolio. Following the recommendations of the Natural Capital Committee, a national investment plan could then be developed to help support financial planning for MPAs.

In addition, there are specific pieces of legislation which could help MPAs attract sustainable funding.

First, Defra, the Ministry of Housing, Communities and Local Government and HM Treasury could include coastal and marine development in any new biodiversity net gain obligations on developers. This would enable Section 106 payments to fund improvements in MPAs.

Second, create a Blue Carbon Code, similar to the UK Woodland Carbon Code and the Peatland Code. This would offer a template for validation and certification of the carbon savings from saltmarshes, seagrass meadows and, potentially, kelp. The 25 Year Environment Plan announced the strengthening of domestic demand for carbon offsets which may be translated into policy instruments, perhaps bringing blue carbon credits into the carbon compliance market, a matter for the Department for Business, Energy & Industrial Strategy (BEIS).

Third, legislation could be introduced to grant land-owners, whose land is flooded as part of planned coastal realignment schemes, the rights to benefit from the goods and services provided by these new land areas; this could include shellfish enterprises. This might ease the transition of land from agricultural use to intertidal or wetland habitat.

Finally, the introduction of charges or taxes on single-use plastics could generate revenue contributing to the creation or maintenance of MPAs. There is the potential for such incentives to be extended to food wrapping waste more generally and used to co-fund both marine and terrestrial conservation.

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Appendix: Highlights from interviews

The comments come from 12 stakeholder interviewers which were held by Vivid Economics and Environmental Finance. We would like to thank the following very much for their contributions:

- Libby West, IFCA
- Jo Traill-Thomson, Landscape Pioneer
- Melanie Parker, Natural England
- Ailing Lannin, MMO
- Klaas de Vos, World Ocean Initiative
- Dan Barwick, Defra
- Marilena Pollicino, Defra
- Andrew Jones, North Devon Council
- Andy Bell, Biosphere Reserve
- David Tudor, Crown Estate
- Louisa Hooper, Gulbenkian Foundation
- Tim Jones, Plymouth Office
- Ian Bateman, SWEEP

Table 9. Key highlights from interviews: investment projects

Category	Comment
Fisheries	<ul style="list-style-type: none"> — There are heavy pressures on the estuary: the current use of beaches and sand is not causing much damage, but there are pressures coming from ports and agricultural run-off — Water quality in the estuary is a huge issue for shellfish farmers: <ul style="list-style-type: none"> — It is currently addressed through advice to farmers on catchment-sensitive farming — Shellfisheries are often closed because of water quality — An improvement in water quality would benefit birds and shellfish farmers (crabs, mussels) — Aquaculture for bioremediation is currently being trialled in the estuary — The MCZ designation was not done to support sustainable fishing but closing the area led to a sevenfold increase in shellfish and lobster — A certification scheme has worked in South Devon; the issue with North Devon is that it is a very mixed fishery and would require the right quota <ul style="list-style-type: none"> — A certification scheme would work much better if there was more of a local market for fish: a lot of fish from North Devon is exported — It may be possible to launch a fish box, as has been done in a few places in the UK and the US: people sign up to a fish box once per month or once per week, and the contents of the fish box depend on what the fishermen are catching in that month; this would also give some price certainty to fishermen — Certification schemes often benefit supermarkets rather than fishers — Projects which were considered during a recent workshop by the Blue Marine Foundation included ice-making facilities and a herring smokery — Introducing a new quota regime would require close engagement with the local community

Category	Comment
Recreation and tourism	— The North Devon coastline has a significant role in the local economy and provides a huge recreational resource in terms of health and well-being
	— There are very good diving opportunities off the 'Green Cliff', just outside the Bideford to Foreland Point MCZ, which could be used to draw people
	— Morte Platform is also a good and accessible dive location
	— Currently most divers that visit North Devon go to Lundy by chartered boat from Ilfracombe
	— The level of investment in beaches is sufficient but could be improved
	— Car parking especially is an issue (very expensive or non-existent)
	— There is a lot to see along the coast (harbour porpoise, occasional seals, birds) but wildlife watching mainly occurs in pockets where there is existing tourist demand

Source: Vivid Economics, Environmental Finance

Table 10. Key highlights from interviews: financing models

Category	Comment
Place-based portfolio model and Marine Improvement District model	— A Business Improvement District Model would be worth looking at
	— Potential for North Devon to achieve enterprise zone status. Torbay Council is currently applying for this.
	— The tourism economy in North Devon consists of many small businesses and some big hotels
	— Local authorities find it hard to maintain the quality of car parks and toilets
	— Would require an assessment of the current revenues from tourism derived by businesses and of the seasonality of the activity
Blue impact fund	— There is a revolving loan facility in California which treats quota as collateral against which fishermen lend money
	— Aquaspark is an impact fund based in Poland which does impact investment in sustainable aquaculture
	— It all depends on how the aquaculture industry plays into wider coastal management
Net gain model	— Almost every marine development project has some sort of mitigation to limit impacts on birds, habitats and other species (e.g. time restrictions, screens to prevent run-off, noise reduction, etc.). There are restrictive development policies on the North Devon coastline.
	— There are much fewer cases of compensation, based on like-for-like habitats and aiming for more (in quantity) than what has been lost.
	— Net gain usually applied on development site, rather than for wider natural environment
Blue carbon fund	— There are some technical aspects to be considered: where can salt marshes and seagrass meadows be increased? What would be the value of increasing these?
	— There are potential opportunity costs to consider: what would the loss to other activities (boat mooring, marinas, etc.)
	— Maybe the numbers would not add up in North Devon but maybe in the whole country (England), the numbers would add up and allow the compensation of the losers of the scheme
Agri-environment schemes (incl. nutrient trading)	— The SWEEP programme is engaged with the local farming group to think about which mechanisms could work
	— Looking at which mechanisms would improve engagement, to ensure a resilient business going forward
	— Existing trading schemes for water quality are still at an early stage in the UK: the mechanism in Poole (reverse auction to tackle water quality); EnTrade has been successful but is still quite new

Source: Vivid Economics, Environmental Finance

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Company Profile

Vivid Economics is a leading strategic economics consultancy with global reach. We strive to create lasting value for our clients, both in government and the private sector, and for society at large.

We are a premier consultant in the policy-commerce interface and resource- and environment-intensive sectors, where we advise on the most critical and complex policy and commercial questions facing clients around the world. The success we bring to our clients reflects a strong partnership culture, solid foundation of skills and analytical assets, and close cooperation with a large network of contacts across key organizations.



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