# TOWARDS INVESTMENT IN SUSTAINABLE FISHERIES

## A FRAMEWORK FOR FINANCING THE TRANSITION

Discussion document

EDF ENVIRONMENTAL DEFENSE FUND

THE PRINCE'S CHARITIES

50in10

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# FOREWORD

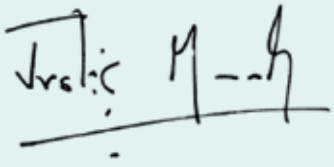
We have reached a critical moment in history. There is a widening gap between what we demand of the Earth's natural systems and what those systems can provide. We face a series of important decisions at the heart of which lies a crucial choice: whether to carry on with business as usual or change our practices in order to sustain the natural capital that, in turn, sustains us.

We now have the opportunity to address the increasingly urgent matters of climate change, biodiversity loss and resource scarcity, particularly as the international community prepares to set the post-2015 sustainable development agenda. These pressures manifest themselves in a variety of ways, not the least of which is the significant challenge they present to global food security. If we are to meet the needs of our fast-expanding population, we must find a way to survive and thrive on the sustainable dividends that natural systems provide and to move away from current practices that deplete or undermine them.

Fisheries are an excellent example of how we can successfully reshape food systems and make them more productive while enhancing their health and resilience. There is a strong body of good practice that shows how abundant and healthy fish stocks support greater social and economic benefits for society. In addition, while most fisheries are either over or fully exploited, they do still have the capacity to regenerate. For this reason, we must act quickly to put them on a more sustainable path before it is too late.

One key constraint to recovering fisheries at the pace and scale required has been a lack of capital to finance the transition. This need not be the case going forward. Investments that take on board the opportunities and risks that are particular to fisheries can lead to transitions in management, fishery health and economic development that not only substantially enhance ecological resilience, but which also improve food and employment security. The alignment of financial capital with natural and social capital should be the new paradigm across all economic sectors, but perhaps especially fisheries.

This document provides a framework for scaling up investment in the transition to sustainable fisheries. We hope that it will stimulate the rapid growth of projects that address this challenge and that are urgently required to meet the needs of the 3 billion people who rely on fish for their primary source of animal protein and the 300 million people who are involved in the sector. We also hope it will begin to reveal the considerable benefits that can be gained through this transition and catalyse a conversation about the solutions that will move us forward.



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# EXECUTIVE SUMMARY

Marine capture fisheries provide significant benefits at a global and local level. They contribute more than US$270 billion to global GDP, provide nearly three billion people with at least 20% of their total animal protein and employ hundreds of millions of people, the majority of whom are in developing countries. Currently, the benefits of marine capture fisheries are under threat. The good news is that proven solutions and tools exist to help fisheries recover to remove this threat, transition to a healthy and profitable state and secure benefits into the future. Because the transition to sustainable fisheries will inevitably require investments, the question of how the transition will be financed, and by whom, must be answered.

The investment case for financing the transition to sustainability is clear. Fisheries generate significantly more value when they are sustainably managed, while also providing biological and social benefits. Furthermore, the fundamental economics of the global seafood market suggest that prices will continue on an upward trend, as will the demand for sustainable products. Therefore, investing in sustainable fisheries can be seen as both a necessary and potentially profitable investment.

To date, the transition to more sustainable, profitable fisheries has been largely funded by philanthropic and public sources of money. However, these types of capital alone cannot support the rate and scale of fisheries reform that is required on a global level. At the same time, past and current investments in fisheries have, in some instances, undermined the underlying resilience of natural and social capital. It is now time to explore a new approach to investing in the transition, an approach which involves all types of financial capital – from philanthropic to public to private. Each can play an important role and through coordination and integration, different types of capital can work together to finance the transition to self-sustaining fishery systems.

This document provides a framework for developing and financing fishery transition projects. It is informed by existing work in the field and is intended as a discussion document to stimulate thought and progress towards investment in sustainable fisheries.

Case studies and on-the-ground research suggest ***three key enablers*** of sustainable and profitable fisheries that, together, provide the basis for increased value:

1. **Secure tenure** aligns the incentives and empowers the fishing industry to pursue sustainable use of the resource and is a vital first step in the transition

2. **Sustainable harvests** determine how much fish can be sustainably taken from the fishery and enable the creation of both management and investment frameworks

3. **Robust monitoring and enforcement** provide assurance that fishers will comply with sustainable management and reduce the likelihood of illegal activity that could undermine the transition

These conditions, particularly establishing secure tenure, provide the platform for unlocking greater social, economic and environmental value in fisheries and are vital to investment activities. Investments in fisheries development that ignore these considerations are at risk of undermining their long-term viability.

With the conditions described above in place, investment can be channelled towards the ***three key drivers*** of increased fisheries value:

1. Improving **stock health** leads to a more abundant resource that supports higher long-term yields and makes fish less costly to find and to catch

2. Increasing **operational efficiency** reduces the cost of fishing and delivering fish through the supply chain, improving profit margins and thus improving the returns from fishing as a whole

3. Increasing **market value** through improved market access, certification, branding and long-term partnerships returns more value to fishers

In order to attract appropriate investment, project developers must address ***key requirements*** including:

1. A clear **business case for the transition** that includes a contextual analysis of the project and as well as a bio-economic and financial model of the investment proposition

2. **Investable entities** to act as counterparty to the investment; these can be existing, modified, or newly created entities

3. **Mechanisms for capturing return** from the beneficiaries of the transition to share the upside of a transitioned fishery with the investor, such as dividends, taxes, or fees

4. **Risk management** through appropriate identification and articulation of risks, as well as efforts to mitigate or manage risk

***Structuring the investment*** to align and coordinate sources of capital can create a financially sustainable transition and match investors to the financial, environmental and social returns that fisheries provide. Project developers can consider two key points:

1. **Sources of capital**, or investors, fall along a spectrum based on, among other things, target returns, type of investment and target terms. Traditionally, fishery transitions have been funded by 'impact-only' investors who expect no return or little financial return

2. **Combining capital** to *sequence*, *blend* or *layer* investment structures can effectively reduce and spread risk, while leveraging larger pools of capital. Including different types of investors will ultimately unlock the resources needed to start to address the scale of the challenge that lies ahead

**In conclusion**, whilst the scale of necessary fisheries transition is immense, so is the amount of available capital, if projects are well developed and appropriate financial structures are applied. And all actors have a role to play. Project developers and the fishing industry can create investable propositions out of fishery transition plans. Governments can establish the enabling conditions for sustainable and profitable fisheries. Investors can work together to develop innovative ways to appropriately combine sources of capital. Critically, all of these actors can work together to implement 'proof of concepts' and develop a pipeline of projects.

# 1

# INTRODUCING FISHERIES AS INVESTABLE PROPOSITIONS

MARINE capture fisheries have for centuries provided populations with a healthy and renewable source of food and significant economic and social value. In order to continue to reap the rewards of this renewable natural resource, fisheries require a transition to policies and practices that promote sustainability of the resource and profitability for the catching sector and broader value chain. The good news is that there is a growing body of research, backed by real-world examples, that shows how this can be achieved.

The transition to sustainable fisheries has accelerated in recent years, with an increasing number of examples in which collaborative efforts have led to real changes in and on the water. However, the change required is still immense and there is an urgent need to increase both the pace and scale of reform.

The transition requires action from multiple actors, including government, industry and in many cases, non-governmental organisations (NGOs) (McClurg, 2014). It requires significant upfront investment and raises two critical questions: how will the financing of the transition to a fully sustainable fishing industry be structured, and who should bear the burden of costs? Evidence from the past two decades suggests that answers to these questions have not been easy to find.

Solutions to these challenges lie in the very benefits, particularly the economic benefits, which the transition process creates. Reforming a fishery to a more socially and ecologically sustainable state can significantly increase economic value. The large economic potential of reformed fisheries provides a leverage point to engage a broad range of investors. Furthermore, there is significant and growing interest in using new forms of capital to catalyse or support fisheries reform. The challenge now is to create, finance and scale up the projects capable of ensuring lasting solutions.

All sources of capital – including philanthropic, public and private – already substantially participate in the global fish economy; some uses of capital support long-term sustainability, while others may work counter to it. Current investments made into the biological recovery of fisheries are principally motivated by environmental or social impact and therefore funded by philanthropic or donor organisations that are not financially motivated. On the other hand, commercial investors have traditionally invested in activities that

See page 72 for glossary and acronyms.

do not necessarily advance social or environmental resilience, i.e. they have not invested in conserving the resource base on which seafood investments depend. In addition, the capital currently deployed to fisheries transition is neither sufficient nor is it effectively organised or leveraged to maximize its impact.

One of the key barriers to unlocking appropriate sources of finance to help drive and support fisheries reform is an information gap. Those working to reform fisheries are often not sufficiently equipped to understand how to attract capital from appropriate sources. For example, project developers, such as NGOs and other intermediaries, may not understand the risk/return preference of various types of investors and how they may match with different stages of the reform process.

Similarly, investors may not understand the entire range of activities and steps required to ensure sustainable and profitable fisheries. For example, ensuring fish stock sustainability generally requires policy change by governments, whereas fishers and seafood companies make independent business-level decisions to increase operational efficiency or derive more market value. Pursuing only one strategy may not deliver as much financial return as pursuing these together.

This document aims to bridge that information gap by providing a framework for developing more coherent investable propositions that are able to attract a broader range of capital providers. It provides basic information on the financial case for fisheries reform, the necessary activities for achieving sustainability and increasing value, how to create an investment proposition and how to structure investments based on the project. It is primarily intended to educate project developers but may be useful for investors as well. Alone, this document does not provide sufficient detail to develop a project and the required investment, but it does reference other tools and resources to support the transition. There is a growing group of consultants and practitioners who are versed in fisheries finance issues and can assist in the application of this framework. Furthermore, it is anticipated that this will be a living document that can be expanded and modified over time.

## The importance of global fisheries

Marine capture fisheries support a vital economic sector that generates significant value, employment and food security, as well as many other non-financial benefits. From an economic perspective, wild fisheries contribute more than US$270 billion to global GDP, which increases by a further US$160 billion per year when related activities, such as fish processing and boat building, are included (World Bank, 2012). This amounts to approximately 1% of global GDP. At the national level the economic value of fisheries can be much higher, representing 30% of GDP in the Seychelles for example.

Fish is a highly traded commodity and as such generates valuable foreign exchange, particularly in developing countries. Fisheries also contribute to economies through tax revenue both at the production level and through the activity of supporting sectors such as canning, processing and distribution. Globally, fisheries employ approximately 260 million people, both directly as fishers and within the value chain (Teh and Sumaila, 2013). Furthermore, given the role of fishing as an important subsistence and safety-net activity for many of the world's poorest communities, it is likely that millions more people are involved in, or indirectly dependent on, fishing activities than appear in official statistics.

In addition to their economic importance, fisheries are critical for food security, providing approximately three billion people worldwide with at least 20% of their total animal protein (FAO, 2014a). In some countries where there is a lack of alternatives, or where a preference for fish has developed, the relative importance of fish is much higher. For example in Japan, nearly 40% of animal protein consumed is from seafood products (FAO, 2013a) and the catching and eating of fish plays a significant role within culture and society. Similarly, in the Maldives, a country where the marine exclusive economic zone (EEZ) is over 3,000 times larger than the available landmass, fish play a vital role in society, contributing over 70% of animal protein consumed (FAO, 2014a).

The ability of wild fisheries to continue to produce fish is predicated on the continued viability of the marine ecosystems in which they exist and the appropriate management of fish stocks to ensure their sustainability. The wider marine environment supports fish stocks by providing breeding and nursery grounds and stable

food webs. Healthy ecosystems are critical for the maintenance of fishing activity and, in turn, where fishing takes place, sustainable management is essential for the maintenance of healthy ecosystems. In addition, healthy marine ecosystems also directly benefit global populations in many other ways – for example, through regulation of climate, flood defence and tourism revenue – and therefore the importance of maintaining their health through sustainable practices goes further than just fish production (Pauly et al., 2005).

However, despite their importance, global fisheries are an underperforming asset. The economic, social and ecological functions they provide are threatened by widespread mismanagement of fishing activity. According to the Food and Agriculture Organization of the United Nations (FAO), overexploitation of fish stocks has depleted 30% of the world's assessed fisheries to an unproductive state (FAO, 2014a). Another study estimates that as the majority of fisheries have not been formally assessed, it is possible that as much as two-thirds of all global fisheries are overfished (Costello, et al. 2012).

The effects of mismanagement have already materialised in many places: communities have suffered a loss of food and livelihoods, local economies have declined and the marine environment has experienced fundamental changes to ecosystem functionality. For example, the collapse of the iconic cod fishery of the Canadian Grand Banks, a fishery once thought to be limitless, resulted in a fundamentally changed ecosystem where it is unlikely cod will recover to its historic abundance without significant intervention. As a result, the region experienced a significant economic downturn and a loss of over 20,000 directly and indirectly related jobs (Gien, 2000), as well as the disappearance of a unique element of Newfoundland's cultural heritage. In the Philippines, a recent study has shown that only 10% of the fish stocks remain compared to 40 years ago. This has implications for millions of people who depend on fishing and are already on the poverty line.

Multiple international treaties and agreements recognise unsustainable fishing practices as a major global issue[1] and there is a growing response taking place to encourage the transition to sustainability in multiple regions. This effort is primarily (although not exclusively) being coordinated and undertaken by NGOs

1. For example, major agreements include the UN Code of Conduct for Responsible Fisheries and the UN International Plan of Action for the Management of Fishing Capacity. Key treaties include the UN Convention on the Law of the Sea and UN Agreement on Straddling and Highly Migratory Fish Stocks, and many activities are also carried out through regional treaties.

and governmental and intergovernmental organisations that have developed extensive knowledge around the types of intervention that are needed to establish sustainable fisheries. It is, however, clear that regulation and governance alone cannot solve the global issue of fisheries sustainability (McClurg, 2014).

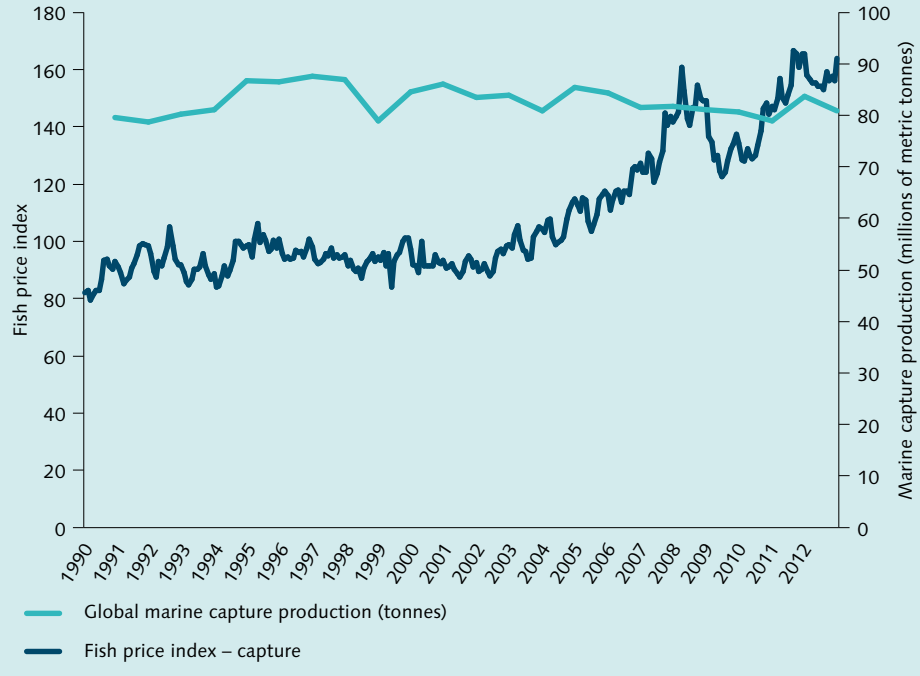
The transition to sustainable fisheries will not only prevent the further deterioration of fish stocks, it can also help global fisheries reset to a higher, more productive and more profitable level. Research indicates that the global harvest from wild caught fish could be up to 40% higher and that global fish abundance could increase by 50% if sustainable management were introduced and marine capture fisheries were allowed to recover (Costello et al., 2012). According to The World Bank (2010), global fisheries could be worth an additional US$50 billion annually. In other words, the upside benefit of sustainable fisheries is huge and should be considered a 'no-regrets option.'

## The investment case

Fisheries transition, in many ways, displays similar traits to those of a classic investment turnaround: the upfront costs of transition are offset by the profits that are generated through more efficient and productive fisheries with higher harvests and lower costs. In other words, there is a real return on investment to be had.

The state of global food markets offers a strong case for both the need for, and potential returns from, the transition to sustainable fisheries. Demand for seafood continues to grow, while supply has been constrained, which has led to a substantial increase in prices since the early 2000s – as can be seen in figure 1. While a growing aquaculture industry can meet some of this demand, marine fisheries still generate nearly 60% of fish sold to consumers (EKO Asset Management Partners, 2014). There will continue to be a large market for wild seafood, both to serve basic food security needs in less developed countries and to serve regions where a premium is placed on wild, sustainably caught fish (World Bank, 2013). Investments that increase the supply and sustainability of this commodity are, therefore, both necessary and potentially profitable.

FIGURE 1 **Price and supply of fish over time**




Source: Tveterås et al, 2012 and FAO, 2014b

Fortunately, proven solutions and tools exist to turn around all types of fisheries. Many case studies from around the world (see table 1) indicate the upside associated with the transition to sustainable fisheries and sustainable management.

Scoping studies have shown that for many fisheries, the increase in overall profit that is generated through the transition process is more than able to pay for the upfront costs of undergoing the transition and for the on-going costs of sustainable management, as well as provide a financial return for investors.

TABLE 1 **Increase in revenues in select fisheries**

| | Fishery revenues – before | Investment activities | Fishery revenues – after | Percent increase |
|---|---|---|---|---|
| Pacific halibut fishery | US$77M (1992) | 1995: Secure tenure; Monitoring and enforcement | US$248M (2008) | 222% |
| Ben Tre clam fishery | US$0.837M (2007) | 2006 to 2009: Secure tenure; MSC certification | US$1.25M (2010) | 49% |
| New Zealand's fisheries | US$1,577M (1986) | 1986: Secure tenure; Monitoring and enforcement; Sustainable harvests | US$3,200M (unkn) | 103% |

Sources: Tindall, 2012; MRAG, 2010

However, whilst the theory is strong, there have been some clear barriers to using financial capital to drive the necessary changes. These include the inability of project developers to articulate and present an investment proposition; the lack of organized entities that are able to receive investment and provide payback mechanisms; and the limited ability of project developers and investors to identify, mitigate and manage the idiosyncratic risks associated with fisheries. To date, few projects have created real investment propositions which clearly state the return on investment and highlight the associated risks. At the same time, projects focused on fisheries transition have not always included the suite of activities that are necessary for generating and protecting future economic potential.

The next two chapters attempt to highlight the enablers and drivers of value increase around which an investable proposition can be developed.

# 2

# ENABLERS OF INCREASED VALUE

**MANY** fisheries are underperforming assets that could generate significantly more economic value, alongside significant social and environmental benefits. First and foremost, fisheries must be managed in a way that ensures environmental sustainability while allowing the fishery to meet social and economic goals. Research and experience highlight three key elements that must be in place to enable a sustainable and financially-viable fishery:

1. Secure tenure
2. Sustainable harvests
3. Robust monitoring and enforcement

These enabling conditions, which are described in more detail below, provide the foundation from which stock recovery can be successfully implemented and maintained and create a more stable business environment for fishers to further improve their operations and access to market. In addition, particularly in the case of secure tenure, they also serve to catalyse an immediate increase in value in the fishery overall.

Some fisheries will have none of these conditions in place, while others may have only one or two. Furthermore, they may be poorly designed and ineffectively implemented. In any case, projects seeking to improve fisheries and generate a return for stakeholders should be designed to introduce or strengthen these management elements and investors should evaluate proposals based on the ability for these conditions to be achieved.

See page 72 for glossary and acronyms.

# SECURE TENURE

### Key actors

Since fish stocks are considered to be a public resource, governments (national, regional and local) are responsible for establishing policies for their management and play a primary role in the development and implementation of secure tenure systems.

The private sector, specifically the fishing industry itself, can also play a key role in designing, advocating for and administering a secure tenure system. NGOs may support the process by providing technical assistance and expertise.

Implementing secure tenure provides fishers with a long-term vested interest in the health of the resource. It provides access and exclusivity to secure, long-term returns, which are essential for increasing the value of fisheries. Tenure systems allocate a secure area or share of the catch to those who operate within the fishery and whose business depends on the fish stocks (MRAG et al, 2009; WWF, 2011; Bonzon et al, 2013). Secure tenure can be allocated to groups of fishers, such as cooperatives, or individuals.

Establishing secure tenure is important because it changes fishers' incentives. Overexploitation of fish stocks and the significant lost value that results is primarily due to the dynamics of open-access resources. Characterised as the 'tragedy of the commons' (Hardin, 1968), in an open-access fishery it is rational and profitable in the short-term for fishers to remove more fish from the sea than it is possible to replenish. As a result, over the long term the available resource base declines and fishing activity becomes increasingly marginal, until almost no economic benefit is derived from it. On the other hand, secure tenure ties current behaviour to future outcomes and incentivises fishers to invest in long-term sustainability.

In many cases the immediate economic impact of establishing secure tenure can be dramatic. For example, the formation of a fishing cooperative with a secure, area-based tenure system known as TURFs (territorial use rights for fishing) in the Ben Tre clam fishery in Vietnam allowed the local fishers to set harvest limits for future benefit and achieve sustainability certification.

The value of this fishery increased by 49% in 3 years (Tindall, 2012). In the Danish pelagic and demersal individual transferable quota (ITQ) programme, fleet-wide profits increased as much as 20% following establishment of secure tenure and fishers doubled their investments in value-add activities (such as processing, filleting and canning). Furthermore, a review of 15 fisheries in North America showed an average 90% increase in revenue per vessel five years after establishment of secure tenure (Grimm et al. 2012).

Well-implemented secure tenure requires that the conditions are clearly defined and can only be revoked through a legitimate process. This gives fishers the security to plan for the long-term, and by extension gives investors the confidence to commit funds. The process and corresponding rules for defining secure tenure through access and use conditions can take many forms, as outlined in box 1. Having secure tenure is fundamental to reducing the risk of investment in fisheries. For an investment in the transition to sustainable fisheries to generate a return, it is essential that all actors are incentivised to operate according to the transition plan over the length of the project lifetime. Secure tenure establishes the appropriate incentives and helps achieve long-term stakeholder engagement by the fishing industry.

## BOX 1 **Resources for establishing secure tenure**

There are several resources available for establishing secure tenure. These resources, which are applicable to a variety of different fisheries and address a diversity of stakeholder goals, are commented on in this section, and full references can be found at the end of this report.

Secure tenure encompasses many systems of management and is often referred to as rights-based management or catch shares. According to EDF's *Catch Share Design Manual* (2013) a catch share program *"allocates a secure area or privilege to harvest a share of a fishery's total catch to an individual or group. Programs establish appropriate controls on fishing mortality and hold participants accountable."* Amongst the different systems of catch share are individual transferable quota (ITQ), individual vessel quota (IVQ), Cooperative catch shares and territorial use rights for fishing (TURFs), each of which have specific advantages and limitations. Other organisations that have highlighted the potential use of secure tenure and provided guidance include WWF (WWF, 2011), the World Fish Center (Andrew & Evans, 2009) and the European Union (MRAG et al, 2009).

In addition, several organisations have created guidelines for the establishment of secure tenure, either through legal frameworks or voluntary guidelines. The latter has been covered in some detail by the FAO, which produced voluntary guidelines for the governance of tenure (including for fisheries) in 2012 and draft guidance on applying secure tenure as it applies specifically to fisheries in 2013 (FAO, 2012; FAO, 2013b).

# SUSTAINABLE HARVESTS

### Key actors

Governments are usually responsible for ensuring that harvests are sustainable and therefore have a primary responsibility for final review and authorization of harvest controls. However there is debate around who should be responsible for funding and collecting data and recommending harvest levels.

In some cases, government takes on the responsibility for these activities, which is considered useful in order to avoid potential conflicts of interest. In other cases, the industry plays more of an important role, particularly in the financing of stock assessments and collection of data. For example, the fishers in the Chilean loco fishery pay for their own stock assessments in order to make the most informed business decisions (Tindall, 2012). NGOs may also play an important role by providing resources and knowledge to assist the process of setting sustainable harvests.

Compliance with appropriate controls on fishing mortality is a vital component of a sustainable fishery and requires limiting catch to a level that promotes sustainable exploitation of the resource and allows for stock recovery, if needed, or the maintenance of stock health if the fishery is already at target biomass levels. A sustainable harvest plan is primarily based on the current health of the population and the biology of the fish species. Setting sustainable harvests relies on data collection, analysis, modelling and interpretation of the results, which in turn will require upfront and ongoing investment.

Understanding the health of the stock, and therefore the expected productive output of a fishery over time is key for investors, as well as managers and fishers. At minimum, to enable the creation of a sustainable business plan, data on fishery landings or on the fish populations themselves need to be collected. Fortunately, the process of data collection and stock assessment is itself well-established and clear guidance on collecting and processing data has been produced by the FAO and others (see box 2).

## BOX 2 **Resources for determining sustainable harvests**

Assessing the status and productivity of fish stocks is crucial to determining long-term sustainable harvests and avoiding overfishing. However, many fisheries lack formal scientific assessments; one study suggests that 80% of landed catch comes from unassessed species (Costello et al., 2012). Such assessments are often not performed due to two obstacles: the cost of these assessments and the lack of historical data records (Apel, Fujita and Karr, 2013). Fortunately, the recent development of "data-limited methods" has reduced the cost and data requirement of determining sustainable harvests. A number of reports have been written describing these approaches and providing guidance on their use. These publications are commented on in this section, and full references can be found at the end of this report.

In some cases, resources and data for determining stock status will not be constrained and a formal stock assessment can be performed. Governments often employ fishery scientists for this purpose. It is common for academics or private sector businesses to perform stock assessments for a fee, and while some organisations, such as EAF-Nansen[2], may undertake full stock assessments pro bono, it is exceedingly rare. Two guides to formal stock assessment have been provided by the FAO (Cadima, 2003 and Hoggarth et al., 2006).

For fisheries with fewer resources available to collect and interpret fisheries data, alternative assessment methodologies have been developed in recent years. EDF's Science-Based Management of Data-Limited Fisheries (2013) report describes a number of effective methods for data-limited situations, while providing a framework for selecting an appropriate approach. Other resources provide more detailed summaries and examples of the application of data-limited approaches (California Sea Grant, 2008; Honey et al., 2010; FAO, 2014c). New methods are developing rapidly, further expanding the availability of options to determine sustainable harvests (for an example see Costello et al., 2012).

2. For more information, please see www.eaf-nansen.org/nansen/en

A robust stock assessment is the best method for understanding stock status and setting harvest levels, but assessments have traditionally been costly and required significant amounts of data. Many fisheries around the world have little reliable data or money for science. New cost-effective methods for approximating stock status when data is limited are being developed (Apel, Fujita & Karr, 2013) and may be a good starting point for many fisheries.

Given its importance, data availability and reliability also has an effect on investment risk. Fisheries that have accurate, appropriate data will reduce levels of uncertainty and therefore increase investor confidence. Uncertainty in stock data and assessments is always a concern because factors such as the growth rates of a specific stock, the carrying capacity for that stock and the environmental variability brought on by seasonal changes or human interference are inherently uncertain. Clearly, this uncertainty is pronounced for data-limited fisheries (Honey et al, 2010). The cost of extra data collection and analysis should be weighed against the degree to which uncertainty will be reduced.

# ROBUST MONITORING AND ENFORCEMENT

### Key actors

The public sector has a key role in establishing policy that defines legal and illegal fishing activity. The public sector may also play a direct role by financing and providing monitoring and enforcement activities. Increasingly, the private sector is playing a role in providing information to ensure compliance with rules, especially in fisheries with secure tenure. For example, fishery cooperatives or associations may establish monitoring protocols for their members and pay for monitoring.

In some cases, the roles and responsibilities of monitoring and enforcement are shared, even if only informally, between public and private entities. A good example of this is in the Patagonian and Antarctic toothfish fishery, where collaboration between governments, the industry and NGOs was necessary to tackle illegal, unregulated and unreported (IUU) activity (Tindall, 2012). Though these collaborative approaches can remain informal, clearly defining roles to ensure that a transparent and robust system is in place is vital to deterring unwanted fishing activity.

Effective monitoring and enforcement systems help ensure that the value and cash flows generated from a productive fishery are secure into the future. Systems must be in place to ensure legal fishery participants comply with rules and regulations, such as harvest limits, while also preventing illegal fishing activity from those encroaching on the regulated sector.

Establishing secure tenure is an important step to providing fishers with the right incentives to prevent or deter illegal, unregulated and unreported (IUU) fishing. Secure tenure changes incentive systems from within the fishery itself, such that incidence of illegal or unreported fishing is naturally and cost-efficiently reduced. Furthermore, fishers with secure tenure are more likely to support systems that prevent outsiders from poaching their fish stocks,

as is the case in the Baja California lobster fishery where fishers annually fund US$1 million in enforcement activities to protect their resource against outsiders (Cunningham, 2013). However, in many cases extra measures are also required.

IUU fishing activity is one of the most significant risks to sustainable fisheries. Unfortunately, the global incidence of IUU fishing is high, accounting for as much as US$23.5 billion annually across EEZs and the high seas, at a mean loss of 18% of catch per fishery (Agnew et al, 2009). There is therefore a clear incentive to enable robust monitoring and enforcement and to reduce or eliminate IUU activity.

Methods to prevent or restrict illegal fishing vary depending on the size and situation of a fishery but there is generally a need for both physical assets for monitoring and enforcement (such as patrol boats) as well as the human capacity for effective control of a fishery – both of which require upfront and ongoing investment.

Additionally, education and awareness-raising within local communities on the importance of long-term sustainable management can increase the degree of engagement with a management plan and therefore reduce the risk of infraction. A good example of this comes from Zanzibar's Village Fishermen Committees, where education programmes resulted in improved fishery surveillance undertaken jointly by government and the committees and eventually to a regeneration of marine resources (Tindall, 2012).

From this, it is clear that ensuring robust monitoring and enforcement will significantly reduce the risk of investment in the transition, as it either reduces or eliminates existing IUU activity and discourages any new IUU activity from starting.

# 3

# DRIVERS OF INCREASED VALUE

THERE are three key drivers that increase fishery value:

1. **Stock health:** The stock health determines the possible harvest, or production level. When the stock is healthy consistently larger harvests can be produced over the long term. In cases where the stock is overfished, allowing fish stocks to recover to a target level[3] will ultimately result in a higher, sustainable harvest.

2. **Operational efficiency:**[4] Efficiency occurs at the fleet level – including cooperatives and communities – and the individual business level. These changes can take place in both the catching sector as well as the rest of the supply chain. Changes in management and/or individual business decisions—such as better use of existing resources, use of fewer resources, installation of more efficient technologies, or better organisational structures—can reduce costs and lead to greater value.

3. **Market value:** The value of a fishery product at market determines the fleet or individual revenues. An improved ability to access and serve the demands of seafood markets can increase revenue.

The previous chapter explains how implementing the right incentive and management systems in a fishery is a critical first step in unlocking the value of the fishery. Further to this, fishers, whether as individuals or cooperatives, have the ability and incentive to improve the bottom-line of their businesses in a way that contributes to the overall sustainability of the fishery. This chapter outlines some of the ways that this can be done. Importantly, if basic conditions described in the previous chapter are not in place, any attempts to increase stock health, operational efficiency or market value will likely be eroded and value will dissipate over time.

3. Two common target levels for sustainable yields exist. Maximum sustainable yield (MSY) is the point where the harvest from the fishery is both as high as possible and can be sustained indefinitely with proper management. Maximum Economic Yield (MEY) is the point where the greatest sustainable profits are achieved and usually results in slightly lower harvests and a larger number of fish in the water. The primary difference between MSY and MEY is MEY factors in the costs of fishing, whereas MSY does not.

4. In fisheries terminology, operational efficiency is commonly defined as catch-per-unit of effort, or CPUE, where effort is defined by a single fishery input or combination of fishery inputs. For example, CPUE might be described as the catch per vessel-day.

See page 72 for glossary and acronyms.

# STOCK HEALTH

### Key actors

The public and private sectors both have a role to play in ensuring stock health.

The public sector can be responsible for establishing policies that permit or directly implement the conditions that ensure a healthy stock: secure tenure, sustainable harvest limits and effective monitoring and enforcement. The public sector may also finance, in full or in part, activities that support these conditions.

The private sector, in particular the catching sector, can be involved in policy designs such that they incorporate fisher input as well as play a role in financing, administering and operating management systems that maintain stock health.

NGOs may support stock health with technical assistance to support the design and implementation of enabling conditions.

The fish stock (or in the case of mixed fisheries, fish stocks) is the natural capital base on which the value of the fishery is built. A healthy stock that is fished at a sustainable level will provide significant and ongoing value. On the other hand, an overfished, collapsed or declining stock provides reduced and diminishing value.

The health of the stock, broadly speaking, drives value in two different ways: first, through the number of fish available for sustainable harvest, and second, through the relationship between this number and the costs required to find and catch the fish. If the stock diminishes – there are less fish available to catch – fishing likely requires more effort in terms of travel to fishing grounds and time to search for fish.

The goal is to maintain the stock at a level that either maximizes the amount of fish that can be removed on a sustainable, ongoing basis (Maximum Sustainable Yield or MSY) or maximizes the value of the fishery (Maximum Economic Yield or MEY, which factors in the costs of fishing, produces a lower harvest than MSY and leaves more fish in the water). See figure 2 for more information.

As discussed in the previous section, there are three key enabling conditions that ensure a healthy stock: secure tenure, sustainable harvest limits and effective monitoring and enforcement. There are additional approaches which may help bolster stock health and increase product value. One approach is an 'ecosystem-based' approach which recognises the importance of wider ecosystem dynamics in determining the stock health. One important component of this is the establishment of temporary or permanent closed areas that protect important parts of the ecosystem.
For example, in the Spencer Gulf prawn fishery of South Australia (Tindall, 2012), fishers activate rolling, temporary closures to help to maintain the stock at a healthy level. In addition, restrictions can be put in place around size or sex of landed fish. These restrictions can help to keep productive parts of the stock in the water, thereby ensuring future value of the fishery at the same time as enhancing dock-side value. All of these measures can maintain the sustainability and resilience of the stock, thereby increasing the value of a fishery.

FIGURE 2 **Stock health and the costs and revenues of fishing**

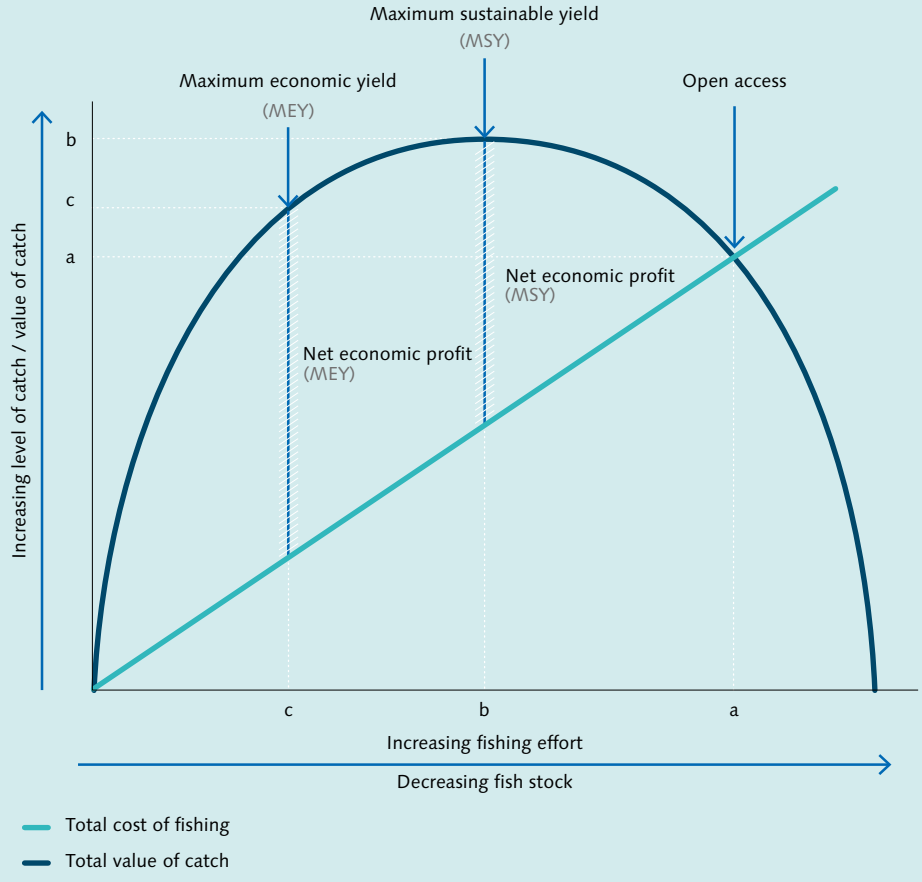



Figure 2 depicts the costs and revenues of fishing for three scenarios. The dark blue line shows the catching sector revenues for sustained levels of fishing effort and the light blue line shows the total catching sector costs of fishing. The difference between the two lines is the economic profit from fishing. At high levels of fishing effort, fish stocks are depleted, fishing costs are high and values derived from fishing are low. At MSY, sustainable harvests from a fishery are maximized, providing the most food production on a sustained basis. At MEY, the economic value of the fishery is maximized by accounting for both the revenues and costs of fishing. Setting sustainable harvest limits at MSY will maximize the amount of fish removed sustainably and setting the catch limit at MEY will maximize the net economic value of the fishery.

# OPERATIONAL EFFICIENCY

### Key actors

The private sector is the primary group of actors concerned with increasing operational efficiency as it is one of the key ways industry can improve the bottom line of a fishery's economic performance.

The public sector can also impact operational efficiencies by implementing policies that provide fishers with business flexibility while ensuring compliance with appropriate standards.

NGOs may play an important role in linking operational efficiency with the broader context of fishery sustainability.

Improving the operational efficiency of a fishery includes any activity that reduces the cost of fishing or delivering seafood through the supply chain. Increasing efficiency and overall profit margins will improve the return on investment (ROI) of the transition process as a whole. Historically, improving efficiency in the absence of a robust management framework has led to increased catch and stock depletion. However, in the context of the overall transition, increasing margins for fishers is an important component of economic sustainability.

To a certain extent, the elements of the transition framework discussed thus far will improve the bottom line of fishing activity. When fishers have the stability of a long-term share of the fishery and when the fish stock is healthy and resilient, fishers attain the flexibility to make business decisions that can maximize operational efficiency. For example, fishers can deploy improved fishing gear that is better suited to the target species, more effective at eliminating non-target species, or more fuel efficient. Technical improvements resulting in reductions in non-target catch often have downstream efficiency gains too, requiring less time and effort to process and sort the fish that has been caught. In the New England groundfish fishery for example, the introduction of the Eliminator trawl (a winner of the WWF SmartGear competition[5]) reduced non-target catch of haddock to less than one percent; fishers

5. WWF SmartGear competition: www.worldwildlife.org/initiatives/international-smart-gear-competition

now spend much less time sorting the fish and more time fishing (Tindall, 2012).

The very best examples are able to combine all of the above benefits. For example, in the Brixham beam trawl fishery in the United Kingdom, gear improvements have resulted in fuel efficiency gains of around 20%, a 50% reduction in fish discards and a 5% increase in value of catch due to increased quality. In 2012, fishers were taking home up to GBP200 a week in additional income as a result (ibid).

Operational efficiency can also extend throughout the rest of the supply chain into buyers, processors or distributors. Changes in the management of the fishery, as well as the efficiency of the catching sector may also incentivize or drive changes in the supply chain.

Measures for operational efficiency do not work to offset risk directly, but they have the ability to increase the return on investment of the transition and therefore are important for introducing new types of capital providers.

# MARKET VALUE

### Key actors

The private sector is the main actor concerned with increasing market value because it, including fishers and other supply chain businesses, will be the primary beneficiary of the increase. Furthermore, the private sector is in the best position to undertake the activities that improve market value.

NGOs have played and can continue to play an important role in providing investment, education and technical assistance that support industry in increasing their market value. For example, NGOs have helped develop certification and branding schemes, while also helping fisheries to navigate the appropriate processes.

Ultimately, the price that a product is able to achieve at market determines the overall value of the fishery. Ideally, prices should not only reflect the costs of fishing but also reward sustainable behaviour. A transition to sustainable management provides opportunities for greater value creation, which in turn further increases profit margins. A few of the key ways of increasing value at market are discussed below.

## Improving quality and access

Within the seafood industry quality is a key price differentiator. Therefore, the fishing industry —including fishers, processors, distributors, etc—can increase market value by improving quality, as well as timing to market. For example, product quality is affected by methods used to capture, process and handle fish and it is possible to increase value through investments in better gear, processing and storage facilities or distribution centres, for example.

Fishers with secure tenure often have the flexibility to extend seasons and avoid gluts, also improving quality and access to different markets. For example, the Alaskan halibut fishery extended their season from 48 hours to nine months after fishers were granted secure tenure with increased flexibility. By avoiding gluts, fishers and processors could sell the fish fresh, rather than frozen, thereby accessing a new, higher-quality market and fetching a higher price (Hermann, 2000).

It should be noted, however, that investments in some of these activities are relatively common for the fishing industry, but are often made without consideration for the underlying sustainability of the resource base. Fishery collapse or a reduced harvest due to overexploitation poses a high risk for investment and therefore investments in market value increase should not be made in isolation of broader investment in the sustainability of the fishery.

## Differentiating product through certification

There is increasingly clear evidence of a high demand for sustainably sourced seafood. Many large international seafood companies, particularly those with primary markets in Europe and North America, have made commitments to source from sustainably managed fisheries. Many of these markets require the quality and assurance outlined above as well as a third-party certification. However, there is a lack of certified supply to meet these commitments. Investing in the transition to sustainable practices that have certification as the end result can help fisheries access these markets, obtaining priority and, potentially, price premiums.

The Marine Stewardship Council (MSC)[6], is perhaps the most widely known and adopted certification scheme; more than 9% of landings from marine capture fisheries have MSC certification (Agnew et al, 2014). One study found that MSC certified frozen Alaska pollock received a 14.2% higher price in UK markets than non-certified pollock (Roheim, et al, 2011).

End markets can also dictate preferences regarding sustainability. For example, countries may give trading preferences or priorities to countries that comply with international agreements, putting significant pressure on those that do not implement basic sustainability measures. Providing consumers with tools to select sustainable seafood, such as Seafood Watch Cards,[7] is another common approach.

Targeted analysis can identify specific market opportunities for different products and therefore the investments needed to access premium markets. Quality and sustainability criteria for access to premium markets are relatively clear for high-value species such as wild salmon and tuna, but they are not so obvious for subsistence and mixed fisheries. Examining both domestic and international markets can provide a clearer understanding of the

6. For more information, please see www.msc.org

7. For more information, please see www.seafoodwatch.org

opportunities available for accessing different and more lucrative markets and their associated requirements.

## Differentiating product through branding

It is also possible for fishers, and others in the supply chain, to obtain a price premium through speciality branding. Seafood branding is diverse and can include efforts to differentiate product based on sustainability, location of catch, type of gear used, specific boat or fisher, time to market and more. Branding does not require fisheries to comply with specific standards, such as the MSC certification scheme and can be tailored to the specific product.

For example, GulfWild[8] is a branding initiative for Gulf of Mexico red snapper, grouper and tilefish that provides buyers and consumers with information on where and by whom the fish was caught, while also assuring it meets specific voluntary standards for sustainability and safety. Trace and Trust[9] provides a technology and marketing platform that makes it easy for restaurants and chefs to share with guests the stories behind fishers (and farmers). Chefs and diners can see pictures and learn more about the people behind the product, including who, where, when and by what methods. The technology works with in-house and off-the-shelf traceability solutions.

Branding can help differentiate products based on sustainability and other attributes, but it can be costly to develop and establish a brand. Investors, fishers and others in the supply chain should conduct analysis to understand potential markets for specific branding initiatives. That said, establishing a recognized brand may allow fishers and other supply chain actors to gain a price premium that offsets the costs.

## Secure, long-term relationships

Establishing long-term relationships between fisheries and markets is one of the most important ways of decreasing market risk and increasing profit. The global seafood market is inherently volatile for both upstream and downstream players: It is challenging for the supply chain to find reliable long-term sources of sustainable seafood and likewise it is hard for fishers to achieve the long-term market access they need to plan their fishing activities. Furthermore, volatility can create a barrier to investment in improved quality, access and certification.

8. For more information, please see www.mygulfwild.us/GW

9. For more information, please see www.traceandtrust.com

Establishing long-term stability from both the supply side and the demand side can help reduce this price volatility. On the supply side, establishing secure tenure and setting sustainable harvests provides fishers and seafood markets with a degree of certainty around production, which creates confidence. On the demand side, setting up markets that allow fishers and buyers to contract for future production quantities and price can reduce volatility. For example, Open Ocean Trading[10] provides a forward contracting platform for buyers and fishers, enabling the creation of long-term contracts between parties that can result in better deals for both. Trust, fair contractual arrangements and a good track record are vital to building productive, long-term relationships between fisheries and their markets.

10. For more information, please see www.openoceantrading.com

# 4

# REQUIREMENTS FOR SECURING INVESTMENT

THE PRECEDING chapters outlined the components of a fishery transition plan that, when implemented collectively, have the potential to increase greatly the economic value of a fishery, whilst boosting the long-term social and ecological resilience of the system. This chapter articulates how to design an investment proposition based on these components. This includes:

1. A business case for the transition
2. Investable entities that can receive, manage and ultimately return capital to investors
3. Mechanisms for capturing the return
4. Risk management

See page 72 for glossary and acronyms.

# A BUSINESS CASE FOR THE TRANSITION

A key starting point for any investment proposition is an analysis of the costs of intervention and the expected returns. The first step is a contextual analysis that determines the scope of the project, the key actors, the current management systems and levels of stakeholder engagement. Then, project developers can develop a bio-economic and financial analysis of the transition in order to show the following:

1. The status of the fishery in terms of its biological, social and economic functions
2. The activities – related to stock recovery, operational efficiency and market gain – required to effect the transition to sustainability, including their cost
3. The time-scale over which the fishery project will generate returns, and the actors who will are likely to receive returns
4. Key risks associated with the project and how they affect the returns
5. Based on the above, the best financial structure and investment strategy to achieve the desired outcomes

The analysis required to model the transition costs and returns will need to incorporate a number of different data sets – biological, social, economic, market and financial. As such, a multi-disciplinary approach and expertise in different fields will be required to develop an robust investment proposition. Historical biological and socio-economic data will inform predictions of future scenarios and return profiles; therefore the quality and availability of data is crucial to developing a realistic fishery transition plan and investment proposition. A summary of the different types of analysis is provided below.

The biological model predicts the current stock health and the magnitude of the changes in harvests required to achieve sustainable fish stocks. The model covers a certain time period, and is based on the current state and intrinsic growth rate of the stock, adjusted by the current level of fishing effort (such as the catch per unit effort). From this, the model can be used to determine the sustainable annual catch limit for the future state of the fishery. This forms the basis of the potential value of the fishery.

Layered on top of this, the model must take into account the fishery's economic operations before, during and after the transition. This will be informed by socio-economic data for the fishery, such as historical data on landed catch, value of catch, number of fishers employed, number and type of vessels and operating costs. Analysing the fishery's operations will provide information on the value that can be generated from improving operational efficiency.

Finally, data on current and future market potential for seafood products needs to be collected and taken into consideration. This may involve domestic or international market analysis, depending on the species and its current or future demand. The financial analysis, including financial structure, cost of capital and associated guarantee mechanisms, can then be incorporated.

For each of these categories it is also important to understand the different stakeholders involved—such as fishers, fisher associations, government, —and their costs and revenues under the current model, as well as under a reform scenario. This distribution of costs and benefits is key to understanding and establishing appropriate investable entities and a mechanism for capturing returns.

One of the most important parts of the analysis described above is the ability to assess and distribute returns, particularly among fishers. As a transtion to a sustainable fishery will create increased economic value overall, the distribution and timing of those returns are important to consider. In fisheries that are depleted and/or where overfishing is occurring, it may not be possible for the stock to support the current level of fishing effort. A reform may therefore require that all fishers reduce their effort, or that some fishers exit the system, or both.

While this may be initially unattractive, if the 'business as usual' scenario is continued, all those in the fishery will be worse off as natural capital deteriorates, catch per unit effort declines and fishing becomes economically unviable. Ultimately, this will lead to many more fishers unable to make a living through fishing. Furthermore, as the stock rebuilds under the reform scenario, fishers may be able to safely increase their catch and/or more fishers may be able to re-enter the system.

Understanding the timing and distribution of returns among stakeholders will be crucial to developing a viable fishery transition project that will benefit stakeholders and turning it into a credible investment proposition. There are a variety of mechanisms that generate value that can be shared across stakeholders. Firstly, the transition project can be designed to meet the specific goals of a fishery, including social goals. Secondly, options for compensatory or alternative livelihood funding mechanisms can be embedded in the overall reform package, if necessary. These approaches, and others, are important as they will help sustain livelihoods and incentivise compliance with the reform strategy, as well as create a more favourable political environment to support the reform.

# INVESTABLE ENTITIES

A key requirement for investing in fisheries transition is a credible investable entity, and this is intrinsically linked to the mechanism for capturing returns, described below. Any investment requires a counterparty to receive the funding, manage the transition to sustainability and have a structure in place to repay the investment.

This entity must be clearly defined; a lack of such entities within the fishing sector currently represents a key barrier to investment. The type of the investable entity will depend on the investment strategy, as well as the return mechanism. It may also depend on the presence of existing entities, or the ability to create new ones. An entity that is able to show a track record and performance history, typically over a period of at minimum 3–5 years, may reduce the perceived risk of the investment and therefore the cost of capital. This has proven highly challenging given the lack of precedent, and will be important to address.

In some cases, viable investable entities may already exist, while in other cases, new entities may need to be established to appropriately manage investment. Viable entities can exist at the level of the catching sector, the supply chain, the government, or a combination of these. It is important to select an entity that can effectively manage the investment and have the ability to largely influence or control the desired reform activities. Often, this will require coordination among multiple actors.

## Catching sector entities

Within the fishing industry, organisations may already exist that could become investable entities, such as cooperatives (see box 3), trade associations or companies. Some entities, with a clear legal structure and good governance, may already be investment-ready, while others may require additional structuring and capacity building to ensure appropriate accountability, legal identity[11] and responsibility to investors or other stakeholders.

11. Ensuring that entities have a legal identity is vital to securing investment, as this provides the basis for contractual agreements and partnerships between parties. The importance of this extends beyond enabling investment – the Marine Stewardship Council, for example, requires the existence of a legal entity that can act on behalf of the fishery to enable certification (MSC, 2014).

## BOX 3 **Fishery co-operatives**

A co-operative is a group of people (or businesses) who come together to do something collectively that they are not as well positioned to do on their own. Co-operatives are common in many fisheries and have proven to be useful vehicles for implementing the activities needed for the transition to sustainability. They can coordinate fishing activities and provide accountable entities for investment. Co-operatives can be organized in a variety of ways and one of the most important distinctions is whether they are incorporated or unincorporated.

*Incorporated co-operatives*
Incorporated co-operatives have their own legal identity, with a structure, registered constitution and governance. They are recognised as corporates in the developed world. This recognised corporate status, combined with on-going, stable≈profitability, generates a stronger and more accountable entity for potential investments.

*Unincorporated co-operatives*
It is also possible for a group of people and /or businesses to co-operate without incorporating. However, it may be more difficult for these cooperatives, and indeed for other unincorporated businesses, to attract investment or to borrow money, as there is no single legal identity with whom the investor can contract.

In either case, following internationally accepted guidelines for creating cooperatives can ensure better functioning groups and provide stronger assurances to investors as to their integrity. For example, the International Co-operative Alliance's (ICA) "Statement of Co-operative Identity" (ICA, 2011) provides formal standards for organizing and creating a cooperative.

## Supply chain entities

In circumstances where credible entities do not exist at the catching sector level, it may be preferable to look further down the supply chain, to processors, distributors or exporters, for entities with requisite legal structures and performance histories. For example, the social impact investor Root Capital has provided almost US$6 million in loans to a crab processing company in Mexico that enables the company to assist their suppliers through a period of transition and achieve MSC certification (Ormeno, 2013). Similarly to the catching sector, supply chain entities may also be organized as companies, co-operatives or associations. However, it is more likely that entities in the supply chain will have appropriate legal structures, as well as a track record and performance history.

## Government entities

In some cases, local, regional or national government entities can be the investable entity. This may especially be appropriate if the investor is a development bank or a donor agency. In this case, the government entity would need a clear relationship with the catching sector or the supply chain that is undergoing transition activities.

It may be possible for government to establish, through policy or legislation, a specific fund, body or vehicle for the purpose of managing a fishery investment and collecting a portion of the revenues. This approach was used in Jamaica in 2009 through the establishment of the Conch Act, which introduced a levy on sales of conch, but also created a fisheries management and development fund tasked with both the management of the fishery and the administration of the levy (Conch [Export Levy] Act, 2009).

## Other approaches

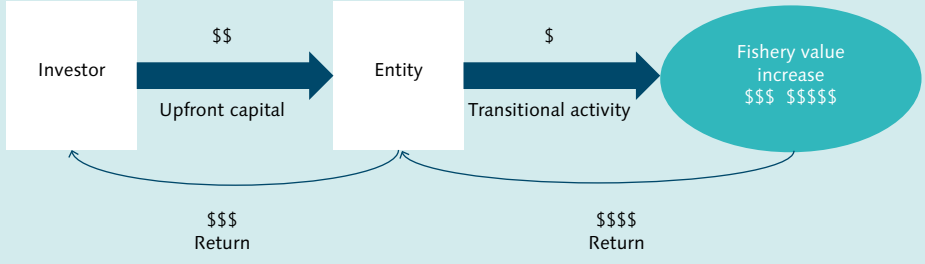
In other cases, joint ownership between public, private and NGOs over an investable entity may be preferable given that in many projects successful delivery of outcomes requires joint decision-making and division of responsibilities. This may be a pre-existing entity or a newly established entity created specifically for the purpose of the investment, such as a special purpose vehicle (SPV), which takes on the liabilities and responsibilities of a specific investment.

Another option is to identify local or international financial intermediaries who may be able to take on the role of managing finance, in part or in full, and work closely with government or the private sector. Development banks, which benefit the public sectors of their constituent countries, are a good example of this, and have a history of taking on such roles in other contexts. Investors may be more comfortable committing funds in the knowledge that they are being overseen by a credible financial organisation.

There are clearly many options and potential structures for investable entities. A key part of project design is to identify the available options in the specific context and match them to the return mechanisms, investment strategies and capital structures that are the most appropriate for the project overall.

# MECHANISMS FOR CAPTURING THE RETURN

FIGURE 3 **A simplified model of the investment process for fisheries transition**




A successful investment in the transition of a fishery is predicated on the ability to capture and return a portion of the resultant cash flow of a reformed fishery to the stakeholders involved, as visualised in figure 3. The appropriate return mechanism will depend on numerous factors, including the organization of the catching sector and supply chain, the investable entity and the investment strategy (see box 4) and investor requirements.

Whether the investable entity is a cooperative, association, company, government agency or some other organization, it must be able to capture some of the increased value of the reformed fishery in order to repay the investor. Given that a key goal of the transition is to create a self-financing and therefore economically sustainable system, once the investors have exited, revenue recovery will continue to support the costs of operating the system.

## Asset purchases and sales

When an investor makes a direct equity investment into fishery assets, such as through purchase of equipment or permits, the primary mechanism for repayment is sale of that asset. Ideally the investor would purchase an asset in support of the transition plan and engage in activities that increase fishery sustainability and value.

For example, the investment could reduce overcapacity or finance the transition to cleaner gear that reduces waste while improving operational efficiency. Once the fishery has increased value and sustainability according to the plan, an investor can then sell the more valuable asset for a profit, thereby recouping their investment.

## Interest and dividends

Investors can also capture ongoing payments such as interest or dividends. Interest payments are primarily used when an investor has provided targeted lending, e.g. through a loan, to implement certain transition activities. The investee then repays that loan after a defined time, with regular interest payments until then. Dividends are a distribution of a portion of the investable entity's earnings and are another way to capture value over the life of the investment. The amount is based on the relative level of investment and the entity's earnings.

## Fees and levies

Charging fees is one method for capturing value and can be charged at the fisher level or throughout the supply chain. For example, fishers can be charged a flat fee in order to gain access to the resource, or a fee based on how much they catch.

For example, many co-operatives already charge their members fees in order to participate. In exchange, members gain benefits from the co-operative such as monitoring or branding services. Co-operatives or associations could charge an additional fee to cover the cost of repaying an investment.

Governments can also charge fees in order to cover the costs of managing a fishery. In US fisheries managed through secure tenure, the industry contributes up to 3% of the dockside value of fish towards management measures. Similarly, in New Zealand, the industry contributes US$20.7 million per year to ongoing management costs in the fishery (MRAG, 2010).

Similarly, businesses throughout the supply chain could be charged a fee to participate. These businesses, including processors, packers, exporters or retailers, each capture and retain product value. In order to ensure the stability and security of supply, these businesses can be required to return a portion of this value to investors. In Jamaica, for example, an export levy was introduced

in 2009 on conch and some of the proceeds were channelled back into a fisheries development fund (Conch (Export Levy) Act, 2009).

## Taxes

Taxes, where appropriate, are another method for capturing value from fishers and businesses and may be an especially useful method when a government agency is the investable entity. Often, although not always, fishers and other supply chain businesses are subject to income and/or business taxes. As fisheries transition to more sustainable, profitable management, fishers' income is likely to increase, meaning fishers may pay more taxes. Similarly, supply chain businesses are also likely to see increased profits, and therefore increased taxes as well. Through taxes, governments may be able to leverage existing tax procedures and infrastructure to capture some of the return and ultimately repay investors. This structure is dependent on government willingness to hypothecate the tax, i.e. to specify its use for a particular purpose.

## BOX 4 **Understanding investment strategies**

Investors deploy capital in a variety of ways and it is useful to understand these different strategies during project development. The specific approach will depend on the project context, risk/reward profile, stakeholders involved, legal and political context, investor preferences and more. Below are some examples of possible investment strategies. It is important to note that these strategies may not automatically address the full reform package as outlined in this report, but serve as examples of the way that capital can be put to work in the context of the transition to sustainable fisheries.

*Equity investment*

Equity investors use their capital to purchase assets, generally with the intention that these will grow in value and can be sold at a later date for a profit or, in the case of some impact investments, disposed of for maximum social and environmental gain. In the case of fisheries transition, the equity investment should be deployed to increase sustainability as well as profitability. Equity investment can range from growth capital for businesses pioneering sustainable approaches along the fishery supply chain, to investment in the underlying stock of the fishery, for example through purchase of fishing permits or access shares. In one example in Morro Bay, CA, investors collaborated with fishers to purchase permits from willing sellers, switch to more sustainable practices that reduced by-catch and habitat impacts and lease permits back with conditions attached (Gleason et al., 2013).

*Targeted lending*

Investors can also provide targeted project lending through investment vehicles. Rather than purchasing the fishery assets, loans are made to key stakeholders in the fishery to allow them to implement parts of a transition plan. This is the premise behind the WWF's Financial Institution for the Recovery of Marine Ecosystems (FIRME) concept (WWF, 2012), which aims to facilitate the transition by providing loans to fishers. These loans are secured against the value of future fish stocks, based on a credible sustainable fisheries management plan. These loans would be repaid with interest but only when a certain baseline of profitability

is reached. In turn, the FIRME's original capital could become a revolving fund that can be reinvested in other fisheries or returned to investors.

*Public-Private Partnerships*

Public-Private Partnerships (PPPs) can be used to finance investment in the management assets of a fishery, such as services that deliver scientific stock assessments or monitoring and enforcement. This strategy has been proposed by EKO asset management (EKO Asset Management Partners, 2014). It suggests that private investors would help fund upfront management costs and, in turn, the government would repay investors under a long-term services contract with benchmarks and milestones, underpinned by robust governance of the partnership. According to EKO, this could "offer a way to solidify a funding stream for such services over a longer period of time, reduce implementation costs overall and insulate the programs from undue political or industry influence" (ibid). For investors it could provide a compelling investment opportunity with a lower risk profile than direct investment into other smaller entities.

# RISK MANAGEMENT

As this report articulates, successful fisheries reform projects can generate significant value and demonstrate positive cash flows. However, as with any investment, the returns are subject to risk. The level and type of risk, along with the expected return, will substantially influence investor appetite for a project. The higher the risk investors are asked to bear in a project, the more they will expect to be compensated for their investment. And at some point, the risk will be too high for investors to accept, given the projected returns, and they will decide not to invest. Importantly, different groups of investors may accept different types and levels of risk. For example, equity investors will typically weigh both the upside and downside risks of a project, whereas debt investors are more concerned with downside risk, as their share of returns is fixed.

Investors carefully consider the risks of any project and calculate risk-adjusted returns, where a project's returns are discounted by the probability of under-performance.

Fisheries projects have five broad categories of risks that should be considered:

1. **Project execution risk** – any risk that directly impacts the successful completion of the project. In the context of fishery projects, key considerations include lack of data; stakeholder dis-engagement by fishers, communities or governments; lack of compliance with a reform plan; and lack of capacity and expertise to undertake a multi-disciplinary, multi-stakeholder project

2. **Environmental risk** – includes risks associated with the ability of stocks to recover; natural (but extreme) fluctuations in stocks; natural disasters and impacts from climate change and ocean acidification

3. **Market risk** – includes risks related to the ability of seafood products to achieve expected prices, including premiums, as well as shifts in seafood market dynamics due to competition (including that from the aquaculture sector) or changes in buyer behaviour

4. **Political risk** – includes the risks associated with political change and lack of political will or buy-in to a transition pathway. Crucially, investors will have higher perceived risk if there are limited mechanisms for transparency or rule of law

5. **Country risk** – refers to the risk associated with macro-economic conditions in the 'host' country, including credit ratings, exchange rate fluctuations, currency devaluation and other issues that relate to the investability of a country[12]

Fisheries are extremely diverse and, generally, risk will increase with the overall complexity—both biological and social—of the system. Consider these four examples, from relatively simple to more complex, that would exhibit different risk and return profiles:

- Multi-species fishery in a developed country with jurisdictional complexity, strong rule of law and some access to market
- Single-species fishery in a developing country with clear jurisdiction, strong rule of law and good access to market
- Single-species fishery in a developed country with jurisdictional complexity, strong rule of law and limited access to market
- Multi-species fishery in a developing country with jurisdictional complexity, limited rule of law and limited access to market

These are just four examples, but they begin to highlight the different levels of complexity and risk that can exist in fisheries projects. See Annex 1, table 1 for a sample risk scoring table applied to these four examples that can be used to quantify relative levels of risk between projects.

For all the reasons outlined above, fisheries investments are generally perceived as risky by financially-motivated investors; this is one of the main reasons for low investment in fisheries in transition. This is partly due to inexperience in the sector, and partly because project outcomes are usually dependent on complex biological and environmental outcomes which many investors are unfamiliar with. In addition, many projects are located in parts of the world where political and country risk is high. This is problematic in a sector that is heavily dependent on good governance. Many countries which have the largest opportunity for increased value (as well as social and environmental benefit) often lack enabling environments

12. For a list of country risk and credit ratings see www.tradingeconomics.com/country-list/rating

that encourage long-term private sector investment: the level of political, economic and policy risk is simply too high. Risk management mechanisms, such as political risk insurance (box 5), can improve the prospect of adequate and dependable financial returns. Guarantee and insurance products are commonly used for this purpose, and project returns will need to be able to support the costs involved.

To expand the pool of investors who will consider investing in fisheries, and to lower the cost of capital, project developers need to focus on managing, mitigating and reducing risk. To some extent, the framework provided in this document is designed to reduce overall project risk (See Annex 1, table 2). That is to say, if the components of a transition plan as articulated above are in place, the risks of investing in fisheries will be greatly reduced. In particular, engagement with and commitment from fishers, fishing communities and key government personnel is vital. In addition, project developers should keep in mind that activities such as hiring expert management teams, establishing partnerships that bring valuable resources or relationships to the investment and entering into long-term contracts will also serve to diminish both actual and perceived risk.

## BOX 5 **Political and country risk insurance**

Political risk is a key barrier to overseas investment, particularly in developing countries, where it is considered the second most important constraint to foreign direct investment after macroeconomic instability (Vivid Economics, 2014). Broadly speaking, political or country risk is defined as any change in political conditions that will result in a loss from an investment. Common political risks include currency inconvertibility, expropriation, war and civil disturbance, breach of contract, and non-honouring of financial obligations (Multilateral Investment Guarantee Agency [MIGA], 2013). Within the category of political risk, adverse regulatory changes (e.g. changes to policy supporting an investment) are considered the single greatest concern to investors (Vivid Economics, 2014).

Investments in the transition to sustainable fisheries are subject to political risk as fisheries projects require commitments by governments to support, or at a minimum enable, secure tenure, harvest limits and robust monitoring and enforcement. Additionally, many countries that could benefit from the transition are subject to high political risks – through government changes or inaction. These non-commercial risks are not easily reduced through due diligence and assessment of the economic viability of the project.

However, insurance products are available to cover political risks, often for foreign parties who have identified investment opportunities in countries with high political risk. Political risk insurance is provided by private entities as well as a number of multilateral agencies. For example, the Multilateral Investment Guarantee Agency (MIGA), an organization of the World Bank Group, provides political risk insurance for foreign direct investment in emerging economies (MIGA, 2013). MIGA applies a set of environmental standards to its insurance products through its Policy on Social & Environmental Sustainability, and has recently provided guarantees for investments being made in the fisheries sector, though as yet these standards are not specific to fisheries management. Other organisations, such as the Overseas Private Investment Corporation (OPIC), offer similar political risk insurance products, while the World Bank's partial risk guarantees (PRGs) cover private lenders against defaults on loans when such defaults are caused by a government's failure to meet specific obligations (Vivid Economics, 2014).

# 5

# CONSIDERATIONS FOR STRUCTURING THE INVESTMENT

**AS THIS** report has shown, the investment case for the transition to sustainable fisheries is a compelling one. There are clear ways to increase value and clear requirements for securing investment. Returns are possible and could even be high, but the risks must be overcome. Both project developers and investors have an important role to play in structuring fisheries investments in order to unlock both the value in fisheries and the existing capital sources that seek the financial, environmental and social returns that fisheries provide. Investments will need to be structured in the right way to match the risk/return profile of projects with the preferences of investors. This chapter examines how this might be initially achieved.

It is also important to note that investors can play a vital role in driving a transition to sustainable fisheries that expands beyond their ability to provide capital. Investors require a level of discipline and rigour that may not have previously existed for many fisheries projects and that will be helpful for project developers regardless. Investors can also be an important source of expertise and services, information and connections. In addition, investment can help spur action such as securing stakeholder engagement or political commitments.

### BOX 6 **How much capital is required to transition fisheries globally?**

Although there is consensus on the need for transition finance, there is not yet a precise understanding of the total amount required, nor of the size of the gap between this total amount and the current level of finance available. UNEP estimates that an upfront investment of US$240 billion to rebuild global fisheries would generate an expected annual gain of US$50 billion. Under this scenario, it is estimated that the world's fisheries would be able to produce 90 million tonnes of seafood annually, 10 million tonnes more than today. Their research also estimates that employment figures would be 27% to 59% higher (UNEP, 2011).

See page 72 for glossary and acronyms.

# SOURCES OF CAPITAL

There are many sources of capital that project developers can consider in financing the transition to sustainable fisheries. And the type of capital that projects can attract is likely to change over time, based on the maturity of both the individual project as well as the sector as a whole. As figure 4 shows, investors fall along a spectrum based on target returns, type of investment, target terms and other factors. Project developers have traditionally focused on attracting capital from the right-hand side of the investor spectrum, that is, grant funders, with an 'impact-only' motivation.

There is both a need and an opportunity to structure projects so that they can attract a broader range of investors. The framework outlined in the previous chapters should be used to articulate effectively the opportunities to investors.

A clear understanding of *all* the different sources of capital will enhance the ability for project developers to target different investors based on project stage and investor expectation. Projects in early stages are likely to have greater risk and uncertainty. Therefore, investors who are more tolerant of risk and more motivated by impact will be critically important to finance early-stage projects in order to unlock additional capital for fisheries reform ('impact-only' and 'impact-first' investors). Moving across the spectrum, more financially-motivated investors include those who focus on social or environmental solutions that can generate market-rate or market-beating financial returns ('thematic investors'), as well as investors who seek to optimise the environmental, social and governance practices of projects ('responsible investors'). These investors may also invest in slightly more risky project stages and can play an important role in bridging the gap between impact-only investors and traditional investors. At the far left are the 'traditional' investors who tend not to discriminate between projects based on social, environmental or governance criteria, so long as they meet minimum standards, and primarily make investment decisions based on financial criteria such as return, liquidity and risk.

FIGURE 4 **The different 'colours' of money**

| | Financial returns | | | Social and environmental returns | |
|---|---|---|---|---|---|
| | **Traditional** | **Responsible** | **Thematic** | **Impact-first** | **Impact-only** |
| **Typical investment** | Those that generate financial returns | Those that protect or enhance competitive financial returns through ESG analysis | Those that *can* generate a competitive financial return | Those that generate a below-market financial return | Those that require grant funding with no capital repayment |
| **Typical investor** | ◦ Institutional investors<br>◦ Private equity<br>◦ Retail investors<br>◦ Commercial banks | ◦ SRI investors (Socially Responsible Investors) | ◦ Social/impact investors<br>◦ Development banks | ◦ Foundations<br>◦ Governments<br>◦ Social/impact investors | ◦ NGOs<br>◦ Foundations<br>◦ Governments |
| **Investment horizon** | ~ 5–> 20 years | ~3–5 years (exits for individual investments)<br>~ 7–10 years (fund life) | | ~ 5 years–long term | Long term |
| **Type of asset** | ◦ Equity<br>◦ Debt<br>◦ Project finance | ◦ Equity<br>◦ Debt | ◦ Project grants<br>◦ Equity<br>◦ Debt | ◦ Programme related investments (PRIs)<br>◦ Small Business loans | Grants for:<br>◦ Seeding concepts<br>◦ Technical assistance<br>◦ Asset purchase<br>◦ Operations |
| **Target return (IRR)** | ~ 5 –>15% | ~10–20% | ~5–15% | ~ 0–5% | 0% |

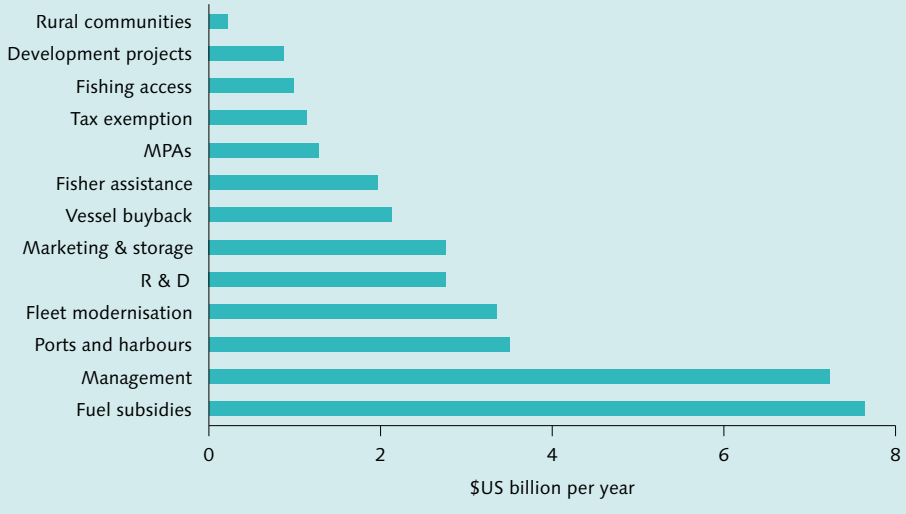
Source: *adapted from* Bridges Ventures, 2012

As figure 4 suggests, government or public funding can and does play a role at multiple points on the investor spectrum. In the fisheries sector, subsidies as one form of public funds are the subject of lively debate. See box 7 for further discussion.

## BOX 7 **Global fishing subsidies**

Governments already provide large amounts of funding to fisheries all over the world. The total value of public subsidies for fishing activity has been estimated at US$35 billion per year. As shown below, subsidies are allocated to a variety of different activities. While some of these subsidies support positive activities such as management, research and development and fleet safety, unfortunately, the majority of subsidies are perverse and unsustainable.

In many places, government subsidies are deployed to ensure that otherwise marginal fishing activity remains economically viable in the short term. This is particularly the case in fisheries that are already over-exploited and have a diminished resource base. Common approaches, including fuel subsidies or tax breaks for fishers (Sumaila et al, 2013), ultimately run counter to long-term sustainability as they support further depletion of fish stocks. The elimination of these 'perverse' subsidies is therefore essential for successful project implementation. Furthermore, re-direction of these subsidies towards the transition can provide a further source of impact capital. Aligning subsidies towards the transition also serves to highlight political commitment to the process.




Source: Sumaila et al, 2013

# COMBINING CAPITAL TO CREATE SCALE AND REDUCE RISK

Importantly, there may be ways to combine different capital sources, either concurrently or sequentially, to reduce and spread risk. An increased use of *sequenced*, *blended* or *layered* investment structures can effectively leverage larger pools of capital. These approaches effectively combine a range of capital sources by matching risk/return profiles to different capital providers and thereby minimize the overall cost of financing the transition.

Initial analysis can be useful to understand the existing status of a fishery transition project. In some cases, it may reveal that a fishery requires upfront investment in activities such as data refinement, stakeholder engagement or other set up costs that are likely to only appeal to grant funders. If this phase is successful, the project may become suitable for further investment. This approach may be advisable for projects with very high risk, such as the multi-species, developing-country fishery example given in the previous chapter.

In other cases, it may be possible immediately to attract sources of capital that are more financially focused; the funding can be structured in such a way that makes the most efficient use of all forms of capital. Impact investors can 'flex' the risk-reward profile of their own investment (for example, by providing a first loss position or guarantee) in order to attract other capital providers who would not otherwise participate. By using these structures (see figure 5), impact investors can channel more capital to catalyse other projects, significantly furthering their impact and increasing the supply of investable projects.

There are a number of approaches that can be used in early, high-risk projects including:

1. **"First loss" reserve:** an insurance product offered by the impact investor to a project or pool of projects; it is the first source of capital to take a loss (last to be paid) in the event of project failure

2. **Concessional loans:** debt finance at below market rates. Impact investors may offer financing to a project at a low (or zero) interest rate in order to increase returns for other capital providers in the structure

3. **Technical assistance facility:** a grant-funded facility that covers some of the costs of capacity-building and project implementation. This removes some of the costs from a fisheries transition project, and increases the chances of successful project delivery, improving the risk/return profile for other investors

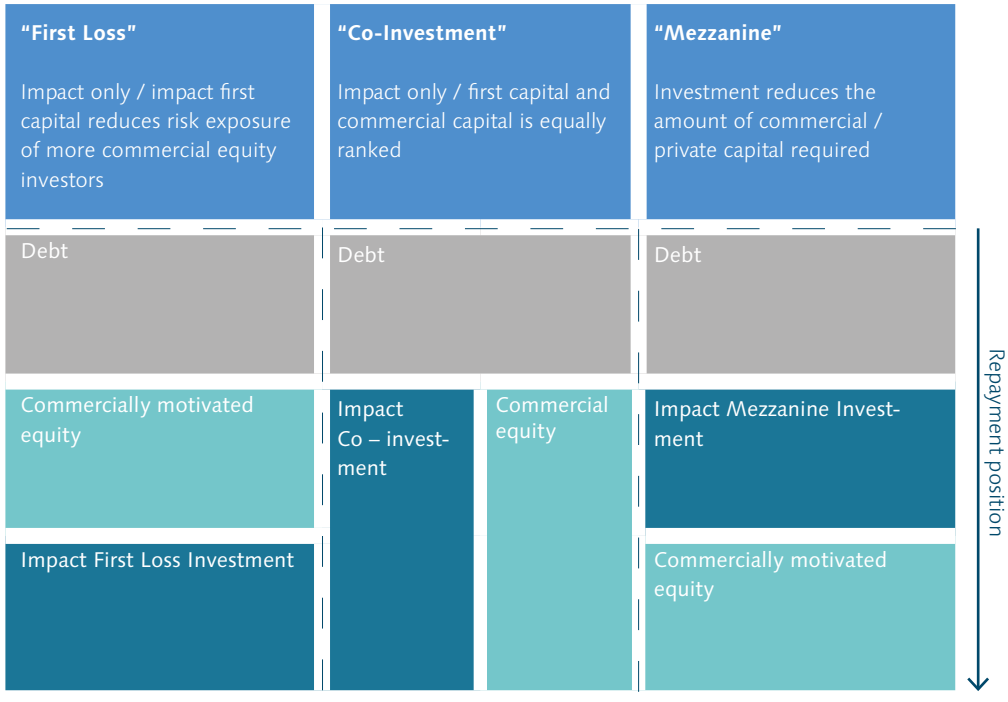
4. **Seed or anchor equity investments:** the impact investor commits capital to a project at an early stage. This investment may be on the same terms as other equity investments, but by committing first and early, impact investors can reduce the financing risk and encourage other investors to participate

5. **Mezzanine investment:** the impact investor invests in the fishery project and is repaid before equity investors but after lenders. This reduces the risk for lenders, but it increases the risk for equity investors, so it only enhances one part of the financing structure

Another way to reduce the overall cost of transition is through aggregation. Aggregation works to reduce risk and increase the supply of capital in a number of ways. Firstly, it diversifies risk across projects, species, environmental conditions, markets and countries. Secondly, it provides the opportunity to pool transaction costs through developing expertise around project management and fishery-related due diligence. Thirdly, it increases the size of the total investment, meaning that larger investors with investment size restrictions are more likely to participate. However, aggregation requires the capacity, knowledge and resources of an intermediary. This can be costly and may require seed funding from philanthropic or public organisations that have an interest in the scaling up of fisheries-related investments predicated on sustainability. Through aggregation, more sophisticated financial tools can be employed

to raise more and lower-cost types of capital. Two of these are described in box 8.

FIGURE 5 **Combining capital sources**




Source: *adapted from* Mendelssohn, 2013

## BOX 8 **Raising capital at scale**

These mechanisms are important to consider because they can encourage lowest cost capital providers to invest into the future of the marine environment.

*Fisheries funds*

Thematic funds, such as fisheries funds, can be used to aggregate finance activities involved in the transition to sustainable fisheries. They offer a number of benefits to investors including reduced risk diversification across projects, environmental conditions, markets and countries; reduced transaction costs due to expertise and project management; and the ability to increase the size of total investment and accommodate investors at different levels. Funds targeting environmental, social and financial returns in fisheries do exist. These largely invest in businesses operating within sustainable fisheries or those in transition – helping to increase operational efficiency and market access. Although these funds may motivate and provide support for fisheries in transition, they are not currently working within the framework that is outlined in this document. However, they still provide an interesting reference point for future options. See Annex 2 for more detailed information on specific examples.

*Bond mechanisms*

Bonds are a form of debt, which work by raising upfront capital, the principal of which is paid back at a defined date, with regular interest payments in the interim. For issuers they have the advantage of certainty. And unlike equity capital, the investment confers no stake in the organisation that is raising funds. Individual fishery projects will usually be too small to issue bonds, given that the types of investors that traditionally buy bonds seek scale and liquidity. But, through aggregation, it could be possible for projects to be securitised into "special purpose vehicles". 'Asset-backed' bonds could be issued backed by the cash flows from this pool.

Standard "treasury-style" bonds can also be used to raise capital, which is then distributed across a variety of projects. Since repayment is linked to the issuer's overall creditworthiness (as opposed to the cash flows of specific projects), investors with lower risk appetites may be interested. 'Green Bonds' and 'Climate Awareness Bonds' are successful models and 'Green Bond' principles have now been developed which further crystalise this investor segment. Leading issuers of these bonds include development banks such as the World Bank or the European Investment Bank. 'Blue' bonds, issued by governments or development banks which fund fishery transition projects (as well as other sustainable marine businesses) could become a standardized way to raise capital that is easily recognizable by institutional investors as a way to diversify portfolios and invest in the transition to a 'blue' economy.

# 6

# CONCLUSIONS

**THE CHALLENGES** involved in redeeming the integrity and resilience of the fisheries sector are considerable and should not be underestimated. However, if the right conditions are met and if conducive enabling environments are constructed, then there should be more than adequate amounts of capital available to invest in solutions. There is a clear opportunity to build sustainable and profitable fisheries globally for significant social, economic and biological benefit. However, in order for this to happen, a coordinated approach between the public sector, the private sector and NGOs is required to identify and implement solutions, enhance the availability of data, and define and reduce risk.

The primary purpose of this document is to provide an overview of the key factors of which project developers should be aware, as well as some of the financial solutions that are readily available to increase projects' feasibility, bankability and attractiveness to investors. By doing so, it is hoped that the document will be a useful basis for further discussion on ways to increase investment substantially into sustainable fisheries management. Encouragingly, although some innovation is needed, there are many examples of tried and tested instruments from other sectors which could be of enormous value.

It is also clear that each stakeholder has an immediate opportunity to drive forward the transition to sustainable fisheries. Industry and project developers can use the framework outlined in this document to develop projects that are designed to deliver sustainable, profitable fisheries and that can be financed using multiple sources of capital. Governments can start implementing policies and practices that enable these projects to move forward at a scale and pace that leads to economic, social and ecological security in the immediate future. Investors can increase their levels of awareness of the idiosyncrasies of marine capture fisheries and then allocate capital towards the transition. To encourage investors towards this sector, a pipeline of projects needs to be developed.

The good news is that this field is rapidly evolving with more parties participating with different approaches. Future iterations of this document will build on this momentum. Most importantly, all stakeholders are encouraged to participate by developing, testing and communicating new insights and ideas. By working together, we can implement the policies, tools and financing that will recover our planet's fisheries.

# ANNEX 1: RISK

TABLE 1 **Risk scoring matrix**

| Risk scoring matrix | | |
|---|---|---|
| Risk category | Specifics | |
| **Project execution risk** | | |
| Stakeholder engagement | No stakeholders engaged/stakeholders disengaged over time | |
| Management failure | Management system does not work as intended; yields no results | |
| Unforeseen delays | Project behind schedule for indeterminate reasons | |
| **Environmental risk** | | |
| Stock decline | Stock declines despite management efforts - external factors at play | |
| Natural disaster | Catastrophic events that impact on the fishery | |
| Climate change | Change in parameters of fishery over time due to climate change | |
| **Market risk** | | |
| No price premium | Product does not attract premium or does not reach premium markets | |
| Market shock | Market suffers from external shock with impacts on demand and price | |
| Shifts in price or behaviour | Changing supply or demand in landscape, due to eg aquaculture or emerging markets | |
| **Political risk** | | |
| Removal of funding | Project loses public funding from government | |
| Removal of framework | Project not supported by necessary legislative or policy framework | |
| Change of government | New government with different priorities does not see need to continue project | |
| **Country risk** | | |
| Country credit rating change | Credit rating change affects cost of capital, shifts attractiveness of investment | |
| Exchange rate fluctuations | Fluctuating foreign exchange changes ROI for foreign investors | |
| Global market change | Global market shock such as recession alters price/demand for product globally | |
| | | |
| | **TOTAL RISK SCORE** | |
| | **SCORE OUT OF** | |

Risk categories scored on binary scale of 0/1, where 0 implies no/less risk and 1 implies risk/greater risk.

| | Fishery | | | |
|---|---|---|---|---|
| | Multi-species, developing-country fishery with jurisdictional complexity, limited access to market and limited rule of law | Single-species, developed-country fishery with jurisdictional complexity, limited access to market and strong rule of law | Single-species, developing-country fishery with clear jurisdiction, good access to market and strong rule of law | Multi-species, developed-country fishery with jurisdictional complexity, some access to market and strong rule of law |
| | | | | |
| | 1 | 1 | 1 | 1 |
| | 1 | 1 | 1 | 1 |
| | 1 | 1 | 1 | 1 |
| | | | | |
| | 1 | 0 | 0 | 1 |
| | 1 | 0 | 0 | 0 |
| | 1 | 1 | 1 | 1 |
| | | | | |
| | 1 | 1 | 0 | 0 |
| | 1 | 1 | 0 | 0 |
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| | | | | |
| | 1 | 1 | 1 | 1 |
| | 1 | 1 | 1 | 1 |
| | 1 | 1 | 0 | 1 |
| | | | | |
| | 1 | 0 | 1 | 0 |
| | 1 | 0 | 1 | 0 |
| | 0 | 0 | 0 | 0 |
| | | | | |
| | **14** | **10** | **8** | **8** |
| | 15 | 15 | 15 | 15 |

TABLE 2 **Risk mitigated through project design**

| | Project execution Risk | | | Environmental risk | | | |
|---|---|---|---|---|---|---|---|
| | No stake-holder engagement | Management failure | Unforeseen delays | Decline in stock health | Natural disasters | Climate change | |
| **Secure tenure** | ✓ | ✓ | | ✓ | Indirectly | | |
| **Sustainable harvests** | | ✓ | | ✓ | Indirectly | Indirectly | |
| **Robust monitoring and enforcement** | | ✓ | | Indirectly | | | |
| **Stock health** | | | | ✓ | Indirectly | Indirectly | |
| **Operational efficiency*** | | | | | | | |
| **Market access** | Indirectly | | | | | | |
| **Eliminating or redirecting perverse subsidies** | ✓ | | | ✓ | | | |
| **Guarantee or insurance products** | | | ✓ | | | | |

* Improving operational efficiencies increase the profit margins of the investment, which in turn can be used as a buffer against risk. Thus, increasing operational efficiencies can minimise all these risks to an extent.

* Country and political risk in particular are often offset by insurance products and guarantee mechanisms, which are explored in greater detail in the next chapter.

| | Market risk | | | Political risk | | | Country risk | | |
|---|---|---|---|---|---|---|---|---|---|
| | No price premium | Market collapse | Shifts in price and behav-iour | Removal of fund-ing | Removal of leg-islative frame-work | Change of gov-ernment | Country credit rating change | Exchange rate fluc-tuations | Global market change |
| | Indirectly | Indirectly | | ✓ | ✓ | | | | |
| | | | | | | | | | |
| | Indirectly | | | | | | | | |
| | | | | | | | | | |
| | ✓ | ✓ | ✓ | ✓ | | | Indirectly | Indirectly | Indirectly |
| | ✓ | ✓ | ✓ | Indirectly | | | Indirectly | Indirectly | ✓ |
| | | | | ✓ | ✓ | | | | |
| | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ |

It should be noted that the ability of these guidelines to offset risk is dependent on their successful execution, which is itself subject to risks. More details on best practice execution of these guidelines can be found under their respective headings.

# ANNEX 2: A SELECTION OF FISHERIES FUNDS

## California Fisheries Fund

**Mechanism:** Revolving loan fund
**Capital source:** Public and private funds
**Target investments:** Operational efficiency and market access
**Requirements:** Management conditions

The California Fisheries Fund (CFF) is a revolving loan fund that supports sustainable commercial fishing on the West Coast of the United States through loans for vessels, permits, equipment and working capital. Established in 2008, CFF has made 22 loans totalling US$2.5 million (California Fisheries Fund [CFF], 2014) for projects that increase operational efficiency and market access. Loan recipients include fishers, processors, distributors, ports, communities and non-profit organizations. Sustainable management guides the investment decision of CFF. Loans are made to applicants that both meet standard lending criteria and operate within fisheries with a management system "that aligns the interests of fishing businesses with ocean stewardship" (CFF, 2014). Loans made by CFF most often occur in fisheries with secure tenure, scientifically determined harvest limits and robust monitoring and enforcement. Within these fisheries, CFF has provided fund to fishers to switch to more sustainable fishing gear and purchase more efficient vessels (CFF, 2014).

## The Sea Change Investment Fund

**Mechanism:** Investment Fund
**Capital source:** Philanthropic and private funds
**Target investments:** Market access
**Requirements:** Conservation committee approval of all investments

The Sea Change Investment Fund is an investment fund created in 2005 to create greater value for environmentally-preferable seafood products. Recognizing a need to create value chains that differentiate between sustainable and non-sustainable seafood products, the fund invests in businesses in the middle of the seafood value chain that differentiate and add value to sustainably sourced seafood. Created in 2005 the fund was capitalized with

US$20 million from philanthropic and private equity sources. Investment decisions must be approved by an independent conservation committee comprised of science and conservation experts (Sea Change Investment Fund, 2014; The David and Lucile Packard Foundation, 2014).

## Verde Ventures: Investing in Integradora de Pescadores of Quintana Roo

**Mechanism:** Loan Fund
**Capital source:** Philanthropic and private
**Target investment:** Market access (working capital)
**Requirements:** Geographical priorities, environmental and social criteria

Verde Ventures is an investment fund that provides loans to businesses that create environmental, social and financial returns. While the fund focuses on a diversity of environmental issues, their investments included a Mexican fishing cooperative, Integradora de Pescadores of Quintana Roo, which had been granted secure tenure for spiny lobsters and voluntarily implemented no-take zones for stock replenishment. Verde Ventures provided a loan for working capital so that the Cooperative could access higher value markets and promote their sustainable brand, CHAKAY. Additionally, the loan was backed by a 75% guarantee from the United Nations Development Program, while Verde Ventures and a local non-profit provided technical assistance to the cooperative (Manta Consulting, 2011).

# GLOSSARY

## Acronyms

| | |
|---|---|
| CPUE | Catch Per Unit Effort |
| EDF | Environmental Defense Fund |
| EEZ | Exclusive Economic Zone |
| ESG | Environmental, Social and Governance Practices |
| FAO | Food and Agriculture Organisation of the United Nations |
| FIRME | Financial Institution for the Recovery of Marine Ecosystems |
| GDP | Gross Domestic Product |
| IFI | International Financial Institutions |
| ISU | The Prince's Charitable Foundation's International Sustainability Unit |
| MSC | Marine Stewardship Council |
| MSY | Maximum Sustainable Yield |
| MEY | Maximum Economic Yield |
| NGO | Non-Governmental Organisation |
| NPV | Net Present Value |
| PPP | Public-Private Partnership |
| SME | Small and Medium-sized Enterprise |
| TNC | The Nature Conservancy |
| TURF | Territorial Use Rights for Fishing |
| WB | World Bank |
| WWF | World Wildlife Fund |

## Terminology

Unless otherwise stated, these definitions are sourced from the EDF Catch Shares Design Manual, Vol. 1 (Bonzon et al, 2013).

**Bond.** A debt instrument in which an investor loans money to an entity that borrows the funds for a defined period of time at a defined (and usually fixed) interest rate. (*Investopedia)*

**Capital.** Wealth in the form of money or other assets owned by a person or organization or available for a purpose such as starting a company or investing. (*New Oxford Dictionary of English*)

**Cash flow.** The total amount of money being transferred into and out of a business, especially as affecting liquidity. (*New Oxford Dictionary of English)*

**Catch.** The total number (or weight) of fish caught by fishing operations. Catch includes all fish killed by fishing, not just landed.

**Catch Share.** A fishery management system that allocates a secure area or right to harvest a share of a fishery's total catch to an individual or group. Programmes establish appropriate controls on fishing mortality and hold participants accountable.

**Credit Rating.** an estimate of the ability of a person or organization to fulfil their financial commitments, based on current financial situation and track record.

**Debt.** An amount of money borrowed by one party from another. Debt in the context of this report refers to a financing method for acquiring capital with the expectation of some future payback. Debt finance is typically risk-averse, and is often deployed in proven, mature industries with high liquidity. Primary investors in debt are commercial banks, pension funds and other institutional investors. Investors who provide debt financing do not take an ownership share over their investment and do not generally participate in business decisions. Compare *Equity*. (*ISU*)

**Discard.** To release or return a portion of the catch, dead or alive, before offloading, often due to regulatory constraints or a lack of economic value.

**Ecosystem-based management.** An integrated approach to management that considers the entire ecosystem, including humans. The goal is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. *(FAO Fisheries Glossary)*

**Equity.** A security representing an ownership interest in a business asset. Equity in the context of this report refers to a financing method for acquiring capital in exchange for a share of ownership of the investable entity. As part-owners, equity investors have a role in making business decisions. Compare *Debt*. (*ISU*)

**Finance.** The management of large amounts of money, especially by governments or large companies. (*New Oxford Dictionary of English*)

**Fishery.** The combination of fish and fishers in a geographical region, the latter fishing for similar or the same species with similar or the same gear types.

**Future.** A derivative instrument that involves a contract to buy or sell an asset for delivery at a future date at a specific price. (*Man Investments)*

**Harvest.** The total number or weight of fish caught, and kept, from an area over a period of time.

**Hypothecated tax.** A tax where the money obtained, or part of the money obtained, is used for a particular purpose, rather than spent on a number of things. (*Financial Times Lexicon*)

**Interest.** Money paid regularly at a particular rate for the use of money lent, or for delaying the repayment of a debt. (*NODE*)

**Investment.** An asset, item or property that is purchased with the hope that it will generate income and/or appreciate in the future. In finance, an investment is a monetary asset purchase, with the idea that the asset will provide income in the future and/or appreciate and be sold at a higher price. While this is the definition that will be broadly used in this report, it should also be noted that in an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. This incorporates the broader meaning of non-financial returns and investments undertaken for social and environmental gain as undertaken by foundations and NGOs. (*Investopedia and ISU*)

**Landings.** The number or weight of fish offloaded at a dock by fishers. Landings are reported at the locations where fish are brought to shore.

**Liquidity.** A relative term to describe the speed at which an asset or assets can be converted into cash (liquidated) and vice versa.

**Private Sector.** The part of the national economy that is not under direct state control. (*NODE*) In this report, the private sector will also refer more specifically to those parts of the economy not under direct state control that operate *for profit*, as a means of distinguishing it from the NGO community.

**Profit.** A financial gain, especially the difference between the amount earned and the amount spent in buying, operating, or producing something. (*NODE*)

**Project Developer.** An organisation or individual working to enable the transition to sustainability within a fishery. Project developers can be philanthropic (such as NGOs and foundations), private (such as fishing industry bodies or trade associations), public (such as government agencies) or a partnership between the above. *(ISU)*

**Risk.** The possibility of financial loss (*NODE*); the chance that an investment's actual return will be different than expected. (*Investopedia*)

**ROI.** Return on investment. A performance measure used to evaluate the efficiency of an investment or to allow comparison of the efficiency of a number of different investments. (*Investopedia*). The value of the return on investment will determine what kind of investor an investment proposition may attract and the cost of finance.

**Secure Tenure.** In reference to the attributes of a catch share programme, the tenure length of shares is sufficiently long for participants to realise future benefits.

**Share, Cooperative.** Ownership over the cooperative as a whole sub-divided amongst its members through individual shares.

**Share, Financial.** Ownership over an invested entity through equity, which allocates a percentage of the total value of the company through individual portions referred to as shares. See *Equity*.

**Subsidy.** A sum of money granted by the state or a public body to help an industry or business keep the price of a commodity or service low. (*NODE*)

**Yield, Biological.** An amount produced of an agricultural or industrial product. (*NODE*) In the case of fisheries, the amount of fish that can be extracted from a fishery, regardless of sustainability. Where sustainability considerations of yield are relevant, relevant terms include maximum sustainable yield (MSY) and maximum economic yield (MEY).

**Yield, Financial.** A financial return (on an investment). (*NODE*)

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The Prince of Wales's International Sustainability Unit was established by HRH The Prince of Wales in 2010 to facilitate consensus on some of the key environmental and social challenges facing the world.

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Environmental Defense Fund, a leading nonprofit organization, creates transformational solutions to the most serious environmental problems. EDF links science, economics, law and innovative private-sector partnerships.

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50in10 is a worldwide cross-sector collaboration to restore fisheries and sustain the communities that depend on them. Working together partners test, improve, and disseminate promising tools and approaches to help fisheries become the sustainability success story of the 21st century, creating more food, better livelihoods, more prosperous businesses and healthier oceans.