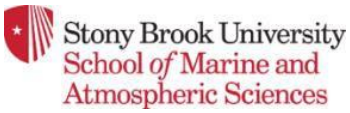
CFA | CONSERVATION FINANCE ALLIANCE

Conservation Finance: A Framework

Authors:
David Meyers, Conservation Finance Alliance; John Bohorquez, Stony Brook University, School of Marine and Atmospheric Sciences, Institute for Ocean Conservation Science; Tracey Cumming, Biodiversity Finance Initiative (BIOFIN), UNDP; Lucy Emerton, Environment Management Group; Onno van den Heuvel, Biodiversity Finance Initiative (BIOFIN), UNDP; Massimiliano Riva, UN Joint SDG Fund; and Ray Victurine, Wildlife Conservation Society.

© Conservation Finance Alliance, March 2020

Financial support provided by the Fonds Français pour l'Environnement Mondial (FFEM), and MAVA Foundation through a grant to the Conservation Finance Alliance.



Acknowledgements:
The authors would like to acknowledge the following reviewers for their thoughtful comments: Jessica Alvsilver, Kumar Bhattacharyya, Aaron Bruner, Martin Callow, Ben Gullion, Katia Karousakis, Eric Swanson, and John Tobin-de la Puente. Cover Photo by David Meyers.

All information contained in this report is prepared from data and sources believed to be correct and reliable as of March, 2020. The findings and conclusions expressed in this report are entirely those of the authors and do not necessarily represent the views of the author's affiliated organizations.

Authors' contacts:
David Meyers david@cfalliance.org; John Bohorquez, john.bohorquez@stonybrook.edu; Tracey Cumming, tracey.cumming@undp.org; Lucy Emerton, lucy@environment-group.org; Onno van den Heuvel, onno.heuvel@undp.org; Massimiliano Riva, massimiliano.riva@undp.org; Ray Victurine, rvicturine@wcs.org.

Suggested Citation: Meyers, D., Bohorquez, J., Cumming, T., Emerton, L., Heuvel, O.v.d., Riva, M., and Victurine, R. *Conservation Finance: A Framework*, Conservation Finance Alliance, 2020, www.cfalliance.org DOI: 10.13140/RG.2.2.14186.88000

Table of Contents

Executive Summary *4*

I. Introduction *7*

II. Defining Conservation Finance *9*

III. Building conservation finance solutions *12*

A. Diagnosing the challenge and defining the needs **12**

B. Framing the response **15**

C. Delivering effective solutions **16**

D. Managing the planning and implementation process **17**

IV. Categorization of Finance Strategies and Mechanisms *18*

A. Return-Based Investments **19**

B. Economic Instruments **23**

C. Grants and Other Transfers **27**

D. Business and Markets **28**

E. Public Financial Management **30**

F. Risk Management **32**

G. Financial Efficiency **34**

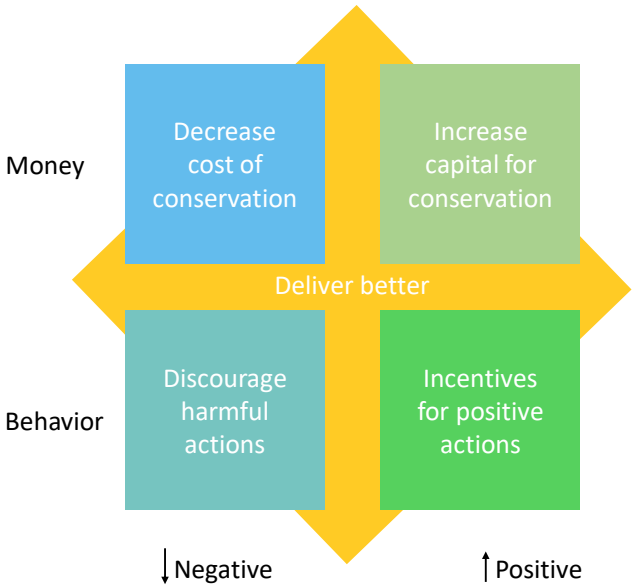
Glossary *37*

References *40*

Executive Summary

Historical definitions of the term “conservation finance” (also called biodiversity finance) are narrowly focused on generating and managing revenue for conservation. The mechanisms and strategies employed by conservation finance practitioners are actually much broader and have great potential for reducing pressures on nature and generating revenues if they are better understood and implemented. The Conservation Finance Alliance (CFA) defines conservation finance as “***“mechanisms and strategies that generate, manage, and deploy financial resources and align incentives to achieve nature conservation outcomes.”*** Identifying and implementing conservation finance mechanisms is most effective using a systems-thinking approach that seeks to address the complex interactions and needs of key stakeholders and decision makers. Some essential background to this broad definition includes the fact that the vast majority of finance for nature comes from government sources, that regulations and economic instruments are generally designed to align incentives and influence market prices, and that private investment in conservation is enabled by governments clarifying ownership and liabilities for nature and ecosystem services.

Conservation finance practices have now moved beyond the simple concept of identifying and closing the finance gap through mobilizing additional resources. Four main outcomes of conservation finance solutions can include: 1) decreasing conservation costs; 2) increasing the flow of capital; 3) discouraging harmful actions; and 4) incentivizing positive actions. These outcomes should be integrated among the mix of conservation finance solutions implemented for a given challenge. Across all finance solutions and conservation actions, it is also important to focus on improving delivery in terms of effectiveness and efficiency.



As described above, recent conservation finance approaches seek to address conservation challenges from a holistic perspective – identifying drivers of change and finance needs, exploring scenarios, and business planning – with the goal of finding the most effective mix of finance solution to address the problems. A conservation finance solution can be defined as ‘an integrated approach

to solve a specific problem or challenge by the context-specific use of finance and economic instruments' (UNDP 2018). One objective of implementing finance solutions is to produce a self-sustaining financial system that operates to achieve sustainable management of nature while assuring the alignment of diverse interests. To achieve this, a single solution can address several objectives and target multiple results, such as combining resource mobilization with improved spending effectiveness and impact. As well, an appropriate mix of solutions can assure the greatest impact and system resilience.

To deliver effective solutions, multiple elements should be considered:

- *Tailoring to context* – delivering solutions that are truly fit for purpose, tailored to specific contexts and conditions, groups and decision-making processes they target, and the policy and practical purpose they serve (GIZ 2018).
- *Managing stakeholder engagement and buy-in* – ensuring that key stakeholders are involved in the process of identifying, selecting and implementing finance solutions and have the capacity to do so.
- *Adopting a flexible and pragmatic design* – with appropriate sequencing, balancing urgent conservation priorities with long-term goals (UNDP 2018).
- *Measuring performance and impact* – an often overlooked and necessary issue.

There are multiple methodologies to assess biodiversity financing expenditures, estimate needs, and identify and plan for potential solutions. The challenge of successful implementation and financial sustainability is to effectively integrate the normative framework (i.e. laws, policies, plans and budgets), the organizational framework (i.e. mandates, structures, and capacities) and behavioral and attitudinal changes (i.e. relationships, engagement, trust-building and cultural change, UNDP 2018).

The paper proposes a taxonomy of conservation finance mechanisms and strategies under which all known mechanisms can be categorized.

A Taxonomy of Conservation Finance Mechanisms

A. Return-Based Investments	• Microfinance • Peer-to-Peer (P2P) Investing and Crowdfunding • Angel Investing, Incubators and Venture Capital • Private Equity • Debt: Leasing, Bank Loans, Notes, and Trade Finance • Capital Markets • Sustainable Investment Strategies
B. Economic Instruments	• Environmentally Related Taxes • Fees and Charges • Tradable Resource Use Permits • Fines and Penalties • Compensation and Offsets • Deposit-refund Schemes • Environmentally Motivated Subsidies
C. Grants and Other Transfers	• Official Development Assistance (ODA) • Private and Corporate Philanthropy • Remittances • Conservation Trust Funds / Environmental Funds
D. Business and Markets	• Supply Chain Resilience • Conservation Businesses • Corporate Social Responsibility and Sustainability • Voluntary Offsets
E. Public Financial Management	• Public Fiscal Planning, Budgeting and Disbursement • Fiscal Transfers • Government Grants • Reforming Harmful Subsidies • Earmarking Revenues for Nature
F. Risk Management	• Insurance Products • Pay for Success • Blended Finance
G. Financial Efficiency	• Management Effectiveness • Public Private Partnerships • Integrated Accounting • Mainstreaming Biodiversity in Development

I. Introduction

Natural and highly resilient ecosystems provide essential services and products to humanity including food, fiber, water regulation and purification, climate stabilization, storm protection, recreation, and cultural or spiritual services. Unfortunately, these natural systems are mostly taken for granted and are provided inadequate funding to ensure their continued existence. The economic value of nature's services, known as 'ecosystem services', may be larger than the global economy at around 125 trillion US dollars per year (Costanza et al., 1997 & 2014). Yet regardless of the value and overall importance of nature, the ongoing loss and degradation of ecosystems has resulted in the reduction of 60%-90%[1] of the world's plant and animal populations over the last half century (WWF, State of Living Planet Report, 2018). The recent IPBES report (2019) also indicates how urgent changes are needed to address rising water stress and crises, massive topsoil loss, depleted fisheries, and an increasingly high economic cost of natural disasters (IPBES, 2019; Coronese et al., 2019). Ecosystem loss and degradation is contributing to and is compounded by climate change as well (IPCC, 2018).

It is important to recognize the historical sources of finance for nature to better understand conservation finance opportunities. Although current revisions are underway, the most comprehensive review of global conservation finance sources comes from the Little Biodiversity Finance Book (GCP, 2012). The graph below shows the overwhelming importance of government budgets for the financing of nature.

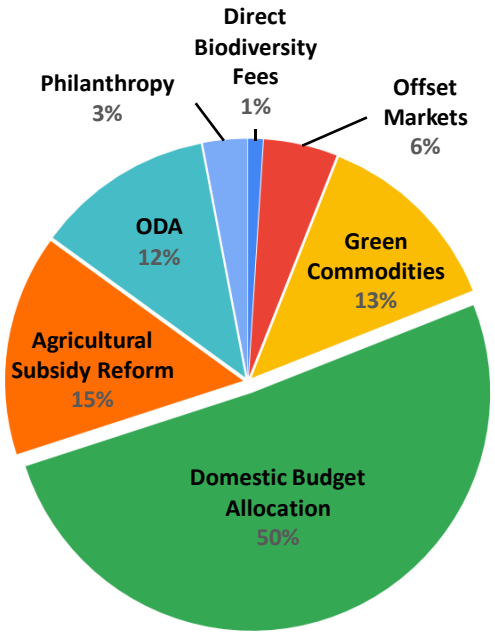


Figure 1 Global Finance Sources for Conservation (source: Global Canopy Programme, 2012)

In response to the expanding challenges to nature and human wellbeing, calls have been made to substantially increase funding for nature (i.e. CBD Strategic Plan for Biodiversity 2011 – 2020). A substantial finance gap for conservation has been estimated to be on the order of 300 to 400 billion USD annually (various, see CBD, Credit Suisse et al, 2014) in addition to the roughly 100 billion USD

[1] Depending on which continent

being currently spent on nature (BIOFIN, pers. communication). The concept of a finance gap assumes that if the gap were filled, for example with a combination of public and private investment, essential conservation outcomes – such as the CBD Aichi Targets – would be achieved. Although a substantial increase in funding for nature is necessary, it is not sufficient to achieve the ecological balance the planet needs to maintain resilient ecosystems and the services we rely on. The assumption that our principal goal in conservation finance should be "increased funding for nature" is based on the idea that the principal cause of biodiversity loss is inadequate spending on conservation. However, when we consider the amount of money that is annually being spent globally on activities that are known to degrade and destroy natural ecosystems – such as urban development, agricultural expansion, poorly managed forestry and fisheries, and investment in infrastructure, mining and extractives, etc. (i.e. most of the global economy) the scale of the challenge becomes clear. A doubling, tripling, or even quadrupling investment in nature will hardly slow down biodiversity loss given the massive pressures on natural ecosystems (New York Declaration on Forests 2018, OECD 2019) and the enormous scale of investment in unsustainable development. Successful solutions to the financial and economic challenges facing nature will both increase funding for nature as well as address these system drivers in order to optimize their impacts.

Given limited funding for nature, conservation finance practitioners have tended to mainly focus on the amount of money needed to achieve an impact, and this approach applies to all scales – such as specified projects or plans, or to cover the cost of meeting particular targets (see, for example, Balmford et al. 2001, 2003, Bruner et al. 2004, CBD 2014, Gutman and Davidson 2007, McCarthy et al. 2012, Waldron et al. 2013, Brander 2015). It is now increasingly recognized that, while there are undoubtedly severe funding gaps as noted above (Coad et al., 2019, Gill et al., 2017), the financial constraints to conservation extend far beyond a simple lack of money. Rather, a wide range of structural and political factors limit the effectiveness and impact of spending, lead to increased costs, and/or fail to create an enabling environment and adequate incentives for conservation – some even serve to discourage or undermine conservation objectives (Emerton 2003, Emerton et al. 2006, UNDP 2018). A more holistic approach is essential to address these complexities and the concept of "financial sustainability" captures a large part of the issues. This broader concept of financial sustainability began to emerge in the late 1990s (see, for example, McNeely 1999), and by the mid-2000s had developed into a working definition and approach that is now widely applied in conservation finance planning and implementation (Box 1).

Box 1: The concept of financial sustainability and constraints to conservation

IUCN defines financial sustainability as "*the ability to secure sufficient, stable and long-term financial resources, and to allocate them in a timely manner and in an appropriate form, to cover the full costs of conservation and to ensure that they are managed effectively and efficiently*". In short, financial sustainability is only possible if there are strong and effective institutions and policies, and a solid framework for planning and implementing conservation within which financial measures are embedded.

Following on from this, in addition to the basic question of whether there is enough money to cover costs, there are eight other particularly important financial conditions that are required for effective conservation, and which form a key part of sustainability:

- *Diversity*: is there a sufficient variety of financing sources to provide adequate funding, address different cost needs, and spread financial risk?

- *Security*: will financial flows be predictable and stable over the long-term?
- *Cost-effectiveness*: are funds being spent in the most useful and worthwhile manner, to the greatest impact?
- *Planning and administration*: are systems and procedures in place to ensure that the right type and amount of funding can be made available at the right time, in the right place, and for the right purposes?
- *Targeting*: are budgets and financial instruments aligned with conservation needs and priorities, and geared towards overcoming key threats, drivers and financing constraints?
- *Distribution*: are funding and incentives going to the groups that actually bear the full costs of conservation, in an adequate, appropriate and effective form?
- *Supportive economic and policy environment*: do other economic, fiscal, policy, price and market conditions, circumstances, and instruments act in support of, and as incentives towards, conservation goals?
- *Other enabling conditions*: is there sufficient organizational and technical capacity, policy prioritization, social acceptance, political will, etc. to ensure that the identified financing solutions will work in practice, and conservation will be financed effectively?

From Emerton et al. 2006, GIZ 2018

In this framework white paper, we seek to clarify the definition and role of conservation finance to show how important its mechanisms and strategies are for addressing the underlying causes of nature loss as well as contributing to increasing sustainable funding flows to nature conservation. This white paper is intended to improve understanding of the opportunities and challenges posed by the field of conservation finance. The paper emphasizes a holistic approach to conservation finance and seeks to support a more harmonized comprehension going forward. Secondly, the white paper provides several conceptual frameworks to facilitate an understanding of the various concepts associated with conservation finance. Finally, the white paper presents a taxonomy of conservation finance strategies and mechanisms.

II. Defining Conservation Finance

Conservation finance[2] has always been an integral aspect of nature conservation. Historically the term “conservation finance” has covered a large scope of issues from national budget allocations, conservation easements, business planning for protected areas, and other money or finance-related aspects of conservation. However, many commonly cited definitions of conservation finance tend to be narrowly focused. One of the most broadly cited definitions is from Clark (2007) who states “Conservation finance involves raising and managing money to pay for conservation.” The Clark definition does include the term “manage” in addition to “raising money” – raising money has been, by far, the main focus of conservation finance and central to most definitions. McFarland (2018) traces the field of conservation finance historically and, taking a broad interpretation of the term, cites the history of mechanisms such as debt-for-nature swaps, payment for ecosystem services, and biodiversity offsets (McFarland, 2018). The inclusion of biodiversity offsets as a conservation finance mechanism, for example, exemplifies the combined need to reduce impacts on nature while at the same time ensuring that there are sufficient funds available to improve or conserve nature.

[2] In this white paper, conservation finance and biodiversity finance are used interchangeably and can be considered alternative names for the same concept.

A recent private sector-focused definition is “a mechanism through which a financial investment into an ecosystem is made – directly or indirectly through an intermediary – that aims to conserve the values of the ecosystem for the long term” (Credit Suisse et al, 2014). Although the authors acknowledged this definition was, by design, focused on private financing, it does reflect the idea that the main goal of conservation finance is to raise more money for conservation. A 2009 guide from WWF stated “conservation finance generates new, long-term, and diversified sources of revenue for conservation” (WWF, 2009). Again, the definition is narrowly focused on generating revenue but the actual guide covered conservation finance mechanisms that go far beyond simply generating additional financing. In effect, current definitions do not adequately describe the breadth and actual value of conservation finance.

This paper proposes the definition of conservation finance as ***“mechanisms and strategies that generate, manage, and deploy financial resources and align incentives to achieve nature conservation outcomes.”*** This definition is inclusive of a wide range of approaches including the main mechanisms providing finance for nature, effectiveness and efficiency of allocation and spending, and using knowledge of economics and financial instruments to better align incentives and change behavior. It is acknowledged that by using a broad definition, the practice of conservation finance touches on a range of related disciplines including economics and public policy as well as many “non-financial” aspects of conservation. In fact, this integrative thinking is essential to achieving effective conservation and can help break down silos and improve outcomes. The following paragraphs explore the various terms included in the above definition with the aim of further clarifying the breath and objectives of conservation finance.

The primary goal of conservation finance is to improve outcomes for nature. Thus, to be included in conservation finance, a mechanism must: 1) involve either financial resources or incentives and 2) have the intent to achieve nature conservation outcomes. It does not by default include revenues generated from ecosystems (forestry, fisheries, hunting) unless they are invested in improved ecosystem management or if the mechanism used to collect those revenues is intended to impact sustainable management (i.e. limited quotas, licenses). Since conservation finance does include efforts to improve efficiency and save money, efforts should be made to measure cost savings and efficiency gains as part of global accounting for conservation finance flows. For example, potential savings to countries by reducing harmful subsidies would be relatively easy to document in cases where harmful subsidies are measured with reasonably high precision, such as fisheries (Sumaila et al. 2016, 2019). Cost savings from reducing other pressures like deforestation may be more difficult.

The definition of conservation finance includes four key terms: generate, manage, deploy, and align incentives.

Generate – to generate revenues for nature conservation from a range of finance sources. To meet the definition for conservation finance, the revenue generated or the mechanism itself must be used for, or at least intended to be used for, conservation outcomes. Although not necessarily included in conservation finance flows, other revenue generated from natural ecosystems or “green” taxes but not earmarked for conservation outcomes is important in that it 1) is an excellent source of potential finance for nature and 2) it can be cited as evidence of the financial value of nature to a country, community, or organization.

Manage - this term is focused on the role of financial management and includes such actions as accounting, investing endowments, minimizing administrative and transaction costs and other aspects of operational efficiency and transparency. This would include money saved through both efficiencies (such as indigenous or community managed areas) and avoided costs.

Deploy - this element focuses on how finances are allocated towards achieving conservation outcomes such as grantmaking, leveraging, and investing, and includes efficiency and effectiveness of spending measures. One key aspect of deploying finance for nature is in tracking the outputs and longer-term outcomes of spending to learn from both positive and negative results.

Aligning incentives - establishing and effectively implementing mechanisms to change behavior towards achieving greater conservation outcomes. This includes adjusting perverse or harmful incentives to minimize their negative impact on biodiversity; introducing negative incentives to discourage damaging behavior (e.g. penalties) and creating positive incentives to encourage positive behavior (e.g. tax breaks). These mechanisms can include, for example: regulations that impact prices, donations and investment, taxes and tax breaks, positive subsidies and reforming or reducing harmful subsidies, and market-based mechanisms such as certification, green procurement, social and environmental safeguards, and socially responsible investing.

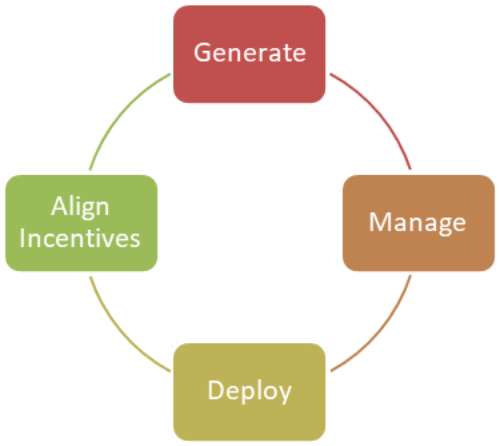


Figure 2 Four elements of the conservation finance definition

These elements, as well as the four outcomes described by BIOFIN below, arise from a holistic approach that parallels impact mitigation principles used for infrastructure and extractive projects where the most effective and efficient gains from mitigation are when impacts are avoided or minimized during the project design and implementation. These same principles apply to conservation finance where actions to reduce biodiversity threats are generally more cost effective than solutions that only seek to restore damaged or lost ecosystems. A case in point is how the expenditures required to deter invasive alien species from initial establishment is much less costly than either eradication or the economic harm the invasive species often cause.

III. Building conservation finance solutions

This section looks at how the conservation finance definition laid out in section II can be operationalized in practice. The following paragraphs describe the thinking and process involved in diagnosing, designing and delivering conservation finance solutions. They also identify key criteria and conditions that are required for them to be fit for purpose. This paper does not provide detailed guidance on how to operationalize specific finance mechanisms. Please see the Conservation Finance Alliance and BIOFIN websites for more detailed guidance.

A. Diagnosing the challenge and defining the needs

The UNDP led project, the Biodiversity Finance Initiative (BIOFIN), which began in 2012, has been exploring biodiversity finance from a national perspective in over 35 countries. During the development and implementation of the BIOFIN methodology (UNDP 2016, 2018, Arlaud et al. 2018) it was determined that an effective approach to conservation (or biodiversity) finance was quite broad and could be summarized in four main outcomes:

1) Avoid future expenditures
2) Deliver better
3) Generate revenues
4) Realign expenditures.

The breadth of these goals is consistent with how the diverse mechanisms of conservation finance have been used in the past and how a more holistic approach to conservation finance could be applied in the future. Due to the strong interconnections between nature and the economy as well as the resulting complexity of natural resource management issues, a holistic "systems thinking" approach is essential when designing and implementing any mechanism such as green taxes, license fees, subsidies, and most every other finance instrument that impacts prices or quantities of goods and services. Issues that can be addressed with a conservation finance strategy are likely embedded in complex systems and should be addressed with care and consultation.

Box 2: Framing conservation finance objectives and results

The UNDP initiative BIOFIN identified four categories of complementary finance results as a lens to identify and prioritize finance solutions.

Results

- *Avoid future expenditures*: measures that can prevent or reduce the need to undertake a future investment – by eliminating or amending existing counterproductive policies and expenditures, investing in preventative actions and infrastructure, or aligning business and livelihood practices with sustainable development;
- *Deliver better*: measures that can enhance cost-effectiveness and efficiency in budget execution, achieve synergies, align incentives, and favor a more equitable distribution of resources;
- *Generate revenues*: measures that can generate or leverage financial resources allocated to biodiversity; and
- *Realign expenditures*: measures that reorient existing financial flows towards improved biodiversity management – for example by reducing, redirecting or eliminating harmful subsidies and other spending that harms biodiversity and increasing or redirecting resources in support of biodiversity.

From UNDP, 2018.

In addition to the advances made as part of the BIOFIN project, in recent years we have seen additional shifts in the way conservation finance is conceptualized and applied. Approaches have moved away from the rather one-dimensional view of costs and funding that long drove the design of conservation financing mechanisms – and which, in many cases, also served to limit their effectiveness and impact. Traditionally, the focus was limited to covering the direct, operational costs of carrying out conservation activities and drafting of resource mobilization strategies for conservation sites, plans or organizations. At best, attention was given to assuring that finance was provided long-term through establishing conservation trust funds, water funds, entrance fee systems and other approaches. Recent approaches seek to address the challenge from an even more holistic perspective – identifying drivers of change and costs, exploring scenarios, and business planning – with the goal of finding the most effective mix of finance solutions to address the problems. This more holistic approach allows detailed estimates of financial needs and identifies clear management and conservation targets.

The BIOFIN approach shows that reducing the finance "gap" for conservation involves both increasing resources and determining how best to decrease the overall financial needs (see Figure 3). It is essential to work on both sides of the equation and depending on the specific problem that is being addressed, one side (increasing resources or decreasing need) will likely have greater opportunity for impact than the other. It is important to ensure that this holistic conservation finance approach is integrated into national planning and policy.

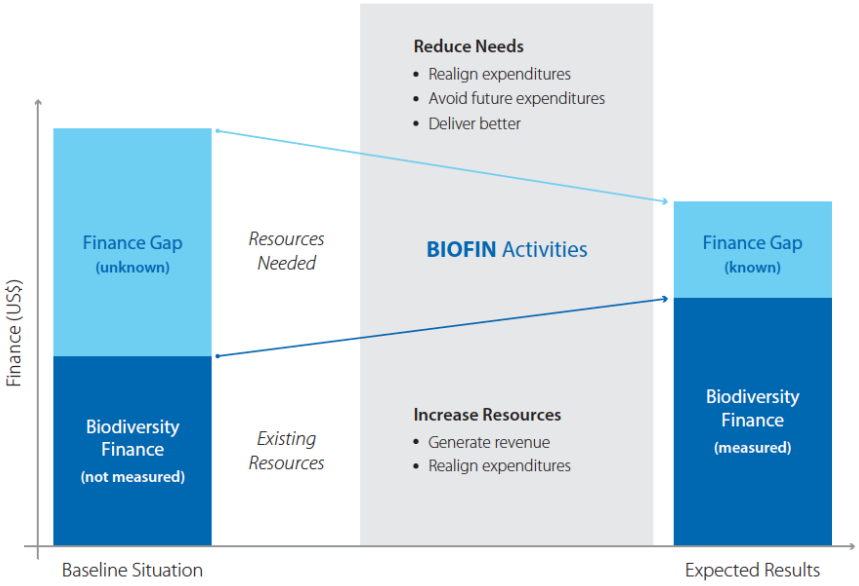


Figure 3 BIOFIN model to reduce the finance "gap" (BIOFIN, 2018)

There are a variety of ways to understand more deeply the finance and conservation challenges that need to be addressed. These include: economic analyses including ecosystem service valuation; finance flows; spatial mapping; political economy analysis; and guided stakeholder discussions. Assessments should provide strong indicators of at least two main elements: 1) the underlying economic drivers of ecosystem degradation and loss (the target of an intervention) and 2) the cost-bearers or benefit recipients of improved environmental management. This information is essential to prioritize and design effective finance solutions especially if the information indicates a potential net economic gain through better governance or when there are identified beneficiaries with a willingness and ability to pay for improved outcomes.

At least two other categories of costs (and cost-bearers) need to be considered in addition to these operational costs: core and opportunity costs (Emerton 2003). Core costs relate to establishing and maintaining the institutions that deliver conservation coordination, research and training, and ensure that policies and laws are in place and being enforced. Opportunity costs arise from the economic activities that are diminished or foregone when it is necessary to restrict land and resource uses in the interests of conservation, or to forego development opportunities. Failure to understand and account for all of these cost components, including how they may change across different conservation approaches or contexts (e.g. terrestrial vs. marine), can lead to significant conservation financing gaps and misplaced finance strategies (Bohorquez et al. 2019). In contrast to operational costs (which are borne mainly by government), core and opportunity costs are typically spread across a wide range of public and private organizations, local communities and individuals (Appolloni et al. 2018). Leaving these cost-bearers out of the design of finance solutions does not only underestimate conservation funding needs, but it can also lead to a failure to set in place the correct incentives, or to adequately address the financial threats to conservation.

B. Framing the response

Moving beyond a simple preoccupation with funding levels, it is effective to develop integrated packages of measures that are designed to address the financial barriers to conservation, and to compensate or reward the full range of costs-bearers. As described in section I, a conservation finance solution can be defined as 'an integrated approach to solve a specific problem or challenge by the context-specific use of finance and economic instruments' (UNDP 2018). Ideally, a finance solution would ensure that either, 1) conservation is financially attractive, viable and sustainable for all the groups and sectors that incur costs or generate harmful impacts on biodiversity or 2) that the government or some other interested party is willing to enforce rules or compensate for individual costs. The objective is to produce a self-sustaining financial system that operates to achieve long-term effective management of nature while assuring the alignment of diverse interests. To achieve this, a single solution can address several objectives and target multiple results (Box 2), such as combining resource mobilization with improved spending effectiveness and impact (UNDP 2018). As well, most conservation finance challenges require a strategic mix of finance solutions to generate adequate impact.

One useful framework for identifying conservation finance opportunities is presented in Figure 4, in which mechanisms act on money and behavior. In terms of money, they can either decrease the cost of nature conservation or increase the available capital flows. In terms of aligning incentives, finance mechanisms can either discourage harmful actions or support positive actions. And in all cases, better delivery can increase impacts.

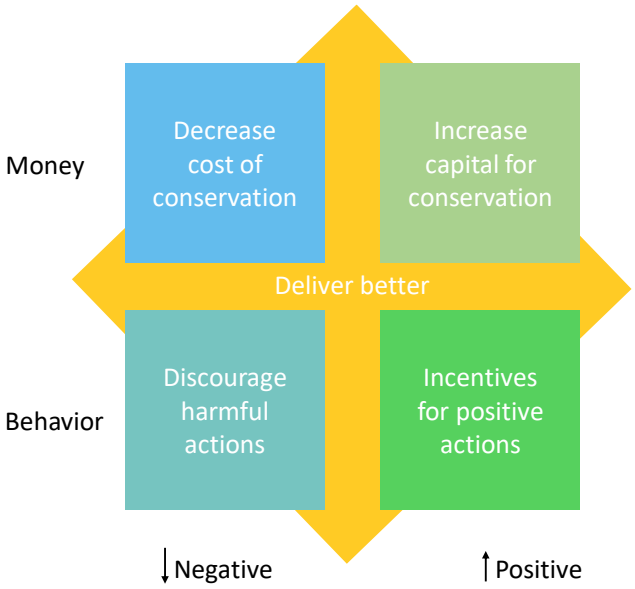


Figure 4 Conservation Finance options for impacting money and behavior

In most cases, conservation finance solutions will include a combination of different sources, actors and instruments. Moreover, available mechanisms rarely operate in isolation, but rather form part of portfolios and 'policy mixes' (Illes et al. 2017, Kettunen et al. 2017, OECD 2019). This diversity offers both opportunities and challenges (Berghöfer et al. 2016). Different instruments can be complementary and mutually reinforcing, leading to a 'whole that is greater than the sum of the parts.'

For example, one instrument may increase conservation effectiveness, another may save costs, yet another achieves distributive fairness, and finally one may provide incentives for a certain group to conserve biodiversity (Ring and Schröter-Schlaack 2011). As a concrete example, a tax on water (or any other natural resource extraction/use) can capitalize an environmental trust fund or stewardship program. At the same, it is also important to ensure that the mix of instruments does not contradict or serve to undermine each other. In many cases, it is possible to achieve the desired effects by reforming existing schemes and organizations, rather than introducing new instruments. The wish to create new mechanisms, usually without considering the need and potential to improve existing ones, has emerged as a major critique of many externally driven conservation finance projects.

C. Delivering effective solutions

How a conservation finance solution will play out in a given context will vary. Contextual factors, criteria and conditions are critical in determining whether a certain solution is feasible, fit-for-purpose and sustainable (see, for example Emerton et al. 2006, Berghöfer et al. 2016, UNDP 2018, WWF 2009). Lessons learned point to the importance of:

- *Tailoring to context.* The design of finance solutions should be grounded in reality. Delivering solutions that are truly fit for purpose requires carefully tailoring them to the specific context and conditions under which they will be implemented, the groups and decision-making processes they target, and the policy and practical purpose they are intended to serve (GIZ 2018).
- *Managing stakeholder engagement and buy-in.* Ensuring that key stakeholders (both the intended beneficiaries and funders, agents or intermediaries) are closely involved in the process of identifying, selecting and implementing finance solutions is one of the most critical factors for success. At the same time, long-term sustainability is highly dependent on investing in local technical, managerial and administrative capacity. The BIOFIN methodology provides a guideline on identifying and prioritizing finance solutions (UNDP 2018).
- *Adopting a flexible and pragmatic design*. There is typically a long gap between initiating a conservation finance solution and seeing the actual delivery of funds or outcomes. Many conservation finance efforts also require that new skills, institutions, partnerships, and regulations are developed. The development and implementation process can take years, often frustrating stakeholder expectations of seeing results within a certain time frame (WWF 2009). It is necessary not only to manage expectations, but also to factor in the need to deliver short-term results to plug the financial gaps that arise while waiting to achieve longer-term goals. Appropriate sequencing is key, balancing urgent biodiversity priorities and long-term goals and mixing short- and long-term solutions (UNDP 2018).
- *Measuring performance and impact.* The bulk of effort often goes into identifying and designing conservation finance solutions, rather than their implementation or follow-up. This means that there is still very little hard empirical evidence of long-term conservation impact and effectiveness (Ferraro and Pattanayak 2006) although many groups are analyzing and improving conservation impact measurement tools (see Conservation Measures Partnership). It has proved difficult to come up with standards for judging the adequacy of financial instruments against conservation goals, and reporting criteria and indicators are often inconsistent (James et al. 1996, Lapham and Livermore 2003).

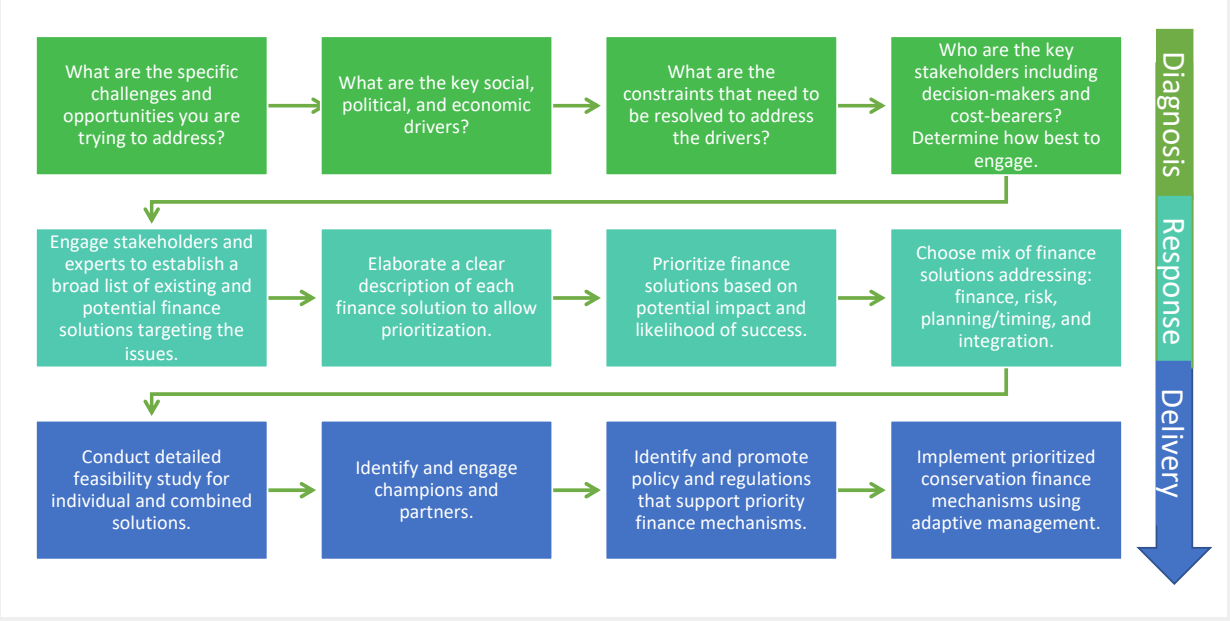
D. Managing the planning and implementation process

Conservation finance solutions must be designed and implemented in a strategic manner if they are to be successful and sustainable in practice. However, while there is now a fairly large body of guidelines, toolkits and other literature on individual financial instruments, there yet remain very few efforts to provide a coherent framework with which to plan and implement conservation finance solutions. But ultimately, it is this strategic process which is likely to prove most critical in determining whether the identified finance solutions are fit for purpose and effectively support nature conservation.

A consensus has begun to emerge over time on the necessity of working through three basic stages of thinking that collectively describe the overall conservation financing framework: how finance is generated and raised, how it is delivered, and the institutional arrangements by which decisions are made (Parker et al. 2012). Looking at this process in its entirety reveals a common logic or strategic approach to diagnosing, responding to and delivering conservation finance solutions (GIZ 2018, Box 3).

Box 3: Adopting a strategic approach and sustainable financing 'logic'

Work carried out by GIZ suggests a sustainable financing 'logic', comprising a series of steps and questions that can be used to diagnose, respond to and deliver sustainable financing solutions. A parallel process established by BIOFIN (2018) presents a means to identify and prioritize finance solutions to solve specific challenges and address opportunities. Together these strategic approaches are driven by the need to ensure that efforts to improve biodiversity finance are tailored to real-world conditions, and are based on a sound understanding of the broader needs and conditions for financial, ecological, and social sustainability in the real world. More information on the specific guidance on using this structured approach can be found in the BIOFIN 2018 Workbook and other tools are available such as LIFT for landscape finance.



Adapted from GIZ 2018, BIOFIN 2018.

Various approaches which serve to operationalize and apply these principles and practices have emerged, targeting different sectors, actors and levels of scale. For example, BIOFIN offers a

methodology to assist national-level government efforts to assess biodiversity financing expenditures, estimate needs, and identify and plan for potential solutions. The challenge of implementation and financial sustainability is thereby structured around interventions in the normative framework (i.e. laws, policies, plans and budgets), the organizational framework (i.e. mandates, structures and capacities) and behavioral and attitudinal changes (i.e. relationships, engagement, trust-building and cultural change, UNDP 2018).

There are a wide range of mechanisms that vary in scope and focus from sustainable development in general (e.g. UNDP's SDG planning tools) through to individual protected areas and other sites. At the site level of the spectrum, focused tools such as 'conservation investment planning' offer a process with which to diagnose and develop financing solutions (Emerton, Tizard and Saw Htun 2018), the protected areas system (see, for example, CFA 2008, Flores et al. 2008, Landreau 2012, TNC 2013), or landscapes (see LIFT). Similar guidance exists for conservation organizations and NGOs (see, for example, Clark 2007), the private sector, and business (Stephenson et al. 2018). While lessons learned are emerging, the above-mentioned lack of evidence on performance and impact makes it difficult to derive clear-cut recommendations. This is an area where further research and analysis is recommended.

IV. Categorization of Finance Strategies and Mechanisms

The following taxonomy of conservation finance strategies and mechanisms seeks to provide a structure for analysis, planning, and implementation of conservation finance. Often the definitions of the different categories cite sustainable development outcomes in addition to conservation. In fact, they are mostly the same tools that are employed for both conservation finance and sustainable development finance. In general, both higher level policy areas or niche areas of sustainable development finance are not included in the taxonomy. Of particular note, both conservation finance and climate finance fall within the larger category of green finance (see glossary). Although climate finance is one important source of funding for conservation finance, it was not placed in its own taxonomic category since many of the same tools that are used for conservation finance are also used for climate finance.

Table 1 A Taxonomy of Conservation Finance Mechanisms

A. Return-Based Investments	• Microfinance • Peer-to-Peer (P2P) Investing and Crowdfunding • Angel Investing, Incubators and Venture Capital • Private Equity • Debt: Leasing, Bank Loans, Notes, and Trade Finance • Capital Markets • Sustainable Investment Strategies
B. Economic Instruments	• Environmentally Related Taxes • Fees and Charges • Tradable Resource Use Permits • Fines and Penalties

	• Compensation and Offsets • Deposit-refund Schemes • Environmentally Motivated Subsidies
C. Grants and Other Transfers	• Official Development Assistance • Private and Corporate Philanthropy • Remittances • Conservation Trust Funds / Environmental Funds
D. Business and Markets	• Supply Chain Resilience • Conservation Businesses • Corporate Social Responsibility and Sustainability • Voluntary Offsets
E. Public Financial Management	• Public Fiscal Planning, Budgeting and Disbursement • Fiscal Transfers • Government Grants • Reforming Harmful Subsidies • Earmarking Revenues for Nature
F. Risk Management	• Insurance Products • Pay for Success • Blended Finance
G. Financial Efficiency	• Management Effectiveness • Public Private Partnerships • Integrated Accounting • Mainstreaming Biodiversity in Development

A. Return-Based Investments

Return-based investments for nature include a range of finance strategies and mechanisms that seek both positive environmental impacts as well as financial returns to a business owner or investor. Investments are defined as: "the outlay of money usually for income or profit" (Merriam-Webster, accessed Jan 10th, 2020). In conservation finance terms, there are multiple elements that could make financial investments either beneficial or detrimental for conservation. Investments that are detrimental to nature are potential targets for finance strategies that reduce harmful impacts or decrease harmful investments. While return based investments are often associated with for-profit enterprises, NGOs and other non-profits, including The Nature Conservancy, can and have executed return based investments. The Nature Conservancy released an in-depth report in 2019 summarizing potential opportunities for private investment in natural capital, and found rapidly growing interest in prioritizing natural capital on the part of investors (Cooper and Trémolet, 2019).

These strategies and mechanisms can be divided in a number of ways, including private *vs* capital markets, impact *vs* finance priorities, investment size (microfinance through large sovereign bonds), and debt/loan-based products *vs* equity and ownership-based approaches (Forest Trends, 2016, Cooper and Trémolet, 2019). Many of these categories are overlapping and non-exclusive; for example, many types of investors use a combination of debt and equity instruments to achieve their investment goals. The following categories seek to capture and describe some of this variation (adapted from Credit Suisse, 2016).

1. Microfinance
2. P2P Investing and Crowdfunding
3. Angel Investing, Incubators and Venture Capital
4. Private Equity
5. Debt: Leasing, Bank loans, Notes, and Trade Finance
6. Capital Markets
7. Sustainable Investment Strategies

1. Microfinance

Microfinance seeks to "provide financial services to households and micro-enterprises that are excluded from traditional commercial banking services" (The World Bank, 2015). Often the beneficiaries of microfinance do not have assets or credit that allows access to traditional capital such as bank loans. Microfinance institutions (MFIs) are extremely diverse and include specialized organizations targeting agriculture, small enterprise development, or other specific areas. MFIs can be arms of larger banks, non-profit organizations, and even village-based cooperatives. A successful microfinance model should address all three "sustainability criteria"; financial, social and environmental. One example of a reportedly successful microfinance model is the Village Saving and Loan Associations (VSLA) model which has been applied to support development in varying social and environmental contexts in Tanzania. Another example is the CAMBio project that has financed small to mid-sized enterprises (SMEs) to integrate conservation of biodiversity into their business, products and services in five Central American countries (Forcella and Lucheschi, 2016).

2. Peer-to-Peer (P2P) Investing and Crowdfunding

Peer-to-Peer (P2P) Investing and Crowdfunding facilitates direct financial investments among individuals or organizations bypassing traditional financial institutions. Peer-to-Peer can be described as formal and informal financial transfers between and within countries that are targeted for sustainable development. Peer-to-Peer transactions are generally technology-based transfers between individuals and one form, "P2P lending," can be defined as: "the borrowing and lending of money between individuals or businesses, usually through the medium of online services, without a bank or other official financial institution acting as an intermediary." (Lexico, Accessed January 10th, 2020). Crowdfunding involves sourcing small donations or investments from a large number of people (the crowd) and is a form of P2P investing. Where the entire objective of the P2P or crowdfunding is in the form of a gift or donation, this mechanism would fit into the "Grants and other Transfers" category, yet it is included in this section due to the prevalence of revenue based P2P approaches. Some for-profit P2P investing platforms include Lending Club, Upstart and Funding Circle. Well-known actors in the non-profit area include Kiva, Kickstarter, and Go Fund Me. In the realm of conservation finance, a good example is WWF Hong Kong's crowdfunding page. Another example of crowdfunding for conservation is the Palau National Marine Sanctuary supported by the "Stand with Palau" crowdfunding campaign. In 2014, the campaign raised $53,000 from more than 400 donors to support the Marine Sanctuary's implementation.

3. Angel Investing, Incubators and Venture Capital

This category covers a wide range of funding and support options for early stage companies and projects. The early stage support includes a range of means for financing "startup" or young companies and can include support ranging from subsidized working space, mentoring, grants, fellowships, through debt and equity financing. Angel investing refers to private, mostly equity investments in early stage companies done by "angel investors" who tend to be high net worth individuals who may be more willing, than typical institutional investors, to invest in early stage enterprises. Angel investors often work within angel investing networks to identify and co-invest in young companies. Incubators are defined as a "facility established to nurture young (startup) firms during their early months or years. It usually provides affordable space, shared offices and services, hands-on management training, marketing support and, often, access to some form of financing." (BusinessDictionary.com, accessed November 16th, 2019). One example of an incubator for conservation is CFA's recently announced virtual incubator for conservation finance which provides mentorship and grant funding. Another example is the partnership between The Nature Conservancy and Techstars Sustainability Accelerator.

Venture Capital (VC) is a formal investment approach for young businesses that involve professional investors – venture capitalists – often working through a team or a VC firm, that make strategic investments in startup companies. There are a growing number of VC firms with an interest in sustainability but very few that are focused on nature. Typical VC firms seek very high returns and will accept a high level of risk to achieve these returns. They are most commonly focused on technology or other types of companies that can provide the rapid growth needed for a high return on investment. Nature based companies that focus on sustainability may find it difficult to identify business opportunities that produce the level of rapid growth needed to satisfy the target returns of traditional VCs. While not taking a traditional VC investment approach which is mainly equity-based, Conservation International Ventures, CI Ventures LLC, is an example of an investment fund that finances early stage conservation ventures. Other funds that are less directly involved in conservation (including many sustainability focused VC funds) can be highly relevant to conservation by investing in technologies that can be used for conservation activities or that may reduce environmental impacts.

4. Private Equity

Private Equity (PE) is a form of private investment that can be described as follows: "the injection of institutional and retail funds targeting investment in privately owned businesses… Private equity seeks to provide growth capital or support buyouts of unlisted entities with a view to securing strong returns on behalf of their investors over a pre-determined (investment) lifetime." (Adapted from Deloitte, 2017). There are a few PE firms focused on nature such as Blue Oceans Partners, which works to invest in sustainable fisheries, aquaculture, renewable energy, and plastic pollution mitigation. Some large investment firms have PE funds targeting different forms of sustainability such as The Rise Fund of TPG. While sharing some similarities to VC, PE typically targets fewer but larger scale and lower risk investments, investing in businesses at a further stage of development compared to a VC. Even for the smallest PE investments, a business typically needs to demonstrate a steady stream of revenue as a pre-requisite for investment.

5. Debt: Leasing, Bank Loans, Notes, and Trade Finance

These are mostly private debt-based instruments that involve the transfer of capital from one entity to the borrowing party who is then under an obligation to pay the debt back at a later date, usually with interest. This category could also be called "green lending." Leasing is a finance instrument that allows individuals or companies to acquire equipment or facilities and pay a monthly or annual fee for use or access rather than having to outright purchase the assets. Bank loans are debt provided directly from a bank to an individual or company. Notes refer to a wide range of formal debt instruments where the borrower agrees to pay back the lender (almost always with interest) as documented by a contract (the "Note"). Some Notes can be tradeable and resold while others are restricted. Trade Finance is a multi-instrument set of mechanisms that are designed to facilitate international trade through enhanced financial liquidity and risk management. "Bank-intermediated trade finance (or trade finance, in short) performs two vital roles; providing working capital tied to and in support of international trade transactions, and/or providing means to reduce payment risk." (Bank for International Settlements, 2014). One example of a trade bank that helps advance investment opportunities for clean energy is the NY State (USA) affiliated NY Green Bank. Many multi-lateral, bi-lateral and national development banks (such as the World Bank, Inter-American Development Bank, and OPIC) use debt-based instruments to support sustainable development and often include conservation goals and environmental and social safeguards in their investments.

6. Capital Markets

The capital markets category includes all of the main publicly traded debt and equity instruments that are traditionally associated with public capital markets such as stock markets. The most common publicly traded instruments are stocks and bonds which are used to facilitate financing of companies and countries. Publicly traded stocks allow for the ownership of companies by both retail and institutional investors. The stock market allows for easy transfer of ownership, called "liquidity", through facilitating the buying and selling of shares and other instruments. Bonds are debt instruments financed through investors (as compared to internal bank finance) and can be traded on capital markets. Green Bonds have raised hundreds of billions USD for the environment and although generally focused on renewable energy investments, increasingly offer opportunities for investments in nature. Blue bonds are a recently emerging niche similar to Green Bonds with a specific focus on the oceans and aquaculture. In 2016, the Republic of Seychelles, with help from The Nature Conservancy, raised funds for marine conservation through a Blue Bond that will generate $430,000 per year to invest in sustainable fisheries. Stock markets are also increasingly encouraging their listed companies (companies are listed through public offerings) to report on various sustainability measures and some stock markets are collaborating on improving their impact on sustainable development through efforts such as the Sustainable Stock Exchanges Initiative.

7. Sustainable Investment Strategies

This category is cross cutting and can apply to all of the above categories that are essentially financial products. "Sustainable, Responsible and Impact Investing" or "SRI" (USSIF, Accessed January 10th, 2020) is a long-term oriented investment approach which integrates ESG (environmental, social and governance) factors in the research, analysis and selection process of securities within an investment portfolio. It combines fundamental analysis and engagement with an evaluation of ESG factors in

order to better capture long term returns for investors, and to benefit society by influencing the behavior of companies" (Eurosif, 2018). For publicly traded instruments, it is based on different rating and screening approaches that either target investments in companies seeking to produce positive outcomes or exclude companies that are not showing commitment to environmental, social or governance issues (ESG) by their management. Global assets under management with some SRI focus are estimated at well over 30 trillion USD (Global Sustainable Investment Alliance, 2018).

Impact Investing is a growing segment of private investing that is defined as, "investments made with the intention to generate positive, measurable. social and environmental impact alongside a financial return" (www.thegiin.org).

Another form of sustainable investment strategy in capital markets is through shareholder activism where the owners of the companies' shares seek to positively influence corporate behavior through shareholder resolutions and other forms of communication possible under the rules and regulations of publicly traded companies.

The following strategies are included as means to achieve SRI in debt and equity capital markets as cited by the Global Sustainable Investment Alliance:

1. Negative screening excludes certain companies from an investment e.g. building a deforestation-free or palm-oil-free portfolio;
2. Best-in-class (or positive) screening selects companies based on their performance, highlighting positive examples of biodiversity friendly products and socially responsible practices;
3. Norms-based screening excludes companies from an investment if they fail to meet internationally accepted norms such as the UN Declaration of Human Rights;
4. Environmental, Social and Governance (ESG) integration focuses on the assessment of the structural integration of ESG factors into investment decision making;
5. Sustainability themed investing has a broad meaning and includes financial products such as green and blue bonds and sukuk[3] and more recently sustainability bonds;
6. Impact investing includes an explicit intention to produce a positive impact, that requires impacts to be measured and reported against the intended targets;
7. Corporate engagement and shareholder action aims to push corporations to address environmental and social issues by exercising shareholder rights.

Some examples of financial institutions that provide investors with the means to make sustainable or impactful investments are Green Century Funds and Calvert Investments, which also offer investment products such as environmentally focused mutual funds.

B. Economic Instruments

Economic instruments are essential mechanisms of conservation finance as many environmental services and costs are external to private company finances. Economic instruments are efficient

[3] A financial instrument used in Islamic finance.

means for governments to bring these externalities into market prices. By definition, economic instruments include "fiscal and other economic incentives and disincentives to incorporate environmental costs and benefits into the budgets of households and enterprises" (Glossary of Environment Statistics, UN 1997). They seek to achieve this role of incorporating costs and benefits into budgets through "full-cost pricing" - that is increasing the prices of environmentally harmful products and services and decreasing the costs and prices of positive environmental goods and services.

The OECD Policy Instruments for the Environment (PINE) database includes six categories of policy instruments, five of which are included(*) in this category (OECD, accessed January 10th, 2020).[4] Some definitions are adapted from the PINE Glossary.

1. Environmentally Related Taxes*
2. Fees or Charges*
3. Tradable Resource Use Permits*
4. Fines and Penalties
5. Compensation and Offsets
6. Deposit-refund Schemes*
7. Environmentally Motivated Subsidies*

1. Environmentally Related Taxes

These instruments specify payments to the government from a tax base of "environmental relevance," which typically includes taxable organizations or individuals with a proven and defined negative impact on the environment. Taxes are described as "unrequited" payments in that distributions are not proportional to payments. The intent is to increase costs of environmentally harmful activities including pollution and thus, incentivize actors to reduce those activities. Industries subject to these taxes typically include energy, transport equipment or services, pollution (water, air, waste management, noise), and natural resources. It should be noted that taxes, along with other economic instruments often combine two objectives: raising revenue and influencing incentives. There are certain taxes that minimize impacts on incentives, such as income tax and value added tax (VAT) while others are designed to have an impact – such as taxes on pollution where the goal is to reduce pollution in an economical manner. Certain taxes called "sin taxes," such as those on tobacco and alcohol, can generate substantial revenue as demand for these products is not very price sensitive (low demand elasticity) indicating that they must be taxed substantially if the goal is to reduce consumption. Taxes on these products, as well as on fossil fuels, have been used for environmental and health expenditures (see Earmarking Revenues for Nature, below).

One example of an environmental tax is a plastic bag levy in Ireland. Beginning in 2002, the Irish Government began imposing a 0.15 euro charge on plastic bags which was raised to 0.22 euro in 2007. The tax has simultaneously reduced plastic bag pollution (from 5% to just 0.13% of all litter) and also raised hundreds of millions in euros for environmental projects. Another older example is the earmarking of hunting and fishing equipment taxes to finance state wildlife management in the USA.

[4] The sixth is voluntary and included in the Business and Markets category below.

2. Fees and Charges

Fees and charges can be described as obligatory payments to the government in exchange for specific government services. As such, they differ from taxes in that they are often (but not entirely) "requited" or that payments and benefits returned are at least somewhat proportional to each other and directed to specific uses. As some taxes can be earmarked for specific uses or for funds, the general distinction between taxes and fees is that the latter is tied to a service cost or some value gained. Permits and licenses are generally considered fees and charges when there is a charge associated with the issuance of the permit or license. The use of fees and charges is common for a wide range of governmental services including many that are environmental and related to conservation. Examples for nature include fishing licenses, protected areas entrance fees, stumpage fees and biosecurity fees. Water and energy tariffs can be used to finance environmental objectives and, in many cases, water tariffs are earmarked for Water Funds (very similar to Conservation Trust Funds) that provide subsidies and grants for watershed maintenance.

3. Tradable Resource Use Permits

Tradable resource use permits and quotas are market-based economic instruments that extend private property rights to shared resources by providing resource users with private access to a specified quantity of a given natural resource and the ability to exchange these rights through market transactions. Tradable permits are effective for managing resources historically under open access like air pollution, fisheries, and water rights. Tradable permits that can be bought and sold are similar to financial assets that may appreciate or depreciate with the health and future prospects of that resource. Therefore, tradable permits and quotas have the potential to benefit the environment by encouraging sustainable use of natural resources to help maintain the value of those permits or quotas to the benefit of whoever owns them. Furthermore, some conservation organizations and impact investors have made the purchase and sale of tradable quotas a central component of investment strategies in sustainable fishing. As an example, Encourage Capital bought quotas from a fishery in Chile without the intention of fulfilling them (i.e. catching fish) in order to reduce pressure on the fish stock and support its recovery. Ideally, those quotas could then be resold, potentially at a profit, if quotas have increased in value either due to increased fishing profitability or improved long term outlook for the fishery (including if the stock has recovered).

4. Fines and Penalties

Fines and penalties are included in the OECD PINE database as part of "Fees and Charges" but are separated in this taxonomy due to their importance as conservation finance mechanisms. Fines and penalties in conservation are charges for "unplanned" damage to nature. In comparison to offsets, license fees, and other charges, fines and penalties are used to economically punish actors who have damaged nature (illegal hunting, forestry, etc.), to discourage a repeat of harmful actions (i.e. charging economic damages following an oil spill), and to collect revenue that can then be used to remediate the impacts on nature and on the economy. Because the primary goal of fines is to discourage certain illegal behaviors, the enforcement of the fines and penalties are as important as the prices or levels set for payment. One example for conservation is the use of Natural Resource Damage Assessment (NRDA) in the USA. For example, the Deepwater Horizon oil spill in the Gulf of Mexico resulted in fines and penalties of approximately $65 billion for BP (The Guardian, 2018).

5. Compensation and Offsets

This category includes compliance related instruments to mitigate and compensate for planned impacts on nature. Compensation includes both regulatory rules and enforcement surrounding the mitigation hierarchy as well as a range of offset strategies to achieve what is called “no net loss” or “net positive impact” (NPI). The approach seeks to identify key natural areas or assets prior to undertaking investments and to either avoid damaging these areas during project implementation or compensate for the unavoidable damages caused. Under best practices, compensation and offsets should be used to compensate for residual impacts following all previous steps in the mitigation hierarchy. Compliance markets for carbon offsets are relatively rare but options for offsets are included in the California Air Resources Board cap and trade program. Most current carbon offsets are voluntary and included in the Business and Markets category.

Different types of compliance and voluntary offsets can provide in-kind compensation for planned damages through on-site restoration or purchase of offset credits and through payment of “in lieu fees” - financial compensation earmarked (in theory) for investments in nature. These economic instruments are relatively common in the extractive industries, transportation, construction, and other industries that commonly alter natural habitats.

An especially advanced system for compensation and offsets is the USA’s wetland and habitat banking system – generally referred to as mitigation banking. Mitigation banking is an environmental market-based approach designed to offset planned adverse impacts to wetlands, species or habitats of concern. Mitigation banks are restored or permanently protected wetlands, streams, or parcels of land. The best mitigation banks have the ability to harbor, preserve, and manage the survival of endangered and threatened species, or other forms of protected habitat such as wetlands, stream corridors and forests. Mitigation banks, once established and approved, generate credits that are then sold to businesses and governments obligated to mitigate damages from a planned project or infrastructure development. A range of documents and supporting information for biodiversity offsets can be found on the legacy site for the Business and Biodiversity Offsets Program.

6. Deposit-refund Schemes

These schemes consist of a product charge (the deposit) and a subsidy for recycling or proper disposal (the refund), with the objective to discourage illegal or improper disposal of products and increase recycling rates. These programs can be either voluntary or legally obligatory. They are typically most associated with plastic or glass bottle recycling programs, but can include any potentially harmful product that requires specific recycling or disposal procedures. One important conservation outcome for this mechanism is in reducing plastic waste entering the oceans through the establishment of a deposit-refund scheme to ensure collection of plastic bottles. Norway is an example of a country that has had recent success in implementing a deposit-refund scheme, which has led to 97% of all plastic drink bottles being recycled and less than 1% of plastic bottles ending up in the environment.

7. Environmentally Motivated Subsidies

This economic instrument includes subsidies with a specific environmental remit such that the subsidies are intended to (directly or indirectly) reduce uses or practices that have a "proven and specific negative impact on the environment" or encourage activities that are positive for the environment. These activities can include either direct payment from government to producers or actors, tax credits or other preferential tax treatments to influence activities, or preferential financing, for example lower-interest loans, to influence good behavior. Some examples for nature include biodiversity friendly subsidies for environmentally-beneficial best management practices, and tax credits for environmental programs that generate new jobs or encourage the donation of conservation easements. Subsidies can also be in-kind such as green government procurement.

C. Grants and Other Transfers

Grants and other transfers are finance mechanisms that enable financial flows from sources of finance to recipients or beneficiaries seeking funding for sustainable development and conservation objectives. Unlike other investments, this finance is provided with either no expectation of financial return to the finance source or below-market concessional rates of financing. This category includes philanthropical finance as well as remittances or other forms of financial transfers with development or conservation objectives.

1. Official Development Assistance
2. Private and Corporate Philanthropy
3. Remittances
4. Conservation Trust Funds

1. Official Development Assistance (ODA)

Bilateral and Multilateral ODA is described as "resource flows to countries and territories on the DAC List of ODA Recipients (developing countries) and to multilateral agencies which are: (a) undertaken by the official sector; (b) with promotion of economic development and welfare as the main objective; (c) at concessional financial terms. In addition to financial flows, technical co-operation is included in aid. Grants, loans and credits for military purposes and transactions that have primarily commercial objectives are excluded. Transfer payments to private individuals (e.g. pensions, reparations or insurance payouts) are in general not counted." (OECD, accessed November 21th, 2019). In effect, ODA is a means by which countries can support economic development in other countries through financial or technical transfers. ODA has historically accounted for about 12% of global conservation financial flows (Parker et al. 2012).

Specific global and national data and information on bi-lateral aid for biodiversity can be found on OECD's page for External Development Finance Statistics. Germany, through its development bank (KfW) and other sources, is one of the greatest government contributors of ODA for conservation and have reviewed their investments in biodiversity. Multilateral development banks such as the World Bank and multilateral funds such as the Global Environment Facility (GEF) provide grants and concessionary financing for a wide range of environmental initiatives including conservation.

2. Private and Corporate Philanthropy

Philanthropy is primarily financial transfers from private and corporate donors to beneficiaries with the intention of contributing to sustainable development including conservation. In addition to grants and concessional finance (below market rate or enhanced conditions), this would include corporate volunteerism and technical support.

Examples of major philanthropic organizations that have contributed to conservation include the Gordon and Betty Moore Foundation, the Walton Family Foundation, the Packard Foundation, Pew Charitable Trust, and many others. An example of a specific conservation program or campaign supported by philanthropy includes the Vibrant Ocean Initiative (previously termed 50 Reefs) to which Bloomberg Philanthropies has pledged $86 million.

3. Remittances

Formal and informal financial transfers between countries that are targeted for sustainable development or conservation - remittances are defined as "a sum of money sent in payment or as a gift." (Lexico, accessed January 10th, 2020). One example of the potential impact of remittances for conservation is an example from El Salvador, where remittances were found to have positive benefits for reforestation.

4. Conservation Trust Funds / Environmental Funds

Conservation Trust Funds (CTFs) are defined as "private, legally independent institutions that provide sustainable financing for biodiversity conservation" (Conservation Finance Alliance, 2014). CTFs provide financing for a range of environmental actions often supporting protected areas, sustainable livelihoods, and other conservation related goals. The more general term "Environmental Funds" is used to describe CTFs and government managed funds, as well as forestry funds and other funds earmarked for environmental efforts. Two resources for case examples and additional valuable information on these CTFs include: (1) RedLAC, the Latin American and Caribbean Network of Environmental Funds, and (2) CFA's Environmental Funds toolkit.

D. Business and Markets

Business and market approaches focus on actions that can be taken by and for the private sector that are generally aimed at decreasing the cost of conservation, aligning private and public incentives, and improving business models and operations in ways that support the sustainable management of nature. They differ from "return-based investments" in that they are investments and actions taken by operating companies or governments that target business operations – raw material sourcing, processing, manufacturing, and pricing – and not focused on investments in companies (i.e. the financial sector). Business and market mechanisms can overlap with "economic instruments" in that when economic instruments correct for positive externalities, they could create business opportunities for companies who contribute to nature conservation. However, this category focuses on the actions and perspectives of operating businesses and not investors (return based investments) or governments (economic instruments and public financial management).

1. Supply Chain Resilience

2. Conservation Businesses
3. Corporate Social Responsibility and Sustainability
4. Voluntary Offsets

1. Supply Chain Resilience

Financial and technical investments in supply chain resilience seek to decrease supply and price volatility in supply chains due to environmental factors and improve long term sustainability of raw material production for business. Environmental factors interact with complex supply chains for raw materials, including commodities, and challenge consumer goods companies' ability to assure price and supply resilience. A wide range of investments and actions can be undertaken by companies and governments to improve sustainability and decrease the negative impact of the production of food, fiber, water, and other raw materials on nature. These actions include anti-deforestation commitments, adherence to sustainable sourcing certifications, technical support and financial incentives down the supply chain, as well as investments in appropriate technology or research to improve the sustainability and productivity of raw material production. Supply chain resilience is separated from corporate sustainability in this taxonomy due to its outsized impact on nature.

One example of an inhouse effort to improve supply chain resilience is Whole Foods Market's use of seafood sustainability certification and rating programs. The supermarket chain only sells wild caught fish that have either been certified by the Marine Stewardship Council or earned Green (Best Choices) or Yellow (Good Alternatives) status by the Seafood Watch rating program. These tools help reduce the supermarket's purchases of unsustainable seafood while also providing transparency on seafood supply chains to consumers.

2. Conservation Businesses

Private or public companies that engage in conservation supportive business activities including ecotourism, sustainable fishing and forestry, and other businesses that employ best management practices and contribute to nature conservation. A growing range of businesses have identified opportunities that contribute to conservation through their business models. Opportunities range from high technology development for tracking environmental conditions through landscape level activities for watershed management and ecological forestry. One interesting example is Ibis Rice™. Ibis Rice has been built around a program by the Wildlife Conservation Society working with rice farmers in Cambodia to protect the breeding areas for the endangered giant ibis. This social enterprise markets the rice under that brand, Ibis Rice, which is Certified Wildlife Friendly – combining a high quality product with clear conservation outcomes.

3. Corporate Social Responsibility and Sustainability

Corporate Social Responsibility (CSR) has evolved from targeted corporate giving towards more integration with companies' business models in what is mostly termed "corporate sustainability". It can be described as follows: "the integration of sustainability thinking and practice in business operations helps companies live up to their responsibilities as global citizens and local neighbors and can significantly strengthen business resilience and profitability. Effective corporate sustainability can offer clear business benefits for operations, reputation, new products and markets, and finance and

can significantly reduce business risks." (BIOFIN Catalogue, accessed January 10th, 2020). The category encompasses a range of voluntary instruments[5] impacting firms or industries that lead them to, "improve their environmental performance beyond what the law demands." Emerging business opportunities in non-compliance markets exist for water management, carbon offsets, eco-conscious consumers and both genetic and ecological resources from nature. This includes the use of voluntary third-party certification for sustainable products such as paper and pulp (Forest Stewardship Council), seafood (Marine Stewardship Council), and agricultural products (e.g. organic, Rainforest Alliance). Corporate social responsibility (CSR) efforts seek to achieve multiple outcomes including attaining ESG commitments for investors, improving employee satisfaction and retention, and protect and promote a company's image, brand value and legal standing. Often these activities will focus on issues pertinent to the companies' operations or clients and initiatives that have added value for the business. A recent initiative that deserves attention is the advertising industry's participation in the UNDP's Lion's Share program that allocates 0.5% of advertising spends to a fund for nature when the ads include animals.

Conservation International (CI) has supported corporate sustainability practices through its program, the Catapult Collaborative for Corporate Sustainability. Businesses that become members of the initiative, which have included large public companies such as Walmart and United Airlines, receive a variety of benefits from CI including advisory services, access to practical decision tools and research, recognition for being part of the program, and more.

4. Voluntary Offsets

This category includes voluntary instruments designed to compensate for planned impacts on nature. It includes all voluntary carbon, wetland and biodiversity offsets as well as any other nature based offsets such as water quality, water temperature, storm water capture, and other forms of company actions to reduce or offset its climate, land and water footprints. Offsets that are required by banks and other investors are included in this category if there are not regulatory requirements (i.e. compulsory offsets) obliging a business to implement or finance an offset (compulsory offsets are included in Economic Instruments). Voluntary biodiversity offsets are primarily seen around mining and other extractive industries, hotels and buildings in sensitive ecological areas, and can be combined with other incentives towards land or water stewardship. As an example, there is an annual State of the Voluntary Carbon Markets report that surveys the status of voluntary carbon offsets.

E. Public Financial Management

Public financial management is focused on how the public sector prioritizes, plans, and executes its national finances. It includes efforts to mainstream sustainable development (including conservation) into national and local government planning and budgeting processes as well as effective disbursement, different forms of fiscal transfers, reforming harmful subsidies, and earmarking revenues for nature. Assuring adequate allocations to conservation in national budgets can be challenging given competing demands on these budgets. Often, data driven approaches such as

[5] Information and Voluntary Approaches is a category of economic instruments in the OECD PINE database which takes the perspective of government. That category has been incorporated into multiple other categories.

performance-based budgeting, identification of key performance indicators, and responding to strategic economic priorities (jobs, hard currency, etc.) can assist government agencies and partners to convince decision makers of the importance of investing in nature. National government budgetary allocations are the largest stable source of finance for nature globally and in most countries.

1. Public Fiscal Planning, Budgeting and Disbursement
2. Fiscal Transfers
3. Government Grants
4. Reforming Harmful Subsidies
5. Earmarking Revenues for Nature

1. Public Fiscal Planning, Budgeting, and Disbursement

National government planning, budgeting, and disbursement is historically the most important source of finance for nature conservation accounting for at least 60% of conservation expenditures worldwide (Parker et al. 2012). A wide range of actions can improve finance for nature through the public planning and budgeting process as well as through effective disbursement and implementation of annual work plans at public and quasi-public agencies and departments (also see financial efficiency). A useful guide to mainstreaming environment into planning and budgeting has been produced by UNDP-UNEP (2015). The Biodiversity Finance Initiative has identified many opportunities for improving public finance for nature and a useful methodology is provided in the BIOFIN Workbook (UNDP, 2018).

2. Fiscal Transfers

Intra-governmental fiscal transfers redistribute tax revenues among levels of government, from national and regional governments to local jurisdictions according to agreed principles and priorities. Ecological fiscal transfers involve integrating ecosystem services or other environmental metrics into allocation amounts making conservation indices (e.g. size/quality of protected areas) part of the fiscal allocation formula to reward investments in conservation. This can be used for example, to incentivize the expansion of protected areas (adapted from UNDP SDG Financing Solutions).

One example of a specific fiscal transfer initiative is Portugal's Local Finances Law, which has resulted in significant increases in budgets for municipal areas with a large proportion of land under protection.

3. Government Grants

As part of public finance, governments often provide direct grants to a wide range of entities for specific activities that are prioritized by different levels of government and different government agencies. Generally, the grant amounts and overall objectives are set during the national and subnational budgeting process but the form of transfer is different from general budget allocations. Details of each grant's objectives are set at the level of government that is issuing the grant. Grants are often issued competitively and seek to address specific issues. One example is in the USA, the Conservation Innovation Grants that are described as "competitive grants that drive public and private sector innovation in resource conservation" (USDA Website, 2020).

4. Reforming Harmful Subsidies

According to the BIOFIN catalogue of finance mechanisms, this can be defined as, "(to) reform, green or phase out a subsidy that directly or indirectly harms biodiversity." Government subsidies can be direct or indirect and may take the form of direct transfers, tax credits, and regulatory advantages that generate economic or financial benefits to the recipient. A broad interpretation of the term is often used and includes implicit subsidies which are defined by the failure to internalize negative externalities to the environment (e.g. pollution). Subsidies harmful to biodiversity include various financial and tax incentives for agriculture, fisheries, forestry, transport and infrastructure, construction, land used change, and energy. In some cases, subsidies that are intended to achieve specific social outcomes may impact economic efficiency to such a degree as to be economically harmful to the country – these are termed "perverse subsidies". The economic and environmental impact of harmful subsidies is well captured by the report from the IMF that global fossil fuel subsidies can be estimated at roughly $5.2 trillion in 2017 (6.3% of global GDP, IMF, 2019). Understandably, these levels of subsidies discourage renewable energy investments and are slowing the response to climate change. Subsidies in the global fishing industry have been estimated recently at $35.4 billion (in 2018) posing a continuing risk to fish stocks due to overharvesting (Sumaila et al. 2019).

5. Earmarking Revenues for Nature

This strategy is based on ensuring that a range of government revenues - generally those associated with natural resource use or environmental damages - are set aside or otherwise specifically allocated for nature conservation or other environmental actions. This can be done through the use of environmental funds, retention of revenues at site or agency levels, or through accounting procedures that assign specific budgetary allocations based on these revenues. This approach is especially important for fees and charges but has also been used successfully in the past for gasoline taxes (Costa Rica) as well as oil and gas funds. One special case worth noting here is the use of earmarked revenues to establish national "payment for environmental services" programs (PES, also known as payment for ecosystem services). PES programs have been implemented mainly for watershed management objectives and are often associated with water funds – a type of environmental fund generating revenue from water tariffs (see fees and charges). In addition to the example from Costa Rica, Mexico has a national PES program for land restoration and management that combines national earmarked funds with local and regional water funds and other forms of public private partnerships.

F. Risk Management

Risk management mechanisms and strategies seek to either leverage the risk abatement properties of well-managed ecosystems or use various risk management mechanisms to improve the conditions or conservation of natural ecosystems. Managing risks is a challenging endeavor for individuals, localities, and businesses and the insurance industry has become extremely experienced at developing and selling a range of instruments to facilitate risk management such as damage, liability, and health insurance. Other mechanisms are designed for managing financial risks and can be combined with investments to facilitate transactions that would have not been possible without managing risk – these are instruments such as loan guarantees and pay for success programs (also known as impact bonds). The combination of risk management instruments and/or various return-

based investment instruments can produce what is termed “blended finance”, which is considered a strategy of financial risk management that facilitates private sector investment in nature.

1. Insurance Products
2. Financial Guarantees
3. Pay for Success
4. Blended Finance

1. Insurance Products

Insurance products are financial mechanisms that are used to manage risks for governments, companies, households and individuals. The Association of British Insurers describes insurance as “a financial product sold by insurance companies to safeguard you and/or your property against the risk of loss, damage or theft (such as flooding, burglary, or an accident). The company pools clients' risks to make payments more affordable for the insured, with each member paying regular premiums to the insurer. If a customer, or a holder of an insurance product, makes a claim for lost, damaged or stolen goods, the insurer will pay out for that loss that is covered under the specific policy” (ABI, accessed December 18th, 2019). Insurance for conservation has many possible benefits that can be divided into two large categories: 1) insurance on environmental damages caused by natural or human activity and 2) aligning incentives through reduced insurance premiums based on investing in or maintaining natural infrastructure that decreases risk of loss. The former has been implemented in Quintana Roo, Mexico, for reef restoration following storm damage, and the latter has a good example in South Africa for decreases in home insurance premiums following the eradication of invasive alien plants that pose elevated fire hazards. Forest carbon offset projects are also known to purchase insurance to mitigate against forest fires and insect damage risk.

2. Pay for Success

The concept of “pay for success” solutions is that private companies or NGOs take on the risk of implementing projects or programs that seek to achieve quantifiable public benefits (i.e. a reduction of a certain percentage of poaching) under an established agreement with government or donors to pay for the cost of services, plus some profit margin, once the activities have been measured to be successful. This allows the government to decrease its own risk when exploring new approaches while promoting innovation, efficiency and effectiveness of programs. For the private sector, or NGOs, the system allows private finance to flow into public projects and be rewarded for program success. This approach is also called “pay for performance” or “impact bonds.” The original development of the pay for success model was called a social impact bond and was piloted for anti-recidivism programs in the UK. A good example in the nature space has been implemented by Quantified Ventures in their Wetlands Environmental Impact Bond (EIB) in Louisiana, USA. The EIB allows private capital to address erosion issues rapidly and private investors receive a return on their investment following successful implementation.

3. Blended Finance

Blended Finance is defined by Convergence as “the use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development.” (Convergence). They note that blended finance strategies have mobilized approximately $140 billion

to-date based on their data. The concept of blended finance includes situations where multiple finance mechanisms with different risk/return profiles are combined in a single project or investment deal so that returns to certain investors are enhanced relative to risk - while donors with lower needs for financial returns can accept higher risk and lower returns. Combining different instruments - for example, a grant, a financial guarantee, concessionary or subordinated public debt, discounted lending or return rates, and private investment - allows for a wider range of finance sources to participate in a program or company's financing. For more information see Convergence.

One useful element of many blended finance solutions are financial guarantees. Financial guarantees are finance mechanisms that reduce the risk of providing loans and encourage greater experimentation in lending. For example, loan guarantees are described as having the "objective [of] induc[ing] lenders to extend loans to individuals and firms they would otherwise not accept as loan clients" (Vogel and Adams, 1996). Financial guarantees have been useful for experimental new funds for nature such as Althelia (Mirova) and others who have been able to decrease the risk of non-repayment to investors in the fund through a loan guarantee program. As an example, Mirova's $100 million Sustainable Ocean Fund is supported by USAID which will provide up to $50 million in principal protection in the event of a loss of investment.

Another example of a blended finance approach can be seen in the debt conversion that was orchestrated to help fund marine conservation in the Republic of Seychelles. In this case, the Nature Conservancy combined a loan and grants (provided in part by philanthropic foundations) in order to buy back debt held by the Paris Club.

G. Financial Efficiency

Financial efficiency includes a series of strategies and mechanisms that produce enhanced conservation results (or sustainable development) relative to cost. They can be efficiency gains through operational, fiscal, or social mechanisms yet they are all designed to improve the impact-to-cost ratio. This is a crosscutting series of mechanisms that can be applied in many organizations, projects, programs, and other situations. Financial efficiency strategies can be implemented in combination with almost all other mechanisms described in this taxonomy.

1. Management Effectiveness
2. Public Private Partnerships
3. Integrated Accounting
4. Mainstreaming Biodiversity in Development

1. Management Effectiveness

Management effectiveness can be defined as strategies and mechanisms that improve the outcome of management activities through seeking more effective measures, activities, and operations relative to the available budget. Increasing performance relative to expenses can have the same impact as increasing revenue in terms of conservation outcomes. Some examples of cost effectiveness measures include improved human resources management, technology upgrades and maintenance, improved strategic planning, etc. Enormous financial efficiency and effectiveness gains can be achieved through improved public procurement efforts. Governments outsource many activities and

investments and through approaches such as green procurement and generally improved oversight of outsourcing, large costs savings and improvement in efficiency can be achieved. One example of an in-depth analysis on cost effective conservation was a cost-benefit analysis performed for soil and water conservation measures in Tanzania (Tenge et al. 2005).

2. Public Private Partnerships

Public private partnerships (PPP, 3P, or P3) are described by the World Bank Group as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance" (World Bank Group, Accessed January 10th, 2020). In conservation finance, PPPs have been used for improving the efficiency of protected areas management, commercial concessions in protected areas and other sites of interest, watershed management, and a range of other activities. The difference between PPP and pay for service mechanisms is that PPPs are usually established as long term mechanisms whereas pay for success is usually a one-time offering (that can be repeated).

One successful example of a PPP is California's Marine Life Protection Act (MLPA) which led to the effective redesign of the state's marine protected area network. State environmental agencies signed a Memorandum of Understanding (MOU) with a private non-profit foundation that outlined specific roles for each organization (Fox et al. 2013, Kirlin et al. 2013). The role of the private foundation (the Resources Legacy Fund Foundation) was primarily to raise charitable funding for the network, as well as provide support staff and facilitate stakeholder input in the planning process. Their efforts raised $19.5 million in donations which was combined with $18.5 million in public funds (Living Oceans Canada, 2014). Another important example for conservation is African Parks – an organization that has taken on the management and financial costs for a range of protected areas in Africa.

3. Integrated Accounting

Integrated accounting and integrated reporting (IR) seek to better integrate all forms of capital (financial, manufactured, social, human, natural) into financial reports for companies and for governments. Natural capital accounting and reporting can offer essential insights into a company's risks and opportunities (see Natural Capital Coalition). Integration of natural capital (and other capitals) into governments' "system of national accounts" - the same systems that tracks GDP and other economic indicators - provides government decision makers with a more complete picture of a country's assets and resource flows. A recently published article in Science tracked the progress of natural capital accounting efforts in countries around the world. Natural capital accounting is becoming increasingly relevant as nature-based solutions are further explored as effective tools for sustainable development.

The Natural Capital Project at Stanford University is a highly valuable source of information on natural capital that works together with decision makers looking to invest in nature based solutions and also provides publicly accessible tools for natural capital accounting and valuation.

4. Mainstreaming Biodiversity in Development

Mainstreaming biodiversity in development is a broad category of strategies that supports the alignment of diverse interests towards multiple sustainable development objectives. The division of various initiatives into sectoral silos of separate priorities, institutions, and programs results in high levels of inefficiency in government budgeting, development finance and many other aspects of development. Strategies that improve alignment of diverse actors in the environment and development space can lead to large cost savings and greater efficiency of spending. Some examples for conservation include prioritizing nature based solutions to climate change, integrating watershed management with urban development, and integrated planning for SDG targets at the national level. Development of government policies that require biodiversity to be protected or compensated are also examples of such mainstreaming (see compensation and offsets).

One of the best documented cases of effectively mainstreaming biodiversity is the Working for Water program in South Africa. This project was initiated in response to harmful impacts of invasive plants on water resources and related ecosystems. It worked to mainstream considerations of invasive species into national strategies, policies, and legislation, as well as with local governments and stakeholders. The initiative resulted in tens of thousands of jobs being created to address invasive plants, and millions of hectares of invasive plants being removed (Redford et al., 2015).

Glossary

Biodiversity Finance - The CBD's definition of biological diversity (or biodiversity) is "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (Article 2 Convention on Biological Diversity). As such, conservation finance and biodiversity finance are used interchangeably and can be considered alternative names for the same concept.

Climate Finance – a subgroup of green finance, which overlaps with conservation finance. Climate finance follows similar principles to conservation finance but focuses on impacts and risks relevant to climate change. Climate change has been identified as one of the greatest threats to nature and biodiversity, and thus climate finance is a major, and growing, source of support for nature conservation. While it is not included separately, many of the financial mechanisms embedded within our taxonomy (e.g. green bonds, carbon offsets) frequently serve as forms of climate finance.

Conservation – The use of the term "conservation" seeks to include a broad concept under what can be considered "nature conservation." Nature conservation as defined by the IUCN is: "the protection, care, management and maintenance of ecosystems, habitats, wildlife species and populations, within or outside of their natural environments, in order to safeguard the natural conditions for their long-term permanence. (IUCN). This definition of nature conservation encapsulates the three objectives of the CBD – "the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources."

Finance Instruments – Finance instruments are defined by BIOFIN as tools used to mobilize, collect, manage and disburse funding and we use this term interchangeably with "tools", "mechanisms", "measures", etc. BIOFIN made a distinction between "instruments" and "solutions" (defined above) and in parallel, there is a general distinction between "mechanisms" and "strategies" in that there can be multiple instruments (and mechanisms) in a solution (or strategy).

Finance Solution — BIOFIN (UNDP 2016, 2018, Arlaud et al. 2018) defined a Finance Solution as an integrated approach to solve a specific problem or challenge by the context-specific use of finance and economic instruments. Specifically, a finance solution is characterized and described by:

- Finance Source - sources of finance the solution relies upon.
- Intermediary - lead agent or intermediaries tasked to manage the operationalization of the solution.
- Beneficiaries - or principal stakeholders that either receive the financing or are the targets of the instrument.
- Instruments - used to mobilize, collect, manage and disburse the funding. They can be strictly financial instruments like bonds or equities, or fiscal and regulatory reforms.
- Results or Outcomes - the desired biodiversity finance outcomes the solution aims to achieve.

Funding Sources – Most relevant or immediate source of financial capital for a finance solution or instrument. The following list provides some categories of funding sources:

- Federal Government
- State Government
- Local Government
- Private Company or Project Developer
- National/Local Non-Government Organization (NGO)
- International NGO
- National Financial Institutions
- International Financial Institutions
- Private Institutional Investors
- Private Foundations
- Bilateral Donor
- Multilateral Donor
- Other Donor
- Community Based Organizations
- Households.

Finance vs. Funding – The term "finance" can be used as both a noun – as in the finance industry – and as a verb – such as, "to finance a project." The term "funding" although similar in that it can be both noun and verb, tends to refer mostly to the flow of capital to projects or programs rather than private investments. For example, an NGO is more likely to seek "funding" rather than "finance" and an investment bank will provide finance rather than funding to a company.

Green Finance - Green finance is a broader category under which conservation finance is one element. According to Bloomberg, Green finance is now $31 trillion US and growing[6] but the definition used is not clear. Green finance can be defined as follows.[7]

- "Green finance comprises:
    - The financing of public and private green investments (including preparatory and capital costs) in the following areas:
        - Environmental goods and services* (such as water management or protection of biodiversity and landscapes)
        - Prevention, minimization and compensation of damages to the environment and to the climate (such as energy efficiency or dams)
    - The financing of public policies (including operational costs) that encourage the implementation of environmental and environmental-damage mitigation or adaptation projects and initiatives (for example feed-in-tariffs for renewable energies)
    - Components of the financial system that deal specifically with green investments, such as the Green Climate Fund or financial instruments for green investments (e.g. green bonds and structured green funds), including their specific legal, economic and institutional framework conditions."

[6] https://www.bloomberg.com/graphics/2019-green-finance/
[7] Definition of Green Finance Dr. Nannette Lindenberg, April 2014, https://www.cbd.int/financial/gcf/definition-greenfinance.pdf

Protected Area Finance - Protected area finance is a subset of conservation finance that addresses finance instruments and solutions that are especially relevant for the finance and management of all types of protected areas as defined by the IUCN.

Resource Mobilization (CBD) - The CBD term “resource mobilization” is also associated with conservation finance and although, by name it is focused on the “generate revenue” outcome of the four BIOFIN results listed above, there are clear indications of a broader interpretation going forward.

References

ABI, How insurance works. Accessed December 18th, 2019. https://www.abi.org.uk/data-and-resources/tools-and-resources/how-insurance-works/

Arlaud M, Cumming T, Dickie I, Flores M, van den Heuvel O, Meyers D, Riva M, Seidl A, and Trinidad A. (2018) The biodiversity finance initiative: An approach to identify and implement biodiversity-centered finance solutions for sustainable development, Chapter in *Towards a Sustainable Bioeconomy: Principles, Challenges and Perspectives*. World Sustainability Series, Publisher: Springer. pp: 77-98

Appolloni, L., Sandulli, R., Vetrano, G., Russo, G., (2018) A new approach to assess marine opportunity costs and monetary values-in-use for spatial planning and conservation; the case study of Gulf of Naples, Mediterranean Sea, Italy. Ocean and Coastal Management, 152, 135-144.

Balmford, A., Gaston, J., Blyth, S., Simon, A. and V. Kapos (2003) Global Variation in Terrestrial Conservation Costs, Conservation Benefits, and Unmet Conservation Needs. PNAS 100(3) : 1046-50.

Bank for International Settlements, (2014). Trade finance: developments and issues. Committee on the Global Financial System, ISBN 92-9197-309-2 https://www.bis.org/publ/cgfs50.pdf

Bennett, N., Whitty, T.S., Finkbeiner, E., Pittman, J., Bassett, H., Gelcich, S., Allison, E.H., (2018) Environmental Stewardship: A Conceptual Review and Analytical Framework. *Environmental Management*. 61:4, 597-614. https://link.springer.com/article/10.1007/s00267-017-0993-2

Berghöfer, A., Emerton, L., Moreno, A., Rode, J., Schröter-Schlaack, C., Witmer, H. and H. van Zyl (2016) Enhancing the financial sustainability of biodiversity conservation: Conclusions from a review of experience in German development cooperation. Discussion Brief, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Bonn and Eschborn.

BIOFIN, BIOFIN Catalogue of Finance Solutions. UNDP. Accessed January 10th, 2020. https://www.biodiversityfinance.net/finance-solutions

Bohorquez, J.J., Dvarskas, A., Pikitch, E.K. (2019) Filling the data gap – A pressing need for advancing MPA sustainable finance. Frontiers in Marine Science, 6:45. doi: 10.3389/fmars.2019.00045

Brander, L. (2015) The Benefits to People of Expanding Marine Protected Areas. University of Amsterdam – IVM Institute for Environmental Studies

Bruner, A., Gullison, R. and A. Balmford (2004) Financial Costs and Shortfalls of Managing and Expanding Protected-Area Systems in Developing Countries. BioScience 54(12): 1119-1126.

Business Dictionary, definition of 'business incubator', Accessed November 16th, 2020. http://www.businessdictionary.com/definition/business-incubator.html

CBD (2014). Resourcing the Aichi Biodiversity Targets: An Assessment of Benefits, Investments and Resource needs for Implementing the Strategic Plan for Biodiversity 2011-2020. Second Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020. Secretariat of the Convention on Biological Diversity, United Nations Environment Programme (UNEP), Montreal.

CFA (2008) Business Planning for Protected Areas. Conservation Finance Alliance.

Clark, S. (2007) A Field Guide to Conservation Finance. Island Press, Washington DC. https://books.google.com/books?id=dpOuZK_Q3DEC&printsec=frontcover#v=onepage&q&f=false

Coad, L., Watson, J., Geldmann, J., Burgess, N., Leverington, F., Hockings, M., Knights, K., Marco, M.D., (2019) Widespread shortfalls in protected area resourcing undermine efforts to conserve biodiversity. Frontiers in Ecology and the Environment, 17:5, 259-264. doi:10.1002/fee.2042

Conservation International, CI Ventures, LLC, Accessed January 10th, 2020. https://www.conservation.org/projects/conservation-international-ventures-llc

Cooper, G., and Trémolet, S., (2019). Investing in Nature: Private Finance for Nature-based Resilience. The Nature Conservancy and Environmental Finance. London, United Kingdom.

Costanza, R., d'Arge, R., de Groot, R., et al. (1997) The value of the world's ecosystem services and natural capital. Nature, 387, 253-260.

Conservation Finance 101. *Conservation Finance Network.* December 28, 2015. https://www.conservationfinancenetwork.org/conservation-finance-101

Constanza, R., de Groot, R., Sutton, R., (2014) Changes in the global value of ecosystem services. Global Environmental Change, 26, 152-158.

Credit Suisse (2014) - Conservation Finance: Moving beyond donor funding toward an investor-driven approach, WWF and Credit Suisse Group AG and/or its affiliates, and McKinsey & Company. https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/environment/conservation-finance-en.pdf

Credit Suisse, (2016). Levering ecosystems: A business-focused perspective on how debt supports investments in ecosystem services. Credit Suisse Climate Bonds Initiative. https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/banking/levering-ecosystems.pdf

Deloitte, (2017), Private Equity Demystified: The fundamentals of private equity deal structuring. https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/Finance/Corporate%20Finance/IE_CF_PrivateEquity_0217_draft2.pdf

Emerton, L. (2003) Building a secure financial future for Asia's protected areas. International Union for the Conservation of Nature (IUCN), Bangkok.

Emerton, L., Bishop, J. and l. Thomas (2006) Sustainable Financing of Protected Areas: A Global Review of Challenges and Options. World Commission on Protected Areas Best Practice Protected Area Guidelines Series No. 13, International Union for the Conservation of Nature (IUCN), Gland.

Emerton, L., Tizard, R. and Saw Htun (2018) Developing Protected Area Conservation Investment Plans: quick reference guide & workbook. Wildlife Conservation Society (WCS), Yangon.

Eurosif, (2018), European SRI Study (2018) European Sustainable Investment Forum, Brussels, http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf

Ferraro, P. and S. Pattanayak (2006) Money for Nothing? A Call for Empirical Evaluation of Biodiversity Conservation Investments. PLoS Biology 4(4): 482-488.

Flores, M., Rivero, G., León, F., Chan, G., et al., (2008) Financial Planning for National Systems of Protected Areas: Guidelines and Early Lessons. The Nature Conservancy (TNC), Arlington.

Forcella, D. and G. Lucheschi (2016) "Microfinance and ecosystems conservation How green microfinance interacts with Socio- Ecological systems Lessons from Proyecto CAMBio in Nicaragua and Guatemala," Working Papers CEB 16-008, ULB -- Universite Libre de Bruxelles. https://ideas.repec.org/p/sol/wpaper/2013-224879.html

Fox, E., Miller-Henson, M., Ugoretz, J., Weber, M., Gleason, M., Kirlin, J., Caldwell, M., Mastrup, S., (2013) Enabling conditions to support marine protected area network planning: California's Marine Life Protection Act Initiative as a case study. Ocean & Coastal Management, 74: 14-23.

Gill, D.A., Mascia, M.B., Ahmadia, G.N., et al. (2017) Capacity shortfalls hinder the performance of marine protected areas globally. Nature, 543:7647, 665-669.

GIZ (2018) towards a strategic approach to the diagnosis, response & delivery of sustainable biodiversity financing solutions. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Bonn.

Global Sustainable Investment Alliance, (2018) 2018 Global Sustainable Investment Review, http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf

Glossary of Environment Statistics (1997) Studies in Methods, Series F., No. 67, United Nations, New York. As quoted in OECD, Economic Instruments, Accessed January 10th, 2020. https://stats.oecd.org/glossary/detail.asp?ID=723

Gutman, P. and S. Davidson (2007) Review of innovative international financial mechanisms for biodiversity conservation. Macroeconomics Program Office, World Wide Fund for Nature (WWF), Washington DC.

Hamrick, K., (2016) State of Private Investment in Conservation 2016: A Landscape Assessment of an Emerging Market. Forest Trends. https://www.forest-trends.org/publications/state-of-private-investment-in-conservation-2016/

Illes, A., Kettunen, M., ten Brink, P., Santos, R., Droste, N. and I. Ring (2017) Exploring the policy mix for biodiversity financing: opportunities provided by environmental fiscal instruments in the EU. In Weishaar, S., Kreiser, L., Milne, J., Ashiabor, H. and M. Mehlin (eds.) The Green Market Transition: Carbon Taxes, Energy Subsidies and Smart Instrument Mixes. Critical Issues in Environmental Taxation series, Edward Elgar.

IMF (2019) Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates, IMF Working Paper, David Coady, Ian Parry, Nghia-Piotr Le, and Baoping Shang

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

Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. *World Meteorological Organization, Geneva, Switzerland, 32 pp.*

IPBES (2019) Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany. 56 pages.

James, A., Green, J. and J. Paine (1996) Financial indicators for biodiversity assessment: In Situ Conservation Investments. Paper presented at IUCN workshop on Investing in Biodiversity Buenos Aires, Argentina.

Kettunen, M., Illes, A., Rayment, M., Primmer, E., Verstraeten, Y., Rekola, A., Ring, I., Tucker, G., Baldock, D., Droste, N., Santos, R., Rantala, S., Ebrahim, N. and P. ten Brink (2017) Integration approach to EU biodiversity financing: evaluation of results and analysis of options for the future. Report to the European Commission (DG ENV) by Institute for European Policy (IEEP), Brussels and London.

Kirlin, J., Caldwell M., Gleason, M., Weber, M., Ugoretz, J., Fox, E., Miller Henson, M., (2013) California's Marine Life Protection Act Initiative: Supporting implementation of legislation establishing a statewide network of marine protected areas. Ocean & Coastal Management 74: 3-13.

Landreau, B. (2012) Guidebook for the Development of Simplified Business Plans for Protected Areas. Agence française de développement (AFD), Fonds Français pour l'Environnement Mondial (FFEM) and Fonds International du Banc d'Arguin (FIBA), Dakar.

Lapham, N. and R. Livermore (2003) Striking a Balance: Ensuring Conservation's Place on the International Biodiversity Assistance Agenda. Center for Applied Biodiversity Science & Center for Conservation and Government, Conservation International, Washington DC.

Lexico, Definition of peer-to-peer lending. Accessed January 10th, 2020. https://www.lexico.com/en/definition/peer-to-peer_lending

Lexico, Definition of remittance. Accessed January 10th, 2020. https://www.lexico.com/en/definition/remittance

Living Oceans Canada (2014) Sustainable Financing Options for a Marine Protected Area Network in British Columbia, https://www.livingoceans.org/sites/default/files/sustainable-financing-options.pdf

McCarthy, D., Donald, P., Scharlemann, J., Buchanan, G., Balmford, A., Green, J., Bennun, L., Burgess, N., Fishpool, L., Garnett, S., Leonard, D., Maloney, R., Morling, P., Schaefer, H., Symes, A., Wiedenfeld, D. and S. Butchart (2013) Financial Costs of Meeting Global Biodiversity Conservation Targets: Current Spending and Unmet Needs. Science 338: 946-949.

McFarland B.J. (2018) The Origins and History of Conservation Finance. In: Conservation of Tropical Rainforests. Palgrave Studies in Environmental Policy and Regulation. Palgrave Macmillan, Cham.

McNeely, J. (1999) Achieving financial sustainability in biodiversity conservation programmes. A framework paper prepared for presentation at an InterAmerican Development Bank Workshop on Investing in Biodiversity Conservation, Washington DC.

Mirriam-Webster, Definition of 'investment'. Accessed January 10th, 2020. https://www.merriam-webster.com/dictionary/investment

New York Declaration on Forests (2018) Forests & Finance Shifting Private Sector Finance to Accelerate Forest Action, New York Declaration on Forests. https://nydfglobalplatform.org/wp-content/uploads/2018/10/NYDF-Forests-and-Finance-Report.pdf

OECD (2019) Biodiversity: Finance and the Economic and Business Case for Action, report prepared for the G7 Environment Ministers' Meeting, 5-6 May 2019. Organisation for Economic Cooperation and Development (OECD), Paris.

OECD, Database on Policy instruments for the Environment (PINE). Accessed January 10th, 2020, https://pinedatabase.oecd.org/

Parker, C., Cranford, M., Oakes, N. and M. Leggett (2012) The Little Biodiversity Finance Book. Global Canopy Programme, Oxford.

Redford, K.H., Huntley, B.J., Roe, D., Hammond, T., Zimsky, M., Lovejoy, T.E., da Fonseca, G.A.B., Rodriguez, C.M., Cowling, R.M., (2015) Mainstreaming Biodiversity: Conservation for the Twenty-First Century. Frontiers in Ecology and Evolution. https://doi.org/10.3389/fevo.2015.00137

Ring, I. and C. Schröter-Schlaack (2011) Instrument Mixes for Biodiversity Policies. POLICYMIX Report, Issue No. 2/2011, Helmholtz Centre for Environmental Research (UFZ), Leipzig.

Ring, I. and D. Barton (2015) Economic instruments in policy mixes for biodiversity conservation and ecosystem governance. In Martínez-Alier, J. and R. Muradian (eds) Handbook of Ecological Economics. Edward Edgar, Cheltenham.

Spergel, Barry and Melissa Moye. (2004) Financing Marine Conservation: a menu of options. Washington, D.C.: WWF Center for Conservation Finance.

Stephenson, J., Williams, J., Iley, R., Labelle, M. and Y. Ranasinghe (2018) Conservation Investment Blueprints: A Development Guide. PricewaterhouseCoopers LLP for Coalition for Private Investment in Conservation (CPIC).

Sumaila, U.R., Ebrahim, N., Schuhbauer, A., Skerritt, D., Li, Y., Kim, H.S., Mallory, T.G., Lam, V.W.L., and Pauly, D. (2019). Updated estimates and analysis of global fisheries subsidies. *Marine Policy,* 109 (2019) 103695

Sumaila, U.R., Lam, V., Le Manach, F., Swartz, W., Pauly, D., (2016) Global fisheries subsidies: An updated estimate. Marine Policy, 69, 189-193.

TNC (2013) Conservation business planning guidance. The Nature Conservancy (TNC), Arlington.

UNDP-UNEP (2015) Mainstreaming Environment and Climate for Poverty Reduction and Sustainable Development: A Handbook to Strengthen Planning and Budgeting Processes www.unpei.org. Second edition.

UNDP (2018) The BIOFIN Workbook 2018: Finance for Nature. The Biodiversity Finance Initiative, United Nations Development Programme, New York. https://www.biodiversityfinance.net/knowledge-product/biofin-2018-workbook

United Nations (1997) Glossary of Environment Statistics, https://unstats.un.org/unsd/publication/SeriesF/SeriesF_67E.pdf

USSIF, SRI Basics, Accessed January 10th, 2020. https://www.ussif.org/sribasics

Vogel, R.C., Adams, D.W., (1996) The Benefits and Costs of Loan Guarantee Programs. The Financier (1997), Vol. 4, No. 1 & 2, pg. 22-29. https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-the-benefits-and-costs-of-loan-guarantee-programs-1996.pdf

Waldron, A. Mooers, A., Miller, D., Nibbelink, N., Redding, D., Kuhn, T., Roberts and J. Gittleman (2013) Targeting global conservation funding to limit immediate biodiversity declines. PNAS 110(29): 12144-12148.

World Bank Group, What are Public Private Partnerships? Public-Private-Partnership Legal Resource Center. Accessed January 10th, 2020. https://ppp.worldbank.org/public-private-partnership/overview/what-are-public-private-partnerships

World Bank Group, (2015). Microfinance: A Critical Literature Survey. Washington, DC. Accessed December 18th, 2019. Pg. 3 https://ieg.worldbankgroup.org/sites/default/files/Data/reports/Microfinance_-_Critical_Lit_Review_w.cover_.pdf

WWF (2009) Guide to Conservation Finance: Sustainable Financing for the Planet. http://awsassets.panda.org/downloads/wwf_guide_to_conservation_finance.pdf