

Conservation Investment Blueprint: Environmental Impact Bond for Green Infrastructure

With Environmental Outcome Based Incentives

***Developed based on the Case Study for Watershed Protection by Quantified Ventures
and on the Case Study for Coastal Resilience by Environmental Defense Fund***

i. Overview of the conservation need and opportunity

Environmental Impact Bonds (EIBs) can serve a host of project-based conservation efforts. With financial returns tied to environmental outcomes, impact investors can share the risk and reward of conservation investments in new and innovative ways.

Scale and scope of activities required to address conservation need/opportunity

Performance-based EIBs are replicable across the conservation space. They are scalable from the local community level to the landscape scale conservation.

ii. Describing how the Blueprint contributes to conservation goals

Contributions to Conservation Goal

Environmental Impact Bonds contribute to any conservation goal by providing up-front capital to start and complete a project.

Key Metrics

With an EIB, the return to investors is linked to the achievement of one or more pre-defined outcome metrics. Stakeholders in each transaction will identify outcomes that are meaningful to them, as well as thresholds for the achievement of those outcomes that would trigger a “performance payment” (also sometimes called an “outcome payment”). These project-specific metrics, or outcomes, reflect the project’s environmental, social, and/or governance (ESG) objectives and desired outcome, and allow outcome funders (also called “payors”) to pay for outcomes, not process. Proxy outcomes metrics can be used where intended outcomes are difficult to directly or inexpensively observe. For example, for wetland restoration, an outcome-based measure could be increased commercial fish spawning; placement of 1 million cubic yards of sediment to create a wetland is an indicator of a process or activity.

Transaction stakeholders involved in designing the transaction will chose the appropriate environmental (or other outcome) as well as the performance threshold that would trigger a performance payment, whether that performance payment is a success payment shared with investors or a risk share payment (a “claw back” or means of recouping costs from investors).

Depending on the project, guidelines for specific key metrics may be found in the IRIS tool provided by the Global Impact Investing Network (<https://iris.thegiin.org>).

A CPIC-branded investment blueprint needs to demonstrate clear and measurable impacts on biodiversity conservation. This can happen through interventions that are designed to ameliorate threats to biodiversity, at the species or ecosystem level. Influence over the delivery of ecosystem flows that benefit people is also desirable.

Threats to biodiversity can be assessed at a spatial scale using the Integrated Biodiversity Assessment Tool (<https://ibat-alliance.org>). The first step is to assess what biodiversity assets exist in proximity to project sites using the proximity tool of IBAT. Once threatened species, Key Biodiversity Areas and protected areas in the vicinity of the site are identified, then each of these have listings of threats to biodiversity that can be influenced by the investment opportunity. An example would be the reduction in pollution of biodiversity-rich rivers from investments in reforestation.

A clear statement of the planned reduction in threats to biodiversity that will be generated by the investment is necessary to justify priority status as a CPIC blueprint. In the first stage of project development, a simple assessment of the project proximity to biodiversity asset and the link between the impacts of investment and the reduction of threats is sufficient. Once investment activity is confirmed, a more detailed assessment of potential return on investment for biodiversity is required. A module to calculate this is under development for IBAT. This biodiversity return on investment can be calculated ex-ante, as a means of assessing opportunities for impact, and ex-post, once the investment is confirmed and management starts.

A first assessment of the impacts of the investment on ecosystem services to people can be made through the use of the TESSA tool (<http://tessa.tools>). A more detailed assessment of the tools available for conservation assessments, forest landscape restoration planning landscape assessment generally, and biodiversity management is available in the Conservation Investment Blueprints: A Development Guide available on the CPIC website (<http://cpicfinance.com/related-reports>).

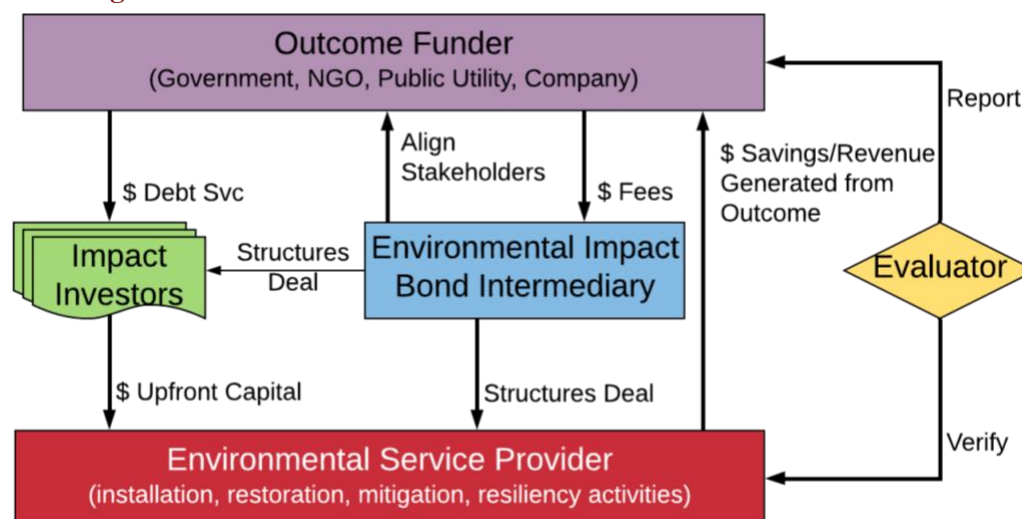
iii. The business model

An EIB is a form of debt financing in which part of the return to investors is dependent on the achievement of desired outcomes of the projects that are financed. An EIB can take the form of a bond, or it can be another debt instrument (such as a note or loan) with a variable return. Return to the investor will generally include principal, interest (or coupon), and a possible performance payment. The level of the performance payment may be fixed (i.e., triggered by achieving a threshold on the outcome metrics) or variable (i.e., depending on the level of impact achieved). There are generally two types of performance payments: a “success payment” that is shared with investors and possibly other stakeholders if projects are successful or hit certain thresholds, or a “risk share payment” that is paid from investors to the issuer if the project fails to achieve outcomes. This risk share payment can also be called a “claw back.”

In addition to the performance payment, the EIB includes interest or a coupon that is payable independent of the achievement of the outcome metric, as with a normal bond/loan.

Generally, an intermediary designs and structures the deal, determining transaction structure, the appropriate outcome metrics to tie to investor repayment, size of these “performance payments,” thresholds for outcomes that trigger performance payments, and how various transaction stakeholders (e.g., investors, outcome funders, service providers) can be adequately compensated and incentivized to participate in the transaction. An independent, third-party evaluator, or validator, is engaged to determine whether performance payments should be triggered.

Organisation and governance



Delivery capacity required, relevant stakeholders identified

Outcome Funder: Any entity that needs to address an environmental or conservation need and issues the Environmental Impact Bond.

Environmental Service Provider: The party(ies) in charge of construction, operations, product/service delivery.

Evaluator: An independent third-party that performs environmental monitoring and evaluation of the project’s outcome(s) that trigger payments.

Environmental Impact Bond Intermediary: Coordinate the deal and align all the stakeholders. Structures the performance-based incentives as contingency payments within the EIB.

Impact Investors: Financial institutions, banks, groups, or individuals that provide capital to address the conservation need based on environmental, social, and governance outcomes.

Additionally an EIB may also have a **Payor-Partner** drawn from parties that receive a benefit from one or more ecosystem services being maintained by or otherwise resulting from the project and is willing to participate in some aspect of the transaction (e.g., payment of the performance payment, some portion of interest or principal).

Products and services being sold

A conservation or environmental project needing up front money to accelerate its completion.

Revenue Model

The source of repayment depends upon the project and issuer. An EIB can be issued based on projected revenues, avoided costs, or on the full faith and credit of the issuing entity. It could also draw upon repayment from multiple outcome funders.

EIBs can target projects that generate avoided costs in the future – reduced costs of green vs. gray solutions, avoided regulatory enforcement or punishment for non-compliance, reduced losses in the event of a significant storm event, etc. The project’s capacity to avoid costs will make the EIB more attractive to the issuer and any other potential participants in the transaction. The value of the intervention – which could be restoration or protection of an ecosystem service -- should be able to be monetized.

Still, it is possible that the result of the project can be of non-financial nature (e.g., recovery of a desired habitat type) if the outcome funder, i.e., the issuer or partner-payor, is willing to attach a value to that and remunerate investors for contributing to it.

Additionally, some transactions might include the involvement of a guarantor (e.g., a philanthropic entity) that agrees to cover some portion of costs such as if a performance payment is triggered, though this involvement is not required and may limit the scalability of this model.

Cash flows and commercial sustainability

The intermediary aligns all the stakeholders. Investors then provide the upfront capital for projects or for engaging the services of a Service Provider. The outcome funder could be any of the stakeholders who are trying to address the conservation or other environmental goal. Repayment of the bond depends on the transaction model.

Benefits to Outcome Funder: Investment in outcomes rather than process, incentivizing all parties toward a successful outcome. Ability to pilot or scale a new environmental project and monitor how well it performs in order to inform future investments. Possibility of achieving environmental outcomes sooner and generating cost savings or new revenue. Transfer of some performance risk to investors.

Benefits to Environmental Service Provider: Fees for services rendered; possible share of performance payment in the event of superior performance.

Benefits to Intermediaries: Fees for services rendered.

Benefits to Investors: Monitoring of impact of investments in a transparent fashion. Incentivizing outcomes better ensures environmental, social, and governance goals are met.

Benefits to Society: EIBs are designed to result in better use of public funds, where the outcome funder is a public entity. EIBs can also yield improved environmental outcomes for health, community economic development and job creation, lower rate-payor fees on utilities (in absolute terms or relative to a trajectory of increasing fees due to projected increases in environmental risks or costs), increased property values or prevented loss of property value (associated with growing environmental risk), and resiliency to climate

change. These benefits may be difficult to measure and attribute to the project, and therefore may not be chosen as the primary outcome to which the performance payment is tied.

External dependencies	
Regulation	<p>A regulatory driver can incentivize action to be taken to address an environmental issue. Regulations can also help ease these types of structures to create investment opportunity. A regulatory driver is not necessary (see Louisiana coastal restoration EIB case study).</p> <p>General regulation of debt instruments may be a factor as some countries do not allow any foreign entity to lend to a local entity.</p> <p>Enforceability of legal documentation should be considered. Understanding the law applicable to contracts where investors and issuers/borrower exist in different jurisdictions.</p> <p>Tax regulation needs to be considered (for example, whether performance payments made by a partner-payor are tax-deductible).</p>
Risk Assessments	<p>Project operation and environmental risk assessment from technical advisors and financial intermediaries can impact investor assessment of relative risk of the project. This helps establish the investor’s confidence in the likelihood of the performance threshold being met, the affordability of the project, and/or its timetable. The base credit worthiness of the issuer also needs to be established.</p>
Environmental Service Provider Expertise	<p>Access to qualified providers of environmental services of conservation goal.</p>

Risk management	
Risk	Mitigation Strategy
Performance Risk of Environmental Outcomes	<p>The economic outcomes incentives allow impact investors to share the risk involved.</p> <p>Defining the right goals can provide risk management by scientific based consultancy and local expertise. This means that successful projects will likely focus on areas where there is a good scientific basis for the proposed action.</p>
Performance Risk of Social and Governance Outcomes	<p>Transparency in environmental service provider selection and employee hiring process with established qualifications on local firms and with local employees. Addressing standard metrics for reporting and auditing of the project.</p>
Regulatory Risk	<p>If a regulatory incentive triggered the need to address the environmental condition and transaction, then if regulations change, it could roll back the driving force for political will to incur the debt. Other relevant risks could include appropriations risk and changing political priorities.</p> <p>Additional regulatory risks and risk management strategies associated with bonds and investing would also apply.</p>
Weather and Climate Change	<p>The relevance of potential weather and climate change impacts on the project and its outcomes depends on the focus of the project proposed to be funded by an EIB. Because weather and/or climate change impacts can affect some aspect of an environmental/conservation project outcome, a science-based understanding of the probability and effects of severe weather events (excessive precipitation, drought), natural disasters (e.g., wildfire and landslides), and other climate change impacts (e.g., rising seas, changes in water quality) needs to be considered in the project planning phase. For example, severe weather during the construction phase could delay</p>

Government Default Risk	<p>completion times and increase bond issuer costs. Bond issuer will typically have a force majeure clause in construction contracts to address the impacts of weather on construction. Weather insurance by the construction firm could mitigate these risks.</p> <p>This is an investor risk. Risk-rated interest based on the seniority of the bond and the rating from agencies mitigates this risk with investors. If an EIB were issued by a non-governmental body, then this risk is not relevant.</p>
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iv. The investment model

The financial instruments being sought to fund the business model
Environmental Impact Bond with Economic Outcome Incentives

The relative size of these instruments and basic information on their terms
 There is no upper or lower bound on the size of an EIB, but there is point below which the bond is not likely to be economically efficient. A transaction of \$2-3M is estimated to be a lower bound at which the associated transaction costs (structuring, measurement & evaluation) are worth it.
 The term depends on the lifecycle of the project and how long measurement will take to determine effective performance. Interest/coupon rates may be less than other risk weighted bonds from the same issuer, as impact investors will also receive outcome performance based incentives.

Investor types and the finance they provide at different stages of project maturity
Mainstream Banks and Lenders: Banks looking to offer ESG products to clients or invest in particular geographies may be interested in investing in an EIB via a private placement.
Impact Investors: In sharing the risk of the impact outcomes, impact investors will accept a range of returns from below market-to-market rate and various debt seniorities, depending on investors' goals in financial return, environmental, social, and governance outcomes. The impact investor umbrella is broad – for smaller and riskier transactions, place-based family offices and foundations could be a strong fit as an investor, whereas larger municipal or government issuances may appeal to larger institutional impact investors.
 Impact investors are willing to help meet the challenges we face today in innovative ways to address climate change, conservation, water pollution, sustainable agriculture and renewable energy.

Risk mitigation instruments used and how these were incorporated into the investment structure
 EIBs can have various performance “tiers” that define the outcome of the project; these outcomes can be used to both establish the degree to which the project is deemed successful and to share the risk associated with the project. Where there are three tiers – base-performance, under-performance, and over-performance – the issuer can recoup some costs or reduce repayment to investors in the case of underperformance. This is a way to mitigate risk for the issuer. Investors are compensated with the potential for an upside performance payment in the “over-performance” scenario. The initial DC Water EIB followed this model. (Other EIBs might have two tiers – base and over-performance – which focuses the transaction instead on incentivizing stakeholders toward a successful outcome. This is the model proposed for the Louisiana wetland restoration EIB.)
 A guarantee facility is a form of risk mitigation that could help cover performance payments or protect principal, as has occurred in the Social Impact Bond space. In this case, a philanthropy or other funder would agree to cover the performance payment for either the issuer/outcome funder or the investor, thereby reducing overall risk of the transaction to the parties involved.

The exit strategy employed

The duration of the investment depends on the transaction and issuer/investor preferences. The EIB will be repaid via principal, interest, and performance payments. Theoretically for a larger public issuance, the security could be tradable on secondary markets.

Innovative features of the investment model

The challenge in some proposed conservation finance projects is that it is difficult to quantify the financial benefits of a project. An EIB addresses that by allowing investors to earn a monetary return for a project that achieves an environmental outcome, rather than necessarily a direct financial impact. A project may lead to cost savings or additional revenue (from which the issuer repays investors), but this does not have to be the case. It's possible that the issuer or a partner-payor may attach a monetary value to a non-monetary outcome, such the protection of a certain habitat, and remunerate investors for helping to achieve that outcome.

The innovative features of this investment model derive from its outcome based-performance payment. EIBs tie investor returns to a pre-agreed, relevant, environmental outcome(s) that are verified by qualified third parties. This allows EIB allows investors to participate in the “upside” from an intervention, which should, in theory, come about from a material economic savings. The approach can also help all parties to the transaction value environmental outcomes (such as water quality or quantity, or other ecosystem service benefits) which can serve to reduce externalization of these costs and benefits in future investment decisions.

Another innovation is that the EIB model helps address the “free rider” problem in which some stakeholders receive significant benefits from projects without paying for them. The EIB model allows for the potential of multiple outcome funders – entities that benefit from the project if it is deemed to be successful, and who may be willing to contribute to the transaction (via performance payment, a portion of the interest, or principle) should a certain threshold of performance be met. The EIB model therefore can open up a new avenue for private sector beneficiaries (industries, homeowners associations, etc.) to partner with government to achieve desired environmental conditions.

Replicability and Scalability

EIB transactions are tailored to specific needs and the interests of the outcome funder, additional outcome funders (if any) and investors. While no two EIB transactions are exactly alike, once an EIB transaction of a kind (e.g., green infrastructure for storm water management or coastal wetland restoration for flood damage reduction) has been designed and transacted, it can be adapted for similar work in other locations with similar revenue streams.

For example, many municipalities facing similar combined sewer overflow needs are now considering the DC EIB water bond model. Over 850 municipalities face addressing their combines sewer overflow (CSO) under the Clean Water Act of 2004¹.

After the conceptual transaction for wetland restoration in LA was planned around a \$40M pilot which will fund only a small portion of one of many tens of thousands of wetland acres identified as needing restoration; therefore, this EIB transaction can be replicated or adapted for much larger projects and bonds. Likewise, because other areas across the Gulf Coast have similar revenue sources and needs, the Louisiana EIB model can be adapted and used across the region. Furthermore, coastal locations across the world that have revenue sources and are or will be experiencing wetland loss and/or experiencing coastal flooding may also be able to use the EIB model to fund coastal resilience work that includes natural infrastructure restoration.

Please review these transactions blueprints in the supplementary case studies.

¹ U.S. Environmental Protection Agency. “Combined Sewer Overflows (CSOs).” *US EPA*, 13 Oct. 2015, <https://www.epa.gov/npdes/combined-sewer-overflows-csos>.

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