

Research Brief

Environmental Impact Bonds: A common framework and looking ahead

RESEARCH SUMMARY

- Environmental Impact Bonds (EIBs) are an emerging financial tool with the potential to transform the environmental funding landscape
- EIBs are being implemented but not at full potential: this research lays out a common framework, defines mechanics, reviews existing EIBs, and proposes a set of future targets and research goals to advance the field and increase deployment

The Need

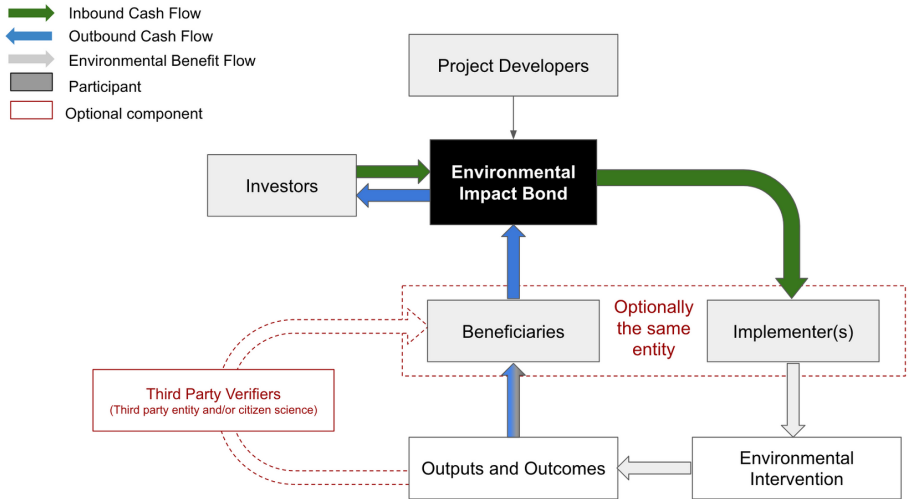
- The environmental funding gap is growing as need outpaces the current allocation of largely government and philanthropic sources
- The challenge is exacerbated by a patchwork of stakeholders with differing geographic and political objectives, complicating coordination efforts and prohibiting action
- Billions of dollars are earmarked for environmental conservation investment opportunities but undeployed due to a lack of investable opportunities

EIBs as a Solution

- Environmental Impact Bonds (EIBs) are one financing mechanism to raise capital for environmental projects where the principal and interest is repaid using financial benefits stemming from project outcomes
- EIB interest rates and repayment can be predetermined or based on pay-for-performance principles
- Aggregation of public and private entities can be facilitated by a project developer who manages the contracts and terms of repayment for each entity

How EIBs Work

1. Investors provide upfront capital to a project-specific EIB financial vehicle
2. Upfront funds are passed to the project implementer responsible for carrying out work on the ground, which can be the same entity benefitting from the project
3. As the environmental intervention leads to specific outcomes and outputs, a consortium of public and/or private entities benefitting from the project repay the cost of the project, plus interest, to the EIB, which is returned to investors



What is the potential future market size for EIBs?

EIBs will only become a significant financial instrument if the potential future market is large enough to attract institutional support and capital. This research evaluates the possible market capitalization of EIBs using contemporary estimates of conservation and environmental needs in the US for three EIB applications (estimates in billions USD):

Flood Mitigation
\$510-\$880

Wildfire Risk Reduction
\$510-\$880

Water Quality Protection
\$60

Total US potential market: \$670-\$1070 billion USD

Research Opportunities and Considerations

To enable wider EIB deployment, this work presents a set of research gaps and objectives for expanding (in need of a wider viewpoint) and refining (in need of further focus) EIBs. As the field of conservation finance continues to develop, addressing these outstanding gaps will become critical.

EIB Expansion

- Methodological assessment of how scale and standardization can reduce development costs
- Determining who will be the main investors of EIBs and what barriers/opportunities exist for institutional and retail investors
- Assessing how multiple benefits can be leveraged for EIB repayment
- Understanding the equity implications of EIBs and how to incorporate Justice, Equity, Diversity, and Inclusion principles into development

EIB Refinement

- Assessing which of the multiple possible EIB financial structures are most appropriate for various environmental project types
- Incorporating uncertainty and risk into benefit modeling and evaluation
- Investigating how different measurement methods impact likelihood of EIB success
- Understanding how model uncertainty will impact the success and acceptance of future EIBs as the field continues to grow and expand



This research brief is based on the study **Environmental Impact Bonds: A common framework and looking ahead** published in the journal ***Environmental Research: Infrastructure and Sustainability***

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