

# Results-Based Financing

Innovative financing solutions for a climate-friendly economic recovery

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CLIMATE  
POLICY  
INITIATIVE

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# EXECUTIVE SUMMARY

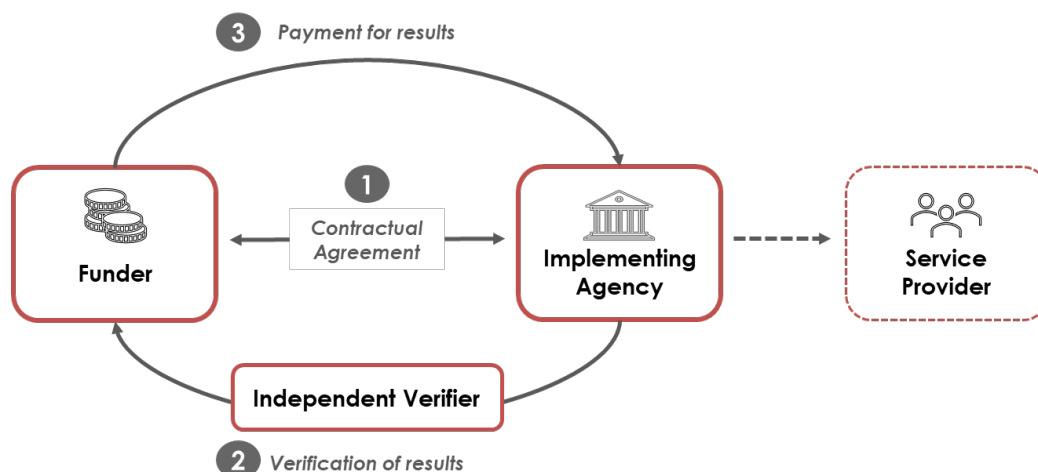
This report assesses the potential for Results-based Finance (RBF) to expand post-COVID recovery funds while improving sustainability efforts.

**By linking financial rewards to climate objectives, RBF enables innovative financing arrangements that can accelerate funding from the private sector.**

The idea that results-based finance can contribute to achieving long-term climate objectives is not new. What is novel is combining financing models, indicators linked to climate performance, and partnerships to create new investment alternatives that improve public spending and attract the private sector towards low-carbon transitioning efforts. This is especially important considering the limited funding available from the public sector, especially in emerging markets where COVID is exacerbating debt burdens.

The mechanics of an RBF arrangement center on a contractual agreement between a funder and an implementing partner. Instead of contracting delivery of individual activities, the contract specifies that payments will be made if certain outputs or outcomes are achieved, which are verified by an independent third party. This aligns the incentives from all parties in a way that maximizes efficiency. Results can take the form of simple outputs that are readily monitored – like the number of trees planted – or more complex arrangements focused on outcomes such as the restoration of a forest.

**Figure ES1: Basic RBF structure**



## OPPORTUNITIES

### **RBF interventions are well suited to target sectors most affected by COVID-19, while reducing risk and pressure for public spending.**

Considering needs for economic recovery post COVID-19, RBF interventions are well suited to sectoral focus, targeting industries most affected by the pandemic, such as tourism and transport, and industries that are catalytic to create more sustainable urban environments, like solid waste management, energy, and water and sanitation. Among the main benefits of this sectoral approach are the creation of numerous jobs from implementing these initiatives, reduction of risk and pressure for public spending, reallocation of sector priorities with more long-term focus, and optimization of public funds supporting workforce development programs that can be directly tied to these interventions.

The table below shows some potential opportunities that are well suited, considering investment needs for climate in a way that also contributes to economic growth.

**Table ES1. Key sectors with potential for RBF interventions**

Sector	Climate Objectives	Example Strategies
<b>Urban Development</b>		
<b>Transport</b>	Mitigation	<ul style="list-style-type: none"> <li>• Electrification</li> <li>• Public transport systems</li> </ul>
<b>Water and sanitation</b>	Mitigation Adaptation	<ul style="list-style-type: none"> <li>• Infrastructure (stormwater, sanitary systems, rain gardens, etc.)</li> </ul>
<b>Solid waste management</b>	Mitigation	<ul style="list-style-type: none"> <li>• Systems and infrastructure development (landfills, collection, etc.)</li> </ul>
<b>Tourism</b>	Adaptation	<ul style="list-style-type: none"> <li>• Restoration and conservation of natural ecosystems</li> </ul>
<b>Land use</b>	Mitigation Adaptation	<ul style="list-style-type: none"> <li>• Reforestation and conservation of ecosystems</li> <li>• Sustainable land management and agricultural practices</li> </ul>
<b>Transition</b>		
<b>Energy</b>	Mitigation	<ul style="list-style-type: none"> <li>• Renewable energy, energy transition, energy efficiency, and accelerated coal retirement</li> </ul>
<b>Industrial</b>	Mitigation	<ul style="list-style-type: none"> <li>• Energy efficiency improvement in processes of material preparation</li> <li>• Infrastructure development</li> <li>• Low carbon production methods incentives</li> </ul>

The figures below highlight some of the need and potential impacts that investments in these sectors can have on both the economy and society:

- Solid waste management comprises 20% of municipal budgets in low-income countries on average and generates about 5% of global emissions.<sup>1</sup>
- The funding gap required for water infrastructure is \$144 billion annually.<sup>2</sup>
- The travel and tourism industry contribution to global GDP has been 10% on average in the last 20 years.<sup>3</sup>
- Renewable energy and energy efficiency measures for decarbonizing the energy sector can achieve up to 90% of the required CO2 emission reductions.<sup>4</sup>

Regulatory frameworks and legislation are already in place in both developed and developing economies to deploy RBF instruments. There are also many successful examples that can be replicated such as RBF schemes that tie payments to carbon emission reductions and environmental impact bonds that provide investors financial incentives if project outcomes are achieved.

## CHALLENGES

While RBF has significant potential to reduce costs and improve project delivery, it also faces important challenges related to implementation.

### **To maximize RBF success, support is needed throughout the project design and development phase.**

Contracting can be complex and parties may not have enough information to create an appropriate contract. The monitoring and verification can be cost prohibitive as results can take a while to materialize and be captured in the contract timeframe – especially at the outcomes level. Realigning incentive structures can lead to unintended consequences which should be considered carefully. A famous anecdote is the “cobra effect” which originated in India under British rule. The government of Delhi wanted to rid the city of cobras and paid residents a reward for every dead snake brought in. After some initial success with the scheme, enterprising

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<sup>1</sup> The World Bank (September 2018)

<sup>2</sup> United Nations (April 2017)

<sup>3</sup> Statista Research Department (February 2021)

<sup>4</sup> Hong Kong Green Finance Association (November 2020)

people started breeding cobras which led to an increase in the overall population of snakes in the city.

Another important challenge to consider is the funding needed to support the upfront work by the implementer as payments may not be received for a considerable amount of time until results are achieved. There is also the issue of counterparty risk. The implementer will want to have reasonable assurance that the funder will be there and able to pay once the project is completed. These are all significant challenges to solve and can greatly complicate project implementation.

## CONCLUSIONS

**RBF is an exciting opportunity to innovate on public procurement, mobilize private finance, and contribute substantial climate and economic impacts.**

RBF presents significant opportunities for key sectors including energy, transportation, water and sanitation, waste management and tourism. These sectors are particularly important to a post-COVID-19 economic recovery and will require trillions of dollars of investment over the coming decades.

RBF approaches can increase the economic efficiency of public procurement and leverage private finance which will help limited public funds stretch further. However, this new approach also faces important challenges to implementation, and it is likely that support will be needed through the project design and development phase. Up-front funding is also likely to be needed in projects where results will take a significant amount of time to materialize. Once the concept is proven in specific sectors, support can be phased out.

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# 1. MECHANICS OF RESULTS-BASED FINANCING

Results-based financing (RBF) is a mechanism that links financial rewards to results. Instead of paying for a project or service upfront, payments are made upon the achievement of pre-agreed and independently verified results. This in principle incentivizes effective and efficient delivery of services and contract performance.

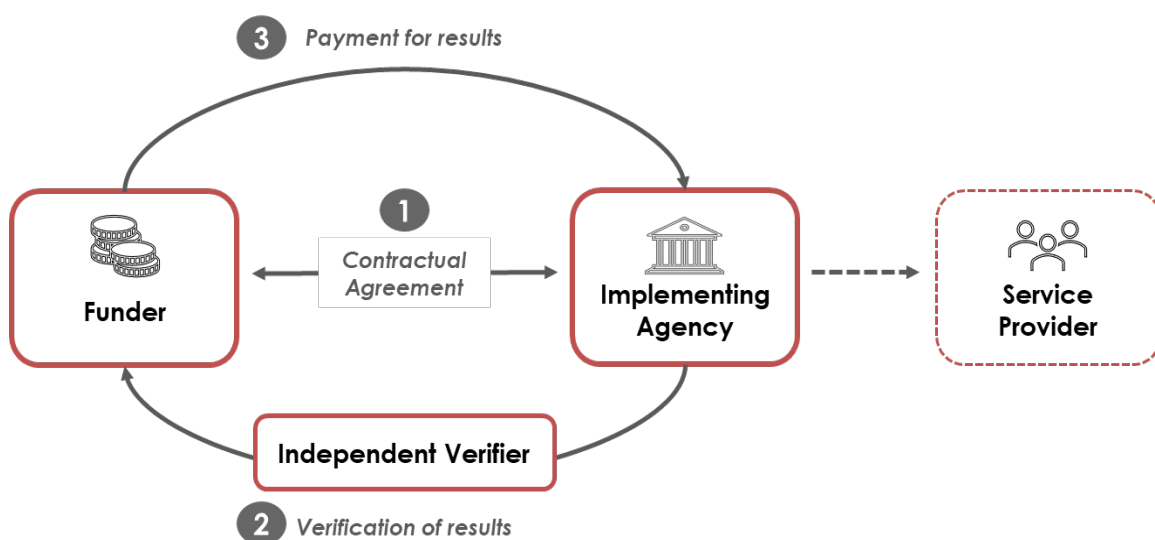
## 1.1 DEFINING CHARACTERISTICS

The terminology of RBF is diverse with multiple terms that refer to the same instrument but they all center on the idea that payments should be linked to results and not to the process of obtaining them. The main advantages of this approach are the economic efficiencies produced from the alignment of incentives, the risk transfer from funder to implementor, and the incorporation of verification mechanisms to monitor and evaluate the delivery of results.

## 1.2 STRUCTURE

The diagram below illustrates the general mechanics of RBF.

Figure 1. RBF Mechanism<sup>5</sup>



<sup>5</sup> Diagram adapted from A Guide for Effective Results-Based Financing Strategies by Instiglio and GPOBA.



The mechanics center on the contractual agreement between the funder and the implementing agency. The funder is the capital provider that is seeking to achieve results. It could be a government, bilateral/multilateral agency, foundation, or private funder. The implementing agency is the incentivized agent, who receives contingent payments, and faces the financial and operational risk. The implementing agency designs and administers the RBF scheme and may bring additional service providers to support delivery. The independent verifier is the entity that validates the project results. It monitors and evaluates the indicators used to measure the achievement of results that trigger the payments.

RBF instruments can be classified by: the type of incentivized agent; the objective of the intervention, whether it targets outputs or outcomes; and/or the nature of the reward, which is the form of payment – such as aid, loan, or grant.

### 1.3 TYPES OF RESULTS

Payments may be tied to the achievement of either outputs or outcomes. Outputs are the direct results produced by the project that are identifiable and measurable. Examples are trees planted or megawatts of clean energy produced. Outcomes are the changes in an environment that are affected by project outputs. For example, a project that plants trees might be seeking to reduce soil erosion as an outcome.

**Figure 2. Types of results**

Outputs vs Outcomes	
<b>Outputs</b>	<b>Outcomes</b>
<ul style="list-style-type: none"> <li>✓ Immediate results of service provider</li> <li>✓ Easily identifiable and measurable</li> <li>✓ Closely related to desired outcomes</li> </ul>	<ul style="list-style-type: none"> <li>✓ Ultimate effect of the service provider               <ul style="list-style-type: none"> <li>✓ Systematic changes</li> </ul> </li> <li>✓ Potential unforeseeable events</li> </ul>

Instruments tied to outputs are simpler and easier to verify compared to those tied to outcomes. Whereas outputs are direct results, outcomes are indirect, long-term, and likely influenced by external factors.

Indicators are used to verify the achievement of results. In an RBF framework where significant money is on the line, outcomes are more difficult to measure and therefore might be too uncertain and risky for the parties involved. For example, in the outcomes scenario above, indicators such as the level of siltation in a nearby stream could be used to measure soil erosion, but this is imperfect as other factors

like weather could also impact siltation. Therefore, outcomes-based approaches are less common and have had limited success.

If an outcomes-based approach is desired, a mix of output and outcome indicators could be used. On the outputs side, one could measure the number of trees planted and on the outcomes side, their root coverage, the water runoff from relevant plots, and finally the level of siltation in the affected stream. Multiple indicators can provide greater confidence that project results are adequately captured. However, this comes at the expense of greater monitoring cost and higher complexity in the contracting process.

## 1.4 ECONOMIC RATIONALE

Three theories explain the economic rationale for RBF: (1) agency theory, (2) management control theory, and (3) transaction costs economic theory. In essence, better governance structures created by aligning transactions through management control theory and agency theory leads to economic benefits.

RBF contracts allow principals to align incentives around the achievement of outputs instead of how those outputs are achieved. Principals design the contract in the most efficient way to get results and alleviates the problems of incomplete information and moral hazard (agency theory). RBF also allows principals to better manage a contract and operational efficiencies by focusing on the achievement of outputs instead of the process of achieving those outputs (management control theory). In addition, RBF allows to create better governance structures by pursuing an efficient economic organization, leading to economic benefits (transaction costs economics theory).<sup>6</sup>

## 1.5 LIMITATIONS

RBF has significant potential to reduce costs and improve project delivery but also faces several challenges, especially related to implementation. First, designing an appropriate contract can be time and resource intensive with many uncertainties. Parties may not have enough information to create an appropriate contract, the monitoring and verification can be cost prohibitive, and results can take a while to materialize and be captured in the contract timeframe – especially at the outcomes

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<sup>6</sup> SELVIARIDIS, Kostas and Wynstra, Finn (2015)

level. Defining feasible and efficient indicators, alongside a credible and reliable measurement system, can be challenging.

Second, the incentive structure can generate unintended consequences such as promoting undesired behaviors or incentivizing short-term results rather than long-term changes. There is a famous anecdote called the “Cobra effect” which originates in India during British colonial rule. The government in Delhi wanted to rid the city of venomous cobras so it paid residents a bounty for every dead snake brought in. This worked for a while until enterprising people started breeding them for income. A more recent example occurred in Mexico in 2018-2020, where a program meant to encourage farmers to plant trees in degraded forest land ended up causing an increase in deforestation, as farmers intentionally degraded standing forest in order to reap the benefits of the replanting program.

There is potential for perverse incentives any time economic incentives are realigned. This should be assessed carefully prior to the implementation of a new program and monitored once the program is operating.

Another important challenge to consider is the funding needed to support the upfront work by the implementer, as payments may not be received for a considerable amount of time until results are achieved. There is also the issue of counterparty risk. The implementer will want to have reasonable assurance that the funder will be there and able to pay once the project is completed. These are all significant challenges to solve and can greatly complicate project implementation.

Other challenges include obtaining adequate evidence for effectiveness. Successful RBF interventions exist, but there are few rigorous studies of real-world cost-effectiveness. RBF instruments are usually applied in combination with other interventions, so it is difficult to isolate the effects of RBF. In addition, even though there is an increased interest in this mechanism, there is still low engagement from the private sector.

## **1.6 CLIMATE FINANCE APPLICATIONS**

The idea that results-based finance can contribute to achieving long-term climate objectives is not new. What is novel is combining financing models, indicators linked to climate performance, and partnerships to create new investment alternatives to improve public spending and attract the private sector towards low-carbon

transitioning efforts. RBF interventions have been applied globally to many sectors and are a promising tool to channel climate finance.

Two types of RBF instruments specially focus on delivering climate results: Results-based Climate Finance (RBCF) and Environmental Impact Bonds (EIB). Both instruments successfully combine climate goals with social, resilience, and economic objectives.

### **1.6.1 RESULTS-BASED CLIMATE FINANCE**

Results-based Climate Finance (RBCF) is a type of RBF mechanism in which payments are made for climate mitigation or adaptation results. It mostly relies on carbon finance<sup>7</sup> and can be combined with other financial instruments, such as up-front grants, loans, or guarantees, and a vehicle for delivering the funding associated with those financial instruments.<sup>8</sup>

One of the main challenges of this mechanism has been to harness the full potential of the carbon market because carbon revenues have been limited so far. As such, cost-effective approaches that address the lack of up-front financing and dynamics of the carbon payments are needed. Some initiatives piloted globally have delivered positive results and have significant replicability potential.

The World Bank developed the Pilot Auction Facility for Methane and Climate Change Mitigation (PAF), a pay-for-performance mechanism that provides price guarantees through an auction in the form of put options to sell future emission reductions at a pre-determined price. The PAF allocates scarce public funds to stimulate investment in projects that reduce greenhouse gas emissions while leveraging private sector financing.<sup>9</sup> In that way the World Bank provides an efficient mechanism for price discovery that ensures that only the most cost-effective projects receive financing.

The PAF model was designed in 2013 and is funded by Germany, Sweden, Switzerland, and the United States. It has conducted a pilot with three auctions that allocated \$53 million, achieving between 1.9-2.6 million tCO<sub>2</sub>e emissions reductions – that would not have been achieved otherwise.<sup>10</sup> The PAF case demonstrated how

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<sup>7</sup> Carbon finance projects involve contracts to purchase emission reductions, such as Certified Emission Reduction (CER) credits

<sup>8</sup> World Bank Group and Frankfurt School of Finance and Management (2017)

<sup>9</sup> Pilot Auction Facility

<sup>10</sup> Ipsos MORI and SQ Consult March (March 2019)

innovative mechanisms can address market barriers that limit existing applications, and promote further replication and scale. The concept could be applied across sectors, countries, regions, or even at global levels.

Another example is the Conservation and Restoration in Lieu of Taxes mechanism developed in Peru by the Ministry of the Environment (MINAM) and the Private Investment Promotion Agency (ProInversion). The model is an extension of the *Work in Lieu of Taxes* ("Oxl") mechanism created by the Peruvian government in 2008, which provides payments in the form of deductible tax certificates to private companies for implementing public procurement projects and achieving specified results. Companies get reimbursed the amount invested with certificates to pay their income taxes only after verification of successful completion of the project and pre-defined outputs.<sup>11</sup> The requirements are defined in a contractual agreement. Examples of result metrics used are the number of beneficiaries, new buildings, vehicles, green areas, roads maintained, specific quality standards, the delivery of complementary services like capacity building or community engagement programs, and feasibility studies.

Oxl has an independent regulatory framework that increases the quality and speed of project implementation through simplified processes. To date, almost PEN 5 billion (USD 1.37 billion) have been deployed in infrastructure projects with more than 16 million beneficiaries, and the mechanism has been replicated in Colombia, Paraguay, and Central America.<sup>12</sup>

Since its creation, 406 projects have been implemented across many sectors, from health and education to electrification and transport. However, only the Catac project (see case study below) was approved under an environmental conservation scheme. Given the potential for project development and the lack of regional government initiatives in sectors such as waste management, sanitation, water infrastructure, and even tourism, private companies have started to present proposals in these areas. The strength of the mechanism and regulatory framework gives the private sector confidence to further commit to this model.

The Conservation and Restoration in Lieu of Taxes is a flexible mechanism that allows companies to combine project development with climate mitigation actions, and expand the scope of activities, like using the carbon markets and more specific and

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<sup>11</sup> Ministerio de Economía y Finanzas, Perú

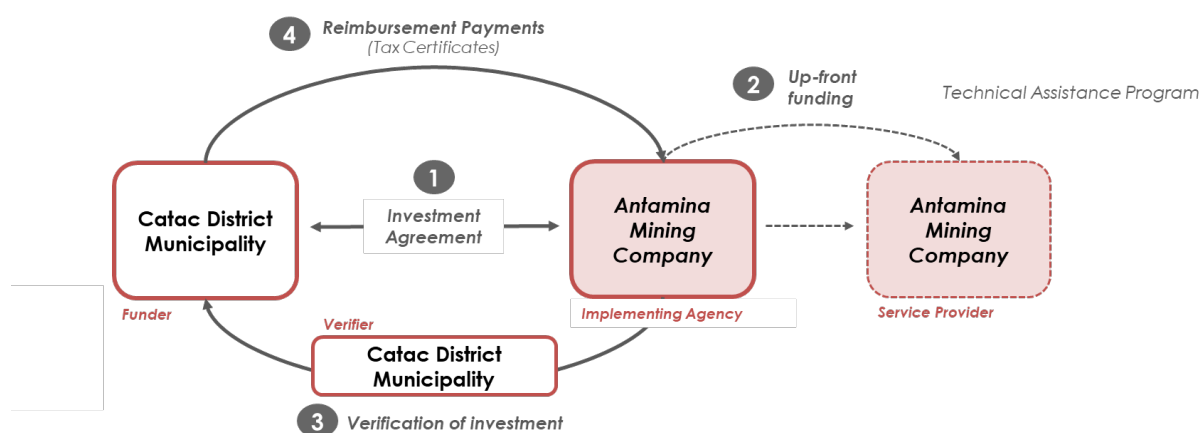
<sup>12</sup> MIRALLES, Denisse (September 2020)

efficient climate performance indicators. It is a powerful tool with great scalability potential.

### CASE STUDY: IMPROVEMENT AND EXPANSION OF THE MUNICIPAL WASTE MANAGEMENT SYSTEM OF CATAAC

Antamina is the world's largest combined producer of zinc and copper, with operations in Cataac, Peru. The company made a strategic alliance with the local government to develop a waste management system. The district of Cataac was generating 1.83 tons of solid waste daily and public services were very deficient.<sup>13</sup> The RBF approach tied payments to a combination of infrastructure and technical assistance that would support the district to manage 3.62 tons of solid waste daily for the next 20 years.<sup>14</sup> Figure 3 outlines all the details of the intervention.

Figure 3. Cataac Project



Characteristics	Impact
<p><b>Performance:</b> Project completion</p> <p><b>Amount:</b> PEN 2 million (~\$600k)</p> <p><b>Financial vehicle:</b> Work in lieu of taxes</p> <p><b>Type:</b> private direct investment</p> <p><b>Return:</b> tax certificates equivalent to a portion of income taxes</p> <p><b>Tenor:</b> 8 months</p> <p><b>Use of cash flows:</b> waste management infrastructure (landfill, compost plant, recycling plant, administrative facilities)</p> <p><b>Metric:</b> reduced solid waste accumulation in open roads and reduce contamination for a population of 3,542 people</p>	<ul style="list-style-type: none"> <li>▪ <b>Climate change:</b> contamination mitigation and environment preservation, energy efficiency               <ul style="list-style-type: none"> <li>▪ Solar panels for electricity</li> </ul> </li> <li>▪ <b>Resilience:</b> workforce development and job creation               <ul style="list-style-type: none"> <li>▪ Local workers trained for organic waste management, compost production, and recycling</li> </ul> </li> <li>▪ <b>Social:</b> reduced disease proliferation, improved health conditions, local educational campaigns for waste disposal</li> <li>▪ <b>Economic:</b> efficient, fast and high-quality project execution, and more effective use of municipal funds</li> </ul>

<sup>13</sup> Municipalidad Distrital de Cataac  
<sup>14</sup> Municipalidad Distrital de Cataac

## 1.6.2 ENVIRONMENTAL IMPACT BONDS

Impact Bonds (IB) are outcomes-based contracts, a type of RBF contract that use private funding from investors to cover the upfront capital required for a provider to set up and deliver a service.<sup>15</sup> With impact bonds, the incentivized agent is not the implementing agency but rather an investor providing up-front funding for a return linked to achievement of outcomes. The difference with more traditional RBF tools is the active involvement of the private sector<sup>16</sup> addressing the pre-financing issue. Until recently, the only two types of impact bonds were Social Impact Bonds (SIB) and Development Impact Bonds (DIB).

Environmental Impact Bonds (EIB)<sup>17</sup>, a new type of impact bond, is a pay-for-success instrument focused on the delivery of successful environmental outcomes. They can include investor payments and penalties tied to the achievement, or non-achievement, of outcomes.<sup>18</sup> The first EIB was the DC Water Environmental Impact Bond, created in 2016 by DC Water with Quantified Ventures to finance the implementation of green infrastructure through an approach that shared performance risk with investors by linking returns to the project's success.<sup>19</sup> This case laid the pathway for other cities to leverage private capital to implement much needed infrastructure. Other successful cases that followed the DC Water EIB are the Atlanta Environmental Impact Bond, the first publicly offered EIB in 2019, for USD 14 million, to finance six green projects, which include a combination of bioretention cells in public parks, stormwater bump-outs in the right-of-way, and larger floodplain, wetland, and stream restoration projects,<sup>20</sup> and the Hampton Environmental Impact Bond to fight flooding.

### CASE STUDY: DC WATER EIB

The initiative was developed as a response to legal action by residents requiring DC water to address stormwater management challenges. DC faced regulatory and environmental concerns from its reliance on a sewer system that combined stormwater and sanitary sewage. The system was dumping an average of 2.5 billion gallons of combined sewer overflow (CSO) annually into 3 rivers.<sup>21</sup> Figure 4 outlines the details of the intervention.

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<sup>15</sup> Government Outcomes Lab

<sup>16</sup> Instiglio

<sup>17</sup> The term EIB was coined by Mark Kim, CFO of DC Water and Eric Letsinger, CEO of Quantified Ventures

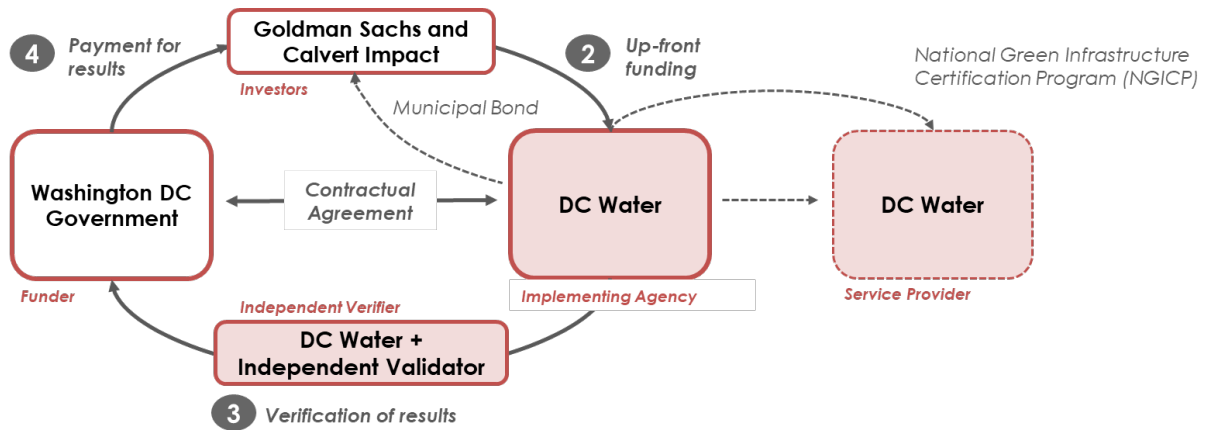
<sup>18</sup> Quantified Ventures. *Sharing Risk, Rewarding Outcomes: The Environmental Impact Bond* (October 2018)

<sup>19</sup> Quantified Ventures. *Case Study DC Water* (2020)

<sup>20</sup> Quantified Ventures. *Case Study Atlanta's Department of Watershed Management* (2020)

<sup>21</sup> Quantified Ventures. *Case Study DC Water* (2020)

Figure 4. DC Water EIB<sup>22</sup>



Characteristics	Impact
<p><b>Performance:</b> 3-tier scenarios related to project outcomes</p> <p><b>Amount:</b> \$25 million</p> <p><b>Financial vehicle:</b> municipal bond</p> <p><b>Type:</b> private issuance</p> <p><b>Return:</b> 3.43% coupon rate</p> <p><b>Tenor:</b> 5 years (30-year term with tender in 5y)</p> <p><b>Use of proceeds:</b> fund pilot to create 20 acres of green infrastructure</p> <p><b>Metric:</b> reduced stormwater runoff into surrounding waterways</p>	<ul style="list-style-type: none"> <li>▪ <b>Climate change:</b> stormwater mitigation (avoided runoff) and increase in green areas                             <ul style="list-style-type: none"> <li>▪ 20 acres of green infrastructure financed</li> </ul> </li> <li>▪ <b>Resilience:</b> workforce development and job creation                             <ul style="list-style-type: none"> <li>▪ 100+ candidates trained for green jobs</li> </ul> </li> <li>▪ <b>Social:</b> increase access to green spaces, improving health outcomes.</li> <li>▪ <b>Economic:</b> performance risk sharing between DC Water and investors, and more efficient use of municipal funds</li> </ul>

The DC Water EIB proposed three different scenarios related to project performance, which depends on the effectiveness of the green infrastructure. If the project performs within the expected outcome range, the bond is paid back as planned, if it outperforms, a payment is made to investors, and if it underperforms, investors make a payment to DC Water. The first contingent payment will be made at the five-year mandatory tender date, after the performance evaluation is conducted.

<sup>22</sup> DC Water is the District of Columbia Water and Sewer Authority (water utility). It conducts a rigorous 3-step program evaluation that involves pre and post construction monitoring with and without green infrastructure, which also requires the opinion of an independent third party to confirm the transaction parties' findings.



## 2. NEED AND GAP

Trillions of dollars of investment are needed for the world to move to a path that limits global warming below 2 degrees Celsius and trillions more to bring the world out of a post-COVID economic slump. Public funds are limited, and innovative financial structures that can help mobilize private investor capital are needed. Government spending and public debt in advanced economies have increased considerably and developing economies have a significant funding shortfall—close to \$2 trillion compared to the estimated needs.<sup>23</sup> In this context, recovery programs present an opportunity to “build back better” and align economic recovery policies with climate objectives.

### 2.1 POTENTIAL OPPORTUNITIES

RBF interventions are applicable to a wide range of projects for both mitigation and adaptation. The table below shows some potential opportunities where RBF frameworks can be well suited. It considers investment needs for climate change in a way that also contributes to economic growth. There are two areas that are particularly relevant: (1) urban development sectors, which can improve the environment and functioning of cities, and (2) transition sectors, which are high emitting sectors that will need to transition to a lower emissions pathway.

**Table 1. Key sectors with potential for RBF interventions**

Sector	Climate Objectives	Example Strategies
<b>Urban Development</b>		
<b>Transport</b>	Mitigation	Electrification Public transport systems
<b>Water and sanitation</b>	Mitigation Adaptation	Green infrastructure (stormwater, sanitary systems, rain gardens, etc.)
<b>Solid waste management</b>	Mitigation	Systems and infrastructure development (landfills, collection, etc.)
<b>Tourism</b>	Adaptation	Restoration and conservation of natural ecosystems
<b>Land use</b>	Mitigation Adaptation	Reforestation and conservation of ecosystems Sustainable land management and agricultural practices

<sup>23</sup> Global Economy and Development, Brookings (August 2020)

Transition		
Energy	Mitigation	Renewable energy, energy transition, energy efficiency, and accelerated coal retirement
Industrial	Mitigation	Energy efficiency improvement in processes of material preparation Infrastructure development Low carbon production methods incentives

The figures below highlight some of the need and potential impacts that investments in these sectors can have on both the economy and society:

- Solid waste management comprises 20% of municipal budgets in low-income countries on average and generates about 5% of global emissions.<sup>24</sup>
- The funding gap required for water infrastructure is \$144 billion annually.<sup>25</sup>
- The travel and tourism industry contribution to global GDP has been 10% on average in the last 20 years.<sup>26</sup>
- Renewable energy and energy efficiency measures for decarbonizing the energy sector can achieve up to 90% of the required CO2 emission reductions.<sup>27</sup>

Regulatory frameworks and legislation to implement RBF interventions are already in place in both developed and developing economies. Many interventions have been developed over existing programs and new innovations are being designed over those frameworks. Examples of this are pay-for-success models using a public-private partnership structure and environmental impact bonds using the municipal bond frameworks.

Despite the traditional focus on development finance, RBF can be structured to achieve climate adaptation and/or mitigation results, leveraging different performance contracting schemes and financing models – such as the ones that can be found in carbon finance or structured finance deals. Moreover, RBF mechanisms can be designed to have different outcomes that solve problems for multiple stakeholders.

The [Monetizing Water Savings](#) (MWS) case illustrates this idea well. The instrument, incubated by the Global Innovation Lab for Climate Finance, improves economic

<sup>24</sup> Global Economy and Development, Brookings (August 2020)

<sup>25</sup> <https://www.un.org/sustainabledevelopment/blog/2017/04/radical-investments-needed-to-meet-global-water-and-sanitation-targets-un-report/>

<sup>26</sup> <https://www.statista.com/statistics/1099933/travel-and-tourism-share-of-gdp/>

<sup>27</sup> <https://www.hkgreenfinance.org/research-report/navigating-climate-transition-finance/>

outcomes for farmers, creates resilient supply chains, and increases water efficiency by using a pay-for-success model to monetize water conservation, efficiency, and nature-based solutions. MWS coordinates the efforts of government, corporations, and agricultural producers to address irrigation inefficiencies in highly water-stressed regions, creating incentives and revenue streams in areas where users often lack the necessary financial resources.<sup>28</sup>

## 2.2 RECOVERY POTENTIAL

Considering needs for economic recovery post COVID-19, RBF interventions can have a sectoral focus, targeting industries that were most affected by the pandemic, such as tourism and transport, and industries that are catalytic to improve urban infrastructure and create healthier environments in cities, like solid waste management, energy, and water and sanitation. Among the main benefits of this sectoral approach are the creation of numerous jobs from implementing these initiatives, reduction of risk and pressure for public spending, reallocation of sector priorities with more long-term focus, and optimization of public funds supporting workforce development programs that can be directly tied to these interventions.

In developed markets, the sectoral approach could untap potential in areas that traditionally haven't been a priority but are gaining increasing importance, like stormwater infrastructure. In the United States, stormwater is one of the fastest growing sources of water pollution, but the annual funding gap for water systems is around USD 8.5 billion.<sup>29</sup> In developing economies this approach can cover sectors not typically address by public institutions, that lag in investments and quality. For example, in Latin American countries, most public resources are dedicated to health and education, and sectors like waste management or transport do not receive enough funding. The IDB estimated an infrastructure investment gap in the region of about USD 150 billion a year for the next ten years.<sup>30</sup>

On the financial side, RBF instruments can unlock access to private investor capital using flexible financing options and blended finance approaches that address market barriers related to investability and risks. For instance, RBF mechanisms can be combined with existing frameworks and financing models used in the capital markets to strengthen the design of the intervention and meet investor requirements. It can be an attractive investment in the current low-rate environment and an alternative for portfolio diversification for investors looking for a climate risk hedge

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<sup>28</sup> The Global Innovation Lab for Climate Finance (September 2020)

<sup>29</sup> Environmental Science & Engineering Magazine (March 2021)

<sup>30</sup> Inter-American Development Bank (April 2019)

and assets with a negative covariance with other assets in the portfolio (e.g., insurance companies seeking diversification benefits).

Capital markets have already experienced the successful application of RBF mechanisms, and new efforts are emerging, but these need to be accelerated. The first performance-linked loan was issued by ING Group to Philips in 2017. The financing structure was a EUR 1 billion revolving credit facility where the pricing was linked to the company's sustainability performance and rating, assessed by Sustainalytics, and was part of a 16-multibank syndicated loan deal.<sup>31</sup> The first sustainability-linked bond was issued in 2019 by Enel Finance International NV and the operation was supported by a syndicate of 8 banks, including Bank of America, BNP Paribas, Citigroup. The bond was a single-tranche issue of USD 1.5 billion which rate was linked to Enel's ability to achieve over 55% of installed renewable capacity by 2021, to be evaluated by an independent auditor.<sup>32</sup>

In addition, RBF can have significant replication and scalability potential. In particular, in developing economies, RBF can be a mechanism that facilitates the aggregation of projects, helping scale interventions from local to national or even regional levels. For instance, the recently launched LEAF Coalition, a public-private initiative to protect tropical forests, aims to engage countries and states to reduce deforestation on a jurisdictional level through an RBF approach, making payments for demonstrated results that increase the speed and scale of forest protection.<sup>33</sup>

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<sup>31</sup> ING (April 2017)

<sup>32</sup> Enel (September 2019)

<sup>33</sup> <http://www.leafcoalition.org/>

### 3. ACTIONABILITY

There have been various applications incorporating the RBF model around the world. In some cases, implementation has been challenging due to the difficulties in measuring results and developing appropriate contractual arrangements. Although investors are becoming more familiar with these types of arrangements, it is expected that new initiatives will still need more support for project development and structuring to overcome some of the challenges of working with a relatively new model.

#### 3.1 SELECTION

Before conducting a results-based finance intervention, the rationale for selecting the model should be clearly defined. Understanding the barriers addressed by RBF will help assess the opportunities and challenges associated and how to better apply this financing tool.

**Table 2: Barriers addressed by RBF**

	Barriers	RBF Overcoming Barriers
<b>Financial</b>	<ul style="list-style-type: none"> <li>Lack of investability and early finance for project development</li> <li>Financing of input and activities that doesn't lead to concrete results</li> </ul>	<ul style="list-style-type: none"> <li>Risk mitigation mechanism (de-risk investments)</li> <li>Spending tied to concrete results</li> <li>Incentives' creation that increases economic efficiency</li> <li>Ability to mobilize private sector financing</li> </ul>
<b>Administrative</b>	<ul style="list-style-type: none"> <li>Lack of capacity and technical skills</li> <li>Lack of project impact assessment and measurement of climate effects</li> <li>Perverse incentives</li> <li>Limited data availability</li> </ul>	<ul style="list-style-type: none"> <li>Partnerships and efficient distribution of tasks (e.g., outsourcing of specialized service provider)</li> <li>Improved quality of service delivery</li> <li>Verification mechanisms and impact assessment</li> <li>Strengthening of technical implementation capacity</li> </ul>
<b>Institutional</b>	<ul style="list-style-type: none"> <li>Inefficient deployment or resources</li> <li>Not clear theory of change and conceptual design (specially in developing economies)</li> <li>Bureaucracy</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen institutional capacity</li> <li>Increased transparency and accountability</li> <li>Focus on achieving and measuring results</li> <li>Ability to pursuit multiple objectives</li> </ul>

In addition, it is important to consider the characteristics of the target country or region, sector, funding sources, and interactions among stakeholders.

## 3.2 IMPLEMENTATION PATHWAY

An effective implementation pathway for RBF instruments should focus on both preparation and execution, considering success factors and strategies to maximize the possibility to achieve high-quality results.

### PREPARATION

The design of an RBF instrument requires detailed planning and project preparation to ensure successful implementation.<sup>34</sup> There are four pre-conditions and four design elements that need to be included, as shown in Table 3 below.

**Table 3: RBF preparation phase checklist**

RBF Preparation Phase			
Pre-Conditions		Design Elements	
<b>Design preparation</b>	Adapted to project objectives and specific circumstances of the country and sector	<b>Targeted population and service provider</b>	Scale, composition, and type
<b>Indicators</b>	Suitable indicators that are measurable and verifiable	<b>Payment recipients</b>	Who will receive the payments – service providers, beneficiaries, or both
<b>Agents attributes</b>	Financial and technical capabilities, ability to control shift in risk allocation, and creditworthiness	<b>Payment triggers</b>	Indicators that reflect impact of the intervention. Target outcomes with payments linked to outputs
<b>Accountability</b>	Process that verifies and reports results – monitoring systems and independent, third-party verification	<b>Types of recipients and funders</b>	Roles, operational capacity, and flow of funds
<b>Environment</b>	Appropriate legal and regulatory frameworks	<b>Results measurement</b>	Methodology and evaluation process

### EXECUTION

The execution phase is a practical phase that is focused on overcoming implementation challenges encountered in real-life applications. The main barriers are related to finding the right partners, securing up-front funding, and evaluating the intervention. Key strategies to address these issues can lead to the development of successful interventions. Table 4 provides additional detail.

<sup>34</sup> World Bank's Open Learning Campus (2020)

**Table 4: RBF execution phase checklist<sup>35</sup>**

RBF Execution Phase	
<b>Key strategies to overcoming implementation challenges</b>	<ul style="list-style-type: none"> <li>✓ Use alternative measurement approaches to assess performance (e.g., proxy indicators, difference-in-differences, matching<sup>35</sup>)</li> <li>✓ Provide pre-development or up-front capital</li> <li>✓ Address private investor demand (structures and sectors)</li> <li>✓ Improve information mechanisms to develop more public-private partnership</li> </ul>
<b>Leverage capital market structures</b>	<ul style="list-style-type: none"> <li>✓ Structure deals to achieve financial sustainability</li> <li>✓ Build structures that can generate annual and/or predictive cash flows – more closely matching project finance or structured finance investments</li> <li>✓ Demonstrate investment opportunity by showing potential for portfolio diversification (e.g., calculating negative correlation with other assets)</li> <li>✓ Position instruments as attractive in a current low interest rate environment</li> </ul>
<b>Use existing regulations with a sectorial approach</b>	<ul style="list-style-type: none"> <li>✓ Develop interventions over existing legislation and regulatory frameworks</li> <li>✓ Promote private entities involvement in partnerships with the appropriate contract incentives</li> <li>✓ Focus on lowering transaction costs (e.g., through standard contracts)</li> <li>✓ Target sectors linked to the development of sustainable cities and with lack of capacity (specially in emerging markets)</li> </ul>

<sup>35</sup> Difference-in differences and matching are quasi-experimental tools for measuring the impact of an intervention. Statistical techniques used to estimate the effects of such intervention.

## 4. CONCLUSIONS

The report highlighted how financial innovation through results-based finance (RBF) can mobilize investment for climate in a way that contributes to economic recovery from the COVID-19 pandemic.

RBF is a promising framework to deliver climate finance and there are significant opportunities for key sectors including energy, transportation, water and sanitation, waste management, and tourism. These sectors are particularly important to a post-COVID-19 economic recovery and will require trillions of dollars of investment over the coming decades.

The case of the DC Water Environmental Impact Bond showed how investors can be mobilized to finance public infrastructure in a way that aligns incentives and achieves important environmental impacts. In Peru, the Conservation and Restoration in Lieu of Taxes program shows how RBF interventions can be highly scalable.

RBF approaches can increase the economic efficiency of public procurement and leverage private finance, helping limited public funds stretch further. However, RBF faces several implementation challenges. To maximize their success, support is needed through the project design and development phase. New initiatives will likely need readiness funding to support up-front costs but as the mechanism matures and more experience is gained in the market, it can be well suited for scaling by the private sector. RBF is an exciting opportunity to innovate on public procurement and contribute substantial climate and economic impacts.



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