



# Climate financing for non-revenue water performance-based contracts

David Ehrhardt, 23 March 2023



# Agenda

1. NRW is a huge problem in the Caribbean
2. Performance-based contracts are proven model to reduce NRW
3. Climate and private finance is available for these types of projects
4. Small-scale and coordination difficulties are barriers
5. A “Regional Water Utility Water and Energy Efficiency Fund” should be created to promote water and energy efficiency contracts across the Caribbean, overcoming those barriers



# We must stop waste of water and energy in water utilities

- In the Caribbean, every year:
  - 540 million m<sup>3</sup>** of water is lost
  - 200,000 MWh** of energy is wasted
- Reducing water losses (commercial and technical) and increasing energy efficiency could have the following outcomes:



**US\$180 million dollars**  
saved a year






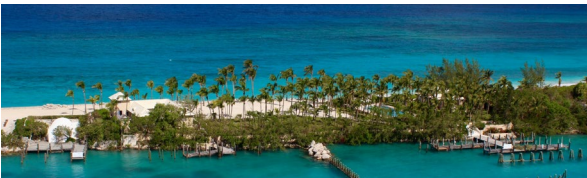




**37,000 tons of GHG emissions**  
reduced a year



**7.5 million people**  
could be supplied with the water saved

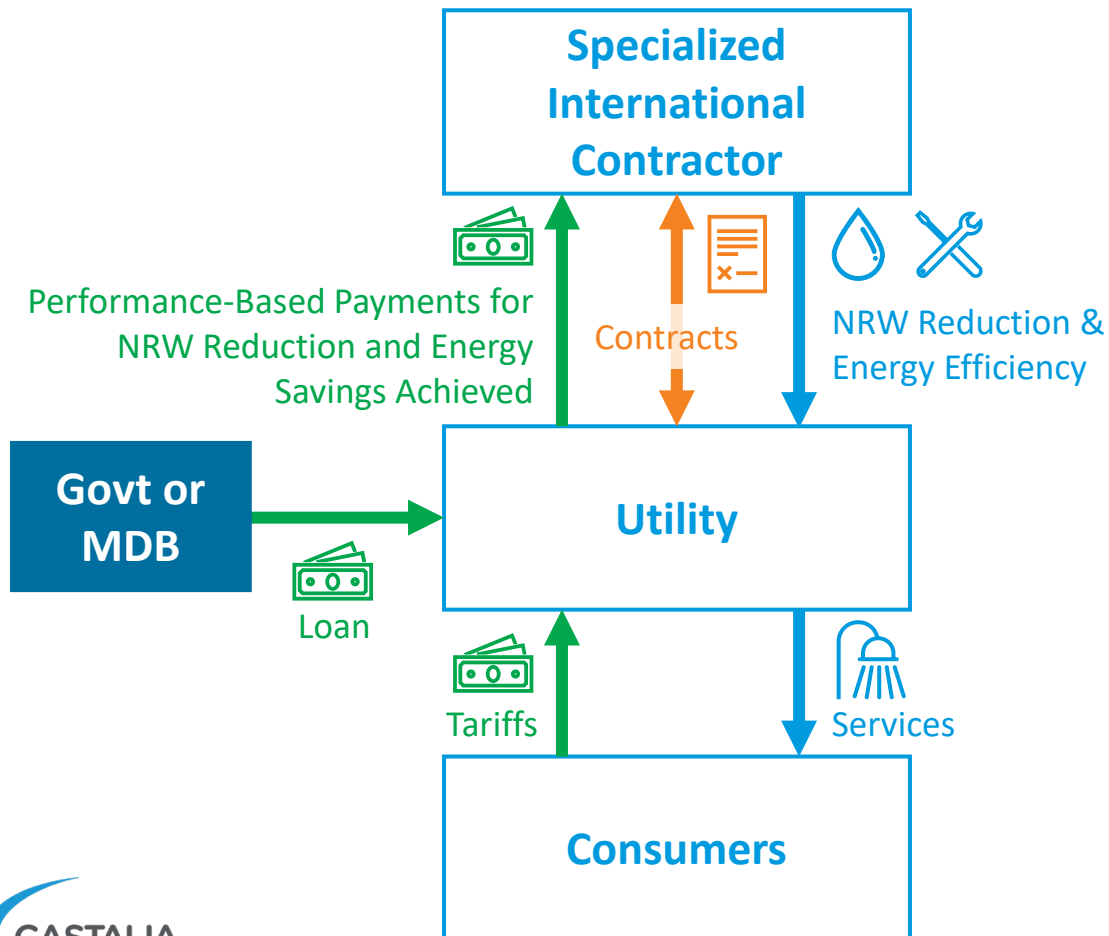


## Performance-based contracts are a proven way to reduce NRW in the Caribbean

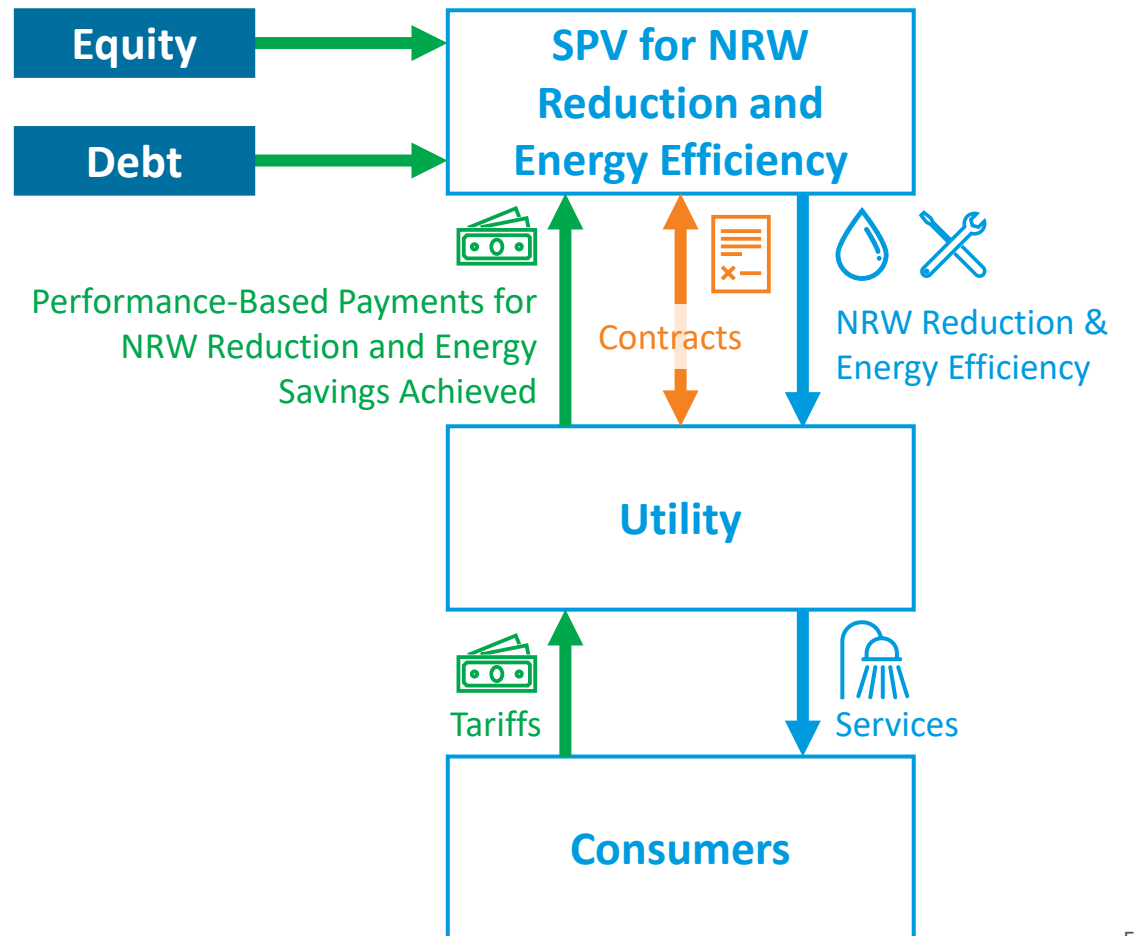
 <b>Location</b>	 Kingston and Saint Andrew (Jamaica)	 Montego Bay and North Western (Jamaica)	 New Providence (Bahamas)
 <b>Cost (US\$ millions)</b>	38	20*	83
 <b>Water saved (MLD)</b>	42	29	17
 <b>Financial Benefit</b>	Pay back period: 4 years, followed by additional cash of US\$3.4 million/year	40% ROI	\$10 million/year in cash flow; \$0.60 profit/m <sup>3</sup> saved
 <b>Period</b>	2015-2021	2005-2010	2012-2020

# Structuring water and energy efficiency PBCs

## PUBLICLY FINANCED OPTION

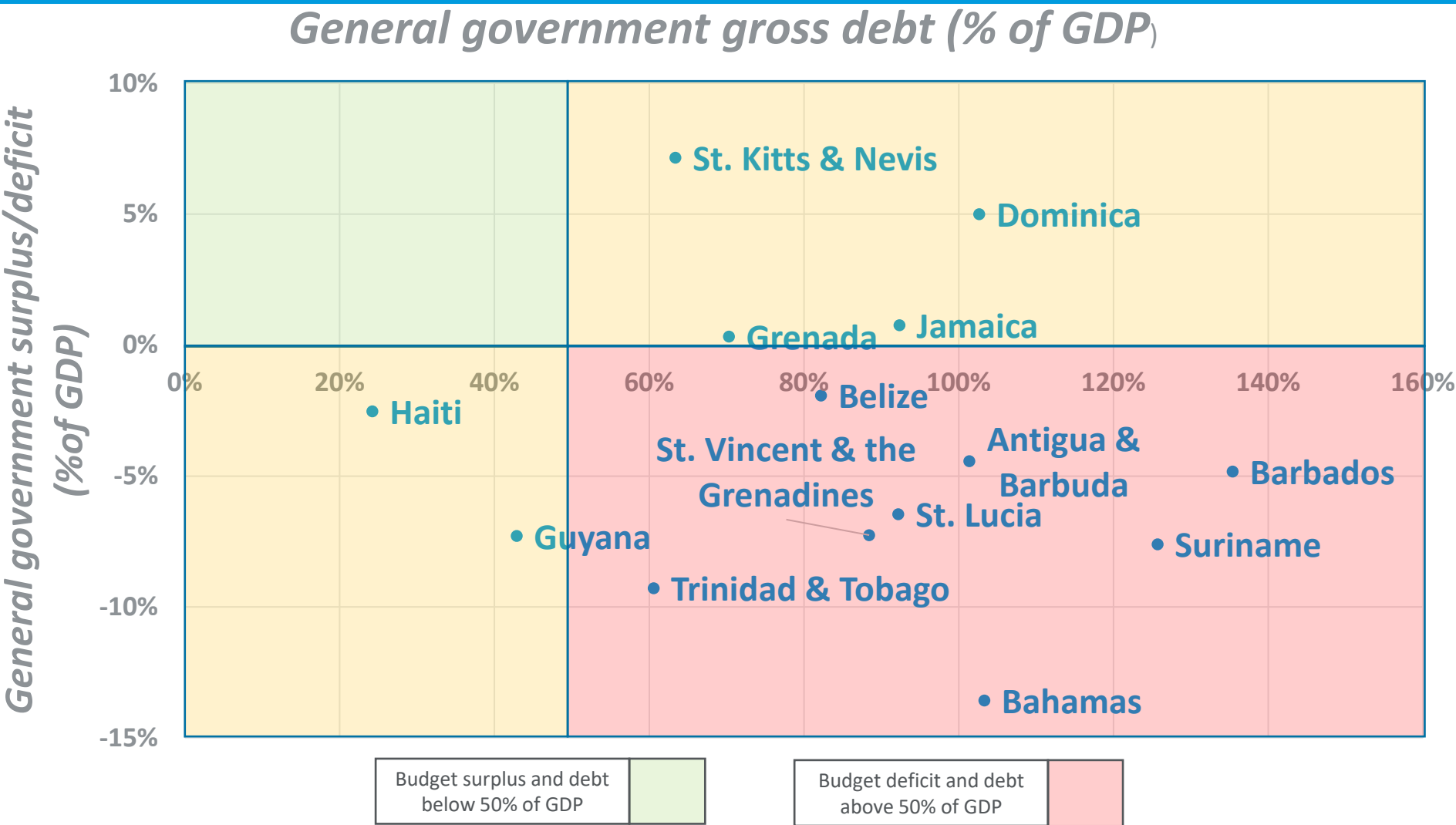


## PRIVATELY FINANCED OPTION





# Public financing challenging in many Caribbean countries





# NRW (and energy efficiency) PBCs are eligible for climate finance

## MITIGATION

NRW reduction improves energy efficiency because less energy is required per m<sup>3</sup> of water sold

Source:

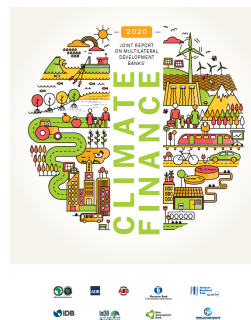


Table A.C.1. List of activities eligible for classification as climate mitigation finance

3. ENERGY EFFICIENCY <sup>25</sup>	3.1. Energy efficiency in industry in existing facilities	Industrial energy-efficiency improvement through the installation of more efficient equipment, changes in processes, reduction of heat losses and/or increased waste-heat recovery and/or resource efficiency <sup>26</sup> Installation of co-generation plants that generate electricity in addition to providing heating or cooling Replacement of an older facility (old facility retired) with a more efficient facility
	3.2. Energy efficiency improvements in existing commercial, public and residential buildings	Energy efficiency improvement in lighting, appliances and equipment, including energy-management systems Substitution of existing heating or cooling systems for buildings by co-generation plants that generate electricity in addition to providing heating or cooling <sup>27</sup> Retrofit of existing buildings: architectural or building changes that enable reduction of energy consumption
	3.3. Energy efficiency improvements in the utility sector and public services	Energy efficiency improvement in utilities and public services through the installation of more efficient lighting or equipment Rehabilitation of district heating and cooling systems Reduction of heat loss in utilities and/or increased recovery of waste heat Improvement in utility-scale energy efficiency through efficient energy use and loss reduction, or resource efficiency <sup>28</sup> improvements

## ADAPTION

Reducing NRW improves climate resilience in regions that are vulnerable to water scarcity



Annex Table 1: Examples of potential adaptation activities in some sectoral groupings

Sector/topic	Sub-sectors/topics	Possible vulnerability to climate change	Potential adaptation activities to address stated vulnerability
Water and wastewater systems	Water supply	Increased risk of flooding of well fields leading to contamination	Well fields relocated away from floodplains, raised well heads
	Wastewater infrastructure/management	Increased exposure to damage and storm-water overload due to coastal flooding and sea-level rise	Protection of wastewater infrastructure from increased flooding
	Water resource management	Reduction in river water levels and flows due to reduced rainfall	Improved catchment management planning and regulation of water abstraction



## Together, private, public, and climate finance can fix this

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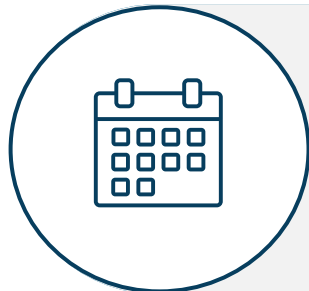
**TOTAL INVESTMENT  
NEEDED**

**\$0.5 billion**



**FINANCIAL IRRS**

**20% to 90%**

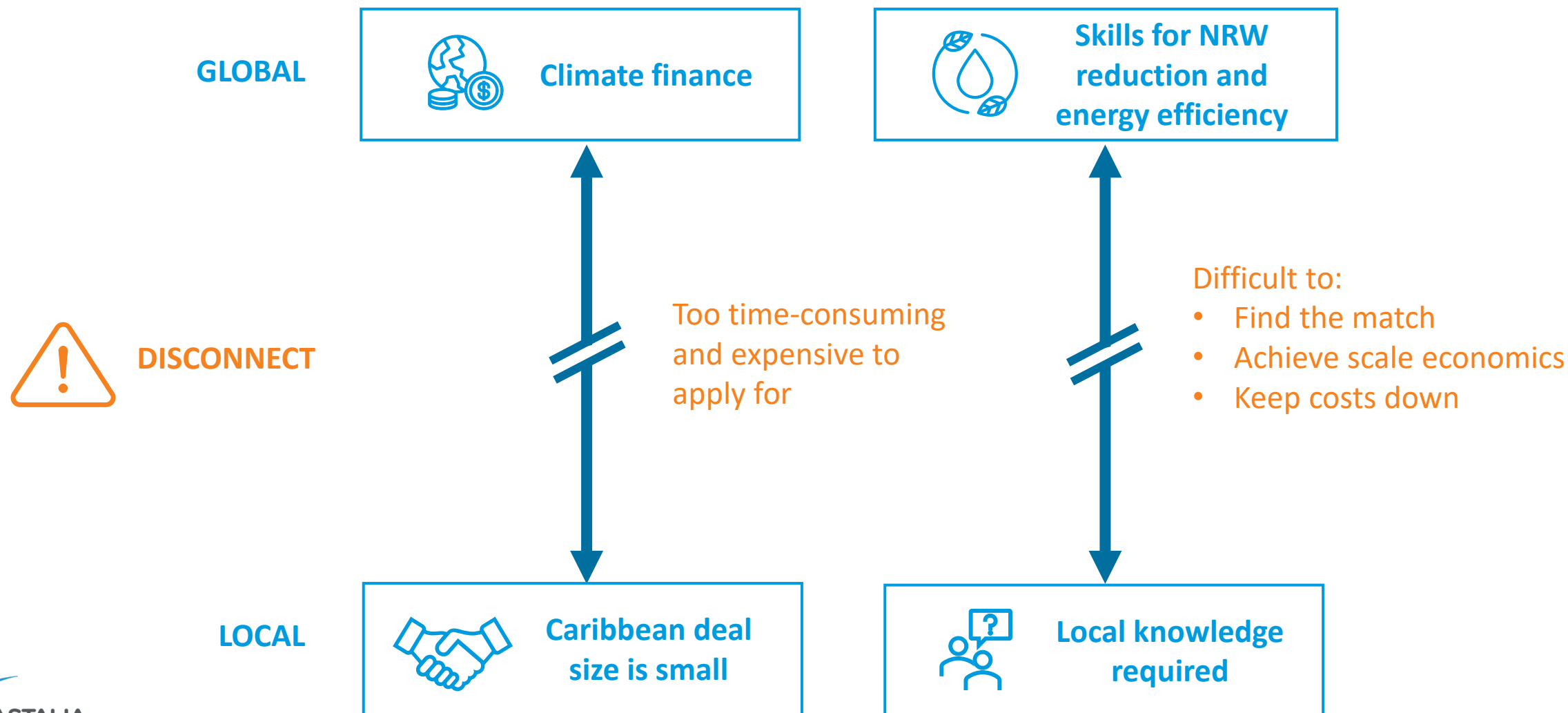


**PAYBACK PERIODS**

**2-7 years**



# Small-scale problems and coordination problems limit access to finance



# A regional climate fund for water and energy efficiency PBCs can overcome barriers

Fund can:



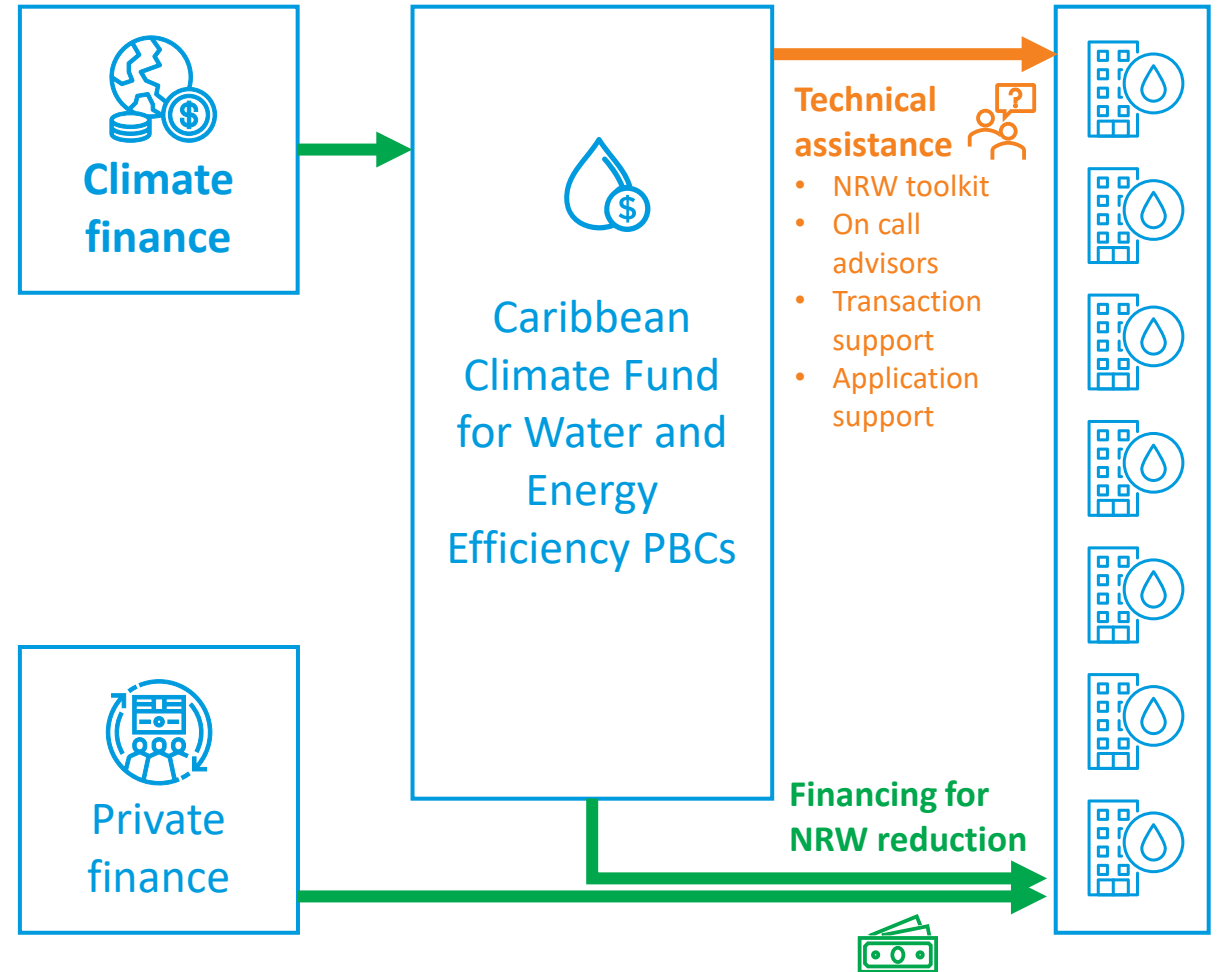
Reduce transaction costs by raising finance at the regional level, then standardizing transactions at the utility level



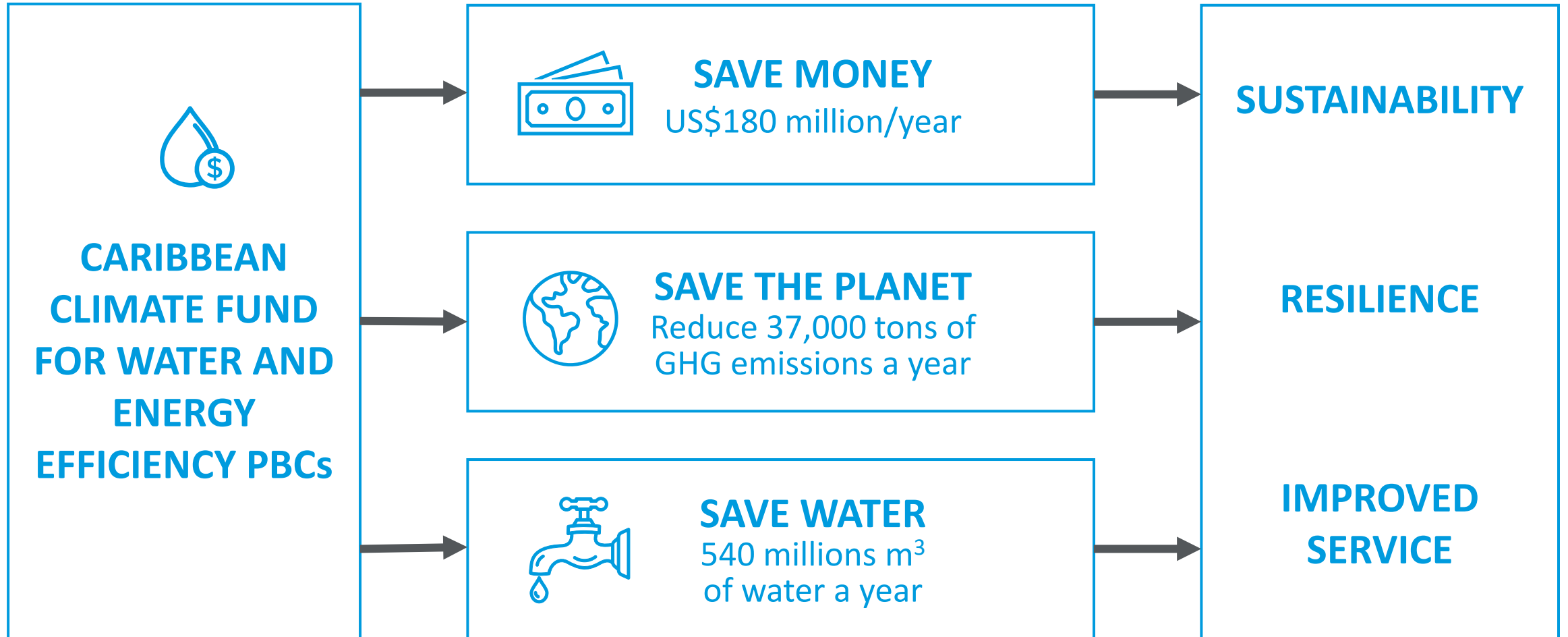
Engage a specialized team that can work with local utilities



Maximize private finance by using climate finance as a risk cushion



## Call to action





**Thinking for a better world.**

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