



## Achieving Development Resilient to Climate Change: A SOURCEBOOK FOR THE CARIBBEAN WATER SECTOR

### No and low regrets investment options for climate resilience

*Enhancing climate resilience involves managing existing climate risks and planning for long term climate change. No and low regrets investment options reduce vulnerability to existing and future hazards, and perform well across a range of climate change scenarios. They can be implemented regardless of climate change uncertainty.*

#### KEY MESSAGES

- No and low regrets options have the potential to offer benefits now and lay the foundation for addressing projected changes (IPCC, 2012)
- The Caribbean Climate Online Risk and Adaptation Tool (CCORAL) can be used to identify no and low regret options
- Water efficiency and improved Water management can deliver co-benefits across sectors and can support both adaptation and mitigation
- Many of the actions implied by Integrated Water Resources Management (IWRM) are no or low regrets.

#### Why no and low regrets?

Decision makers in the Caribbean are faced with the problem of existing climatic hazards which cause unacceptable levels of social, economic and environmental disruption. On top of this, climate change poses additional risks through rising sea levels, increasing temperatures, changing rainfall characteristics and potentially increased severity of hurricanes.

Regional investment needs to target both existing and long-term future risks. No and low regrets investment options deliver benefits now and across a wide range of future scenarios of climate change, and are therefore a top priority for resource allocation.

**No regrets** options provide benefits in the absence of climate change and also for a wide range of future uncertainty. **Low regrets** options may incur an additional cost to offset climate change risks but these costs are small in comparison to the benefits of avoiding future costs.



***“Adaptation to the current climate variability, while having direct benefits can also help society to better prepare for the increased variability expected in the future”***

**UN-Water (2010).**



## What are the characteristics of no and low regrets investment options?

No and low regrets options are characterised by the following:

- **Benefits across a wide range of future uncertainties:** Options which provide an acceptable level of benefit across a range of future climate and development scenarios.
- **Bringing co-benefits across sectors and stakeholders:** Options which minimise trade-offs and maximise benefits to all stakeholders and with other related development priorities.
- **Flexibility to future change:** Options which can be adjusted in future avoiding locking in investment for long periods of time.



## Key questions to determine whether investments are no or low regrets

Key questions to understand whether an investment option is no or low regrets include:

- *What is the lifespan of the investment? Can long lifespan investments be adjusted as climate changes and development progresses?*
- *Are there difficult trade-offs to consider that may have negative impacts under some scenarios? If so, the option is not low regrets.*
- *Are there co-benefits between the investment and other sectors, stakeholders and development objectives?*
- *Will the option perform satisfactorily under a range of future climate change and development scenarios?*
- *What additional actions or investments are available which could refine investments to ensure they perform well under all future scenarios?*
- *What is the cost of the additional action or investment and is it worth simply bearing the risks?*

## IWRM as a tool for climate change adaptation

Applying the principles of Integrated Water Resource Management (IWRM) to improve the sustainability of water management delivers benefits now and will help to manage changing climate risks in the future. As such it should be considered a priority low regret activity to support climate change adaptation.

The IWRM Toolbox provides a wealth of tools and approaches to enhance the management of water resources for economic, environmental and social benefits. It is a web based resource available at: [www.gwp.org/en/ToolBox](http://www.gwp.org/en/ToolBox).

Tools cover the enabling environment for water management, institutional roles and responsibilities and the instruments for managing water resources.

Global Water Partnership Caribbean (GWP-C) supports the implementation of IWRM across the region.



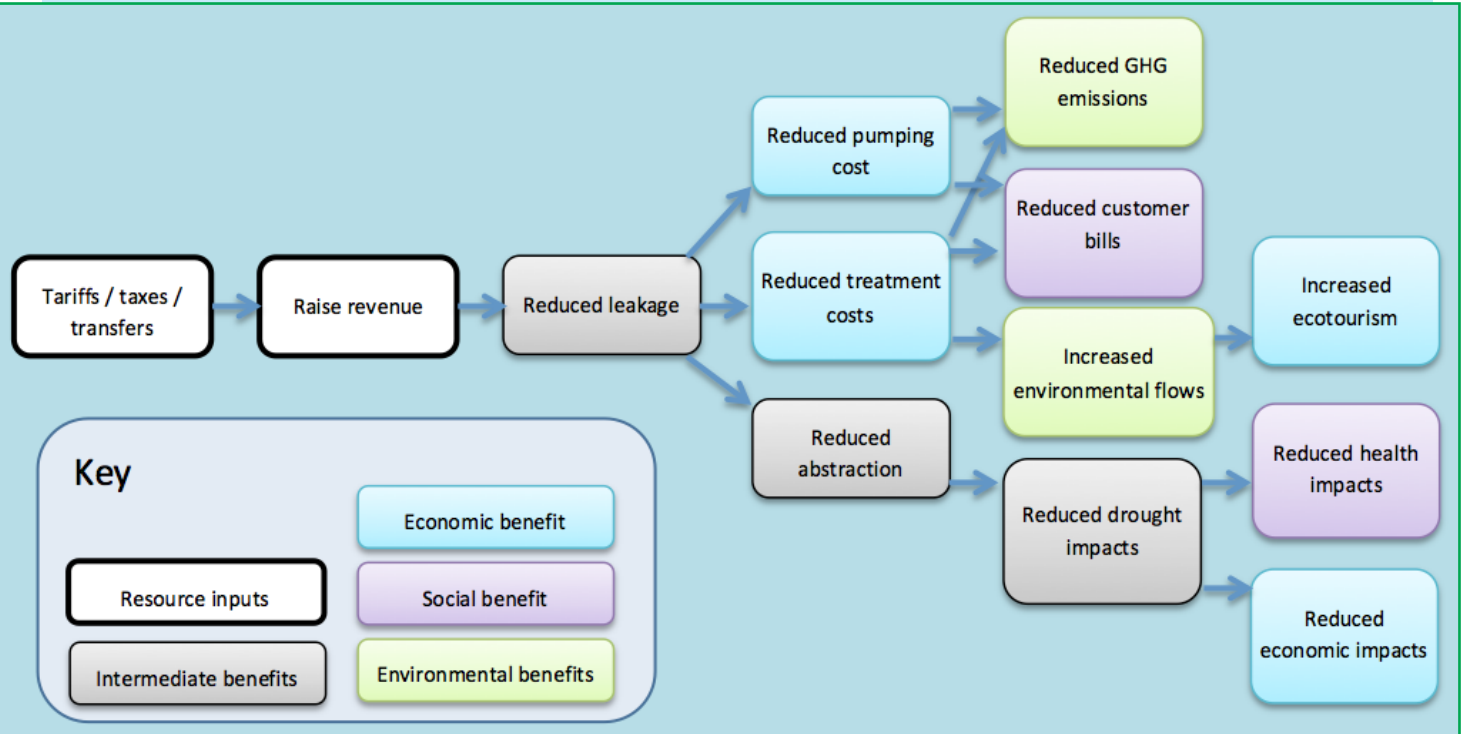
## What do no and low regrets investments look like for water?

No and low regrets options for water management may include:

- **Policy level** - developing and implementing national policies and strategies for coordinated management of land and water resources building on IWRM principles and practice.
- **Legislative level** - Developing water allocation and pricing structures, water use efficiency, and measures to manage and regulate water quality.
- **Planning level** - Enhancing data, information and knowledge systems to support the evidence-base, basin planning, and supply-demand assessment.
- **Budget level** - Developing investment plans and financing strategies to support climate change adaptation, and identifying low cost opportunities to enhance resilience.
- **Project level** - Assessing the risks posed by climate change on the performance of water infrastructure, and identifying cost-effective options to reduce risks to acceptable levels.

## Enhancing efficiency in water management can bring multiple benefits

Integrating water management across sectors and seeking improvements in efficiency through management tools or infrastructure improvements can yield co-benefits. For example, leakage reduction brings a cascade of wider benefits, including reduced greenhouse gas emissions which may be eligible for specialist climate change mitigation finance.



The Intergovernmental Panel on Climate Change (IPCC) have acknowledged the links between the co-benefits of mitigating and adapting to climate change through water management. The latest Fifth Assessment Report states “Increasing efforts to mitigate and adapt to climate change imply an increasing complexity of interactions, particularly at the intersections among water, energy, land use, and biodiversity”. Examples of water-related actions with co-benefits include reduced energy and water consumption in urban areas through recycling water; sustainable agriculture and forestry; and protection of ecosystem services. (IPCC, 2014)



## Identifying no and low regret options

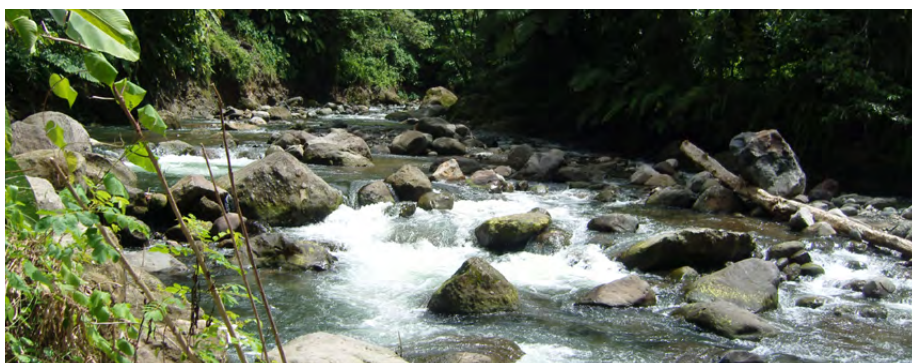
The references below are freely available and provide tools and techniques for identifying and implementing no and low regret investment options.

### **Achieving development resilient to climate change: A Sourcebook for the Caribbean water sector (GWP-C & CCCCC, 2014)**

Developed by Global Water Partnership Caribbean (GWP-C) and the Caribbean Community Climate Change Centre (CCCCC) the Sourcebook provides tools, methods and approaches for planners and decision makers to develop and implement options for enhancing water security and climate resilience in the region.

### **Caribbean Climate Online Risk and Adaptation Tool – CCORAL**

Developed by the CCCCC, CCORAL is a Caribbean-specific web-based platform. CCORAL can be used to screen decision making activities to identify no and low regret options for enhancing resilience. CCORAL is available online at <http://ccoral.caribbeanclimate.bz/>



## Example of low regrets investment: The GEF-IWCAM project

The Integrating Watershed and Coastal Area Management (GEF-IWCAM) project in Small Island Developing States of the Caribbean addressed root causes of coastal degradation.

It aimed to strengthen capacity to implement integrated approaches to the management of watersheds and coastal areas.

GEF-IWCAM represents a low regrets activity as improvements in the sustainability of land and water management will bring benefits under all scenarios of climate change.

The project included activities at the legislative, planning and project levels through a legislative toolkit, IWRM road maps and demonstration projects respectively.

Further information is available from the project website <http://iwcam.org>

## References

IPCC. 2012. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

IPCC. 2014. *Climate Change 2014: Impacts, Adaptation, and Vulnerability Summary for Policymakers, WG2 AR5*

Global Water Partnership Caribbean (GWP-C) and Caribbean Community Climate Change Centre (CCCCC). 2014. *Achieving Development Resilient to Climate Change: A Sourcebook for the Caribbean Water Sector*. Global Water Partnership-Caribbean. Available at [www.gwp-caribbean.org](http://www.gwp-caribbean.org)

UN-Water. 2010. *Climate Change Adaptation: The Pivotal Role of Water*. Available at: <http://www.unwater.org/>

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