The Nature Conservancy

# WATER FUNDS
Field Guide | 2018

# Acknowledgments

# Acknowledgments

# Key Contributors

Latin American Water Funds Partnership | The Nature Conservancy | Fundación FEMSA 10 Years | IDB Inter-American Development Bank | gef

Keurig Dr Pepper | natural capital PROJECT | FOREST TRENDS | U.S. Forest Service | WORLD RESOURCES INSTITUTE

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Mexichem | McDonald's | Nestlé | P&G | PENTAIR | PEPSICO | Quilmes | Unilever | VEOLIA

"Nature is our strongest ally in ensuring global water security"
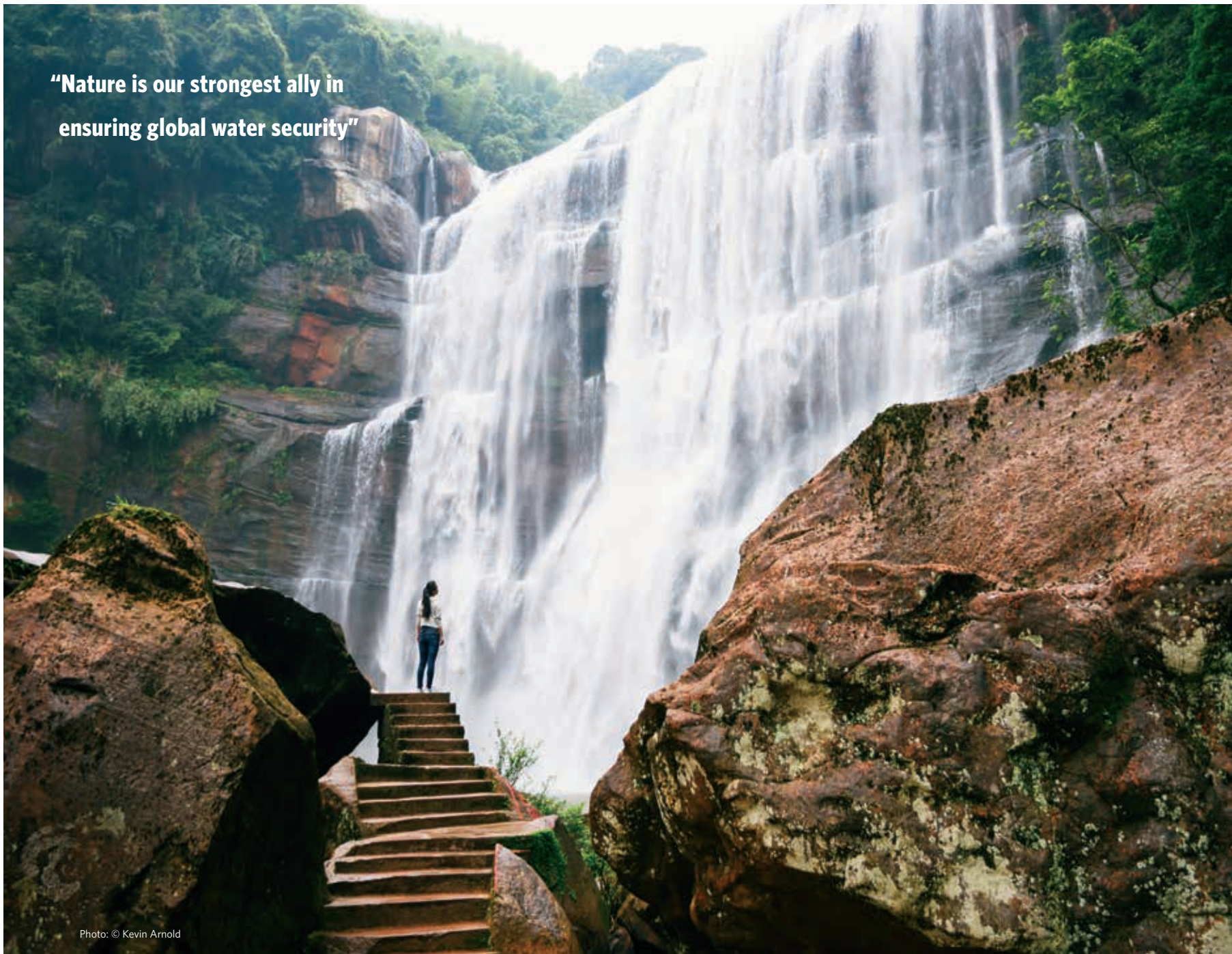
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Photo: © Jerod Foster

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# Water Funds around the world

The Water Fund model is being replicated in diverse, global geographies.



**GLOBAL RESULTS**

**35** WATER FUNDS CREATED

**12** COUNTRIES

- 🔵 WATER FUNDS CREATED
- 🟡 WATER FUNDS UNDER DEVELOPMENT
- ⚪ PROSPECTIVE WATER FUNDS

🟢 **TNC WATER CONSERVATION ACTION GEOGRAPHIES**

Map labels: UNITED STATES, JAMAICA, DOM. REPUBLIC, MOROCCO, CHINA, MEXICO, COSTA RICA, GUATEMALA, INDIA, EL SALVADOR, PANAMA, ETHIOPIA, COLOMBIA, GABON, RWANDA, KENYA, ECUADOR, TANZANIA, INDONESIA, PERU, ZAMBIA, BRAZIL, BOTSWANA, CHILE, SOUTH AFRICA, ARGENTINA
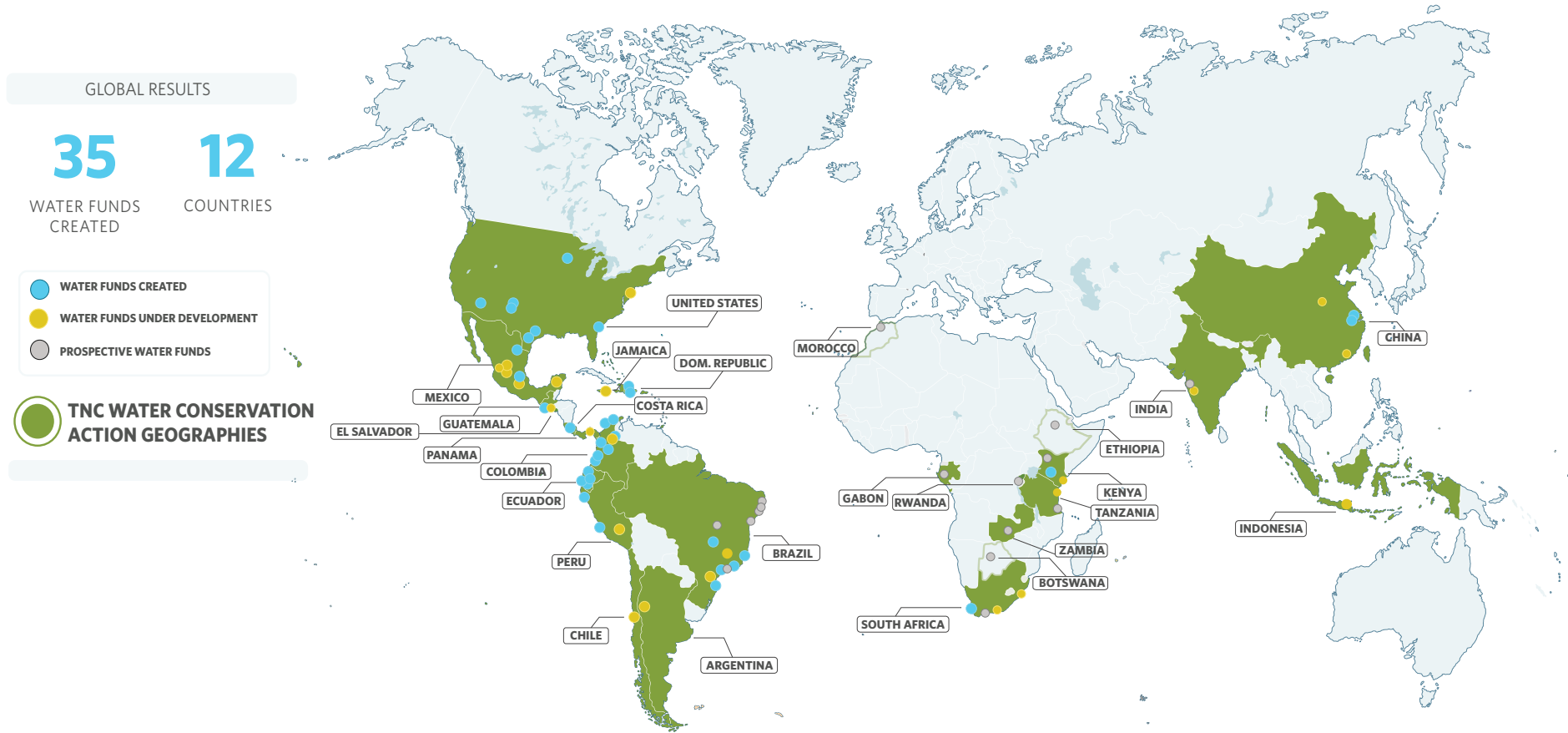
**Figure 1.** Water Funds Global Portfolio

## DEFINITIONS

**Water Funds created** = Water Fund is operational and actively implementing

**Water Funds under development** = Water Fund is actively being designed

**Prospective Water Funds** = Still scoping whether Water Fund model is feasible
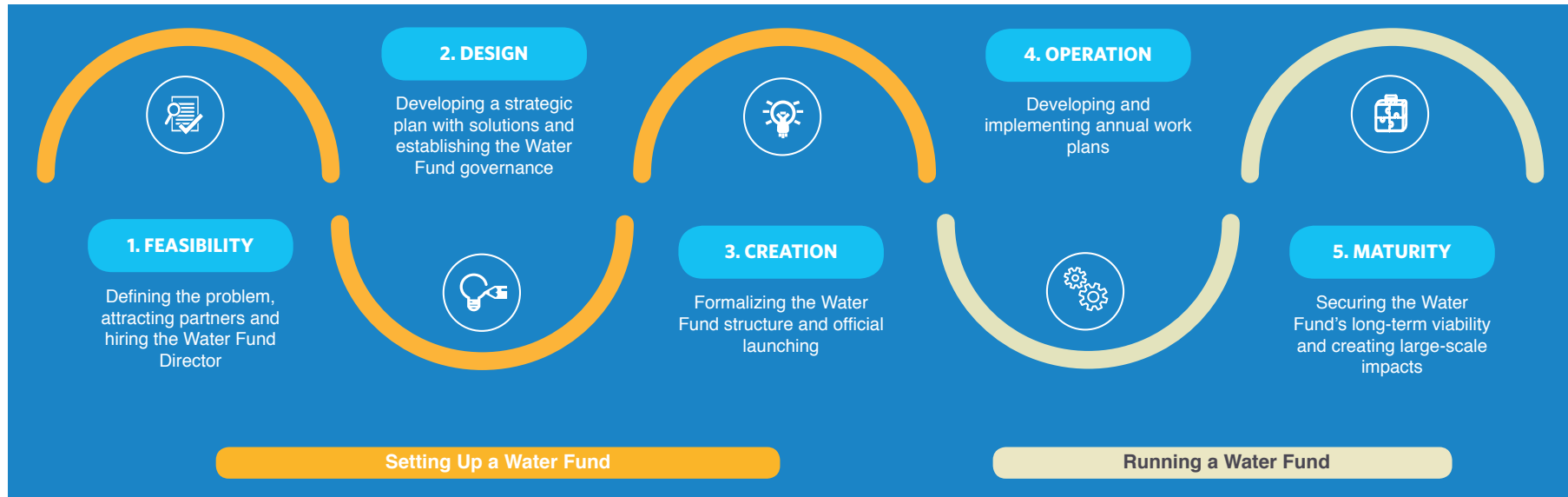
# 2018 List of Water Funds

| AFRICA | ASIA PACIFIC | LATIN AMERICA | NORTH AMERICA |
|--------|--------------|---------------|---------------|

**AFRICA**

**Botswana**
- Maun

**Ethiopia**
- Addis Ababa

**Gabon**
- Mbé Basin

**Kenya**
- Eldoret
- Mombasa
- Nairobi

**Morocco**
- Sebou River

**Rwanda**
- Kigali

**South Africa**
- Cape Town
- Durban
- Palmiet/Bot
- Port Elizabeth

**Tanzania**
- Dar es Salaam
- Tanga

**Zambia**
- Kafue Basin

**ASIA PACIFIC**

**China**
- Dongjiang
- Danjiangkou
- Longwu
- Qiandao

**India**
- Pune
- Thane

**Indonesia**
- Pasuruan

**LATIN AMERICA**

**Argentina**
- Mendoza

**Brazil**
- Belo Horizonte
- Brasilia
- Camboriú
- Curitiba
- Espírito Santo
- Goiânia
- João Pessoa
- Maceió
- Recife
- Rio de Janeiro
- Salvador
- Santos
- São Paulo

**Chile**
- Santiago

**Colombia**
- Bogotá
- Bucaramanga
- Calí
- Cartagena
- Cauca Valley
- Cúcuta
- Medellín
- Santa Marta

**Costa Rica**
- San José

**Dominican Republic**
- Santo Domingo
- Yaque del Norte

**Ecuador**
- Paute
- Guayaquil
- Quito
- Tungurahua

**El Salvador**
- San Salvador

**Guatemala**
- Guatemala City

**Mexico**
- Aguascalientes
- Chiapas
- Guanajuato
- Mexico City
- Monterrey
- Toluca
- Zacatecas

**Panama**
- Panama City

**Peru**
- Cuzco
- Lima
- Píura

**NORTH AMERICA**

**Jamaica**
- Kingston

**United States**
- Austin
- Brandywine-Christina
- Minneapolis
- Phoenix
- Rio Grande
- San Antonio
- Santa Fe
- Savannah River

● WF created     ● WF under development     ● Prospective WF

# Water Funds Project Cycle

The Nature Conservancy & Partners have standardized the Water Fund development process around a 5-phased cycle: Feasibility, Design, Creation, Operation, and Maturity.



**2. DESIGN**
Developing a strategic plan with solutions and establishing the Water Fund governance

**4. OPERATION**
Developing and implementing annual work plans

**1. FEASIBILITY**
Defining the problem, attracting partners and hiring the Water Fund Director

**3. CREATION**
Formalizing the Water Fund structure and official launching

**5. MATURITY**
Securing the Water Fund's long-term viability and creating large-scale impacts

**Setting Up a Water Fund**

**Running a Water Fund**

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### Feasibility Overview
Step 1.1 — Eligibility Screening Checklist
Step 1.2 — Situation Analysis Report
Step 1.3 — Decision Support Document
Step 1.4 — Gain Formal Commitments & Hire 20 Director

### Design Overview
Step 2.1 — Formalize WF Board & Develop Charter
Step 2.2 — Start Creation of Legal Mechanism
Step 2.3 — Update Situation Analysis
Step 2.4 — Water Fund Strategic Plan
Step 2.5 — Design Studies
  • Portfolio of Interventions
  • Social Impact Assessment
  • Business Case
  • Long-term Finance
Step 2.6 — Monitoring & Evaluation
Step 2.7 — Pilot Projects

### Creation Overview
Step 3.1 — WF Legal Mechanism Established
Step 3.2 — Create first Annual Operating Plan
Step 3.3 — Operational Management Readiness
Step 3.4 — Launch Event

### Operation Overview
Step 4.1 — Annual Operating Plan
Step 4.2 — Reporting
Step 4.3 — Adaptive Management

### Maturity Overview
**Maturity Criteria**
✔ Significant % of long-term financing committed
✔ Routine reporting that documents WF's ongoing impact
✔ Influence demonstrated
✔ Positive public perception demonstrated

"Water for people or water for nature is a false choice—the solution to water security requires much, much bigger thinking."

Photo: © Nick Hall

# Introduction

# Introduction

The **Water Funds Field Guide** captures The Nature Conservancy (TNC) and partners recommended best practices process for scoping, designing, creating, and operating Water Funds as of **2018**. The purpose of this document is to equip practitioners with step by step guidance to the Water Funds Project Cycle.

For more resources, including the latest case studies, tools, templates, and more, please visit the Water Funds Toolbox (waterfundstoolbox.org) which serves as an on-line repository of knowledge on Water Funds. You can also sign up for virtual and in person training on Water Funds on the training website (nature.org/waterfundstraining).

## What is water security?

Water security is one of the most pressing global challenges of the 21st century.

Cities are growing at an incredible pace around the world, increasing demand for secure supplies of food, water, and energy. Global water consumption has doubled every 20 years, and by 2025, at least 2/3rds of the world's population will likely be living in water stressed areas. These development pressures create many challenges for securing the long-term supply of water upon which people and nature depend.

A few examples of global water security concerns include:

- Water stress currently affects 2 billion people worldwide, and 1 in 4 cities[1].

- Water-related natural hazards—which include floods, mudslides, storms and related ocean storm surges, heat waves, cold spells, droughts and waterborne diseases—account for 90% of all natural hazards[2].

- Urban water demand is projected to increase by 80% by 2050[3].

- Water consumption for energy production is predicted to increase by 85% by 2035[4].

These concerns are further exacerbated by increasing climate variability, particularly in terms of its role in amplifying water-related natural disasters that threaten urban areas, agricultural production, and coastal populations.

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1   United Nations. (2016). *The Sustainable Development Goals Report 2016. Also see: United Nations. (2011). Global Assessment Report on Disaster Risk Reduction: Revealing Risk, Redefining Development.*

2   UNESCO. (2012). *The United Nations World Water Development Report 4: Managing Water under Uncertainty and Risk.*

3   Florke, M., C. Schneider, & R. McDonald. (2018). *Water competition between cities and agriculture driven by climate change and urban growth.* Nature Sustainability (1): 51-58.

4   International Energy Agency. (2012). *World Energy Outlook 2012.*

# WATER SECURITY: A GROWING CHALLENGE

Societies can enjoy water security when they comprehensively and successfully manage their water resources and services to meet the needs of each dimension of water security:

Water is an essential element for Sustainable Development due to its close relation to a range of diverse challenges

The Future We Want, UN, Rio +20

## PRESERVING ECOSYSTEM INTEGRITY

**Environmental Water Security**
Restore healthy rivers, aquifers and ecosystems

**Domestic Water Security**
Satisfy household water and sanitation needs in rural and urban communities

**Resilience to water-related natural disaster**
Build resilient communities that can adapt to climate change

ECOSYSTEM INTEGRITY

**Water Security**

**Urban Water Security**
Develop healthy, vibrant, livable water-sensitive cities and towns

**Economic Water Security**
Support productive economies in agriculture, industry, and energy

**Figure 2.** Ecosystems play a fundamental role in water security, by producing enough water in terms of both sufficient quality and quantity. However, when ecosystems lose their integrity due to severe degradation, they can no longer provide these ecosystem services, jeopardizing water security.

# The role of watersheds in securing water

Watersheds[5] include a range of working landscapes, such as forests and wetlands. While most cities originally tapped supplies of water from relatively healthy water sources, over time wastewater pollution and land use change, including growth of agriculture or expansion of urban or suburban boundaries, degrade the quality of the water and alter the flow regime.

Accordingly, the quality and reliability of the water supply, at a city's water intake, is directly related to how well the watershed (or aquifer recharge area for groundwater) that drains to the intake is managed.

In order to meet current demands for clean, reliable water, water utilities usually employ one or more of the following options:

1. **New water sources:** transport water via interbasin transfer from a source further away and/or tap groundwater sources;

2. **Advanced water treatment system:** treat polluted water to a usable standard;

3. **Demand reduction strategies:** promote strategies to reduce water demand and water use; and/or

4. **Improve landscape management and wastewater treatment:** maintain or improve the quality and reliability of water coming into intake point(s).

This fourth option is commonly referred to as Source Water Protection.

| Comparison of built and natural infrastructure | |
|---|---|
| **Built Infrastructure** | **Natural Infrastructure** |
| Built infrastructure refers to human-engineered infrastructure for water resources, such as pipes, concrete canals, water treatment plants, reservoirs and levees. It is also commonly referred to as "grey infrastructure." | Natural infrastructure uses the inherent ability of nature to provide the same services that we expect from built infrastructure. It is commonly referred to as "green infrastructure." Water related services are a subset of the full spectrum of 'ecosystem services,' or benefits, that nature provides to people. |
| In the realm of water management, built infrastructure includes manmade structures established to capture, move and treat water. In most developed countries it is the primary approach applied to urban water supply management. | In terms of water management, natural infrastructure can help infiltrate, store and filter water to provide clean water and regulate flows. |

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5    A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel.
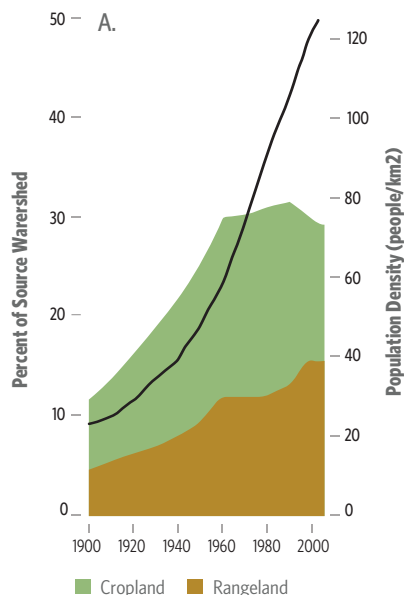
**Figure 3. Watershed Degradation Over Time**
Trends over time in watershed degradation in urban source watersheds, median cropland and rangeland coverage, as well as population density.



Photo: © Charlie Ott

# The Challenge

## Watershed Degradation

*The declining health of watersheds around the world is threatening the supplies of water we all depend on.*

Over the past century, the median population density in source watersheds has **increased five-fold** and the proportion of source watershed converted to cropland has **doubled** while pastureland has more than **tripled**. In the absence of robust watershed management, the problem will grow more severe in the coming years, with cropland projected to increase ten percent and fertilizer use fifty-eight percent by 2030[6].

# The Natural Solution

To address the barriers noted above, and change the trajectory of water risk for a given city, we need a governance mechanism that has political and financial influence. In watersheds around the world, this influence is increasingly held by cities. Cities that choose to play an active role in source water protection can use their political and financial influence to counter trends in watershed degradation. In doing so, cities can directly protect and restore terrestrial and aquatic ecosystems, while improving the livelihoods of rural communities. This can all be done while reducing the costs and carbon footprint associated with transporting and treating supplies of water.

There are many types of **interventions** that can help improve the ability of nature to provide clean, reliable water or reduce the impact of human activities on our streams, lakes and groundwater.

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6    McDonald et al, 2016, Estimating watershed degradation over the last century and its impact on water-treatment costs for the world's large cities, Proceedings of the National Academy of Sciences (PNAS), 113 ( 32), 9117–9122

## What is an intervention?

An intervention is any action that is taken by a Water Fund to help mitigate or address the identified water security issues. For instance, improving agricultural practices to reduce sediment loadings, restoring grasslands to regulate water availability, or implementing water demand reduction strategies. Many of these actions are also often referred to as 'conservation activities'. Read more about different intervention examples by visiting the Toolbox.

**Targeted land protection.** Protecting targeted ecosystems, such as forests, grasslands or wetlands.

**Revegetation.** Restoring natural forest, grassland or other habitat through planting (direct seeding) or by enabling natural regeneration.

**Riparian restoration.** Restoring natural habitat that is at the interface between land and water along the banks of a river or stream. These strips are sometimes referred to as riparian buffers.

**Agricultural best management practices (BMPs).** Changing agricultural land management to achieve multiple positive environmental outcomes.

**Ranching best management practices (BMPs).** Changing land management practices on ranchlands to achieve multiple positive environmental outcomes.

**Fire risk management.** Deploying management activities that reduce forest fuels and thereby reduce the risk of catastrophic fire.

**Wetland restoration and creation.** Re-establishing the hydrology, plants and soils of former or degraded wetlands that have been drained, farmed or otherwise modified, or installing a new wetland to offset wetland losses or mimic natural wetland functions.

**Road management.** Deploying a range of avoidance and mitigation techniques that aim to reduce the environmental impacts of roads, including those impacts related to negative effects on soils, water, species and habitats.

**Figure 4.** Examples of common types of Water Fund interventions.

## Source watersheds are a nexus of value and action

The value of source water protection goes well beyond water security. One of the most exciting aspects of using nature to help secure water is that although the primary outcome we are seeking is cleaner, more reliable water, implementation of these interventions can provide a whole suite of additional benefits. These include benefits such as climate mitigation, climate adaptation, human health and well-being, and biodiversity.

**Water security**. Maintaining or improving water quality and dry season flows.

**Climate change mitigation.** Avoiding greenhouse gas emissions and increasing carbon sequestration.

**Climate change adaptation.** Using nature to mitigate climate change impacts and build resilient communities.

**Human health and well-being.** Supporting and improving physical and mental health, food security, livelihoods and social cohesion.

**Biodiversity conservation.** Protecting and improving the status of terrestrial and freshwater species and the ecosystems in which they live.

**Figure 5**. Sustainable watershed management can help to secure multiple benefits

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### Learn More

waterfundstoolbox.org/ ecosystem-services

### Nature's Benefits: what are ecosystem services?

Ecosystem services are benefits that nature provides to people, including clean air, water, and all of the food and fiber we get from nature.

Ecosystem services can be categorized into *provisioning, regulating, cultural, and supporting services*. Water-related services include regulation of flows, water purification, and cultural or spiritual values connected to water. Cultural or spiritual values includes the importance of water bodies to indigenous peoples and even freshwater recreational opportunities.

The most important things to remember about ecosystem services is that nature provides a lot of values that we might take for granted, and that we often replace with built solutions when nature loses its ability to provide those services due to degradation or land use changes.
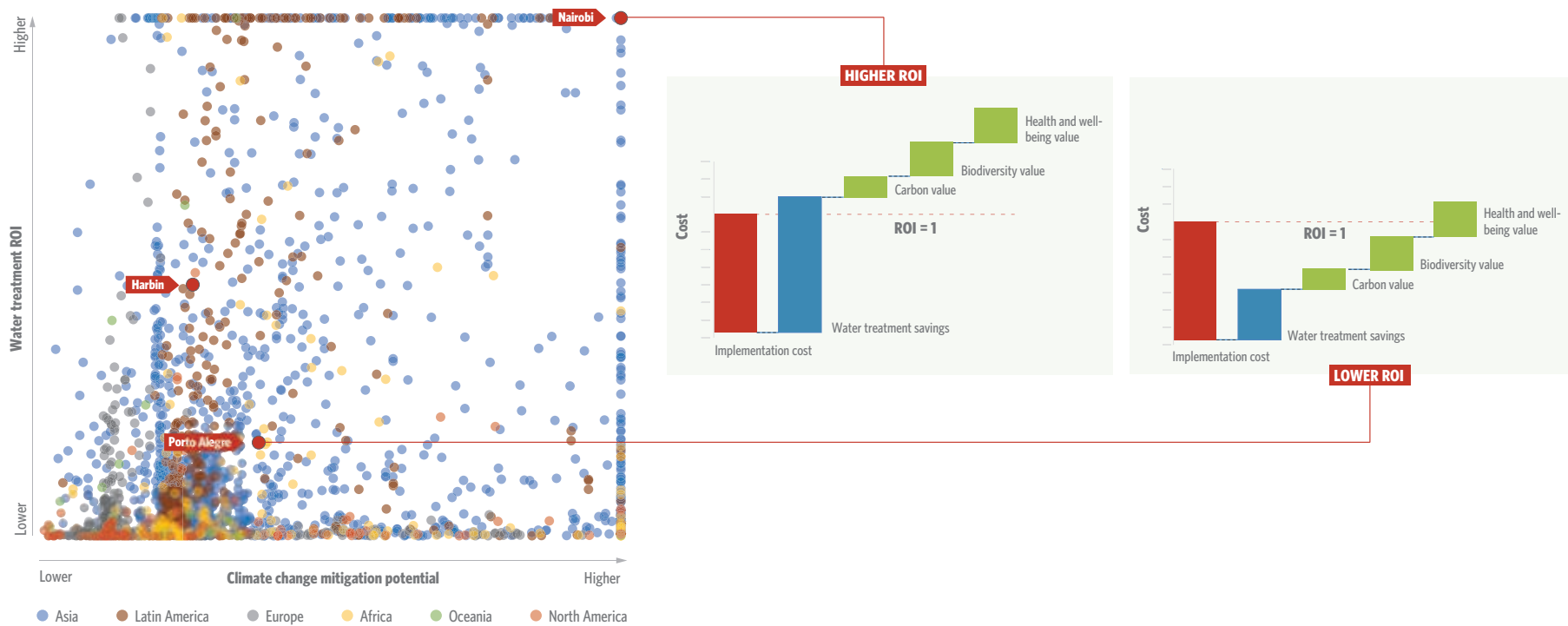
**Figure 6 Left:** Comparison of indicators of potential co-benefit value (horizontal axis) versus relative water treatment ROI (vertical axis). Climate change mitigation potential estimated from annual sequestration potential from reforestation and cover crops as implemented to reach a 10 percent reduction in sediment or nutrients. **Middle:** Illustrative graph showing cities with a positive ROI based solely on water treatment savings. **Right:** Illustrative graph showing cities whose ROI could be positive with the addition of co-benefit values.

# Beyond the Source

## A multitude of benefits from source water protection

Source water protection is first and foremost a strategy for securing clean, reliable natural water sources. But there are many other benefits that can be accrued. **A new report**—called Beyond the Source—analyzes 4,000 cities to demonstrate the health, climate and biodiversity benefits of source water protection.

Download the Beyond the Source report. You can download the executive summary in the following languages: English, Portuguese, Spanish, Chinese, German and French.

**Learn More** ↗

nature.org/beyondthesource

"Source watersheds are vital natural infrastructure for nearly all cities around the world."

Photo: © Andrew Peacock

# Water Funds

# Water Funds: A governance solution to local water challenges

The water security benefits and co-benefits of source water protection are not being captured systematically today. Despite overwhelming benefits to cities, most exert little influence over how sources are managed.

Traditional urban water management systems that focus on engineered solutions—like aqueducts, pipes, and drains—will likely be insufficient to deal with pressures like global urbanization and climate change on their own. These "business as usual" solutions are expensive, degrade over time, and can have devastating effects on the health of rivers, floodplains, and wetlands.

**But there is another way. An innovative natural solution for water security has been developed: Water Funds.**

## What is a Water Fund?

Water Funds are organizations that design and enhance financial and governance mechanisms which unite public, private and civil society stakeholders around a common goal to contribute to water security through nature-based solutions and sustainable watershed management.
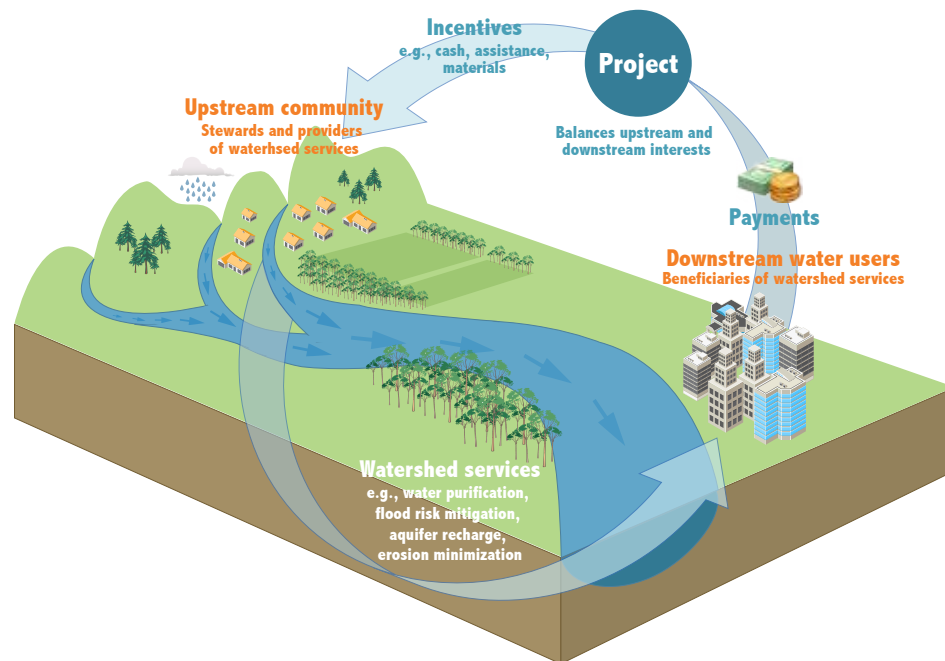


**Figure 7.** The transfer of services and funding within a Water Fund © Forest Trends, 2012

"For more than 15 years, Water Funds have successfully enabled downstream water users to invest in upstream habitat protection and land management to improve water quality and quantity."

**Ready to Begin?**

**ACCESS WF 101 TRAINING:**
nature.org/waterfundstraining

# Barriers to effective water governance

*Governing connected systems — land and water — within a watershed needs a combination of elements: clear rules, appropriate actors, effective participation, common visions, multisector and multi-level strategic planning, strong relationships, accountability and conflict management.*

Local, regional, and global actors can help protect water sources by providing leadership in overcoming the following barriers to good governance over watersheds[7, 8]:

- institutional fragmentation hinders decision-making;
- a lack of political will and public awareness hinders collective action;
- a lack of information about the type and scale of interventions needed;
- a lack of incentives for stakeholders to improve conditions;
- a lack of investment in the processes and transaction costs of stakeholder engagement.

## Collective Action for Water Security

The Water Fund, an institutional platform developed by cities and conservation practitioners including TNC, can help resolve governance issues by bridging science, jurisdictional, financial and implementation gaps. For more than 15 years, Water Funds have helped communities improve water quality by bringing water users together to collectively invest in upstream habitat protection and land management, and mobilize innovative sources of funding. As a permanent governance, investment and source water protection implementation mechanism, Water Funds provide the framework for collective action, connecting land stewards in rural areas and water users in urban areas to share in the value of healthy watersheds. With a portfolio of 35 funds in operation as of the publication of this report and more than 30 in design, TNC and its partners are building an understanding of how to reduce the risks associated with source water protection investments. Other actors are also developing similar models in a variety of contexts. Taken together, a body of work is emerging that provides solutions to the barriers on the ground.

A few examples of common challenges Water Funds seek to address include:



**Figure 8.** The major elements and flows of a Water Fund. A Water Fund is designed to cost-effectively harness nature's ability to capture, filter, store and deliver clean and reliable water. Water Funds have four common characteristics: science-based plans, a multi-stakeholder approach, a funding mechanism and implementation capacity. We explore these concepts further below.

- Improving water quality: reducing sediment and/or nutrient loadings
- Regulating water quantity: surface water regulation
- Improving groundwater infiltration (quality and quantity)
- Reducing biodiversity loss
- Mitigating climate change impacts
- Adapting to climate change impacts
- Reducing risk of catastrophic fires
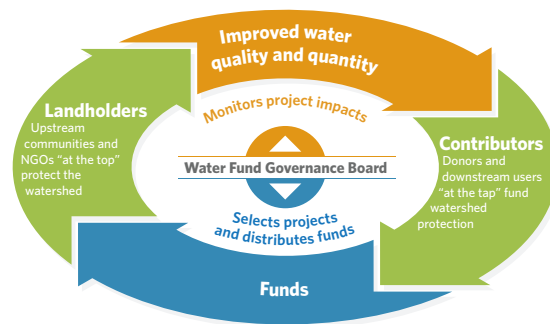
7    Grey, D., Garrick, D., Blackmore, D., Kelman, J., Muller, M., and Sadoff, C. (2013). Water Security in One Blue Planet: Twenty-First Century Policy Challenges for Science. Philosophical Transactions of the Royal Society A Mathematical,Physical and Engineering Sciences 371: 20120406.

8    Akhmouch, A. and Clavreul, D. (2016). Stakeholder Engagement for Inclusive Water Governance: "Practicing What We Preach" with the OECD Water Governance Initiative. Water 8: 204.

# Water Funds in Action

## Quito, Ecuador

In response to growing water demands and concern over watershed degradation, the municipality of Quito, the water company of Quito and The Nature Conservancy helped create the Fund for the Protection of Water (FONAG) in 2000. FONAG works to mobilize critical watershed actors to exercise their civic responsibility on behalf of nature, especially related to water resources. The multi-stakeholder board—composed of public, private and NGO watershed actors—provides a mechanism for joint investment in watershed protection, including supporting the communities that live there.

FONAG conducts source water protection through a variety of mechanisms. First, it works to protect and restore high Andean grasslands (páramos) and Andean forest in critical areas for water provision to Quito, including areas owned by local communities, private landowners and the Quito water company. In addition to direct source water protection activities, FONAG focuses on strengthening watershed alliances, environmental education and communication to mobilize additional watershed actors in watershed protection. FONAG has also established a rigorous hydrologic monitoring program to communicate and improve outcomes of investments in collaboration with several academic institutions.

FONAG has an endowment of more than US$10 million and an annual budget of more than US$1.5 million. The largest source of funding (nearly 90 percent) comes from Quito's water company, which by a municipal ordinance is required to contribute 2 percent of the water company's annual budget. Since its inception, FONAG has worked to protect and/or restore more than 40,000 hectares of páramos and Andean forests through a variety of strategies, including working with more than 400 local families.

## Nairobi, Kenya

The Upper Tana River Basin is of critical importance to the Kenyan economy. Covering an area of approximately 1.7 million hectares, the Upper Tana supplies 95 percent of Nairobi's drinking water, sustains important aquatic biodiversity, drives agricultural activities that feed millions of Kenyans and provides half of the country's hydropower output. The basin has experienced high population growth and declining sustainability of agriculture, resulting in the conversion of forest to cropland and decreasing land per capita.

Smallholder farms are the largest upstream water user in aggregate of Upper Tana Basin water. Hydropower generation is the second largest upstream user of water, though the water is returned to the river. The unchecked expansion of farming, quarrying and dirt road construction across the Upper Tana over the last 40 years has led to land degradation. Consequently, elevated sediment loads are entering the river system, impacting the delivery of water to Nairobi water users and reducing the storage capacity of reservoirs. In response to these challenges, the Upper Tana-Nairobi Water Fund was launched to implement a holistic set of source water protection activities with the objectives of increasing water yields, reducing sediment, and promoting sustainable food production and increased household incomes in farming communities across the project areas.

In order to mobilize funding, a comprehensive analysis integrated investment planning techniques with watershed modeling tools to prioritize where to work. Non-monetized benefits, including pollinator habitat and carbon storage, were identified and the overall cost-to-benefit analysis concluded that, even by conservative estimates, the selected watershed interventions could ultimately deliver a two-to-one return on investment over a 30-year timeframe. By recognizing the multiple embedded values of a healthy watershed, and involving the key stakeholder groups, the water fund was able to design a collective action program whereby investing together made the most financial sense. Many of these projected benefits are already being measured through demonstration interventions.

## San Antonio, Texas, United States

As one of the largest artesian aquifers in the world, the Edwards Aquifer serves as the primary source of drinking water for nearly 2 million central Texans, including every resident of San Antonio—the second largest city in Texas—and much of the surrounding Hill Country. Its waters feed springs, rivers and lakes and sustain diverse plant and animal life, including rare and endangered species. The aquifer supports agricultural, industrial and recreational activities that not only sustain the Texas economy, but also contribute immeasurably to the culture and heritage of the Lone Star State.

With careful land management, there is the potential to avoid additional impacts to the aquifer and reduce the need to expand water treatment for San Antonio. In 2000, voters approved the city's first publicly-financed water fund measure to protect the Edwards Aquifer. The proposition passed with enthusiastic support and authorized US$45 million to purchase properties within the aquifer's most sensitive area. San Antonians have since voted three more times not only to continue the program, but to greatly expand it. The ensuing Edwards Aquifer Protection Program raised a total of US$315 million to protect the Edwards Aquifer in Bexar County, where San Antonio lies, as well as throughout much of the surrounding regions.

Since 2000, The Nature Conservancy has worked alongside city officials in San Antonio and surrounding communities to ensure these Water Funds have the greatest impact. To date, the efforts have helped local governments invest more than US$500 million in water protection funds and protect more than 48,560 hectares above the Edwards Aquifer, including 21 percent of the aquifer's recharge zone, its most sensitive area.

# A closer look: 5 areas of action common to all Water Funds

*While each Water Fund will differ slightly based on local conditions and context, there are 5 areas of action that are common to all Water Funds. Learn more about these below and online in the Toolbox.*

| Area of Action | Strategic Purpose | Examples of Actions | Examples of Deliverables |
|---|---|---|---|
| **GOVERNANCE** | Assembling and aligning stakeholders with political influence and societal trust that bring credibility to the Water Fund and helps the institution initiate interventions. This includes stakeholders from the private companies, academia, civil society and the public sector all engaging at different levels of participation with the Water Fund (some as partners, some as promoters and some as allies). Work in this area is focused primarily on the Water Fund's initial set-up, but may also be necessary in the early phases of interventions to assemble/ organize relevant stakeholder support for these initiatives. | 1. Convene stakeholders to establish credibility.<br>2. Establish decision-making rules and governance structures.<br>3. Establish the Water Fund's legal mechanism. | • Stakeholder Map/Analysis<br>• Water Fund Charter (or similar agreements)<br>• WF established as a new Legal Entity or hosted in an existing Entity |
| **SCIENCE** | To build the case for the Water Fund through scientific analysis and build credibility through monitoring and evaluation of interventions. | 1. Make decisions based on science: identify problems and optimize a portfolio of interventions to help address them.<br>2. Monitor interventions to demonstrate impact.<br>3. Incorporate monitoring results into decision-making and adapt operations. | • Water Balance Model<br>• Portfolio of Interventions<br>• Monitoring and Evaluation Plan |
| **FINANCE** | To develop and implement the Water Fund's model for financial sustainability, which is capable of financing and ensuring the ongoing operation (including implementation of selected interventions and execution of other related activities) of the Water Fund. | 1. Determine how much resources are required.<br>2. Develop strategy for securing resources.<br>3. Secure long-term resources to ensure longevity. | • Resource Needs (for creation and operation)<br>• Business Case<br>• Fundraising Strategy |

| Area of Action | Strategic Purpose | Examples of Actions | Examples of Deliverables |
|---|---|---|---|
| **IMPLEMENTATION** | To develop and execute projects related to interventions, such as natural infrastructure and other projects that help to improve water security. Efforts here deliver tangible work products, such as reports, restored land, trees planted, and so on. | 1. Develop timebound strategic vision and plan for the region.<br>2. Implement compelling pilot projects and scale-up those strategies as impact is demonstrated.<br>3. Retain high caliber staff to lead and manage the WF. | • Strategic Plan<br>• Hiring<br>• Administrative and operational systems. |
| **COMMUNICATIONS** | To engage stakeholders to create a shared vision of desired Water Fund outcomes, mobilize collective and coordinated action, and to report regularly on intermediate results. | 1. Establish a shared vision between stakeholders.<br>2. Articulate benefits of the Water Fund to gain influence.<br>3. Assure consistency in communications and branding between stakeholders, partners, Board members. | • Water Fund Pitch<br>• Annual Reports<br>• Launch Event |

**Learn More** ↗

nature.org/beyondthesource

*Consult page 112 of the Beyond the Source report for examples of different governance, funding, and implementation mechanisms from real Water Funds.*

Project Cycle

# Water Funds Project Cycle

## Process Overview
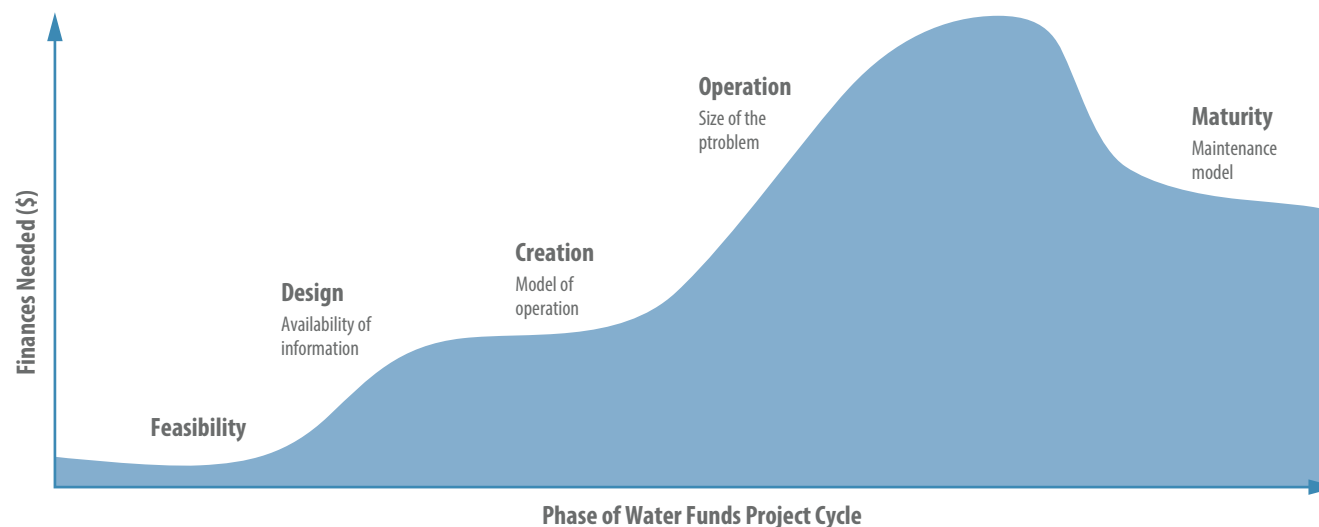


**Figure 9.** Generalization of Financial Resources Needed

The total duration of each phase will vary depending on local conditions and context, the availability of resources and data, stakeholder buy-in, and a number of other critical factors. TNC & partners experience suggests that - as a global average - it takes approximately 2-3 years to complete the Feasibility, Design, and Creation Phases and begin operations. New tools and learnings are continuously helping to shorten this duration by gaining efficiencies across the Project Cycle.

CAVEATS FOR PROJECT CYCLE GUIDANCE:

- **Skillsets Required:** the most prevalent skillsets required for each step are listed based on the broad categories of *Governance, Science, Finance, Implementation, and Communications.* Definitions of these terms can be found in the List of Key Terms and in the online Toolbox. While these categories are intended to be helpful indicators of the types of capacity you will need, they should not restrict who is involved. Many steps require multi-disciplinary approaches and you should act based on your best judgement (e.g. if communications is not listed as a key skillset required, this should not prevent you from leveraging communications resources to better articulate an idea, product, or desired outcome).

- **Order of Steps**: some steps may occur concurrently. The timing of the stepwise order recommended in this document may need to be adjusted based on local conditions and context.

"The Nature Conservancy & Partners have standardized the Water Fund development process around a 5-phased cycle: Feasibility, Design, Creation, Operation, and Maturity."

# Overview: Phases

| Phase 1: FEASIBILITY | Phase 2: DESIGN | Phase 3: CREATION | Phase 4: OPERATION | Phase 5: MATURITY |
|---|---|---|---|---|
| SETTING UP A WATER FUND | | | RUNNING A WATER FUND | |

### Purpose – What is the reason each phase needs to be done?

| | | | | |
|---|---|---|---|---|
| To test eligibility by quickly and efficiently determining if there are water security challenges and a potential for a Water Fund to help.<br><br>If so, then assessing the feasibility (by more deeply understanding the situation) and generally determining how a Water Fund could positively contribute to water security within a defined area/region. | To design a Water Fund which serves as a regional collective action platform where stakeholders from all sectors convene, coordinate and collaborate to help improve water security through science-based systemic change. | To prepare the Water Fund for operation and officially launch it. | To establish stability by developing and implementing a comprehensive workplan which guides: (1) systematic execution of activities, (2) measurement and evaluation as per plan, (3) communication of progress (towards previously defined objectives for the Water Fund), and (4) continuously improves operations through adaptive management and innovation. | Assure long term viability of the Water Fund to create lasting and significant impact that positively contributes to water security. |

### Deliverables/Outcomes – What are the tangible products resulting from each phase?

| | | | | |
|---|---|---|---|---|
| • Eligibility Checklist<br><br>• Situation Analysis Report<br><br>• Decision Support Document<br><br>• Formal Commitments | • Updated Situation Analysis Report<br><br>• Water Fund Strategic Plan<br><br>• Design Studies<br><br>• Monitoring and Evaluation Plan<br><br>• Resourcing Agreement(s) | • WF Legal Mechanism Established<br><br>• Create initial Annual Operating Plan<br><br>• Operational Management Readiness<br><br>• Launch Event | • Updated Annual Operating Plan<br><br>• Periodic Progress Reports<br><br>• Updated Strategic Plan Evolving To Maturity Plan | • Significant Percentage of Long-Term Financing Committed<br><br>• Routine Report Documenting Water Fund's Ongoing Impacts<br><br>• Influence Demonstrated<br><br>• Positive Public Perception Demonstrated |

# On average, what does it take to execute each phase?

| Phase 1: FEASIBILITY | Phase 2: DESIGN | Phase 3: CREATION | Phase 4: OPERATION | Phase 5: MATURITY |
|---|---|---|---|---|
| **SETTING UP A WATER FUND** | | | **RUNNING A WATER FUND** | |
| **Capacity needs** | | | | |
| • Local project manager with knowledge of local context (e.g. TNC)<br><br>• SWAT team of local / international experts to synthesize **existing** knowledge<br><br>• Lead for stakeholder mapping, including consultation workshops / engagement of potential champions | • WF Director (either local project manager or new hire)<br><br>• Monitoring & modeling lead<br><br>• Business case lead<br><br>• SWAT team of local / international experts to create **new** knowledge, incl. key studies<br><br>• Informal WF board, including WF champion | • WF Director<br><br>• Monitoring and Evaluation lead<br><br>• Admin, communications & legal support<br><br>• Formal WF board, including WF president | • WF Director<br><br>• Monitoring and Evaluation lead<br><br>• Communications Lead<br><br>• Admin and legal support<br><br>• Formal WF board, including WF president | • WF Director<br><br>• Monitoring and Evaluation lead<br><br>• Communications Lead<br><br>• Admin and legal support<br><br>• Formal WF board, including WF president |
| **Resources estimates** | | | | |
| • 1-6 months | • 1-2 years | • Varies widely depending on local laws<br><br>• Need at least 2 years annual budget for implementation and operations | • Operating budget<br><br>• Implementation budget<br><br>• Some WFs set aside a % of revenue for endowment to eventually cover operating costs | • Full endowment to cover operating costs<br><br>• Secured long-term public funding |

Feasibility

# Feasibility Phase

## Purpose

### What is the reason this Phase needs to be done?

The Feasibility Phase is undertaken to test eligibility by quickly and efficiently determining if there are water security challenges and a potential for a Water Fund to help.

If so, then the Feasibility Phase proceeds by assessing the feasibility of a Water Fund (by more deeply understanding the situation) and generally determining how a Water Fund could positively contribute to water security within a defined area/region.

## Objectives

### What specific results do we aim to achieve?

• Assessing and deciding whether to invest further based on eligibility screening efforts.

• If eligible, deciding whether it's feasible to continue investing in preparing for and designing a Water Fund, including whether there are sufficient commitments and resources to continue.

## Key Deliverables / Outcomes

### What are the tangible products resulting from this work?

• **Eligibility Screening:** Provides a summary-level description of water security challenges in a region and whether a Water Fund could help address these concerns.

• **Situation Analysis Report –** Provides a more detailed review of available technical and other information needed to assess the feasibility of developing a Water Fund. The report contains details on water resources, relevant regional context and a thorough water security situation analysis. These contents are accompanied by supporting maps and figures along with an initial stakeholder inventory and evaluation, all aimed at building greater understanding of the challenges and opportunities for a Water Fund to help improve water security in the region.

• **Decision Support Document –** Building upon the Situation Analysis, the Decision Support Document provides: a go/no go recommendation; a clear articulation of the water security challenges and the magnitude of these problems (to the extent known); along with the potential Water Fund contributions/interventions that could help improve water security in the region.  The Document's aim is to inform a decision on going forward with the Water Fund's design and providing any accompanying recommendations/conditions for moving ahead.

• **Formal Commitments –** Including commitment of a potential champion, hiring/onboarding a Water Fund Director and sufficient financial resources to complete a Water Fund's design.

**Ready to Begin?**

## Transition Requirements

### What conditions must be satisfied to move forward?

- **The Water Fund is deemed to be a feasible mechanism:** the Water Fund has been deemed 'feasible' based on the findings of the Water Fund Feasibility Decision Support Document.

- **Resources have been committed:** relevant decision-makers have deemed sufficient commitments and resources exist to support the Water Funds design and agrees that other conditions (if any) that must be addressed before moving ahead have been satisfied.

- **Formal 'go' decision has been made:** relevant decision-makers have formally documented their decision for the Water Fund to move forward to the Design Phase.

## Resourcing the Feasibility Phase

### High-Resource Scenario

A scenario wherein resources are highly available indicates that there already is significant interest from one or more stakeholders in the Water Fund model. This scenario provides the team championing the Water Fund with options that may not be available in *low-resource scenarios*. For instance, high resources may enable you to:

- Complete your feasibility determination quickly

- Conduct robust campaign research (e.g. willingness to pay studies, extensive polling, etc.)

- Contract for scientific analyses by the most credible, available consultants

- Engage stakeholders in-depth



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Photo: © Alan W. Eckert

### SANTA FE WATER FUND, NEW MEXICO, USA

**Feasibility Determination**

In addition to safeguarding the water supplies of the City of Santa Fe, the Santa Fe Water Fund in New Mexico, USA served as a highly effective 17,000 acre pilot project that catalyzed the development of the Rio Grande Water Fund, which spans an area of roughly ten times the size of this pilot project.

The local team secured funding to contract professional pollsters who surveyed 402 voters in the City of Santa Fe to assess public attitudes toward local waters supplies and potential steps that may be taken to protect them. That survey indicated that an overwhelming majority of voters indicate that they would support a nominal fee (on average, $0.65 dollars per month, but a majority was willing to pay up to $2.00 dollars per month) to help fund the protection of the city's water supply. This survey further indicated that conceptual support for the proposal was broad, cutting across all major demographic and geographic subgroups of Santa Fe voters. This kind of upfront investment in this survey provided the team with an indispensable tool for engaging partners, including the City Council.

Learn more about Conservation Campaign Tools: waterfundstoolbox.org/conservation-campaign-tools

Photo: © Nick Hall

## Low-Resource Scenarios

A low-resource scenario does not preclude the scoping of feasibility for a Water Fund. It does require the team championing the feasibility determination to be more agile and collaborative, which may generate additional long-term benefits in the form of partnerships.

Specifically, a low availability of resources likely indicates an increased need for:

• Pro-bono support (e.g. legal, scientific analyses from universities, etc.)

• Partner collaboration and sharing of resources

• Leveraging of similar examples to attract investment (e.g. using results from similar effort to make the case for the Water Fund)

### UPPER TANA NAIROBI WATER FUND, KENYA

**Feasibility Determination**

The Upper Tana River basin, located in Kenya, covers approximately 17,000 km² and is home to 5.3 million people. It further provides drinking supplies for the entire downstream population of Nairobi, Kenya. The Nairobi Water Fund was created as the first Water Fund in Africa, and was scoped through a highly collaborative approach.

The team that championed the Water Fund noted how the process for scoping the feasibility of the Water Fund needed to rely on the ongoing support of partners to succeed, such as by contributing towards the hosting of events and activities, as well as by contributing subject matter experts in the absence of available funding for consultants or the hiring of staff. Resources were further shared in that experts from TNC's Latin America program provided direct support in both the scoping of the Water Fund and corresponding GIS analyses. Finally, pilot sites were frequently leveraged to attract attention and investment to the larger effort. The Nairobi example demonstrates how even with few resources, momentum can be built to complete a feasibility determination through the mobilization of partners and optimization of internal resources.
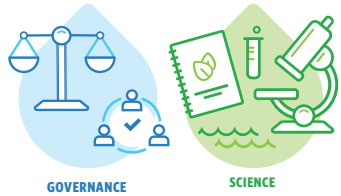


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# 1.1 Eligibility Screening

## Purpose

To test eligibility by quickly and efficiently determining if there are water security challenges and a potential for a Water Fund to help.

## Key Ideas

The Eligibility Screening Checklist is the result of a short and preliminary research effort lasting a maximum of two weeks. The research determines the water security challenges and the potential for a Water Fund to help.

| Key Idea | Description |
| --- | --- |
| Use existing data | An Eligibility Screening should utilize existing data and studies, where available. |
| Engage existing efforts that hold similar goals | Any existing efforts that hold similar goals to what the team anticipates the Water Fund would seek to achieve should be engaged early to explore opportunities to collaborate, or at a minimum, avoid competition. |
| Conduct an expert visit | Conduct a visit by experts to the country/city to meet with key stakeholders (e.g. Ministry of the Environment/Water Agency, Water Utility, Private Sector, Academic sector) to evaluate enabling conditions for a Water Fund. This should not be an extensive engagement effort. For instance, this may simply be a series of meetings with 4-6 people. |
| Clearly define the water security problem(s) | A clear definition of the water security problem(s) that a Water Fund might help contribute to resolving is a key outcome of an Eligibility Screening (e.g. current causes of water treatment plant shutdowns or an anticipated cause of shutdowns, such as increased sediment loadings, etc.). A checklist is provided below to help define these problems in the 5 dimensions of water security. |
| Document results | The results of the Eligibility Screening should be documented for decision-makers (e.g. in the provided checklist). |
| Make a Go/No-Go Decision: determine if the Water Fund should proceed | A Go / No-Go Decision should be made based on the results of the Eligibility Screening to determine if further investments should be made in assessing the Water Fund's feasibility. |

**Important note:** the Eligibility Screening is just that, a screening process. Scientific rigor and due diligence are considered as much as possible within the allotted time-frame, but details will not be recorded. Such rigor is reserved for the feasibility determination and resulting Situation Analysis Report.

Featured Template

Eligibility Screening Checklist

The purpose of the Eligibility Checklist is a tool to assist decision making at the very beginning of the life of a Water Fund. The Checklist documents the results of the Eligibility screening and recommends if a Water Fund could help improve water security.

# 1.2 Situation Analysis

## Purpose

The purpose of a Feasibility Situation Analysis is to: (a) assess the feasibility of a Water Fund (by more deeply understanding the situation); and (b) generally determine how a Water Fund could positively contribute to water security within a defined area/region.

## Key Ideas

| Key Idea | Description |
|---|---|
| How does the Feasibility Situation Analysis differ from an Eligibility Screening? | The Feasibility Situation Analysis provides a more detailed review of available information needed to assess the feasibility of developing a Water Fund and if it is the right tool to help address identified water security issues. |
| What does the report contain? | The report contains details on water resources, relevant regional context, and a thorough water security situation analysis. These contents are accompanied by supporting maps and figures along with an initial stakeholder inventory and evaluation, all aimed at building greater understanding of the challenges and opportunities for a Water Fund to help improve water security in the region. |
| This report is a living document | The Situation Analysis Report will need to be updated again in the Design Phase, prior to initiating strategic planning. This report is intended to document the current situation and be periodically updated to help inform decision-making processes. |

## Relevant Skillsets Required

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waterfundstoolbox.org/project-cycle/feasibility/situation-analysis

## Featured Examples

### Bogota Water Fund, Colombia

The main study area associated with this analysis was the Capital District of Bogotá (Bogotá D.C.). Because Bogotá D.C. receives and supplies water resources from and into other administrative and hydrogeological areas, this analysis provides information available for other nearby areas. This analysis determined that while Bogotá D.C. has abundant water resources, but faces significant challenges in all dimensions of water security. For instance, this includes challenges such as a lack of integration between water security policies, environmental management, and territorial planning; a lack of piped drinking water supply to 18% of residents of Bogotá D.C.; sanitation services are not available in some areas of the city, including wastewater treatment; and others. Access the report and other examples in the online Toolbox.

### Upper Tana Nairobi Water Fund, Kenya

The main study area associated with this analysis comprised selected sub-catchments of the Upper Tana River basin, located in Kenya. While this study is more expansive than the recommended minimum scope of a Situation Analysis outlined in this Field Guide, it provides an excellent example of how to characterize the situation and centralize information critical for making feasibility decisions. This study adopted the following approach to characterize the situation: literature review; stakeholder consultations and collection of secondary information and data; field visits; and compilation of data and report writing. The report concludes that a Water Fund in the Upper Tana River basin is feasible based on existing evidence, research, and stakeholder meetings. Access the report and other examples in the online Toolbox.

### Longwu Water Fund, China

The main study area associated with this analysis was the Longwu Reservoir. This reservoir is located northeast of Huanghu town, Yuhang district, Zhejiang Province and supplies drinking water to two villages of approximately 3,000 people. Total nitrogen and total phosphorus levels have been rising in the drinking water, while dissolved oxygen has been dropping. The nutrient pollution is largely the result of over-application of fertilizer and pesticides for bamboo planting in the catchment. To help address this water security issue, this study explored the technical, financial, and governance aspects of a potential Water Fund to support decision-makers in making a feasibility determination. Access the report and other examples in the online Toolbox.

## Featured Template

### Situation Analysis Template

This template provides a structure for capturing background information on a given city's source water situation, an overview of the social, policy/legal and potential finance context, along with an analysis of the five dimensions of water security, including the challenges that city faces in each dimension.

## Featured Tool

### Stakeholder Mapping and Engagement Tool

Stakeholder Identification, Mapping, Prioritization, Action Planning and Engagement all make up a process called Stakeholder Engagement. The corresponding guideline document will take the reader through the various steps of the Stakeholder Engagement Process.

# Key questions: situation analysis

**Note**: *questions related to addressing the situation are covered in the Decision Support Document.*

## Governance

- Have you built an inventory of relevant government agencies, policies, and regulatory frameworks?

- Are there national, state, or local legal conditions that would prevent, limit, or catalyze the development of a Water Fund?

- Who are the key stakeholders? What is the current 'appetite' of stakeholders?

- Who are potential champions?

- Are other initiatives in place with similar objectives and with whom we can collaborate (or at a minimum ensure we are not competing)?

- What could be the role of partnerships?

- How does the country or countries in which the Water Fund would operate rank in terms of transparency and corruption?

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## Science

### Water Resources:

- What is the physical setting in which the Water Fund would operate?
  - › Summary of municipal boundaries, hydrologic unit(s), watershed(s), interbasin transfers.
  - › Summary of geography, demographics, hydrology, and hydrogeology of watershed(s).

- Have you characterized land use trends?
  - › Summary of current land use, trends and developments, effects of land use change, and ecologically sensitive areas.

- Have you characterized the current approach to water management in the region?
  - › Provide a summary of: Entities involved; Water sources used; Treatment and distribution; Water use limitations; Water costs; Priorities for relevant systems; Reputation of regulators; and other relevant factors.

- What is the water balance and water quality for relevant watersheds?
  - › Provide a summary of: Total actual renew water resources (precipitation); Water transfers; Evapotranspiration; Runoff; Groundwater extraction; Consumption; Water scarcity analysis; and other relevant factors.
  - › Provide a summary of the water quality: water quality problems (nutrients, sediments, pollution, etc.).

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## Water Security:

- What are the key water issues in each dimension of water security:

  › **Domestic Water Security** relates to providing all people with reliable, safe water and sanitation services. What is the situation in terms of coverage and access to piped supply and improved sanitation? Specify challenges, apparent drivers, and information gaps.

  › **Economic Water Security** relates to the productive use of water to sustain economic growth in the food production, industry, and energy sectors of the economy. What is the situation in terms of water availability for meeting the needs of agriculture, industry, and energy? Include data related to current water consumption by sector, expected demand trends, expected supply trends, and supply sustainability. Specify challenges, apparent drivers, and information gaps.

  › **Urban Water Security** relates to the creation of better water management and services to support livable water-sensitive cities. What is the situation in terms of urban water supply, urban wastewater collection, flood and storm drainage, and urban river health? Specify challenges, apparent drivers, and information gaps.

  › **Environmental Water Security** relates to the restoration and/or protection of rivers and ecosystem health on a regional scale (e.g. issues with flow regulation, environmental governance, and ecosystem services). What is the situation in terms of flow regulation, environmental governance, and ecosystem and hydrological services? Which strategic ecosystem services will the water fund protect, conserve, restore, fund and/or compensate? In other words, where is the opportunity to fund long-term conservation that benefits all parties involved? Specify challenges, apparent drivers, and information gaps.

  › **Resilience to Water-Related Natural Disasters** relates to the building of resilient communities that can adapt to change and are able to reduce risk from natural disasters related to water to minimize the impact of future disasters. What is the situation in terms of water-related natural disasters, droughts, floods, climate change susceptibility, and effects of predicted climate in the watershed(s)? Specify the disaster prevention strategy, mitigation measures planned, adequacy of planned mitigation, and climate change adaption actions. Specify challenges, apparent drivers, and information gaps.

## Finance

- What is the current situation in terms of partner fees, private sector contributions, subsidies and grants (governmental, federal, and local levels), grants (from Foundations), services, endowment donations, cooperation funds, and other sources (lotteries, crowdfunding).

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# 1.3 Decision Support Document

## Purpose

The Decision Support Document helps decision-makers to decide if the Water Fund should proceed to the Design Phase. The document provides recommendations and any conditions related to moving ahead.

## Key Ideas

Building upon the Situation Analysis, the Decision Support Document provides the following:

| Key Idea | Description |
|---|---|
| A Go / No-Go Recommendation | The document should provide a recommendation if the Water Fund should or should not move ahead to the Design Phase. The results of the Situation Analysis should help inform if the Water Fund is deemed 'feasible' in terms of both its ability to help address the identified water security issues and its likelihood to succeed. This may include specific conditions that must be addressed in moving ahead to the Design Phase. |
| A clear articulation of the water security challenges and the magnitude of these challenges | The document should provide a clear articulation of the water security challenges and the magnitude of these problems (to the extent they are known). |
| A clear articulation of the potential Water Fund contributions/interventions that could help improve water security in the region | The document should provide a clear articulation of the potential Water Fund contributions and interventions that could help improve water security in the region. |
| What is the difference between the Situation Analysis and Decision Support Document? | The Decision Support Document is based on the Situation Analysis. The contents of this document serve for decision making purposes. Detailed information should not be presented in this document, as that is the purpose of the Situation Analysis report. |
| What might constitute decision criteria? | Decision criteria for making Go / No-Go Decisions will ultimately be based on local conditions and context. Some factors you may want to consider include:<br><br>• **Magnitude of Impact:** from a practical perspective, to what degree can a Water Fund help to improve water security and related challenges in the region?<br><br>• **Acceptable Risk:** are identified risks associated with potential interventions to help improve water security acceptable? Is it possible to understand the probability of success with confidence?<br><br>• **Feasibility:** even if the previous bullets are positive, do any specific considerations related to governance, science, finance, implementation, and/or communications suggest that the Water Fund may not be feasible? |

## Relevant Skillsets Required



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## Learn More

waterfundstoolbox.org/project-cycle/feasibility/decision-support

## Featured Examples

### Belo Horizonte Water Fund, Brazil

Based on Belo Horizonte's identified water security challenges and the potential for a Water Fund to mitigate and resolve the challenges, the recommendation was made to proceed with the design of the Water Fund. Apart from sanitation issues, the Water Fund was seen to be a logical option for addressing the identified challenges. For instance, the problem of an expanding population (an additional 200-300,000 people) and increased reliance on groundwater has been identified as a problem, with potential interventions such as identifying recharge areas of the aquifers, reforesting and conserving vegetation in recharge areas, developing hydrogeological studies to better understand groundwater quantities and regional flow, and others identified. Access the document and other examples online to learn more about the level of detail that was presented to decision-makers at this phase of the process.

### Brandywine-Christina Healthy Water Fund, USA

The Brandywine-Christina Healthy Water Fund aims to drive regulatory-driven municipal stormwater and drinking water utility investments toward agricultural restoration projects and to create marketable Environmental Impact Units, which can be sold to generate revenue for more conservation and create a self-sustaining, revolving fund structure. This document assesses the feasibility of a Water Fund on a preliminary basis, specifically by consolidating research and analysis, conducting interviews with watershed experts and stakeholders, and completing an economic analysis. While this study is more expansive than the recommended minimum scope of a Decision Support Document outlined in this Field Guide, it provides an excellent example of how to centralize information critical for making feasibility decisions. The study found that sufficient preliminary evidence exists to conclude that a Water Fund offers a financially and politically viable approach to water quality (and perhaps quantity) improvement in the Brandywine-Christina watershed. Access the report and other examples in the online Toolbox.

## Featured Template

### Decision Support Document Template

Decision Support Document uses the results from the Feasibility Situation Analysis to inform the decision whether to move forward with the design of a Water Fund for a given city. This template provides a structure and guidance for presenting key information to decision-makers.

**\*Note:** What if the feasibility determination recommends that a Water Fund is NOT the right tool for addressing the identified water security issues? There are many conservation alternatives that may still address these issues. Learn more: waterfundstoolbox.org/conservation-alternatives.

# Key questions: decision support document

## Go/No-Go Recommendation

• Is the recommendation for the Water Fund to proceed to the next phase (Design)?

• What assumptions underlay the recommendation?

## SWOT Analysis

• Given the current conditions, what are the strengths, weaknesses, opportunities, and threats to the Water Fund?

## Conditions

• What conditions must be met before the Water Fund can proceed? (e.g. conditions related to identified weaknesses and/or threats)

# Feasibility Considerations

## Governance

• What organizations and groups should be involved in the Design Phase?

• Decision-making: is there an advisory panel that could be convened to help guide this determination of feasibility?



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## Science

• What is the current state of knowledge within the project area?

• Are there major information gaps that need to be filled before a decision about feasibility can be made?



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## Finance

- What is the total cost estimate for completing the Design Phase?
- As a very high-level estimate, what is the potential total cost of developing the Water Fund?
- Who might value the interventions the Water Fund is proposing?
- Do conditions necessitate investment into further analysis of stakeholders' willingness to pay? (e.g. for political leverage)

## Implementation

- Who will design the Water Fund?
- What considerations related to the implementation of interventions are important to highlight for decision-makers?

## Communications

- What is our 'elevator pitch' for the Water Fund?
- Who should the contents of the feasibility documents and its recommendations be shared with?

## Problem Statements & Interventions

- What are the key problems/challenges the Water Fund will help address?
- What is the magnitude of those problems?
- What interventions might the Water Fund implement to help address those problems?

# 1.4 Formal Commitments and Hire Water Fund Director

## Purpose

Prior to initiating the design of the Water Fund, several key actions should be taken to assure that sufficient resources and capacity exist to sustain the momentum behind the Water Fund and the completion of its design.

## Key Ideas

The following actions should be taken prior to initiating the Design Phase:

(a.) gain a formal commitment from a potential champion (e.g. to advocate for the Water Fund),

(b.) secure sufficient financial resources to design the Water Fund, and

(c.) hire and onboard the Water Fund Director.



Photo: © Nick Hall

## Relevant Skillsets Required

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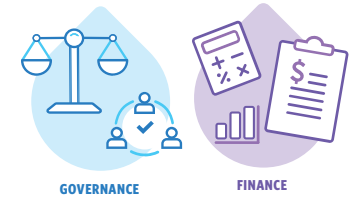
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waterfundstoolbox.org/
project-cycle/feasibility/formal-
commitments

| Key Idea | Description |
|---|---|
| Formal commitments may be documented in different ways | Commitments may be documented in a range of ways, such as Memorandum of Understandings, Charters, or other agreement documents. In all cases, it is important that commitments are documented, particularly where resources are being allocated. |
| Champions may emerge from a range of contexts | Who is a champion? A champion should be a charismatic individual or group that is interested and cultivated over time to offer leadership and increased visibility to the Water Fund. A champion should have a positive reputation publicly and not hold any conflicts of interest with the Water Fund's goals or eventual operation. For instance, a champion may be someone with an influential voice in the region related to water security (e.g. a water utility leader; a respected business leader; a trusted non-profit leader; etc.), a public personality (e.g. a sports personality; a famous musician; a well-known grassroots advocate; etc.), or another influential area that would elevate the visibility of the Water Fund, while not jeopardizing its reputation or violating any conflicts of interest. |
| Hire a Water Fund Director before initiating the Design Phase | It is highly recommended that a WF Director be hired prior to the Design Phase. The WF Director is responsible for leading the strategic and operational aspects of the Water Fund's development. The **key roles and responsibilities of this position** include:<br><br>• Design and ensure proper implementation of work plans and the necessary inputs;<br><br>• Strengthen the organization with partners and strategic partners in different sectors;<br><br>• Position the organization as a leader in the issue of water security through science;<br><br>• Ensure the sustainability of the organization implementing innovative financial schemes;<br><br>• Influence decision makers on issues related to water;<br><br>• Facilitate and catalyze multi-sectoral action; and<br><br>• Develop the consolidation strategy of the organization.<br><br>(*see online Toolbox for examples of actions for each of these roles from the Mexico City Water Fund, Mexico). |

# Feasibility Phase Checklist and Action Plan

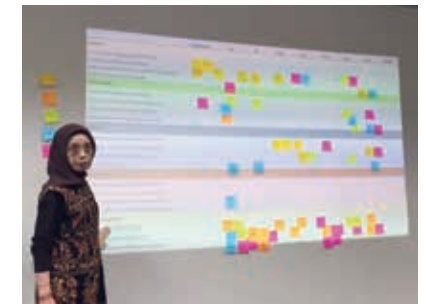| Governance | Science | Finance | Implementation | Communications |
|---|---|---|---|---|
| ❏ Inventory of relevant government agencies and policies complete | ❏ Critical data and information reviewed, data gaps identified | ❏ Detailed cost-estimate of Design Phase complete | ❏ Capacity to design WF identified/available | ❏ Elevator pitch for WF complete |
| ❏ Stakeholder map complete | ❏ 5 dimensions of water security analyzed | ❏ High-level / rough cost estimate of total Water Fund cost complete | ❏ SWOT analysis complete | ❏ Relevant reports prepared (e.g. Situation Analysis, Decision Support Document) |
| ❏ Champions identified and engaged | ❏ Potential WF interventions identified and prioritized | ❏ Potential funding sources identified | ❏ Recommendation of Go/No Go Decision | |
| ❏ Critical stakeholders engaged to learn more about water security situation | ❏ Consensus achieved on key challenges the WF would help address and why WF is the right mechanism to solve the identified challenges | | ❏ WF Director hired | |
| ❏ Institutional and political conditions identified | | | | |

Photo: © TNC

**Note:** Download a copy of the checklist and action planning tool for completing the Feasibility Phase in the Water Funds Toolbox.

Design

# Design Phase

## Purpose

### What is the reason this Phase needs to be done?

To design a Water Fund which serves as a regional collective action platform where stakeholders from all sectors convene, coordinate and collaborate to help improve water security through science-based systemic change.

## Objectives

### What specific results do we aim to achieve?

- To have a compelling, actionable Strategic Plan that articulates how the Fund will contribute to improved water security in a region, describing ways it will:

  › build a reputation as a credible convener and collective action platform;

  › use this reputation to increase its ability to influence relevant public policy; and

  › with sufficient influence, ultimately unlock the potential for creating significant positive water security impacts at scale.

- To have leadership (WF Director, Board and advisors) committed to the Fund's strategy and plans with sufficient support from critical/priority stakeholders, donors/investors along with resources and/or commitments to move the Fund into the Creation and Operation Phases.

## Key Deliverables / Outcomes

### What are the tangible products resulting from this work?

- **Updated Situation Analysis:** As previously described, but the Report is updated to include new information, insights and/or stakeholder details contributed by the Board, advisors or other trusted sources.

- **Design Studies:** Design studies are technical analyses undertaken to inform design decisions related to the Water Fund's: 1) portfolio of interventions, and 2) business case and long-term finance strategy.

- **Water Fund Strategic Plan:** A long term (5-year) plan which aims to create clarity, focus and a shared roadmap for implementing important strategic choices made by a Fund's leadership.

- **Monitoring and Evaluation Plan:** a long-term plan which details the rationale, strategies, and costs for monitoring and evaluating the various projects being implemented by the Water Fund.

- **Resourcing Agreement(s):** With donors and investors committing resources to finance the Water Fund's creation and initial operation.

Photo: © Alan W. Eckert

## Transition Requirements

**What conditions must be satisfied to move forward?**

- Clear and concise narrative of the region's water security challenges and what contributions the Fund plans to make in helping address these concerns.

- A Strategic Plan that is endorsed/supported by the Fund's leadership.

- Resources and/or sufficient financial commitments to create the Water Fund and operate it for at least 2 to 5 years.

## Relevant Skillsets Required



**GOVERNANCE**

**Learn More** ↗

waterfundstoolbox.org/project-cycle/design/wf-board

# 2.1 Formalize WF Board & Develop Charter

## Purpose

Water Fund Boards are established as the decision-making authority that will take responsibility for the Water Fund's goals. A Charter should be developed, it is a document with the first set of rules that will govern the Water Fund as a project and the decision of the Board (e.g. in early phases, a Memorandum of Understanding or an Administration Agreement). Specifically, these Boards and the corresponding governance document are established to:

1. **Establish the principles** under which Water Funds will operate.

2. **Establish the Governance mechanisms** by which Water Funds will operate, including identifying: (a.) key decision-making processes and (b.) the roles and responsibilities of the individuals and groups.

3. **Assure Partners and Investors** – A Charter type document will assure Water Fund participants and other stakeholders that Water Funds will be managed and operated in an efficient, effective and appropriate manner so as to increase the potential to improve water security and avoid unreasonable risks.

## Key Ideas

A Water Fund Board at this phase is an advisory committee that is usually comprised of strategically selected stakeholders and/or experts who provide guidance on key issues such as proposed strategies, resource allocation, the definition of goals, and/or decisions related to budgetary disbursements.

| Key Idea | Description |
|---|---|
| Boards or Steering Committees may fulfill different roles | Depending on the needs of the Water Fund, a Board / Steering Committee may be established with a range of purposes. Watch the provided videos in the Toolbox below to learn more about the roles and responsibilities Steering Committees have taken in a few existing Water Funds. |
| | While not limited to the following, the main functions of a Board or Steering Committee are typically to: |
| | • Provide overall direction and guidance to the planning process. |
| | • Prepare a work plan that includes a detailed timeline. |
| | • Conduct meetings to coordinate strategies and define next steps. |
| | • Analyze alternatives for the preparation of initial studies. |
| | • Analyze and facilitate the incorporation of new members to the Board. |
| | • Supervise the work of consultants. |
| | • Prepare a list of potential risks and classify them. Determine if risks can be managed or mitigated. |
| The Board's composition should be duly formalized through a Memorandum of Understanding or similar instrument (e.g. Charter | This document should ideally be prepared and signed at the beginning of the process. Potential Board members should also be engaged as early as possible in the planning process. |
| Limit committee size to 6-9 members | The ideal size of a board or committee is typically between 6 to 9 members. Committees that are larger than this size tend to develop factions and create challenges for establishing efficient decision-making processes |
| Embrace diversity on boards and committees | Diversity on all Boards and Committees is critical to their overall effectiveness. Relevant diversity means inclusion of the identities, skills and spheres of influence that are strategically relevant to the context and the committee's purpose. |

Photo: © Mbichagraphy/TNC

## Featured Example

### Rio Grande Water Fund, USA

Signed in 2014, the *Rio Grande Wildfire and Water Source Protection Collaborative Charter* (Charter) sets out conditions by which signatories will collaborate. Severe wildfires and the resulting post-fire effects, as was seen after the 2011 Las Conchas fire, impact surface water sources and supplies by degrading water quality and introducing large quantities of sediments into reservoirs and the conveyance infrastructure that serve communities, acequias and irrigation districts in the Rio Grande Watershed, resulting in effects that may continue for several decades. As a result of this threat and the Water Fund's efforts, 50+ Signatories have now signed the Charter. The Signatories form an executive committee and fill roles such as raising funds for watershed restoration projects, providing oversight, and/or establishing working groups to help carry out the purposes of the Charter. Access the Charter and other examples online to learn more.

## Featured Template

### LAWFP Charter

This Charter establishes the initial rules and governance mechanisms that will guide operations of Water Funds in the Latin American Water Funds Partnership and the behavior of those involved in its activities.

# Methods Kit. Governance and Legal Models

Water Funds are expected to evolve through a range of legal structures, beginning with simple agreements and then moving towards more sophisticated legal structures. A range of Governance and Legal Models should therefore be explored to identify the optimum governing structure of the Water Fund, while not limiting or unduly constraining the interaction it may have with relevant governing bodies. A Methods Kit has been developed that provides guidance for the following topics and questions:

• Legal and institutional structure and formation

• Do we need a new organization?

• Can I start without a new legal entity?

• How do I choose an organizing structure?

• Other important legal issues to consider

• Forming and organizing a new entity

• What issues should be considered when forming an entity?

• How will the legal entity be governed?

• How do I form an entity?

***Note**: while this guidance is intended to support local Water Fund practitioners, a legal expert should be retained to help answer these questions in all scenarios. Visit the online Toolbox to learn more.

# 2.2 Start Creation of Legal Mechanism

## Purpose

To start the process of creating the Water Fund's legal mechanism, such as establishing the Water Fund as a 'legal entity' within its operating jurisdiction, or hosting a Water Fund within an existing public or private entity using an Administration Agreement or similar tool. Depending on local legal requirements, this process may take an extended period of time, even up to and through the Creation Phase.

## Key Ideas

| Key Idea | Description |
|---|---|
| Conduct a legal and institutional analysis | Legal and institutional analyses are undertaken to help navigate legal aspects of developing a Water Fund and ultimately determine the optimal Governance and Legal Model. It is critical that a Water Fund always be in compliance with the guidelines, laws, and procedures of the participating institutions and the country or region where the Water Fund is operating. This analysis is therefore not only critical for the long-term institutional success of a Water Fund, but also for addressing any concerns that partners and stakeholders may hold related to ensuring transparent and accountable governance. Information and data for each given Water Fund will accordingly vary significantly at both the state and country-level. If other Water Funds already exist within the same country, it is highly recommended that a review of those Water Funds be completed to compare governance and legal structures, and that the structure of those Water Funds be used as a starting point for any future efforts. |
| Review existing legislation | The Water Fund should contribute to and complement existing plans, programs, and projects that different levels of government have established in their environmental policies. There should be consideration of key legal aspects such as national environmental policies, legislation for financing environmental services, the capacity or obligation of public agencies to finance watershed management, existing legislation to establish water service rates, and other existing mechanisms for funding. |
| Review existing management plans | There should be a careful exploration of existing management plans in the project area to determine how the Water Fund could partially or fully contribute to financing them (e.g. existing plans that are underfunded). These management plans may be broad in scope, in line with the priority focus areas of the Water Fund, which may include protected areas, territorial zoning, irrigation districts, and so on. |
| Identify legal nature of potential partners | Given that each country has different regulations for the administration of public resources, there should be consideration if any of the potential funders will be subject to a permanent oversight by state audit agencies and therefore limited or requiring additional steps for their involvement. |
| Optimize resource administration | The Water Fund's success will largely depend on the adequate management of resources, legal, and financial guarantees, as these can often be limited. As such, the selection of 'the best option' for administering those resources is critical. The legal and institutional analysis should explore these options. For example, the analysis should compare advantages and disadvantages between options like: creating a Trust Fund or a new organization; or hosting the Water Fund in an existing national environmental funder other existing organization. |

## Relevant Skillsets Required

**GOVERNANCE**

**Learn More** ↗

waterfundstoolbox.org/project-cycle/design/legal-mechanism

Photo: © TNC

# Methods Kit. Legal and Institutional Analysis

There are many different legal considerations to account for when developing a Water Fund. Accordingly, in collaboration with pro bono legal volunteers, including lawyers at Morrison and Foerster and DLA Piper, TNC has compiled a series of concise guidance documents to help others in conducting these analyses. A Methods Kit has been developed that provides guidance for the following topics and questions:

- Financial and fundraising aspects:

  › How Do U.S. Tax Laws Limit the Financial Support that Non-Profit Water Funds May Receive from For-Profit Organizations?

  › How May a Non-Profit Water Fund Receive Financial Support from For-Profit Organizations Under U.S. Tax Laws?

  › How Can a Water Fund Obtain Financial Support From Non-Profit Organizations or Governments?

  › How Can a Water Fund Obtain Non-Financial Support?

- Marketing and Public Relations:

  › How can marketing and other relationships help support Water Funds?

  › How can a Water Fund best seek support through relationships?

- Technology and Intellectual Property Rights:

  › What Intellectual Property Rights Can a Water Fund Have?

  › What Are the Benefits of Intellectual Property Rights?

  › How Should a Water Fund Choose a Trademark?

  › How Can a Water Fund Protect Its Trademark?

  › How Can a Water Fund License Its Trademark?

  › What Are Service Marks and Trade Dress?

  › What is a Copyright?

  › How Can a Water Fund Use Copyrighted Works?

  › How Can a Water Fund Use Trade Secrets?

*Note: while this guidance is intended to support local Water Fund practitioners, a legal expert should be retained to help answer these questions in all scenarios. Visit the online Toolbox to learn more.

# 2.3 Update Situation Analysis

## Purpose

To update information in the Situation Analysis that is pertinent to strategic decision-making.

## Key Ideas

| Key Idea | Description |
|---|---|
| The Situation Analysis Report is a key input for developing the Water Fund Strategic Plan | The Situation Analysis details the current state of water security, regional governance, stakeholders, and much more. It is important that your team and Water Fund Board have the most current information on which you will base your strategic decisions. |
| The situation may have evolved since the original report was prepared | This report will need to be updated to account for any changes in circumstances within the region that are pertinent to the Water Fund's mission. That includes changes in key factors such as water security considerations, water policy, stakeholder interest, and so on. |
| New stakeholders may have joined the Water Fund since the original report was prepared | New information, insights, and/or stakeholder details may have been contributed by the newly formalized steering committee/Board, advisors, or other trusted source. Other stakeholders also may have emerged since the original report was prepared. The report should be updated to account for these new inputs. |
| Use the same format and template as the original report | To ensure that the report is prepared as efficiently as possible, only the sections that have changed or need to be updated should be modified (including any additions of new sections). The Situation Analysis is a living document. |

## Relevant Skillsets Required



GOVERNANCE            SCIENCE

FINANCE

## Learn More ↗

waterfundstoolbox.org/project-cycle/design/update-situation-analysis
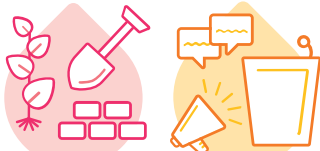
GOVERNANCE

SCIENCE

FINANCE

IMPLEMENTATION

COMMUNICATIONS

**Learn More**  ↗

# 2.4 Water Fund Strategic Plan

## Purpose

A Water Fund Strategic Plan is created to establish a long term (5-year) plan that creates clarity, focus and a shared roadmap for implementing important strategic choices made by the leadership of a Water Fund.

## Key Ideas

| Key Idea | Description |
| --- | --- |
| The Strategic Plan aims to create clarity, focus, and a shared roadmap | **OBJECTIVES:** <br><br> • **Create clarity**: to establish a framework for documenting and evolving important strategic choices made by the leadership of the Water Fund. <br><br> • **Create focus**: to allow more effective goal-setting and purpose-based leadership and action by the Water Fund. <br><br> • **Create a shared roadmap**: to drive measurable progress toward relevant impact and systematic change |
| Understanding the Theory of Change: how might a Water Fund impact water security? | Creating the Strategic Plan for a Water Fund is initially done during the Design Phase and then repeated every 5 years during the Operations Phase. Before starting the Strategic Plan, it is important to understand where the Water Fund is in the Theory of Change model. The overall goal of the Theory of Change is to build credibility to gain relevant policy influence which positions a Water Fund to help create impact at scale in ways that improve water security, while securing co-benefits such as biodiversity conservation, climate change mitigation, and human health and well-being. <br><br> • **CREDIBILITY** <br><br> As a credible contributor to improved water security, the Water Fund is gaining social and political capital with relevant and influential actors. <br><br> • **INFLUENCE** <br><br> As a formal participant in relevant decision-making and governance processes, the Water Fund holds evidence of its success in influencing water security-related public policy. <br><br> • **IMPACT AT SCALE** <br><br> As an influential entity, Water Funds are now prepared and capable of helping create systemic change and positive water security impacts at scale. |

| Key Idea | Description |
|---|---|
| Do you have all the data/information needed to begin the Strategic Plan? | Strategic Plans can be completed more quickly depending on the local context and the degree to which supplemental studies must be completed to support the Plan. |
| | Depending on if there is any missing information and the comfort/confidence level of the Water Fund Board, additional studies (e.g., to help optimize a portfolio of interventions) may be needed to address open questions or concerns Board members may have. You will need to balance this uncertainty against the need to sustain the momentum and progress forward, ensuring that the team does not become caught-up in a state of 'analysis paralysis', where no decisions are ever actually made due to uncertainty. |
| | Nonetheless, if Board members raise significant concerns, it will be important to take the time to conduct relevant assessments, research and/or studies to get answers to the most pressing questions, ensuring the Board is confident and supportive of the Strategic Plan. |
| Engage the Water Fund Board through iterative work efforts | The process, or mechanics, of engaging the Water Fund Board during the strategic planning process should be thought of as a series of **iterative** work efforts. **CONCEPTUALIZE > VET > REFINE > PROCEED** |
| | Work efforts should consist of conceptualizing a practical approach with the Water Fund Team, and then engaging with the Water Fund Board to vet and refine before moving to the next work effort. |
| | It is important to include the Water Fund Board throughout the strategic planning process in this iterative approach to ensure their support and agreement. Not including the Water Fund Board in this manner could create re-work and hinder the progress of the strategic planning process. |
| Decisions must be made without 100% certainty | The Strategic Planning Team and Water Fund Board must be comfortable making decisions and moving forward without 100% certainty and complete data. |
| | The expectations of Board members are typically that the Water Fund will achieve its goals. To demonstrate how these goals will be achieved, the team must balance the need for information required to develop an effective strategy versus the impacts that securing more data and certainty would have on the overall effort (e.g. additional time, resources). |
| | While the Water Fund Team's risk tolerance is important, the Board's risk tolerance in decision-making should be the core driver behind the substance and pace of the process. |
| What is the process for developing a Strategic Plan? | Strategic planning is an iterative process that aims to achieve the following: |
| | **1. CLARIFY THE CHALLENGE** |
| | The purpose of Clarifying the Challenge is to be clear on: 1) how to define the challenges the Water Fund is going to help address, 2) what success looks like and how the Water Fund contributes to that success, 3) how to identify the risks and obstacles and how they can be mitigated/navigated, and 4) how to formulate the Water Fund's strategy, objectives, and 5-year goals by tangible actions the Water Fund will conduct. |
| | **2. FORMULATE INTERVENTIONS** |
| | The purpose of formulating interventions is to conceptualize the portfolio of interventions, associated targets, and resource requirements for the Water Fund. |
| | **3. SUPPORT INTERVENTIONS** |
| | The purpose of supporting interventions is to: 1) establish engagement plans based on stakeholder categories and high-level protocols for communications, 2) create a plan to secure resources (i.e., fundraising strategy), and 3) to develop a 5-year roadmap to track milestone progress toward the Water Fund goals. |

Photo: © Erika Nortemann

## Featured Example

Mexico City Water Fund, Mexico

This plan outlines a 5-year strategy for the Water Fund, specifying its vision, mission, water security challenges, risks and mitigation strategies, interventions, stakeholder engagement and communications strategy, resource requirements, implementation roadmap, and other critical strategic planning factors. This plan provides decision-makers (e.g. the WF Board) with a level of detail that will keep them engaged, while continuing to embrace an evidence-based approach to decision-making. Access the plan online to learn more.

## Featured Template

Water Fund Strategic Plan

 This template provides a recommended structure for assembling and presenting a Water Fund Strategic Plan to the Water Fund Board. This includes a recommended flow of ideas, formats, and level of detail that is appropriate for this audience. This template is best used alongside the Mexico City Water Fund example, which can be accessed in the online Toolbox.


Photo: © Erika Nortemann

# 2.5 Design Studies

## Purpose

Design studies are undertaken to strengthen the technical, scientific, financial, and/or political basis on which decisions are being made.

## Key Ideas

| Key Idea | Description |
|----------|-------------|
| Design studies help build the technical case and evidence-base underlying the Water Fund | Design studies are a critical step in the development process that guides the refinement and/or establishment of measurable goals for a water fund. These results of these studies directly inform decision-making and help build the underlying technical case and evidence-base that supports the overall strategy that is outlined in the Water Fund Strategic Plan (e.g. types of interventions implemented, conservation targets, expected outcomes, etc.). |
| Design studies help inform decision-making processes | **Examples of how design studies can help with decision-making processes:** <br><br> • **Intervention Portfolio:** Evaluate the range of possible interventions and combinations over space and time to help determine the optimum mix of the portfolio (e.g. effectiveness and cost; combinations may be a mix of built and natural infrastructure interventions; etc.). <br><br> • **Social Impact Assessment:** Evaluate the impacts of a potential Water Fund project on specific communities who reside in the project area to help determine positive and negative social impacts. <br><br> • **Business Case:** Conduct a business case analysis to evaluate anticipated impacts with or without the proposed interventions to help inform the team on who might be a prospective investor. <br><br> • **Influencing Policy:** Conduct an institutional mapping study to determine how best to position the Water Fund in terms of effectively influencing public policy. |
| Design studies should be selected and scoped based on the priorities of the Strategic Plan | Design studies should be selected and scoped appropriately based on how they help achieve the Water Fund's Theory of Change. For instance, if the first 5-year Strategic Plan's focus is to establish credibility within the region and conducting an exhaustive technical study on infiltration rates will not help achieve related 5-year goals, it may not be a priority among the limited resources available. However, if this factor becomes critical for establishing the **scalability** of specific interventions, it may be necessary to complete it sooner. <br><br> Investing early in other long-term factors such as the importance of an environmental baseline for measuring progress should not be overlooked. Given its importance, monitoring and evaluation is covered in a standalone, subsequent section. |



Photo: © Mbichagraphy/TNC

SCIENCE          FINANCE

Photo: © Melissa Boisson/TNC
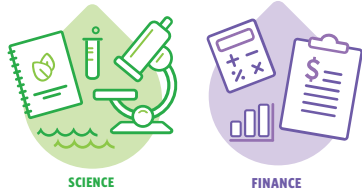


# 2.5.1 Portfolio of Interventions

## Purpose

A Portfolio of Interventions is formulated to ensure that a Water Fund has a robust plan for guiding the stakeholders' investments in the most optimal way for meeting the goals set for the Water Fund.

## Key Ideas

This portfolio should identify the combination of interventions that will provide the greatest benefit (Return on Investment) in terms of ecosystem services change given the available resources.

| Key Idea | Description |
|---|---|
| There are many types of interventions | An intervention is any action that is taken by a Water Fund to help mitigate or address the identified water security issues. For instance, improving agricultural practices to reduce sediment loadings, restoring grasslands to regulate water availability, or implementing a water demand reduction campaign within an urban area are all examples of interventions. Many of these actions are also often referred to as 'conservation activities'. |
| The portfolio translates the stakeholders shared vision for the Water Fund into action on the ground | The initial portfolio of a Water Fund is an important study to translate the shared vision between stakeholders stated in the Water Fund goals into a detailed plan of field interventions, that will help to achieve measurable results within a specific time frame. |
| The portfolio should help sustain targeted ecosystem services related to water security | A well-defined portfolio helps to make meaningful contributions to targeted ecosystem functions that yield valued ecosystem services. |
| The portfolio is trying to identify the optimal return on investment | What is the overarching question this portfolio is trying to answer? The objective of doing this type of classification is to understand what conditions may apply for each intervention and the expected outcomes of implementing them. The overarching question a portfolio must answer is which set of investments, both in terms of activities and location, will yield the greatest return toward the goals of the Water Fund? |
| The portfolio informs planning efforts related to finance, science, and operations | A well-defined portfolio provides meaningful information for financial planning (e.g. how much the portfolio will cost per hectare per year for field interventions; per study, engagement, or campaign for other interventions; etc.), monitoring and evaluation (e.g. what measures strategy is required to demonstrate progress?), and operational planning (e.g. what is our schedule for implementation of interventions given available resources and our strategy?). |

Featured Tool

Formulate Portfolio of Interventions: Tool Selection

Step-by-step guidance for tool selection is provided in the Toolbox. This includes expert videos, an example from a real Water Fund, and a handy spreadsheet that provides an overview of key tools used to formulate a portfolio of interventions, including descriptions and links for tools for the (1) optimization of interventions, (2) evaluation of ecosystem services, and (3) data management.

What lessons have you learned from completing ecosystem services analyses for Water Funds?

Listen to Jorge Sarmiento Léon from TNC to learn more.

Photo: © Ami Vitale
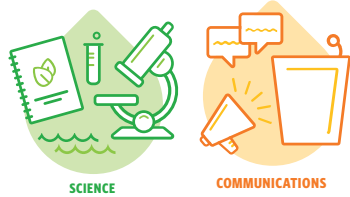
SCIENCE    COMMUNICATIONS

# 2.5.2 Social Impact Assessment

## Purpose

A Social Impact Assessment (SIA) is a tool applied to ensure that potential social impacts (both positive and negative) are carefully considered in designing Water Fund projects. A SIA may help to improve project design and social sustainability of a project, select indicators for long-term monitoring, increase participation and ownership of project goals, and/or identify potential negative impacts resulting from a project.

## Key Ideas

A Social Impact Assessment (SIA) isn't just about evaluating how the monetization of watershed services will affect society in financial terms, it's about understanding who the key actors are and how a Water Fund might present risks and benefits to existing livelihood strategies and social structures. This analysis should not be treated as a secondary or 'additional' assessment.



Photo: © Nick Hall

| Key Idea | Description |
|---|---|
| A Water Fund can have both positive and negative social impacts | Water Funds and other similar Investment in Watershed Services programs have the potential to generate both positive and negative social impacts, depending on how they are designed and implemented. Ensuring that Water Funds do no harm and generate positive social and economic outcomes for diverse groups of local communities, farmers, and other rural land stewards is critical from an ethical and equity perspective. It is also important for program effectiveness as participants are unlikely to continue, expand, and advocate for the Water Fund if they do not feel they are benefiting in a meaningful way. |
| What are social impacts? | There are many frameworks for conceptualizing social impacts and human well-being. One useful framework, broadly used in the SIA field, is to think about social impacts as including changes to:[9] <br><br> • People's way of life – lifestyles, work, recreation <br> • Culture – shared customs, beliefs, values, and language <br> • Community – cohesion and character <br> • Political systems – participation in decision making; local norms and governance systems <br> • Environment – natural capital, ecosystem services, air quality etc. <br> • Health and well-being – as defined by the WHO as a state of complete physical, mental, social and spiritual well-being and not merely the absence of disease or infirmity <br> • Personal and property rights <br> • Fears, aspirations, and security |
| A Water Fund will have many projects | Many distinct projects will be carried out by a Water Fund over different time periods and locations. While each of these projects could undergo separate SIAs, teams will likely need to prioritize these studies given limited resources. |
| A SIA may help to improve the social sustainability of a project | At a minimum, an SIA should do the following (adapted from Richards and Mwampamba 2013[10] and Esteves, Frank, and Vanclay 2012[11]): <br><br> • Provide a good understanding of how interventions will affect the social landscape, including vulnerable and under-represented groups; <br> • Anticipate positive and negative impacts and how they will affect different stakeholder groups; <br> • Assess attribution (have a way to address the causes of outcomes and impacts); <br> • Develop a monitoring program that allows for adaptive management; <br> • Assess risk and develop a risk mitigation plan; and <br> • Include participation of project stakeholders, including local communities. |

## Featured Tool.

### The Social and Biodiversity Impact Assessment methodology

The SBIA, designed originally for carbon projects, outlines a participatory approach to assessing potential project impacts. This methodology has since been adapted for Water Funds, which is available in the online training.

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9  Adapted from Richards, M. and Panfil, S.N. 2011. Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects: Part 1 – Core Guidance for Project Proponents. Climate, Community & Biodiversity Alliance, Forest Trends, Fauna & Flora International, and Rainforest Alliance. Washington, DC.

10  Richards and Mwapamba. 2013. Initial Recommendations for the Social Impact Assessment of Investment in Watershed Services. Forest Trends. http://www.forest-trends.org/documents/files/doc_4086.pdf

11  Esteves, A.M., Franks, D., and Vanclay, F. (2012) Social impact assessment: the state of the art, Impact Assessment and Project Appraisal, 30:1, 34-42, DOI: 10.1080/14615517.2012.660356. http://www.tandfonline.com/doi/pdf/10.1080/14615517.2012.660356?needAccess=true
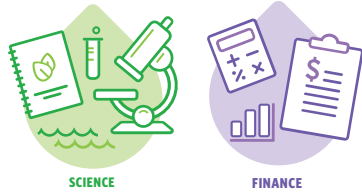
# 2.5.3 Business Case

## Purpose

A business case analysis compares the benefits that a Water Fund generates for a particular supporter, with their investments in the Fund.

Its purpose is to assess for a specific investor – current or potential - whether their investment in the Water Fund is financially beneficial for them.

## Key Ideas

Business cases are important tools for quantifying and demonstrating the value of a Water Fund for individual investors. By demonstrating a strong business case, you are better situated to increase investments by existing funders and attract prospective new funders, helping the Water Fund move its interventions to a larger scale and increasing the fund's viability and sustainability.

While the exact analytical process may vary slightly case-by-case, a best-practices approach will be based on the following ideas:

| Key Idea | Description |
|---|---|
| Business cases will connect the biophysical and economic spheres | For instance, a business case may study how reforestation of a targeted area is connected to the monetary benefits generated by that activity. To do so, a credible business case analysis must establish and quantify links between water fund activities (also known as 'interventions') in the watershed and specific outcomes that generate benefits for the investor whose business case is analyzed. |
| Business cases help demonstrate value | Business cases are important tools for quantifying and demonstrating the value of a Water Fund for individual investors. By demonstrating a strong business case, you are better situated to increase investments by existing funders and attract prospective new funders, helping the Water Fund move its interventions to a larger scale and increasing the fund's viability and sustainability. |
| Business cases establish and quantify links between Water Fund interventions | All credible business cases must establish and quantify links between Water Fund activities (also known as 'interventions') in the watershed and specific outcomes that generate benefits for the investor whose business case is analyzed. |
| Business cases may vary slightly in terms of their analytical processes | The exact analytical process followed in a business case analysis may vary depending on the local context and needs. |

**ROI FRAMEWORK**  **ANALYSES**  **KEY OUTPUTS**



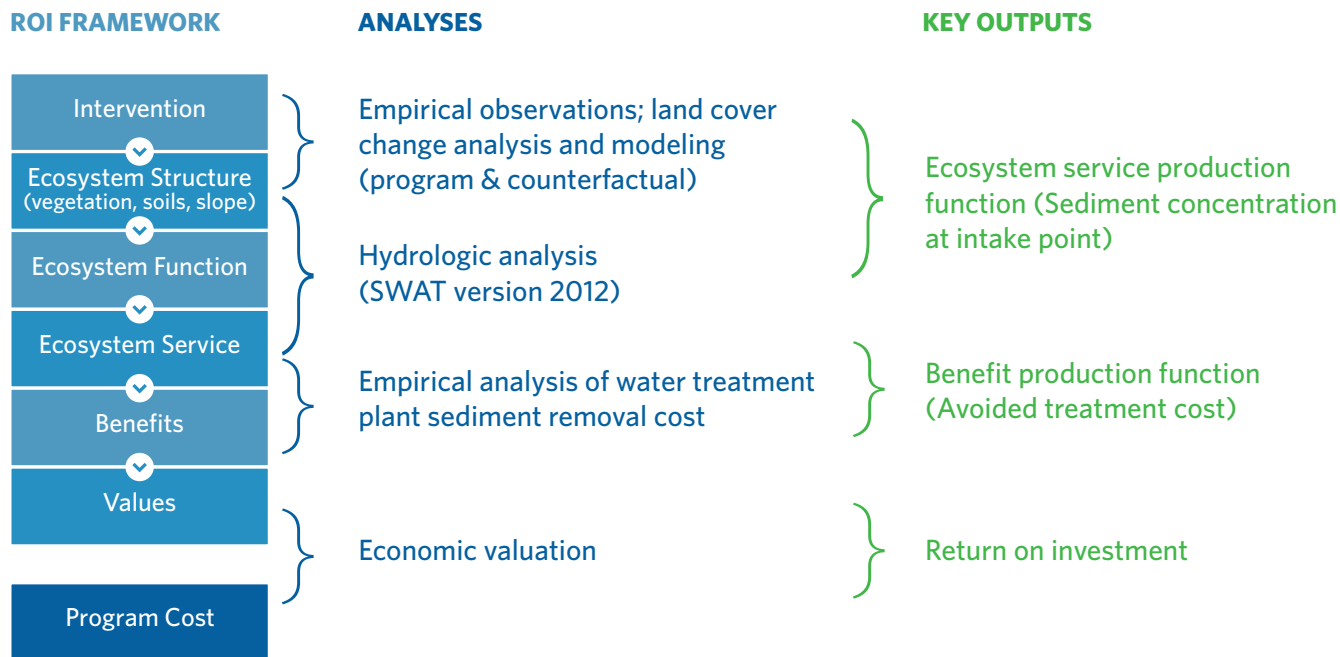| ROI Framework | Analyses | Key Outputs |
|---|---|---|
| Intervention | Empirical observations; land cover change analysis and modeling (program & counterfactual) | Ecosystem service production function (Sediment concentration at intake point) |
| Ecosystem Structure (vegetation, soils, slope) | | |
| Ecosystem Function | Hydrologic analysis (SWAT version 2012) | |
| Ecosystem Service | Empirical analysis of water treatment plant sediment removal cost | Benefit production function (Avoided treatment cost) |
| Benefits | | |
| Values | Economic valuation | Return on investment |
| Program Cost | | |

**Figure 10.** Analytical framework and associated analyses used to assess the return on investment of the Camboriú watershed conservation program for water treatment plant sediment management.

## Featured Examples

### Camboriú Water Fund, Brazil

Credible economic assessments of watershed conservation or restoration are almost entirely absent from the literature, leaving the business case for watershed conservation an important yet largely unanswered question. Likewise, those interested in evaluating the business case in their own geography lack the examples and tools to do so in a robust manner. Remedying the situation requires a rigorous analytical framework to assess the return on investment of watershed conservation. The Nature Conservancy—in collaboration with Stanford University, EPAGRI-CIRAM and EMASA—recently conducted such an analysis of a payment for watershed ecosystem services (PWS) program in Santa Catarina State, Brazil.

### Upper Tana Nairobi Water Fund, Kenya

This study assesses the business case for the creation of the Upper Tana-Nairobi Water Fund to help protect and restore the quality and supply of water to one of Kenya's most productive and economically important regions. The Upper Tana River basin covers approximately 17,000 km$^2$ and is home to 5.3 million people. The water it provides is of critical importance to the Kenyan economy. It fuels one of the country's most important agricultural areas, provides half of the country's hydropower output, and supplies 95% of Nairobi's water. It is also home to areas of unique biodiversity and iconic national parks.



Photo: © Andre Targa Cavassani



Photo: © Nick Hall

# 2.5.4 Long-Term Finance

## Purpose

To identify a long-term financial mechanism based on the value proposition of the Water Fund, which further broadens the participant base and sources of finance.

## Key Ideas

**Note:** Long-term finance may also be referred to as "sustainable finance."

| Key Idea | Description |
|---|---|
| Retain a financial expert to identify potential long-term financial mechanisms for the Water Fund | Identification of a long-term financial mechanism (i.e. a sustainable finance strategy) is distinct from conducting a business case analysis, which assesses whether investments in the Water Fund is financially beneficial for specific investors (current or future). As financial analysis requires specialized expertise, this step should not be conducted by a practitioner without relevant experience and/or expertise. It is highly recommended that a qualified expert be retained to complete long-term financial studies. |
| Establishing an endowment may help mitigate cash flow risks | Experience suggests that it often makes sense for Water Funds to constitute an endowment to mitigate cash flow risks, as well as to give certainty to water producers that the fund will be able to fulfill its multi-annual commitments and to strengthen its credibility by incorporating a transparent vehicle to administer resources. |
| | Even if the Water Fund becomes the recipient of constant flows from tariffs, rights or other sources, an endowment managed by a Trust Fund may facilitate investment from other users. Although the trust or similar vehicles have benefits, there may be cases where local regulations make it difficult to create such a figure. |
| | As one example of Water Funds without a trust, most Water Funds in Brazil are hosted by the municipalities or basin councils to finance conservation actions. The governance structure is based on the decisions of the basin committees and resources come from appropriations of these committees. |
| General guidelines for development of a long-term financial mechanism | In all cases, it is recommended that any identified long-term financial mechanisms comply with the following conditions:<br>• Clearly define the sources and intended use of the funds.<br>• Establish accountability.<br>• Be transparent and welcome scrutiny by members.<br>• When allowed, be authorized to receive tax deductible donations.<br>• Make the best possible effort to minimize the administrative cost.<br>• Have a clear mandate to use the funds only for the purpose of the Water Fund.<br>• Have a clear management guideline, approved by the Board of the Water Fund. |

"By connecting downstream and upstream communities, Water Funds can be seen as promoting a more systemic approach to watershed management that involves, connects and gives voice to a broad range of stakeholders."

Photo: © Erika Nortemann

# 2.6 Monitoring and Evaluation

## Purpose

Monitoring and evaluation is undertaken to observe, record, compare, track, discover and adaptively manage the projects we are implementing.

## Key Ideas

Once clear goals for the Water Fund and a portfolio of interventions to achieve those goals have been established, it is essential to identify monitoring needs and design a monitoring program to fulfill those needs.

| Key Idea | Description |
|---|---|
| A qualified expert should be retained | Qualified experts should be retained for defining monitoring needs and developing this plan in all scenarios. |
| What is monitoring and evaluation? | Monitoring and evaluation is the act of systematically collecting information about something over time and space to characterize its state and to identify changes.[12] |
| Monitoring and evaluation requires a broad range of expertise | Monitoring requires expertise in not only the methods for designing scientifically-robust monitoring programs, but also in the various instruments, techniques and software needed to properly collect, manage, assess, data and communicate results. |
| Monitoring includes environmental, social, and economic parameters | Monitoring Water Funds requires the tracking of a range of different environmental, social and economic parameters in order to provide the basic information to assess the types and degrees of change being realized. |
| Why do we monitor Water Funds? | • To observe, record, compare, track, discover and adaptively manage the projects we are implementing. You may think of new ideas without monitoring, but cannot learn or validate ideas without monitoring.<br><br>• Clear goals and monitoring data are the foundation through which science-based, sound investments are made and validated.<br><br>• Financial supporters require regular reports on returns of investment and progress, participating communities require evidence of the proposed benefits, and water fund managers require information to strengthen models and adapt management practices to changing environmental and socioeconomic conditions and to become more efficient and effective. |

12   Higgins, J.V., and A. Zimmerling (eds.). 2013. A Primer for Monitoring water funds. Publisher, Arlington, VA: The Nature Conservancy.

| Key Idea | Description |
|---|---|
| What does a Water Fund need to monitor? | A Water Fund's monitoring needs depend on the types of questions it is seeking to answer. For example, monitoring may be required to:<br><br>• Track scope and efficiency of implementation of interventions.<br>• Test effectiveness of new types of interventions through edge of field monitoring.<br>• Illustrate early changes resulting from interventions.<br>• Measure progress towards project goals (trend/impact monitoring).<br><br>Consider the issue(s) you are trying to help address through a Water Fund. What questions need to be answered to validate the solution you are a proposing, who needs to know those answers, and how often do they need updates? |
| How are indicators selected? | Indicators should be selected based on how they help to demonstrate progress towards the Water Fund's Theory of Change, including results chains and intermediate results. Learn more in Conservation by Design 2.0. |
| What is the difference between outputs and outcomes? | An output is what is created at the end of a process. Your outputs might be training classes offered, people served, and grants funded. Outputs tell the story of what you produced or your organization's activities. Output measures do not address the value or impact of your services for your clients.<br><br>An outcome is the level of performance or achievement that occurred because of the activity or services your organization provided. Outcome measures are a more appropriate indicator of effectiveness. Outcomes quantify performance and assess the success of the process. Learn more. |

## Featured Example

### Upper Tana Nairobi Water Fund, Kenya

The *Upper Tana Nairobi Water Fund Monitoring and Evaluation Plan* details the monitoring and evaluation plan for the GEF-funded Upper Tana-Nairobi Water Fund and the Coca-Cola Africa Foundation grant. It is updated annually. Among other aspects, this plan outlines the Water Fund's Theory of Change, monitoring strategy, evaluation strategy, timeline, budget, and more. Access the online Toolbox for more examples, case-studies, and tools.

## Featured Tool:

### A Primer for Monitoring Water Funds

This document highlights the critical information needs common to Water Fund projects and summarizes issues and steps to address in developing a Water Fund monitoring program. It explains key concepts and challenges; suggests monitoring parameters and an array of sampling designs to consider as a starting-point; and provides suggestions for further reading, links to helpful resources, and an annotated bibliography of studies on the impacts that result from activities commonly implemented in Water Fund projects.
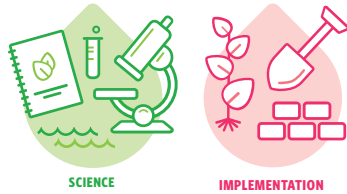
SCIENCE          IMPLEMENTATION

# 2.7 Pilot Projects

## Purpose

Pilot projects are often implemented to establish a 'proof of concept', ground truth implementation models and/or develop implementation capacity.

| Key Idea | Description |
|---|---|
| Pilot projects are not implemented in every Water Fund | While the scale and timing at which pilot projects may be implemented and scaled-up will vary depending on local context and conditions, they will typically be implemented in the Design or Creation Phase. |
| Pilot projects establish proof of concept | Some stakeholders may be skeptical of the solutions a Water Fund is proposing (i.e. the range of interventions proposed). Starting small and demonstrating that those interventions can produce tangible results at a small-scale may help to build the case that they can play an important role at a larger-scale. Rigorous monitoring of pilot projects is required to build a credible and defensible case. |
| Pilot projects may help to ground truth implementation models | A Water Fund will undertake a series of design/technical studies to help optimize which set of interventions the Water Fund will implement and where those should be implemented. These studies are underpinned by a series of assumptions. The implementation of pilot projects can be an effective tool for ground truthing that those assumptions are valid and that the proposed strategy for operating the Water Fund will succeed. For instance, a pilot project may inform a Water Fund manager that the established implementation schedule for the first year of operation may need to be extended due to local factors that had not been fully accounted for before. |
| Pilot projects may help to build implementation capacity | Implementing pilot projects may help to build staff or local contractor capacity in the types of interventions that the Water Fund will be seeking to scale-up. For instance, building capacity in best management practices for revegetation, agriculture, forest protection, and so on. |

## Key Questions

- What are the expected outcomes of pilot projects, both in hydrologic terms and in terms of replicable models?

- Have sufficient resources and staff been allocated to implement and monitor pilot projects?

- Has access been gained to all project and monitoring sites?

- Is all monitoring equipment ready for deployment?

# Design Phase Checklist and Action Plan

| ❏ Governance | ❏ Science | ❏ Finance | ❏ Implementation | ❏ Communications |
|---|---|---|---|---|
| ❏ Water Fund Board or Steering Committee formalized in agreement document | ❏ Situation Analysis updated | ❏ Resource needs identified / financial planning completed | ❏ Risks identified and mitigation strategies developed | ❏ Vision and mission statements complete |
| ❏ Stakeholder map updated | ❏ Interventions formulated, optimized, and aligned with Theory of Change | ❏ Fundraising strategy completed | ❏ Roadmap completed | ❏ Communications and Stakeholder Engagement Strategy completed |
| ❏ Creation of legal mechanism started | ❏ Results chains completed | ❏ Potential long-term financial mechanism explored or study initiated | ❏ Any necessary pilot projects started or completed | ❏ Strategic Plan document completed |
| ❏ Critical stakeholders engaged in strategic planning process | ❏ Relevant science-based design studies completed, as per Strategic Plan | ❏ Business case completed | | |
| | ❏ Monitoring and Evaluation Plan completed | | | |

**Note:** Download a copy of the checklist and action planning tool in the Water Funds Toolbox.

Creation

# Creation Phase

## Purpose

**What is the reason this Phase needs to be done?**

The Creation Phase is undertaken to prepare the Water Fund for operation and officially launch it.

## Objectives

**What specific results do we aim to achieve?**

- Complete the initial Annual Operating Plan, preparing the Fund to pursue its strategy and conduct work in pursuit of established objectives, goals and targets.

- As plausible, to start efforts that can provide tangible 'quick wins', validating (even if in small ways) the impact this institution can make and accelerating recognition/credibility with critical and priority stakeholders.

- Use a formal launch event to build broad awareness of the Water Fund and its aspirations to help improve the region's water security.

## Key deliverables/outcomes

**What are the tangible products resulting from this work?**

- **WF Legal Mechanism Established:** WF legal mechanism is established, such as the formalization of an Administration Agreement with a preexisting organization to "host" the Water Fund, and all the organizations to be represented in the board of the Water Fund, or the creation of a new legal entity (e.g. By Laws or Statutes).

- **Annual Operating Plan:** The initial Operating Plan is completed (including the first year budget) and has been approved by the Water Fund Board.

- **Operational Management Readiness:** Systems, resources and staff are sufficiently in place to begin Water Fund operations.

- **Launch Event:** Preparation, promotion and execution of the Water Fund's public launch have been successfully completed.

## Transition requirements

**What conditions must be satisfied to move forward?**

- Verified all deliverables are complete, ensuring preparedness for the Operation Phase.

- Confirmed committed resources will be available to the fund operations.

GOVERNANCE

# 3.1 Water Fund's Legal Mechanism Established

## Purpose

To ensure that the Water Fund is legally constituted.

## Key Ideas

| Key Idea | Description |
|----------|-------------|
| A qualified expert should be retained | Qualified experts should be retained to ensure a Water Fund legal mechanism is legally constituted prior to holding a public launch event. |
| What constitutes the legal creation of a Water Fund? | The legal establishment of a Water Fund may occur through various legal mechanisms, and the legal structure of a Water Fund will evolve over time into a more complex structure. |
| | For this reason, the design of the legal mechanism should consider expectations of the Operating Plan of the Water Fund, to ensure that future activities and developments will not anticipate the evolution of the legal mechanism, as informed by the analyses conducted under the Legal and Institutional Analysis step of the Design Phase. |
| When should the Board of Directors be established? | The Board of Directors should also be officially established during this step, this is a transition from an Advisory Board into a formal governing Board. |
| | Board members should be selected and cultivated strategically based on their ability to both add legitimacy and operational capacity to the management of the Water Fund and based on what was defined on the design phase regarding governance. In most cases, this step provides recognition of those who provided the most support to the Water Fund development process in its early stages and/or those who have been deemed to be necessary for the legitimacy of the Water Fund. |
| Legal considerations related to implementation | In addition to legal creation of the Water Fund, consideration needs to be given to all legal requirements that will apply to its implementation. This is particularly important for ensuring no unexpected challenges arise as it relates to hiring, contracting, and/or conservation agreements for the implementation of interventions. Visit the online Toolbox for further details. |

Photo: © Kenny Braun

## Key Questions

At a minimum, this step will seek to address the following questions (note: some questions may have already been answered in the Design Phase, or at least with a different level of detail):

- What steps need to be taken to ensure the Water Fund legal mechanism is legally binding for all parties?

- Who will define who may sit on the initial Board of Directors and the rotation period? (e.g. typically defined in Design Phase)

- What conditions will be included in the legal document for creation? Are there any state approved Charter documents or guidelines?

- What manuals and procedures will guide the operation of the Water Fund?

The exact legal procedures that will need to be followed to legally create a Water Fund will vary depending on the country and/or state. TNC and its legal partners have compiled a series of concise guidance documents to help others in conducting these analyses, which can be accessed in the online Toolbox.

IMPLEMENTATION    COMMUNICATIONS
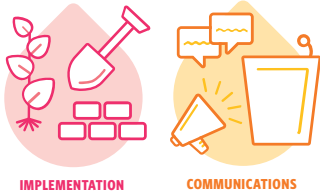
**Learn More** ↗

waterfundstoolbox.org/project-cycle/creation/operating-plan

# 3.2 Create first Annual Operating Plan

## Purpose

Annual Operating Plans are developed as guides for those responsible for managing the day-to-day operations of a Water Fund. Specifically, these plans establish:

- **Aims of the next 12 months:** this aspect provides Water Fund leadership with an overarching indication of planned achievements within the next 12 months, to periodically assess progress and make necessary mid-course corrections.

- **Priorities:** this aspect helps to guide tactical decisions throughout the year.

- **Action Roadmaps:** this aspect details planned actions, accountabilities, key performance indicators and associated budgets for these efforts.

## Key Ideas

| Key Idea | Description |
|---|---|
| How does this plan relate to the Strategic Plan? | This initial Annual Operating Plan will be based mostly on the contents of the Strategic Plan. This plan differs from the Strategic Plan in that it: <br><br>• is a standalone document that is part of the WF's broader Strategic Plan; <br>• establishes the near-term activities necessary to implement the Strategic Plan; and <br>• provides milestones for measuring progress and guidance to help align day-to-day decision-making with the Water Fund's strategic intent. |
| What are the typical contents of an Annual Operating Plan? | The contents of an Annual Operating Plan typically include: <br><br>• Purpose and Background <br>• Aims of the Plan <br>• Priorities for Interventions, Stakeholder Engagement, and Fundraising <br>• Roadmaps: by Area of Action <br>• Supplemental and Supporting Materials |
| Complementing the Strategic Plan, annual roadmaps should be structured around Areas of Action | The Strategic Plan organizes the Water Fund's work around the same 4 Areas of Action used in the Strategic Plan: (1) Governance, (2) Implementation & Science, (3) Communications, and (4) Finance. |
| Routine and tactical aspects of Water Fund operations should be addressed in an existing document (e.g. Charter or similar agreement document). | While the scope of the Annual Plan addresses near-term activities and milestones, other relevant details related to routine and tactical Water Fund operations may be addressed outside of this Plan, such as within the Water Fund's Charter document (e.g. the WF's operating principles, structure, roles and responsibilities, decision-making processes, etc.). |

## Key Questions

The process for developing an Operational Plan should involve regular consultation with the technical team and partners. This process should also involve steps that ensure all involved parties are well-versed in the results of the Strategic Plan. At a minimum, Operational Plans will seek to address the following questions:

- What interventions will be implemented by the Water Fund each year?

- Who will be responsible for each task?

- What is the short-term budget?

- What resources and expertise do we need to complete this list of actions (annually)?

The Water Fund Strategic Plan for a Water Fund should be developed prior to this step and should serve as the most important tool for developing an Operational Plan.

### Featured Example

Mexico City Water Fund, Mexico

The 2018 Annual Operating Plan for the Mexico City Water Fund, Mexico was developed using the WF's 5-Year Strategic Plan, taking into account activities that would build credibility, influence and ultimately position the Fund to have significant impact at scale. The associated activities and efforts detailed within the document aim to make sufficient progress in 2018, helping to ensure achievement of the WF 5-year strategic objectives. A copy of this plan can be accessed in the online Toolbox, alongside a template.



Photo: © Tim Boucher

# 3.3 Operational Management Readiness

## Purpose

Systems, resources and staff are sufficiently in place to begin Water Fund operations.

## Key Ideas

| Key Idea | Description |
|---|---|
| What is a Water Fund team for implementation? | The Water Fund team for implementation is the technical body responsible for executing the directives of the Board. It is typically responsible for managing the implementation of specific interventions, leveraging additional resources, and supervising the operations of a Water Fund. |
| Why do we need to establish this team? | A Water Fund team should be established specifically for implementation to ensure that there is a technical body to guide the implementation of interventions and to execute the directives of its Board. |
| What is the role of this team? | While the specific responsibilities of the Water Fund team are typically defined during the Design Phase of each water fund (i.e. when the governance model is developed), the core responsibility of the Water Fund team is to support and coordinate the implementation of the long-term strategy. This support and coordination role will vary depending on the selected implementation model, but in all cases, this technical body is important for ensuring that the Water Fund is operating efficiently, effectively, and adapting to changing circumstances (e.g. new learning through monitoring, changes in revenue, etc.). |

# 3.4 Launch Event

## Purpose

To build broad awareness of the Water Fund and its aspirations to help address specific challenges.

## Key Ideas

| Key Idea | Description |
| --- | --- |
| Launch events should convey a concise, united message from Water Fund partners | A launch event can help to increase public support, solidify coalitions, and attract new resources to a Water Fund. Accordingly, it is important that a concise and united message is presented at the launch event to encourage widespread media attention and interest from both the public and private sector. This is further an excellent opportunity to highlight the goals of the Water Fund and recognize partners who helped develop it. |
| What is a common goal of holding a launch event? | A key goal of a launch event is to ramp up the commitment from existing members and to engage a wider audience by highlighting the project through a range of media. It is important that the Water Fund be known not only by the general public, but also by sectors that may be key participants in it. Accordingly, a proposal should be prepared that discusses key event details such as timing, attendees, location, logistics, costs, the agenda, goals, and expected outcomes. The agenda should cover all topics that partners wish to publicize, including a brief history of the Water Fund, its supporting partners and the Water Fund's objectives and goals. |
| Who should be invited? | Invitations for the launch event should be sent to media, key private sector stakeholders, local governments, important trade associations, environmental authorities, government environmental agencies, and non-governmental organizations, sufficiently in advance so as to ensure a good level of participation. The launch event should convey a clear message that the Water Fund is not a political tool, but a financial and governance mechanism through which several public and private institutions are participating to achieve a common long-term goal. |
| Launch events will range in their scope, cost, and objectives | A range of factors will affect the overall scope and cost of a launch event, including the availability of resources, the venue, number of participants, and objectives for the event. |

## Relevant Skillsets Required



COMMUNICATIONS

### Learn More ↗

waterfundstoolbox.org/project-cycle/creation/launch-event



Photo: © TNC



Photo: © Mbichagraphy/TNC

## Key Questions

At a minimum, the team developing and hosting the launch event will seek to address the following questions:

- Where is the best location and when is the most opportune time to hold a launch event?

- Who will be invited to speak and take part in the launch event?

- How much will a launch event cost and who will pay?

- What are the goals and expected outcomes of hosting a launch event?

- What is the central message that is to be conveyed at a launch event? (e.g. public-private cooperation to achieve a common long-term goals, etc.)

- What other activities could be organized around the launch event to maximize the impact (e.g. media workshop, field visit, press conference, etc.)

- What media coverage do you hope to generate?

## Featured Example

### Nairobi Water Fund: Launch Event – Lessons Learned

The Toolbox provides a wide range of documents from existing Water Fund launch events that can be used to inform others. This includes lessons learned from the team that designed and executed the launch event for the Upper Tana Nairobi Water Fund, which focused on leveraging the voices of its champions and partners, the Business Case, examples from the field, and other key factors. Access this document and others in the Toolbox.

## Creation Phase Checklist

Photo: © Mbichagraphy

**Note:** Download a copy of the checklist in the Water Funds Toolbox.

| ❏ Governance | ❏ Science | ❏ Finance | ❏ Implementation | ❏ Communications |
|---|---|---|---|---|
| ❏ Legal mechanism established | ❏ Monitoring and evaluation systems ready (equipment installed, trained field staff, QA/QC, etc.) | ❏ Finance and accounting processes ready (budget, tax, financial report, etc.) | ❏ Annual Operating Plan completed | ❏ Launch Event completed |
| ❏ Legal processes ready (contracts, agreements, etc.) | | | ❏ Staff necessary for operations hired | |
| ❏ Procurement processes ready (supplies, vendors, etc.) | | | ❏ Audit and assessment process ready | |
| | | | ❏ Any necessary pilot projects started or completed | |

"Nature-based solutions used to improve water quality and quantity can also help us reduce our carbon footprint, maintain critical ecosystems and build healthier, more resilient communities in the face of climate change."

Photo: © Louise Stafford

Operation

# Operation Phase

## Purpose

### What is the reason this Phase needs to be done?

The Operation Phase is undertaken to establish stability, specifically by developing and implementing a comprehensive work plan which will guide the following: (1) systematic execution of activities, (2) measurement and evaluation of activities, (3) communication of progress (towards previously defined objectives for the Water Fund); and (4) the continuous improvement of Water Fund operations through adaptive management and innovative approaches.

## Objectives

### What specific results do we aim to achieve?

- Annual planning cycle (aligned w/Strategic Plan) in place.

- Ongoing intervention implementation with activity and impact realization measured and plans being developed for future projects.

- Long-term strategy developed (an evolved version of the Strategic Plan) and programs launched to help create a vision of water security in the region. This will help the Fund:

  › further establish its role in contributing to water security;

  › secure long term, sustainable financing to support these efforts; and

  › to be integrated into the area's water policy/legal framework.

- Routine review and communication of results conducted signaling efficient/effective operations and governance including application of adaptive management, as needed.

## Key deliverables/outcomes

### What are the tangible products resulting from this work?

- **Annual Operating Plan –** Addressing technical, marketing and communication, stakeholder, fundraising, administration, audit and assurance and improvement, innovation and planning aspects of operating the Fund.

- **Periodic Progress Reports –** For finance, operations, key impact indicators, key activity indicators (and other KPIs) including information about appropriate corrective actions, building internal and external trust.

- **Updated Strategic Plan Evolving To Maturity Plan –** Evolve the Water Fund's Strategic Plan into a Maturity Plan, ensuring long-term viability of technical, governance, social acceptance and financial aspects (including the case for achieving long-term financing) of the Water Fund.

Photo: © Devan King

## Transition Requirements

**What conditions must be satisfied to move forward?**

- Capable of independency – has resources (time, talent and money) to operate plus the Water Fund is able to secure a significant percentage of its long-term financing.

- Capable of providing evidence (data/measurements/reports) that ongoing interventions are delivering the desired impacts at scale in alignment with the Fund's objectives and the region's long-term security vision.



## Relevant Skillsets Required

IMPLEMENTATION      COMMUNICATIONS
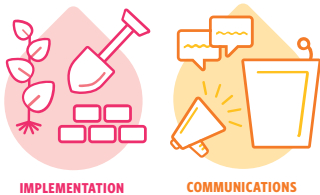
**Learn More** ↗

waterfundstoolbox.org/project-cycle/operation/annual-operating-plan

# 4.1 Annual Operating Plan

## Purpose

Annual Operating Plans are developed as guides for those responsible for managing the day-to-day operations of a Water Fund. Specifically, these plans establish:

- **Aims of the next 12 months:** this aspect provides Water Fund leadership with an overarching indication of planned achievements within the next 12 months, to periodically assess progress and make necessary mid-course corrections.
- **Priorities:** this aspect helps to guide tactical decisions throughout the year.
- **Action Roadmaps:** this aspect details planned actions, accountabilities, key performance indicators and associated budgets for these efforts.

## Key Idea

The key task during operations of the Water Fund will be to update and modify the Annual Operating Plan based on the experience implementing the initial version. This process of review and modification should account for any lessons learned during the previous 12 months, the planned achievements in the subsequent 12 months, priorities, and roadmaps for planned actions. See Step 3.2 Create first Annual Operating Plan for key ideas, key questions, and more, as they apply equally to this step.

# 4.2 Reporting

## Purpose

To communicate key results, provide updates on planned activities, and/or detail the financial status of the Water Fund.

## Key Ideas

| Key Idea | Description |
|---|---|
| How frequently should reporting occur? | Reporting to relevant parties should be conducted at a frequency that is deemed appropriate by the project team and Board of Directors. |
| Reporting helps to sustain engagement | Reporting is a critical step in ensuring that all stakeholders remain engaged and that transparency in the ongoing operations of the Water Fund is maintained. |
| Remember your target audience | Consider your target audience when preparing to report on results and progress. For instance, in which format would they prefer to receive this update? How detailed should your report be? Are there any sensitivities in terms of data or Water Fund partners' preferences that need to be addressed before the report can be released? |

## Key Questions

At a minimum, defining reporting requirements will seek to address the following questions:

• What stakeholders should receive information on the Water Fund's key results?

• What are the key results that need to be communicated to those stakeholders?

• Through what means should those results be communicated?

• How often should results be communicated?

## Relevant Skillsets Required



COMMUNICATIONS

**Learn More** ↗

waterfundstoolbox.org/project-cycle/operation/reporting

## Featured Example

### Rio Grande Water Fund, USA

The *2017 Annual Report* from the Rio Grande Water Fund summarizes the Water Fund's achievements from the past year. For instance, it highlights the progress made since its 2014 launch and over the past year (e.g. funding invested, leveraged; acres restored; etc.). This report provides an excellent example of how to highlight key information for your target audience, while thanking and recognizing supporters.

Photo: © Michael D-L Jordan

Photo: Nick Hall

# 4.3 Adaptive Management

## Purpose

To systematically use monitoring information to make adjustments or corrections to management actions in order to achieve desired outcomes and continuously improve Water Fund operations.

## Key Ideas

| Key Idea | Description |
| --- | --- |
| Adaptive management aims to drive accountability | Science-based adaptive management programs are designed to provide accountability to a wide range of stakeholders, including donors, investors, agencies, partners, communities, and land and water managers. |
| Uncertainty exists in all managed systems | Adaptive management can help to reduce uncertainty through monitoring and learning processes. The reduction of uncertainty helps to improve management. Note: while uncertainty can be reduced through adaptive management, it can never be eliminated. |
| Management decisions must be made despite uncertainty | In almost all cases, decision-making cannot wait for certainty. Robust monitoring and evaluation programs can help to evaluate management decisions and continually improve the knowledge on which these decisions should be based. |
| Systematic learning will accelerate progress towards objectives | Learning about the effects of management will hasten improvement of management decisions in the future, resulting in more rapid and cost-effective attainment of objectives. |
| Incorporate an adaptive management mechanism into the Monitoring and Evaluation Plan | Adaptive management should be closely linked and integrated into the Monitoring and Evaluation Plan that was developed earlier. Relatedly, the Annual Operational Plans should specify general details regarding the process that will be followed and the frequency at which new information will be assessed and incorporated into the operations of the Water Fund. In terms of monitoring, to provide the best scale of economy, it may be advantageous to rely on historical and ongoing monitoring programs that are yielding relevant data and being implemented by federal and state resource management agencies. |
| The adaptive management process has five steps | The recommended adaptive management process for Water Funds has five steps: (1) Identify quantitative management objectives; (2) Plan and implement actions; (3) Monitor outcomes of management actions; (4) Review monitoring results; and (5) Implement changes. |

## Featured Example

### Rio Grande Water Fund, USA

The *Rio Grande Water Fund Monitoring and Adaptive Management Plan* provides valuable information for learning about the Rio Grande Water Fund's monitoring and adaptive management plan. The monitoring questions, indicators, and frequency are key considerations that should be considered in the development of similar plans for other Water Funds. Access the example in the online Toolbox.

## Relevant Skillsets Required



GOVERNANCE    SCIENCE

FINANCE

IMPLEMENTATION    COMMUNICATIONS

## Learn More

waterfundstoolbox.org/project-cycle/operation/adaptive-management

# Maturity

# Maturity Phase

## Purpose

**What is the reason this Phase needs to be done?**

Assure long term viability of the Water Fund to create lasting and significant impact that positively contributes to water security.

## Objectives

**What specific results do we aim to achieve?**

- Secured long-term financing and achieved favorable conditions for the Fund and its contributions to water security, including being integrated into the area's governance/water policy/legal framework
- Fund is capable of efficiently/effectively delivering the desired Impact over the long term
- Monitoring and measuring progress/impacts systematically, allowing for continual improvement
- Society has recognized the positive impact of the Fund helping to assure its longevity

## Key deliverables/outcomes

**What are the tangible products resulting from this work?**

- Significant Percentage of Long Term Financing Committed – Summarized and document in reports, agreements, etc.
- Routine Report Documenting Water Fund's Ongoing Impacts – Against defined Water Security objectives
- Influence Demonstrated – As a defined stakeholder or formal participant in the area's relevant water governance body(ies)
- Positive Public Perception Demonstrated – Via monitoring of public opinion regarding the positive contributions of the Water Fund

### Featured Example

#### Quito Water Fund

One of the most well-known Water Funds is the Fund for the Protection of Water, known as FONAG. It was established in Quito in 2000 for a period of 80 years with a small investment of $21,000, but has since grown to a $10 million endowment and an annual budget of more than US$1.5 million. The largest source of funding (nearly 90 percent) comes from Quito's water company, which by a municipal ordinance is required to contribute 2 percent of the water company's annual budget. This capital provides a stable, long-term financial mechanism, using revenues derived from its equity to co-finance activities in the watershed and cover operational costs. FONAG can be considered to be in the maturity phase since 2010, which means that it has taken 10 years to reach maturity since its creation in 2000.



Photo: © Erika Nortemann

# Appendix

# Appendix I: List of Key Terms

### Biodiversity

The variability within and among all living organisms and the ecological complexes in which they occur. Biodiversity includes ecosystem or community diversity, species diversity, genetic diversity and the ecological and evolutionary processes that sustain it.

### Built infrastructure

Built infrastructure refers to human-engineered infrastructure for water resources, such as pipes, concrete canals, water treatment plants, reservoirs and levees. It is also commonly referred to as "grey infrastructure."

### Ecosystem Integrity

Maintenance of viability for a species target, or maintenance of processes, composition, structure, and function within the natural range of variation for a natural community or system-level target.

### Ecosystem services

The benefits nature provides to people. Ecosystem services can provide material benefits (such as food, water and employment) or intangible benefits (such as spiritual values and intellectual satisfaction) and can contribute to any component of human well-being.

### Human Well-Being

A state of being in which one's needs are met, one can act meaningfully to pursue chosen goals, and one enjoys a satisfactory quality of life. Human well-being can be defined by multiple components, including basic sustenance, health, education, work and leisure, security, and equality.

### Impact

The desired future state of a conservation target or human well-being.

### Intermediate Result

Essential precursors to achieving outcomes. Intermediate results are often the near-term focus of strategies and evidence that the theory of change is playing out as expected.

### Intervention

An intervention is any conservation activity undertaken by a Water Fund to help address water security issues. For instance, improving agricultural practices to reduce sediment loadings or restoring grasslands to regulate water availability.

### Measures

Express the results of monitoring and analysis in the context of outcomes and management decisions.

### Monitoring

The act of collecting information over time to provide data on a project's status. Water Funds often monitor socio-economic, hydrological and implementation measures.

### Natural Infrastructure

Natural infrastructure refers to the inherent ability of nature to provide the same services that we expect from built infrastructure. In terms of water management, natural infrastructure can help infiltrate, store and filter water to provide clean water and regulate flows. It is commonly referred to as "green infrastructure."

### Nature

Biodiversity and ecosystem services, as well as the processes necessary to maintain them.

### Outcome

Statement detailing desired impact of project, such as the desired future status of a conservation target or human well-being interest. An outcome statement should be impact oriented, measurable, time limited and specific.

### Return on Investment (ROI)

A performance measure used to evaluate the efficiency of an investment. In Water Funds, return on investment is used to assess the increase in an outcome per unit cost of the conservation action.

## Socio-ecological System

Defined by Singh et. al 2012[13] as: 1) a coherent system of biophysical and social factors that regularly interact, 2) a system that is defined at several spatial, temporal, and organizational scales, which may be hierarchically linked, 3) a set of critical resources (natural, socioeconomic, and cultural) whose flow and use is regulated by a combination of ecological and social systems, and 4) a perpetually dynamic system with continuous adaptation.

## Source Water Protection

Protecting and/or restoring watershed area with the aim of improving water quality, quantity, and/or the timing of flow. Source water protection includes land management practices at the point where water flows off the landscape and collects in streams, lakes, reservoirs and aquifers.

## Stakeholder

Any individual, group, or institution who has a vested interest in the natural resources of the project area or who will be affected by project interventions.

## Strategy

The set of actions or interventions that a project implements in order to achieve a desired impact for nature and people.

## Systemic Change

Refers to creating or strengthening the social, economic, political, and cultural systems that comprise and sustain a socio-ecological system.

## Theory of Change

The description of a sequence of events that is expected to lead to a particular desired outcome. It shows a causal pathway from the current to the desired situation by specifying what is needed for goals to be achieved, articulating underlying assumptions which can be tested and measured.

## Water Fund

Water Funds are organizations that design and enhance financial and governance mechanisms which unite public, private and civil society stakeholders around a common goal to contribute to water security through nature-based solutions and sustainable watershed management.

## Project Cycle

The project cycle is a 5-phased best practices process for developing a Water Fund: (1) Feasibility, (2) Design, (3) Creation, (4) Operation, (5) Maturity.

In each phase, the following areas of action apply:

*Governance:* Establishing the processes and rules for decision-making within the Water Fund. This includes assembling and aligning influential stakeholders.

*Science:* Building the case for Water Fund interventions, defining target intervention area and outcomes, and measuring progress towards outcomes using monitoring and evaluation.

*Finance:* Ensuring financial sustainability, including the return on investment case, annual and long-term financial planning, and fundraising strategies of the Water Fund.

*Implementation:* Executing Water Fund related interventions in the project area, from early pilot projects to education programs to large-scale restoration projects.

*Communications:* Engaging stakeholders to create a shared vision of desired Water Fund outcomes, mobilizing collective and coordinated action, and reporting regularly on intermediate results.

*Related term:* The Latin American Water Funds Partnership has recently launched a portfolio management system—the *Desired State*—which specifies consistent deliverables to assure quality and efficiency across participating Water Funds.

## Water Security

Societies can enjoy water security when they successfully manage their water resources and services to: satisfy household water and sanitation needs in all communities; support productive economies in agriculture, industry, and energy; develop vibrant, livable cities and towns; restore healthy rivers and ecosystems; and build resilient communities that can adapt to change.[14]

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13  Singh, S.J., Haberl, H., Chertow, M.R., Mirtl, M. and M. Schmid. Long Term Socio-ecological Research: Studies in Society-nature Interactions across Spatial and Temporal Scales. 2013 ed. New York: Springer, 2012.

14  Based on the water security framework developed by the Asian Development Bank.

# Appendix II: Key Resources

## Water Funds Toolbox

The Water Funds Toolbox (waterfundstoolbox.org) is the result of an extensive, multi-annual, global collaboration effort led by TNC. These capacity building tools were developed by TNC and partners based on TNC's nearly 20 years of experience scoping, designing, creating, and operating Water Funds – an innovative tool for key stakeholders, where collective action is needed to secure water.

The Water Funds Toolbox was designed by Water Funds practitioners for other practitioners. It represents a globally-relevant set of best practices for designing, operating, and monitoring Water Funds. The Toolbox is not a static web-product. It is an iterative repository of global knowledge and best practices that will help local, regional, and global actors to explore the Water Fund model and to take collective action to secure their water supplies. The Toolbox was founded on landmark efforts such as the 'Water Funds Manual' (2012), expanded to incorporate the global experience in the Water Funds Toolbox beta-site (2016), and then tested in the field, improved, and officially launched (2018).

Access the iterative, multimedia, step-by-step guide for developing a Water Fund and lead the way to a secure water future.

Expert videos • Testimonials • Step-by-step guidance • Lessons learned • Templates • Tools and resources • Background on real water funds • Fact sheets • Methods kits • Publications • Case studies

**Learn more:**

- Contribute your knowledge:
  waterfundstoolbox.org/add-resource

- Thank you to our contributing partners:
  waterfundstoolbox.org/partners-and-contributors

- Contact the Toolbox administrator:
  waterfundstoolbox.org/contact

**Learn More** ↗

waterfundstoolbox.org
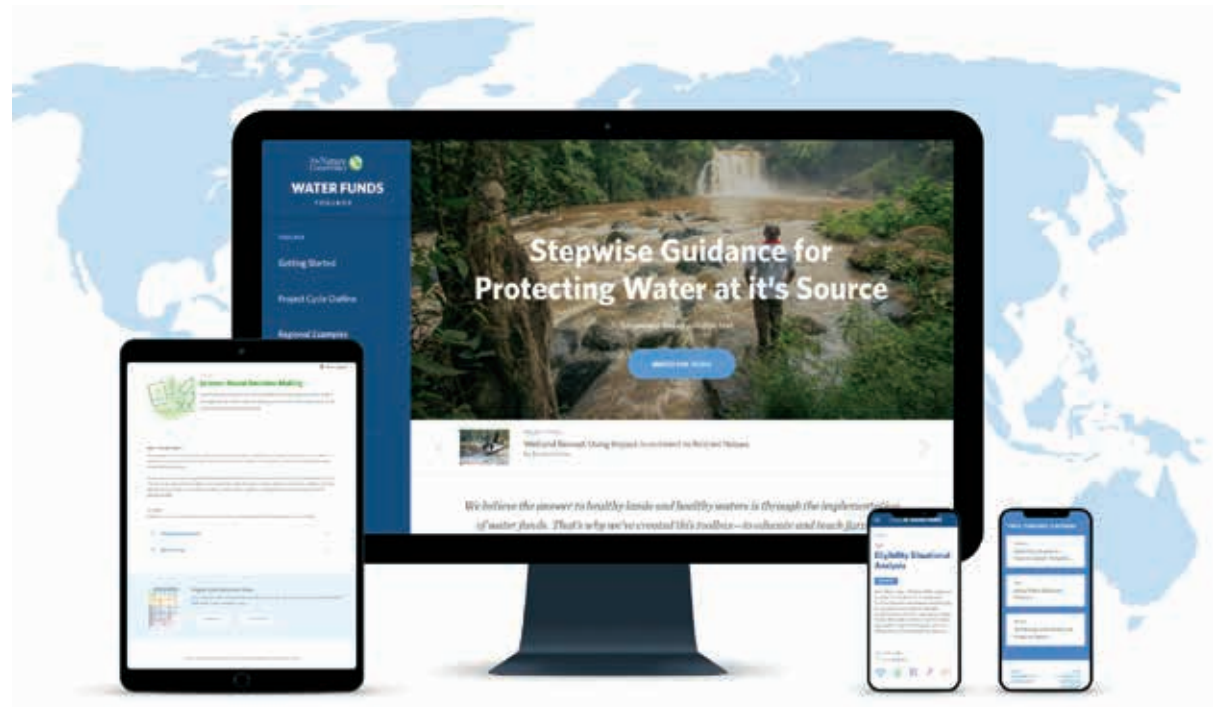
# Water Funds Training

The Water Funds Training provides a field-tested, step-by-step curricula for developing Water Funds. Co-developed by experts in Water Funds and adult learning, this curricula has been iteratively refined through field tests in key geographies wherein TNC and its partners are currently developing Water Funds, including sites across Africa, Asia Pacific, Latin America, and North America. The training offers a structure that leverages both **online and in-person workshop** components to maximize learning and capacity building.

## INTRODUCTION

**Course 1.  What is Water Security?**

**Course 2.  Source Water Protection**

**Course 3.  What is a Water Fund?**

**Course 4.  Water Funds Project Cycle**

*Assessment*

## FEASIBILITY PHASE

**Course 1.  Intro to Feasibility**

**Course 2.  Feasibility Determination**

2.1   Governance

2.2   Science

2.3   Finance

2.4   Implementation of Program Activities

*Assessment*

## DESIGN PHASE

**WF STRATEGIC PLAN**

**Course 1. Getting Started**

**Course 2. Clarifying the Challenge**

2.1   Clarify the Challenge

2.2   Vision and Mission

2.3   Risk Identification & Mitigation

2.4   Strategy & Areas of Action

2.5   Goal Setting

**Course 3. Formulating Interventions**

3.1   Interventions: Getting Started

3.2   Using the Intervention Formulation Framework

3.3   Determining Resources Needed / Financial Planning

**Course 4. Supporting Interventions**

4.1   Stakeholder Engagement & Communications

4.2   Fundraising Strategy

4.3   Roadmap

**Course 5. Pulling it all Together**

**DESIGN STUDIES**

**Course 6.   Formulate a Portfolio of Interventions**

**Course 7.   Social Impact Assessment**

**Course 8.   Business Case Analysis: Part I, II, III.**

**UNDER DEVELOPMENT**

**Course 9.   Monitoring and Evaluation**

**Course 10. Pilot Projects**

**Course 11.  Formalize WF Board and Develop Charter**

**Course 12. Start Creation of Legal Mechanism**

## Water Funds Network

The Water Funds Network is a global community of Water Funds practitioners who exchange ideas, knowledge, and lessons learned from applying best practices in the field. Members of the Network hold expertise in a wide range of disciplinary backgrounds, including knowledge in areas such as legal, aquatic science, management, financial planning, fundraising, geographic information systems, monitoring, stakeholder engagement, and much more!

The network's goal is to build a global network of water fund practitioners who are empowered to succeed in their roles through knowledge exchanges, increased collaboration with other Network members, and the joint identification of solutions to challenges related to the scoping, designing, and operation of Water Funds.

Join the global community of Water Funds practitioners working to apply and refine the water fund model around the world.

**Network activities:** Webinars • Discussion boards • News • Member profiles • Recognition programs • Competitions • Peer learning & review

## Latin American Water Funds Partnership

waterfunds.org

Created in 2011, the Latin American Water Funds Partnership is an agreement between the Inter-American Development Bank (IADB), FEMSA Foundation, the Global Environment Facility and (GEF) and The Nature Conservancy (TNC) to contribute to water security in Latin America and the Caribbean through the creation and strengthening of Water Funds.

This Partnership brings scientific, technical and financial elements, as well as credibility and reputational support so that Water Funds achieve their water security objectives in the long term.

## Water Funds Tools

Short descriptions for some of the most common Water Fund tools are provided below.

The selection of 'the best' or 'right' tool will be highly dependent on data availability and quality, technical capacity, and model requirements. Furthermore, the effort and extent of modeling should be aligned with the objectives of the analysis. For instance, modeling and analysis does not need to be overly exhaustive if the case for developing the Water Fund can be proven with less extensive modeling tools, data frequency, or technical analysis. Step-by-step guidance for tool selection is available in the Toolbox.

### The Natural Capital Project

The Natural Capital Project (NatCap) has been a leader in the development of tools to support decision-making and goal-setting in Water Funds for many years. The increasingly wide application of these tools, adaptability, and data requirements may make these tools advantageous for a given Water Fund (e.g. RiOS and InVEST do not necessarily require monthly data to conduct modeling, which requires that all related assumptions and caveats be carried forward when presenting results).

Photo: © TNC

**Learn More** ↗

Join the community: nature.org/ waterfundsnetwork

LATIN AMERICAN **WATER FUNDS** PARTNERSHIP

natural capital PROJECT

### InVEST

InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs) is a suite of models used to map and value the goods and services from nature that sustain and fulfill human life. It helps explore how changes in ecosystems can lead to changes in the flows of many different benefits to people.

### RiOS

RIOS supports the design of cost-effective investments in watershed services. The Resource Investment Optimization System (RIOS) provides a standardized, science-based approach to watershed management in contexts throughout the world. It combines biophysical, social, and economic data to help users identify the best locations for protection and restoration activities to maximize the ecological return on investment, within the bounds of what is socially and politically feasible.

### ROOT

ROOT is a tool to perform optimization and tradeoff analysis. It uses information about potential impact of restoration or management change activities together with spatial prioritization or serviceshed maps to identify key areas for ecosystem service provision. Multi-objective analysis allows users to consider how to best manage tradeoffs between different project goals.
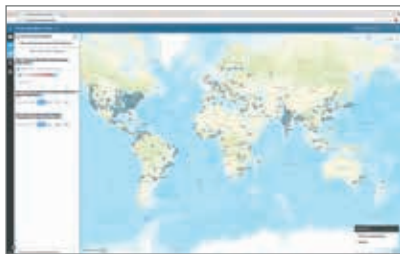
### Protecting Water Atlas

Where is the greatest potential for pollution reduction through watershed conservation in my region? Where are the areas of overlap among co-benefits of source water protection, like biodiversity conservation, climate change mitigation, and human health and well-being?

Insights into these questions can be made by accessing this tool. The maps and underlying data used in Beyond the Source represent a rich set of resources that lend themselves to further exploration. An online companion to the report, maps.protectingwater.org, features an interactive map and enables users to explore the data.

Learn more: protectingwater.org

### AQUEDUCT

The World Resources Institute developed Aqueduct. This global water risk mapping tool helps companies, investors, governments, and other users understand where and how water risks and opportunities are emerging worldwide.

### Soil and Water Assessment Tool

SWAT is a public domain model jointly developed by USDA Agricultural Research Service and Texas A&M AgriLife Research. SWAT is a small watershed to river basin-scale model used to simulate the quality and quantity of surface and groundwater, and predict the environmental impact of land use, land management practices, and climate change. SWAT works on the ArcGIS (v. 9.2 and up) platform. This tool is widely used in assessing soil erosion prevention and control, non-point source pollution control, and regional management in watersheds.

"For half of cities, annual source water protection activity costs could be just US$2 or less per person. Visit nature.org/beyondthesource to learn more."

Photo: © Kevin Arnold

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