









The Greater Cape Town Water Fund (GCTWF) is a collective action funding and governance mechanism that enables downstream public and private water users in the City of Cape Town to provide financial and technical support for catchment restoration alongside upstream communities. The GCTWF was initiated by The Nature Conservancy (TNC) in 2017 as a program to clear invasive species in the City of Cape Town's sub-catchment areas to improve water supply and water security, following extreme drought events between 2015 and 2018. The program also contributes to job creation, biodiversity conservation, and the restoration of indigenous ecosystems. The business model's main principle is that nature-based solutions and ecological infrastructure that address water supply problems at the source are cheaper and more cost-effective than traditional grey infrastructure solutions.

The GCTWF is an example of blended finance that pools financial resources from various sources and through various instruments, including public sector budgets through performance-based contracts, philanthropic contributions, and direct corporate investments from water-dependent industries. The main success factors for securing financing are the partnership model through a steering committee with representatives from public and private actors, and the business case developed by TNC that quantifies the value and impact of ecosystem services. The GCTWF is one of more than 30 water funds that have been established by TNC in North and Latin America, and Africa. It is a scalable and replicable model for other contexts and can use a variety of instruments and sources to secure financing for climate-related investments.

Keywords: Water fund, blended finance, nature-based solutions, water supply

Actor(s) interviewed: Director of The Nature Conservancy in South Africa

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Further reading: GCTWF business case + business case summary

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Best practice information card

Table 1. Greater Cape Town Water Fund. Information card

Location	The City of Cape Town, Western Cape province, South Africa		
Population size	The City of Cape Town¹: 4,977,833 (2024) Western Cape province: 7,433,020 (2022)		
Project area size	55.000 hectares or 555 km² (the total expected area for clearing and controlling invasive land species		
Area type	Downstream: Urban area (The City of Cape Town) Upstream: mountain areas and Cape Floristic Region		
Climate challenge	Droughts due to increased temperature and decreased rainfall		
Key Community System(s)	Water management, ecosystems and nature-based solutions		
Objectives	Increase water supply and prevent water shortages		
Climate challenge solution	Clearing and controlling invasive plant species that use significantly more water than indigenous species in the sub catchments that supply the rivers and dams of the Western Cape Water Supply System (WCWSS)		
Key benefits	Increased water supply and security, green jobs, ecosystem restoration and biodiversity enhancement, resilience to climate shocks, reduced severity of wildfires.		
Implementation status & timeframe	2017-2049. Implementation of the program is ongoing since 2019.		
Investment volume (€)	\$54.29 million (2024 US Dollar)		
Key financing barriers addressed	Overreliance on inconsistent and insufficient government and private funding; lack of a long-term strategic plan.		
Financial model	A Water Fund is a collective action funding and governance mechanism, a separate legal entity, that enables downstream public and private water users to provide financial and technical support in catchment restoration alongside upstream communities.		
Financial sources	Public: Local (metropolitan) municipality Private: Large enterprise and multinationals (water-dependent industries) Third sector: Foundations and trusts, philanthropies, charities		
Financial instruments	Blended finance: water fund Taxation (public budget from general taxes) Grants: donations, private corporate investments Intergovernmental transfers		

¹ The City of Cape Town is not the same as Cape Town. The City of Cape Town is a metropolitan municipality that forms the local government of Cape Town and surrounding areas. The City of Cape Town contains multiple cities and municipalities, Cape Town being one of those.



Overview and timeline

The City of Cape Town, South Africa, experienced a severe drought between 2015 and 2018, and the city came close to running out of water, a situation referred to as 'Day Zero'. The risk of water shortages due to extreme drought will increase because climate models predict decreased rainfall and increased temperatures in the future. At the same time, water demand in the city is projected to increase as Cape Town's population is growing rapidly at 2.6% per year, accompanied by an increase in industrial activities. In 2018, The Nature Conservancy (TNC) predicted that water demand would outstrip supply by 2021.

Cape Town's water sources are multiple sub-catchments in the Greater Cape Town Region. These catchments naturally store, filter, and transport rainfall to rivers and dams, and recharge the Atlantis Aquifer. The problem is that these **sub-catchments are in a degraded state due to invasive plant species**. Invasive species use significantly more water than indigenous species and consume millions of litres of water that would otherwise flow to the rivers and dams that supply the Western Cape Water Supply System (WCWSS). Invasive plant species also increase the frequency and severity of wildfires and hinder river flow and aquifer recharge. TNC calculated in 2018 that water resources were reduced by 15% due to invasive plant species, with a possible increase to 37% in the future.

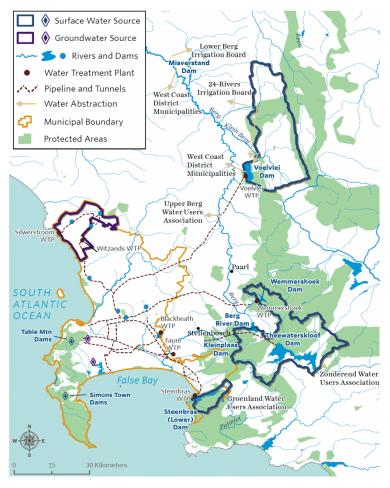


Figure 1. The Western Cape Water Supply System.2

Since 1995, the Government's Working for Water programme became responsible for clearing invasive species in sub-catchments but have struggled to keep up with the growth of invasives, especially in difficult to reach mountain areas, despite the implementation of 300 projects in 2014/2015. **Invasive species remained a persistent problem because various structural conditions and key barriers** inhibited an increase in financing and funding programs to improve water security. Some of these that relate to financing and funding are:

· Lack of a coherent and long-term ecological infrastructure restoration strategy.

² The Nature Conservancy. (2019). *Greater Cape Town Water Fund: Business Case* | *Summary of the Findings*. The Nature Conservancy. PDF





- Legislative limitations that prevent the City of Cape Town from playing a more active role and taking ownership of its water resources, because the sub-catchments are outside the jurisdictional boundaries of the City of Cape Town.
- Previous programs never targeted catchment areas in higher mountainous areas that are inaccessible.
- Over reliance on government funding. There was some private sector, corporate, and private landowner funding, but funding overall has been inconsistent and insufficient.

In 2016, the City of Cape Town was approached by TNC, an American non-profit organisation, with the proposition to explore a water fund. TNC had experience with setting up water funds in North and Latin America, with the Quito water fund in Ecuador being the first in 2000. The Greater Cape Town Water Fund (GCTWF) would become the second one in Africa. A coalition made up of TNC, local and supra-local government agencies, NGOs, and corporations formed the GCTWF steering committee, which issued commissioned studies to evaluate the impact of nature-based solutions on water supply, specifically the targeted removal of invasive plant species. The GCTWF organisation was officially established in November 2018, and the business case was published in April 2019. The business case proved that removing invasive plant species was more cost-efficient than traditional grey infrastructure. A new dam or desalination plant is more expensive and does not solve the root problem of invasive plant species reducing water supply.

The business case marked the end of the feasibility step, after which a 30-year strategic plan was developed with solutions for the water supply problem and the establishment of the Water Fund governance. The strategic plan's first activities funded under the Water Fund took off in 2019 with removing and controlling invasive plant species in seven sub-catchments as its main priority. The strategic plan includes ecological infrastructure interventions to secure water supply, including the restoration of four priority wetlands, controlling invasive alien plants in former forestry areas, and restoration of natural vegetation on the Atlantis Aquifer. The GCTWF also acts as a job creation and training program by employing teams from nearby disadvantaged communities to do the plant clearing work.³ The program aims to remove and control invasive species from almost 55,000 hectares. In the first six years, the work aims to yield annual water gains that are the equivalent of two months' water supply for the City of Cape Town. By 2045 the work aims to yield 100 billion litres water annually, the equivalent of one third of the City of Cape Town's current annual demand.

Table 2. Greater Cape Town Water Fund. Timeline with key moments

Date	Key moment
2000	The Water Fund model was started in Quito, Ecuador, by The Nature Conservancy.
2013	TNC did a study to analyse which cities in Sub Saharan Africa cities could benefit from a Water Fund. The City of Cape Town was identified as one of those cities.
2016	TNC approaches the City of Cape Town to explore a water fund. Collaboration started between TNC, government agencies, NGOs, and corporations.
2017- 2019	Feasibility study about a water fund for the City of Cape Town started. The GCTWF organisation was officially established in November 2018, the steering committee was formed, and the business case was published in 2019.
2019- 2024	The implementation of the strategic plan started with a proof of concept, recruiting of teams, training and setting up the first field teams. The high-impact phase of six years with initial clearing of invasive plant species (57% of the total investment cost).
2023	The GCTWF was formed as an independent entity and institution with its own governance structure, ending the work of the teering committee.
2025- 2048	Maintenance phase: keep the catchment areas free of invasive plant species (43M of the total investment cost).

Governance and key stakeholders

Until 2023, the governance structure of the GCTWF was composed of a steering committee and three working groups. TNC was the lead partner and secretariat of the GCTWF from the start. In 2023, the steering committee transitioned into an independent institution and legal entity, also called the GCTWF, which takes the form of a non-profit company under South African law with a public-private governance board and its own financial statements. At the time of writing (March 2024), members still had to be appointed to the new entity. Therefore, we focus in this factsheet on the initial governance structure. It is expected that most of these stakeholders will also be represented in the new entity. Under the new governance structure, for now, TNC will continue to host the GCTWF because this brings down operational costs and keeps overheads low.

³ We did not find information about who performed other ecological interventions than the plant clearing work.



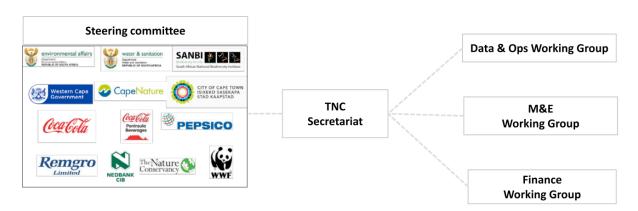


Figure 2. Governance structure of the GCTWF until 2023.4

The **steering committee** was responsible for commissioning studies during the feasibility phase (e.g., the business case), the design of the water fund entity, and the strategic plan, including decisions about the interventions or actions that would be funded through the GCTWF. The steering committee is a voluntary group that represents the main stakeholders, including TNC, NGOs, local and supra-local government agencies, and private sector corporations. The corporations are important economic actors and main water consumers in Cape Town. Public sector partners included the Western Cape Government, the City of Cape Town, the provincial Department of Environment, national departments of Environmental Affairs and Water & Sanitation, Cape Nature, and SANBI (South African National Biodiversity Institute). NGOs involved are TNC and WWF. Private sector partners included: Coca-Cola Peninsula Beverages, Remgro Limited, Nedbank, PepsiCo, and AB-InBev.

The three working groups are:

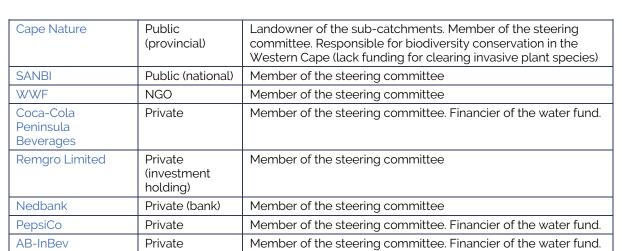
- The Data and Operational Working Group was the main working group of the water fund because it
 makes decisions and oversees implementation. This working group also collected data to track
 progress in detail about where clearing invasive species is taking place. This information is also
 communicated to the public to be transparent about the progress.
- Monitoring and evaluation working group.
- · Finance working group to work out the financing and funding details and strategies.

Table 3. Greater Cape Town Water Fund. Key stakeholders and their responsibilities or roles.

Stakeholder	Туре	Role and responsibilities
The Nature Conservancy	NGO	The Nature Conservancy is a global non-profit that has implemented over 30 water funds in North America, Latin America, and Africa. TNC initiated the water fund and still hosts the GCTWF.
Pegasus	Private	Company that provides support to TNC to accelerate water fund development across the globe
Nature for Water (N4W)	Private	Provides technical support, identifying a sustainable funding mechanism for full cost implementation. N4W is jointly managed by TNC and Pegasus
Western Cape Government	Public (provincial	Member of the steering committee
The City of Cape Town	Public (local)	Member of the steering committee, key beneficiary, main collaborator of TNC. Financer of the water fund.
Department of Environment	Public (provincial)	Member of the steering committee
Department of Environmental Affairs	Public (national)	Member of the steering committee
Department of Water & Sanitation	Public (national)	Member of the steering committee

⁴ Stafford, L. (2022) Greater Cape Town Water Fund. Presentation. Stellenbosch Invasive Species Forum.





Business model & financial model

Business model

The water fund business model is based on two core elements. First, it starts from the principle that it is cheaper and more cost-effective to prevent water problems upstream at the source with nature-based solutions than it is to address them further downstream with grey infrastructure. It thereby puts forward ecological infrastructure restoration as the best way to enhance water security for downstream water users. Second, a water fund is about collective action and bringing together public and private stakeholders alongside local communities to enable job creation and ensure financial support from downstream public and private water users. In doing so, the water fund serves a bigger purpose and is believed to be a catalyst for collective action and change to protect ecosystems and build more resilient communities against the backdrop of climate change.

The water fund business model for the City of Cape Town has multiple values and benefits:

- Increased water supply, water security, and water quality for the City of Cape Town.
- Creation of green jobs in marginalized communities, with a specific focus on training and employing women.
- Restoration of indigenous ecosystems, enhancement of biodiversity, and improved soil quality.⁶
- · Increase of resilience to climate related shocks like droughts.
- · Reduced severity of wildfires.

Key beneficiaries of these values and benefits are water users in the Cape Town metropolitan area, the agricultural sector, and smaller municipalities and communities. There are no direct monetary benefits, but increased water supply ensures water security in times of severe droughts, which is important for water-dependent industries. TNC also calculated that wetland rehabilitation would generate \$5.19-\$8.57 million in economic net benefits.

TNC calculated in the business case that \$54.29 million (2024 US Dollars) is the investment cost required to clear and maintain seven priority sub-catchments over 30 years. Of that total, a high impact investment of \$30.76 million (57%) is required during the first six years for initial clearing, after which \$23.53 million (43%) is required to keep the catchment areas free of invasive plant species. Nature-based catchment restoration has the highest return on investment compared to other solutions, generating higher annual water gains for less dollars/hectare. Alternative grey infrastructure solutions such as desalination infrastructure or groundwater exploration would cost 5-12 times more to generate the same result, and probably don't offer the same (co-)benefits and values as listed above.

Financial model

A Water Fund is a collective action funding and governance mechanism that enables downstream public and private water users (water utilities, local governments, businesses) to provide financial and technical support in catchment restoration alongside upstream communities, as shown in Figure 3. A water fund pools funding

⁵ We did not find information about who is funded by the GCTWF to deliver the works and actions described in the strategic plan. We know that local upstream communities are involved. The GCTWF set up a training program to train land create jobs for local communities to clear invasive species. It is not clear who else is funded to perform other (public or private actors). ⁶ 70% of plants in the Cape Floral Region are found nowhere else in the world.



from multiple public and private sources, and through multiple financial instruments. Sources and instruments can differ in each water fund and depend on the local context. Contributions are voluntary and do not have a fixed investment term or amount. TNC plays an important role in securing the necessary funding. The financing and funding structure shown in Figure 3 shows that a water fund can be interpreted as a form of payment for ecosystem services (PES), whereby financial contributions from downstream users (beneficiaries) flow directly or indirectly to the upstream providers of ecosystem services. In a water fund, public and private financing is pooled in a water fund that is then used to pay for all required resources (indirect contributions), including staff, materials, training, etc.

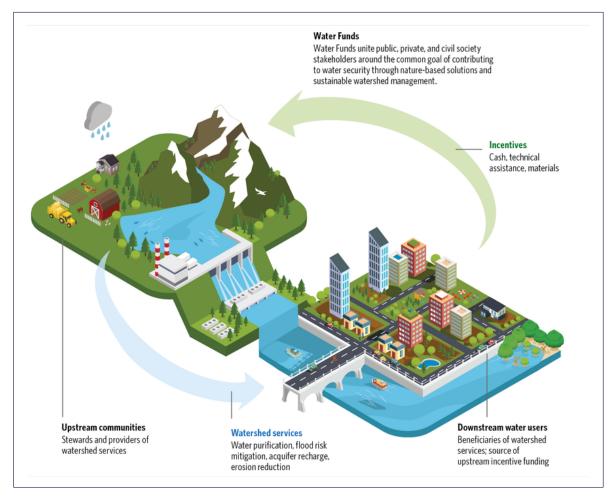


Figure 3. Water fund (general) financing and funding structure.7

The financing and funding structure of the GCTWF is characterized by different phases:

- 1. The first phase entailed securing funding to perform the feasibility studies (business case) and design the water fund. In this case, as in most other water funds, TNC relies on **philanthropy** to finance the feasibility studies and water fund design. In the GCTWF, this was financed by the Coca-Cola Foundation.
- 2. The second phase is marked by **seed funding** to initiate implementation with a proof of concept. In this case, this was also financed through **philanthropy** from the Coca-Cola Foundation. The Coca-Cola Foundation provided \$156,000 that was used to recruit teams, train and set up the first field teams, and establish a proof of concept.
- 3. The third phase marks the start of the full implementation of the programme. After the business case was launched, more corporates came on board, and the financing and funding shifted from philanthropy only to **direct private corporate investments**, with still some donations from foundations and charitable funds. Corporates have an incentive to invest because they benefit from the replenishment of the Atlantis Aquifer, or they have water replenishment targets, meaning that they want to replenish the equivalent of their consumption levels. Corporates that approach TNC to invest in the water fund usually do so in two ways. Corporates either propose an amount and ask how

 $^{^{7}}$ The Nature Conservancy. (nd). What is a Water Fund (Water Funds Toolbox). The Nature Conservancy. Last consulted on 7 June 2024. $\underline{\sf URL}$





much water it can replenish, or they disclose how much water they use to determine the cost of replenishing that amount. To date, the fund has received financial support from The Coca-Cola Foundation, Levi Strauss & Co, the Caterpillar Foundation, Proctor & Gamble, Amazon, private individuals, and foundations.

4. The fourth phase marks a shift from private only to **public-private finance**. In 2019-2020, the City of Cape Town financially started contributing to the water fund in different waves. Investment from the City of Cape Town comes from its **public budget** and is paid to TNC through **performance-based contracts**, meaning the city does not pay upfront but after certain performance targets are met (the contract details are not known). This is done to ensure that taxpayer's money is used in an efficient way. The City of Cape Town is the only public actor that contributes to the water fund.

The GCTWF is considered a form of **Blended finance**, which the Mission project P2R (Pathway2Resilience) defines as a financial approach where "projects combine concessional public finance with non-concessional private finance and expertise from the public and private sector. Specifically, it is the use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development." This definition fits the financing and funding structure of the GCTWF, which started with contributions from philanthropic foundations to develop a business case, which could then be used to leverage public and private investments on a larger scale.

To date, TNC has raised 70% of the required funding for the first six years (high-impact investment phase), of which 45% is government funding from the City of Cape Town and 55% is corporate and foundation/philanthropic funding. By now, the GCTWF is widely known, and more corporates are contacting the GCTWF to become financially involved. TNC aims to secure the remaining funding by 2025. TNC is also looking into other instruments to secure additional funding in a sustainable and consistent way alongside the ongoing public and private contributions. Possible instruments are water bonds, an endowment, water charges or water tariffs. The use of instruments such as a water charge or tariff would require a political decision.

Enabling conditions

The design and implementation of the water fund required a **strong narrative backed up with scientific evidence** that the proposed nature-based solutions would be effective. This required an assessment of the cost and impact, which can be challenging for nature-based solutions or ecological infrastructure. In South Africa, long-standing programmes like Working for Water provided a strong basis to estimate the feasibility study. Likewise, there is a scientific evidence base for the water yield impacts of nature-based catchment restoration strategies. The business case was therefore an important resource to secure public and private financing.

The success of the water fund depended on the buy-in of the City of Cape Town. The city, however, was uncertain whether it was allowed to invest in the sub-catchments because they lie outside the jurisdictional boundaries of the city. A **legal opinion** was sought, and the verdict was that the city can invest outside its jurisdictional boundaries because of its duty to provide water.

Finally, there are **two de-risking mechanisms** that help to secure financing. First, the City of Cape Town contributes through performance-based contracts, which means that it only needs to pay if the program meets its performance targets. Second, TNC provides estimated replenishment figures to corporates that are validated by a third party.

Outcomes

In terms of **efficiency**, it has already been mentioned that clearing invasive species is more cost-efficient than alternative grey infrastructure solutions to improve water supply. As for the implementation itself, it was mentioned during the interview (January 2024) that the programme is on track with clearing invasive species, and TNC is on track with securing funding for the first six years, the high-impact investment phase.

The effectiveness of the program is monitored by TNC. As of October 2023, GCTWF teams have cleared more than 46,000 hectares of invasive trees. This recovers about 15.2 billion litres of water per year (42 million litres per day) back into the water catchment and keeps the rivers flowing.

Since 2019, The GCTWF also generated **broader impacts**. As of October 2023, the GCTWF has created 722 green job opportunities in a region faced with severe unemployment, nearly half of which are held by women. About 150 of those jobs are for high-angle technicians. GCTWF also supports eight businesses with mentorship to grow their operations in the environmental sector and is providing training to individuals in various disciplines.

⁸ Pathways2Resilience. (2024). Financial sources, instruments and best practice case studies to support financing regional adaptation. Pahtways2Resilience. Last consulted on 7 June 2024. <u>URL</u>



Lessons learned

Successes and limitations

The main success factor according to TNC and the interviewee is the partnership model with buy in from the downstream users, including the water utility company, the City of Cape Town, and private sector water users. The governance structure allowed for all these stakeholders to be involved in the steering committee, which creates a sense of co-ownership, shared responsibility, and commitment. Buy in from the downstream users is facilitated by a strong business case that clearly shows the added value and cost efficiency of the program and solution. The business case received input from a lot of experts, meaning there is validation from scientist, hydrologists, biologists, etc. The interviewee stated that **Transparency and accountability** are also important factors to convince actors to contribute to the water fund. The monitoring and reporting system ensure that the impacts are frequently updated and visible to everyone.

Despite the proven effectiveness of the interventions through the GCTWF and financial contributions to the program so far, two **limitations** that we deduct from this case are the **voluntary character of the water fund** and the fact that **financing is usually not immediately secured for the implementation of the entire program**. This requires a constant effort to secure financing. TNC can now rely on experience with securing financing in more than 30 water funds in different countries and continents, through different instruments. Another limitation is one that applies to green infrastructure and nature-based solutions in general, being the difficulty to quantify ecosystem services, which has been pointed out in academic and grey literature often. This was not a limitation in the GCTWF due to the strong evidence base for water yield impacts of nature-based catchment restoration strategies, but it could be a limitation in other contexts considering the importance of a strong business case with quantifiable impacts to secure financing.

Transferability conditions and potential

Since 2000, TNC has implemented more than 30 water funds in North America, Latin America, and Africa, and more will be initiated in the future. This shows that **the water fund is a generic model that is scalable across different geographies and contexts.** Based on its experience, TNC has developed a standardized water fund development process with five steps in two phases (Figure 4): setting up a water fund (feasibility, design, creation), and running a water fund (operation, maturity). Some conditions must be met to transfer the water fund model to other contexts:

- Partners must have the ability to build long-lasting partnerships that combine different areas of expertise and that bring public and private stakeholders together.
- Ecosystem services must be quantifiable (also in monetary terms) and relevant for large public or private entities such as companies or municipalities. This also requires the ability to measure the cost efficiency of ecological infrastructure and nature-based solutions compared to grey infrastructure solutions.



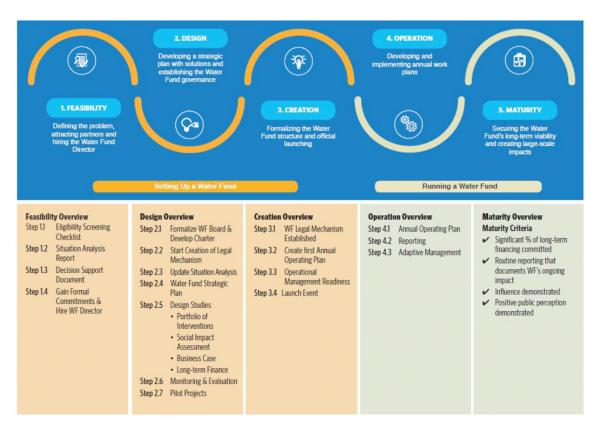


Figure 4. Water Fund (general life cycle).9

Related factsheets

- The GCTWF is an example of a climate-related program that creates socio-economic benefits aside from environmental benefits by actively involving entire local communities in the realisation of projects. Similar situations can be found in the factsheets of the Clean Water Partnership (ID 02), Project Finance for Permanence (ID 03), and the Seychelles debt-for-nature swaps (ID 15).
- The factsheet of the Sheffield Lower Don Valley Flood Defense project (ID 11) also describes a case wherein corporations contribute to climate adaptation measures (flood protection) they benefit from. Different from the GCTWF, in Sheffield, a business improvement district was used to secure contributions for five years from corporations benefitting from flood protection.

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⁹ Stafford, L. (2022). Greater Cape Town Water Fund. Presentation. Stellenbosch Invasive Species Forum.