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# Transformative Riverine Management Projects in Durban

BACKGROUND AND STRUCTURING



EThekweni Municipality is planning how to scale-up its existing project across all of Durban's waterways, with support from the C40 Cities Finance Facility (CFF).

## Executive summary

The eThekweni Metropolitan Municipality (eThekweni Municipality) governs the greater Durban area, a coastal city containing 18 major river systems. Some river systems extend far inland of the city boundary. Over the past 30 years, deteriorating river water quality and more frequent flooding have caused escalating costs to the city, businesses and citizens.

Human health and safety risks are being increasingly linked to poor riverine management. These problems are made worse by the rapidly expanding population living in informal and peri-urban settlements adjacent to rivers. This situation is mirrored throughout the south eastern province of KwaZulu-Natal (KZN) in South Africa, where alternating cycles of drought and flood have driven informal settlements into flood plains, resulting in extreme vulnerability and loss of life and property.

EThekweni Municipality has built a strong policy base and institutional buy-in for riverine management, especially in partnership with other stakeholders. Since 2010, it has implemented several riverine management projects. Although slightly different in focus and structure, they contribute collectively to the city's experience and track record in managing river systems for locally important socio-economic, financial and ecological benefits. These projects support cost-efficient delivery of city services.

These projects have also become a mechanism for addressing climate change risks. The scale and urgency of the need for action on climate change have resulted in a global focus on 'transformation', implying large-scale, sustained and catalytic carbon emissions reductions and enhanced resilience within cities. With support from the C40 Cities Finance Facility (CFF), eThekweni Municipality is building a case for investment in transformative, city-wide urban river management. Much can be gained from reflecting on and sharing the learnings from the city's riverine management experiences so far. This report contrasts three different riverine management projects: (i) the city-led Sihlanzimvelo Project, (ii) community-led Aller River Pilot Project, and (iii) the Green Corridors special purpose vehicle, supported by the city.

An analysis of the background and structuring of these projects suggests the following key insights:

- 1. Transformative** riverine management requires building effective transversal working relationships across departments, institutions and sectors. Projects should be planned collaboratively to establish joint project resourcing and mutual accountability.
- For transformative riverine management projects to be **institutionally and financially sustainable**, a compelling business case is needed. This business case should justify the project purpose and benefits in the context of the services that the city should deliver and its socio-economic and environmental priorities.
- Riverine management projects should be sized to ensure they are technically feasible, contextually relevant, manageable and **operationally sustainable**.
- Appointing an appropriately mandated, resourced and skilled programme manager with a multi-year focus is vital for transformative riverine management projects to be **sustainable**. This ensures that projects achieve their desired outcomes, are delivered cost-efficiently and within the desired timeframes, helping to underpin continued political and financial support.
- Transformative riverine management projects should be designed to **build human and social capital** to enhance human health, well-being and to grow the green economy.
- City **partnerships** with citizens, businesses and non-profits can leverage wider, longer-term investment in riverine management, and offer opportunities for innovative approaches that bring enhanced project impacts and transformation.

### About the C40 Cities Finance Facility

The C40 Cities Finance Facility (CFF) is a collaboration of the C40 Cities Climate Leadership Group and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The CFF supports cities in developing and emerging economies to develop finance-ready projects to reduce emissions to limit global temperature rise to 1.5°C and strengthen resilience against the impacts of a warming climate. The CFF is funded by the German Federal Ministry for Economic Development and Cooperation (BMZ), the Children's Investment Fund Foundation (CIFF), the Government of the United Kingdom and the United States Agency for International Development (USAID).

### About the C40 Cities Finance Facility's support to eThekweni Municipality

With support from the CFF, the eThekweni Metropolitan Municipality is building a case for upscaling riverine management to encompass all rivers in the city. The project vision is to build a compelling business case for transformative urban riverine management which works in partnership with all affected stakeholders to rehabilitate and sustainably manage all riverine corridors in the city in a manner that:

- is resilient to the impacts of climate change;
- transforms riverine corridors into clean, safe, healthy, valuable and pleasant open spaces;
- generates social and economic opportunities;
- impacts positively on the city.

# Objectives of the report

This report is the first in a 3-part series presenting Durban’s learnings from the establishment, implementation and planned upscaling of transformative riverine management projects. It contrasts how the design and structure of three selected projects influenced their impact and outcomes concerning:

- **Transformation:**  
Practices that resulted in positive changes to systems, financial flows, skills and climate action implementation at scale, including improving transversal working and horizontal integration between sectors and stakeholder groups.
- **Operational sustainability:**  
Practices that underpinned the sustainability of the investment and secured positive outcomes.
- **Human and social capital development:**  
Practices that built people’s skills, community institutions, capacity and / or levels of social cohesion, supporting the multiplier effect.
- **Partnerships and collaboration:**  
Practices that built relationships between the city and other groups, including catalysing wider action, impact or investment.

The report is based upon interviews with the responsible project managers and city officials from eThekweni Municipality and a literature review.



# Contrasting project examples

The three projects from which learnings are contrasted in this report are:

	Sihlangezwe Project	Green Corridors Green Spaces project	Aller River Pilot Project
Project lead agent and partners	Led by the city department responsible for roads and stormwater maintenance  11 other city departments participate in a project steering committee	Led by the Green Corridors NPC, a city-supported special purpose vehicle working on community upliftment through the creation of a green spatial economy.  Green Corridors facilitated partnerships between municipality and other river management stakeholders	Led by the Kloof Conservancy, a community-based organisation promoting environmental awareness and protection  Partnerships with non-profit organisations for implementing different aspects of the project  Several city departments contributed to project activities
Objectives	Removal of litter/waste and invasive plant species from stream areas to reduce stormwater blockages and create employment	Enhance local quality of life, living environments and sustainable livelihoods	Restoration of sections of the Aller River with a focus on water quality improvement and invasive species removal
Funding	eThekweni Municipality Roads and Stormwater Maintenance departmental operating budget, embedded programme management staff	3-year funding agreement with eThekweni Municipality, plus other externally funded projects	eThekweni Municipality Environmental Planning and Climate Protection Department, later phases funded by donor agencies
Community partnership approach	Community co-operatives employed to clean 300km of stream banks and culverts from waste and invasive species. The streams are located in high density, low income settlements where poor river quality is associated with human health risks and flooding impacts  A consultant is employed to manage the project, including appointing community assessors to monitor implementation and build local awareness	Local communities employed to maintain, improve and create new riverine open spaces  Sustainable livelihoods supported through upcycling / recycling waste from rivers and growing food near restored streams  Community-based eco-tourism and nature-based youth development	Local communities employed to remove invasive alien plants and clean litter from streams  Community Eco-Champs’ employed to build awareness and capacity for community river stewardship, monitor rivers and report pollution issues
Timelines	Initiated in 2012, ongoing	Initiated in 2010, ongoing subject to annual renewal of the Memorandum of Agreement with eThekweni Municipality	June 2016, ongoing

## Why riverine management projects?

Rivers are dynamic systems that are constantly responding to human and biophysical impacts. River management thus needs to be responsive to changes. A vast range of factors influences the performance and liveability of riverine corridors, including solid waste (littering, dumping), sand mining, the status of riparian vegetation, the attenuation of surface runoff (though natural and artificial wetlands, canalisation or diversion measures), pollution and discharges from wastewater systems.



Also, climate change will severely affect Durban's water systems and the services they deliver. Impacts are projected to include declining water quality (with associated risks to human health), more intense flooding, reduced water availability and food security (Lutz, 2018). The effects of a changing climate can be disastrous if combined with blocked rivers and streams and settlements in vulnerable, flood-prone areas. Durban suffered severe flooding incidents in October 2017 and April 2019.

To alleviate this issue, eThekweni Municipality has placed the protection of ecological infrastructure, especially its river systems, as a central pillar of its climate change adaptation response. It has mapped 94,000 ha of ecological infrastructure and recognised it in key policies as critical for the supply of ecosystem services. The value derived from the flow of ecosystem services (such as flood attenuation and water supply) is at least R4.2 billion per annum (US\$284 million). The use of resource economics to demonstrate the financial value of ecological infrastructure has helped build awareness throughout the city administration on why investment in its management makes good financial sense (Cartwright et al. 2013). The Durban Climate Change Strategy (2015) included a focus on ecological infrastructure to improve the city's water security and reduce flooding risk.

As of 2019, the city established several riverine management and restoration projects which involved different city departments and external partners. These projects include a strong focus on community involvement and capacity/skills development, given the strategic priority of addressing poverty. They combine ecosystem restoration, adaptation to climate change and the creation of economic opportunities for low-income populations. While some projects were externally funded, the city has invested significant funding into many of them, demonstrating a recognition of their value to the delivery of city services.

eThekweni Municipality has, through 10 years of building knowledge and testing implementation approaches, established institutional and political support for riverine management as a mechanism for delivering city services cost-efficiently while addressing climate change risks. Several riverine management projects have been implemented, different in focus and structure but contributing collectively to the city's experience in managing river systems to produce socio-economic, financial and ecological benefits.

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# Insights on the design and structuring of riverine management projects

## PROJECT STRUCTURING FOR TRANSFORMATION

Transformative riverine management requires building effective transversal working relationships across departments, institutions and sectors. Projects should be planned collaboratively to establish joint project resourcing and mutual accountability.

The multi-dimensional nature of riverine management requires collaboration across city departments. Sihlanzimvelo, the Aller River and the Green Corridors projects have helped to build relationships between city departments and to lay a good foundation for transversal working on riverine systems management.

How each project was motivated and structured has influenced these outcomes. Sihlanzimvelo implements riverine management actions aiming to improve the efficiency of service delivery across several city departments. All affected departments were involved in the project design phase and have continued to be involved in implementation. However, funding contributions from the departments that stand to benefit from the project activities have not been successfully secured. Despite this, the project has facilitated successful inter-departmental technical collaboration. Inter-departmental service level agreements that set out project roles and responsibilities have been suggested as a potentially useful mechanism for improving transversal working relationships, particularly in facilitating joint funding and mutual accountability. Departmental representation in project design and set up needs to be sufficiently senior to ensure that appropriate resources are allocated.

In the Aller River and Green Corridors projects, not all city departments which needed to support the project activities were involved in the initial project conceptualisation stage. This resulted in significant time and effort being invested in gathering their support after the projects had already started. Project-focused relationships between individuals in the different departments were successfully developed within each project, adding significant value to the projects and the functions of the involved city departments.

## DESIGNING PROJECTS FOR OPERATIONAL SUSTAINABILITY

For transformative riverine management projects to be institutionally and financially sustainable, a compelling business case is needed. This business case should justify the project purpose and benefits in the context of the services that the city should deliver and its socio-economic and environmental priorities.

A major strength of the Sihlanzimvelo project plan was its initial design as a solution for improving cost efficiencies in city service delivery. The project costs and intended benefits were motivated based on the department's core mandate and functions. The Green Corridors project also motivated cost efficiencies from community upcycling / recycling of waste collected from streams in local circular economy projects, saving on transport and disposal costs.

Sihlanzimvelo, the Aller River and Green Corridors projects focused on job creation and health benefits, which helped them gain political traction. For the Aller River and Green Corridors projects, ecological, climate change and green economy co-benefits were used to demonstrate linkages with the respective mandates of the lead agencies.

The focus on job creation brought political pressure around which communities would benefit. Consequently, solid technical justifications for where the projects needed to be located were important. Given the larger scale of employment opportunities associated with the Sihlanzimvelo project, it experienced greater political pressure around the project location than the other two projects. The Aller River and Green Corridors projects, being of smaller scale and implemented via a community partner on one hand, and a special purpose vehicle on the other, were not as exposed.

Riverine management projects should be sized to ensure they are technically feasible, contextually relevant, manageable and operationally sustainable.

The Sihlanzimvelo, Aller River and Green Corridors projects have each focused on spatially defined areas within river sub-catchments. Project interventions were designed around building awareness and capacity within specific communities and on addressing particular management problems along specific sections of rivers. Containing the spatial focus and scale in this way has helped secure the

respective successes of the projects, particularly in terms of keeping the numbers of stakeholders and diversity of management interventions to within manageable limits and ensuring that projects are technically feasible in relation to the desired outcomes.

Replication across a whole river system can be incremental, where projects start small and evolve, and can be built as a learning, adaptive process. This will also help to bring along partners whose role is crucial at the beginning and throughout.

Appointing an appropriately mandated, resourced and skilled programme manager with a multi-year focus is vital for transformative riverine management projects to be sustainable. This ensures that projects achieve their desired outcomes, are delivered cost-efficiently and within the desired timeframes, helping to underpin continued political and financial support.

Across all three projects, clear leadership (including a project champion) and political support were critical. Different governance models can be accommodated by understanding the strengths and weaknesses of relevant stakeholders and by finding a model that optimises around each partner's strength.

In the Sihlanzimvelo project, appointing an experienced project champion from the outset to deal with project planning, funding, procurement, inter-departmental collaboration, and political and technical challenges has been critical for the long-term sustainability of the project. Similarly, the highly skilled and committed chairperson and volunteers of the Kloof Conservancy were the central force behind getting the project off the ground, bringing various city departments onboard and resolving funding and implementation challenges.

A key challenge for all projects has been city supply chain management requirements and processes. The Sihlanzimvelo project employs a large number of community co-operatives, the procurement of which is time-consuming and fraught with procedural difficulties. The need for the Supply Chain Management Unit to be on board with the procurement requirements to sustain labour intensive riverine management projects from the start was critical to the sustainability of the project. Where city funds are being transferred, the mechanisms for partnering are limited and the timeframe for funding is often limited.

## DEVELOPING HUMAN AND SOCIAL CAPITAL

Transformative riverine management projects should be designed to build human and social capital to enhance human health and well-being and to grow the green economy.

The Aller River Pilot Project Eco-Champs initiative was specifically designed to build human and social capital to mobilise wider community stewardship of riverine areas. This involved training and employment of seven local community members to assist with river health maintenance, waste reduction, monitoring and community awareness, under a Team Leader and Community Liaison Officer. The Eco-Champs team worked with schools and churches to promote community awareness and behaviour change. This approach was made possible by the skills and experience of the Kloof Conservancy, whose interest in the project was centred on establishing a community-driven river stewardship model.

Similarly, the Green Corridors project has built skills and capacity in beneficiary communities extending beyond riverine management actions. These include helping people making a living from waste upcycling / recycling and producing food while improving the health of their local rivers. The Green Corridors programme is now able to manage a substantial and diverse portfolio of projects (approximately R20 million per year – US\$1.35m) with a focus on non-profit community development. Municipal funding means it can focus on delivering its own mandate rather than those of external funders.

The community co-operatives employed through the Sihlanzimvelo project have been given the core skills needed to establish and run a co-operative, remove invasive alien plants, and comply with health and safety regulations. The community assessors play a wider role in creating awareness and behaviour change in the surrounding communities.

However, clarity over objectives and ensuring the project's scope doesn't expand too much is also crucial. For example, the Sihlanzimvelo project benefited from clear programme messaging around job creation, risk reduction and climate change. On the other hand, individual river management projects must fit a systemic narrative to ensure that success in one area does not compromise success in another area.

## THE VALUE OF PARTNERSHIPS

City partnerships with citizens, businesses and non-profits can leverage wider, longer-term investment in riverine management, and offer opportunities for innovative approaches that bring enhanced project impacts and transformation.

Partnerships between different actors involve arrangements that bring in additional complexity. However, they also allow for increased creativity and flexibility, as different partners can grow to understand how they add value and take advantage of those opportunities.

Building on the pilot phase city funding for the Aller River Project, the Kloof Conservancy was able to secure donor funding to sustain the project into a second phase. This was only possible because the Kloof Conservancy had the skills and interest to take the project forward.

The city partnership with Kloof Conservancy brought innovations and approaches that deepened and broadened the project impact. For example, the strong focus on building community stewardship through the Eco-Champs initiative would have been difficult for the city to implement on its own. The Aller River Project benefited from strong internal learning processes that could be used to inform programme development.

Similarly, the Green Corridors project has benefited from the skills and experience of the non-profit agencies that have managed project implementation, resulting in a stronger focus on sustainable livelihoods and circular economy initiatives.

## Conclusions

Rivers are complex systems to manage and eThekweni Municipality's experiences in implementing riverine management projects have demonstrated this. How projects are motivated, planned and structured during set up can significantly influence their transformative impact and operational sustainability.

To leverage large-scale, long-term positive systems change in riverine management, project design and structuring should be centred on building human, social and institutional capital, securing sustainable funding, and on establishing effective collaboration and partnerships between city departments and with citizens, businesses and non-profits.

These are the lessons learned from the establishment of transformative riverine management projects in Durban. Two upcoming reports, to be published in 2020, will cover the lessons learned from implementation and planned scale-up of such projects.

These lessons learned should be understood critically. There is no 'cut and paste' solution available that can be employed for riverine management projects. Replicability depends on a careful assessment of structuring models based on the local geographical, political, socio-economic and governance contexts. Given the existing constraints and strengths, what is likely to work will differ in each context. However, the key insights identified in this report can be used as principles to guide the structuring of riverine management projects everywhere, in municipalities in South Africa and beyond.

## Further Reading

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## Relevant websites

**eThekweni Municipality Environmental Planning and Climate Protection Department web page:** [http://www.durban.gov.za/City\\_Services/development\\_planning\\_management/environmental\\_planning\\_climate\\_protection/Pages/default.aspx](http://www.durban.gov.za/City_Services/development_planning_management/environmental_planning_climate_protection/Pages/default.aspx)

**eThekweni Municipality Roads and Stormwater Maintenance Department web page:** [http://www.durban.gov.za/City\\_Services/engineering%20unit/Roads\\_Stormwater\\_Maintenance/Pages/default.aspx](http://www.durban.gov.za/City_Services/engineering%20unit/Roads_Stormwater_Maintenance/Pages/default.aspx)

**Green Corridors website:** <https://www.durbangreencorridor.co.za/>

**Kloof Conservancy website:** <https://www.kloofconservancy.org.za/>

**Take Back our Rivers Project (Aller River Project) web page:** <https://www.kloofconservancy.org.za/projects/take-back-our-rivers-project/>

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