



Infrastructure Investment Prospectus



Western Cape
Government
FOR YOU

**ECOLOGICAL INFRASTRUCTURE
INVESTMENT WITHIN STRATEGIC
WATER SOURCE AREAS**

EXECUTIVE SUMMARY

High-level project overview; Unique value proposition and competitive advantage; Strategic significance and impact; Key stakeholders; Investment opportunity.

PROJECT DESCRIPTION & STRATEGIC CASE

Project scope and objectives; Justification; Sector-specific analysis; Market size and demand analysis.

PROJECT STATUS & IMPLEMENTATION READINESS

Current phase of development; Readiness for procurement; Regulatory and environmental approvals; Community and stakeholder engagement.

GOVERNANCE, POLICY & ENABLING ENVIRONMENT

Legal and regulatory framework; Government policies; Governance role; Investment needs and policy incentives.

ECONOMIC & COMMERCIAL VIABILITY

Value-for-money assessment; Cost-benefit analysis; Risk evaluation; Economic multipliers and macroeconomic benefits.

FINANCIAL REQUIREMENTS & FUNDING STRATEGIES

Total project cost breakdown; Funding sources; Revenue models; Innovative financing mechanisms.

PROJECT FEASIBILITY, APPROVALS & INFRASTRUCTURE PLANNING

Feasibility study findings; Master plan integration; Alternative evaluation; Infrastructure planning and prioritisation.

DELIVERY MECHANISM & PROCUREMENT STRATEGY

Phased implementation; Procurement methods; Bidding process; Supplier selection; Risk-sharing mechanisms.

PROJECT COMMUNICATION & STAKEHOLDER ENGAGEMENT

Investor engagement strategies; Community participation; Government and regulatory interactions.

SPECIAL (E.G. GENDER) PROCUREMENT ACTIONS & SOCIAL IMPACT

Gender-responsive procurement; Social benefits; Sustainability and environmental compliance.

OPERATIONS & MAINTENANCE STRATEGY

Long-term asset management; Performance monitoring; Digital technology leverage; Resilience planning and climate adaptation.

CONCLUSION & CALL TO ACTION

Summary of investment benefits; Next steps; Contact details and proposal submission.

CONTENTS

The Western Cape faces escalating threats from invasive alien plants, which degrade ecosystems, intensify wildfires and floods, and consume nearly 1 trillion litres of water annually. This project proposes a strategic, five-year clearing programme focused on priority landscapes managed by CapeNature. It will enhance water security, reduce disaster risks and bolster the province's ecological and economic resilience.

Invasive alien plants outcompete indigenous species, reduce biodiversity, and destabilise catchments. Their prolific spread increases wildfire fuel loads, exacerbates flooding and accelerates soil erosion, costing the province billions in damage. Critically, these plants divert water needed for communities, agriculture, and industry, resulting in worsening scarcity in a drought-prone region.

This initiative adopts a scientific-based, impact-driven approach to clearing invasive plants, targeting high-yield catchments where interventions will maximise water recovery and risk mitigation. Inspired by successful models like the Greater Cape Town Water Fund, which recovers over 15 billion litres of water annually, the programme will leverage existing partnerships, governance frameworks and monitoring systems to ensure accountability and effectiveness.

The project aligns with key government priorities, including the National Infrastructure Plan 2050 and the Western Cape Ecological Infrastructure Investment Framework. It builds on years of proven implementation, using established clearing methods, standardised training, and collaborative platforms to ensure consistent delivery. In addition to improving water security, the project provides additional benefits, including disaster risk reduction, creation of rural employment opportunities, protection of vital infrastructure, and conservation of the Western Cape's unique biodiversity.

EXECUTIVE SUMMARY

Implementation will follow a phased approach beginning with intensive eradication in high-impact areas, followed by maintenance to prevent re-growth. A robust partnership model will engage government, municipalities, private landowners and local communities to foster shared ownership and sustainability. To ensure long-term success, the project will pursue innovative financing mechanisms, including blended finance, payments for ecosystem services, and biomass valorisation (e.g., biochar production). These models aim to extend the project's impact beyond the initial investment horizon.

This initiative offers investors a cost-effective, low-risk opportunity to address urgent water and climate challenges, while generating measurable ecological and economic returns. Immediate action will secure water for communities and agriculture, lower future disaster recovery costs, and strengthen climate resilience across the province.

A strategic investment in ecological infrastructure today will safeguard the Western Cape's water, ecosystems and economy for generations to come.

PROJECT DESCRIPTION & STRATEGIC CASE

Project scope and objectives; Justification; Sector-specific analysis; Market size and demand analysis.

PROJECT SCOPE

This project encompasses the investment of R3,1 billion of catalytic funding for the first 5 years into the eradication of invasive alien plants within strategically important landscapes managed by CapeNature, specifically for the gains in terms of water supply that would arise from such an investment. The scope of this project is spatially limited to land managed by CapeNature and associated water catchments that are fed by the runoff from these lands (see figures below for the spatial scope of this project). The project is further limited to a period of 5 years of catalytic investment, followed by a subsequent 5-year period of partnership investment to sustain the economic benefits of the project.

OBJECTIVE

The overarching objective of this project is to improve the resilience of the Western Cape not only through directly improving water provisioning but also through reducing the risk of wildfires, flooding and rangeland degradation associated with invasive alien plants.

JUSTIFICATION

The programme will strategically address the key risks of climate change which is predicted to significantly impact the Western Cape in terms of extreme disaster episodes. In the last ten years, the Western Cape has seen a marked increase in the frequency and intensity of disasters episodes. The disaster episodes have a direct impact on built infrastructure (e.g. bridges, dams, buildings, roads, etc.). Moreover, it directly impacts the economy, socio-economic environment, and natural

environment of the Western Cape. This is especially devastating for the economy (in particular, the agricultural economy, which contributes 52% of the national agricultural exports), placing immense pressure on the already vulnerable communities through, inter alia, loss of income and food security.

The environment is pushed beyond the ecological disturbance recovery equilibrium because of prolonged droughts and extreme floods (as experienced in 2015-2021 and 2021, 2023 and 2024, respectively). Investment in ecological infrastructure will delay the need to build new dams to augment the existing water supply. Through upscaling rehabilitation and maintenance of ecological infrastructure, CapeNature (and private landowners) could make a significant difference to water security for all sectors in the Western Cape, particularly in critical water supply catchments under its management while also improving the resilience of the province more broadly through improved ecological condition.

The proposed programme is strongly aligned with the National Spatial Development Framework and the National Infrastructure Plan 2050, which commits that “ecological infrastructure will be rehabilitated and protected”. To achieve this, the National Infrastructure Plan identifies that:

- “Financing mechanisms to support ecosystem protection and rehabilitation must be established”.
- “Priority areas for ecological infrastructure will be identified, Programmes will be developed and implemented, and a monitoring and reporting framework will be developed and implemented”.

The proposed project is strongly aligned with the National Spatial Development Framework and the National Infrastructure Plan 2050

Rehabilitation of ecological infrastructure is a low to no risk resilience strategy with the key outcomes of:

1. Safeguarding important built infrastructure from damage through disasters such as flooding and wildfire.
2. The improvement of water security for downstream agriculture, human settlements, and businesses throughout the province.

Furthermore, this programme would serve as a pilot for the rollout of similar approaches throughout the country. Preliminary work by the Western Cape Department of Agriculture has shown that the the volume of water “freed” through investment in ecological infrastructure rehabilitation and maintenance, and the return on that investment. The Western Cape regional office of the Department of Forestry Fisheries and the Environment’s Environmental Programmes and the Western Cape Department of Agriculture’s programmes are in strong support in strong support of the approach to drive upscaling of catchment rehabilitation as the basis for piloting blended finance approaches to sustain gains of the initial investment in ecological infrastructure by government.

DEMAND ANALYSIS

The programme is desirable from multiple perspectives. Firstly, from a conservation of biodiversity perspective, alien invasive plants occupy terrestrial areas traditionally occupied by indigenous ecosystems. These indigenous species are outcompeted by invasive alien plants and are thus displaced by them. The impact of this is continued habitat degradation and loss through invasive alien plants. This trend is internationally recognised as one of the leading causes of habitat loss to indigenous species and the subsequent loss of important biodiversity. **The Western Cape is hyper-diverse and recognised as one of the most biodiversity-rich regions in the world.** This biodiversity plays a crucial role in sustaining our ecosystems, which underpin the wellbeing of all inhabitants of the Western Cape. In addition to sustaining life as we know it in the Western Cape, this biodiversity also attracts tourists from around the world and significantly contributes to the economy of the Western Cape.

Apart from the above, the invasive alien plants that displace these indigenous species significantly increase the risk of high-intensity wildfires due to their fire-adaptiveness and sheer size (i.e. significant amounts of material available to burn when a fire arises). They also exclude the development of

undergrowth and give rise to increased soil erosion as water runs off landscapes invaded by invasive alien plants, picking up sediment, which then silts up waterways and dams downstream. When high-intensity rainfall is experienced, these invasive alien plants (mostly large trees) are swept away by powerful rivers in-flood and often get lodged against bridges and other downstream built infrastructure such as water and sewerage pipelines, resulting in significant back-pressure and often the failure of the structure they are lodged against. Additionally, these blockages also cause flooding rivers to swell and break their banks, resulting in the flooding of urban areas and dwellings. The result is an ever-increasing cost of natural disasters and the continual need to rebuild roads, bridges and pipelines. Lastly, and perhaps **most importantly in this instance, these invasive alien plants utilise substantially more water than the indigenous vegetation they displace**, which has resulted in a significant amount of water in our catchments being consumed by these plants. The 2017 Status of Biological Invasion Report estimated that approximately 963 million cubic metres (just shy of 1 trillion litres) of water was used by invasive alien plants per year in the Western Cape alone. It is highly likely, if not certain, that this total annual water lost to invasive alien plants has grown, given that these invasive alien plants spread at an average 5% per annum. Nationally, the Western Cape is the worst afflicted province in terms of invasive alien plants and the associated water losses.

Given the growing demand for water in the Western Cape, and the decreasing availability of water due to climate change and other factors, the loss of approximately 1 trillion litres of water every year to invasive alien plants is a clear and well-articulated (and substantiated) demand that this programme will address. ●

PROJECT STATUS & IMPLEMENTATION READINESS

Current phase of development; Readiness for procurement; Regulatory and environmental approvals; Community and stakeholder engagement.

While the concept of investing in ecological infrastructure is relatively new to the rest of the world, South Africa has a wealth of experience in this arena. The Working for Water programme initiated by national government in 1995 has been lauded by many as one of the earliest examples of investing in ecological infrastructure for various benefits to human wellbeing, and also as one of the earliest examples of saving costs by investing in ecological infrastructure as opposed to built infrastructure (in the case of the Working for Water programme, the built alternative would have been dams). However, the prioritisation of ecological infrastructure investment due to its ability to create many low to medium-skilled jobs as opposed to a focus on return on investment, and the positioning of ecological infrastructure investment as the sole mandate of the government have contributed to the slow uptake of this approach.

With growing austerity measures due to year-on-year poor economic growth and increasing complexities around procurement, orders of magnitude less public funding is being spent on ecological infrastructure investment in South Africa. The impact of this is that much of the sector's absorptive capacity has been lost as service providers have found gainful employment elsewhere. However, the standard operating procedures, training methods, equipment standards, and all other structures developed over the last 30 years remain intact and primed for renewed interest in ecological infrastructure investment.

The Western Cape Government has also spent considerable effort in clarifying a province-wide approach to ecological infrastructure investment. This is perhaps best reflected in the Western Cape Ecological Infrastructure Investment Framework of 2021 (EIIF), which adopted a

participatory approach to the development of such a province-wide approach. During the development of this framework, the emphasis on ecological infrastructure being first and foremost about the return on investment, was re-established. Additionally, the participatory approach adopted in its development re-positioned the mandate for ecological infrastructure investment squarely on the whole of society and not at the feet of government. Additionally, the EIIF provides a clear understanding of where investment should be focused for the greatest return on investment. This has been further refined by CapeNature in their role as custodian of conservation areas within the province, with an advanced knowledge of where these invasive alien plants are, and approximately what it would cost to eradicate them from strategically important landscapes. In addition to knowing where investment should be placed, inroads have been made through remote sensing and other research approaches regarding the quantification of impacts arising from these interventions, further derisking ecological infrastructure for investors. A province-wide monitoring tool is also currently under development, which would complete the knowledge generation process of knowing where these plants are, knowing where they are being eradicated, and utilising this information to plan and cost landscape-wide impactful interventions with minimal risk.

Generally speaking, the Western Cape is at an advanced state of readiness for ecological infrastructure, but focusing in on certain landscapes, such as the Boland and Groot Winterhoek Strategic Water Source Areas, readiness is even more progressed. In these strategically important landscapes, coordinating entities and social compacts for a whole-of-society approach have been in place for many years. Platforms and tools, such as water funds, have been established to

monitor investments and the resulting impacts at a fine scale on a monthly basis. In these instances, the absorptive capacity is high, and the risks are very low. However, given the current limited scale of investment in ecological infrastructure, the absorptive capacity of many landscapes for projects such as these is limited. That said, the skill requirement associated with these projects is low to moderate, and the lead time needed to improve absorptive capacity is expected to be short-term. ●

GOVERNANCE, POLICY & ENABLING ENVIRONMENT

Legal and regulatory framework; Government policies; Governance role; Investment needs and policy incentives.

The legal framework for ecological infrastructure is well defined through three pieces of legislation. The framework legislation of the National Environmental Management Act (NEMA) sets a duty of care for safeguarding the environment from current and future harm for all South Africans, organisations operating in South Africa, and all spheres of government. The subordinate National Environmental Management Biodiversity Act provides the necessary provisions for the identification of invasive alien species and the regulated use/existence of such species through categorisation. The Conservation of Agricultural Resources Act also sets out requirements for the control of invasive alien plants insofar as their impact on agricultural resources. These three sets of legislation provide policy coherence, certainty and clarity for the programme at hand.

Further to the above, this programme meets many national and provincial policy objectives. At a national level, the programme aligns with the National Spatial Development Framework and the National Infrastructure Plan, which emphasises the rehabilitation and protection of ecological infrastructure. Provincially, the programme articulates well with the three portfolios of the Provincial Strategic Plan and aligns best with the resource resilience cross-cutting focus area. Other provincial policies also emphasise the importance of this programme, such as the draft Water Resilience Strategy, the Growth for Jobs Strategy 2035, the Western Cape Infrastructure Framework, the Sustainable Water Protection Plan, and the Ecological Infrastructure Investment Framework.

At a provincial level, efforts have been underway to improve governance in this space. This includes the coordination of Western Cape Government Departments involved in the ecological infrastructure

investment space, or that are impacted by worsening ecological infrastructure. A result of these efforts is greater clarity and certainty to investors, as a unified and consistent approach is applied by the whole of the Western Cape Government. Lastly, focusing specifically on this programme, governance roles are well-defined and tightly regulated in conservation areas, with CapeNature holding an exclusive mandate for interventions and the oversight of any sub-contracted individuals tasked with the implementation thereof. This is clarified by the National Environmental Management Protected Areas Act. ●

...this programme meets many national and provincial policy objectives. At a national level, the programme aligns with the National Spatial Development Framework and the National Infrastructure Plan (NIP 2050), which emphasise the rehabilitation and protection of ecological infrastructure.

ECONOMIC & COMMERCIAL VIABILITY

Value-for-money assessment; Cost-benefit analysis; Risk evaluation; Economic multipliers and macroeconomic benefits.

The programme is a low to no-risk resilience strategy with key outcomes including safeguarding built infrastructure from disasters and improving water security for agriculture, human settlements, and businesses. Preliminary work has shown significant economic benefits, such as delaying the construction of the reduced frequency and intensity of flooding events and enhancing agricultural productivity.

Conservative estimates provided by the CSIR in 2022 suggested that approximately R10 billion would be required to clear alien invasive plants from the surface water in Strategic Water Source Areas within the province over a thirty-year time horizon. These estimates were extrapolated based on surface area, extent of invasion, and topography to arrive at an estimated R16.5 billion required to bring alien invasive plants under control within the province. In both instances, the same investment profile of intensive upfront investment to bring the spread of these plants under control, followed

by a prolonged maintenance phase to eradicate re-seeding and re-sprouting plants before they reach maturity, was applied. This is the most cost-effective investment profile, as evidenced by the Management Unit Control Plan modelling tool.

Importantly, the finances required to address the issue of alien invasive plants will likely increase for each passing year if we do not invest the requisite funds into addressing the issue. While the quantum reflected above might appear significant, it is important to consider these costs when compared to responding to the damage caused by as well as the economic impact associated with disasters. All these costs can be considered savings in this instance, as the frequency and intensity of floods, fires, and droughts, and worsening food security, will be markedly reduced if invasive alien plants are eradicated in the province. Additionally, the jobs and livelihoods that would be sustained by ensuring the continued supply of water must also be considered, let alone the water needed



Figure 2: Estimated ecological infrastructure investment profile for the Western Cape

for desired future economic growth. National economic growth targets seek to secure the reduction of unemployment and increase the quality of life for all citizens. The Western Cape Growth for Jobs Strategy looks to contribute towards this and notes that a doubling of water available to secondary and tertiary sectors is necessary to achieve a R1 trillion inclusive provincial economy by 2035 that grows between 4% to 6% per annum.

Given the rate of in-migration to the province, and the fact that alien invasive plants currently utilise close to 1 trillion litres of available water per annum in the Western Cape, the cost outlined above pales in comparison to the savings that would arise from accelerated investment in ecological infrastructure.

Examples of recent costs associated with alien invasive plants are provided below:

- i. The direct damage costs associated with extreme weather events in the province between 2003 and 2014 amounted to approximately **R5,08 billion** in terms of damage to infrastructure. Considering the increased frequency and intensity of these events, this figure is anticipated to increase markedly in the coming years. There is evidence to support that in areas where there was historic investment in ecological infrastructure, infrastructure such as roads, bridges and dams were less affected through such pre-emptive action.
- ii. With regard to the 2015 to 2019 drought and associated fires, the financial cost to the agricultural sector alone amounted to approximately **R6 billion**.
- iii. The 2017 Knysna fires, which were found to be largely a result of the high infestation and fuel loads of alien invasive plants, resulted in approximately **R3 billion** of direct damage and impacted thousands of livelihoods.
- iv. The 2021 George floods resulted in approximately **R750 million** in damage to infrastructure.
- v. Extreme weather events in September 2023 accounted for flooding damages of R130 million in the Overstrand Municipality alone.
- vi. The 2023 floods during May in the Hexrivier, June in the West Coast, Overberg and Cape Winelands, and September in the Overberg, Cape Winelands, West Coast, Garden Route, and Central Karoo districts, respectively, amounted to approximately **R3,4 billion** in agricultural damages.
- vii. The 2024 significantly higher than-normal

fires experienced during the 2023/2024 fire season has resulted in extensive damage to built infrastructure, irrigation systems, plants, orchards and vineyards, and natural veld.

- viii. The 2024 February flash flood in the West Coast resulted in approximately **R95 000** in fencing damages.

However, it is important to note that the calculations outlined above regarding bringing alien invasive plants under control are based on the spread of alien invasive plants as documented in 2007 and 2008 and published in 2010. Leading project managers in the province suggest that the landscapes are significantly worse off in current times than they were 20 years ago, suggesting that **these estimates might be inadequate**.

Additionally, the role of topography in the persistence of alien invasive plants cannot be understated. Concerted efforts to eradicate alien invasive plants are being undertaken by many private landowners in the lower reaches of the catchments, only to have these riparian zones re-infested due to seeds being washed downstream from plants in the upper mountainous reaches of the catchments¹. To efficiently bring alien invasive plants under control, priority must be given to invaded areas high up in the mountains. These areas are invariably managed by state Departments or entities, which means that a “whole-of-society” approach to eradicating alien invasive plants in these spaces is not possible (e.g. approximately 64% of the Groot Winterhoek, 45% of the Boland, 41% of the Outeniqua and 42% of the Tsitsikamma Strategic Water Source Areas fall within protected areas⁷). CapeNature is responsible for the management of significant portions of these mountainous Strategic Water Source Areas within the province, where clearing costs are high due to altitude, remoteness and the sensitivity of these environments.

The control of alien invasive plants within the province’s protected areas has been a focal point for many years, with “Working for” allocations often prioritising these landscapes. The importance of maintaining ecological function within the province’s conservation estate has meant that CapeNature and their reserve managers have collected significantly better data on the extent of alien invasive plants on the properties they manage, enabling realistic estimates of the funding required to control and eradicate alien invasive plants on these properties.

¹Note also that some invasive plants (pinus spp. in particular) spread seeds during fires, resulting in significant dispersal ranges for high-altitude stands of invasive plants. ⁷CapeNature pers. comm. May 2024

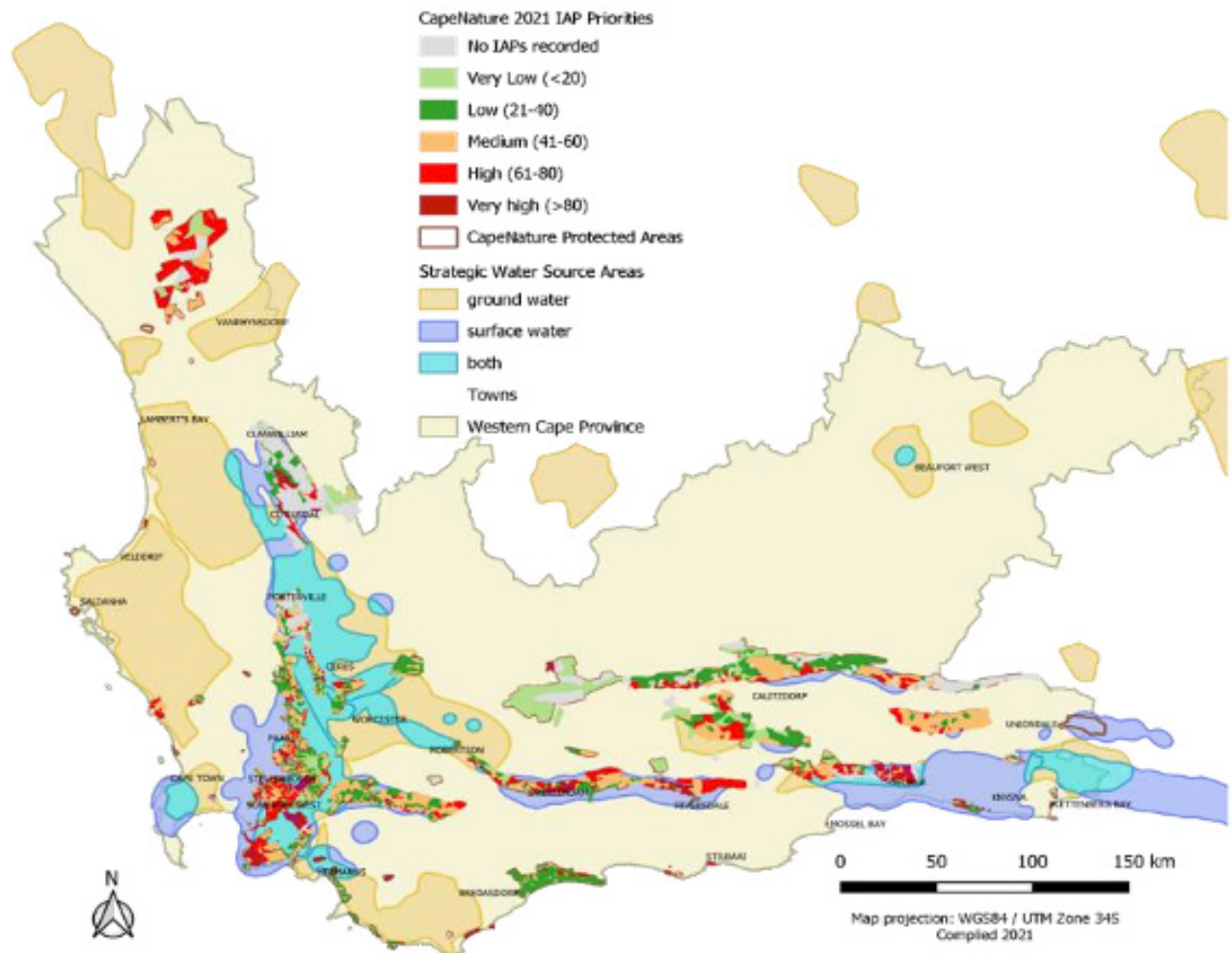


Figure 3: Extent of alien invasive plant infestations within CapeNature managed land, and their densities.

Recent discussions between CapeNature and DFFE regarding the funds needed for the management of alien plants within CapeNature-managed properties necessitated an evaluation of intervention costs. The subsequent analysis estimated that it would cost CapeNature approximately R 314 million per year to clear the top 10% priority areas of the land that it manages within Strategic Water Source Areas (see Figure 3 for an understanding of the spatial extent of these lands, and Table 2 for an overview of the financial evaluation undertaken by CapeNature).

Comparing these costs to the revenue that could be generated through the sale of the resulting water by downstream municipalities would yield a maximum approximate revenue of R1,8 billion per annum² - a potential 473% return on investment. ●

PRIORITY NBALS ³	TOTAL PER ANNUM	HAT	INTERMEDIATE	GENERAL
Total Budget	R 313 944 281	R 287 544 841	R 16 750 721	R 9 648 719
Person Days	293 306	252 625	23 594	17 087
Total hectares (ha)	96 818	78 152	6 956	11 710
No of Nbals	656	575	40	41

Table 2: Overview of CapeNature funding evaluation for the clearing of 10% of priority areas of land managed by CapeNature within Strategic Water Source Areas (per annum).

²The financial return of water gained from R313 million in clearing budget, based on R0.04/l is between R600 mil based on average mean annual runoff (MAR) per Catchment and R1.8 billion based on compartment MAR for these priority compartments.

³Nbals are an agreed upon spatial management unit through which alien clearing interventions are frequently coordinated.

FINANCIAL REQUIREMENTS & FUNDING STRATEGIES

Total project cost breakdown; Funding sources; Revenue models; Innovative financing mechanisms.

Utilising the calculations reflected in Table 2 as the basis for the R 3 billion catalytic investment programme proposal, the clearing interventions and their associated Full-Time Equivalents (FTEs, hectares (ha) cleared and the Nbals reached, would look similar to those reflected in figure 4 and tables 3 and 4 below. **In this scenario, the first five years (totalling R3 086 678 796) would almost entirely come from the catalytic investment allocation. Investment in years 6 to 10 would arise from CapeNature and other partners who leverage from the benefits of this initial catalytic investment.**

While there are initiatives to attract grant funding to the maintenance of ecological infrastructure in the country from inter alia the Green Climate Fund, these funding sources may take some time to deliver actual funding flows and outcomes on the ground. The catalytic investment programme would be seen as a significant co-finance contribution to leveraging such grant funding and provide the urgent intervention required to address the increasing risks to water security and infrastructure.

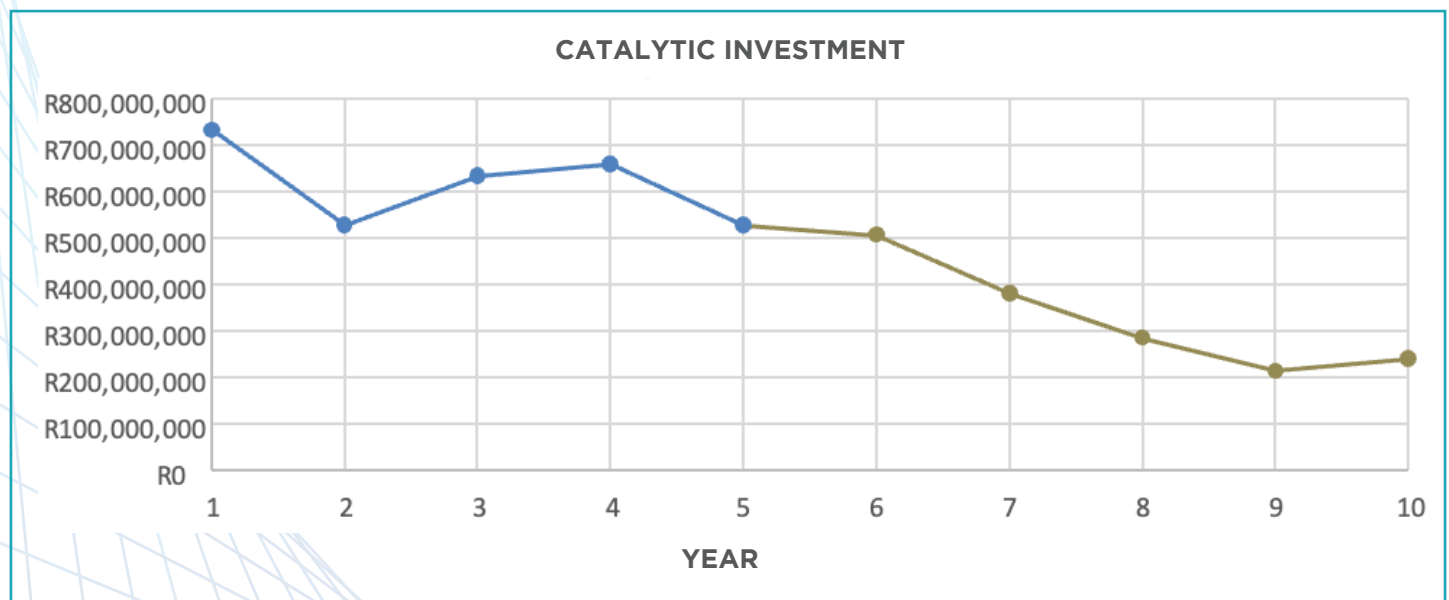


Figure 4: Investment scenario based on R3 billion catalytic investment from years 1 to 5

PRIORITY NBALS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Total Budget	R734 677 231	R528 967 606	R634 761 128	R660 151 573	R528 121 258
FTEs	2 640	1 901	2 281	2 372	1 898
Total ha*	226 569	163 130	195 755	203 586	162 869
No of Nbals*	1 535	1 105	1 326	1 379	1 104

Table 3: Summary of Catalytic investment scenario (years 1 to 5)

PRIORITY NBALS	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
Total Budget	R506 996 408	R380 247 306	R285 185 479	R213 889 110	R239 555 803
FTEs	1 822	1 366	1 025	769	861
Total ha*	156 354	117 265	87 949	65 962	73 877
No of Nbals*	1 059	795	596	447	501

Table 4: Summary of sustained investment after Catalytic (years 6 to 10) with partner funding

*Note that the Nbals, and ha reflected in this investment scenario would comprise both initial and follow-up clearing and can therefore not be totalled. The finer details in this regard can be calculated during the proposal development process.

Clearing undertaken as part of this investment scenario would likely be confined to the Strategic Water Source Areas in the province (see Figure 5 for the dark blue polygons). The focus on Strategic Water Source Areas aligns well with broader efforts to invest in ecological infrastructure for water security. Three collaborative platforms have been established in the province which adopt a whole-of-society approach to securing these important areas. These efforts (in chronological order) are the Greater Cape Town Water Fund, the Boland Groot Winterhoek Collective and the Outeniqua to Tsitsikamma Water Working Group.

Benefits of collaborative platforms include:

- Improved governance and a keen sense of roles and responsibilities towards the securing of Strategic Water Source Areas (where a central focus is on eradicating alien invasive plants),
- Collective identification of problems and the co-creation of solutions.
- Systematic planning of interventions.
- Blended financing of interventions.
- Existing collaborative relationships allowing for rapid implementation of interventions if funding arises.

These benefits are already evident in the three collaborative platforms mentioned above, however, the Greater Cape Town Water Fund is the only platform that has progressed to the implementation of clearing interventions. To date (April 2024), interventions undertaken by the Greater Cape Town Water Fund have resulted in approximately 46 000 hectares cleared, generating 722 green job opportunities. High confidence estimates suggest that a total of 15.2 billion litres of water have been released per year because of this clearing, which equates to 42 million litres per day. Within this platform, the City of Cape Town has invested a total of R98.5 million⁵, with the total investment of all partners being R223.5 million⁹ – this can be regarded as the City of Cape Town leveraging approximately R1.40 for every R1 invested, showcasing the blended financing benefits of collaborative whole-of-society approaches.

While the Boland Groot Winterhoek Collective and the Outeniqua to Tsitsikamma Water Working Group are still relatively new compared to the Greater Cape Town Water Fund, steady progress has been made in terms of establishing collaborative relationships and governance structures. The Boland Groot Winterhoek Collective and the Outeniqua to Tsitsikamma Water Working Group have significantly progressed the state of readiness of their respective Strategic Water Source Areas for catalytic investment and would be the secondary focus of the programme for parts of the catchments below the land managed by CapeNature (which is the primary focus of the programme). The role of municipalities in these collaborative platforms cannot be emphasised enough, as they stand to benefit from the improved water security, as well as the reduced intensity and frequency of disasters (such as flooding and fires) and the impact these have on built infrastructure. Municipalities are currently integral role players and partners in all three of the abovementioned collaborative platforms. ●

⁵As of April 2024

PROJECT FEASIBILITY, APPROVALS & INFRASTRUCTURE PLANNING

Feasibility study findings; Master plan integration; Alternative evaluation; Infrastructure planning and prioritisation.

In the wake of the “Day Zero” drought of 2015-2019, the Western Cape Government, led by the provincial Department of Environmental Affairs and Development Planning, and supported by the Western Cape Department of Agriculture, commenced with a process to co-create an Ecological Infrastructure Investment Framework for the province, which would rely on the active participation of integral landscape partners, including players from national government all the way to passionate individuals and landowners to arrive at a solution for the ever-increasing risks

inherent in worsening ecological functioning. The outcomes of this process, facilitated by the Council for Scientific and Industrial Research, were published in February of 2021 and included a unified scientifically-based vision for the ecological infrastructure of the province, along with a list of four key risks, and a spatial prioritisation of intervention at a quaternary catchment-level, which took the emerging research into Strategic Water Source Areas⁶ at the time into account⁷.

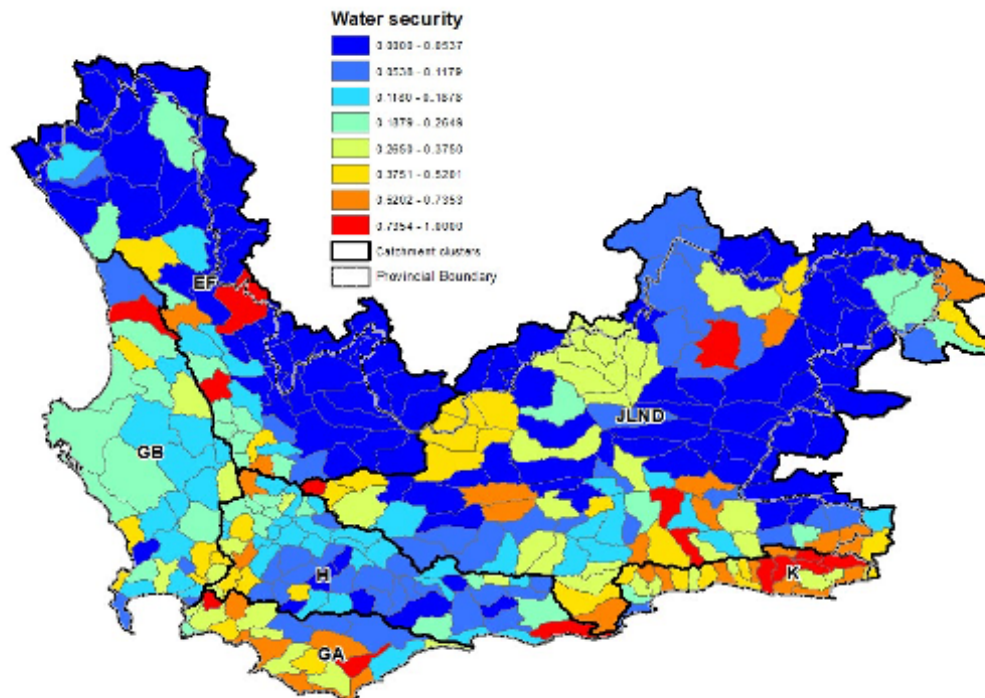


Table 4: Example of the water security risk prioritised at the quaternary catchment level through the province by means of a multi-criteria analysis (red denotes high priority, and blue denotes low priority).

⁶Strategic water source areas are those areas that have a relatively high natural runoff in the region of interest, which is made accessible for supporting the region's population or economy. Approximately 10% of South Africa's surface area accounts for 50% of its potable water (these areas are Strategic Water Source Areas).

⁷Those tasked with researching Strategic Water Source Areas formed part of the same research team that informed the Ecological Infrastructure Investment Framework (e.g., David le Maitre of CSIR).

The four risks identified within the Ecological Infrastructure Investment Framework have relevance both in terms of the ecological infrastructure that largely accounts for these risks, and also insofar as these risks impact on existing built infrastructure.

The following investment objectives set out in the Ecological Framework are of particular relevance to the programme:

- To improve water quality and quantity in support of people's health and livelihoods, economic growth, and job creation in rural areas where there are high levels of unemployment of the lowly skilled in the province, by controlling the threat of alien invasive plants specifically and improving the ecological status of rivers, wetlands and estuaries more generally.
- To reduce the vulnerability of people, property, productive and irrigated agricultural land, and the environment to the threat of uncontrolled wildfires.
- To reduce the exposure of communities, the environment, infrastructure and economic activities to the impacts of increased flooding within the catchment and along the coast. ●

DELIVERY MECHANISM & PROCUREMENT STRATEGY

Phased implementation; Procurement methods; Bidding process; Supplier selection; Risk-sharing mechanisms.

SUSTAINABLE FINANCING

While this programme would effectively be the catalytic intervention needed to address the risks and secure water resources, **sustainable financing mechanisms will be included in the process of project preparation to ensure that gains are sustained.** While outside of the scope of this programme, the resulting impacts may be sustained through the following:

- **Water Resource Management Charges through the Water Pricing Strategy** will be collectable from the additional water released as a result of clearing alien invasive plants, which in turn can be re-invested into the management of the catchments (both in terms of sustaining the costs of strategic planning and ongoing collaborative models, and also in terms of clearing alien invasive plants).
- Another option available is sustainable finance, which includes the development of **payment for ecosystem services** models at a municipal level. This could take the form of passing on any savings that municipalities realise from improved water quantity, quality, and reliability to the continued ecological infrastructure investment in the catchment, or the charging of additional tariffs to water users for catchment management. Other examples include the identification of **Special Ratings Areas**, where the inhabitants of communities enjoy the reduced risk of wildfires or flooding as a result of improved catchment management. These options will likely be in addition to the Water Resource Management Charges mentioned above.
- Other options include establishing **Water Funds**, where the programme investment would serve as catalytic funding, which would

leverage funding from other partners who share the same or similar objectives as outlined herein (e.g. the leveraging of R1.40 for every R1 invested by the City of Cape Town in the Greater Cape Town Water Fund).

- **Establishing value-added industries** around the alien invasive plant biomass that results from clearing invasive alien plants also has the potential to contribute meaningfully to the sustaining of the objectives outlined herein. Research into the generation of ethanol for jet fuel from alien invasive plants within the Western Cape suggests that approximately 14.6 million oven-dried tonnes of alien invasive plant material are easily accessible for beneficiation into ethanol (or other products). While the costs associated with beneficiating these 14.6 million oven-dried tonnes to ethanol would be approximately R19.23 per litre in 2025 (considerably higher than other feedstocks), the co-benefits of carbon emission reductions and other biodiversity benefits would likely make this option attractive to international airline companies. Additionally, as other feedstocks are exhausted or become more costly, the use of alien invasive plants becomes more of a reality. In addition to beneficiating alien invasive plants into ethanol, a study undertaken in 2022 explored the establishment of business models around the beneficiation of biochar, activated carbon and wood vinegar from alien invasive plants. This study found that approximately R395 million could be realised over a five-year period from the beneficiation of alien invasive plants to biochar, activated carbon and wood vinegar with the seed capital of R55 million. ●

PROJECT COMMUNICATION & STAKEHOLDER ENGAGEMENT

Investor engagement strategies; Community participation; Government and regulatory interactions.

As a whole-of-society approach, the programme will take place within the context of a province-wide implementation plan. This broader context will ensure that the successes made by CapeNature in the eradication of invasive alien plants will be well communicated to partners so that partners may leverage benefits from these efforts downstream of the catchments in question. It is anticipated that these spinoff benefits will assist in the sustainable financing of ecological infrastructure investment and the sustained gains arising from the catalytic investment programme.

An initial step to be undertaken, should this programme receive funding, would be the utilisation of existing structures and capacity to develop a communication and stakeholder engagement strategy. ●

SPECIAL (E.G. GENDER) PROCUREMENT ACTIONS & SOCIAL IMPACT

Gender-responsive procurement; Social benefits; Sustainability and environmental compliance.

The interventions arising from this catalytic investment programme will be located in rural environments and will focus specifically on the improved resilience of ecosystems. While a detailed analysis of mechanisms to maximise the beneficial impacts of this programme on vulnerable groups must be undertaken, it can generally be stated that vulnerable groups are likely to benefit considerably from this programme due to:

- The predominance of **vulnerable groups** in rural remote communities **surrounding the location** of the protected areas where these investments are to take place.
- The reliance of vulnerable groups on **healthy ecosystems** for the benefits they provide, and the sustaining or improvement of these through the investments in question.
- The **reduced risk** to vulnerable groups outlined herein to drought, fires and flooding. Vulnerable groups are least able to avoid these risks and often feel them most acutely. ●

OPERATIONS & MAINTENANCE STRATEGY

Long-term asset management; Performance monitoring; Digital technology leverage; Resilience planning and climate adaptation.

The model followed by Western Cape Department of Agriculture in ecological infrastructure rehabilitation and maintenance has resulted in water users contributing approximately 16% of what is invested in their water user association or irrigation board. ●

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