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Africa's $170bn infrastructure challenge demands a nature-first approach

The China Development Bank and Development Bank of Southern Africa recently signed a $29: loan facility agreement to support infrastructure development across Africa. As African governments begin to plan to access this facility to address their infrastructure needs, a key consideration will be whether Africa's infrastructure is adapted and resilient enough to cope witl a changing climate.

By Dean Muruven 4 Sep 2025

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As we further understand the impact of our changing environment, nature-based solutions are emerging as critical approach for addressing infrastructure challenges in the face of climate change and rapid urbanisation.

This strategy, which integrates natural systems into built environments, offers significant potential for how v address infrastructure development – locally, regionally and globally.

Defining nature-based infrastructure

Our 'A Value-Driven Approach to Nature-Based Infrastructure' report defines nature-based solutions as interventions that harness natural processes to address societal challenges while simultaneously providing benefits for human well-being and biodiversity.

In the context of infrastructure, this translates to integrating natural systems into our built environment to enhance resilience, sustainability, and cost-effectiveness.

The report is based on a comprehensive study, spanning multiple countries and sectors, and highlights tha infrastructure development and operations drive over 25% of human-generated biodiversity loss—fragmenting habitats, depleting resources, and polluting terrestrial, freshwater, and marine ecosystems.

Africa is a continent with some of the most iconic ecosystems and biodiversity, but it also must address a

$170bn per year infrastructure need. As new infrastructure is built and ageing infrastructure is restored, we should consider the opportunities to ensure a nature-positive future across the continent.

By considering how nature-based solutions can enhance and support traditional grey infrastructure, Africa can redefine the future of infrastructure development along a trajectory that works with nature rather than against it.

Collaborative opportunities across the sector

The diversity of actors in this sector—which includes the work of governments, infrastructure owners, engineering and construction firms, and real estate developers—presents unique opportunities to create tailored restoration responses to specific environmental and developmental challenges.

In fact, the infrastructure sector can play a vital role in addressing ecosystem degradation while meeting developmental targets by contributing to nature conservation, protection and restoration through nature-based and hybrid solutions, such as the use of wetlands for flood management or the use of mangrove reforestation for coastal protection.

These solutions are particularly important for integrating infrastructure successfully with natural ecosystem

Taking action to mitigate and reverse ecosystem impacts not only helps the environment, it also offers tremendous economic benefits. In our experience, some businesses achieved an ROI more than double that of conventional ‘grey’ or ‘built’ solutions, such as conventional wastewater treatment plants or drainage networks.

Industry awareness and progress

To understand the sector’s progress in this area, we surveyed more than 45 infrastructure companies around the globe to evaluate their awareness of the industry’s nature-related impact and their maturity in terms of mitigating harm, restoring ecosystems, and generating positive environmental outcomes.

We found varying levels of awareness and maturity, with about 80% of respondents saying they focus on reducing the negative impacts of their projects through operational improvements and process changes.

While this focus on harm reduction is important, it is only part of the solution. Pursuing nature-positive approaches is a transformational act that can greatly enhance our environmental resources and meet soci economic objectives.

Infrastructure players looking for meaningful environmental impact should take a strategic approach that aims to: reverse ecological harm; reduce reliance on resource-intensive practices; avoid emissions throug ecosystem-based carbon sinks; and build resilience against climate change.

In the process, they will unlock business opportunities, foster innovation, and enhance their competitive advantage.

The business case for nature-based solutions

Nature-based solutions (NbS) are by the means a panacea for Africa’s infrastructure development and gre solutions will need to complement grey approaches. The economic argument for nature-based solutions,

though, is compelling.

Our report highlights a study of 59 NbS projects, revealing that an overwhelming 92% were more cost-effective than alternative solutions. The net present value of these projects ranged from $1.9m to $837m, with a median of $26m.

These figures underscore the significant economic potential of NbS, particularly for a region like Africa comprised mostly of developing nations grappling with limited resources.

Here, there is an opportunity for diverse applications of nature-based solutions across infrastructure secto In water management, natural flood management systems and wetland restoration offer promising solutior for flood-prone areas and water-stressed regions.

Urban planners can leverage green spaces to mitigate the urban heat island effect and improve air quality, while sustainable urban drainage systems provide more effective stormwater management.

Boosting biodiversity through urban planning

Furthermore, by integrating natural systems into urban planning and infrastructure projects, we are able to boost biodiversity, with green corridors and urban forests protecting and enhancing local ecosystems.

For Africa, a continent rich in natural resources and facing significant infrastructure challenges, nature-base solutions present an opportunity to leapfrog traditional development models.

A recent report from the World Bank supports this notion, highlighting that these solutions are gaining traction in Sub-Saharan Africa, with investment growing by approximately 15% annually since 2012.

Case study: Dar es Salaam, Tanzania

An example of where this is being done effectively is in Dar es Salaam, Tanzania, which, as a coastal city, faces annual losses of $47.3m due to flooding.

The implementation of NbS interventions, including riverside reforestation and community-based drain cleaning, is expected to significantly reduce these losses, illustrating the value NbS has in addressing immediate infrastructure challenges while providing long-term environmental and social benefits.

By integrating nature into our built environment, we can create cities and societies that are not only more resilient and sustainable but also cost-effective and beneficial to local communities and ecosystems.

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