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Conservation Rivers in Nairobi have endured massive pollution since the city's establishment 102 years ago, but

Inside a government project

Already, some rivers have a new, cleaner and promising look. For the first time in over a century, restoring Nairobi's water courses is slowly becoming a reality.

BY JAMES KAHONGEH

Every river in Nairobi undergoes multiple changes as it dances from its source to the mouth. Depending on its course, a river in the city will typically be black, grimy grey, green or earthy.

Sometimes the colour is hard to place. Every section, though, is as distinct as the type of effluent released at that point.

From industrial effluence to untreated sewage, oil and solid waste, there couldn't possibly be any distress that rivers in Nairobi haven't endured since the city's establishment 102 years ago.

But the situation is expected to change forever once the government completes a project to reclaim the rivers and their ecosystems through the Nairobi City Regeneration Programme (NCRP) that began in 2018.

In total, Nairobi City County has seven rivers—Nairobi, Gitathuru, Ruiruaka, Ngong, Mathare, Kirichwa Ndogo and Kibarage. These are served by smaller tributaries that are equally polluted.

But if the dream to reclaim the city's rivers is to become a reality, the right place to start is to address Nairobi's pervasive sanitation crisis, notes Athi Water chief executive Michael Thuita.

"We've focused our efforts and resources on the rehabilitation and expansion of the existing sewerage as well as the construction of new facilities to manage our waste better," says Mr Thuita.

Under this programme, a number of projects have been implemented, including the construction of ablution blocks in informal settlements and installation and repair of manholes.

But how have the city's rivers been like over the years? What is their state after restoration works?

Among Nairobi's most polluted rivers, none is quite as violated as Ngong River—largely because of where it passes. Whereas its water is clean upstream, its fortunes change as soon as it enters the expansive Kibera slum.

Just a few metres between the border of Jamhuri estate and Kibera, Ms Winnie Ayiso washes clothes as her shy one-year-old daughter clings onto her. Unable to buy water for laundry, Ayiso, 27, walks for two kilometres from Makina village to use the river water.

Says she: "The water is clean. It doesn't smell and it doesn't stain clothes."

That is until the river enters Kibera.

Here, as in other low-income informal settlements across the city, most households channel their domestic and human waste to Ngong River through open trenches. Domestic waste water is also drained into the river.

For seven kilometres, the river chokes with tonnes of human and other solid waste, domestic waste water and other debris as it wiggles slowly downstream.

Mr Michael Othili, the programmes coordinator at Mazingira Yetu, a community-based organisation, says the river cannot be cleaned without addressing the causes of its pollution.

"There has to be reliable ways to manage waste water and solid waste that comes from households in the area," Othili says.

For a start, the government has constructed 15 ablution blocks in Kibera as part of the NCRP, with plans underway to construct five more here. Thir-

ty more will be put up in other neighbourhoods in what's expected to revolutionise the city slums' sorry state of sanitation.

In what amounts to lawlessness, but also signals a lack of choice, some residents have constructed their latrines atop storm-water drains, along which the waste flows downstream.

Six months later, reception has been positive, with the majority of residents now using the public toilets. At one such facility at Beyond Zero village, a small queue forms during our visit, demonstrating the villagers' eagerness to utilise the new facility.

Consequently, disposal of excreta in the river has reduced. The river is now flowing freely. The water may still have a hue of grey, but it's hard to believe this section of the river was barely moving only six months ago.

"During the clean-up exercise, we removed 400 tonnes of solid waste from the Kibera section of Ngong River," recounts Othili.

Other than soluble toxins, this section of the river is now free of solid waste. "I hope one day we'll be able to use water from this river for cleaning," Ayiso says.

Yet channelling waste directly into rivers isn't a slum-specific problem. In some middle income residential areas such as Kasarani and Roysambu, some developers direct waste water from their apartments into roadside drainage systems. This untreated water ends up in rivers, polluting them.

Water and Sanitation Cabinet Secretary Sicily Kariuki has warned city residents against bypassing the infrastructure or installing illegal connections. She adds that the government won't hesitate to take legal action against offenders.

"It's your duty as users to ensure that, once we have put up the infrastructure, everyone utilises it responsibly," says CS Kariuki.

For decades, Nairobi River was the indisputable emblem of disorder in the "city under the sun". The section between Globe Roundabout and Kariokor bridge was particularly disgusting, thanks to garbage cartels who dumped waste into the river and vehicle service shops along Kirinyaga Road who released auto waste into the course. At the height of the chaos, even human bodies were abandoned to rot in the river.

Not so today. Tonnes of solid waste have been dredged out of the waterway and its banks reinforced with concrete slabs. But in this river's total makeover, it's the restoration of its riparian section that's worth celebrating.

A few years ago, John Michuki Memorial Park was a hideout for city cut-throats, street urchins and idlers. Visiting the park off Kijabe Street was a hair-raising affair.

Now it's a green, secure and organised facility that offers tranquillity away from the flurry of activity in the city. A big win in the government's efforts to rehabilitate river ecosystems in the capital.

Of the seven major rivers in the city, Ruiruaka, which tears through Ruaka, Karura and some sections of Ridgeways before joining Mathare River downstream, is perhaps the cleanest.

Dark with grime only a year ago, today, the only blemish is its brown colouring, mostly from farming activities upstream.

"It's the cleanest river in Nairobi," Derrick Atandi claims, taking a plunge where the river crosses Thika Road just before Allsops.

Atandi and his teenage friends spend most of their afternoons here swimming. Only a year ago, he and his swimming crew couldn't step into its waters. Even owners of vegetable plots here couldn't use its water—too smelly to handle and too toxic—to water their crops with.

Just few metres from here, the trunk that transports sewage from the surrounding neighbourhoods had been destroyed as the highway was being constructed in 2010. For ten years, it emptied its contents directly into the river.

"We had to dredge a tunnel below the road to re-



NUMBERS THAT TELL A STORY

3.4

Millions of people who defecate in the open in Kenya

70

Percentage of sanitation coverage that Nairobi aims to attain by 2023

400

Tonnes of solid waste that was removed from Ngong River in Kibera

7

Number of major rivers in Nairobi City County

2018

Year when the Nairobi City Regeneration Programme began

2022

Year by which the Dandora Waste Water Treatment Plant should be completed

2,475

Tonnes of Solid waste that Nairobi generates per day.



Left: An excavator at a construction site on Lumumba Drive where the Ministry of Water and Sanitation and Athi Water Works Development Agency are building a new sewerage line on February 26. KANYIRI WAHITO | NATION

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to save city's polluted rivers



17

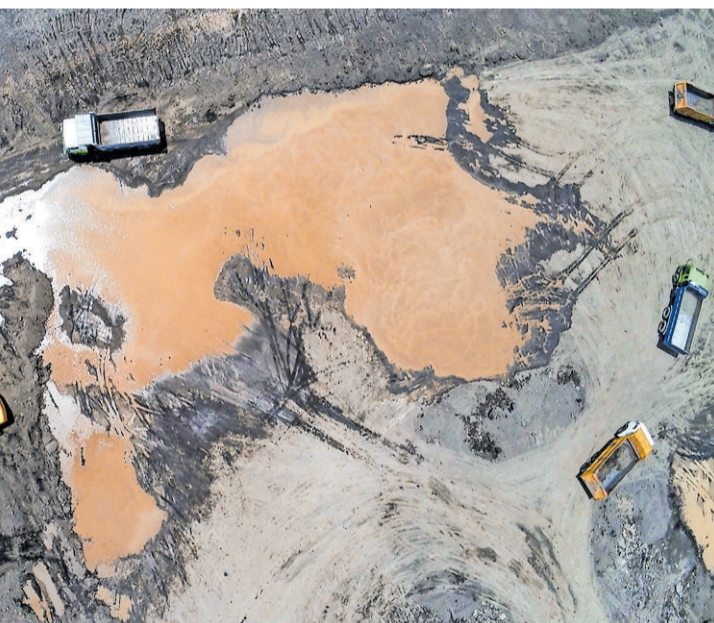
Number of sub-counties in Nairobi

150

Estimated number of private companies that deal with solid waste in Nairobi

102

Age of Nairobi City



place the old trunk. The new one can't be damaged even in case of extensive road repair works in the future," explains Mr Albert Ocharo, an engineer with Athi Water.

At 600 millimetres, the new concrete trunk has a wider diameter than the old line. Firmer steel manhole lids have also been installed to ward off vandals.

Sewer lines are designed in such a way that they run alongside the river, to allow waste water to flow by force of gravity. It's because of this proximity that waste is deposited into the river when the line is damaged, according to the engineer.

Encroachment of riparian land is a common feature across the city. In Lavinton, for instance, tens of homes sit on top of River Kirichwa Ndogo. These discharge their waste into the river.

While the county government of Nairobi had started to demolish such structures from 2018, a series of lawsuits forced them to stop the exercise. Mr Thuita describes encroachment of riverine areas as the biggest setback to restoration of

An aerial view of the expanded Dandora waste water treatment plant in Ruai on February 10. The plant will increase water treatment capacity from the current 160 million to 180 million litres per day by the end of the year. JEFF ANGOTE | NATION

rivers and river ecosystems in the city.

"When a homeowner moves to court, we're forced to stop our works. But the government is addressing these disputes through a multi-agency team which will give the way forward," says the engineer.

Waste water and untreated sewage may be the dominant pollutants of rivers in Nairobi. But solid waste too threatens, not just the quality of water in the river, but also its flow.

Heaps of waste from manufacturing industries, green waste from food markets and domestic refuse overwhelm city rivers at every turn.

After years of disposal of solid waste in Ngong River at Kariobangi, in a textbook case of human depravity, a series of garbage hills now stand erect in the middle of the river.

The course here has changed entirely, and in some segments, garbage has blocked the flow of water, which now stagnates and morphs into mucky pools where mosquitoes breed.

To counter this indiscriminate behaviour, the government has scaled up garbage collection points in different villages in informal settlements such as Kibera, Kariobangi, Mathare and Huruma. This garbage is collected and sorted before disposal.

At the heart of these successes has been sensitisation of residents by community groups such as Mazingira to change their mind-set about environmental consciousness.

But to work here, Mr Othili says, the CBO had to first break the resistance from both residents and waste cartels.

"Kibera has been protective. Convincing residents to participate in the rehabilitation works took time. But slowly, residents are slowly becoming supportive," he adds.

Ridding city rivers of raw sewage and solid waste that have plagued them for decades may be an ambitious dream. But gradually and surely, progress is being made toward attaining this goal.

Already, some rivers have a new, cleaner and promising look. For the first time in a over a century, restoring Nairobi's water courses is slowly becoming a reality.

Mazingira Yetu Organization Programmes Coordinator Michael Othili cleans up a section of Nairobi River in Kibera on March 12. FRANCIS NDERITU | NATION

Project hopes to connect more Nairobians to sewer system as capital seeks solution to waste menace

BY JAMES KAHONGEH

For over 100 years, the population of Nairobi has grown in multiples of 10,000 annually. From only 5,000 inhabitants in 1902, 4.3 million people inhabit the city today, a 76,000 percent growth.

This has translated to the generation of tonnes of waste. In the absence of proper mechanisms to dispose waste and slow expansion of sanitation infrastructure, overwhelmed city authorities have thrown in the towel as the situation grows dire by the year.

Statistics show that Nairobi generates more than its developing peers. With slightly over five million people, Addis Ababa generates about 1,700 tonnes of solid waste per day. Nairobi, with 700,000 less people, produces 2,475 tonnes every day.

In August last year, the government rolled out the second phase of Nairobi Rivers Sewerage Improvement Programme, following the successful completion of the first phase (2012-2017) that saw the city's sanitation coverage raised from 40 percent to 48 percent.

The current phase that is due to be completed in 2023 targets to raise the coverage to just over 70 percent. Athi Water has built a new 2.3-kilometre 600mm sewer trunk along River Kibagare, that will serve areas around Parklands, Nairobi School, Loresho, Deep Sea slum, Kibagare and Westlands.

This trunk, featuring 40 manholes along its course, was laid at a cost of Sh73.8 million. Additionally, Athi Water has rehabilitated sewers along Nairobi, Gitathuru, Ngong and Mathare river basins at a cost of Sh77 million. Taxpayers parted with an additional Sh88 million for rehabilitation of sewer crossings at Muthaiga, Mathare, Ruaraka, Kariakor Market and Gikomba, some of which had outlived their purpose and others that had been vandalised.

These works, funded jointly by the Government of Kenya, African Development Bank (AfDB) and the French Development Agency at a cost of Sh11 billion, will see most of the city's waste water collected and treated.

"The project will provide 12,000 new household sewer connections, serving approximately half a million residents of Nairobi," says Athi Water chief executive Michael Thuita.

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Athi Water CEO Michael Thuita



A man walks on a sewage pipe across Ruaka River near Thika Road at Allsoaps on March 13. KANYIRI WAHITO | NATION