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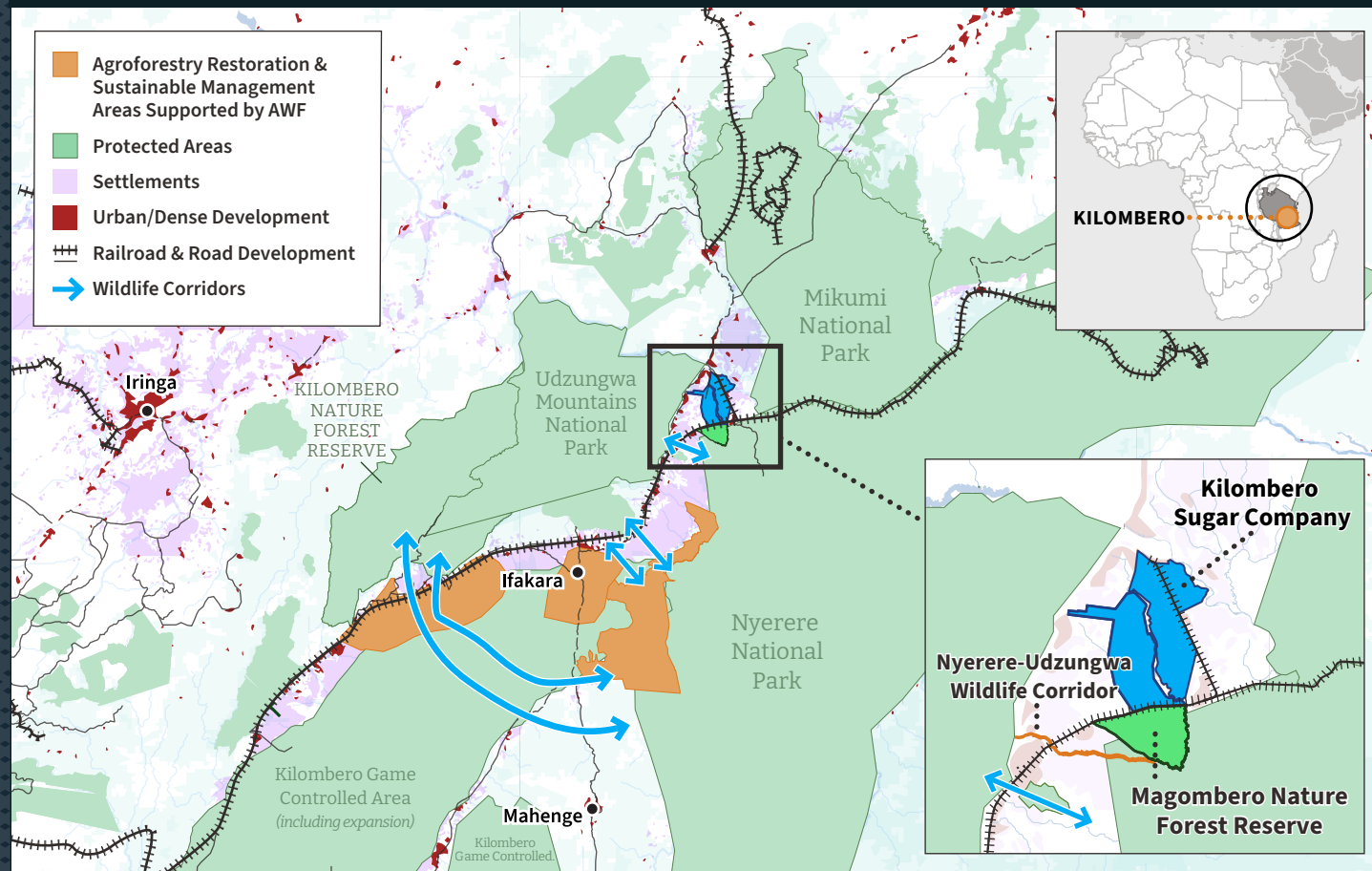
The Kilombero Valley

Balancing Agricultural Development and
Conservation Through Landscape-Level
Planning and Stakeholder Engagement

Today, the Kilombero Valley is a powerful example of how sustainable development and conservation can thrive side by side.



Kilombero Valley Landscape



Introduction

For millennia, the communities of Tanzania's Kilombero Valley have lived alongside nature. But in recent decades, a combination of population growth, expanding agriculture, new infrastructure, and a shifting climate has put that balance under strain.

Located in south-central Tanzania, the valley is a fertile floodplain of extraordinary natural richness. It is part of the Kilombero River basin, which spans roughly 40,000 square kilometers—about the size of Switzerland—and produces much of Tanzania's food supply, including 40% of its sugar and 30% of its rice. More than 1.6 million people depend on the valley's fresh water, and it contributes 81% of the water supply to the Mwalimu Nyerere Hydroelectric Plant, one of East Africa's largest sources of power. The valley's wetlands and forests form a vital passage linking two major national parks—Udzungwa Mountains and Nyerere—allowing elephants, 75% of the world's puku antelope, and dozens of other species to move between protected areas. A recognized wetland of international importance, the valley supports 350 plant species and 300 bird species, including three found nowhere else on Earth.

But the same features that make Kilombero so productive also make it vulnerable. Expanding farms are pushing into wildlife habitat. A US \$1 billion railway upgrade and new roads bring economic promise but also new pressures. Rivers that feed hundreds of thousands of people are being depleted by over-extraction. The corridors that wildlife need to survive are at risk of being cut off, one field at a time.

Since 2014, the African Wildlife Foundation (AWF) has worked alongside local communities, businesses, and government to show that development and conservation can be complementary. Much of this work has been carried out as AWF's contribution to the SUSTAIN program—a consortium led by the IUCN and funded by the governments of Sweden,

Norway, and the Netherlands which supports sustainable and inclusive growth in Africa's development corridors. In 2015, AWF began land-use planning across the valley in earnest, laying the foundation for all initiatives that followed.

This report covers AWF's work across four interconnected areas:

- 1 **AWF, in partnership with Kilombero Sugar, Reforest Africa, and Tanzania Forest Services Agency**—using the valley's dominant industry as a platform for conservation, driving higher yields on existing farmland, protecting wildlife corridors, and catalyzing over half a million dollars in private conservation investment, including KSC's landmark donation of 1,254 hectares to expand the Magombera Nature Forest Reserve.
- 2 **The transformation of cocoa farming**—building a farming system where growing trees and growing income go hand in hand by providing cocoa seedlings and sustainable farming techniques to increase agroforestry and connecting cocoa farmers to competitive markets through cooperatives.
- 3 **Land and watershed restoration**—reviving degraded rivers and increasing tree cover, establishing wildlife corridors, and restoring 1,280 hectares of riverbank across six rivers, establishing Water User Associations and tools for monitoring river health.
- 4 **Long-term local governance**—building the Integrated Kilombero Multi-Stakeholder Platform, which has brought over 60 organizations together to manage the landscape's future as one and the Kilombero Network of Conservation Champions to link national policies to local action.

Bringing Agriculture & Conservation Together

A Sugar Company Becomes an Active Partner

Kilombero's sugarcane fields stretch across 26,000 hectares. They support around 11,000 farming families and generate 40% of Tanzania's sugar. For years, however, low productivity pushed farmers to a familiar and damaging choice: clear more land or earn less. The wildlife corridors running through the valley paid the price.

In 2009, farmers harvested only 20,000 tons of sugar in a difficult year. Soil was being depleted. Yields were unpredictable. And the pressure to expand was relentless. "For years, we struggled," recalls Hussain Shabaini, a sugarcane farmer who has watched the valley transform over the past decade.

The turning point came when AWF, through the SUSTAIN program, began working directly with Kilombero Sugar Company—Tanzania's largest sugar producer and the dominant commercial force in the valley. The partnership rested on a simple but powerful insight: KSC's long-term viability depends on a healthy watershed, thriving soils, and stable communities. Conservation, in other words, was not a cost to the business—it was a condition for its survival.

Together, AWF and KSC introduced what they called vertical expansion: maximizing yields on existing farmland rather than clearing new land. Working with the Tanzania Agricultural Research Institute, they supplied farmers with drought-resistant, high-yield seed varieties, training in sustainable soil and water management, and financial tools to help smallholders invest in their existing plots rather than expand into

ecologically sensitive areas. A covenant was introduced prohibiting KSC from purchasing any sugarcane grown in protected areas, backed by a grower registration and traceability system to enforce it.

The results have been striking. By 2020, average yields had nearly doubled—from around 20 tons per hectare to up to 40 tons. Sugarcane expansion was reduced from a projected 16,000 additional hectares to just 10,000 (62% of original projections), sparing critical habitat. By 2022, the 17 farming cooperatives in the program had earned a combined 60 billion Tanzanian shillings—around US \$24 million. AWF and its partners established 174 hectares of seed nurseries, supplied improved sugarcane seed to 1,470 farmers, and helped equip cooperatives with computers and financial management systems.

"A big part of our success was learning that protecting the environment is key to long-term farming," Shabaini says. "We didn't just want higher yields; we wanted to farm in a way that respected the land."

Women have been central to this transformation. The number of women-owned sugarcane farms has grown from 600 in 2015 to 3,000 in 2025, and many women now hold leadership roles in local cooperatives. AWF farmer Salma Mgwale, a 26-year-old cooperative leader, puts it plainly: "When you empower women, you uplift the entire community."



ELEPHANTS MOVING THROUGH THE UDZUNGWA-NYERERE WILDLIFE CORRIDOR SECURED IN PARTNERSHIP WITH THE GOVERNMENT OF TANZANIA, AWF AND THE SOUTHERN TANZANIA ELEPHANT PROGRAM.

A Corporate Gift to Nature

The KSC partnership produced one of the most tangible conservation milestones in the valley's recent history. In 2018, KSC donated 1,254 hectares of its farmland to the Tanzanian government, expanding the Magombera Nature Forest Reserve to 2,600 hectares total. Magombera is one of Tanzania's most ecologically important lowland forests—home to the rare Udzungwa red colobus monkey, the Magombera chameleon, elephants, hippos, buffalo, and a critical passage for wildlife moving between Nyerere and Udzungwa national parks. AWF helped broker the donation, coordinate its management, and establish permanent research plots to measure the forest's carbon storage. The Tanzanian government subsequently upgraded the reserve to Nature Reserve status, giving it the strongest legal protections available. It stands as a powerful demonstration of what a corporate partner, given the right incentives and relationships, can do for conservation.

When Business Invests in Nature

Along with sustainable agriculture practices and expansion of the Magombera Nature Forest Reserve, KSC has invested over US \$523,000 in conservation-linked activities—restoring riverbanks, treating wastewater, replanting trees—because a healthy watershed is good for its business. AWF helped make that case by putting an economic value on the ecosystem services the valley provides. The result is a Payment for Ecosystem Services model, where downstream businesses contribute to the protection of the land and water upstream that sustains them. A carbon credit initiative through Udzungwa Corridor Limited has since taken this further, restoring 2,433 hectares of forest while generating income for eight villages. The shift from donor-funded conservation to business-funded conservation is exactly the kind of long-term sustainability that Kilombero needs.

Cocoa Demonstrates That It Pays to Protect the Forest

In 2015, around 1,200 farmers were growing cocoa in Kilombero. Most were struggling. They had limited training in farming techniques, low yields, and no reliable market. By 2025, nearly 6,000 farmers were cultivating cocoa across 4,500 hectares, earning more than they would have thought possible ten years ago.

Cocoa is different from most crops. It grows under a canopy of shade trees, which means cocoa farmers are incentivized to plant and maintain trees rather than cut them down. In a valley where deforestation has long been one of the main drivers of ecological decline, cocoa farming is, in a very real sense, conservation in disguise. As one farmer, Boniphass David Mbwaga, explains, “In the past, people would cut down forest trees to clear land for farming. But with the income from cocoa, we no longer need to do that.”

In 2018, a cocoa drying facility was installed in the valley, giving farmers the means to improve post-harvest quality and command better prices. In 2024, cocoa auctioning began, connecting cooperatives directly to competitive buyers for the first time. The following year, farmers harvested nearly one million kilograms of dried cocoa beans, earning an estimated US \$6.6 million in a single auction cycle. The price per kilogram rose from under US \$1 in 2017 to over US \$11 in 2024—a 1,000% increase, driven by better processing facilities, improved quality, and AWF’s support in connecting farmers to competitive markets. In 2025, cocoa accounted for 76% of all new farms established in Mlimba District—every one of them under tree-integrated growing systems that benefit both farmers and the forest.



AYUBU WILLY, INVESTOR AND FARMER IN THE KILOMBERO VALLEY LANDSCAPE. AFTER RECEIVING TRAINING FROM AWF, HE FOUNDED A SEEDLING BUSINESS THAT EMPLOYS 35 YOUTH.

From Seedlings to a Thriving Enterprise

Ayubu Willy was one of 2,000 farmers who received AWF training in growing cocoa seedlings to support agroforestry 2017. Starting with just a few seedlings on a small plot, he built what is now one of Kilombero’s most productive cocoa nurseries, raising 180,000 seedlings a year and employing 35 young people—most of them women. His reach extends far beyond Kilombero. He has partnered with local churches to distribute seedlings, received orders from as far away as Tanga, on Tanzania’s coast, and sent cocoa plants to Zimbabwe and Uganda for testing in new climates. “What started as a short-term project has grown into a long-term source of income and motivation,” he says. Cocoa farming has now created more than 340 green jobs in the valley, including more than 200 for young people like Ayubu.

Bringing Science to the Farm

For years, agricultural research in Tanzania operated largely behind closed doors—conducted at stations, written up in reports, and rarely reaching the farmers who needed it most. Through the Eco phase of the SUSTAIN program, AWF helped change that by transforming the Tanzania Agricultural Research Institute Ifakara into a national Centre of Excellence for Cocoa Research, where farmers and scientists work side by side and their knowledge flows both ways. A research plot now holds 236 cocoa varieties from across Tanzania’s growing regions. Nearly 750 farmers across 24 villages help design trials and test techniques on their own land, feeding real-world results back to researchers.

Healing the Land and Its Rivers

A decade ago, the hillsides of Vidunda were largely bare. The forests that once covered them had been cleared for firewood and farming, leaving slopes exposed to erosion and soils struggling to hold water. Today, those same hills are being reforested—with timber trees, cocoa, and native species—and the community doing the work has no plans to stop.

“Before partnering with AWF, we started with about two acres. But after collaborating with AWF, we expanded because they provided us with seedlings,” says Peter

Stephan Mkwana’hembo, who grows timber trees alongside cocoa in Vidunda. AWF has distributed almost a quarter million seedlings in the area in recent years, and the community plans to plant another 200,000 in the coming year. The practical philosophy is simple, as Peter puts it: “The natural forest brings rain, but we can’t get timber from it. The trees we plant now give us both timber and rain.”



SISTER EUSEBIA PUNDUKA AMIDST YOUNG TREES CULTIVATED BY THE CHURCH AS PART OF THEIR REFORESTATION EFFORTS.

The Sisters of Mbingu

In the village of Mbingu, two Catholic nuns—Sister Eusebia Punduka and Sister Narisisa Kilenga of the Franciscan Sisters of Charity—have become unlikely but powerful conservation champions. Sister Eusebia trained with AWF’s Trainers of Trainers program and has gone on to educate over 600 farmers in sustainable land management. Launched in 2016, the program has built a network of locally based extension workers capable of cascading practical agricultural advice to farming communities across the landscape. In the sisters’ case, the church’s land serves as a working demonstration farm, visited by farmers who want to see sustainable practices in action before adopting them on their own plots. “I’ve focused on aligning farming practices with conservation and sustainability,” she says, “empowering farmers to protect the environment while improving their lives.”



IKWAMBI RIVER IN 2023



IKWAMBI RIVER IN 2025 AFTER RESTORATION

Bringing a River Back to Life

When the Ikwambi River—a lifeline connecting Udzungwa Mountains National Park to the ILUMA Community Wildlife Management Area—dried up due to over-extraction, AWF worked with local communities to reopen the channel. Crop yields in the Sululu Rice Irrigation Scheme rose from 4–7 bags per acre to 15–20 bags per acre almost immediately. Land rental values in the area more than tripled. More than 500 farmers across 200 households benefited—while water continued to flow into the wildlife area downstream.

Across the valley as a whole, AWF has supported the planting of more than 1.37 million seedlings, developed 12 village land-use plans, restored 1,280 hectares of riverbank habitat along six rivers, and helped bring improved land management to over 226,000 hectares.



NAOMI KASSIM MAYOWERA (RIGHT) AND HER FAMILY IN FRONT OF THEIR FAMILY HOME ON THE BANKS OF THE MCHOMBE RIVER.

Protecting the Rivers That Sustain Everything

For Naomi Kassim Mayowera, who farms on the banks of the Mchombe River, the water is not just a resource. “Without the river, we have nothing,” she says. “It feeds our farms, our animals, and our families. Protecting it means protecting our future.”

Since 2021, Naomi has been a member of Juwamange—a 30-person Water Users Association dedicated to the health of the Mchombe River in the Mngeta community. With AWF’s support, the group monitors the river regularly using the Tanzania River Scoring System, a tool that tracks insect life in the water as an early warning system for pollution. “These insects act as sentinels,” explains Committee Chair Leonard Kisihanga. “If we see them moving toward the riverbank, we know something is wrong—and we go upstream to find out

what.” The group also plants trees along the riverbanks to prevent erosion, and has built working relationships with schools, religious organizations, and local police to address problems at their source.

This kind of community-led monitoring is now replicated across the valley. AWF has helped establish or strengthen five Water User Associations across Kilombero’s main river systems and trained almost 250 community members—roughly half women—to monitor water health and respond to threats. A valley-wide Catchment Management Plan gives these groups a shared framework, while low-cost digital monitoring technology introduced to four irrigation schemes gives farmers and managers real-time data on water levels and stream flow.

GOVERNING TOGETHER

Water and forests need governance as much as they need protection. To address the fragmented and often conflicting decisions being made about Kilombero’s land and resources, AWF worked with Tanzania’s National Land Use Commission and IUCN—as the lead partner of the SUSTAIN program—to establish the Integrated Kilombero Multi-Stakeholder Platform in 2018, a formal body that brings together over 60 organizations to make joint decisions about the landscape. Government agencies, protected area managers, businesses, universities, religious groups, and community representatives all sit at the same table.

In its short existence, the platform has facilitated over 20 formal dialogue sessions, contributed to the expansion of the Kilombero Game Reserve by approximately 500,000 hectares, and helped mobilize over 18 billion Tanzanian shillings—roughly US \$7 million—in conservation investment. The

approach has already been replicated in Zanzibar, demonstrating that what works in Kilombero can work elsewhere too. In 2024 the platform was complemented by the Kilombero Network of Conservation Champions, established to translate national conservation policy into local action and sustain community-level momentum across the landscape.

Land-use planning has been critical in defining wildlife corridors and zones for agriculture and other human activities in the valley and setting apart ecologically sensitive areas, including crucial water resources. AWF has also supported human-wildlife coexistence around the ILUMA Wildlife Management Area—a community-managed buffer zone around Nyerere National Park—by providing patrol technology and training for 45 village game scouts. Human encroachment into ILUMA has dropped by an estimated 60% as a result.





Looking Ahead

The Kilombero Valley is not a finished story. The population is growing. Climate change is intensifying. The pressures on this landscape will not ease on their own. But after more than a decade of work, there is a foundation here that did not exist before—farmers who protect their forests because they secure their future, companies like KSC that invest in conservation because it is profitable, communities who monitor their rivers because they know how, and a governance structure that brings all of these groups together.



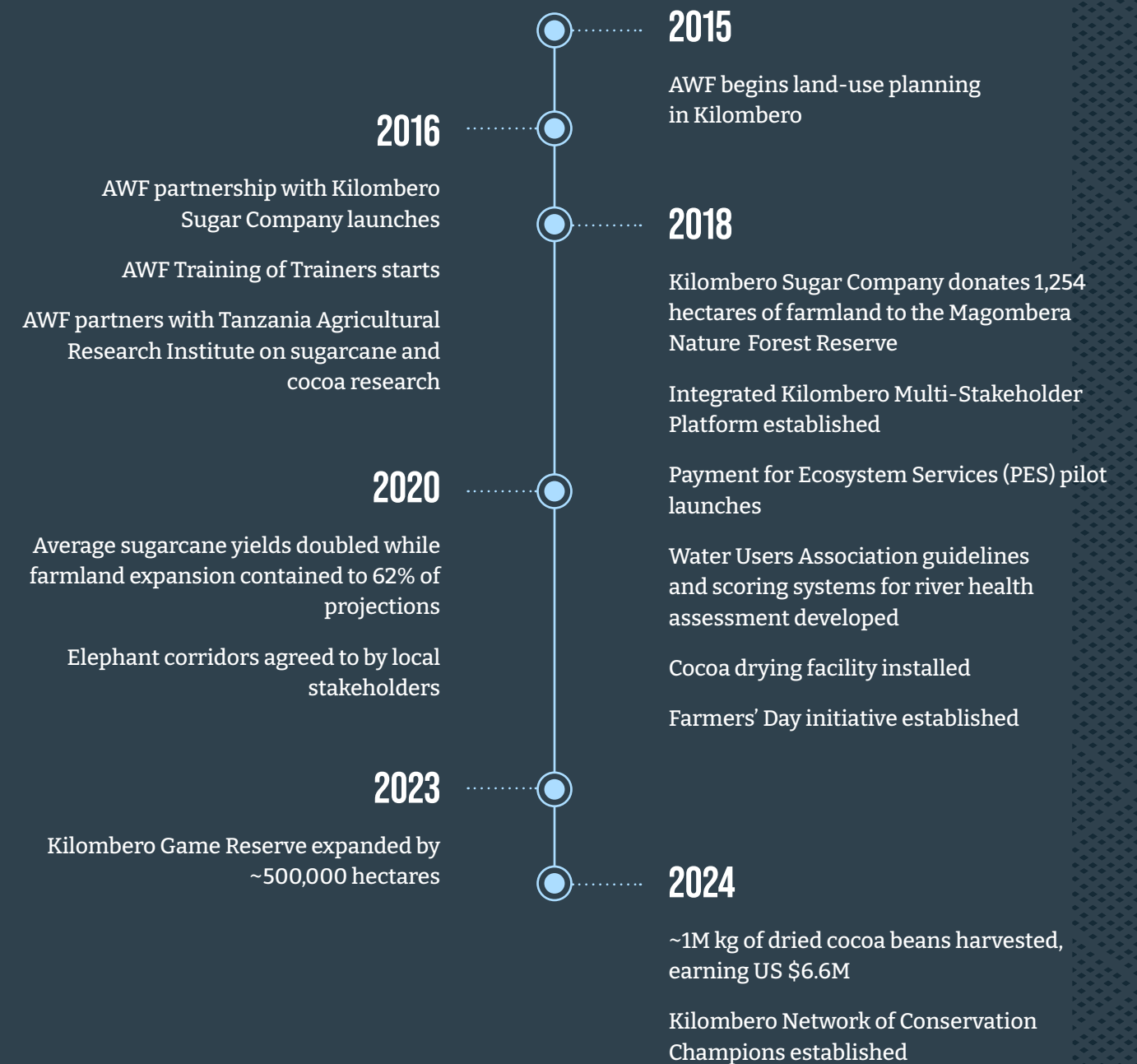
When you empower women, you uplift the entire community.

SALMA MGWALE
Farmer & Cooperative Leader, Kilombero

The tools used in Kilombero—better seeds, farmer cooperatives, corporate conservation covenants, water monitoring groups, land-use plans, multi-stakeholder platforms, carbon markets, partnerships with business—are practical, proven, and available to other landscapes facing similar pressures.

What Kilombero shows is that the choice between development and conservation is a false one. Farmers like Hussain and Ayubu are not sacrificing their livelihoods for the sake of wildlife. A company like KSC is not sacrificing profit for the sake of the environment. They are all building something more durable—because they made a decision, together, about how to use this land. The rivers, the forests, the wildlife corridors—these are not obstacles to prosperity in Kilombero. They are its foundation.

AWF & Kilombero Timeline



BY THE NUMBERS

Sugarcane & KSC Partnership

~US \$24M
earned by 17 cooperatives in 2022

3K
women-owned sugarcane farms
(up from 600 in 2015)

US \$523K+
invested by KSC in conservation-linked activities

UP TO 70%
increase in yields per hectare

11K+
sugarcane farmers supported

1,254 HA
donated by KSC to expand
Magombera Nature Forest Reserve

Land & Watershed Restoration

226,809 HA
under improved land management

1,280 HA
of riverbank habitat restored across
6 rivers

~500K HA
added to Kilombero Game Reserve
conservation status

5
Water User Associations established
or strengthened

~US \$7M
in conservation investment
mobilized via Kilombero
Multi-Stakeholder Platform

3.5M
people reached with conservation
messaging by AWF-supported radio
and TV programs

Cocoa

~US \$6.6M
total cocoa farmer revenue in 2025
auction cycle

1,000%
rise in cocoa price per kilogram from
2017 to 2024

340+
green jobs created, including 200+
for young people

17,232
farmers trained across all value
chains

247
community water monitors trained

20+
formal multi-stakeholder dialogue
sessions held

12
village land-use plans developed

1.37M+
seedlings planted



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COVER: A CHINESE-FUNDED RAILWAY DIVIDES RESTORED FOREST (LEFT) AND SUGARCANE FIELDS (RIGHT) IN THE KILOMBERO VALLEY.