

CONSERVATION

KENYA'S CHIMULU HILLS

A Model for Sustainable Funding of Conservation





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BELOW: Zebras Grazing with Chyulu Hills in background.

Like the supporting keystone of an arch linking Amboseli and the greater Tsavo ecosystem, the Chyulu Hills -- in conservation terms-- are a critical corridor.

Rising from about 3,000 feet to 6,000 feet, older volcanic summits are covered in a rich green cloud forest, in stark contrast to the semi-arid grasslands and *Acacia commiphora* woodlands around their base, stretching west to Amboseli and east across Tsavo. Almost every night, the hills seem to reach out and grasp the clouds that shroud their tops until dissipated by the morning sun. Because the porous hills do not hold water, many plant species adapted ways to secure moisture from these clouds.

The forests are home to a completely different assemblage of trees, insects, birds and mammals, while the slopes below create an important vegetation gradient where wildlife and livestock graze during dry seasons.

Underground streams that form beneath the Chyulus are vital in a vast area of dry country where water is at a premium, and will become even more so with intensifying

droughts associated with climate change. Underground water from the Chyulus supply local communities, plus Umani and Ol Pusare, and Mzima Springs provide 30 per cent or more of the water for Mombasa. Not only is the water volume significant to local communities and Mombasa, all currently suffering water deficits, but it is also of exceptional quality. The potential consequences of losing this water would be significant for the whole of south-eastern Kenya. Yet, currently, Mombasa pays absolutely nothing towards protecting this crucial water lifeline.

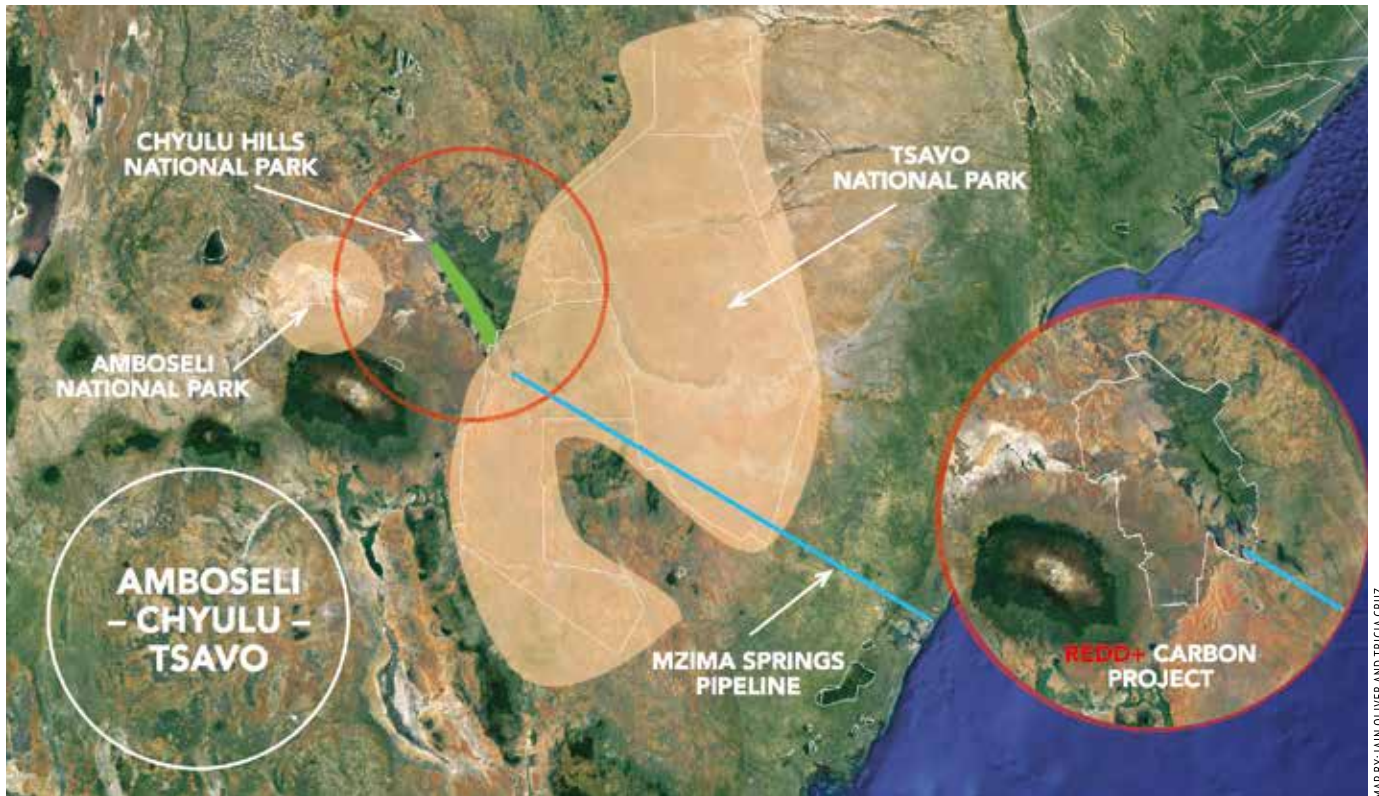
Over the past 50 years, Kenya has seen significant declines in wildlife populations and habitat, a consequence of a human population that has grown from around 14 million in 1970 to about 47 million today (a 335 per cent increase). In spite of this, Kenya still boasts some of the finest wildlife areas in the world. In addition to their intrinsic values of biodiversity; providing healthy links to nature, and supplying critical benefits such as water and climate mitigation, Kenya's wildlife areas draw millions of tourists

One attraction is Mzima Springs, where visitors can watch hippos underwater via a bunker with



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a glass window. During the 2009 drought, hippo died when other wildlife and cows competed for grass along the shores. The hippo population has begun to recover, but despite record rains of 2018, the water that percolates through the Chyulus may spend 25 years underground before emerging at Mzima.

Tourism is the third biggest contributor to Kenya's GDP, after agriculture and manufacturing, contributing \$2.5 billion to GDP in 2016. With the decline in habitat, including Nairobi National Park, remaining wildlife areas become even more economically valuable and ecologically important.

Conservation is more effective when large-scale wilderness areas are protected, especially where large mammals range over wide areas. Currently, only three large-scale wilderness areas remain in Kenya: the Northern Rangelands; the Mara as part of the Mara-Serengeti ecosystem; and the Amboseli-Tsavo ecosystem.

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Map showing location of Chyulu Hills landscape and REDD+ Project area forming a critical corridor between Amboseli and Greater Tsavo. Also shown is the water pipeline from Mzima to Mombasa.

Although the Chyulus may look modest, especially against the backdrop of their volcanic cousin, Kilimanjaro, they play a giant role in maintaining a larger conservation landscape, protecting biodiversity, contributing to Kenya's ecotourism, and as a critical water resource.

What are the challenges and opportunities for protecting the Chyulus?

As with any conservation initiative, questions include how to pay for protecting the natural resources, how to use them sustainably, and how to maintain an integrated strategy across a range of stakeholders.

The Chyulu landscape has six major land owners with legal tenure: Kenya Wildlife Service (Chyulu Hills and Tsavo West National Parks), Kenya Forest Service (Kibwezi Forest Reserve) and four Maasai Group ranches on the western side (Kuku, Kuku A, Rombo, Imbirikani). Additionally, land east of the Chyulus is individually owned, mainly by *Wakamba* farmers.

Three NGOs support conservation programmes on behalf of the land owners: David Sheldrick Wildlife Trust, which leases the Kibwezi Forest reserve; Maasai Wilderness Conservation Trust (MWCT), and Big Life Foundation that work with the four group ranches. One of the challenges is building collaboration across these entities so that programmes are integrated.



PHOTO BY: STEFANO RICCI

UNPREDICTABLE FUNDING

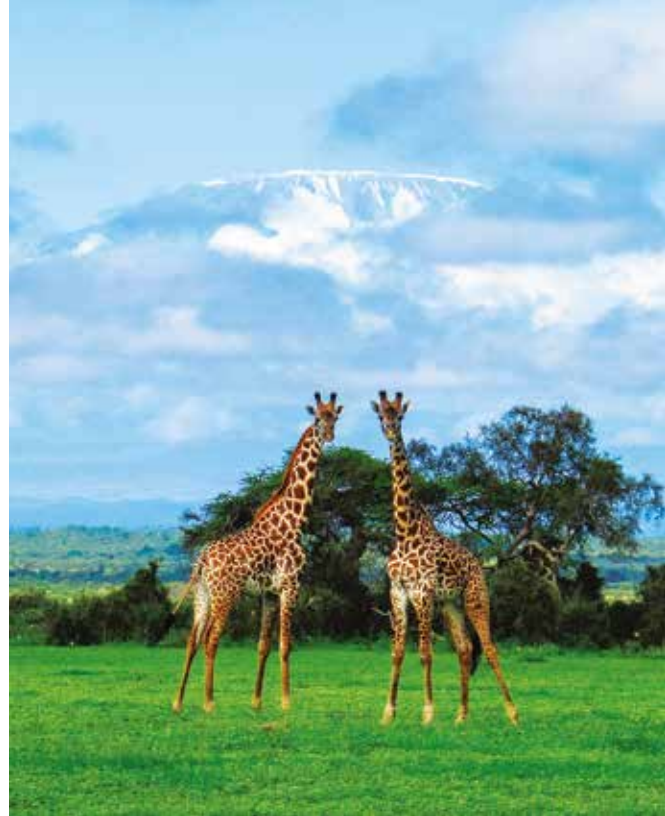
Within Kenya, conservation is dependent on a combination of ecotourism, development funding, or philanthropy. Unfortunately, all these sources tend to be unpredictable and short term. How many grants are available over a ten-year horizon? Virtually none. How many unexpected occurrences over the last few years have caused sudden drops in tourism? Global recessions, political unrest, terrorism, the Ebola outbreak in West Africa, all took their toll. But conservation and communities require long-term, predictable revenue.

The Chyulu Hills ecosystem offers an exceptional opportunity to refine a model that promotes coordination across stakeholder entities, builds a diversified income streams, and long term stability. It is a common vision that has often proved to be difficult.

Conservation in the Chyulus has historically followed the traditional model of ecotourism, international philanthropy, and some bilateral and multilateral funding. Campi ya Kanzi, for example, pays lease and conservation fees to the Group Ranches. The conservation fee is earmarked to finance Wildlife Pays, a programme where livestock losses caused by wildlife are compensated to Maasai owners.

For the Chyulu ecosystem as a whole, and particularly the Group Ranches, ecotourism and

Chyulu is a vital corridor for animals that live in Tsavo and Amboseli. The park shelters a wide variety of wildlife which include the critically endangered eastern black rhino, the cheetah, antelopes such as gerenuk and lesser kudu, huge concentrations of plains game such as wildebeest, zebra and eland as well as elephants which normally wander in from neighbouring Amboseli.



ABOUT Chyulu Hills

Wildlife

Wildlife densities are low, and animals tend to be skittish because of heavy poaching. Some of the animals you might see are: eland, klipspringer, giraffe, zebra, baboon and Sykes© monkey. Other big game that pass through from Tsavo West include elephant, buffalo, lion and leopard.

Best Time to Visit

Chyulu Hills can be visited year-round, but wildlife viewing is usually best in the dry months from June to October and January to February. Visits during the peak of the short rains (November), and especially during the long rains (April and May), might be challenging. The condition of the roads isn't great, even in the dry season, although it gets much worse after rain. A sturdy 4x4 is required throughout the year.

Scenery

The volcanic mountains offer a fascinating mix of volcanic ash cones and barren lava flows. Big black rocks are testament to the volcanic origin of the mountains. The lava flows are sparsely vegetated, but the upper slopes are home to 37 species of orchids. Deep beneath the hills is a catacomb of mostly unexplored caves.

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conservation programmes are already leading economic drivers and the largest providers of local employment. Just on Kuku, the combined efforts of MWCT and Campi ya Kanzi provide over 300 full-time jobs. These include field rangers, researchers, administrators, teachers and medical staff, as well as employees of the lodge.

CARBON CREDITS

Yet conservation and community services are still significantly under-funded. It is in this context that partners are developing a broader vision for a portfolio of ecosystem-based payments.

Over the past six years, partners collaborated to develop a REDD+ [*efforts to Reduce greenhouse gas emissions from Deforestation and forest Degradation*] carbon project, the second such project in Kenya. This is verified under rigorous international standards for forest carbon projects, the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity Standards (CCBS).

The project has now registered two million

Bird watching is best in the dense mountain forest of the western sector of the park where Hartlaubs turaco, sunbird, speckled moosebird and white eared barbet are prevalent. Various swallows fly along the forest edges while deep in the glades you spot stripe cheeked greenbul, tropical boubou, white-eyed slaty flycatcher and silvery cheeked hornbill. The hills also mark an important stopping off point for the globally threatened Abbott's starling.



carbon credits on the Markit Registry and has begun sales of these credits. It is estimated that this will generate about 600,000 credits per year. While the market for REDD+ credits is currently challenging, successful marketing could generate \$3-\$5 million per year.

One of the benefits of developing REDD+ projects in compliance with standards is that the process promotes information-sharing. In the case of the Chyulu Hills REDD+ project, this has resulted in the formation of a Trust (the Chyulu Hills Conservation Trust) that brings the six land owning entities and the three associated NGOs together. Importantly, the Trust has been assigned legal ownership of the carbon rights.

Collaboration is essential to successfully monitor and evaluate with third part “auditors” to certify compliance. Such reviews are required on a regular basis as carbon credits can only be issued based on actual performance: reducing

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PHOTOS BY: MASAI WILDERNESS CONSERVATION TRUST

deforestation, conserving biodiversity, and the delivery of benefits to local communities.

Few conservation programmes are subject to such rigorous monitoring as REDD+ projects. This also provides carbon buyers with a level of assurance that carbon credits are real, and that the project is delivering its outcomes.

Through the structure of the Trust, all the Trustee organisations, including the Group Ranches, are allocated proceeds from the carbon sales and have decision-making authority over the use of these funds, provided that they support the overall aims of the REDD+ project. The Trust has set up its own grant making process to manage the awarding of the funds to the partner organisations and monitor their use.

Beyond ecotourism and REDD+ project, a significant opportunity exists for payment for water delivered from the Chyulus. The current capacity of the Mzima-Mombasa pipeline is about 35,000m³ per day, but it only delivers about 15,000m³ per day, yet this is 30 per cent of Mombasa's daily usage.

It is only reasonable that Mombasa should contribute to the protection of this vital water resource. In fact without making such payments, Mombasa is taking a huge risk. Even at modest pricing, payments could generate several million dollars a year to support catchment protection in the Chyulus.

TOP: One of Kenya's iconic landscapes - Chyulu Hills - will soon reap big from the sale of two million carbon credits. Located between Amboseli and Tsavo national parks, Chyulu Hills is an integral part of Kenya's largest conservation landscape that has been severely degraded by overgrazing, drought, deforestation and forest degradation. Revenue from the sale of carbon credits, will help reduce deforestation and protect forests and natural resources.

Another sustainable revenue base includes proposals for a large-scale solar plant that would feed into Kenya's national grid. Additional revenue can come from developing economic opportunities for local communities. This includes improved livestock management, grass seed banks, honey production, and local arts and crafts.

With all these opportunities, the Chyulus provide an opportunity to demonstrate building a model "green" economy that protects biodiversity enhances water security, and improves the well-being of local communities. All depend on a strategic and integrated effort by stakeholders to protect "The Green Hills of Africa". ●

Want to visit this project?

Visit MWCT and Campi ya Kanzi

www.maasai.com

Contact bookings@maasai.com or call :0720 461300. Your stay at Campi ya Kanzi will be carbon neutral.

+ FIND OUT MORE

Do you want to help preserve this unique Kenyan water tower? Become a carbon neutral person! You can check on www.maasaiwilderness.org and select the carbon project and then use the offset your CO₂ button to buy Chyulu carbon credits.