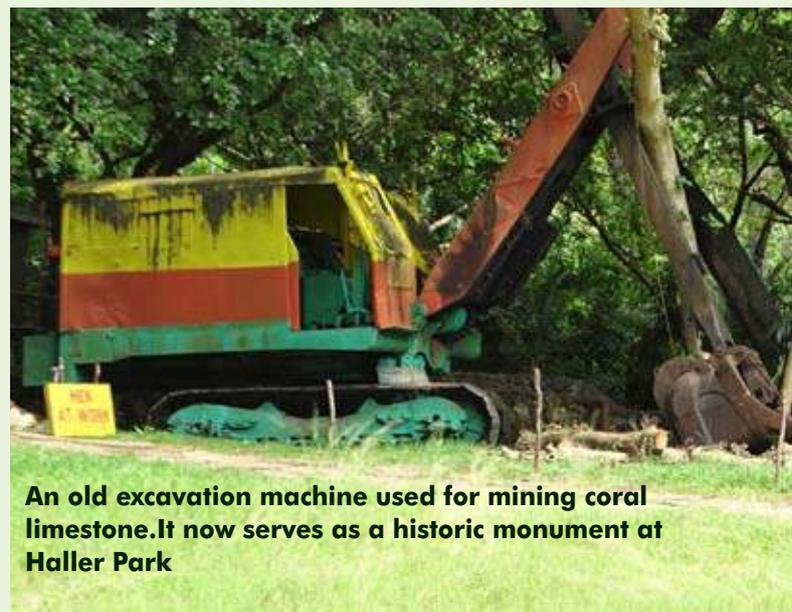


## CONFERENCE NEWS BULLETIN



**An old excavation machine used for mining coral limestone. It now serves as a historic monument at Haller Park**

# Rare Star Tortoise Finds Home in Former Cement Quarry

**By Clifford Akumu**

**T**he most confiscated tortoise species in the world has found refuge at a restored cement quarry in Bamburi at the Kenyan coast.

The Star tortoise is a rare freshwater species according to the wildlife trade watchdog TRAFFIC. It is classified as vulnerable on the International Union for Conservation (IUCN) Red List of Threatened Species.

Increased habitat loss, illegal collection for the international wildlife trade and the long reproductive cycles are some of the challenges facing the species.

These factors according to experts make it almost certain that populations in the wild are shrinking at an alarming rate.

But there is hope in the conservation of the tortoise—an endangered through biodiversity conservation.

“In essence, we are giving nature a helping hand,” said Dr Msando adding that the aim of the project is to restore indigenous coastal forests in the quarries to support conservation of local biodiversity.

The rare star tortoise is the most confiscated species of freshwater tortoise in the world, according to the wildlife trade watchdog TRAFFIC. The species and its conservations, says Msando, is critical in raising the numbers.

Bamburi quarry rehabilitation program started in 1971 by Rene Haller—a Swiss agronomist. About 320ha is now teeming with biodiversity.

The rehabilitated sites now offer refuge to some rare and endangered species that roam the protected area freely.

“We only have a single tortoise of this species in the park. And as an extension conservation initiative we are monitoring its movement and studying its interaction with other species to study the ecosystem,” he added.

Apart from restoring the once “ugly scar on a beautiful environment,” says Msando, the project has morphed into an ecosystem conservation monument promoting eco-tourism and environmental sustainability.

“Educating the younger generation on environmental issues is key in cultivating a culture campaign, geared towards awareness creation and mindset change,” he says.

The park is now receiving visitors from all walks of life, with a total of 187,000 individuals visiting the park last year. A modest fee of between Ksh100-200 is charged to locals and Ksh250-300 to international visitors.

# From Barren Wasteland Into a Biodiversity Hotspot

By Hazla Quire

Once an eyesore and a wasteland of abandoned pits, the former quarries that were used for the mining of limestone for cement production are now teeming with wildlife and vegetation. They have since become a biodiversity hotspot at the Kenyan coast.

This transformation is due to the sound environmental management and rehabilitation effort by the Bamburi Cement, through the Lafarge Eco Systems initiative. This has resulted in the formation of the Haller Park – a diverse ecosystem of forest, grasslands and ponds.

The success of this effort involved the introduction of the red-legged millipedes. It played an important role in fertilizing the soil after feeding on the casuarinas tree species, which was introduced in the area.

Dr Albert Musando, the ecosystems and tourism manager of Lafarge Eco Systems, explained that it took five years, for the casuarina to start self-seeding and spreading across the surrounding area. By the time the trees started falling off, the 320 hectares of reclaimed quarry area was fully fertilized to allow new plants to grow and replenish. Wildlife was then introduced to create a perfect flora and fauna environment and now the once barren, ugly abandoned quarries were transformed into a green paradise with over thirty species of animals and 180 bird species in addition to insects that aid plant pollination.



Albert Musando of Lafarge Eco Systems explaining to journalists how the ecosystem works

The Park has since become a tourist attraction. This, at another level is an indication of what environmental management by industries can result into.

“The Haller Park story aims to allay long enduring concerns about industries destroying nature, because through the harmonization of nature and factory production,” said Nyinge Nyinge the ecotourism manager of Haller Park. He adds that this is what the future of heavy industries should be.

The Park has since become a tourist attraction. This, at another level is an indication of what environmental management by industries can result into.



A former quarry, that has now been restored. Photo by Hazla Quire



Industrial wastewater that has been purified and is now used in rearing fish at Haller Park in Bamburi. Photo by Hazla Quire



**Julius Ngeti, the KWS tourism warden speaking to journalists about the Mombasa Marine National Park and Reserve**

## Paradise in the Sea

By Carol Otieno

With a total area of 210km<sup>2</sup>, the Mombasa Marine National Park and Reserve remains an attractive place for snorkeling, diving, swimming and enjoying the colourful marine life it has to offer. It is no wonder therefore that it brings in no less than Ksh 1million per month from the marine protected areas.

One of the protected areas in the park is the paradise reef, which is only 1 km from the beach. The reef was established in 1986, a time when the Kenyan government through KWS begun to protect it.

However, it cannot be visited at any time.

“The reason why the paradise reef cannot be visited at all times is because you cannot have a good view of marine species when the tides are high, so the best time especially for the tourists is when the tides are low and this varies from time to time each day,” says Julius Ngeti, KWS Tourism Warden.

The paradise reef is preferred by newlyweds for their honeymoon. Birthday parties are also held here but only for four hours when the tides are low.

Besides generating income for the government, the park is also a place where research is conducted, a recreational center and a national

heritage site. Hence it is important to protect it for current and future generations.

The citizens benefit as well, because they are able to provide boat ride services thereby generating income.

One of the challenges facing the park, just like the rest of the ocean, explains Ngeti, is the issue of litter. However, they try to ensure that the beach is cleaned every day.

The marine park lies between the Mtwapa and Tudor creeks and its blue waters are also ideal for wind surfing.

The park also provide a home to a colorful variety of marine species which include the star fish, corals, sea grass, stone fish among others.

# The Blue Economy Opportunity



**Kenya need to fully utilize its Coastal tourism potential. Photo by Mekonnen Teshome**

By Mekonnen Teshome

Kenya’s maritime economic sector remains underdeveloped. However, this presents an opportunity for growth.

According to Dr. Jackline Okuh, the Kenyan economy is expected to benefit from its massive maritime potentials.

“Though the Blue Economy has always been with us, we haven’t exploited it to improve the livelihood of our citizens and boost our economy,” says Okuh, a maritime scholar.

As the country’s maritime business activities are still in their infant stages, it goes without saying that the country needs to strengthen its blue economy sector.

Okuh underlined the fact that Kenya’s culture of utilizing maritime resources is still weak. For example, she said that the Kenyan per capita consumption of fish is only 4.5 kilos per year while the global consumption stands at 20 kilos per year.

At another level, the country has not developed its coastal tourism sector, artisanal fishery, aquaculture and the like.

“We need also to think of the sea weed businesses as well as agro-processing activities, to support the economy of the country,” she said, adding that Kenya’s energy and mining sectors are also hugely expected to utilize the marine potentials.

**As the country’s maritime business activities are still in their infant stages, it goes without saying that the country needs to strengthen its blue economy sector.**



Michael Okal, a researcher from ICIPE explains an innovation used to trap the tsetse fly. Agatha Ngotho



A technician from ICIPE collects samples from the ear vein of a cattle in Tangini village in Kwale County, to test for the presence of trypanosomiasis. Agatha Ngotho

# Waterbuck body odour collar repellant to fight tsetse

By Agatha Ngotho

**F**armers neighboring game reserves are set to benefit from a cheap technology that controls tsetse flies.

Michael Okal a researcher and entomologist at the International Centre of Insect Physiology and Ecology-ICIPE said they have developed a collar repellant technology for protecting livestock against trypanosomiasis disease.

He spoke on Monday during the Kenya Science Journalist Congress meeting organized by the Media for Environment, Science, Health and Agriculture network in Mombasa.

He said farmers neighbouring the Shimba Hills game reserve bring their livestock for sampling and screening of trypanosomiasis.

"This is an exercise that we do monthly with about 3, 000 cattle which we screen to see if they are infected or not. By doing so, we can be able to evaluate if the technologies are effective or not. This is part of the process of monitoring if the technologies that we are upscaling are being effective," Okal said.

He said the technology being upscaled in the area is known as waterbuck body odour repellant.

"This is an innovative technology that mimics the odours of animals that are not bitten by tsetse flies. The biomimicry technology is safe for the environment, cheap for farmers to use and it allows for mobility that the cattle can move when still protecting them in different areas," he said.

He said ICIPE has been working here for the last 10 years together with the community to try and optimize that technology and to disseminate it in this area.

Okal said the disease is more common in areas where there is a game reserve. "You could not keep livestock

in this area ten years ago. When we first came here, 70 percent of all the animals in this area that nears Shimba hills were infected by the disease. And out of those, most died and those that survived could not provide milk, give birth or even plough land" he said.

The researcher said that through the use of the repellent collar, farmers barely loose animals to trypanosomiasis.

"We have been able to increase herd sizes with many farmers doubling their herd sizes. There has also been increase in milk production by up to 80 percent, reduction in the use of trypanosides by up to 50 percent and increase in the land ploughing which is common in the area," said Okal.

He explained that tsetse flies selectively bite animals and the way they know this is an elephant or waterbuck is by using the sense of smell.

"So what we have done in this collar is that we have identified the body odour of those animals that they do not bite like the waterbuck then we put it in a slow release mechanism and put it in a collar that we hang on a cow. So when the flies pass near the cattle, they think it's a waterbuck and avoid it."

He added that the collar can last longer but farmers have to change the repellent after every six weeks at a cost of Sh80.

Okal confirmed that trypanosomiasis or sleeping sickness in human has not been reported in Kenya in the last 20 years. "But the disease is always a threat because we have the tsetse fly that transmit human trypanosomiasis, and there are risks within the borders of Uganda and Tanzania," he said.

He noted that the disease is not easy to diagnose and treat in human beings making this an obstacle to control it.

"Our goal as ICIPE is to be able to develop a repellent so that in future we could just use something like a bracelet, an equivalent of a collar to prevent human beings from being bitten by the fly," said Okal.

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