

Technology offers possible cure for the deserts

A simple circle box breathes life to flora and fauna in the lifeless drylands

- Published 30 September, 2010
- By [Josephat Siror](#)
- Kenya
- [Comments \(0\)](#)
- Viewed 111 times

Standard News

KENYA: It might sound like a daydream or illusion but scientific evolution may prove that the country's 85 percent surface covered by drylands could turn green, thanks to the environmental advancements geared towards tackling climate change.

Groasis Waterboxx, a new concept in scientific discoveries from AquaPro, a Dutch-based company, has a possible new solution to changing the vast deserts into green Oases. First piloted in Morocco's Sahara desert four years ago, the demonstrations proved that the conditions commonly referred to as hostile to plants and animals in many parts of the region, can convert the lifeless lands into lush green areas through ensuring survival.

The initial results of the new Waterboxx technology, according to the company, showed that trees grown using the technology have an 88 percent survival rate in dryland conditions when the device is removed. By contrast, the trials from Northern Africa showed that of those trees grown under humid conditions, only ten percent survived without the Waterboxx, despite being watered on a daily basis.

The ambitious idea has also hit the Kenyan soils with its inaugural trials targeting dry and arid landscapes of Ngong Hills, Naivasha, Marsabit and parts of Eastern Province. The Groasis Waterboxx concept enables water to undergo a complete photosynthesis cycle in an eight-shaped centre box that regulates the temperatures.

Designed to reduce excessive evaporation while facing an east-west direction, the Waterboxx also captures the moisture from the atmosphere with "minimal consumption of water by the plant through the condensation process," explained Professor Pieter Hoff, the inventor of Groasis technology.

The Waterboxx is a round device made from polypropylene and about the size of car tire — 20 inches in diameter and 10 inches high. An opening at the center of the box provides a space for a plant or tree to germinate and grow.

"At the base of the box is a wick that taps into the ground beneath the box and drips a small amount of water to the plant's root system each day. Once the plant or tree has taken root on its own, reaching a water source sometimes several meters below, the box can be removed and used again to start another plant or tree," described Professor Hoff.

The simple-looking Waterboxx enables a plant to withhold water for a period of 3 to 4 months, hence enhancing its survival in harsh weather conditions. The Waterboxx has two outlet siphons that allow drops of water to reach the plant or the seed. At its circumference, two protruding perforated affix protects the box from winds, possible floods and external pressure as they are nailed deep down in the earth's surface.

Prior to its launch at African Nazarene University in Nairobi, the Waterboxx concept had been preceded by a series of presentations to various climates including the Inter-Ministerial forum held in Kenya ahead of the world's climate change meeting in Copenhagen last year. The technology, spearheaded by Ministry of Youth and Environment and Mineral resources, may be the breakthrough answer to the uncertainty swirling around the country's inability to tackle climate change.

The launch of the new technology also comes in the wake of uncertainty facing reclamation of lost forest cover that currently is measured at only 2 percent. The new Waterboxx concept could offer a magic solution to the country battered by the effects of climate change and that has also resulted in devastation of a large magnitude – including death of wild animals and destruction of biodiversity.

With this new technology, the traditional watering of seeds from seven to ten times a day can be reduced to a paltry nil in the course of germination. According to Professor Hoff, the Groasis Waterboxx technology also allows the growth of other crops, even in rocky areas which have always left many scientists baffled trying to unravel a dose-through research for degraded lands across the world, particularly the deserts, in the hope of turning around the dust-bath ecological zones.

Professor Hoff believes that earlier trials using optimum temperatures of about 44 percent, results of desert planting can yield up to 88 to 90 percent survival. "We do not say that high temperatures can affect the seeds planted in Waterboxx, but warm temperatures and common conditions realized in desert regions can effectively sustain plants using Waterboxx technology," assures Professor Hoff.

The Sahara desert, where the first African pilot project was undertaken, reveals positive response when seeds are grown using Groasis Waterbox technology. And while this technology can be used anywhere, it is well suited in the worlds' dry areas, since it can dotter desertification and allow progressive generation of green lushes, making the land fertile and productive, despite persistent droughts," says Professor Hoff during the launch of the concept in Kenya a fortnight ago.

With implementation of the new technology kicking off in earnest in Kenya following the launch, scientists are optimistic that the new concept can further transform the deserts into a more fertile, productive and economical generating landscape.

"As of now, the results of initial demonstrations hold the breakthrough to turning our vast desert lands into an economic hub," said Professor Isaac Kigatiira, a scientist in charge of drylands and natural resource studies at African Nazarene University.

Professor Kigatiira added that through the use of Groasis Waterboxx technology, the scale of effects of desertification would be reduced significantly, pointing out that the project had a potential to creating green jobs, generation of resources and the much-sought-for solution to climate change.

"If this technology (Groasis Waterbox) is adopted on a wider scale, the country would possibly reclaim the lost forest cover as well as increasing the current fast diminishing and degraded lands in the near future," said Professor Kagitiira.



Image: Groasis

Groasis waterboxx experiments at Robert Mondavi Wineries June 2010.

“As of now, the results of initial demonstrations hold the breakthrough to turning our vast desert lands into an economic hub,” said Professor Isaac Kigatiira, a scientist in charge of drylands and natural resource studies at African Nazarene University.



Image: Groasis

Example of a Groasis Waterboxx.