

Assisted Natural Forest Regeneration – Low Cost Direct Tree Seeding in Kenya

What is a Seedball?

A Seedball is simply that - a seed inside of a ball of charcoal dust mixed with some nutritious binders. We are focusing on helping reduce the costs of planting various useful indigenous plant species (mostly trees!) in Kenya. The biochar coating of the ball helps protect the seed within from predators such as birds, rodents and insects and extremes of temperature until the rains arrive! Once soaked, the seedball will help retain and prolong a moist environment around the seed to encourage germination.

Seedballs Kenya is a collaboration between Chardust Ltd and Cookswell Jikos. Together we have researched and developed the concept for Kenyan ecosystems. Chardust Ltd. is involved with manufacture and Cookswell Jikos Ltd. is involved with sales, marketing and distribution.



The history behind the concept:

Cookswell Jikos has been involved with dry land forestry projects with the Woodlands 2000 Trust in Kajiado/Kitui and Narok County. After many years of growing various types of trees we began to focus on indigenous acacia trees due to their resistance to drought, pests and browsing as well as their social and ecological benefits. We came to notice that the costs of replacing certain indigenous trees lost to charcoal making in dry areas of Kenya became cost prohibitive on the larger landscape scale.



The Woodlands 2000 Trusts Woodlot – 15 years after establishment.



High woodlot establishment costs of seedlings, hole digging, irrigation, weeding etc. Our average cost per tree planted was 40ksh per tree.



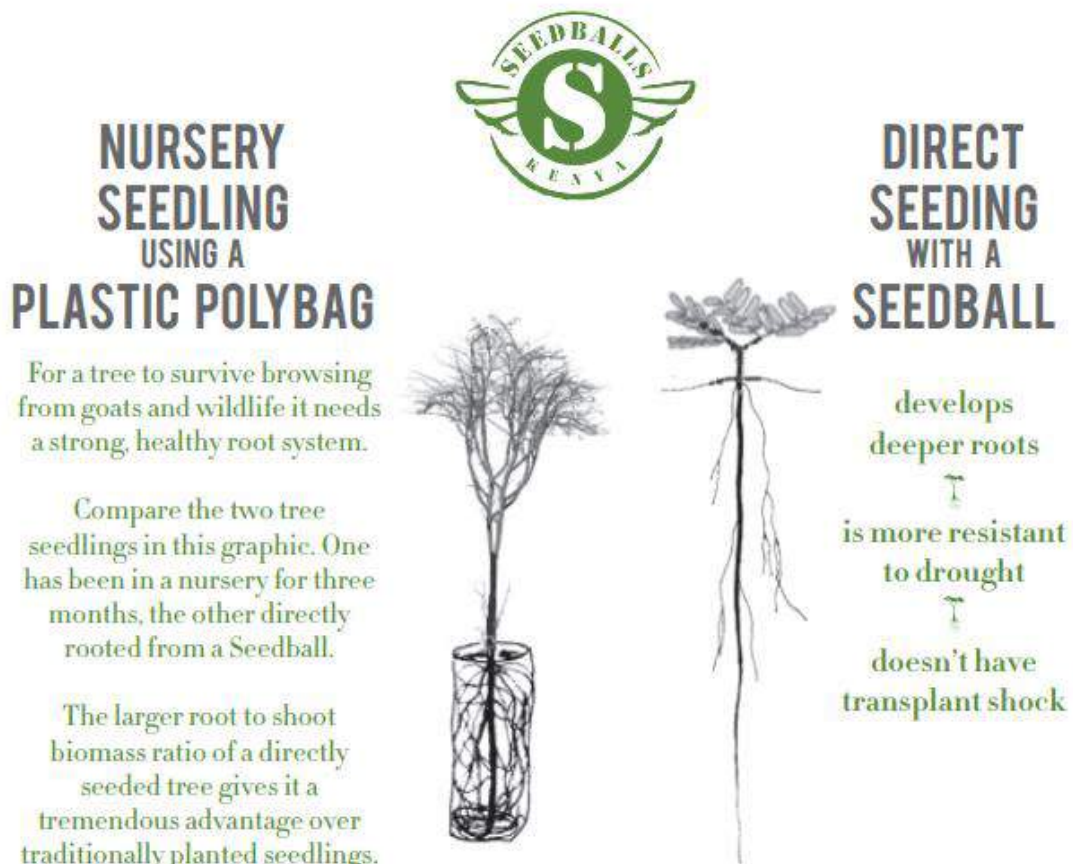
Around 2012 we started to notice 'wild' acacia trees of the same variety we were planting on our woodlot growing on the side of the highways around Kenya with zero care and zero intentional input from any foresters.



We discovered that they were growing from seeds inadvertently blown off by the wind from the back of trucks bringing river sand with tree seeds in it into the cities around Kenya.



We then began to research direct seeding of acacia trees and found out that growing trees in dryland areas has enhanced benefits for the tree because it allows for a natural root system establishment as show below



A root from a directly sown seed (top) vs. a tree seedling from a plastic bag (bottom)

Why the protective coating?

We found that broadcast seeding (zero till) of orthodox seeds were prone to predation from mice, insects and birds and that the use of a seed coating was necessary.



We use vendor's waste charcoal dust as our seed coating as charcoal dust is an excellent inert, nontoxic plant growth medium and it would help close the rural-urban charcoal energy supply cycle. Some of the piles of charcoal dust in Nairobi date back almost 100 years as evidenced by old coins we have found in at the bottoms of the piles.





Growing new acacia trees from the waste dust of long dead acacia trees.

How and where to distribute seedballs?

Distributing seedballs can be done using very many numerous methods, we advise to consider the cost and time spent on each option given the location you would like to grow trees in. Below are a few examples.

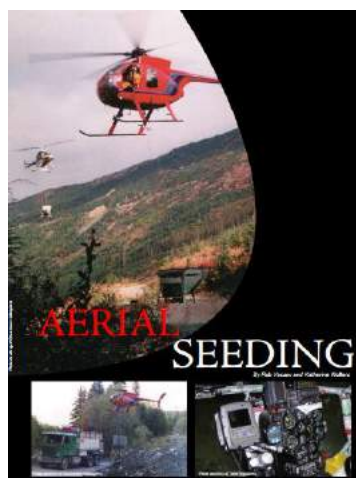
By slingshot or by hand:



Using livestock



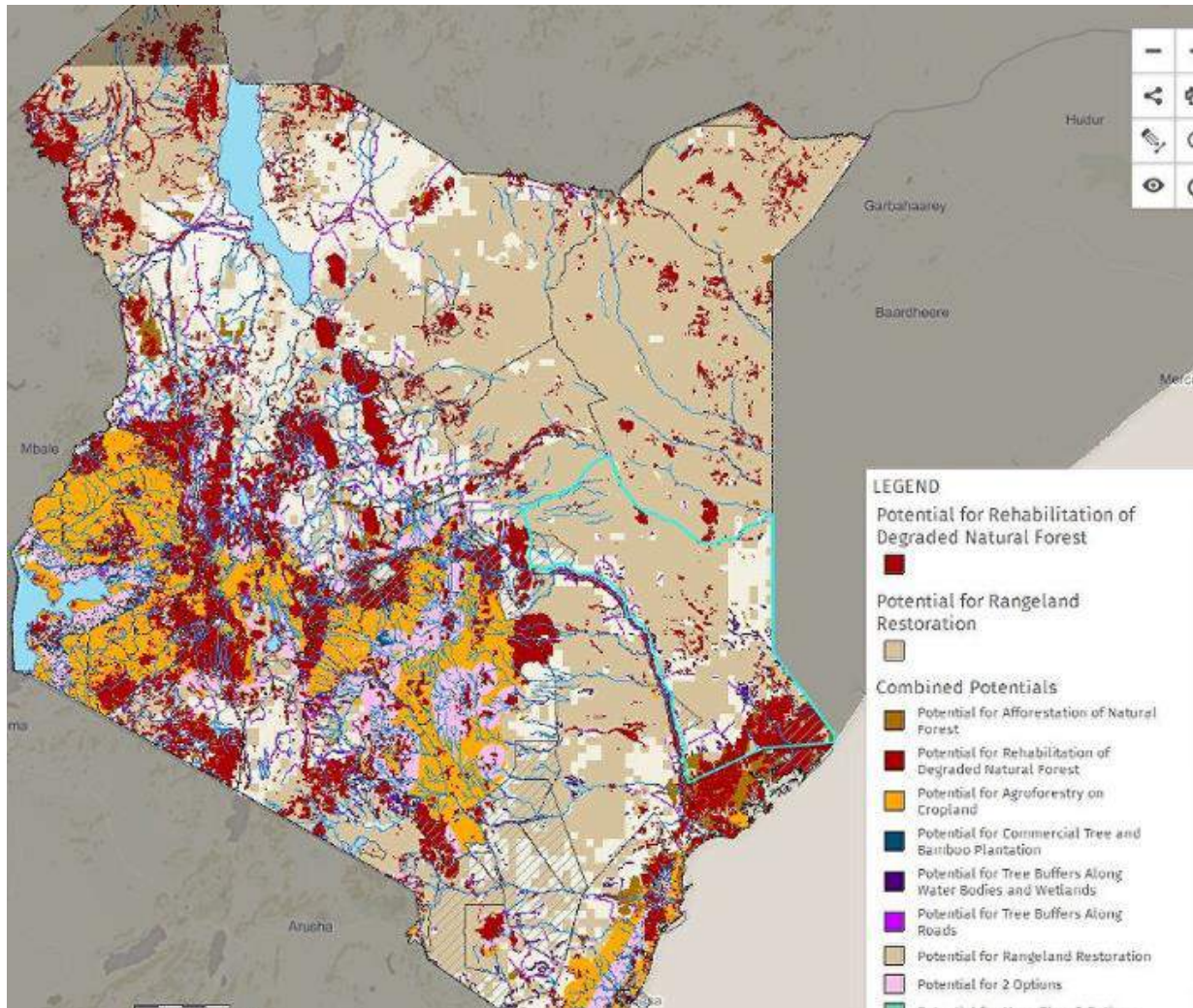
Aerial seeding tests Kajiado, Kenya 2018



Aerial tree seeding in Canada

Where to distribute seedballs in Kenya?

We recommend using one of the many reference maps from the Kenya Forest Service and the World Agroforestry Center as well as engaging with local communities on species adaption, viability and social and economic acceptance to the areas they will be grown in.



Some examples of direct sowing using seedballs around Kenya.



November 2017 – Matuu, Machakos County.



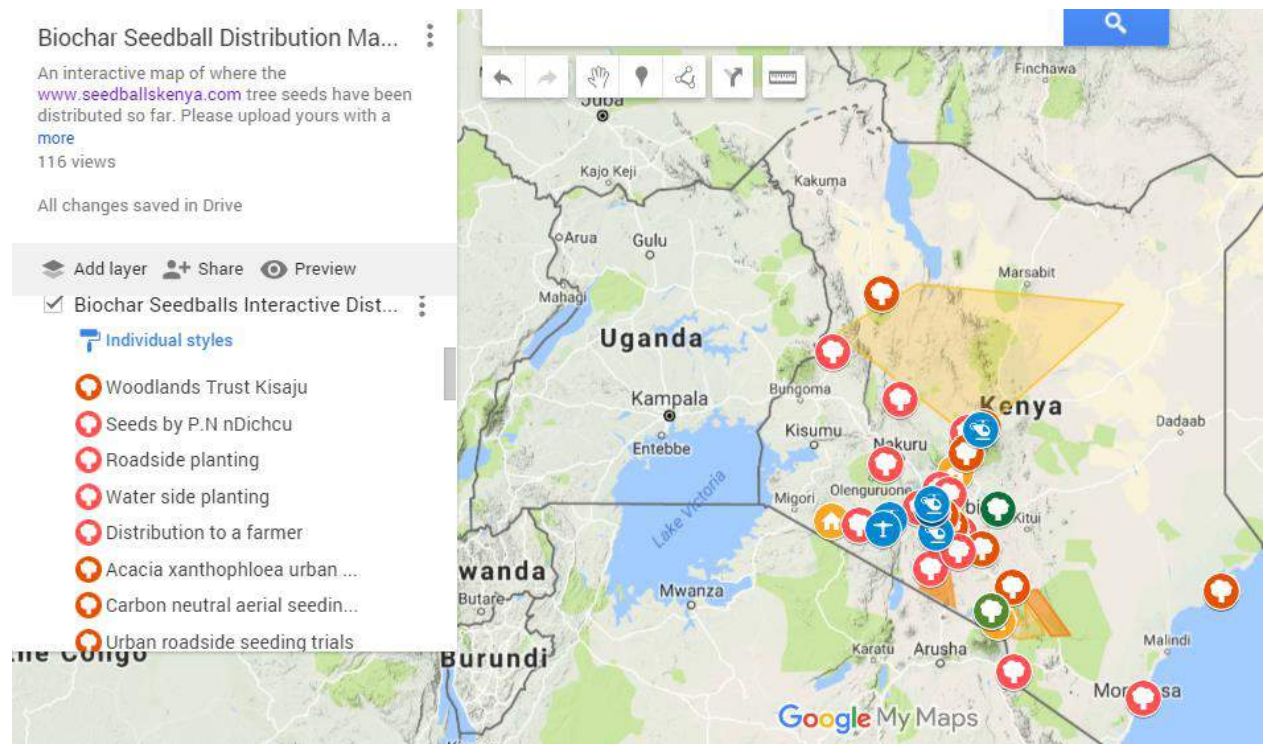
June 2018 - Matuu, Machakos County



May 2017, Kajiado County, Mile 46



July 2018, Kajiado County Mile 46



National Seedball Distribution Map.