



Outstanding Practice in
AGROECOLOGY 2019



FACTSHEET

Kenya – Drylands Natural Resource Center (DNRC, 2007)

IN BRIEF

The Drylands Natural Resource Center (DNRC) works with over 600 smallholder farmers in Kenya, in order to enhance income generation, build social capital and provide food security/sovereignty. Under its Tree Nursery Programme, over 100,000 tree seedlings are planted in drylands per year and the Training and Outreach Programme educates especially schoolchildren and farmers on agroecological techniques by means of shared learning and the DNRC demonstration farm. The Rainwater Harvesting Programme installed 90 water cisterns each of 10,000 liters in schools and households providing clean, available and secure drinking water to over 1,800 children and parents. The practice has grown from 27 farmers in 2007 to 600 today. DNRC has been asked by two Catholic organisations, Trócaire and Fastenopfer to train their staff in their technique so that they can help to spread it around Kenya.

ABOUT THE PRACTICE AT A GLANCE

Organisation: Drylands Natural Resource Center (NGO)

Implemented in: Makueni County (Kenya)

Year: 2007

Beneficiaries: 600 households (total about 3,600 people); 6 schools (total number of schoolchildren about 1,800)

Topic(s): Production, processing, consumption, agroforestry, water

PROBLEMS TARGETED / CONTEXT

In Kenya, drylands account for 89% of Kenya's total land area and 36% of the population depend on them. Drylands, especially drylands in Africa, face a confluence of challenges including climate variability, frequent drought, natural resource degradation, declining agricultural productivity, and high population growth. To address the challenges of deforestation, falling crop yields, economic breakdown, community degradation and climate change, DNRC equips small-scale subsistence farmers in drylands to restore their fragile and degraded lands.

Founded and led by Kenyan national, Nicholas M. Syano, the Drylands Natural Resources Centre (DNRC) is a locally registered NGO since 2008. It was started as a case study to see how dryland issues in terms of food insecurity, environmental regeneration and community building can be improved. DNRC works with small-scale farmers in arid and semi-arid areas (drylands) of Kenya to promote sustainable development of natural resources, in order to bring about improved livelihoods of the marginalized communities and their inhabitants.

KEY FEATURES OF THE SOLUTION

DNRC's main goal is to transform drylands into functioning agricultural land in order to ensure food security for those that depend on dryland areas. Its objective is to deliver an ambitious programme of long-term community engagement, in which families restore their land through the application of agricultural and agroforestry best practices guided by permaculture and agro-ecological methods that increase crop yield, improve soil and water resources, generate valuable timber and non-timber tree products, adapt and mitigate climate change and bring the community together. Therefore, the main stakeholders are small-scale farmers and their families, marginalised communities and schools.

Farmers are highly involved in this practice: The 600 farmers are organized in 13 groups and each group has officials, who are democratically selected and represent the group's issues to the monthly summit. The summit meets with DNRC management and democratically makes decisions on the projects every month. All farmers together with DNRC make sure they follow the implementation. Any challenges experienced are reviewed for effective changes at the next summit. All the 600 farmers also meet at least once per year. Moreover, a board of trustees composed of farmers' representatives is majorly involved in decision-making, together with DNRC.

Within this framework, the DNRC carries out various programmes: In the Tree Nursery Programme more than 100.000 seedlings (comprising more than 30 different local species, but mostly papas trees) are raised and distributed to farmers during rainy season to save water.

In the Training and Outreach Programme, extension officers train farmers continuously on how to plant the seedlings and on permaculture. Trees are raised from January to October, through a process, which involves an extension officer finding farmers able

to plant, who prepare the holes and wait for rains to plant trees. Once rain comes, an announcement made to all farmers to collect seedlings. To enhance food security and sovereignty, DNRC issues diversified fruit trees to farmers as well as trains them to start agroecological food production project, which is more working with nature than against it and helps them to plant indigenous and drought resistance diversified food crops and fruit trees. DNRC also works with six schools and teaches children how to plant trees. Training is done through shared learning, regular formal trainings at DNRC demonstration farm, DNRC's organic kitchen garden, focus groups, farm visits and educational programmes and open days.

The Rainwater Harvesting Programme sets up rainwater cisterns, ensuring clean water for the farmers and their community. The cisterns are installed by the community in solidary groups hence creating a sense of solidarity and work and promoting community cohesion. Water is shared.

To help farmers to diversify their sources of income, promote indigenous knowledge, strengthen social capital, and help achieving food security and sovereignty, DNRC promotes value addition especially Moringa powder, green charcoal production, local chicken production, kitchen gardens for sale of vegetables, basketry, carvings and timber and non-timber products which promote circular economy. They also sell moringa seeds to external markets and the sale of products is used for income to the farmers and for sustainability of the organization. DNRC is providing in particular training in business development especially handmade baskets and carvings among the farmers. Traditional baskets are sold to Kenyan people (as plastic was banned in Kenya) or sometimes exported to the USA. These are made of locally grown sisal fibre plants and the older generations teach younger generations how to make them, facilitating knowledge exchange. DNRC has also started to promote Kamba housing technique (cob) to build accommodations - a technique, which is cheap, environmentally suitable and labour intensive thus providing employment. DNRC now partners with Permaculture Research Institute Kenya and LUSH to develop Moringa oil production.

Finally, yet importantly, DNRC is keen on building social capital of the community. Together with the farmers, we organize two get-togethers per year whose major reason is to cook, serve each other, eat, socialize and dance Kamba traditional music, which help the community cohesion.

INNOVATIVE ASPECTS

- Holistic approach to sustainability, balancing environmental, economical and social aspects.
- Promoting various local tree species that increase biodiversity, food security and diversity of market products.
- Guided by permaculture ethics, agroecological principles, inclusivity, brotherhood, gender equality, equity, hard work, accountability and transparency.
- Ensures high farmer-involvement in management and decision-making.

FACTS & FIGURES

- Over 100,000 tree seedlings of over 30 different local species planted each year, species ranging from indigenous timber trees, fodder trees, fruit trees, aesthetic trees and bushes among others.
- The survival rate of planted trees is 80%.
- Involves 600 farmers. Most of them have planted between 100-200 trees on at least ¼ acre to 1 acre.
- Installed 100 rainwater cisterns each of 10,000 litres at farms and schools, each costing USD 1,200 (funded through fundraising activities) and benefitting around 1,900 people.

OUTCOME, IMPACT & EFFECTIVENESS

- DNRC has now expanded to seven communities in and around the town of Mbumbuni, the headquarters of the Mbooni East Constituency in Makueni County, Kenya.
- Strengthening local economies by increased and diversified income of farmers that ranges from sale of firewood from the pruned trees, sale of moringa powder, oil and seeds, aloe vera, sale of both baskets and carvings. One farmer makes on average 6,000 KShilling (\$60) twice a year from trees. A tree of 3 years gives 20 kg of firewood, twice a year. Moringa & mpopo can be harvested within a year.
- Reversed vicious cycles of deforestation, soil erosion, and farm collapse by planting of 34 indigenous trees that increased ground cover in the region (aiming at least 5 % wood cover) and slowly build soils. Improved microclimate increases food production. More water retention. Biodiversity.
- Improved health through clean water from rainwater harvesting.
- Bigger community strength and ownership, empowerment.

OUTLOOK, TRANSFERABILITY, SCALABILITY & COST-EFFICIENCY

DNRC started its work with only 27 farmers in 2007. Since 2007, this number has grown to over 600 smallholder farmers proving scalability. Hence, DNRC is a living testimony that can be replicated in other regions with drylands. They wish to reach 1,000 farmers and start an agro-processing programme to sustainably add value to tree and non-tree products in the near future. The catholic organizations Trócaire and Fastenopfer asked DNRC to train their staff so that they replicate its practices in other areas in Kenya and beyond.

The practice is funded through global crowd funding, donations from supporters and in-kind work of farmers. Currently the project has an annual budget of USD 20,000 (having risen from USD 5,000 in 2009) and 40 % is self-financed. Expenses include seeds (USD 0.03 per seedling charged to farmers, they can pay in kind), pots, fuel for transport (furthest distance is 70km), personnel costs, water for donkeys, overheads. DNRC's sources of income ranges from sale of eggs, sale of green charcoal, sale of chicken, sale of vegetables, sale of milk and paid consultation trainings to outsiders.

The major challenges DNRC faces to upscale the practice further is lack of water (dependency on the seasonal Waani river where they fetch water manually with donkeys), transport of produced materials such as firewood and seedlings, and lack of financial resources necessary to employ more personnel (at the moment there are only two outreach officers). Technology would be specifically helpful in the form of advertisement (e.g. social media), GIS/GPS tracking and computers to ensure better record keeping.

INTERVIEWEE FEEDBACK

Number of points: 22.5 out of 23

Summary: The practice scored excellently across all future justice principles, receiving full marks, only losing 0.5 points for its current (but shifting) reliance on external funding.

1 (Sustainable use of resources) – 5.5/6 – The interviewee provided profound on the activities and future expansion plans of DNRC. The practice scored very well across all 7 Principles, however half a point was removed for its partial reliance on external funding.

2 (Equity and eradication of poverty) - 4/4 – The practice diversifies the activities of farmers (trees, farming, baskets, etc.), which increases their resilience. Furthermore, it works with 60 % of women and with 1,800 young people in schools. Promotes processing for value addition and market access.

3 (Precautionary approach to human health, natural resources and ecosystems) - 2 / 2 – Combines the restoration of biodiversity and indigenous species, water conversion with an agro-ecological approach. In addition, the staff at the centre, trained in permaculture, informs farmer proactively about risks and takes their views into account.

4 (Public participation and access to information) - 3/3 – The DNRC is open to everyone; indeed farmer's often take their relatives there, universities and organizations (even international) regularly come to visit the site. As for the co-creation of knowledge, the old generations teach the younger ones how to make baskets, preserve seeds and cook local food.

5 (Governance and human security) 3/3 – Farmers are involved in the decisionmaking process. Indeed three farmers are included in the DNRC board, the 600 farmers have 10 representatives, who take decisions in monthly summits, and at two annual meetings all farmers participate.

6 (Integration, interrelationship- human rights, social, economic and environmental objectives) - 3/3 – Environmental regeneration, income generation and community strengthening are the backbone of practice. Among the main achievements are the improvement of microclimate, of soils, of community water sinks, and of biodiversity. Furthermore, there is a better social cohesion and that people have more hope for the future.

7 (Common but differentiated obligations) - 2/2 – Practice is appropriate to region and doesn't place inappropriate burdens on vulnerable people.

CONTACT

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LINKS AND FURTHER READING

Permaculture Research Institute Kenya: http://pri-kenya.org/?page_id=234

Kuli Kuli (2014), Partner Campaign: <https://www.kulikulifoods.com/dnrc>

Global Giving: <https://www.globalgiving.org/projects/drylands-natural-resources-and-forestry-centre-kenya/#menu> <https://www.globalgiving.org/pfil/8654/projdoc.pdf>