Equator Initiative Case Studies
Local sustainable development solutions for people, nature, and resilient communities

KIJABE ENVIRONMENT VOLUNTEERS (KENVO)
Kenya

Empowered lives.
Resilient nations.
Local and indigenous communities across the world are advancing innovative sustainable development solutions that work for people and for nature. Few publications or case studies tell the full story of how such initiatives evolve, the breadth of their impacts, or how they change over time. Fewer still have undertaken to tell these stories with community practitioners themselves guiding the narrative.

To mark its 10-year anniversary, the Equator Initiative aims to fill this gap. The following case study is one in a growing series that details the work of Equator Prize winners – vetted and peer-reviewed best practices in community-based environmental conservation and sustainable livelihoods. These cases are intended to inspire the policy dialogue needed to take local success to scale, to improve the global knowledge base on local environment and development solutions, and to serve as models for replication. Case studies are best viewed and understood with reference to ‘The Power of Local Action: Lessons from 10 Years of the Equator Prize’, a compendium of lessons learned and policy guidance that draws from the case material.

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PROJECT SUMMARY

Kijabe Environment Volunteers (KENVO) has worked with rural communities on the Kikuyu Escarpment in Kenya since 1996, with a primary focus on forest conservation and reforestation in response to human pressures on the escarpment’s forests. The organization has evolved beyond this initial focus, however, into a flexible delivery mechanism for donor-funded interventions and a powerful vehicle for holistic local development.

The current range of activities includes selling affordable fuel-efficient stoves to poor farming households; distributing mosquito nets to combat increased incidence of malaria in escarpment communities; encouraging bee-keeping and fish-farming as alternative livelihood activities for farmers; facilitating conflict resolution over water access between local tribes; a comprehensive environmental education program; and developing ecotourism through the creation of an eco-lodge in partnership with a local Maasai tribe.

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KEY FACTS

EQUATOR PRIZE WINNER: 2008
FOUNDED: 1996
LOCATION: Kimende, Kenya
BENEFICIARIES: Rural communities of Kijabe
BIODIVERSITY: Kereita Forest
With the objective of conserving Kenya’s natural habitats and biodiversity, Kijabe Environment Volunteers (KENVO) provides local communities with the information, education, and resources they need to advance environmentally-friendly businesses. KENVO has been active in the Kijabe area of the southern slopes of the Aberdares since 1996, working to combat the degradation of forests on the Kikuyu Escarpment. These are home to indigenous tree species from the Croton, Olea, and Prunus Africana families, as well as varieties of Blue Gum. The forests are also habitats for many species of bird, Sykes’ and Black and White Colubus Monkeys, and elephants. The escarpment itself overlooks the Rift Valley floor, approximately 2,500 metres above sea level at its highest point, along the course of the Nairobi-Naivasha Highway.

The most common source of income is from small-scale agriculture. Households grow vegetables such as carrots and potatoes, and typically harvest one grain – such as maize – per year. KENVO’s main office, situated adjacent to Kereita Forest, is at around 2,400m above sea level; tea is grown at around 2,000m, and coffee at 1,500m. Much of KENVO’s work has focused on eco-agricultural initiatives, encouraging conservation practices that complement local communities’ farming livelihood activities.

**Reforestation and diversifying livelihoods**

The main focus of KENVO’s work is forest rehabilitation. A group of young activists with university educations in conservation initially united in 1996 to address the problem of deforestation in Kereita Forest, an indigenous tree species block that still serves as the central conservation area of KENVO’s work. Pressure on the forest resulted from the local communities’ practices of felling for timber and charcoal burning, as well as grazing their herds within the forested area. The education of local villages on the importance of conservation became the main aim of KENVO’s work, and led to the broad portfolio of alternative environmentally-friendly livelihoods they support today.

Agroforestry has formed a large part of this, enabled by the United Nations Environment Programme’s (UNEP) sponsorship of a Responsible Consumer Behaviour paper compensation scheme. This has supported the creation of a tree nursery at Kereita, with a second funded by Carbacid Mining Company, and a third in the grounds of a local primary school in the village of Matathia, where KENVO works in environmental education. Between them, these three nurseries produce almost 100,000 seedlings each year.

Other significant areas of work include youth empowerment, through mentoring local groups of young people and involvement in the Canada World Youth international exchange program. Community outreach is continued through workshops, and KENVO’s monthly bird-watching monitoring exercise in Kereita Forest, mostly with Kikuyu village populations along the escarpment. Giving training and financial support to grassroots community organisations for livelihood improvement projects such as bee-keeping and fish farming has helped to provide alternative sources of income for local people. Finally, an ecotourism campsite is being developed on a southern portion of the escarpment with the indigenous Il Parakwo Maasai tribe.
**Organizational structure**

KENVO membership remains open to any community members who wish to volunteer their time to combat forest degradation in and around the Kikuyu Escarpment forests. Currently, the group has more than 100 members in total, including both full-time and affiliate group members. The organization is led by an elected committee of seven figures, including two representatives from KENVO member groups, that oversees the implementation of decisions made by members and oversees long-term programs.

KENVO also has a 12-person secretariat that oversees the day-to-day running of the organization, based at the KENVO Resource Centre, near the town of Kimende, which also houses a library and lecture hall. The Centre itself was built with government funding in 2005; the recently-established district government offices are within a quarter of a mile. Kenya Forest Service (KFS) also has offices in the region, and has been a close partner of KENVO since its foundation. Representatives from KFS, Nature Kenya, a Kenya Forests Working Group, Kenya Forestry Research Institute (KEFRI), and UNEP form an advisory committee that provides expert advice to the organization’s project implementation teams.
Key Activities and Innovations

Tree planting for forest rehabilitation forms the main part of KENVO’s work, taking place at three tree nurseries. The schemes are funded by different sources, and involve KENVO volunteers, community participants, school children, and Kenya Forest Service.

Kereita Forest tree nursery

The first of these programs, based at KENVO’s Resource Centre adjacent to Kereita Forest, began in 2000, when a Nairobi-based UNEP department undertook an Early Warning Assessment to calculate their paper usage. Through a Responsible Consumer Behaviour paper compensation scheme they pledged that, for each ream of paper used, they would give KENVO the funds calculated to grow one indigenous seedling to planting height. The division initially contributed around 2,000 seedlings per year; currently there are eight divisions taking part, contributing at least 16,000 seedlings. With other private companies involved in compensating for trees they have harvested for medicinal and cosmetic research, the Kereita nursery plants around 30,000 seedlings annually.

These are mostly of one species, Croton, which has bio-diesel uses. It is also non-palatable for livestock, which is an important consideration: local communities are allowed to graze their livestock in the forest in return for a tax, as long as they follow their herds. In practice they do not, so many seedling trees are destroyed before they can grow. Another non-palatable, indigenous species planted is from the olive, or Olea, family. Greveria, or Silky Oak, is an exotic, fast-growing species, and is also planted at Kereita for commercial uses. These seedlings are sold to households at KSh5 (around USD 0.06, below the market price of KSh10) for use in agroforestry by households. This species has proven uses as animal fodder, firewood, and timber.

The Kenya Forest Service (KFS) has divided Kereita Forest into two blocks: 4,700 hectares are reserved for indigenous trees, which are protected against felling by law, while 2,600 hectares are for commercial use. This includes cyrus, pine, and blue gum trees. The nursery itself is divided into three sections, for use by KFS, KENVO, and communities. The communities are given initial capital by KENVO, in the form of seeds and pods, and they develop their own cooperative nurseries, taking cuttings from the mother trees in the forest, before selling the seedlings at planting height to KENVO. Local schools also fundraise for the cost of seedlings and volunteer at the nursery. Through these schemes, KENVO has been successful in creating incentives for reducing local practices of deforestation and charcoal burning, which had put huge pressures on the forest.

Carbacid tree nursery

The second nursery at Carbacid was begun in 2004, and is primarily funded by Carbacid mining company, which mines carbon dioxide in the area, through their “Greening Kereita Forest” project. The nursery is managed wholly by KENVO. Members of the local community volunteer to help fill potting bags for the seedlings, and are paid on an informal basis. Carbacid provides a minimum of 50,000 seedlings annually, of which 30-40,000 are indigenous. Again, these are mostly Croton and Olea, as well as Greveria, and are planted within the surrounding forest. At times when funding has not been provided by Carbacid, KENVO has funded the project independently.

Matathia tree nursery

KENVO has encouraged environmental education in Lari and Matathia Districts, through supporting the development of schools’ Environment Clubs. At Matathia Primary School, for instance, students have participated in organised clean-ups, field trips, bird-watching programs, education about indigenous and exotic tree species, and KENVO’s annual World Environment Day activities. Students have also learned about water and soil conservation, as well as the importance of waste management, through recycling programs. The school’s Environment Club, founded in 2003, has cultivated a tree nursery within the school compound, after KENVO donated Greveria seeds. This nursery, part-managed by a KENVO representa-
tive, now includes Croton, Olea, Jatropha, various Acacia types and Dobae. These seedlings have been used for the rehabilitation of the Kikuyu Escarpment: 30,000 have been planted since August 2009, with a target of 100,000, which would include ten different tree species. KENVO has also enabled the development of a school support network for the replication of this success within neighbouring districts, through KEFIBA (Kikuyu Escarpment Forest Important Bird Areas).

**Alternative livelihoods**

Apiculture has been an eco-friendly livelihood activity supported by KENVO, although the socioeconomic returns in terms of income generation are still being realized. This began in 2005 with funding from the EU's Biodiversity Conservation Programme (BCP). Since then, 150 beehives have been distributed to 10 local youth and women's groups, usually comprising of 15 members each. KENVO has also given training and donated protective harvesting gear to the groups, while on their part, the group members are expected to create the hives area, and ensure its security. The ten groups meet for joint discussions each month. One of these examples, Esibonia Youth Group, began their work in June 2009, and expect to harvest their first batch of honey by October 2010. After using a portion of the honey for their own consumption, the group intends to market and sell the product. Another group has been able to expand their activities to manage 40 hives.

Fish-farming is another area in which KENVO has given support to local groups through access to micro-loans. Kaharlu Women's Group, a women's agricultural co-operative that has worked on Kikuyu Escarpment since 1985, was given funding by KENVO to dig out a fish pond. KENVO then supplied the plastic lining and 400 tilapia fish. The women harvested 900 specimens in July 2010, and have been assisted in marketing them by KENVO. Mariculture and apiculture are being encouraged in order to further reduce pressure on the escarpment forests for livelihoods.

Finally, KENVO has initiated an ecotourism project in collaboration with the indigenous Il Parakwo Maasai people, from the southern slopes of the escarpment. The construction of lodges at Osotua Camp, Kanan, began in 2007 after participatory work with tribal leaders. Maasai representatives had originally been engaged by KENVO in beginning tree nurseries, to compensate for the effects of their livestock grazing and charcoal burning on the escarpment forests. Training was also given on forest monitoring and policing. The idea behind developing an eco-lodge was to promote the rehabilitation of these forests and to generate revenue for local education projects. This was given impetus after site visits to successful examples of Maasai community-based conservation and tourism projects, such as Il Ngwesi Group Ranch in Laikipia District. The II Parakwo Maasai and KENVO submitted a joint proposal for funding from IUCN, with further funding contributed by USAID's PACT Kenya, and a grant from the UNDP-implemented Global Environment Facility (GEF) Small Grants Programme.

The lodge and campsite will allow visitors to interact with the Maasai people, view performances of cultural dances and traditions, and to purchase artisanal handicrafts made by local people. The construction work is being undertaken alongside a tree-planting scheme in the surrounding area, with 2,500 trees planted by May 2010. Once open, the proceeds will be reinvested in developing its tree nursery, expanding the local primary school to eight classrooms, and to fund a water distribution project. In the course of its work in the area, KENVO has helped to mediate a conflict between the Maasai pastoralists and the Kikuyu agrarians from the higher slopes over access to water sources. As well as funding the project, IUCN has also provided training for the Maasai as guides to the area's wildlife, while KENVO is marketing the eco-lodge via a website. Currently the management team consists of seven representatives from KENVO and seven from the Maasai people, and meets monthly to discuss progress. The revenues from the project will help to fund KENVO’s conservation activities, and will greatly contribute to its long-term financial sustainability.
Biodiversity Impacts

There have been measurable changes in the areas of high biodiversity targeted by KENVO's work, especially in Kereita Forest. Education of the local community has successfully changed attitudes towards use of the forest, and has reduced practices such as charcoal burning. This has been complemented by the extensive tree-planting schemes at Kereita and Matathia, as well as around the new ecotourism lodge. Finally, agroforestry and the promotion of various eco-friendly businesses have reduced communities' dependence on the forest for their livelihoods.

Measuring improvements in conservation

KENVO has been able to observe these positive impacts through regular community participation in monitoring of birds, wildlife and vegetation. Annual monitoring is conducted every August in specified transects of land measuring up to one kilometre in length. Within these transects are sample plots in which the vegetation is monitored. This includes measuring the extent of canopy cover, the diameter of tree seedlings, and looking for human disturbances within the area. One notable improvement in the regenerated forest areas has been significantly higher numbers of *Prunus Africanus*, or Red Stinkwood, which has medicinal properties and is highly important to the indigenous people of the Kikuyu Escarpment. Indigenous *croton* and *olea* tree species have also been chosen for their utility for local communities, as well as being non-palatable.

Birds are also counted annually within these sample plots, as well as in monthly birding exercises. Kereita Forest is home to at least 120 bird species, including hawks, Turacos, shrikes, cuckoos, weavers, and eagles. The forest also supports a population of the endangered Abbott’s starling, leading to the forest being classified as an Important Bird Area (IBA) by Bird Life International, through Nature Kenya. One observed trend within the regenerated portion of Kereita Forest has been the return of Green-Headed Sunbirds and Red-Chested Sparrowhawks from the interior of the forest to its edge, indicative of the reduction in human activities within the forest area. Other wildlife species include both Sykes Monkey and Black and White Colobus, while the higher forest areas are also home to elephants. This has led to some human-wildlife conflicts, especially when elephants have encroached on household farm plots, so KENVO worked locally with Kenya Wildlife Service in erecting part of an electric fence around the Aberdares region.

As well as being an important area for forests and wildlife, the escarpment area forms part of the south-eastern Aberdares area, which is an important water catchment area within Kenya. Most of the water used in Nairobi, for instance, comes from the Aberdare region. In light of this, growing and planting of eucalyptus trees for commercial reasons was stopped, due to their harmful effects on water sources and soil fertility. The importance of the region for local and national ecosystem services is reflected in the involvement of other Kenyan stakeholders. Much of KENVO’s conservation work has been conducted in partnership with the local branches of both Kenya Forest Service and Kenya Wildlife Service, while data from KENVO’s monitoring exercises are sent to the National Museums of Kenya for analysis.

Socioeconomic Impacts

The chief socioeconomic benefits resulting from KENVO’s work will be seen in long-term income generation from the eco-businesses they have promoted. Over time, apiculture and mariculture activities are expected to provide a reliable source of revenue for the groups involved. Similarly, the ecotourism project will provide a source of income for the local Maasai, who plan to reinvest the profits into expanding their secondary school to eight classrooms. The tree nurseries have given families access to timber and encouraged agroforestry, thereby enhancing their livelihood prospects.
Delivering health and education benefits

In addition to these longer-term benefits, however, KENVO has also sponsored various infrastructure and health projects. Since 2005, the group has been involved in selling fuel-efficient stoves to local communities, reducing their need for fuel wood and improving health conditions in their homes. This has used the successful Jiko “Rocket” ceramic stove model, which has been sold to 300 households. Training was given to young people by experts, who then acted as pioneers in training others on how to install and use the stoves. The associated health and social benefits are especially targeted for women, who are generally the chief firewood-gatherers in households.

Matathia Primary School has benefitted from two water tanks donated by KENVO to serve their tree nurseries. Access to water is a pressing concern for many of the communities on the escarpment, and has been a priority for KENVO in several areas. At the site of their new eco-lodge, Osotua Camp, they have helped to mediate a dispute between the uphill Kikuyu agrarians and the downhill Maasai pastoralists over the use of water for agriculture and livestock respectively. By installing water tanks and pipes, KENVO has helped to resolve the problem, and ensure water security for the two tribes.

Finally, KENVO has targeted the problem of increased incidence of malaria in the communities along the escarpment. The rate of malarial infections has been increasing in recent years, which has been linked to the warming temperatures, and subsequent higher numbers of mosquitoes. Early in 2010, as part of a joint project with civil society organisations from Manitoba, Canada, 500 mosquito nets were distributed to local health centres at Lari, Kagwe, and Kereita, and to other dispensaries. The scheme was an example of community-based measures to mitigate the effects of climate change, and was made possible through KENVO’s participation in international youth exchanges.

POLICY IMPACTS

KENVO’s influence on policy changes has been growing steadily since their inception. Although this was initially limited, they have been able to have an impact through membership of national bodies such as Kenya Wildlife Service (KWS), Kenya Forests Service (KFS), a Kenya Forests Working Group, and Nature Kenya. They also sit on the District Environment Committee, and benefit from their close proximity to the local government headquarters.

Increasingly, Kenyan policies on environmental conservation are taking into account the interests of communities. For instance, the Forestry Act of 2005 enabled the creation of Community Forest Associations (CFAs), building on the introduction of Participatory Forest Management (PFM) approaches in areas of Kenya. These CFAs act as umbrella organisations for all of the various stakeholder forest user groups, and give communities a mandate to make their own decisions on conservation and the sustainable use of their natural resources. Five CFAs have been formed in five forest blocks in the district, with a further five being planned for the remaining blocks in the larger escarpment forest. This participatory approach has had some notable benefits: an example is when KFS planned to grant concessions for ecotourism ventures in some portions of the Kikuyu Escarpment. KENVO mobilised to collect opinions from local communities and communicated these to KFS; as a result, the forest service has given first priority to communities’ applications for ecotourism concessions. Participatory forest management has also allowed for the establishment of a number of usage rights within the forest for local communities.

Fig. 1: Some user rights for Kikuyu Escarpment communities

- Collection of medicinal herbs
- Harvesting of honey
- Fuel wood collection
- Grass and fodder harvesting
- Grazing
- Ecotourism and recreational activities
- Plantation establishment through the KFS Plantation Establishment and Livelihood Improvement Scheme (PELIS)
- Silviculture activities
- Seedling production and seed collection
- Butterfly, fish, and mushroom farming
- Collection of fruits, berries and vegetables
- Water abstraction
- Quarrying, laterite (murram) and ballast collection
- Extraction of woodcraft materials
- Harvesting of timber
- Development of community-based timber and non-timber industries

While these developments represent significant progress in conservation policy, obstacles remain to a model of truly participatory resource management. One example is the stifling effect of government bureaucracy, which has limited the influence KENVO can have on regional and national policy-making decisions.
SUSTAINABILITY

To date, KENVO has been able to sustain its work through the engagement of local community members, partnerships with regional and national NGOs and government offices, and funding support from international organisations. Its longer term sustainability remains a concern, however; the principal means through which KENVO hopes to ensure this is the development of ecotourism at Osotua Camp.

Volunteer support has been crucial for the maintenance of KENVO’s tree nurseries, and this has frequently involved local youth, schools, and women’s groups. This has been encouraged by the benefits offered by agroforestry, which have incentivised growing and planting tree seedlings. Meanwhile, exotic, fast-growing tree species have also been sold for profit, which has helped to fund part of KENVO’s work. Private funding has been crucial however: UNEP and Carbacid Mining Company each fund one of KENVO’s tree nurseries.

Large-scale community development projects such as apiculture, mariculture, and ecotourism, or donating bed nets or water tanks, have been enabled through funding and partnerships with the Kenyan government and non-governmental sources. The eco-lodge and campsite at Osotua, for instance, has been supported by USAID through PACT Kenya, the GEF Small Grants Programme, and IUCN, who assisted in the initial marketing efforts.

KENVO’s relationship with Nature Kenya has been developed through their association with BirdLife International, after Kereita Forest was designated as an Important Bird Area (IBA). A new forest rehabilitation scheme called “Tupande Pamoja” has been planned by KENVO, which will involve corporate sponsors buying tree seedlings from local communities to replant forests.

KENVO has worked with Kenya Forest Service (KFS) on project implementation committees in the Kereita Forest area, and KFS has also been instrumental in conducting forest surveys and monitoring. Kenya Wildlife Service (KWS) collaborated with KENVO to construct a wildlife fence within the Aberdares region to prevent wildlife incursions. Finally, the Ministry of Agriculture has helped to implement fish-farming projects, as well as bee-keeping and tree nurseries, targeting food security issues. These relationships have been fundamental to the group’s sustained impact, as has their participation in the District Environment Committee, District Development Committee, District Security Committee, and District Education Stakeholders’ Forum.

Long-term financial stability is an important challenge for KENVO, however, and this will rely on revenues generated by their ecotourism initiative. This would provide a reliable source of funding for their development projects, and would allow them to scale up their successes.

REPLICATION

KENVO has been able to act as an influential model for forest conservation through its role as a Site Support Group (SSG) with Nature Kenya and BirdLife International. It has hosted other groups from Important Bird Areas (IBAs) in Kikuyu, Kakamega, and Laikipia, who have learned from KENVO’s initiatives. Together these groups form a national network for bird conservation, and meet at an annual forum hosted by Nature Kenya.

Within the Kikuyu Escarpment, there are other projects based on KENVO’s model. Through their extensive mentoring work with youth groups, they have been able to train pioneers who implement the lessons learned and best practices in their own communities. In particular, many of these groups similarly focus on forest monitoring.
PARTNERS

- Nature Kenya
- Kenya Forests Working Group
- Ecotourism Kenya
- Carbacid Mining Company
- IUCN (International Conservation Union)
- PACT Kenya (through USAID)
- UNDP GEF Small Grants Programme: Small Grant Recipient 2009-2011
- Kenya Wildlife Service
- Kenya Forest Service
- United Nations Environment Programme
- Kenya Forestry Research Institute (KEFRI)
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The Equator Initiative brings together the United Nations, governments, civil society, businesses and grassroots organizations to recognize and advance local sustainable development solutions for people, nature and resilient communities.

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