



MULIRU FARMERS CONSERVATION GROUP

Kenya



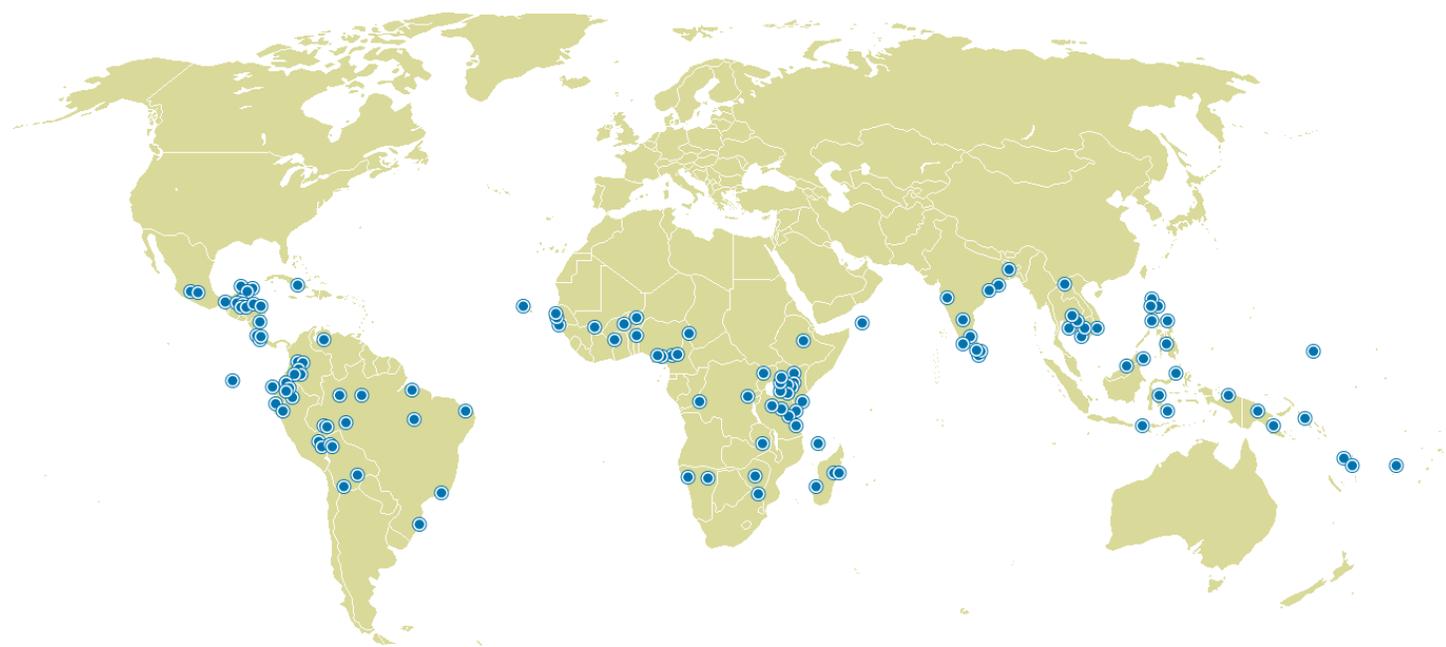
Equator Initiative Case Studies

Local sustainable development solutions for people, nature, and resilient communities

UNDP EQUATOR INITIATIVE CASE STUDY SERIES

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

Muliru Farmers Conservation Group is a community-based organization located near Kakamega Forest in western Kenya. The group generates income through the commercial cultivation and secondary processing of an indigenous medicinal plant, to produce the Naturub® brand of medicinal products.

The enterprise reduces pressure on the biodiverse Kakamega Forest by offering an alternative to the exploitation of forest resources, while the commercialization of the medicinal plant has heightened local appreciation of the value of the forest's biodiversity. Over half of the project participants are women and 40 per cent of participants rely entirely this initiative for their income. A portion of the enterprise's revenues are invested in forest conservation and biodiversity research.

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KEY FACTS

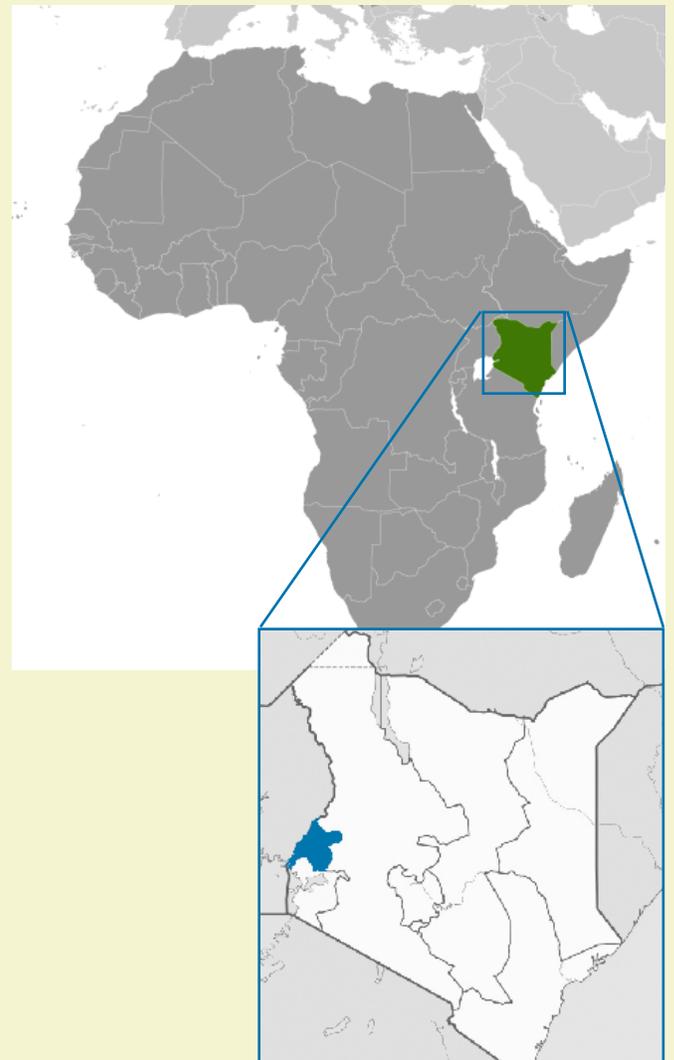
EQUATOR PRIZE WINNER: 2010

FOUNDED: 1997

LOCATION: Western Province, Kenya

BENEFICIARIES: 360 households

BIODIVERSITY: Kakamega Forest



Background and Context



Kakamega Forest is the last surviving rainforest in Kenya. Located in the country's Western Province, it is home to a unique variety of ecosystems and diversity of flora and fauna. The forest is a cornerstone of local livelihoods, income and wellbeing. The forest provides timber, fuel wood, fodder, building materials, and medicinal plants. It contains watersheds that provide surrounding communities with fresh water, and sustains what is in essence a natural resource-based local economy. Like many forest ecosystems, however, Kakamega is under threat from population growth, local economic pressure, and extractive industries. The forest is being pushed beyond its natural limits and is steadily being degraded. Human population density around the forest is as high as 1,200 people per square kilometer. High levels of poverty have led the 35,000 households in adjacent communities to overexploit the forest resources, with timber and non-timber forest products being harvested in an unsustainable manner.

Ocimum kilimandscharicum - a potent remedy

One species endemic to Kakamega Forest is *Ocimum kilimandscharicum*. This indigenous medicinal plant has been used by the local population for generations, notably for the treatment of cold, flu and coughs. *Ocimum kilimandscharicum* leaves contain essential aromatic oils. The leaves were traditionally added to boiling water to release an aroma which was useful in the treatment of respiratory problems and ailments when inhaled by the patient. The local population also used the plant as a mosquito repellent, a source of nectar for bees in apiculture, as a flavoring agent, and to protect stored grains from pests and insect infestation.

The Muliru Farmers Conservation Group formed in 1997 with a vision of sustainably cultivating *Ocimum kilimandscharicum* as a means of conserving the Kakamega Forest and offering forest-adjacent communities an alternative income source. The initiative combines traditional knowledge with modern science and technology, and brings together a diverse partnership – rural farmers, research institutes and the private sector – to harness the commercial value of this me-

dicinal plant. The organization works with local farmers to develop purified extracts of *Ocimum kilimandscharicum* which are developed into products under the brand Naturub®. The brand has been formally registered as a medicine in Kenya and is marketed as a treatment for flu, cold, chest congestion, aches and pain, insect bites, and muscular pain.

The organization has four primary objectives:

- i. Promote the commercial cultivation of *Ocimum kilimandscharicum* among the resource-poor communities living adjacent to Kakamega Forest;
- ii. Create revenue for the local community by processing *Ocimum kilimandscharicum* plant material, and producing and marketing Naturub® products;
- iii. Raise awareness about the value of conserving the Kakamega Forest; and
- iv. Stimulate the participation of forest-adjacent communities in conservation activities.



Key Activities and Innovations



The Muliru Farmers Conservation Group mobilizes communities living adjacent to the Kakamega Forest to cultivate *Ocimum kilimandscharicum*. As a high-value commercial crop, the medicinal plant is an appealing livelihood option for the otherwise economically marginalized local farmers. Training is provided on domestication and processing. The plant is harvested by cutting the stems at the base, and then plucking the leaves. Processing to extract the essential oil was previously undertaken on a small scale basis, mainly at the household level. In 2005, however, Muliru built a centralized processing facility. Farmers are supported to gather the *Ocimum kilimandscharicum* leaves and then transport them to the processing facility. At the processing facility, the plant material is weighed and dried. Dried leaves are processed using hydro-distillation equipment, which produces essential oils. The purified essential oil is used in the production of Naturub® balms and ointments.

Production and marketing of Naturub

Since the processing facility opened, over 770 tons of community cultivated *Ocimum kilimandscharicum* leaves have been processed and over 700 kg of essential oil have been produced. Over 400,000 units of Naturub® products have sold in both urban and rural areas of Kenya. The products have received wide acceptance in the market and are competitive with major international brands. Total revenue from the project thus far has been over USD 70,000. Currently, over 360 rural households cultivate the plant on smallholder farms. The acreage under *Ocimum kilimandscharicum* cultivation has increased by 700%, from 2.5 hectares in 2005 to 20 hectares in 2010.

In addition to producing and marketing Naturub® products, Muliru Farmers Conservation Group offers workshops on biodiversity conservation and alternative livelihood solutions based on sustainable natural resource management. It also operates several indigenous tree seedling nurseries, which are used for on-farm planting, reforestation, and agroforestry trainings.



The most noteworthy innovation of the project is a new brand of registered medicine, developed and commercialized by local communities. Not only is all cultivation of the plant community-driven, the processing facility is fully owned, operated and managed by local farmers. In addition to improved livelihoods, local community members have attained new knowledge in modern science and technology, industrial processing and production, and entrepreneurship, including in sales, marketing and management. The initiative effectively combines traditional knowledge with modern science and technology, and is an effective model of a multi-stakeholder partnership.

Organizational structure

The Muliru Farmers Conservation Group is led by a Management Board comprising a Chairperson, Vice Chairperson, Secretary, Vice-Secretary, Treasurer, Organizing Secretary, and four Committee

Members, each of whom is elected by the group's member farmers for multiple-year terms. The board is the highest governing authority within the management structure of the MFCG medicinal plant enterprise, and is tasked with selecting, evaluating, and approving appropriate compensation for the enterprise's Overall Supervisor. The primary responsibility of the board is to protect the farmers' interests and ensure they receive a decent return on their produce. The Overall Supervisor, in turn, oversees the day-to-day running of the enterprise, including human resource management, planning, financial and physical resources management, fundraising, and providing a link between the organization's staff and the Board.

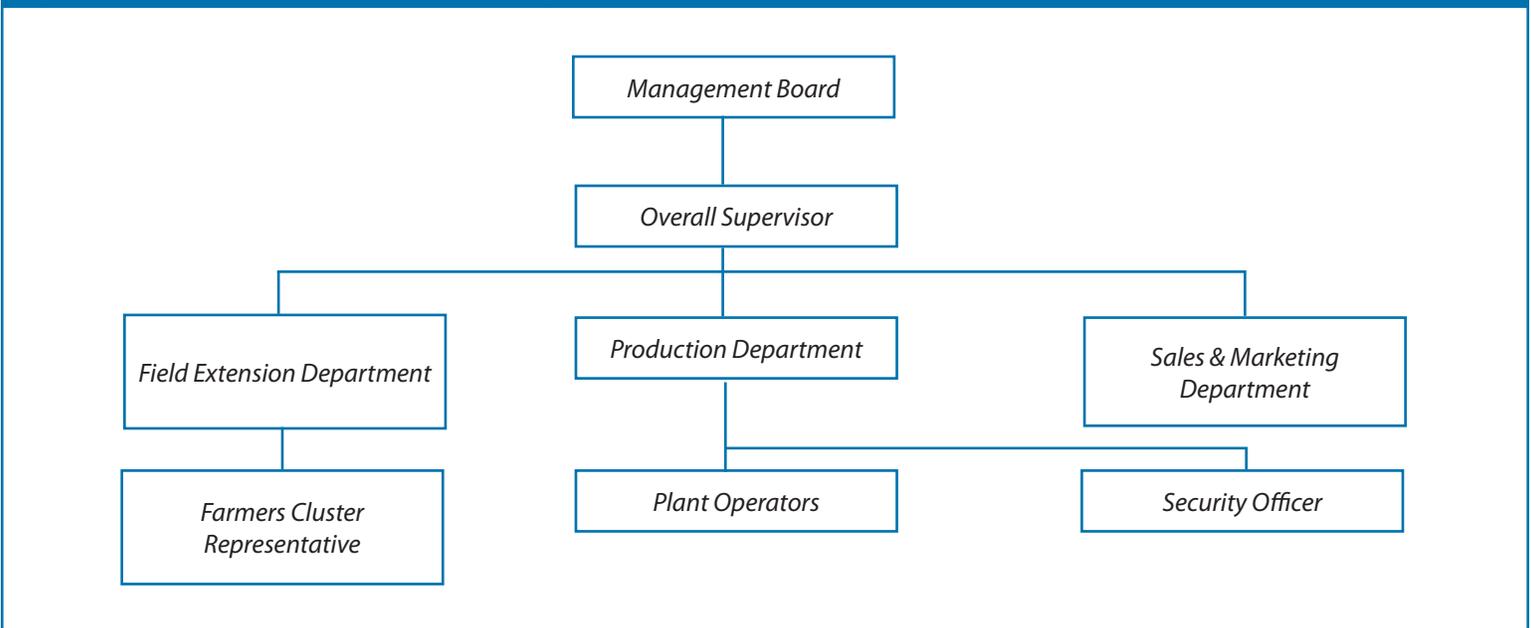


The initiative's Field Extension Department provides initial training to farmers and links them to the Muliru enterprise. The department guarantees the quality of the raw materials used in processing, and ensures that farmers are paid a fair price for their produce. They also assist farmers in preparing farm plans and record keeping. The Production Department, meanwhile, links the enterprise with private partners in out-sourcing some of the production services that the enterprise cannot undertake.

After processing, Muliru's products are marketed by the initiative's dedicated Sales and Marketing department. Through this office, the organization has partnered with private marketing companies to undertake packaging design, market surveys, advertisements, and the distribution of products to different retailers. Through these partnerships, MFCG has been able to engage with large Kenyan retail chains such as Uchumi, Nakumatt, and Tusky's Supermarkets.

Finally, the group works at the local level through three organizational units. The Farmers Cluster Representatives work on behalf of small clusters of farmers, representing their views during planning meetings. The Plant Operators are responsible for the initial distillation of essential oils from the raw plant materials. Nine youths – four female and five male – were trained in essential oil distillation using hydro-distillers. They have since acted as "Trainers of Trainees", passing on training to others in the operation and facilitating training of schools and colleges that visit the enterprise. Finally, the group's Security Officer is responsible for maintaining and safeguarding the enterprise's properties, liaising with the provincial administration in matters of security and reporting to the overall supervisor.

Fig. 1: Muliru Farmers Conservation Group organizational structure



Source: Muliru Farmers Conservation Group.

Impacts



BIODIVERSITY IMPACTS

The main biodiversity impact of the project has been the conservation and sustainable use of the Kakamega Forest, protecting its estimated 380 plant and 350 bird species. As well as improving local attitudes to conservation of the forest, Muliru's sustainable harvesting of *Ocimum kilimandscharicum* has been undertaken as part of the devolved sustainable management of the forest under the Mwileshi Community Forest Association.

Mwileshi Community Forest Association

Kenya's central government authority responsible for management of the country's forests, Kenya Forest Service (KFS) is in the process of developing participatory forest management plans for areas across the country in close consultation rural communities. Communities are able to partner with KFS and local county councils in the form of Community Forest Associations (CFAs) registered under the Societies' Act, who can sue or be sued. CFAs enter into agreements with KFS for management of a forest under a management plan. Kakamega was among three forests in Kenya selected to pilot collaborative forest management between local communities and the Forest Department – this led to the formation of the Mwileshi CFA, registered in June 2009 with an initial 25 forest user groups (these have since grown to 31.) These groups include all community-based organisations around the forest involved in conservation activities, including the Muliru Farmers Conservation Group.

The association is predominantly involved in the management and conservation of Kakamega Forest, which includes maintaining an indigenous tree nursery and active afforestation; 10,000 seedlings were planted in September 2010 alone. They conduct their activities according to the Kakamega Forest Management Plan. The association is also involved in sensitizing communities on conservation, monitoring the forest condition, monitoring activities carried out by member groups, training groups in nursery management, develop-

ing ecotourism, and assisting in forest policing, while environmental education is largely carried out by Muliru Farmers Conservation Group in partnership with local primary and secondary schools through the Kakamega Environmental Education Programme.

Changing attitudes to conservation

Based on surveys conducted by Muliru, of the 360 households participating in cultivation of *Ocimum kilimandscharicum* over 85 percent participate in forest conservation activities. The survey, broken down by activity, finds: 49 percent promote conservation awareness among other community members; 59 percent have reduced their collection of firewood, fodder and timber; 37 percent have deterred other community members from misusing forest resources; 5 percent have reported poaching and illegal forest activities to local authorities.

The harvesting of *Ocimum kilimandscharicum* is environmentally friendly. Plants are able to regenerate naturally and the community has a source of income that does not damage or degrade the forest. In addition to reducing local dependence on unsustainable extractive activities, the initiative has been successful at improving local awareness about the threats to Kakamega Forest and the importance of conserving biodiversity. Naturub® products bear a distinctive message on their packaging regarding biodiversity conservation.

SOCIOECONOMIC IMPACTS

Muliru activities cover five districts in the vicinity of the Kakamega Forest, with a total participating population of roughly 2,500 community members, or 360 households. This is an economically marginalized community with few livelihood options. Over 40 percent live below the poverty line and over 30 percent of households own less than 0.4 hectares of land, an important statistic in an economy where land is tantamount to earning capacity.

The Muliru Farmers Conservation Group has positively altered the local economy, providing greater employment and income-generation opportunities. Eight community members are employed on a full time basis to operate the initiative. Day-to-day management needs include field supervision, quality control, and oil distillation. More importantly, the on-farm cultivation of *Ocimum kilimandsharicum* has created nearly 900 jobs for smallholder farmers. To date, over 400,000 units of Naturub® have been sold. The product is available in major national store chains such as Uchumi, Tusky's Mattresses, and Eastmatt. It is also available in other outlets in Kenya, such as shops and chemists. Participating community members receive a share of revenues from Naturub® products three times a year, and have increased their income by an average of 300 percent since the initiative began.

Spillover benefits

There have also been a number of secondary benefits of Muliru's work. Based on surveys conducted by the organization, 31 percent of participating community members have used income generated from the project to start small businesses that provide an additional and needed source of income. Additionally, 83.5 percent use their

income for food security needs; 57 percent to cover school fees; 26 percent to purchase clothing; 17.5 percent to buy livestock (an additional source of income); and 7.65 percent have invested in housing renovations. Hands-on training and workshops are provided by private sector and relevant NGO partners, which has also given community members new and marketable skills.

The initiative has equally been a source of community empowerment. Smallholder farmers are directly involved in the decision-making and strategic direction of the organization. In addition to greater access to finance, information on sustainable farming, and training opportunities, the initiative has provided a forum for social networking among community groups, thereby improving community cohesion, trust and social capital – all of which are essential ingredients of the collective action needed to address common challenges.

The initiative works to ensure gender equality in all of its activities, and has aimed to ensure that women receive equal access to productive resources and equal engagement in marketing and enterprise development. Women form the majority of participating community members and have been elected into leadership positions to govern the group.



Sustainability and Replication



SUSTAINABILITY

Muliru has established a 10-year plan for the distribution of net profits from the sale of Naturub® products which will be allocated as follows: 10 percent for conservation activities around Kakamega Forest; 10 percent for a community development fund, to be used for projects in and around Kakamega Forest; 60 percent for distribution to participating members of the Muliru Farmers Conservation Group; and 20 percent for a conservation research fund for further diversification of other natural products.

According to projections made by Muliru, not only is the organization financially sustainable, but it has significant room for growth. Naturub® is the first registered natural medicine by the Pharmacy and Poisons Board of Kenya. As a pioneer in this space, the organization has a competitive edge. Market intelligence has established the total market for Naturub® to be Kshs. 100 million per annum. The market share has a geographic split of 80 percent rural and 20 percent urban. Currently, retail chains contribute only 7 percent of the balm and ointment markets. The rural population provides the biggest potential growth demographic, and currently contributes 70 percent of the market.

Sustainability has also depended on partnerships and outsourcing certain services beyond the local economy. Muliru has partnered with advertising agencies for sales and marketing activities, high-technology companies for manufacturing needs, and other private sector companies that specialize in quality control. Other important partnerships include the International Centre of Insect Physiology and Ecology, University of Nairobi, World Agroforestry Centre, Kenya Wildlife Service, Kenya Forestry Research Institute, and Global Biodiversity Development Institute. The types of support include product development, quality control, incubation needs, entrepreneurship training, agroforestry guidance and advocacy, all of which are essential to the initiative's sustainability.



Efforts to make the initiative more resilient and sustainable into the future include: expanding capacity building and training to communities in production, processing, and business management; broadening local and international marketing efforts; putting research into the development of additional product lines; and instituting changes in governance that balance corporate efficiency, as well as the enhanced participation of women and youth.

REPLICATION

Muliru has shared its project model and experiences with communities from Kenya, Uganda, Tanzania, South Africa and Nigeria. Over 830 people have visited the initiative to learn first-

hand about their cultivation, production and marketing techniques. Knowledge generated from the project has been exchanged through lectures, demonstration activities, story-telling and exchange visits. Additionally, the initiative has been covered by both national and international television and radio media stations. As a result of this coverage, two communities are actively applying the initiative model: The East Usambara Farmers Conservation Group based in Maramba, Tanzania (adjacent to the East Usambara mountain forests) and The Budongo Community Development Organization based in Masindi, Uganda (adjacent to the Budongo forest reserve). In the opinion of the Muliru Farmers Conservation Group, knowledge exchange amongst peer groups is one of the most effective methods of learning new skills. It provides confidence, drive and motivation to undertake new initiatives.

PARTNERS

The initiative has established a robust partnership with the following stakeholders:

- International Centre for Insect Physiology and Ecology - A leading international research institute which advances insect and arthropod-related science, biodiversity research, and biochemistry
- University of Nairobi: This is a centre for learning and scholarship committed to the promotion of academic achievement and excellence in research through intellectual products
- World Agroforestry Centre (ICRAF): The World Agroforestry Centre is part of the Consultative Group on International Agricultural Research (CGIAR) centres dedicated to generating and applying the best available knowledge to stimulate agricultural growth, raise farmers' incomes, and protect the environment.
- Kenya Forestry Research Institute (KEFRI): A centre of excellence in forestry research and technology development, KEFRI provides information and technologies for sustainable forest development and allied natural resources
- Kenya Wildlife Service (KWS): The Kenya Wildlife Service undertakes conservation and management of Kenya's wildlife. It is a state corporation established by an Act of Parliament Cap 376 and enforces related laws and regulations.
- GBDI: GBDI is a non-profit institute that works to help industries gain access to emerging markets.

The project has also benefitted from funding from the following sources:

- UNDP/Global Environment Facility Small Grants Programme
- The Ford Foundation
- The BioVision Foundation
- The MacArthur Foundation
- German Development Service (DED)
- PACT-Kenya/USAID
- WHO Multilateral Initiative on Malaria/Research and Training in Tropical Diseases (TDR)



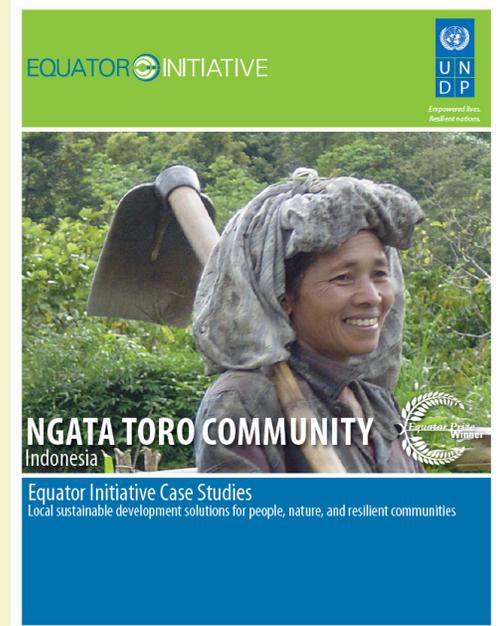
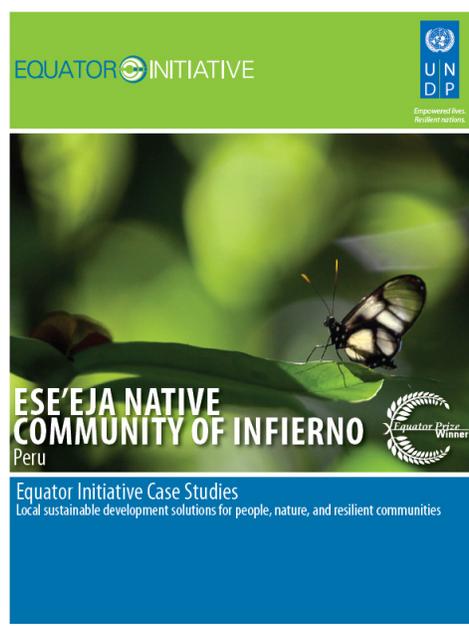
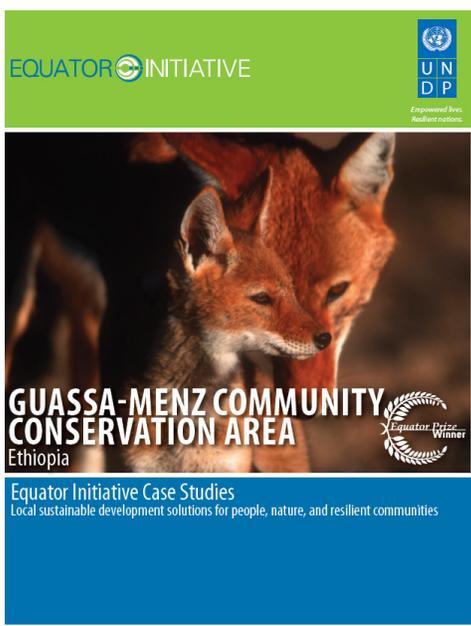
“Our advice to community-based organizations would be: seek appropriate partnerships for both technical and financial assistance to be able to advance; sharing knowledge can bring change; be ready to invest time and personal involvement in the activities of the initiative; be patient and persistent as achievements take time and effort to be realized; and be open to embracing new technology.”

James Ligare, Muliru Farmers Conservation Group

FURTHER REFERENCE

- Muliru Farmers Conservation Group PhotoStory (Vimeo) <http://vimeo.com/15780379>
- Video on Muliru Farmers Conservation Group (Vimeo) <http://vimeo.com/43207923>

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