



AFRICAN CENTRE FOR THE INTEGRATION OF HUMAN RIGHTS (PACINDHA)

Mali



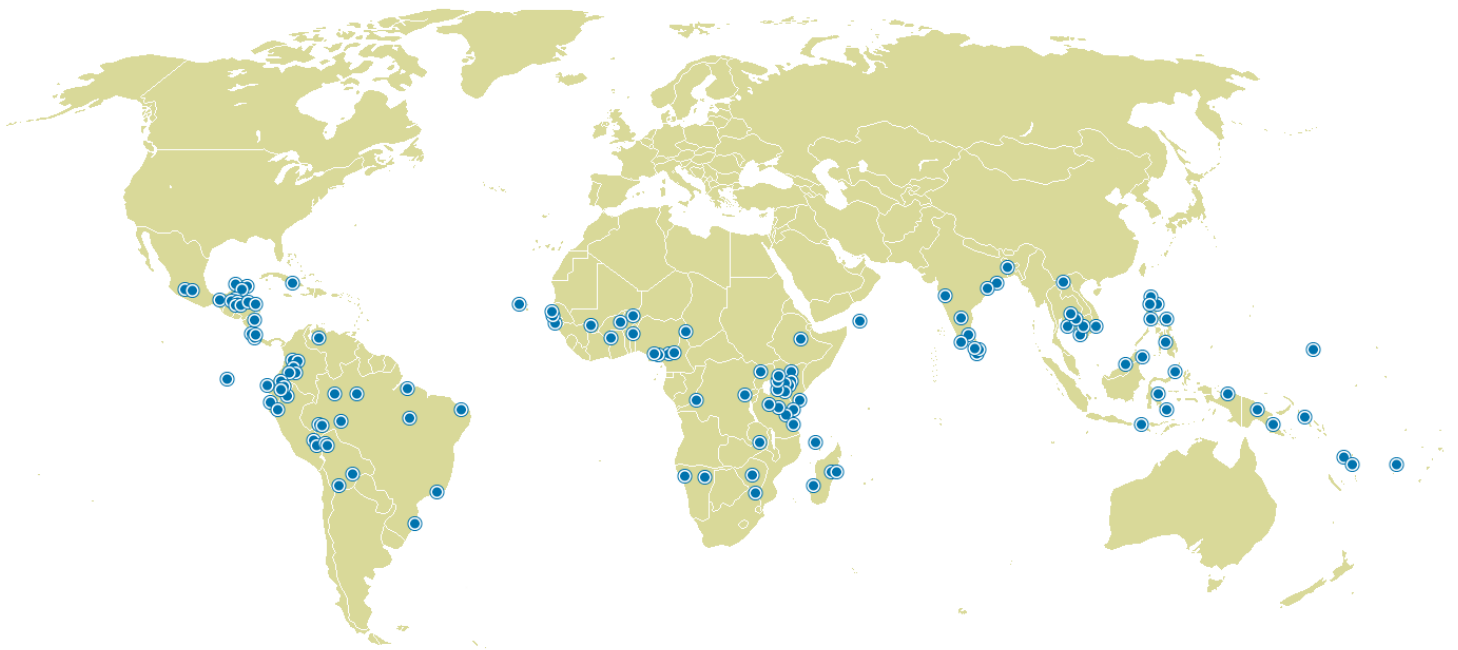
Equator Initiative Case Studies

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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Acknowledgements

The Equator Initiative acknowledges with gratitude PACINDHA, and in particular the guidance and inputs of Amadou Konate (President) and Siaka Diarra. All photo credits courtesy of PACINDHA. Maps courtesy of CIA World Factbook and Wikipedia.

Suggested Citation

United Nations Development Programme. 2012. *African Centre for the Integration of Human Rights (PACINDHA), Mali*. Equator Initiative Case Study Series. New York, NY.

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PROJECT SUMMARY

This NGO mobilizes local communities in western and southwestern Mali to sustainably manage natural resources and protect biodiversity. Since 2003, the initiative has implemented a wide range of activities, including the protection of wildlife and fauna species, combating the use of polluting substances, and improving land management and access to water for local communities.

One key intervention has been to restore the *Detarium Microcarpum* plant population, a species which had become endangered because of overuse and bush fires. The promotion and commercialization of products such as jewelry made from the plant, the popularization of its medicinal properties, and wider activities to support the sustainable harvest of the species have created income for the community: the group has successfully rejuvenated 200 ha of *Detarium Microcarpum* in ten villages throughout Ouelessebouyou.

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KEY FACTS

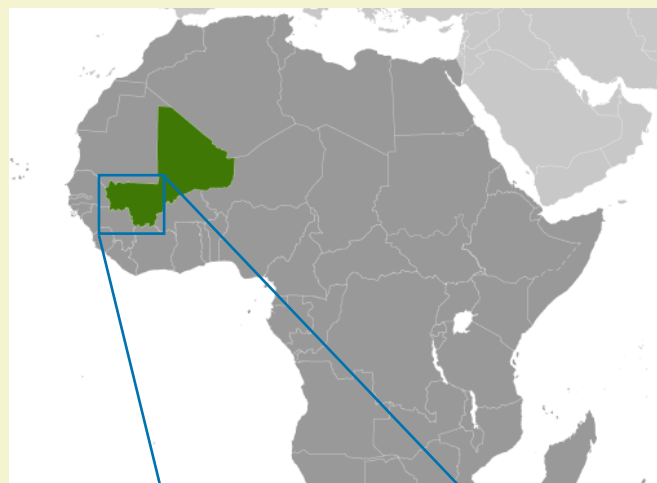
EQUATOR PRIZE WINNER: 2006

FOUNDED: 2003

LOCATION: Western and south-western Mali

BENEFICIARIES: 75 villages

BIODIVERSITY: *Detarium microcarpum* tree



Background and Context



The African Centre for the Integration of Human Rights (*Pôle des Actions d'Intégration des Droits Humains en Afrique - PACINDHA*) is a non-governmental organization that mobilizes local communities in western and south-western Mali to sustainably manage natural resources and protect biodiversity. The organization operates in a region where human activities such as logging, bush fires, overuse of chemical fertilizers, industrial development and poaching pose serious risks to threatened plant and animal species and contribute to degradation of the fragile savanna ecosystem.

Mali's rapid urbanization has led to a boom in logging in sub-districts situated along the main roads to Bamako. Between 1960 and 2009, the capital's population grew from 100,000 to 1,800,000 people, according to the 2009 census. Ninety per cent of households in the city rely on firewood or charcoal for cooking and boiling water. Given this demand, as well as the growing need for building materials, deforestation is a growing problem in areas surrounding Bamako.

In Mali's Ouelessebougou municipality, the *Detarium microcarpum* tree is particularly threatened by the expansion of logging as it makes for good firewood, being quick and easy to light even when damp. Its dark brown, regular grain wood also makes it a good candidate for medium-heavy lumber used in carpentry, joinery, carving and construction. Unregulated logging of this tree poses a threat to the livelihoods of rural women who depend on the tree for its many marketable uses.

A valuable local resource

The tree's sweet fruit is an important food source for rural populations in the Sahel. People generally consume it fresh, although its pulp can be used as a sugar substitute in certain dishes and it is a key ingredient in the manufacture of nutritionally-enriched porridge for children. Furthermore, the tree's seeds can yield oil or create a flour to use as a flavoring, emulsifying or thickening agent. In Mali, a healthy tree can produce an average of 675 fruits (about seven ki-

lograms), which keep for up to three years if stored in jute bags. This makes the fruit highly portable and a prime candidate for export. According to the Malian Railway's Bureau of Customs, Mali exports thousands of tons of the fruit each year to countries throughout the region.

The bark, leaves, seeds, fruit, and roots of *Detarium microcarpum* have medicinal uses due to their diuretic and astringent properties. In Mali specifically, various parts of the tree are used either alone or in combination with other plants to treat a large number of medical complaints, including malaria, measles, epilepsy, paralysis and other spinal problems, nocturia, yellow fever, hypertension, snake bites, hemorrhoids, leprosy and impotence. When applied to wounds, fresh bark and leaves can prevent and cure infection, and powdered bark is a common pain reliever. In southern Mali, the leaves and roots are even used to treat diarrhea in cattle. Traditionally, Koranic students in Mali use writing slates and prayer beads made from the wood of *Detarium microcarpum*, and the tree's seeds are used to make jewelry.

Besides logging, *Detarium microcarpum* and other species of plants and animals are threatened by bush fires, which both herders and sedentary farmers intentionally set in order to clear fields and search for honey. This trend causes soil compaction, reducing soil permeability and making land vulnerable to erosion. Expansion of cotton-growing has also accelerated the rate of deforestation, decreased the use of fallow periods, and contributed to soil fertility challenges. Near Mali's borders with Cote d'Ivoire and Guinea, 30 per cent of arable land is affected by some form of land degradation. As a result, farmers have experienced reduced crop yields and are increasingly dependent on expensive chemical fertilizers. In the last five years, nitrogen-based chemical fertilizer has more than doubled in price, becoming too expensive to produce any economic benefit for the vast majority of subsistence farmers. Excess use and improper management of such fertilizer can lead to eutrophication of surface water, acidification of soil, and human exposure through contamination of



air, food and drinking water. Industry, specifically the opening of a cotton ginning factory in Ouelessebougou in 2005, has increased concerns about the effects of pollutants on humans, livestock, and wildlife populations.

Wildlife reserves in western Mali used to be home to considerable populations of large mammals that have been devastated by poaching and competition from livestock. The Boucle de Baoulé Biosphere Reserve contains several smaller wildlife species and forest reserves that covering a total area of 918,000 hectares. The reserve's natural resources are subject to pressure from indigenous peoples, mobile pastoralist groups and their livestock (mainly sheep, goats and zebu cattle), and the clearing of vegetation for agricultural use. Population pressures have intensified with the tarring of the Kita-Bamako Kenieba road. The Bafing Reserve is home to 260 animal species,

including Derby Eland (*Taurotragus derbianus*), leopards (*Panthera pardus*), African wild dogs (*Lycaon pictus*) and severely endangered chimpanzees. The capture and killing of chimpanzees is lucrative business for networks of poachers throughout Mali, Gambia, Senegal and Guinea. Small chimpanzees are sold as pets for XOF (West African CFA francs) 50,000-200,000, and chimpanzee meat and organs are used in occult practices.

PACINDHA works with communities, government authorities, media and development partners in the region to address the above challenges. The organization has been most active in developing and training local committees to coordinate management and protection of natural resources while advocating for a supportive legislative and judicial framework.

“PACINDHA is always looking to find a link between forest resources and improving the living conditions of populations, because the destruction of natural resources is always linked to great impoverishment. Environmental protection can only happen when the populations are really involved with all their energy.”

Amadou Konate, President, PACINDHA

Key Activities and Innovations



PACINDHA has been most widely recognized for its initiative to protect and restore the *Detarium microcarpum* in order to improve the living conditions of rural people around Ouelessebouyou. The organization launched the project in 2004 after a village survey, conducted in 2003, indicated a lack of organized conservation or municipal regulatory efforts. PACINDHA carried out an awareness campaign about the excessive pressure on *Detarium microcarpum*, which reached 90 per cent of the local population and municipal authorities in 43 villages. As a result, there has been a strengthening of the legal and regulatory framework, outlawing cutting of *Detarium microcarpum* in the municipality. Ten village environmental protection committees, trained by PACINDHA, continue to inform their communities about these restrictions and other environmental management regulations in Mali. The committee members also serve as relay agents of water and forestry in the villages, calling in higher officials when infractions occur.

Supporting women's livelihoods

PACINDHA has provided organizational support and training to ten women's cooperatives on the sustainable harvest, marketing and commercialization of *Detarium microcarpum* products. Women benefit from the trees without logging by making jewelry, extracting medicinally valuable products and selling the tree's fruit. Each cooperative is comprised of about 500 members led by a president. PACINDHA trained women in new techniques for making beaded jewelry with *Detarium microcarpum* seeds and marketing the finished products. Groups have participated in study tours to Bamako, where women contacted merchants and traders, eventually finding markets for their products in Mali and beyond in Senegal, Burkina Faso, Guinea, Niger, Europe, Asia and America.

Protection of *Detarium microcarpum* has improved fruit harvesting and storage practices and encouraged local consumption. Village stocks of the fruit tend to last eight months of the year now and provide a significant source of nutrition when prepared with couscous

during the months from June to September when grain stores tend to run low. Local interest in biodiversity and resource protection has risen, particularly among women, as protection efforts have led to significant increases in income, especially from selling fruit. Concern about the effects of degradation, particularly on the livelihoods and lives of rural women depending on the tree, led to an organizational effort to adopt a convention giving the tree protected status, restoring its population and allowing for its sustainable management and use.

Following the success of this natural resource management initiative, PACINDHA has undertaken a number of other biodiversity and local livelihood projects around Ouelessebouyou and the wider region.

Tackling poaching

In the Bafing Wildlife Reserve and its peripheral zone, PACINDHA carried out a two-year initiative to reduce poaching of chimpanzees and destruction of wildlife habitat. Thirteen national television broadcasts and over 50 radio programs tackled the subject of chimpanzee protection, raising national awareness of poaching. The campaign gained support from local political leaders and was successful in involving hunters. PACINDHA coordinated the training of village monitoring committees to cut down on poaching and destruction of chimpanzee habitat within the reserve and along its border areas. A force of over 200 local guards now share responsibility for securing the area.

Building local capacity through conservation

PACINDHA has also built local capacity of communities surrounding the Bafing Reserve by training civil society groups in sustainable livelihoods activities and promoting ecotourism. The organization has especially encouraged the sustainable production of honey, *Detarium microcarpum* fruit, palm wine from the *Raphia sudanica* tree,



and products made from the fruit, fiber and wood of the *Borassus aethiopum* palm tree. In the riverine communities surrounding the reserve, PACINDHA has installed solar water pump systems to improve community access to water as well.

In Koussan, near Mali's borders with Cote d'Ivoire and Guinea, PACINDHA has worked with the local committees to stop those who set bush fires and have planted *Andropogon gayanus* to restore and replenish degraded soil. Sixteen village-level environmental protection committees have been trained in the application of environmental protection regulations, and an environmental education program has reached 2,000 students. The organization has also promoted the growth of a beekeeping industry in the area to avoid the need to light bush fires for the purpose of finding honey.

PACINDHA also worked with local people to decrease the health risks of poor water access in Koussan. In the past, animals and 90 per cent of people there have relied on poor quality, stagnant surface water from creeks and rivers between February and May. Consuming dirty water led to diarrhea and abdominal pain in about 45 per cent of children and 36 per cent of women, according to local health centre reports. To address this challenge, PACINDHA trained a hygiene and sanitation committee, established a borehole and trained local women to carry out market gardening around the new water point.



To reduce water and habitat stress on animals, the organization also established 20 salt licks in order to maintain the population of large mammals, including bushbuck, hartebeest and waterbuck as well as herders' cattle and goats by providing them with sources of mineral nutrients.

Back in Ouelessebouguo, PACINDHA has led a campaign to eliminate the use of leaded petrol through regional and national networking in the media, communities and distribution chains. The organization has also worked to limit the negative impacts of pollutants from the newly-developed cotton ginning industry on nearby wildlife and livestock.

PACINDHA approaches community resource management by educating the municipal leaders and populations about their own economic relationship with the depletion and degradation of natural resources. The organization has been innovative in its use of radio and other media to spread messages about the symbiotic relationship between biodiversity conservation and local livelihoods. The initiative is also active in advocating for village-level involvement in policy change and enforcement. The organization relies largely on training local management committees to inform communities of environmental regulations, carry out surveillance, and enforce environmental protection rules.

“The success of the Detarium protection project profoundly changed our conception of the role of population in protecting the environment. It showed us that poverty is a threat to the environment, because when communities have no reliable source of income, they turn against nature to survive. It is essential that these people are included, not only to increase their income but to increase the value and appreciation of biodiversity products.”

Amadou Konate, President, PACINDHA

Impacts



BIODIVERSITY IMPACTS

PACINDHA's efforts have led to the rejuvenation of 200 hectares of *Detarium microcarpum* in ten villages throughout Ouelessebouougou municipality. Throughout Mali, PACINDHA has been active in the creation of 20 local agreements for natural resource management and has worked with 200 community groups to sustainably manage over 5,000 hectares of forest.

The PACINDHA initiative in the Boucle de Baoulé Biosphere Reserve in western Mali has led to the protection of 918,000 hectares of land. In this area, PACINDHA has trained community groups to intervene in the illegal export of wildlife. The Bafing Wildlife Reserve project has created 28 committees to protect chimpanzees, which has led to fewer cases of poaching, particularly in the border areas surrounding the reserve.

In Koussan, PACINDHA has led 80 farmers in the restoration of 320 hectares of degraded land through the seeding of *Andropogon gayanus* and the production of organic fertilizer, which has protected ground water by reducing the need for polluting chemical fertilizers. Four hundred farmers from ten villages have mastered the technique of seasonal penning of animals and, of these, 100 farmers have added a total of 200 acres of crop fields.

SOCIOECONOMIC IMPACTS

Many villages have found that PACINDHA's information and organizing around environmental protection has enabled them to market sustainable products that ultimately improved income. In 2010 alone, PACINDHA created more than 500 temporary jobs. In Ouelessebouougou, sales of the *detarium* fruit, which may have brought an average woman in a rural area XOF 5,000 per month prior to community efforts, have risen five- or six-fold in some areas, providing some woman with more than XOF 30,000 each month. Typically, families invest the money they make from these types of income generating activities in children's school fees, agricultural tools and

livestock. Some families use this income to pursue beekeeping, market gardening or small poultry-raising and PACINDHA has provided training to improve the productivity, sustainability and market reach of these practices. Greater availability of *Detarium microcarpum* for medicinal purposes allows some families to save money on more expensive health treatments, allowing for investment in other priorities.

Similar economic benefits have been felt in connection with PACINDHA's capacity building efforts in other aspects of livelihood. In Koussan, agricultural training has led to increased soil fertility and agricultural production and a decreased reliance on chemical fertilizers. PACINDHA has assisted communities in accessing clean water, reducing conflict over limited water sources, and reducing the incidence of diseases related to the consumption of unsafe drinking water. The new water point has also given women more time to engage in income-generating activities like market gardening, as they spend less time traveling and queuing to collect water. In the Bafing Reserve area, the beginnings of ecotourism initiatives have given hope for new sources of income to many local entrepreneurs with the establishment of a small tourist camp in the area.

POLICY IMPACTS

Village-level environmental protection committees have allowed local people to find a voice and coordinate with government technical services. Along with awareness campaigns, this shift has decreased the frequency of disputes between communities and technical service providers. PACINDHA reports that many local people have shifted in favor of national environmental protection policies, whereas before, most believed such policies to be restrictive and even repressive. The development of local conventions for environmental protection has allowed for local involvement in decision-making, leading to a feeling of empowerment and responsibility for the management of local resources. As a result compliance with regulations has increased as people feel a greater sense of involvement in their design.

Sustainability and Replication



SUSTAINABILITY

Environmental protection committees and their working relationships with state services and organizations will structurally guarantee the sustainability of PACINDHA's work. By focusing on training and raising awareness about the intertwined fates of local environment and local livelihoods, the communities working with PACINDHA have internalized a commitment to natural resource protection. The committees remain actively engaged in carrying out their various duties beyond the initial period of training, as PACINDHA provides only limited financial support.

As for organizational sustainability, PACINDHA is largely reliant on grants and donations. The organization collects membership dues, but these usually result in a trivial amount of money that does not fund the implementation of all of PACINDHA's activities.

REPLICATION

Today, PACINDHA has a wide reach, largely due to the success of the organization's *detarium microcarpum* initiative from 2004 to 2006. PACINDHA currently operates in over twelve municipalities in 75 villages, with a working population of approximately 47,500 people. The organization estimates that more than 200 villages have benefited from replicating the promotion of sustainable biodiversity products.

PACINDHA is a member of two civil society coalitions that are working for the ongoing protection of Mali's biosphere reserves. These arrangements provide ample opportunity for networking and for the exchange of ideas and experiences.

PARTNERS

The UNDP-implemented GEF Small Grants Programme (SGP) has been an essential partner in many of PACINDHA's activities, including its successful *Detarium microcarpum* protection initiative. The full breakdown of GEF-SGP grants received by PACINDHA since 2003 for a range of different projects is listed in Table 1.

The Canada Fund for Local Initiatives (CFLI) has also provided financial support, notably funding the training of women's cooperatives in turning *detarium microcarpum* seeds into beads and necklaces and the study tour linking cooperatives with marketing outlets. The Global Environment Facility and the World Bank have also been important sources of support.

Within the government, Mali's Ministry of the Environment has been supportive by providing its agents to conduct outreach and training concerning environmental protections and law. The forestry service and Ministry of Environment and Sanitation have also been actively supportive of PACINDHA's efforts. The government has been particularly supportive in establishing the reserve and buffer zone in the Boucle de Baoulé Biosphere Reserve.

PACINDHA has worked in partnership on several environmental projects with two local NGOs, The Malian Association for the Conservation of Fauna and the Environment (*l'Association Malienne pour la Conservation de la Faune et de l'Environnement* - AMCFE) and The Malian Association for the Study, Protection and Planning of Nature and the Environment (*l'Association Malienne pour l'Étude, la Protection, et l'Aménagement de la Nature et de l'Environnement* - AMEPANE).

Table 1: Small Grants Programme grants since 2003

Project title	Period	Amount granted (USD)
Bafing Wildlife Reserve Chimpanzee Protection (pilot study)	2003-4	1,000
Bafing Wildlife Reserve Chimpanzee Protection	2004-6	31,229.80
Management and restoration of <i>Detarium Microcarpum</i> population in Ouelessebougou municipality	2004-6	31,164.80
Protection of <i>Prosopis Africana</i> and <i>Pterocarpus erinaceus</i> and prevention of coal mining on hillsides	2005-6	16,229.57
Elimination of leaded petrol in Africa for improving air quality	2005-7	25,340.58
Development of a legal and institutional framework for the protection of chimpanzees in the Bafing Wildlife Reserve	2006-8	33,876.63
Supporting communities in combating the illegal wildlife trade and reducing Persistent Organic Pollutants (POPs)	2006-8	27,808.71
Improving access to clean drinking water in Koussan	2008-9	19,394.00
<i>Land rehabilitation through planting of Andropogon Gayanus and capacity building of CBOs in Koussan</i>	2008-10	37,197.16
Total:		223,241.25

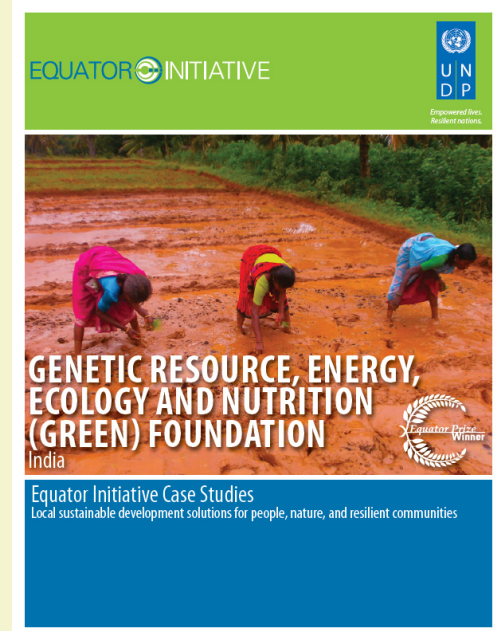
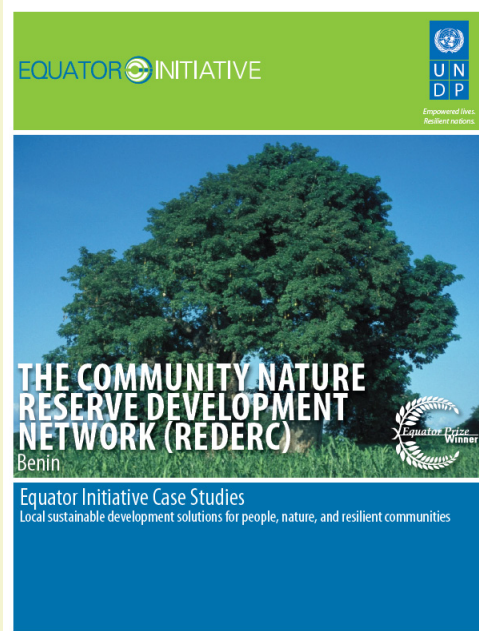
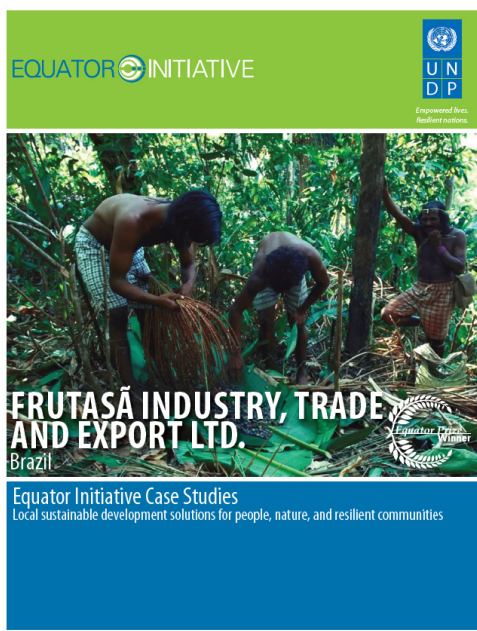
Source: UNDP-implemented GEF Small Grants Programme



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