ANJA MIRAY ASSOCIATION
Madagascar

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

Anja Miray Association was established in 1999 in response to the degradation and clearing of local forests, the sedimentation of water resources, and the loss of wildlife such as ring-tailed lemurs, chameleons and tropical birds. The Association operates a 30-hectare community forest reserve in the Haute Matsiatra region of Madagascar.

The community has established an ecotourism initiative which funds community works projects – schools, health clinics and environmental education – and ongoing conservation activities. Ecotourism has also provided a revenue stream for alternative livelihood projects such as fish farming and tree nurseries. The Association has provided a leading model of community-based forest management in the country.

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KEY FACTS

EQUATOR PRIZE WINNER: 2012

FOUNDED: 1999

LOCATION: Haute Matsiatra region

BENEFICIARIES: 2,500 community members

BIODIVERSITY: Ring-tailed lemurs (Lemur catta)
Madagascar has evolved in isolation over millions of years and is home to thousands of flora and fauna species, 90 per cent of which are endemic to the island (e.g. found nowhere else in the world). Known as a biological hotspot for its abundance of animal and plant life, many scientists refer to Madagascar as the “eighth continent” because of its truly unique biodiversity. The country’s biological heritage, however, is under threat from unsustainable development patterns and anthropogenic pressures. Meeting the basic needs and development aspirations of a growing population, while also ensuring biodiversity conservation and sustainable natural resource management, is a top priority for development agencies and conservationists across the country.

The community of Anja

One example of meeting these twin challenges comes from the rural town of Anja, located in southern Madagascar’s Haute Matsiatra region in the province of Fianarantsoa, 400 kilometers south of the country’s capital, Antananarivo. The province of Fianarantsoa is known for its tall mountains (which reach altitudes of up to 2658 meters) and its rich biodiversity. Plant and animal diversity in the province comes from its distinct location between three ecosystems: low altitude rainforest, mountain plateau, and highland forests. The forests surrounding Anja are located at the base of three deep-grooved granite domes known as the Three Sisters (“Telo Mirahavavy”), which rise to 400-500 meters in height. Tafonies, caves formed from wind erosion, speckle the near-vertical façades of the mountains. The caves have been used for more than two centuries by the local people, originally as shelters by the Betsileo people (a highland ethnic group of Madagascar) and later as a place of refuge. Up until the 1930s, the tafonies were used as sacred tombs for nobles of royal ancestry by the Betsileo. The deceased were traditionally wrapped in ornate silk lambas (the traditional rectangular cloth worn by both men and women in Malagasy culture) to be carried to the top of the mountains in ceremonies known as vahi-masoandro and then lowered into the caves by ropes made from plants found in the area.

In addition to their anthropological importance, the mountains are home to several rare and threatened species of birds that nest along the cliffs. The Anja forest, meanwhile, is notable for its dense population of ring-tailed lemurs (*Lemur catta*), as well as six snake species, three varieties of chameleon, seven lizard species, and twelve amphibians. The forests also contain one of Madagascar’s rarest mammal species, the Lowland Streaked Tenrec (*Hemicentetes semispinosus*), a black and yellow-striped animal distantly related to the hedgehog. The diverse plant life includes species from the spiny deserts of southern Madagascar, the central highland mountains, and the western dry forests, including families of exotic saxicol plants and species of rare terrestrial and epiphytic orchids. Additionally, many medicinal plants used in traditional Madagascar healing can be found in the area.

Prior to 1815, the forest at the base of the mountains served as a refuge that could support up to 200 people during times of invasion, allowing the people to remain un conquered for two centuries and earning them the name “Betsileo”, meaning “The Many Invincible Ones.” In 1817, however, the Betsileo kingdom of Anja was finally conquered by the Merina, beginning the process of their assimilation into Malagasy society. Accelerated by French rule, the Betsileo were made to establish villages and farms and to pay taxes. Many descendants of these same clans live in Anja today, and are active participants in the community association that protects the land of their ancestors.

Threats to the environment and local livelihoods

In the early 1990s, local concern for environmental degradation arose in response to a vicious cycle of deforestation, land degradation, and biodiversity loss. It is estimated that around 90 per cent of Madagascar’s original forests have been cut down. The common practice of tavy (“fat” in English), a type of slash-and-burn agriculture, has been particularly harmful to the island’s forests. Tavy has proven difficult to contain not only because of its practicality in agriculture, but be-
cause of its traditional associations in Malagasy culture with prosperity, health, and ancestral tradition. While convenient for clearing areas for crop cultivation, the cycle of burning heavily depletes soil nutrients. After only a few years, the soil is exhausted and more land is needed.

The Anja area has been no exception to these trends. By 1990, more than half of the original Anja community forest had been illegally cleared through slash-and-burn methods as local demand for agricultural land increased. In addition to a loss of flora and fauna, the clearing of the forest triggered erosion and led to a loss of water retention in the soil, creating a severe water shortage. As predominantly subsistence farmers, the local community depended on water to irrigate crops and flood the rice paddies. After deforestation, irrigation became impossible, erosion left the lands heavily silted, and agricultural land became unproductive. As a consequence, the community needed more land to farm: more land led to less water and even less productivity, nurturing a vicious cycle that threatened to further erode and destroy the forest. The destruction of habitat was particularly devastating to the local lemur population, as their food sources disappeared. Adding to their plight, lemurs were hunted when people sought to supplement poor diets because of food shortages. By the early 1990s, it is estimated that fewer than 100 lemurs remained in the surrounding area.

**Fokonolona: the community takes action**

In 1996, in an effort to stem deforestation, the national government enacted land management legislation that would allow communities to manage local natural resources. The legislation – which proposed using a signed contract with the community as the legal basis of communal land management – first needed to be adapted to local Malagasy culture. The traditional social structure in Malagasy society that has bound communities together for generations is the Fokonolona. Deriving from the word foko (‘tribe’) and olona (‘human’), this social system has worked to protect villages and surrounding ecosystems throughout Madagascar’s history by granting a large degree of resource governance autonomy to individual communities. In Anja, this system was reintroduced as a vehicle for collectively addressing the deteriorating environmental situation.

Recognizing the unfolding ecological disaster, a group of 20 youths from the Anja community resolved to take action to improve the situation in and around their village. Working with Madagascar’s national forest service, the group began to raise funds and provide outreach to families who had been farming on public land. The strategy was to clear the reserve by offering farmers alternative lands outside the protected area. Once all of the farmers were resettled and the reserve was cleared, a community Dina was instituted that prohibited further use of the protected land. Dina is a customary system of rules and regulations used in Madagascar to guide and control resource use and shape community behavior. The rules have traditionally been passed orally from generation to generation, but are today backed by legal authority in many areas.

Building on these efforts, six villages surrounding Anja began a collective campaign to reforest the area with native tree species, educate resident communities about the necessity of environmental protection, and develop the area’s forests as an ecotourism destination. Recognizing the area’s ecotourism potential – both Andringitra and Ranomafana National Parks have long been popular destinations for tourists interested in lemur-spotting – the communities endeavored to leverage this revenue stream for local economic de-
Development and the conservation of local forests. In recognition of this groundswell of local conservation action, the Anja forest was designated a community-managed reserve by the Government of Madagascar in 1999.

*The Anja Miray Association*

In 2001, with the aim of serving the area’s 2,500 residents, community representatives and local government officials came together to form the Anja Miray Association. This organizational development phase was supported by the UNDP-implemented GEF-Small Grants Programme (SGP). Management of 60 hectares of land was officially transferred to the Anja Miray Association on November 23, 2001 in accordance with Malagasy Law No. 096-025 (1996), which mandated community management of renewable natural resources through the protection and administration of local sites. Initially, 13 hectares of this was demarcated as a community reserve. Following a successful evaluation in 2009, the association was granted a ten-year contract to manage the area, with an additional 12 hectares being demarcated to give a total of 72 hectares of land under local management. The Anja Community Reserve grew from 13 to 18 hectares. Today, the Anja Community Reserve is a thriving tourist attraction, popular with visitors from all corners of the globe. In 2011, Anja Miray received 12,000 visitors and generated USD 45,000 for the association. Anja Community Reserve is one of the most visited community-managed forest and ecotourism sites in Madagascar.

*Governance and institutional structure*

The association holds biannual community meetings, where all major decisions are discussed and voted upon. The meetings are held in a large community center (constructed by the association for this purpose) and provide a forum for residents to identify and agree upon investment priorities. Reports on Anja Miray Association activities and finances are produced regularly and shared with community members through a number of media channels, including local radio.
The association has created a model in Madagascar for community-based ecotourism. By creating a network of marked trails through the Anja Community Reserve – and providing knowledgeable, experienced guides – the association has been able to attract tourists, students, and scientists from across the globe. Since its inception, the Anja Miray Association has hosted more than 50 organizations and more than 10,000 schoolchildren, sharing insights and knowledge about the reserve, about community forest management, and about the area’s unique biodiversity.

**Ecotourism**

The Anja Community Reserve offers visitors two trails of varying difficulty. The first, a two-hour hike, allows visitors the chance to see several different species of lemur as well as natural caves, some of which serve as Betsileo tombs. The second and longer of the two hikes takes visitors to the top of a 1400-meter mountain on a winding six-hour loop. Visitors are accompanied by local guides who take an active role in promoting environmental sustainability in the reserve. A campsite equipped with simple shelters, latrines and a bathing area offers visitors a place to tent or enjoy a picnic. The Anja Reserve is equipped to host people with physical disabilities, allowing everyone to see the beauty of the forest. At least ten private tourism and non-profit organizations provide growing visibility and supportive contacts for Anja Miray throughout the country.

**Investing in the community**

The flourishing ecotourism operation has allowed the Anja Miray Association to fund numerous economic development projects within the community. Chief among these has been the investment made in local education, with revenues used for the construction of schoolhouses, teacher wages, and subsidizing school fees for orphaned children. A reserve fund was also established to assist the community with unforeseen events – in effect, a local social safety net. In the association’s 2012 work plan, for instance, a percentage of the reserve fund was dedicated to helping community members deal with and recover from brush fires. The General Assembly votes on each disbursement of funds, which range from USD 150-250 for each individual ‘crisis’ and are executed by the Executive Board. To offset the need for fuel from the forest, the association has established eucalyptus (kininina in Malagasy) tree nurseries in the communities to provide sustainable sources of fuel wood. For a nominal fee, members of the association can receive additional seedlings.

More than fifty percent of association members are women. In a deliberate strategy to empower women, the association has funded the purchase of materials (such as textiles, fabrics and raw silk) and provided training to promote a handicraft industry marketed to tourists. Guiding jobs, meanwhile, have been targeted at local youth, with 28 professional guide positions created so far. In a pioneering step, vocational training has been provided specifically for disabled members of the community.

**Forest patrols and low-impact harvesting**

Four monitoring officers maintain daily, twelve-hour patrols of the community-managed reserve. Harvesting of plants within the site is strictly prohibited, but members of the association may submit requests for gathering small amounts for non-commercial, medicinal purposes. One plant that is commonly harvested within the reserve is *Imperata cylindrica* (known locally as “tenina”), a perennial rhizomatous grass that local people use in traditional ceremonies: Betsileo funeral processions require the dead to be tied to a handmade ladder and then pulled by rope to their resting places in the mountain caves; *Imperata cylindrica* stems are harvested to create these natural cords.
**Sustainable agriculture and fish farming**

The Anja Miray Association also runs activities intended to improve agricultural practices. The association has been successful at reducing local farmer reliance on slash-and-burn agriculture, a key driver of deforestation and biodiversity loss in the region. Adoption of a System of Rice Intensification (SRI) – a rice farming method intended to increase yields in irrigated farming systems without relying on purchased inputs – has allowed the community to double rice yields in recent years, from the national average of two tons per hectare to over five tons per hectare. SRI was developed in Madagascar in the early 1980s and has only recently come into widespread use throughout the rest of the developing world. The system, which differs from traditional cultivation in that farmers must physically transplant and re-plant small seedlings, requires much less water than traditional rice cultivation and as little as 10 per cent of the seed input. Initially, the technique requires increased labor, but has proven to increase yields while maintaining soil integrity.

The association has also been instrumental in cultivating fisheries in the rice fields, a traditional practice that had diminished over the past two decades. Previously, fish from the flooded rice fields were a primary source of food for many community members. The association has helped to reintroduce this practice and, today, farmers harvest a total of around five tons of fish each year, a not insignificant number given food security and alternative income-generation concerns.

**Fig. 2: Anja Community Reserve visitor numbers**

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Source: Anja Miray
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“Prior to our initiative, this vast territory was cleared every year for corn planting. Local communities were hunting the lemurs as a source of protein to supplement their poor food diet. Our environment was completely destroyed.”

*Victor Rahaovalahy, Chairman and Founder, Anja Miray Association.*
Impacts

Biodiversity Impacts

The southeastern region of Madagascar is one of the most biologically diverse areas in the world. The region sits at the crossroads of three distinct habitats and is home to a high diversity of wildlife and plant species. Human activity – in particular slash-and-burn agriculture, but including the more general pressures one might associate with population growth and development – has had a deleterious effect on this unique area. The Anja Community Reserve, sitting at the heart of the region, contains an abundance of lemur, reptile, amphibian and bird species, the majority of which were previously threatened due to severe environmental degradation.

Ecosystem restoration

Reforestation has had a profoundly positive effect on local ecosystem health and the provisioning of ecosystem goods and services. Where deforestation once led to land degradation, which led to compromised soil integrity, which led to a lack of water retention in the soil, which led both to flooding and a lack of water security for the local population, reforestation has improved water infiltration into the soil and increased the availability of fresh water in the community. Droughts have become far less frequent and the community has the water it needs to irrigate its crops. As one example of restored ecosystem functioning, a lake that had dried up during the period of extreme deforestation has once again emerged and today serves as a primary source of fish for the communities. Additional income from tourism has also allowed members of the community to become less dependent on agriculture, which, combined with vastly improved agricultural practices, has reduced some stresses on the land.

Socioeconomic Impacts

The ecotourism project developed around the Anja Community Reserve has transformed the local economy. The association has created more than 450 jobs, directly benefitting more than half of the area’s 2,500 residents. Since the association began its work, tourist visits have skyrocketed from 100 in 2001 to more than 12,000 in 2011. It has become one of the most visited community-managed ecotourism sites in all of Madagascar. Ecotourism brings in USD 35,000-45,000 to the community annually, roughly equivalent to the initial grant received from the UNDP-GEF Small Grants Programme in 2001.

Investing revenues in conservation and community

Each year, the community establishes a budget and decides how to distribute and invest that year’s revenue. The uses to which ecotour-
ism revenues are put vary. One consistent target of reinvestment has been all the conservation and restoration activities associated with maintaining the Anja Community Reserve, including but not limited to reforestation, environmental surveillance, and monitoring and evaluation. Taxes are also paid to the Municipality of Larintsena (approximately 5 per cent of total ecotourism revenue) and to the Regional Environment and Forest Management Bureau of the Haute Matsiatra region (as forest usage fees, to cover periodic follow-up and evaluation costs incurred by the Ministry of Forests – also around 5 per cent). Both taxes were established as conditions of the management transfer contract signed in 2001. In addition, funds under ‘public investments’ – around 14% of all revenues – have been used to build six new schoolhouses. The schools now provide formal education to 450 students (an increase from 80 students previously). These funds have covered the salaries of six teachers and provided subsidies for several orphaned children. The association has also used revenues to construct a community center that is used for meetings, information exchange, and local events.

Twenty-eight young people in the community are employed as professional guides in the reserve. Any visitors entering the reserve are accompanied by a local guide, many of whom are multilingual. Each guide is also responsible for training new guides, thus ensuring sustainability and allowing more villagers to participate. Many women sell crafts to the tourists, providing an additional source of income to supplement the traditional reliance on agriculture and helping to increase school enrolment, as more families can afford to pay annual fees. The association has also taken care to include community members with physical disabilities in their development plans. Welding materials were purchased and classes held for this purpose, training disabled community members in a new and marketable skill-set.

Two additional benefits from Anja Miray Association work have come in the form of improved agricultural productivity and greater food security. The community – and region more generally – has historically suffered from high rates of malnutrition and limited access to food. Through the work of the association, the community has become completely self-sufficient, managing to grow its own food and autonomously provide food security for the local population. Much of this success owes to the agricultural training provided by Anja Miray Association. In recent years, increased rice yields have even allowed farmers to maintain crop surpluses. Advances in agricultural productivity are also inextricably linked to parallel improvements in environmental health and restored ecosystem functioning; improved water provisioning by the Anja forest has boosted irrigation of rice fields and created ponds for fish farming.

**POLICY IMPACTS**

As a leader in the field of community ecotourism in Madagascar, the group has sought to share its experience with other groups in the country and has proven extremely successful in spreading its message and expanding its reach in environmental conservation and advocacy. Anja Miray has been held up by the National Public Interest Group for Sustainable Community Management of Natural Resources in Madagascar as a model of success. The land management law was originally proposed as an economically feasible way to promote conservation and development. By granting communities the legal right to protect their own land, the government correctly predicted that communities would be better equipped to promote conservation. Anja Miray has proven to be one of the most successful examples of this trend of community leadership in biodiversity conservation for sustainable development.
Sustainability and Replication

SUSTAINABILITY

The association has enjoyed steady growth in its membership and operations, owing in large part to a high level of community investment in and ownership of its activities. Anja Miray Association has grown from 20 members at its founding to 350 today. Undoubtedly, much of this is due to the tangible successes of the association’s work, particularly in job creation, the development of more sustainable and more productive agriculture, and the publicly visible investment of ecotourism revenues.

Underpinning the association’s success and sustainability has been consistent growth in tourism numbers. From 2001 to 2011, the number of visitors (and corresponding tourism revenues) increased by an average of eight to ten percent annually. Anja Miray is among the most visited community-managed forests and ecotourism sites in Madagascar, and is a prominently featured destination of suggested ecotourism routes for southern Madagascar.

The association is financially self-sustainable. Importantly, it is not entirely dependent on tourism for its financial security and sustainability. The association learned first-hand about the necessity of diversified revenue streams when, in 2009 and 2010, a national political crisis led to a downswing in tourist traffic and the number of visitors to their site dropped significantly. In response, association members used a reserve fund to supplement lost tourism revenue and invested in new agriculture activities. They focused on adopting modern farming techniques to improve harvests. Higher yields of rice, tomatoes and manioc were able to fill the shortfall in local household incomes from the drop in the tourism industry.

In 2011, to celebrate its tenth anniversary, the association launched a new development plan for the next ten years with a view to improving local living conditions and the overall environmental health of the reserve. The main goal of the new development plan is to ensure good governance and the sustainable management of forested areas based on: i) respect for the rule of law; ii) the efficiency of the existing organizational structure; iii) the effective participation of each structural entity; iv) the healthy management of all resources (renewable and otherwise); and v) the prevention of corruption and adherence to transparency.

REPLICATION

Anja Miray has become a benchmark for community-based tourism in Madagascar and has served as a model for replication. With the support of the UNDP-implemented GEF-Small Grants Programme (SGP) Madagascar, the association leads a local network of village associations (Vondron’Olona Ifototra or ‘VOI’) responsible for natural resource management in Ambalavao district: the Fédération des VOI Mitsinjo Ny Ho Avy aims to share and spread Anja’s success and to develop the Anja tourism circuit to involve surrounding sites.

Transferring best practice community-to-community

Through involvement in knowledge-sharing initiatives, the association has also been at the centre of a growing national movement calling for improved local management of natural resources. In May 2012, Anja was the site for creation of TAFO MIHAAVO (the national network of local communities for natural resource management, or Tambazotran’ny Fokonolona Miaro ny Harena Voanjanahary in Malagasy.) This network of 482 local communities, drawn from 17 of Madagascar’s 22 regions, has helped Anja Miray to amplify its success and inform community-based action across the country. The network is described as a forum where member communities can share ideas and address common concerns about the environment and sustainable development.

The network aims are stated in the ‘Anja Declaration,’ also released in 2012, which calls for the increased transfer of natural resource management to local communities throughout Madagascar. It
highlights Fokonolona – the traditional social structure based on Malagasy values – as “the most stable, well-established and durable structure” accepted by Malagasy communities across the country, and underscores its value as a tool for sustainable natural resource management. While acknowledging the benefits of existing laws – especially the GELOSE legislation of 1996 (Malagasy Law No. 096-025) – the declaration calls on the national government to strengthen and clarify these laws. Through the declaration, TAFO MIHAAVO also calls on the international community to engage in horizontal learning and exchange to improve local development throughout the world. The Anja Miray ten-year strategy calls for strengthening and developing stronger Dina laws in line with local and environmental needs, followed by giving an expanded role to TAFO MIHAAVO member organizations in national resource governance.

PARTNERS

The UNDP-implemented GEF-Small Grants Programme has provided support to the association since its inception, allocating an initial USD 38,000 grant to increase local awareness of the potential benefits of environmental conservation and sustainable tourism. Today, the local ecotourism enterprise generates a similar sum each year. SGP Madagascar has also been critical to association networking and knowledge-sharing activities through its support to both the Fédération des VOI Mitsinjo Ny Ho Avy and TAFO MIHAAVO.

Since its formation in 2001, Anja Miray has worked closely with the Ministry of Environment and Forests. Funding partners have included the National Rural Development Support Programme, World Wildlife Fund, World Mountain People Association, USAID’s EcoRegional Initiatives Program, and the European Association of Zoos and Aquaria Conservation Campaign (EAZA), which contributed €18,000 in 2008.

“With the income generated by ecotourism, and the sale of handmade items, we were able to build two schools for our children and also pay teacher salaries.”

Victor Rahaovalahy, Chairman and Founder, Anja Miray Association.
FURTHER REFERENCE

- Anja Miray Association website: http://anjacommunityreserve.net.ai.net/

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