IMPACT MADAGASCAR

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ANNUAL REPORT **2019**

Sifaka Conservation

This year's annual report is dedicated to looking at what we have accomplished and showing what sets us apart by presenting the successes of our pioneering and innovative activities. It is clear that none of our achievements would have been possible without our supporters, our partners, and our great team that never fails to exhibit bravery and strength. While we are proud of the successes you will read about throughout this report, we know that

together we can and we must do more.

We at Impact Madagascar aim to achieve a high quality of **science**, to implement **pioneering** activities, to attract **more funding**, to formulate more **creative** approaches to **community conservation**, and to **innovate** in our **partnerships** and actions.

Our team is **passionate**, **dedicated**, and works hard to enhance their **leadership** skills to ensure that **tomorrow's world** is still full of **biodiversity**.

OUR VISION

Madagascar is a land full of possibilities with unique and beautiful biodiversity, but also with difficult challenges when approaching conservation projects. Well-known for its **endemic and iconic flora and fauna**, Madagascar is also recognized for its **high rates of poverty and deforestation**.

Impact Madagascar, a Malagasy NGO, was born from the idea that it is **not possible to protect the environment without also considering the people who depend on its resources** on a daily basis.

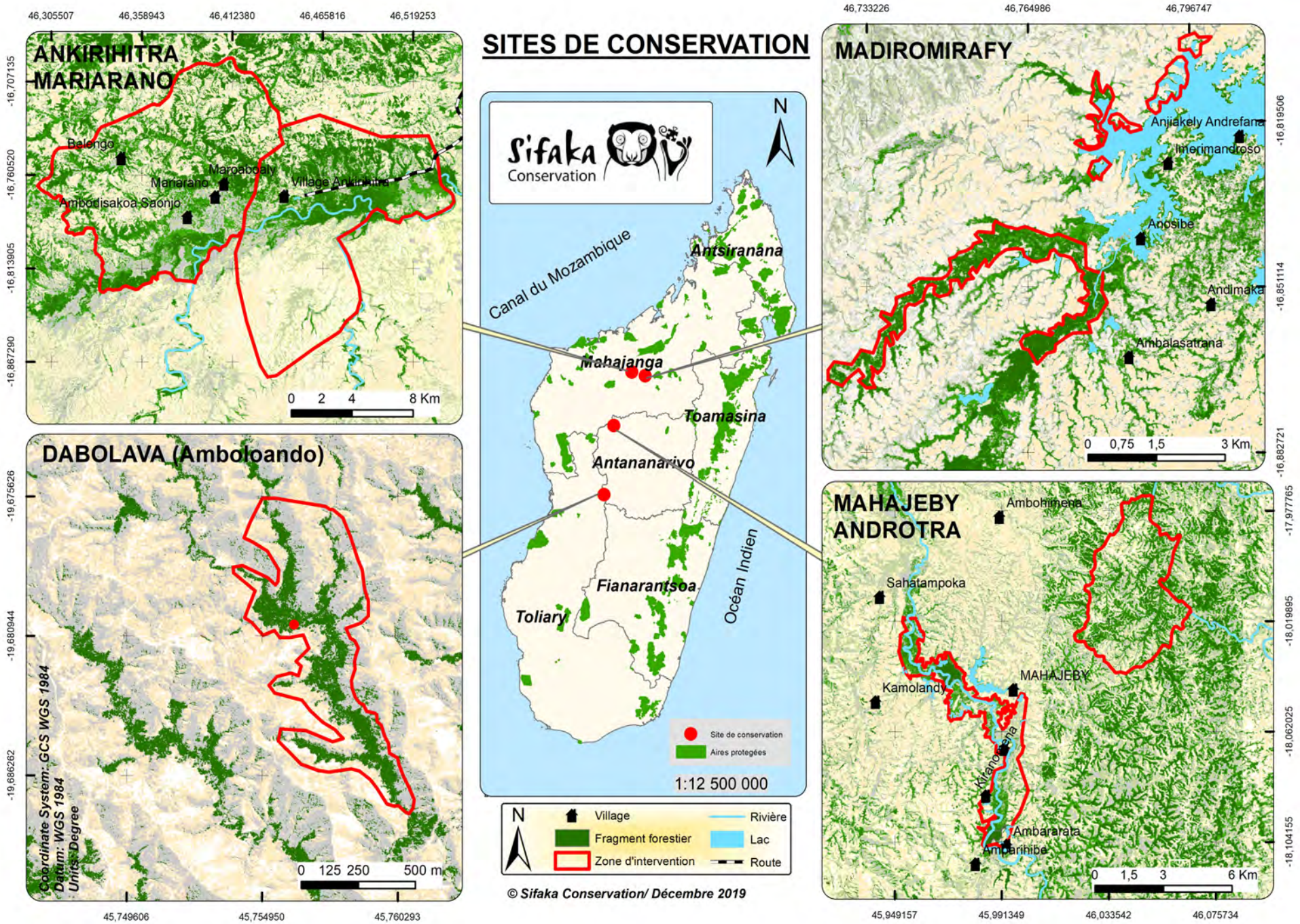
Since its foundation in 2014, Impact has been working with the people of Madagascar to **provide solutions for the problems of deforestation, pollution, and poverty** through a variety of projects involving community development, biodiversity conservation, and environmental education. Our small team works alongside local people in order to **empower the population at a community level** and to teach them practical conservation skills that are sustainable for both them and the environment.

We've been dedicated to finding conservation strategies that are both practical for local people, and beneficial for Madagascar's precious wildlife.

See how we made a difference in Madagascar this past year!

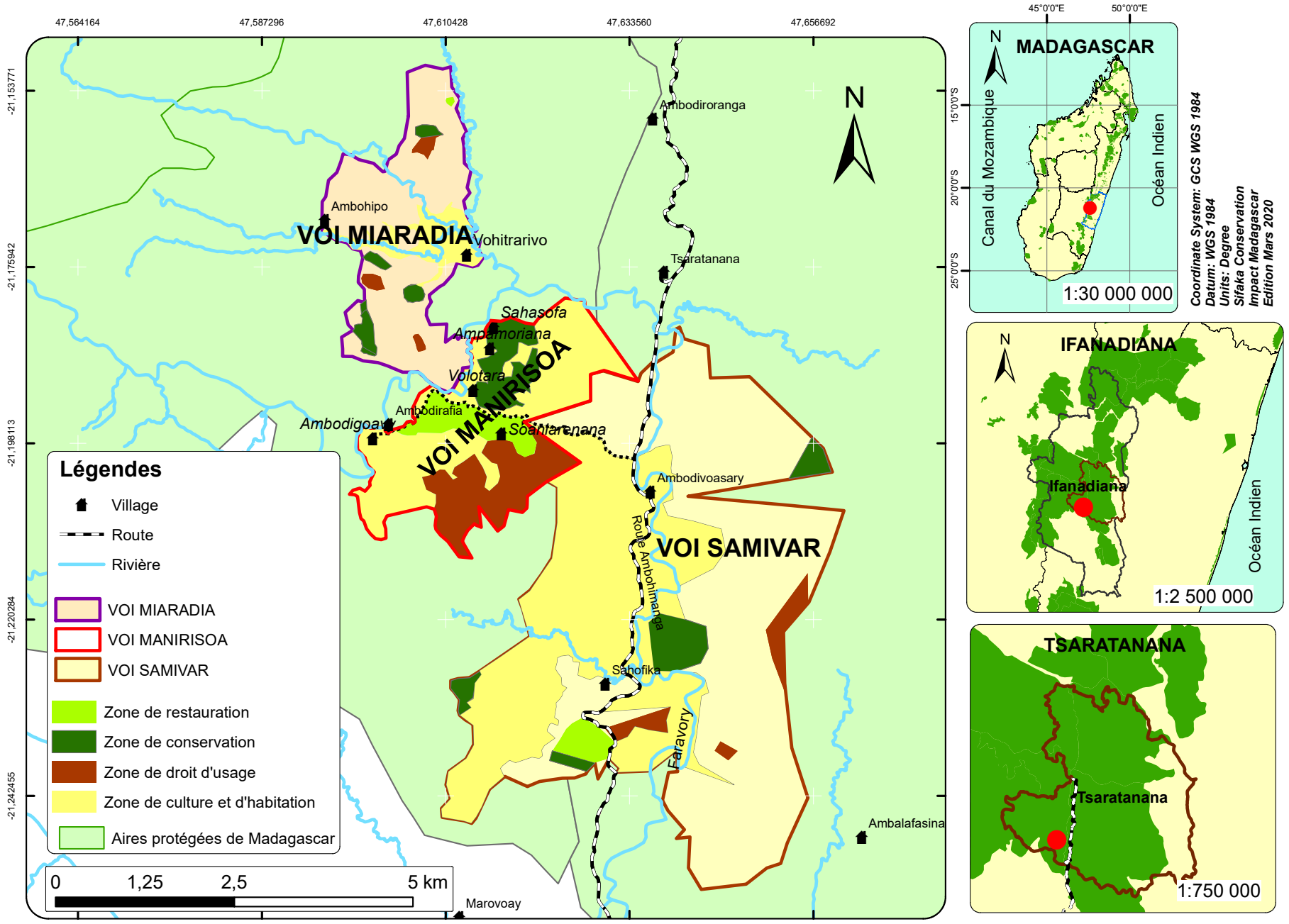
PROJECT SITES

ANKIRIHITRA, DABOLAVA, MADIROMIRAFY, MAHAJEBY SITES



PROJECT SITES

VOHITRARIVO SITE



OUR MAIN PROGRAMMATIC AREAS

Successful conservation requires a multi-faceted approach. We take this into account when we design our projects and we ensure that they address a variety of objectives and are based on each site's unique ecosystems and the needs of its community. In addition to this individuality, many of the sites share common goals and conduct similar activities, especially those that we've previously had success with and have proved to deliver real results. Thus, after compiling all of our data from 2019, we were able to identify what our main focal points were for this year across all our sites:

Lemur and Habitat Monitoring

Reforestation and Forest Rehabilitation

Community Development and Community Conservation

Environmental Outreach

More specifically, we focus on 4 main programs:

1. **Sifaka Conservation**: This is a program that aims to protect the remaining population of crowned sifakas (*Propithecus coronatus*) and their habitat in the highlands and the northwest of Madagascar, while also improving the livelihoods of local communities to become less dependent on natural resources. The objective of the program is twofold:
    - Protect the remaining and fragmented populations and their habitat by creating new community-managed protected areas and connect the most isolated populations by exchanging individuals between sites
    - Promote better wellbeing to local communities at the household level through alternative livelihoods and community development, in line with biodiversity conservation
    - Promote ecotourism for areas with unique ecosystems

2. **Community development** to reinforce the conservation program on the Greater Bamboo lemur in the Vohitrarivo area using community-based conservation programs and livelihood improvement. This program is in collaboration with HELPSIMUS.

3. **Practical environmental education** to promote sustainable development and environmental behavior, through Pan African for Conservation Education (PACE)

4. **Community health** programs related to biodiversity conservation

ANKIRIHITRA SITE

The rural municipality of Ankirihitra is well known at the national level for its large expanse of forest and for the species richness of the different forms of life that call it home. Various species of fauna and flora take refuge in these natural habitats and it is one of the reserves for critically endangered species such as *Propithecus coronatus*, *Eulemur mongoz*, *Haliaetus vociferoides*. We have undertaken a variety of projects with the local community and the Boeny/Betsiboka Forest Administration. These activities focused on forest restoration, raising awareness among the local community about conservation issues and environmental education, lemur and habitat surveys, and the natural resources management transfer of the Mariarano forests to a new community-based association called 'Miara-Mirona' (meaning "walking and working together").

Reforestation and Forest Rehabilitation

2019 was a year of successful conservation actions.

The seedlings that were produced locally were planted in the labohazo conservation area. More than **3,000 seedlings** of *Khaya madagascariensis*, commonly known as "hazomena", were planted and covered four hectares of previously bare ground. **270 people** from the communities participated in the tree planting.

For the first time, the students of the Ankirihitra primary school participated in a reforestation project. **Eighty-six (86) students participated** and they planted **215 seedlings** around their school on a surface of 0.5 Ha.

Nine thousand (9,000) seedlings of four species were produced from the nursery.

The nursery on site was prepared for the reforestation activities that will take place in January 2020.

Of the 9,000, there were 6,000 plants of *Khaya madagascariensis*, 1,000 plants of *Acacia auriculiformis*, 1,000 plants of *Albizia lebbeck*, and 1,000 plants of *Anacardium orientale*.

ANKIRIHITRA SITE

Environmental Outreach

Three classes (the three oldest grades) of students from the local primary school, received **environmental education presentations** that aimed to raise awareness of the importance of **conservation** and the roles of **biodiversity** and the environment in **human life**.

These sessions focused on five key themes: the environment, the food web, the lemurs of Ankirihitra and their ecological role, ecosystem services, and the harmful consequences of forest destruction.

A hand washing station (tippy-tap system) was also installed to encourage the students to practice good hygiene.

Twenty (20) wooden signs were made that marked land zoning, warned of prohibited activities, and encouraged vigilance. These **signs were strategically placed** at target locations. There are 3 warning signs, 6 signs indicating the zoning in the community-based conservation area, and 11 signs signifying a no-entry zone.

Additionally, **large-scale campaigns** took place to raise the villagers' awareness of the importance of biodiversity, environmental protection, and lemur conservation. These sessions were attended by **775 people** and included talks, presentations, and documentary film screenings. A village meeting was held to persuade the local people to stop hunting lemurs, to stop the trafficking of wildlife, and to stop the use of bushfires.

The enforcement of laws that apply to offenses against forestry legislation, hunting, fishing, nature protection, land clearing, and vegetation fires were also explained to the local community and 100 brochures were distributed outlining these laws.

ANKIRIHITRA SITE

Lemur and Habitat Monitoring

Surveys were taken of both diurnal and nocturnal lemurs and their densities were calculated. These surveys were undertaken from 4 transects for diurnal lemur species and 2 transects for nocturnal lemur species.

The results are follows: **118 groups of diurnal lemurs were counted,** made up of **472 individuals**. Their densities were calculated: *Propithecus coronatus* with 255.74 individuals/km^2, *Eulemur rufus* with 44.07 individuals/km^2, and *Eulemur mongoz* with 6.74 individuals/km^2.

This survey also found **one nocturnal lemur species** (*Microcebus murinus*). A total of **77 individuals** were counted. The calculation of the density of nocturnal lemurs in the forest of Ankirihitra was 538.46 individuals/ km^2.

Six types of pressures were identified: the hunting of lemurs, birds, and wild boar, villagers' unauthorized entry into the conservation area, fires entering the conservation area (bushfires), the extraction of resources from the forest and of insects in the conservation area, the trafficking of the Madagascan flying fox (*Pteropus rufus)*, and illegal logging. Some of these threats were found to be increasing, however, this discovery inspired immediate actions.

For the first time, **unannounced inspections** by forest police officers and the forest administration of the area were undertaken. They were successful in finding a fake logging permit that had been used to cut down 126 trees, 6 people involved in illicit logging (39 pieces of timber were seized), and 8 people involved in the poaching of lemurs. They were all summoned to be investigated by the police. These inspections also resulted in the rescuing of 21 *P. rufus* individuals from illegal trafficking.

ANKIRIHITRA SITE

Community Conservation

A new official **contract for natural resources management**, effective for three years, was signed allowing for community management of natural resources by the community-based conservation association, VOI Miara Mirona, which includes an area of 3,972 hectares. This is a new **community-based conservation program** installed in Ankirihitra to promote additional community reserves to the area. As a result, there are two community-based conservation programs in Ankirihitra, one with VOI Miara Mirona, the other with VOI Voavonjy. The total area managed by the two VOIs is 6,600 Ha of forests and habitat.

Community Development

Market gardening activities continued from previous years. New and existing members were trained and provided with seeds. In the villages of Ankirihitra, Maroabolay, and Mariarano, there was a total of 204 beneficiary households (24.05 ares* of agricultural land) This was an increase in each village in comparison to 2018, with this year welcoming 131 new beneficiaries.

* 1 are = 100 m^2

Poultry farming activities also continued from 2018. There was a total of 35 beneficiary households. The breeding success rate of the ducks was only 37.28%, with the majority of losses being from disease (57%). However, some of these diseases could be prevented with the proper vaccinations and better their chances of surviving. In 2020, some of the villagers will be trained on poultry vaccination techniques.

The local communities of two villages (Ankirihitra and Maroabolay) also received training in the **System of Improved Rice Cultivation** (SRA). A total of 64 households participated, and of these beneficiaries, 36 households were new. Weeders, seeds, and herbicides were distributed. Unfortunately, the crops could not be planted because of road closures following the cyclone in the northwestern part of the island. The supplies will be carried over for use in 2020.

ANKIRIHITRA SITE

Goals for 2020

In 2020, we aim to continue our conservation activities, as well introduce new projects in order to reinforce what is already being undertaken.

The continuing activities will focus on:

- Increasing the production of fast-growing tree species via community reforestation projects
- Producing more forest tree seedlings in the nurseries
- Holding capacity building sessions for VOI patrol guides
- Implementing environmental education programs in schools in Ankirihitra and Mariarano
- Conducting a survey of the lemurs in the forest along labohazo
- Carrying out unexpected checks with the Boeny Betsiboka forestry administration
- Production of rocket stoves to Ankirihitra and Mariarano.

DABOLAVA SITE

Dabolava is a commune located in the north-eastern part of the Menabe region of Madagascar. Amboloando forest is the most southern distribution range of the crowned sifaka, so it is important to maintain genetic diversity by implementing conservation actions. We focused on the rehabilitation of areas damaged by fire and the creation of suitable habitat by increasing the amount of tree coverage using a combination of pioneer and fast-growing forest species. These activities were monitored periodically and local technical agents ensured their implementation to ensure the sustainability of these efforts.

Environmental Outreach

Two classes from two schools in Dabolava, with a total of 53 students, were given lessons focused on hygiene, biodiversity, and the lemurs of Madagascar. These students also received **practical training on gardening** and worked on the gardens they created in previous years. Periodic visits after the initial lessons showed that they were successful in maintaining them; so much so that they were **able to sell the fruits and vegetables they produced**. The proceeds they collected from these sales were put into a class fund that went towards beneficiary students.

These students also took a **field trip** to discover the **natural state of biodiversity** and build their capacity during the training led by the environmental educator. Fifty-two (52) students were present at the nature outing in the Amboloando forest. According to evaluation questionnaires filled out after the visit, 85% of the students' reviews indicated they had a good level of understanding and satisfaction with the activities.

Local families also received practical lessons in **healthy living, water purification, and how to recycle their plastic waste**. Thirty-two (32) households were trained, and of those, it was found that 25 households continued to practice the techniques we taught them i.e. 78% of the beneficiaries in the two villages concerned.

The second annual **Sifaka Festival** was held in Dabolava with **600 participants** in the conservation awareness parade and an **audience of 1,200-1,500** people per day.

This festival is an interactive and entertaining way to **raise awareness** about the importance of **protecting the environment**, the **conservation of endangered species**, and to **encourage the public's participation in the community reforestation activities**. The results of the evaluation questionnaires completed after the festival showed that more than 65% of the public responded positively, which indicates that the awareness messages were successfully delivered to the majority of the public.

DABOLAVA SITE

Reforestation and Forest Rehabilitation

The Sifaka Festival appeared to be successful in encouraging the local community because **more than 700 people** participated in the three-day tree-planting event. This community reforestation resulted in the planting of **6,225 seedlings** of fast-growing tree species. This is 1,000 more seedlings than were planted than in 2018.

The members of the local conservation committee also helped in digging holes for tree planting, and they were paid a small allowance for each hole. More than 5Ha of previously reforested areas were also maintained during 2019 by watering and removing invasive grasses.

The survival rate of the newly planted seedlings was 74%. The seedlings that didn't make it were replaced after the survey.

This year, **a total of 10,031 seedlings were produced in the nursery**. These young plants were composed of 5 fast-growing species and 8 forest species. See the number of seedlings of each species produced in the table below.

Species	No. of seedlings	Species category
Albizia lebbeck	3312	Fast-growing species
Acacia mangium	58	Fast-growing species
Poupartia sylvatica	205	Forest species
Stereospermum euphorioïdes	152	Forest species
Syzygium sakalavarum	110	Forest species
Albizia gummifera	1506	Forest species
Gmelina arborea	1520	Forest species
Albizia sp. 1	600	Fast-growing species
Acacia leptocarpa	387	Fast-growing species
Acacia rovuma	785	Forest species
Melia azedarach	1005	Fast-growing species
Canarium boivinii	206	Forest species
Macaranga ferruginea	185	Forest species
TOTAL	10031	

Seedlings continue to be produced for reforestation and forest rehabilitation activities that will take place in the villages of this area in 2020.

DABOLAVA SITE

Community Development

The community-based conservation association, VOI Rianala, and members of the local community received training in **various practical skills**. A total of **112 beneficiary households**, of which 43 were VOI members, were trained in the practice of **market gardening**. Over 100 seed packets were donated to these households for their cultivation plots.

Awareness was raised among the local populations of Dabolava, Soanafindra, and Ambinda about the use of **rainfed rice cultivation**. In these three villages, there were 53 beneficiaries, all of whom received training and treated seeds so they could produce rain-fed rice during the rainy season. Additionally, each village received a number of weeders.

Additionally, **SRI (System of Intensive Rice Cultivation)** programs were continued in Dabolava, Soanafindra, and Ambinda. There was a total of **40 beneficiary households**, and 22 of them were practicing. The households in Dabolava and Soanafindra had a total area of **5.70 ha under cultivation**. The average production yield was 2.61 Tons/Ha to 3.22 Tons/Ha with SRA techniques, and 4Tons/Ha using SRI techniques.

These agricultural trainings not only allow a source of income for the local people, but it also demonstrates that they can secure their livelihood in a way that doesn't harm the forest.

DABOLAVA SITE

Community Conservation

The production of **rocket stoves** continued from previous years and in order to meet the needs of the local population, a new additional oven (used for fabricating the stoves themselves) was built near the construction house. The first round of production resulted in **50 stoves** that were to be sold in public markets. The stoves are **fuel-efficient** and they **reduce the use of wood up to 43%,** as well as helping villagers save money on charcoal consumption.

The collaboration agreement with **DREDD Menabe** (the regional Office of the Ministry of Environment and Sustainable Development) was prepared for renewal, in which a three-year contract would be signed in 2020.

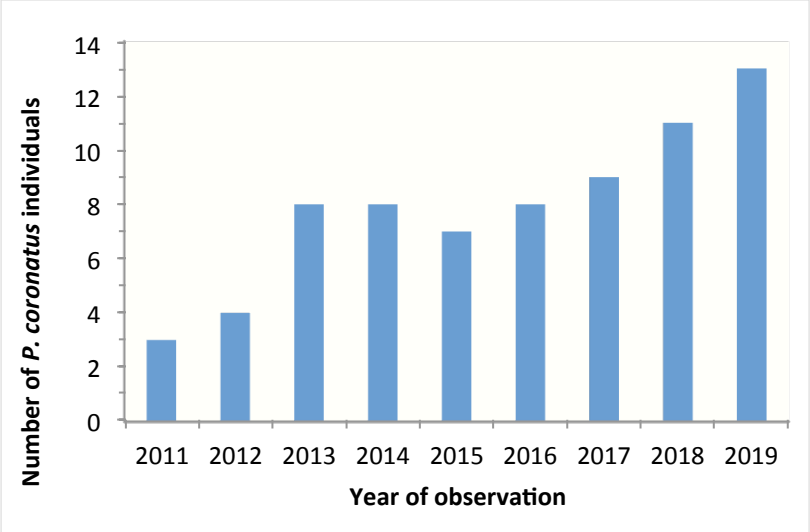
The community-based association VOI Rianala in Dabolava is now three years old; thus, the final evaluation is planned for 2020 in order to **renew their management contract**. VOI Rianala will be assessed for their achievements, in collaboration with the DREDD Menabe.

DABOLAVA SITE

Lemur and Habitat Monitoring

The improvement of the quality of Amboloando forest continues to support the **long-term conservation of the crowned sifaka**, in partnership with the local community of Dabolava, however there are still activities in this area that threaten the health of its biodiversity. The biggest threats are bushfires caused by slash-and-burn practices and illegal gold mining. However, despite these ongoing pressures, 2019 was a good year for the sifakas.

Of the 13 crowned sifakas counted this year, zero were lost, and they welcomed two new babies!

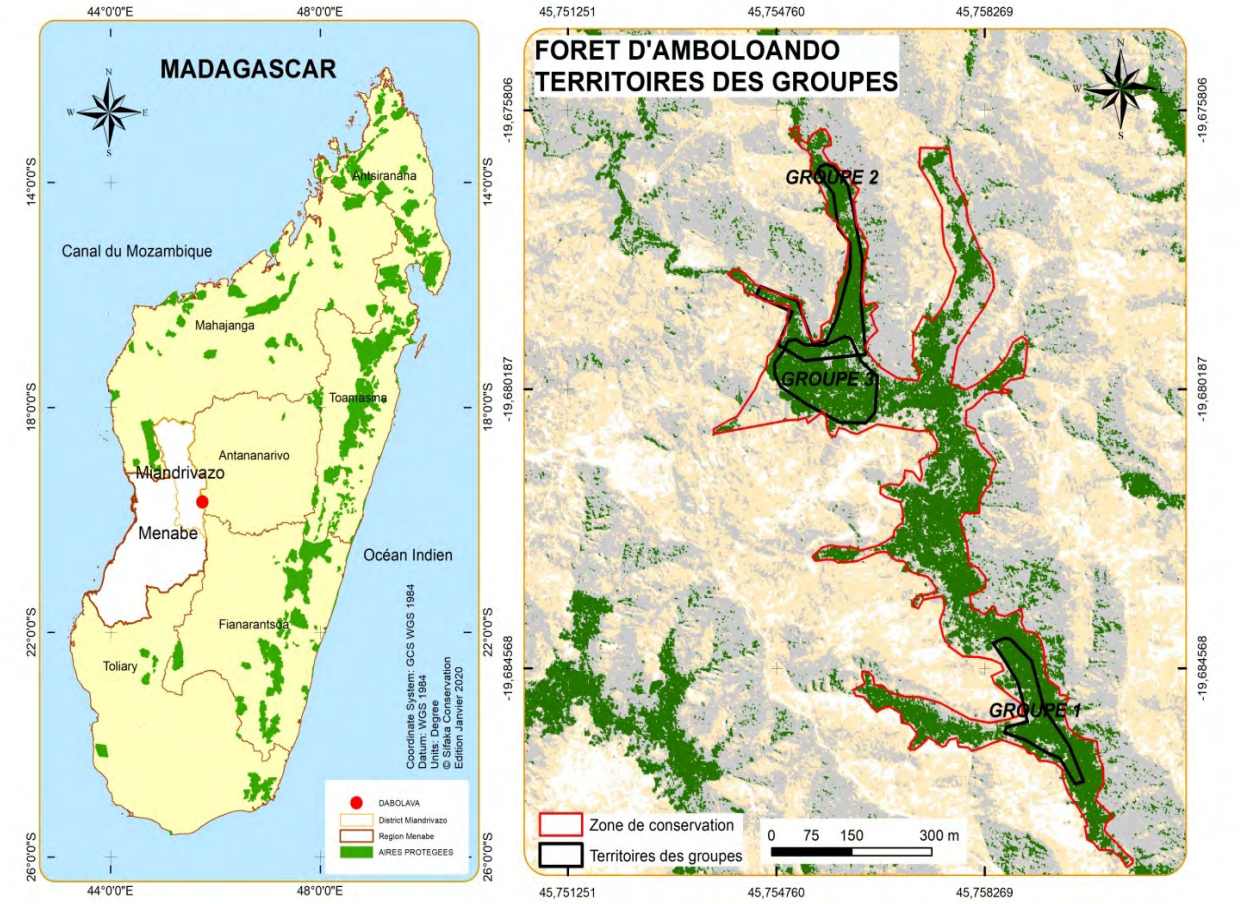


As can be seen in the chart above, the number of individuals in this area has **increased every year since 2015**.

The restored zones are being continuously cleaned and maintained to **accelerate tree growth**. The trees reached a height of 2 to 4 meters. This area will be available for the lemurs' use starting in the 2020 rainy season. The most recently reforested trees reached a height of about 50 cm to 1 meter and are cleaned for invasive herbs and maintained to improve their quality.

DABOLAVA SITE

Lemur and Habitat Monitoring *continued*



Map showing the territories of the 3 crowned sifaka groups within Amboloando Forest

To further protect the habitat and prevent the entry of bushfires, an **effective firebreak system was established**. In order to prevent fire from entering the sifaka groups' home ranges or the reforestation area, a biological firebreak with a total length of about 3.5 km and a width of 15 m was installed to subdivide the conservation area into 5 large sections. The firebreak was ploughed and underwent direct seeding to ensure that there was tree coverage throughout the area to avoid the growth of weeds. This new firebreak joined an existing reserve firebreak belt (10-12 m wide) that goes around the entire forest and forms a closed boundary at the outer edge. At the outer limit of the conservation zone, the dual-band firebreak around the zone constitutes the first barrier against fire coming from the outside. Despite the abundance of fires outside of the firebreaks, no bushfires entered the conservation areas and the biodiversity within remains undisturbed.

Goals for 2020

- Continued awareness-raising and reforestation with the local population and authorities
- Ensure the renewal of the TGRN with the DREDD Menabe
- Creation of a fourth group of sifakas. *The introduction of an additional group is needed in order to increase genetic diversity and to solve the male-biased sex ratio through a translocation program.*
- Strengthening of habitat restoration and monitoring of related activities

MADIROMIRAFY SITE

The Madiromirafy site is made up of two distinct ecosystems, the Mandrava gallery forest, and the Madiromirafy Lake. Both areas are important habitats for a variety of species. Most notably, the gallery forest is home to the endangered crowned sifaka and two critically endangered species depend on the lake: the Madagascan fish eagle (*Haliaeetus vociferoides*) and the damba (*Paretroplus maculatus*), a fish. Unfortunately, these important ecosystems have been affected by anthropogenic pressures which have caused biodiversity loss and habitat damage.

Environmental Outreach

Four villages in the area (Anjiakely, Ambodimadiro, Madiromirafy, and Anosibe) were given a **series of presentations** and the **screening of a films**. These presentations focused on the **fundamental roles of the forest**, the causes of destruction and **their impact on human life**. Across the villages a total of **1,100 people attended**.

Three primary school classes in Ambodimadiro, Anjiakely, and Anosibe were also given **practical training** based on **hygiene and health** and why they are both so important. The students were trained how to properly wash their hands and to understand what germs are and how they spread.

Additionally, **60 students were taken on a field trip** into the gallery forest and nursery of Mandrava. They learned about the forest, as well as the nursery and the reforestation projects taking place.

MADIROMIRAFY SITE

Reforestation and Forest Rehabilitation

An awareness campaign was carried out to encourage people to participate in reforestation and forest restoration in their local area. Overall, there was an **audience of 760 people**.

More than 200 villagers participated in reforestation activities. **They planted 5,220 seedlings** of three species: *Acacia auriculiformis*, *Eucalyptus citriodora,* and *Breonadia microcephala*.

7,000 seedlings were produced in the nursery (an increase from 5,220 in 2018). These seedlings will be planted in January 2020.

Community Health

A workshop was conducted on sexual education with the girls from the secondary school in Madiromirafy, mainly focused on menstruation, contraception, and an open discussion on hygiene and health. The workshop was followed by the **distribution of washable sanitary pads to 40 girls** aged 11 to 17.

Additionally, there was a **reusable sanitary pad sewing workshop** with three local seamstresses to produce sanitary pads and sell them, to **improve their sources of income**. The seamstresses were provided with supplies (sewing machines, fabrics, and accessories) to produce 10 sanitary pads for sale per day.

MADIROMIRAFY SITE

Community Health continued

A **medical mission with Madagascar Medical Safari** (MMS) was carried out in the villages of Madiromirafy and Mangabe. This is a collaboration Impact Madagascar has with the NGO, HoverAid. This is a program where doctors and specialists travel to sites and **provide free medical care** to the community. Consultations, dental extractions, general and minor surgeries, and ophthalmology appointments were provided for a total of **189 patients** in Madiromirafy and **342 patients** in Mangabe. This improves the health of the communities, which in turn also allows them to work on their livelihoods and biodiversity conservation.

The **Anosibe school** which was constructed in 2018, officially opened. **Forty-five (45) students** attend the new school.

The school has **two classrooms**, with a capacity of 80 students and a library/teacher's room (which could also be used as a classroom in the future), a shelter for outdoor activities and/or workshops, and bathroom facilities for children and teachers.

School supplies were donated, including desks, tables, benches, and chairs, as well as stationary for students.

We were able to support one teacher by paying his monthly teaching salary, thanks to the support of Cotswold Wildlife Park & Gardens.

MADIROMIRAFY SITE

Community Development

A series of programs focusing on **practical agricultural techniques** were carried out in the villages of this area.

Poultry farming continued from previous years. It was initiated by the distribution of **496 ducklings to 102 breeders** in four villages. The average survival rate was 79.15%, which is a significant increase from 41.72% in 2018. Additionally, six people registered to be trained in vaccination techniques.

In the nursery, patrol guides were trained on how to produce compost. This compost was made for created for use in the nurseries where the seedlings for reforestation are grown. Four guides received training and together produced a total **of 280 kg of compost**.

Compared to 2018, there was a nearly 40% increase in the average survival rate of the poultry the villagers raised.

To help with the **control of armyworm** (a pest that attacks crops), an insecticide and sprayers were given to six beneficiary households. Among the treated crops, it was found that there was an **83.33% success rate**. This use of insecticide was able to reduce the losses from armyworm on corn crops from 73% (without treatment) to 17% (with treatment).

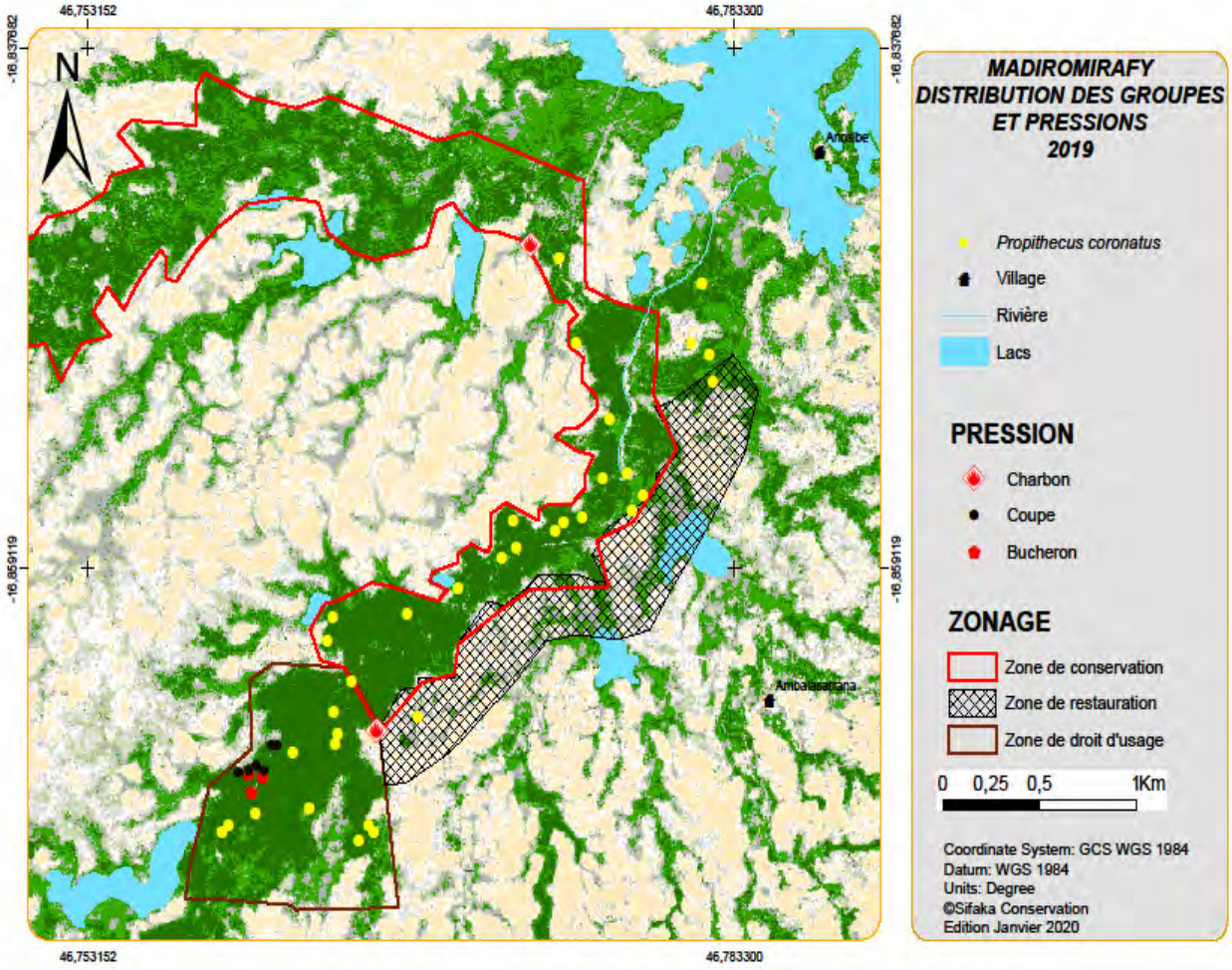
Thirty-one beneficiary households across three villages (Madiromirafy, Anjihikely, Ambodimadiro) participated in the practice of **market gardening**. They received 62 packets of seeds and cultivated a total area of more than 7.7 ares.

In the village of Ambalasatrana, 16 beneficiary households received the training and supplies needed for the practice of **rainfed rice cultivation**. These households received treated seeds, insecticide, and rainfed rice weeders to start their cropping season.

MADIROMIRAFY SITE

Lemur and Habitat Monitoring

The 2019 survey of *Propithecus coronatus* in the Mandrava gallery forest found **29 groups, 148 individuals, and 20 new babie**s. This is an increase from 2018 when the total number of individuals was only 123, recorded groups were 25, and newborns were 14.



Map displaying the group distribution of P. coronatus *and pressure distribution in the Mandrava gallery forest*

The main pressures and threats to the forest habitat and its biodiversity were identified as **illegal logging** and the **production of charcoal**. Several actions were taken to protect the Mandrava gallery forest and the Madiromirafy aquatic zone, and prevent further destruction.

These actions included conducting important **capacity building sessions** for forest patrol agents (polisin'ala) and members of the local conservation committee.

MADIROMIRAFY SITE

Community Conservation

The Forestry Administration (DREDD - Representative of the Ministry of Environment) provided **training to the forest patrol agents and COBA** (community-based conservation) members. These trainings were carried out in order to ensure the **legal and sustainable use of the natural resources**. The first session focused on the roles of the forest patrol agents, which is to patrol and control the collection of resources, and to report to the VOI and record all observed offenses. The training led by the Head of the Fisheries Department and the Head of Aquaculture within the Betsiboka Region explained the **regulations regarding fishing**, the monitoring of lakes and fish abundance in the water, the legal size of fish catches, the legal type and size of net that can be used, and also the requirement that all persons working in the fishing area must have a legal card. Additionally, **unannounced checks** were conducted in the lake and wetland areas, and the forest. There was a check in the daytime and it resulted in the seizure of all the caught fish under regulation size. Additionally**, three people were summoned** for use of **illegal fishing nets**. There was also a nighttime check which was successful in finding two illegal fishermen using prohibited fishing nets (their nets were confiscated and destroyed).

Preparing compost for tree nurseries

In the forest, patrols were also successful. The technical agents made rounds around the forest with the gendarmes. **One person was arrested for using bushfir**e to clear their field, which had gone into the restoration area. The burnt area was about one hectare (1Ha) and the burnt species in the restoration area were *Stereospermum* sp. and *Albizia lebbeck*. All the offenders were investigated. After the inspections were undertaken, a meeting was held at Madiromirafy village to remind the public of the laws on fishing and forestry, and the use of natural resources.

MADIROMIRAFY SITE

Community Conservation *continued*

In order to improve **cohabitation between local households** living nearby the Mandrava forest and the **biodiversity**, meetings were held in the village of Ambalasatrana to implement a **conservation agreement** between the local villagers to **protect the gallery forest**. Fifteen (15) people attended the meeting, all of which were either farmers or worked to produce charcoal. The Impact Madagascar team presented on the importance of the forest and its ecological and socio-economic role and discussed with the local households solutions to reduce pressures on forests.

An agreed win-win situation was developed with local authorities: the local people will plant fast-growing tree species for charcoal production, and will secure the forests around where they live. Impact Madagascar will train and support them in agricultural techniques and alternative livelihoods.

To further improve the wetland ecosystem of the area, **the lake was stocked with 1,500 fish** in 2019. The young fish were carefully transported, acclimatized to the lake water, and were then released. The fish were noted to be doing well and it is assumed that **they all survived** (no dead fish floated).

Additionally, **5 ecotourism groups** were booked and scheduled for April, May, July, and August, 2019. Of these, 4 groups arrived on site to visit the Mandrava forests, the camp, the tree nurseries, and the newly built school. One of the groups canceled due to an access problem at the beginning of April, but overall it proved to be a successful year for ecotourism in the area.

MADIROMIRAFY SITE

Goals for 2020

In addition to continuing our current activities at the Madiromirafy site, our main goals for 2020 are to:

- Strengthen and improve habitat monitoring activities for the crowned sifaka
- Increase activities related to wetlands and other biodiversity targets (herpetofauna and fish)
- Continue ecological restoration and reforestation activities
- Produce rocket stoves in the rural commune of Madiromirafy
- Strengthen environmental education activities
- Strengthen community health activities
- Improve ecotourism activities

MAHAJEBY SITE

Mahajeby is a village found in the region of Bongolava in central-western Madagascar. The forests of Mahajeby are home to over 75 crowned sifakas. Conservation activities have been successful and actions that threaten their habitat were noted to be significantly reduced at the end of 2019. Conservation activities took place in four villages in the area: Mahajeby, Kamolandy, Ambohimena, and Sahatampoka. They focused on ecological restoration, reforestation and seedling production, as well as raising awareness about important environmental issues especially relevant to this area. Additionally, there was a concentration on the improvement and strengthening of the community-based conservation associations.

Primary school students created a garden and were able to sell the produce they grew.

Environmental Outreach

Eight villages were visited to disseminate information and **raise awareness about conservation and the dangers of bushfires**. Session topics included the explanation of the negative effects of bushfires on fauna and flora, and information was given about the laws and legislation concerning the use of bushfires. Additionally, there was a presentation about preventive and active control, and the distribution of posters on the subject to be put on display. A total of 371 villagers attended these sessions. There was an **80% rate of comprehension** of the explanations, presentations, and posters, after the assessment post-event.

Fifty-four primary school students worked to create a **vegetable garden**. Their total cultivation area was 45 m^2. They were able to reap the benefits from their work and were able to sell the produce they grew, allowing them to practice **market gardening** themselves.

MAHAJEBY SITE

Reforestation and Forest Rehabilitation

Three villages were visited to raise awareness about the **importance of reforestation** and to encourage them to participate in the **community tree planting**. A total of **237 residents** helped plant the seedlings. Additionally, a sport tournament was held to gather people and to raise awareness about the importance of reforestation and tree planting. The participating players planted 213 plants.

In total, **5,787 seedlings were planted**, of which 1,769 were Eucalyptus, 2,605 were Acacia, and 1,413 were Melia trees. The seedlings were planted in 2 hectares of the VOI reforestation area and 4 hectares in personal household plots of the local communities.

During the monitoring of the reforestation program in the communities (five communities including the VOI, primary school, churches, the secondary school and the community hospital) in May, it was found the survival rate of the young trees was 75%. Unfortunately, when they were checked in November, that rate had dropped to 35%. The main cause of this was the severe drought in the area.

There was an estimated annual total of 50,000 seedlings produced!

The nursery continued to produce seedlings of a variety of species including:
Carica papaya,
Syzygium sakalavara,
Ficus lutea,
Acacia robusta,
Eucalyptus citriodora,
Eucalyptus camardi,
Melia azedarach
and other forest and fruit tree species.

MAHAJEBY SITE

Community Conservation

The production of **rocket stoves** is a new activity in Mahajeby. Four villagers volunteered and received training for the production of the stoves. **Thirty-five** stoves (20 for charcoal, and 15 for firewood) were built and sold for 5,000 Ariary each. **75% of users were satisfied** with the shape, speed and consumption of the charcoal of the stoves.

The community-based conservation association **VOI FIARO** in Mahajeby is two years away from natural resource management. The results from the mid-term evaluation found:

- Members of the community-based conservation association: 80

Number of activities undertaken and results:

  - More than 48 ecological surveys by members carried out (compared to 24 in 2018)
  - Formation of 650 m of firebreaks in the reforestation zone
  - 65 families have their own tree planting program and the maintenance of seedlings
  - 250 market gardening beneficiaries
  - 2 quarterly reports were sent
  - 4 general meetings carried out

- Logging requests received: 10
- Number of DINA (local laws) applications: 3
- Annual workplan established for the VOI FIARO

Efforts were also made to make the village responsible for supervising a part of the forests in their surrounding area. A management/monitoring plan for each area within the villages was established. Additionally, 10 KASTI (Komitin'ny Ala sy ny Tontolo Iainana, translating to Forest and Environment Committee) were designated per village to be environmental leaders responsible for verification and control of the forest outside the area managed by the VOI. Eight forest patrol agents were put in charge of monitoring and patrolling the forest in the area managed by the VOI. Lastly, **six forest fragments were dedicated as conservation areas**.

Community Development

Households across the 4 villages of Mahajeby, Kamolandy, Ambohimena, and Sahatampoka, were beneficiaries of practical training of **income-generating activities**. Beneficiaries received training and supplies for the practice of **rainfed rice cultivation**. There was a total of **121 beneficiary households** who all participated in the trainings and were given treated seeds and insecticide.

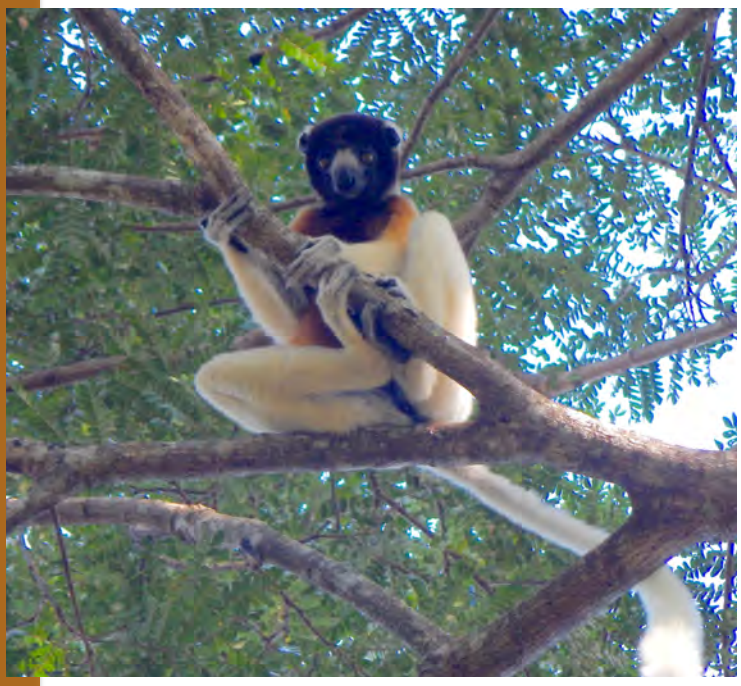
Additionally, **250 beneficiary households** took part in **market gardening** activities. In 2019, 176 participated in crop growing and produced a total of 47.13 ares of cultivated area.

MAHAJEBY SITE

Lemur and Habitat Monitoring

A total of **76 crowned sifaka individuals made up of 16 groups** were recorded from Mahajeby forests. There has been an increase in the number of individuals each year, but this year's increase was especially notable.

In the area, 49 illegal logging instances and 280 hectares of cleared habitat were registered in the controlled use zone (not in conservation area). However, there was no recorded hunting and only one documented bushfire.



The pressures and threats in the area continued during the first quarter, but were **significantly reduced** during the second half of the year, except for some clearing in the Ambararata Conservation Area. Overall, there was a reduction in actions that are destructive to the habitat.

The number of crowned sifaka groups with newborns increased to about 85% in 2019.

Goals for 2020

- Capacity building for VOI members and for patrol guides
- Reinforcement of income-generating activities, particularly the market gardening with specific speculations.
- Promotion of Practical Environmental Education, Health and Hygiene, and Water Management
- Provision of supplies needed to build rocket stoves to ensure continuous production
- Planting of more than 50,000 seedlings and ensuring that they are monitored.

VOHITRARIVO SITE

The Vohitrarivo site is an area in the municipality of Tsaratanana in the northwest of Madagascar. Our activities were focused in the villages of Vohitrarivo, Sahofika and Ambodigoavy. These activities were mostly based on the creation, supervision, and support of community-based conservation associations in these sites. Other projects included seedling production at the nurseries in the area, reforestation campaigns, and numerous community development activities focused on providing practical agricultural training and coaching to community members.

Reforestation and Forest Rehabilitation

The following reforestation activities were carried out in the villages of Vohitrarivo and Sahofika:

VOHITRARIVO:
2,691 seedlings of fast-growing trees
3,476 seedlings of native species planted

Eucalyptus:
1,667 seedlings reforested:
1,647 seedlings reforested in the individual cultivation plots of VOI members (92 beneficiaries)
20 seedlings planted in the reforestation plots of VOI Miaradia

Acacia:
1,024 seedlings in the individual cultivation plots of VOI members (92 beneficiaries)

Forest tree species:
3,476 seedlings planted in the reforestation plots of VOI Miaradia

SAHOFIKA:
3,658 seedlings of fast-growing trees
2,701 seedlings of native species planted

Eucalyptus:
1,743 reforested seedlings,
96 of which were planted in the reforestation plots of EPP Sahofika students
1,647 reforested seedlings in the individual cultivation plots of VOI members (115 beneficiaries)

Acacia:
1,915 seedlings reforested:
104 planted in the reforestation plots of the EPP Sahofika students
513 seedlings in the reforestation plots of VOI Samivar
1,298 seedlings in the individual cultivation plots of VOI members (115 beneficiaries)

Forest tree species:
2,701 seedlings planted on VOI Samivar reforestation plots

VOHITRARIVO SITE

Reforestation and Forest Rehabilitation *continued*

Additionally, the tree nurseries in both Sahofika and Vohitrarivo produced a large number of tree seedlings for the reforestation of the VOIs on the site:

REFORESTATION CAMPAIGN 2019:

No. of Eucalyptus tree seedlings produced:
2,214 seedlings for Sahofika
1,772 seedlings for Vohitrarivo

No. of Acacia tree seedlings produced:
2,341 seedlings for Sahofika
1,749 seedlings for Vohitrarivo

No. of cinnamon seedlings produced:
1,264 seedlings for Vohitrarivo

No. of forest tree seedlings produced:
3,689 seedlings for Sahofika
4,137 seedlings for Vohitrarivo

REFORESTATION CAMPAIGN FOR 2020 (and ongoing production)

No. of Eucalyptus tree seedlings produced:
1,841 seedlings for Sahofika
2,937 seedlings for Vohitrarivo

No. of Acacia tree seedlings produced:
1,088 seedlings for Sahofika

No. of fruit tree seedlings produced:
621 seedlings for Sahofika

No. of pots directly sown:
430 pots containing Albizia seeds for the village of Sahofika

VOHITRARIVO SITE

Community Development

Community development activities involving many community members across a variety of topics took place in this area in 2019. Many activities focused on **practical agricultural training** and **income-generating activities**.

Fish farming practices that were developed in previous years and carried out by the beneficiaries in the village of Vohitrarivo were monitored. It was found that a total of **13 households** were participating and the approximate **survival rate of the fish was 87%**.

The practice of SRA in the villages of Vohitrarivo, Sahofika, and Ambohipo was launched and monitored. A total of **37 beneficiaries** practiced the techniques, transplanting a total of **232 ares of rice fields** throughout both growing seasons. Despite there being an overall decrease in participation rates compared to 2018, there was an **increase in crop production** yields at every site.

Students also participated and they planted crops in the **vegetable garden of their EPP** (primary school) in Sahofika. They cultivated squash, petsai (Napa cabbage), ramirebaka (bok choy) and carrots on 8 ares, and beans on an additional 9 ares. **They harvested their produce for the school canteen**.

Market gardening activities were continued in five villages of the area: Ambodimanga, Ambohipo, Ambodivoasary, Sahateza, and Sahofika. Unfortunately, most sites were not able to plant crops during this campaign because the beneficiaries were unable to collect seeds during previous campaigns. However, all but two villages had an increase in the number of beneficiaries since 2018, with a total of **270 beneficiaries**.

Household waste and water management programs were launched in Sahofika and Vohitrarivo. The **20 beneficiary families** of each village were trained and given rainwater collecting and water management devices. The beneficiaries were able to **collect rainwater** and used it in their households. With regard to waste management, the technique has been mastered up to 85% on average for the village of Vohitrarivo and 80% on average for the village of Sahofika.

An **SRA program was** launched in the villages of the Fokontany Ambodigoavy. Fourteen households enrolled and **45 people were trained** in SRA, resulting in 89.48 ares of installed crop area. The average production yield from using SRA techniques was 4.12 Tons/Ha to 4.29 Tons/Ha.

The **cultivation of vanilla** was introduced to the village of Vohitrarivo. **Nineteen people registered** for the program and vanilla plant seedlings were distributed. Additionally, training in the techniques to improve vanilla cultivation took place in order to better the chances of crop success. This is a new program that Impact Madagascar will monitor and improve in 2020.

VOHITRARIVO SITE

Community Conservation

In addition to the participation of the VOIs of this area in the reforestation campaigns, other activities were focused on the support, coaching, and strengthening of these community-based conservation associations (VOI for natural resources management).

The VOI based in Vohitrarivo, VOI MIARADIA, had a registered **144 members** at a mid-term evaluation. Additionally, there were 11 polisin'ala recorded as part of this VOI. The VOI MIARADIA has completed its first management contract and is awaiting its final evaluation before moving on to renewal.

The VOI SAMIVAR of Sahofika is currently entering its third year of management. At its mid-term evaluation, there were **180 regular members** registered. Additionally, there was a recorded 16 polisin'ala as part of the VOI.

VOI MIARADIA of Vohitrarivo has 144 members and VOI SAMIVAR of Sahofika has 180 members.

Meetings were held to establish **a third VOI** called MANIRISOA (meaning "wanting the good things") in the area, in the village of **Ambodigoavy**. The proposal of its creation was accepted by all. The delineation of the area, the inventory of natural resources and an agro-socio-economic survey were conducted in order to prepare the community-based conservation activities with the local management transfer. The draft of the management plan was established with six conservation zones, three user rights zones, one restoration zone, four reforestation and local communities areas.

The remaining processes to officially validate the VOI MANIRISOA included the validation of the management tools, the training of COGE members and committees before starting up, and the signing of the management contract.

VOHITRARIVO SITE

Goals for 2020

The following activities are proposed for the year 2020:

- Signing of the management contract for Ambodigoavy VOI (VOI MANIRISOA)
- Renewal of the management contract VOI MIARADIA
- Monitoring the three VOIs
- Improved patrol data collection for patrol guides
- Seedling production in all areas where the VOIs are set, followed by restoration programs
- Livelihood activities

OUTLOOK FOR 2020

The environmental outreach, community development, lemur and habitat monitoring, and reforestation and forest rehabilitation activities undertaken in 2019 will continue into 2020. We will work to strengthen, improve, expand, and complete these actions where necessary.

Some of our goals for 2020 are:

- To continue to protect the environment and the many life forms that depend on it, by improving habitat monitoring activities, and by increasing the production of rocket stoves to reduce the need of firewood and timber
- To improve the lifestyles of local communities by providing training and supplies for their participation in income-generating activities and practical skill-building sessions
- To continue our ecological restoration and reforestation activities, with a focus on community reforestation projects
- To continue to expand nursery production and training on compost making and other useful skills
- To continue to improve the community management of natural resources by holding capacity building sessions and coaching for members, as well as ensuring contracts are signed or renewed where necessary
- To introduce technology and SMART analyses for our monitoring and patrols
- To improve ecotourism in areas where it is possible (such as Madiromirafy)
- To continue environmental outreach programs for schoolchildren and adults alike, providing engaging and interesting content and activities

CONFERENCES OUR TEAM PRESENTED AT IN 2019

Members of the Impact Madagascar team presented five of their studies at two conferences in 2019. The titles of their studies and the conferences at which they were presented are as follows:

Research presented at the 2nd African Primatological Society (APS) Conference in September 2019 in Entebbe, Uganda:

- "Gestion communautaire des ressources naturelles pour la conservation des lémuriens dans la forêt d'Ankirihitra, Madagascar" by Rakotondrabe Andriamihaja Rado and Razafindramanana Josia
- "Community-based conservation for the protection of critically endangered *Prolemur simus* in Vohitrarivo, Madagascar" by Rakotoarinivo Toky Hery, Razafindramanana Josia, Rabeony Fenomanantsoa Noella, Rakotonandrasana Ndimbisoa, Roullet Delphine
- "Mise-à-jour des données sur le petit hapalémur du nord (*Hapalemur occidentalis*) dans la forêt d'Anjahambe, Vavatenina, Madagascar" by Vonjy Andrianarimalala, Josia Razafindramanana, Harizo Rijamanalina, Delphine Roullet
- "Activities and social interactions between males and females of crowned sifaka in gallery forests in Madagascar" by Sahoby Randrianaly, Josia Razafindramanana, Hasina Ravaoarisoa, Andoniaina Rakotoarisoa, Brigitte Raharivololona, Jamie Craig, Delphine Roullet

Research presented at the Association for Tropical Biology and Conservation (ATBC) Conference in August 2019 in Antananarivo, Madagascar:

- "Preliminary behavioral ecology of crowned sifaka in gallery forests in Madagascar" by Hasina Ravaoarisoa, Sahoby Randrianaly, Brigitte Raharivololona, Josia Razafindramanana, Andoniaina Rakotoarisoa, Jamie Craig, Delphine Roullet

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