

ENVIRONMENT AND DEVELOPMENT

Ambatovy, Cited as an Example

It is sometimes difficult to associate environmental protection with development projects, a fortiori, mining operations. Based on increasingly stringent standards and recognized good practices; responsible mining companies are currently making special efforts in mitigating their activities' impacts on their host countries' environment and biodiversity.



TEDx Talk by Mrs. Kerry Ten Kate

In the TEDx Talk "Think net Positive," held at the University of Stirling, Kerry Ten Kate, Director of Biodiversity Initiative Forest Trends and the Business & Biodiversity Offsets Program, presented the best way to pair potentially harmful investment projects with biodiversity conservation. Taking Ambatovy as an example, she talked about the mitigation hierarchy, which helps to reach no net loss of biodiversity and ultimately to have a net positive impact.

"I believe we can transform the way we manage development to secure a far better outcome for nature and help people and the companies at the same time. We don't need to accept the development projects that inevitably result into these dreadful losses of habitat and species. That is not the price we have to pay for jobs and a healthy environment," she said in front of a highly interested audience.

In fact, Ambatovy was cited as an example by Kerry Ten Kate because the design of the company's environmental management program is based on the mitigation hierarchy, which is "to avoid - minimize - offset and restore," and, therefore, avoid any net loss of biodiversity and preferably obtain a net positive impact. First and foremost, it is important to avoid and minimize the mining activities' impacts on the environment. For example, Ambatovy's pipeline was often rerouted during

its construction in order to bypass critical areas, such as the spawning areas of the Mantella, an endangered golden frog species. Also, "the company has set aside for permanent conservation, part of the area on which it had permission to mine, which is quite a significant economic sacrifice, but it is really importance, particularly in a place like Madagascar," Kerry Ten Kate, the BBOP Director, said when talking about the 3,600 hectares of azonal forest conserved on the area where the ore containing nickel and cobalt is extracted.

With regards to residual impacts, she said it's important to proceed to better offsetting and restoration. Thanks to partnerships with the community and with other actors in the environment field, Ambatovy protects forests that are equal to nine times the surface of the Mine the company operates. *"Without these conservation activities, it's extremely likely that much of these forests will be degraded and deforested over time through other pressures, particularly slash and burn agriculture, which has been a cause of loss over many years in this area,"* added Kerry Ten Kate. Incidentally, in order to clear any misunderstanding, she clearly stated that "the project is by no means perfect but , it is a really serious effort of planning for no net loss of biodiversity. And of course it is just one project in one sector in one country ."

As the association between environmental protection and investment projects is both a pressing and a topical issue along with the climate change related threats and the last COP21, the speaker concluded this part of the conference by saying: "Just imagine the difference we could make for conservation if we could ensure a really high standard of no net loss and net positive impacts on biodiversity for all the projects around the world."

As a reminder, Ambatovy has committed, and remains committed, to establishing pioneer environmental management plans in order to ensure compliance with the highest national and international standards throughout the different phases of the project (construction, operation and closure). The company is also dedicated to avoiding, minimizing, and mitigating any residual impacts and lastly, to implementing a multifaceted biodiversity offsetting program to anticipate and manage environmental risks thanks to increased stakeholder involvement through the promotion of public information and consultations, transparent communication and appropriate management that will help in addressing possible environmental risks.

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SOCIAL INVESTMENT FUND

17 Projects Underway

The Social Investment Fund was created by Ambatovy in 2012 to contribute to social and infrastructure projects in the company's intervention areas. Several projects are underway while others have already been handed over to the communities:

Rehabilitation of a portion of road in Ambatondrazaka: To improve the road infrastructure quality in the capital of the Alaotra Mangoro Region.



Donation of two generators producing 13MW of electricity to JIRAMA Toamasina: To improve the electricity supply in the city of Toamasina.



The Market of Moramanga: A large market made up of six (6) hardwall buildings, which can host over 1,350 merchants in Moramanga. This market will enable better organization and better safety thanks to the facilities and equipment set up according to health and hygiene standards.



Donation of 2 fire trucks for the firefighters in Toamasina.



Rehabilitation of workshops at the Technical and Vocational High School of Toamasina: To enable students to work in an up-to-standard educational setting and to ensure better academic results.

MINE REHABILITATION

For a Comprehensive Ecological Restoration

A comprehensive ecological restoration for the return of a functional alternative forest after the operation phase: this can briefly summarize the broad lines on which Ambatovy's mining rehabilitation works at its Mine Site in Moramanga will focus.

"Our goal is to go beyond a mere reforestation and achieve a true ecological restoration, which takes into account all the elements of a forest, such as the fauna and flora. We will also rebuild their habitats," stated Samuel Rafanomezana, Ambatovy's Rehabilitation Supervisor.

Following a successful trial conducted at Analamay since 2010, the mine rehabilitation is already underway on an area of over 23 ha, using layered planting techniques. The process consists of planting a dozen species of different sizes and ages at the same time, allowing some forest species to grow normally in the shade of large trees, called pioneer species.

In order to facilitate the recolonization of the site, piles of stone block of various sizes, piled on each other, as well as dead wood, were placed in the restored area to serve as microhabitats and shelters for amphibians, reptiles and mammals to protect them against predators. Old branches were also installed to serve as perches for birds, which play an important role in seed dispersal through ornithocory.

"The restoration begins with reshaping the land to soften the landscape and rebuilding the soil by adding the topsoil, which was previously preserved and stored during stripping, along with the compost, obtained from ground tree stems and leaves from forest clearing, for fertilization.



The Mine rehabilitation is already in progress

The actual revegetation comes next," stated the technician.

It should be noted that forest rehabilitation at the Mine Site, which is among Ambatovy's most important commitments, is conducted following the Scope of work for a five-year rehabilitation plan established in 2009 and validated by Government representatives (CIREEF) and local environmental authorities by mutual agreement.

Furthermore, in order to adjust and improve working methods, Ambatovy also works closely with researchers from Malagasy and foreign universities and colleges, as well as research labs. Still in this sense, development work will soon be carried out at Ambatovy's nursery in Ampangadiatrandraka, Moramanga, to increase the production of seedlings for the proper conduct of the rehabilitation work.

ORCHIDS

Nine New Species Identified

Following the research and identification works undertaken by Ambatovy in collaboration with laboratories in Madagascar and abroad, nine new species of orchids have been identified at Ambatovy between 2011 and 2015. Being part of the flora richness in Ambatovy's operating area in Moramanga, orchids are subject to a specific conservation program, which consists of transplanting the individuals collected from the clearing zones in an acclimatization site at least one year prior to transfer to the conservation parks. Out of the 1,000 orchid species found in Madagascar, 252 are found in Ambatovy, an area rich in biodiversity.



TARATRA MANGORO

Reconciling the Environment and Sustainable development

“Killing two birds with one stone” is what famers within the Taratra Mangoro farmer organization in Moramanga want to achieve with **Ambatovy’s** support by trying to promote income-generating activities through new farming techniques while preserving the environment, mainly Mangoro’s watershed.

“We are farmers and we all live on agriculture, which is greatly dependent on the environment. We must then protect and preserve it for our good,” said the current President of the Association, Arsène Robertin. Thus, since its creation in 2013, the farmers within the Taratra Mangoro organization have embarked on a project funded by **Ambatovy**, which aims at promoting organic onion cultivation.

Certainly, it was only a pilot phase, but the harvest proved satisfactory and promising for the 25 farmers who chose to adopt new farming techniques, which use no chemical inputs. Indeed, one onion weighed up to 200 g. To continue this experience, the promotion of organic farming in this area is entering a new phase this year and Taratra Mangoro, which is actively taking part, hopes to do better than in 2013. Thus, the activity has spread to other areas along the Mangoro River in the Rural Municipality of Morarano Gare, and 54 farmers have adopted the organic farming technique. They have started planting since early July and 95% of the young plants are in good condition. To protect this new field from contamination by other crops that are more “chemical,” the farmers, led by the Mayors of the two municipalities, Ambohibary and Morarano Gare, are currently developing an inter-municipal *“Dina”* [Community pact].

Also, as part of income-generating activities that are associated with environmental preservation, for which Taratra Mangoro and **Ambatovy** are working closely together, the Association



Onion cultivation by the Taratra Mangoro Association

members who have been engaged in the production of eucalyptus and fruit tree seedlings have also benefited from **Ambatovy’s** financial and technical support. In early 2016, almost 70,000 eucalyptus and acacia trees were planted on the initiative of the farmer organization in order to protect the Mangoro River watersheds from erosion. In addition, many other livelihoods chosen by the

Taratra Mangoro members have enabled them to improve their living standards, such as chicken and Muscovy duck breeding in the village of Ankaditany. This sector has indeed gained a renewed interest among farmers in the locality after that one of them could afford to buy a zebu with profits from chicken farming supported by **Ambatovy**.

Ambatovy, in the Electric Era

It is now time for electric vehicles at **Ambatovy**. For some time, small electric cars, called buggies, have been circulating on the main roads at the Plant Site in Toamasina, transporting materials from one area to another, or facilitating the movement of employees who perform their work. Similarly, 24-seater electric buses traveling at 30km/h are currently in the testing phase for employee transport and are expected to replace the conventional buses that will soon be decommissioned.

*“The use of this means of transport is very beneficial for **Ambatovy**. In addition to being cheaper, as they use electricity produced at the Plant, these cars are very environmentally friendly and don’t create harmful emissions,”* said Stephan Hodgson, Acting Director, Asset Management, at **Ambatovy**.

It should be noted that electric vehicles have already become the usual means of transport in large industrial sites. Thus, to maintain continuous improvement, other means of transport, such as electric trucks, will also be introduced on a trial basis soon



Electric bus with 24 seats

Banjina

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