

# Ambatovy

SUSTAINABILITY  
REPORT

# 2018





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# List of Acronyms

<b>ACA</b>	Additional conservation action
<b>AEMS</b>	Ambatovy Environmental Management System
<b>AFNOR</b>	<i>Association Française de Normalisation</i> (French Standardization Association)
<b>AIFR</b>	All Injury Frequency Rate
<b>AIMS</b>	Ambatovy Incident Management System
<b>ALBI</b>	Ambatovy Local Business Initiative
<b>AMSA</b>	Ambatovy Minerals S.A.
<b>APELL</b>	Awareness and Prevention of Emergencies at the Local Level
<b>BBOP</b>	Business and Biodiversity Offsets Program
<b>BNGRC</b>	<i>Bureau National de Gestion des Risques et Catastrophes</i> (National Office of Disaster Risk Management)
<b>CAZ</b>	<i>Couloir Ankeniheny Zahamena</i> (Ankeniheny-Zahamena Corridor)
<b>CCS</b>	<i>Centre Culturel et Social</i> (Cultural and Social Center)
<b>CFAM</b>	<i>Corridor Forestier Analamay Mantadia</i> (Analamay-Mantadia Forest Corridor)
<b>CI</b>	Cobalt Institute
<b>CIREEF</b>	<i>Circonscription de l'Environnement, de l'Ecologie et des Forêts</i> (District for Environment, Ecology and Forests)
<b>CLC</b>	<i>Comité Local de Coordination</i> (Local Coordination Committee)
<b>CLP</b>	Classification, Labeling and Packaging
<b>CNLS</b>	<i>Comité National pour la Lutte contre le Sida</i> (National Committee for the Fight against AIDS)
<b>COBA</b>	Community-based Association
<b>COGES</b>	<i>Comité de Gestion</i> (Water Management Committee)
<b>COMBO</b>	Conservation, impact Mitigation and Biodiversity Offsets
<b>CR</b>	Critically Endangered Species
<b>CRBPs</b>	Children's Rights and Business Principles
<b>CRC</b>	Convention on the Rights of the Child
<b>CRGRI</b>	<i>Comité Régional de Gestion des Risques Industriels</i> (Regional Committee for Industrial Risk Management)
<b>CSB</b>	<i>Centre de Santé de Base</i> (Basic Health Center)
<b>CSR</b>	Communities and Social Relations
<b>DMSA</b>	Dynatec Madagascar S.A.
<b>DRAE</b>	<i>Direction Régionale de l'Agriculture et de l'Elevage</i> (Regional Directorate of Agriculture and Livestock)
<b>DREEF</b>	<i>Direction Régionale de l'Environnement, de l'Ecologie et des Forêts</i> (Regional Directorate of Environment, Ecology and Forests)

<b>DRT</b>	<i>Direction Régionale de Tourisme</i> (Regional Directorate of Tourism)
<b>EITI</b>	Extractive Industries Transparency Initiative
<b>EN</b>	Endangered Species
<b>EPFI</b>	Equator Principles Financial Institution
<b>ESIA</b>	Environmental and Social Impact Assessment
<b>ESU</b>	Evolutionary Significant Unit
<b>FAO</b>	Food and Agricultural Organization
<b>FFW</b>	Food for Work
<b>FIMIAM</b>	<i>Fikambanambe Mivondrona Ampitambe Mahatsara</i> (Federation of Formal Entities of Ampitambe)
<b>FORMA-PROD</b>	Program for Professional Training and Improved Agricultural Productivity
<b>GEM</b>	<i>Groupement des Entreprises de Madagascar</i> (Madagascar Business Association)
<b>GERP</b>	<i>Groupe d'Etude et de Recherche sur les Primates</i> (Primate Study and Research Group)
<b>GHG</b>	Greenhouse Gas
<b>GRI</b>	Global Reporting Initiative
<b>Ha</b>	Hectare(s)
<b>HEM</b>	Heavy Equipment Mechanic
<b>HIA</b>	Health Impact Assessment
<b>HIV / AIDS</b>	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
<b>HS</b>	Health and Safety
<b>IAIA</b>	International Association of Impact Assessment
<b>ICMM</b>	International Council on Mining and Metals
<b>ICRC</b>	International Committee of the Red Cross
<b>IFAD</b>	International Fund for Agricultural Development
<b>IFC</b>	International Finance Corporation
<b>IGA</b>	Income-Generating Activity
<b>ILO</b>	International Labor Organization
<b>INGO</b>	International Non-Governmental Organization
<b>ISO</b>	International Organization for Standardization
<b>IUCN</b>	International Union for Conservation of Nature
<b>JICA</b>	Japanese International Cooperation Agency
<b>km</b>	Kilometer
<b>KPI</b>	Key Performance Indicator

<b>kt</b>	Kilotonne
<b>LBG</b>	LBG Canada (formerly London Benchmarking Group)
<b>LESDE</b>	Local Economic and Social Development in the Extractives
<b>LGIM</b>	<i>Loi sur les Grands Investissements Miniers</i> (Law on Large Scale Mining Investments)
<b>LME</b>	London Metal Exchange
<b>LPG</b>	Liquid Petroleum Gas
<b>LTI</b>	Lost Time Injury
<b>LTIFR</b>	Lost Time Injury Frequency Rate
<b>MAC</b>	Mining Association of Canada
<b>MBG</b>	Missouri Botanical Garden
<b>MECIE</b>	<i>Mise en Compatibilité des Investissements avec l'Environnement</i> (Rendering Investments Compatible with the Environment)
<b>MIDEM</b>	<i>Mission Indépendante pour le Développement et l'Éducation à Madagascar</i> (Independent Mission for Development and Education in Madagascar)
<b>Min</b>	Minimize
<b>MoU</b>	Memorandum of Understanding
<b>NGO</b>	Non-Governmental Organization
<b>NI</b>	Nickel Institute
<b>NNL</b>	No Net Loss
<b>OCHA</b>	Office for the Coordination of Humanitarian Affairs
<b>ONE</b>	<i>Office National pour l'Environnement</i> (National Office for the Environment)
<b>ORN</b>	<i>Office Régional de Nutrition</i> (Regional Office of Nutrition)
<b>PAP</b>	People Affected by the Project
<b>PGEDS</b>	<i>Plan de Gestion Environnementale et Développement Social</i> (Environmental Management and Social Development Plan)
<b>PI</b>	Predicted Impact
<b>PPI</b>	<i>Plan de Préparation d'Intervention</i> (Intervention Preparedness Plan)
<b>PSHP</b>	Private Sector Humanitarian Platform
<b>QAQC</b>	Quality Assurance Quality Control
<b>QMS</b>	Quality Management System

<b>REACH</b>	Registration, Evaluation, Authorization and Restriction of Chemical Substances
<b>Rs</b>	Restore
<b>SAHA</b>	<i>Sahan' Asa Hampandrosoana ny eny Ambanivohitra</i> (Rural Development Program)
<b>SCC</b>	Scientific Consultative Committee
<b>SCM</b>	Supply Chain Management
<b>SDGs</b>	Sustainable Development Goals
<b>SDRA</b>	<i>Structure de Dialogue Région-Ambatovy</i> (Dialogue Structure for the Region and Ambatovy)
<b>SDS</b>	Safety Data Sheet
<b>SFCG</b>	Search for Common Ground
<b>SIF</b>	Social Investment Fund
<b>SIM</b>	<i>Syndicat des Industries de Madagascar</i> (Madagascar Industries Union)
<b>SLO</b>	Social License to Operate
<b>SOC</b>	Species of Concern
<b>SOP</b>	Standard Operating Procedure
<b>SPI</b>	Significant Potential Incident
<b>STI</b>	Sexually Transmitted Infection
<b>TKI</b>	<i>Tokotany Iraisana</i> (Common Ground)
<b>TMF</b>	Tailings Management Facility
<b>ToT</b>	Training of Trainers
<b>TRIFR</b>	Total Recordable Injury Frequency Rate
<b>TSM</b>	Towards Sustainable Mining
<b>UDHR</b>	Universal Declaration of Human Rights
<b>UN</b>	United Nations
<b>UNDAF</b>	United Nations Development Assistance Framework
<b>UNICEF</b>	United Nations Children's Fund
<b>VSLA</b>	Village Savings and Loan Association
<b>VPSHR</b>	Voluntary Principles on Security and Human Rights
<b>WASH</b>	Water, Sanitation and Hygiene
<b>WED</b>	World Environment Day
<b>WHO</b>	World Health Organization
<b>WUA</b>	Water Users Association





## Message from our President

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Stuart Macnaughton  
President

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*“Our goal is to be a producer of high quality nickel and cobalt that creates lasting value for all stakeholders and that contributes to sustainable development in Madagascar. Indeed, the long-term success of our company requires that sustainability be integrated into all aspects of our business and that it be core to our planning and decision-making.”*

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Dear Readers,

I am very pleased to share with you Ambatovy’s ninth annual Sustainability Report covering our objectives, approaches and performance over the course of the year. It reflects the importance that Sustainability plays in our operations.

Our goal is to be a producer of high quality nickel and cobalt that creates lasting value for all stakeholders and that contributes to sustainable development in Madagascar. Indeed, the long-term success of our company requires that sustainability be integrated into all aspects of our business and that it be core to our planning and decision-making. This includes striving to meet the highest standards, having a strong safety culture and demonstrating responsible environmental stewardship in order to ensure we have significant, positive and lasting impacts in the communities where we operate. Ambatovy plays an important role in catalyzing the economic development and social well-being of local communities through job creation and training, the purchase of local goods and services, community investments, and the payment of royalties and taxes.

Ambatovy’s operational priorities in 2018 were focused on zero harm and a transition to a steady state of operations. Despite the constraints we faced with a volatile global commodities market and with damages incurred at the Plant Site during Cyclone Ava in early January, Ambatovy continued to push towards our full production capacity and to work towards achieving the world’s best practices in operational efficiency, health and safety, environmental management, and social engagement. To achieve these goals, we developed and launched a new strategic plan entitled Ambatovy 2021 which will guide our activities for the coming three years.

During the year, we continued to ensure that we met and upheld our sustainability commitments and we maintained a robust program for environmental management, community relations and stakeholder engagement. Indeed, as discussed in further detail throughout this report, we have extensive activities in biodiversity, conservation efforts, offsets and community investment. A few examples:

- We continued to focus on improving our performance and aligning our activities with international best practice. Towards that end, we had our first full year of implementation of the Towards Sustainable Mining (TSM) protocols and, in collaboration with our partner UNICEF, we developed and rolled



out a training program with suppliers and sub-contractors on the Children's Rights and Business Principles (CRBPs).

- After enabling legislation was adopted, Ambatovy made the first payment of mining royalties destined for the decentralized territorial collectivities in our operating areas, including 20 communes and two regions, marking an important milestone in the good governance of royalties. We also developed a partnership with a local NGO to support and accompany the communes in the preparation of their communal development plans.
- We launched the Greenbelt Project, an initiative to reinforce company-community relations around the Mine Site through additional and specially targeted efforts for local recruitment, local purchasing and community investments.
- We are pleased that during the year, we experienced no work-related or community fatalities and achieved our lowest Total Recordable Injury Frequency Rate (TRIFR) in our history, at 0.12.

Ambatovy's sustainability priorities for 2019 and beyond include:

- Achieving reliable production and financial stability while at the same time demonstrating our commitment to responsible and sustainable mining and refining;
- Continuing to push for zero harm through building a strong safety culture;

- Continuing to accompany the collectivities in the safe, effective and transparent management of royalties to ensure that the benefits of our operations continue to improve the quality of life of community members for generations to come;
- Supporting the national strategy to control the Asian Toad population; and
- Ensuring that our environment and community investments are sustainable beyond the life of the mine.

These achievements could not have been possible without the commitment and dedication of all our stakeholders, especially our employees and partners. I am confident that with the gains and progress made in 2018, Ambatovy is well on our way to achieving our vision of being recognized as the world's most successful nickel laterite operation.

Thank you for your interest in Ambatovy. We hope that you enjoy the report and welcome any feedback you may have.

Sincerely,

Stuart Macnaughton  
President

# About This Report

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## Report Profile

For the ninth year in a row, Ambatovy is publishing our annual Sustainability Report. This report was prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option, and gives performance data for January through December 2018, following our eighth annual Sustainability Report covering 2017 that was published during the third quarter of 2018.

The report provides information on Ambatovy's sustainability performance during the past year and focuses on key areas of interest for Ambatovy's stakeholders. The accuracy of Ambatovy's Sustainability Report is validated through internal controls and internal approval processes. This 2018 Sustainability

Report has not been externally assured; however, we submit annual reports to Malagasy authorities and to our national regulator (the National Office for the Environment or ONE) with information on our sustainability performance, and our work in the field is closely monitored and regularly reviewed by the ONE and Independent Engineers sent by our lenders.

No significant changes regarding size or structure took place during the reporting period, nor did we significantly diverge from our last report in terms of scope, boundary, or measurements that would affect the comparability of previous reports or require a restatement of major disclosures.

## Reporting Boundary, Materiality and Scope

Unless otherwise noted, this report discloses material information for the calendar year 2018 (January 1<sup>st</sup> – December 31<sup>st</sup>). Our report addresses a wide range of economic, social and environmental issues that Ambatovy considers to be of material importance, as this term is used in the GRI guidance on materiality and completeness. The GRI guidance specifies that sustainability reports should cover topics and indicators that reflect a company's significant economic, social and environmental impacts or those that would substantively influence the assessments and decisions of stakeholders.

This report includes information about our operations (located fully in Madagascar) and covers Ambatovy and the departments and initiatives directly under our control. As a Joint Venture private entity, there are no other groups, subsidiaries, leased facilities, joint ventures, suppliers, or other bodies that fall under Ambatovy's jurisdiction. The report has drawn the majority of data from internal sources, but, when relevant or necessary, we have included data from external sources. The scope of the report reflects not only the GRI Standards but also the expectations of our stakeholders to cover the topics material to them and to our business. Statements from previous years' reports may appear again in this report in order to provide context and background information for new readers and for those unfamiliar with our operations.

There were two key considerations that stood out for us during the process to determine what is included in the report and how we prioritize content and its organization.

- **Organizational commitments:** In view of Ambatovy's obligations to our national regulator and our commitment to the International Finance Corporation (IFC) Performance Standards and other international standards and codes, we have internal programs in place to ensure coherence with these standards.
- **Materiality of data for internal and external stakeholders:** When selecting amongst the various GRI disclosures for our report, Ambatovy chose those that could be considered relevant, important and meaningful to our stakeholders at all levels. We also provided additional information not required in the GRI guidelines that we felt was relevant to our operations and important in light of our mandatory and voluntary commitments to national and international regulatory bodies, associations, and programs. The report therefore gives stakeholders essential information on our structure, strategy and performance with specific information that relates to the sustainability challenges of our industry. For a list of our material topics, please refer to the GRI Content Index in the appendices.

We intend this report to be used as a reference for a variety of stakeholders, particularly government authorities, local communities, civil society groups, employees, international organizations, partner companies, financial institutions, suppliers, and other members of the business and media community. More in-depth information on our stakeholder identification process and our engagement activities can be found in the Stakeholder Engagement section of this report.

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We welcome comments and questions related to this report. Please contact us at [media@ambatovy.mg](mailto:media@ambatovy.mg) for further information. Please note, all monetary values in the report are \$ US Dollars unless otherwise noted.







# About Us

Ambatovy is a large-scale nickel and cobalt mining enterprise in Madagascar, comprised of a lateritic mine near Moramanga and a processing plant in Toamasina. The two sites are linked by a pipeline of approximately 220 km in length. An auxiliary office in Antananarivo provides administrative, legal, and communications support to both locations and serves as a liaison with government offices and international organizations as well as the media and business sectors.

## Our Vision

Ambatovy will be recognized as the world's most successful nickel laterite operation.

## Our Mission

Together in Madagascar, we sustainably deliver value, producing high quality nickel and cobalt.

## Our Values

### Respect

- We treat others with dignity and respect, regardless of the situation.

### Integrity

- We are true to our word and are ethical in all that we do.

### Responsibility

- We take responsibility for our choices, our words, and our actions.

### Excellence

- We never stop seeking to improve our business.

### Number of Employees:

3,600 direct, approx.  
6,300 contractors, approx.  
93% of direct employees  
are Malagasy

### Environment and Biodiversity:

2,154 hectares (ha) mine footprint  
(mine area + buffer zone) over the life  
of the mine; more than 14,000 ha  
of offsets, or "like for like"

### Annual Design Capacity:

60,000 tonnes of refined nickel;  
5,600 tonnes of refined cobalt;  
200,000 tonnes of ammonium sulphate

### 2018 Production

33,185 tonnes of nickel;  
2,852 tonnes of cobalt;  
94,341 tonnes  
of ammonium sulphate

### Operational Lifespan of the Mine:

Approximately 27 years

### Locations:

Ambatovy is located in central  
and eastern Madagascar



# Our Operations and Facilities

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## Mine Site

Our Mine Site is located near the town of Moramanga, in the Alaotra Mangoro Region, 80 km east of Madagascar's capital. The ore body at the Mine consists of two lateritic nickel deposits: the Ambatovy and the Analamay deposits, with a total footprint of 2,154 ha, including our actual mine area of 1,616 ha and a buffer zone. Ore is surface-mined and turned into slurry for transportation to the Plant Site via a pipeline.



## Plant Site

Ambatovy's main operations are located at our Plant Site, approximately 10 km south of the Port of Toamasina, in the Atsinanana Region. It is an industrial complex covering more than 320 ha. The facility was designed and built to operate in accordance with Malagasy regulations and the IFC Performance Standards. The site's main components include a pressure acid leaching area, a refinery, and a utilities area to support the process. Site facilities also include a medical clinic, a training center, several canteens, warehouses, workshops, a laboratory, offices, and living quarters.



## Tailings Management Facility

Ambatovy's Tailings Management Facility (TMF) is located approximately 10 km west of the Plant Site and will be constructed over the life of the project in three phases, with the continuous raising of the perimeter dams to meet our tailings containment needs. The tailings – residue with no commercial value left over after mining, processing, and refining – are neutralized and pumped from the Plant Site through a 15 km pipeline to the Tailings Site, a secure, stabilized area where the treated residue is deposited for permanent safekeeping. Excess water from the Tailings is discharged into the ocean through a diffuser system designed to minimize localized impacts. A portion of this water is available to be reused at the Plant Site. When the Tailings Site has been filled, it will be reclaimed and drainage systems will be re-established. Ambatovy's TMF was built to specifications consistent with the requirements of the IFC and the site was chosen for its relatively low environmental sensitivity.



## Pipeline

Ambatovy's pipeline, which is approximately 220 km, runs from the Mine to the Plant Site in Toamasina. The route selected for the pipeline makes some significant deviations to avoid sensitive environmental areas, cultural sites, and local populations. It is buried for the majority of its route, avoiding critical wildlife habitats and residual forest fragments. Deep rooting vegetation was planted along the length of the pipeline to stabilize steep slopes, prevent erosion, and assist in rehabilitation.



## Support Facilities

Ambatovy also has support facilities located near the Plant Site, including the port, railway, road, ammonia storage tanks and the marine outfall. Ambatovy installed a substantial extension of Pier B at the Port of Toamasina, which includes a new fuel terminal, as well as equipment for handling the importation of bulk raw materials such as limestone, coal, sulphur and ammonia. We also installed a 12 km railway and financed the upgrade of an 11 km road linking the port to the Plant Site. Ambatovy imports ammonia and stores it, first at a large storage tank located four km north of the Plant Site, and then at the Plant Site's ammonia storage tanks. The marine outfall is a pipeline that extends 1.5 km offshore within a rock-filled breakwater structure. Installed in 2011, it is used to dispose of excess reclaimed water from the TMF.

# Our Products

Ambatovy uses a hydrometallurgical process developed by Sherritt International Corporation to produce finished nickel, cobalt, and ammonium sulphate. We supply a global portfolio of industrial customers located primarily in Asia, Europe, and the United States. Our products are primarily used as inputs for the production of stainless steel, chemicals for the manufacture of battery products, and specialty high-performance alloys for turbine components in both aerospace and land-based power generation equipment. They are also consumed in the production of a wide range of other specialty industrial products.



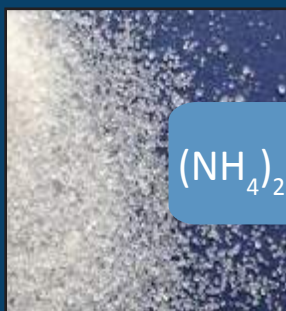
Ni

The majority of nickel produced worldwide goes into the manufacturing of stainless steel. Nickel is often also combined with other metals to create super alloys. It is found throughout our modern environment, from jewelry and silverware, to rechargeable battery systems for hybrid and electric vehicles, cell phones and other portable electronics and devices, and in jet turbines and other high-end and high performance applications. Ambatovy produces Class I nickel briquettes of minimum 99.8% purity for the world market and Ambatovy nickel is a registered brand on the London Metal Exchange (LME). In 2018, we produced 33,185 tonnes of nickel.



Co

Cobalt has been used for centuries to add vivid blues to glass, glazes and pottery. In modern times, it is used in hundreds of chemical, metallurgical, and industrial products and is an indispensable component of rechargeable batteries used in a variety of devices including cellphones and tablets, power tools and other portable devices, as well as in hybrid and electric vehicles and other technologies. Ambatovy produces cobalt that is of minimum 99.8% purity. It is sold in briquette and in powdered form. In 2018, we produced 2,852 tonnes of cobalt.



$(\text{NH}_4)_2\text{SO}_4$

As a by-product of the hydrometallurgical process, Ambatovy also produces ammonium sulphate, an inorganic, highly water-soluble salt. The primary use of ammonium sulphate is as a fertilizer for soils, as part of a complete agronomic improvement plan. Ambatovy's ammonium sulphate is produced in crystallized granules and is sold mainly on the international market. In 2018, we produced 94,341 tonnes of ammonium sulphate.

## 2018 Highlights

**+147,000**

safety interactions  
between staff and leadership

Almost  
**180,000**  
man-hours  
of training

**\$252**  
million  
in local  
purchasing



**+16,200**  
visitors  
to the Mine  
and Plant Site

**150**

children financially  
supported in their  
studies

**93%**

Malagasy  
direct employees

**+550**  
community  
meetings



Support to  
**14**  
Village  
Savings and Loan  
Associations  
(VSLAs)

More than

**450**

local suppliers  
and contractors



**13%**  
female workforce  
(direct)

**+1,010**

archeological objects  
discovered and preserved



Lowest Total  
Recordable Injury  
Frequency Rate (TRIFR)  
in our history, at

**0.12**

**5%**

decrease in GHG  
emissions as  
compared  
to 2017

**\$ 18.5**  
million

First payment  
of portion of royalties  
going to the 2 Regions  
and 20 Communes  
in our zones  
(covering  
Q4 2012 – Q2 2018)



# Corporate Governance

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Ambatovy is a joint-venture enterprise held by three shareholders: Sumitomo Corporation, Korea Resources Corporation (Kores), and Sherritt International Corporation (our operator). All three partners are fully committed to transparent, sustainable and responsible business practices.

Ambatovy is comprised of two companies: Ambatovy Minerals S.A. (AMSA) and Dynatec Madagascar S.A. (DMSA), which, together, are responsible for day-to-day operations. AMSA is the holder of the mining title and operates the Mine Site and pipeline, and DMSA manages the Plant Site and all the activities related to it. Both AMSA and DMSA are subject to the laws of Madagascar, and each has a board of directors. In practice, AMSA and DMSA act in parallel under the purview of Ambatovy's Executive Committee, which consists of members from each of the three partner companies.

At the end of 2018, the Executive Committee was comprised of nine individual voting members who are responsible for overseeing the direction and execution of Ambatovy's activities. The Committee meets at least quarterly or as circumstances require, providing appropriate governance of the Company.

In addition to the Executive Committee, there are three sub-committees whose members are also employees of each of our partners:

- Audit
- Environment, Health and Safety, Security and Community
- Marketing

 **Sumitomo Corporation**



# Our Sustainability Commitment

Ambatovy believes that our long-term sustainability is directly linked to the quality of our relationships with our stakeholders, along with our resilience to external and internal crises and our ability to weather negative cycles within the mining industry.

In the conduct of our business, we are committed to engaging with our stakeholders and earning their support by operating ethically, creating a rewarding workplace, demonstrating environmental excellence and submitting to external controls.

To meet this commitment Ambatovy will:

- **Effectively engage stakeholders** in order to understand their expectations, to build trust, to foster employee pride and community ownership, to maximize economic benefits to the community and country, and to reinforce national and international acceptance of Ambatovy;
- **Demonstrate strong governance** by ensuring that our internal governance and compliance is flawless, that the country and our neighboring communities receive their fair share of benefits from Ambatovy, and that we operate ethically within our zero tolerance policy and with uncompromising respect for human rights as defined by international standards;

- **Comply with national environmental regulations and international standards** in order to ensure no net loss of biodiversity via Ambatovy's Environmental Management System (AEMS); to adequately fund and staff the AEMS; to ensure the legal protection, long term management and financing of Ambatovy's land offsets; and to consistently use clear metrics to measure loss and gain of biodiversity;
- **Ensure external controls of our activities** by continued use of third party expertise and sound science-based programs, as well as open and transparent collaboration with authorities charged with supervising our environmental and social activities;
- **Create a rewarding workplace** that attracts the best industry talent, emphasizes skills development, and develops pride and ownership in our workforce.

This commitment is not only internalized within Ambatovy's activities but is also expected of our suppliers and contractors. In this way, we hope to further increase the positive impacts we have on our host country and extend our best practices across the industry.

## The Sustainable Development Goals

The United Nations' Sustainable Development Goals (SDGs), a follow-up to the Millennium Development Goals, consist of 17 ambitious targets to address global issues and to ensure a sustainable and resilient future for the world by 2030. The success of the SDGs depends on the participation of a range of actors – governments, communities, non-governmental organizations and corporations.

The nature of the work of the natural resources sector has economic, social and environmental impacts on the jurisdictions where projects and operations are located. As a responsible company working in both a low-income country and a biological hotspot, we aim to ensure that the potential negative impacts of our activities are minimized and mitigated to the greatest extent possible while also focusing on actions that positively impact our local communities and the country at large. To this end, the SDGs serve as a reference for us to gauge how and to what extent we are contributing to Madagascar's development and to its achievement of these globally recognized sustainability targets.

As outlined in Appendix 1 and as described throughout the text of this report, there are several ways that Ambatovy supports and contributes to the SDGs, particularly through our overall business approach, through our extensive investments in social and environmental activities, and through our commitment to supporting the growth of Malagasy industry and promoting small businesses.

### SUSTAINABLE DEVELOPMENT GOALS





## Key Impacts, Risks and Opportunities

We have always understood that in order to work in Madagascar, we must be mindful of the unique economic, social and environmental context of the island. Most of the impacts related to our activities are positive, such as the creation of jobs, contributions to the local economy and improved industrial capacity in the country. However, it is necessary to be aware of not only our positive impacts but also any potential or actual negative ones, so that we can develop and implement strategies to minimize, manage, and remediate them.

We are aware that we are working in a country that has high biodiversity and that faces challenging socio-economic issues. If we do not carefully manage our activities, there are risks that we may negatively affect the delicate ecosystem surrounding our activities and worsen the poverty that already exists in Madagascar. These risks were carefully considered before we even broke ground and we continue to assess risks and impacts as they arise. Each year we identify sustainability-related impacts and opportunities and work to ensure that these impacts are minimized to the extent possible. While each challenge is weighed from within its specific context, in general, we prioritize them based on impacts on stakeholders and the environment, as well as on our ability to operate safely and efficiently. As Ambatovy begins to run closer to full production capacity, our focus is shifting from establishing our presence in our host country and communities, to maintaining the sustainability of our actions and investments and building partnerships.

### Economic

Many extractive companies in sub-Saharan Africa have chosen to refine their minerals in Asia, Europe, or North America. Ambatovy's decision to refine our products in-country brings important local benefits including the creation of thousands of additional jobs (and the subsequent professional training and career development opportunities that come with them), significant earnings for the Government of Madagascar, local spending on goods and services, technology transfer and capacity building, and the construction of important infrastructure. These are all generating substantial economic returns for Madagascar and will continue to do so for many years.

There is enormous potential for extensive positive financial benefits for the communities and the country through wages and supply contracts. There is also the potential to improve capacity to deliver goods and services of international quality. We work

to maximize these positive impacts through targeted programs to increase local supply, promote local employment and support income generating activities for community members. Identified negative impacts include the potential for price inflation as people move into the communities surrounding our operations looking for economic opportunities. However, these are more than compensated for by the aforementioned economic benefits.

The emergence of the electric vehicle market has created optimism about the nickel and cobalt markets since both metals are key components in current battery technology. As a low-cost, high purity producer of Class I nickel, Ambatovy is poised to take advantage of growing demand given that our production is primarily in briquette form – a type ideally suited to battery production.

In recent years, our industry has seen a growing requirement from manufacturers and consumer-facing companies to demonstrate responsibility in their supply chains, which is subsequently putting pressure on upstream mining companies to provide evidence of social and environmental responsibility at their operations, with a particular focus on human rights, labor rights and occupational health and safety. Customer expectations for mining companies today are growing with regards to demonstrating high standards for environmental, economic and social performance, while also mining and processing safely and efficiently. An increasing number of customers, potential customers and industry groups want to know how we conduct our business, and are requesting risk readiness assessments, due diligence reviews and third-party audits of Ambatovy's operations. We are preparing ourselves to support our customers and the industry groups in this endeavor by aligning with international standards, such as Towards Sustainable Mining, conducting internal audits on responsible supply chain requirements, providing training for our suppliers and sub-contractors, doing gap assessments, and leveraging industry associations for insight and support. Our customers can be confident that Ambatovy produces high-quality nickel and cobalt in accordance with applicable laws, regulations and the highest ethical standards.

### Social

In a country with significant poverty and social needs, great expectations can be placed on large foreign companies to solve many, if not all, of the area's inherent socio-economic challenges. Indeed now, more than ever, stakeholders – from

local communities and civil society organizations to regional authorities and the national government – expect to experience tangible benefits and improvements in their standard of living from natural resource extraction and processing.

Managing the expectations of our stakeholders is therefore paramount, especially as we struggle with a volatile commodity price environment. We are obligated to be fully compliant with both Madagascar’s national regulations and the IFC Performance Standards, and a key focus over the past several years has been avoiding, minimizing, and mitigating negative social impacts and maximizing the positive ones. We are committed to helping improve the lives of people near our operations, but we rely on our host government to fulfill its obligations regarding basic services, particularly in the areas of health, education and infrastructure. Moreover, Ambatovy seeks to establish partnerships with other groups in a manner that taps each partner’s strengths so as to address stakeholder issues and opportunities and to have a greater and more sustainable impact, but that does not substitute for the government, does not foster dependency, and does not create unrealistic expectations of what we can do.

## Environmental

The Mine lies at the southern end of the eastern rainforest so protection of the biodiversity in surrounding areas has been a key issue since the early planning stages. The partially degraded forests around the Mine have undergone considerable human-induced pressures for many years, often prior to our arrival to the area, including hunting and gathering, selective logging, slash-and-burn agriculture, uncontrolled fires, and species collection for trade and consumption. Operating in such a highly sensitive ecosystem therefore obligates us, as an environmentally and socially responsible member of our community, to design and implement extensive avoidance, mitigation and conservation measures to ensure that we continue to minimize our impacts. Ambatovy has devoted considerable time and resources to ensuring these measures are incorporated into our business plans and operational processes. Local communities have also been included in our

environmental management and stewardship activities to preserve the long term sustainability of Madagascar’s diverse flora and fauna.

We are also obliged under the laws of Madagascar and our financing agreements to meet stringent environmental criteria. Aside from those obligations, we have committed ourselves to multiple voluntary compliance and monitoring programs, such as the Business and Biodiversity Offsets Program (BBOP) for which Ambatovy is a pilot project (please see the sections on Governance and Human Rights and on Environment for more on this initiative) in order to achieve no net loss. Compliance with these criteria requires a substantial financial commitment on our part, but we have carefully budgeted funds to ensure that we meet or exceed the targets that have been set.

As at many mining companies globally, due to recent dam failures in Brazil and elsewhere, Ambatovy is reviewing and evaluating our tailings management monitoring systems and risk assessments in order to ensure that our approach is more than robust and current.

## Governance

Madagascar is a country with governance concerns, high rates of poverty and a history of political instability. These are all risks that could significantly impact our business and reputation. In order to mitigate these risks, we commit to conducting all activities with integrity and the highest standards of responsible conduct. This includes avoiding actual and perceived conflicts of interest, having zero tolerance for corruption of any form, and respecting the rights of all people with whom we interact. We do this by vigorously implementing our Business Ethics Code, Anti-Corruption Policy and Human Rights Policy. We strive to be as transparent as possible and take an active part in the Extractive Industries Transparency Initiative (EITI) process in Madagascar, which includes disclosure of our financial and operational information, as required under the EITI standard. By implementing the Voluntary Principles on Security and Human Rights (VPSHR), we are also able to align our policies and security operations with the highest international standard for security and human rights.

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Sustainability-related risk management is the responsibility of the Executive Committee and the Environment, Health and Safety, Security and Community sub-committee. This sub-committee meets quarterly to discuss issues that have arisen over the period and to authorize any significant changes to our plans and management strategies. We remain committed to managing these impacts, risks and opportunities. While there are areas for improvement and challenges that lie ahead, we are proud of our accomplishments in 2018.





## Stakeholder Engagement

Ambatovy has a responsibility and a commitment to engage internal and external stakeholders who are directly or indirectly affected by the company's activities, as well as those who may have interests in the company and/or the ability to influence matters, either positively or negatively. We engage and collaborate regularly with stakeholders where common interests and concerns exist. Our stakeholders include national, regional and local government authorities; local communities and People Affected by the Project (PAPs); the general public; the international community; civil society organizations and local non-governmental organizations (NGOs); the press and media; the private sector/business community; our employees and contractors; and our shareholders and lenders. Identifying and understanding who our stakeholders are is an important part of our work. Stakeholder influence can vary, from minor to significant, and this influence may change over the course of the different phases of our operations.

The purpose of our stakeholder engagement is fourfold:

- To establish and maintain constructive relationships with our stakeholders and to maximize the shared benefits of our activities;
- To contribute to Ambatovy being a successful, resilient and sustainable company;
- To enhance and strengthen our reputation, both domestically and internationally;
- To maintain both our regulatory and social licenses to operate in Madagascar.

We recognize that effective stakeholder engagement is critical for establishing mutual understanding of one another's needs, interests, aspirations and concerns, for making decisions to support business objectives related to growth, risk management and operational excellence, and for collaborating to address local stakeholder priorities. In other words, constructive stakeholder relationships are essential to securing and maintaining our social license to operate and creating mutually beneficial outcomes.

We take a thoughtful, sincere and ethical approach to engaging stakeholders and catalyzing the development of sustainable communities. We recognize that a significant part of our role is to help build human and institutional capacity wherever we operate so that local communities can achieve their development goals.

For Ambatovy, stakeholder engagement is an ongoing process, encompasses a range of activities and approaches, and will span the entire life of the Mine. Like other Ambatovy business functions, our stakeholder engagement needs to be well managed. It is

guided by a well-defined strategy with clear objectives, priorities, methods for engagement, concrete activities and assigned responsibilities. Our approach is systematic (rather than *ad hoc*) so that we can track and manage stakeholder issues and risks more effectively.

Through our various stakeholder engagement activities, the following topics and/or concerns were raised in 2018:

- Livelihoods development
- Access to resources
- Royalties
- Employment opportunities
- Business opportunities
- Impacts of our operations on the environment, human health, the economy and society
- Compliance with national regulations and international standards
- Good governance
- Safety and security issues

Each of these topics has been raised by several of our stakeholder groups (indicated below), signaling to us that these are the key topics of interest and concern. We regularly engage, report and communicate on these topics with the relevant or concerned stakeholders.

Stakeholder engagement entails building robust, productive relationships through communication, consultations, ongoing dialogue and working partnerships. We want our stakeholders to understand why and how we operate. We especially want input from relevant stakeholders when a particular aspect of our operations directly affects them.

Our stakeholder engagement is guided by the following principles:

- Through our actions and behaviors, Ambatovy actively strives to earn the respect, trust and cooperation of all stakeholders. We create and maintain relationships that are inclusive, honest, transparent and mutually beneficial. These relationships are a tangible, valuable asset and integral to the company's business outcomes.
- Ambatovy is committed to sustainable development, i.e., meeting the needs of the present without compromising the ability of future generations to meet their own needs. As such, Ambatovy creates long-term value and benefits for our stakeholders while seeking to understand and respond to their issues and interests.



- Ambatovy recognizes that we need to be accountable for our actions and impacts. If our operations are not managed appropriately, they have the potential to impact local communities and the environment negatively. Thus, the company attempts to minimize the impact of our operations by operating our facilities to the appropriate industry and international standards, and by working collaboratively with stakeholders to identify and mitigate negative impacts, and to maximize positive ones.
- All Ambatovy employees and contractors have a responsibility to conduct meaningful stakeholder engagement as “ambassadors” for the company. Ambatovy understands that to achieve success in stakeholder engagement, we must integrate the principles of stakeholder engagement within all aspects of our business.

Ambatovy’s stakeholders are identified as those who have been directly or indirectly impacted by our activities, who have an interest in the company and/or who have an ability to influence matters, be it positively or negatively. Through our stakeholder identification process, we have identified 10 groups of national and international stakeholders:

- Malagasy Government and Regulatory Bodies
- Regional and Local Authorities
- Local Communities and People Affected by the Project (PAPs)
- Malagasy General Public
- International Community
- Civil Society Organizations and Local Non-Governmental Organizations (NGOs)
- Press and Media
- Private Sector/Business Community
- Our Employees and Contractors
- Our Shareholders and Lenders

As described below, our engagement tactics vary depending on the type of stakeholder group involved, the nature of the interaction, and the topics and issues raised.

## Malagasy Government and Regulatory Bodies

Ambatovy strives to have an open and transparent relationship with the Government of Madagascar at all levels as well as with regulatory bodies that are authorized to oversee our operations. This transparency is achieved through ongoing engagement and reporting that frequently go beyond what Ambatovy’s legal obligations require. We meet with relevant ministries and authorities at national, regional, and local levels and often host members of these institutions for site visits to help them better understand Ambatovy’s operations, approaches and challenges. In 2018, Ambatovy engaged with government officials on a

wide range of important matters and policy issues specifically related to Ambatovy. We also had extensive engagement with government officials to review progress on activities supported through the Social Investment Fund (SIF). As in previous years, we continued to work closely with the ONE with regards to our environmental and social commitments.

## Regional and Local Authorities

As with counterparts on the national level, Ambatovy collaborates with regional and local authorities in many aspects of our operations. In order to encourage transparency through continuous and open communication, Ambatovy regularly offers informational visits and tours to regional and local authorities. In 2018, we worked closely with them to discuss the progress of projects funded through the SIF, as well as Ambatovy’s support for Cyclone Ava relief efforts in January. We also continued to engage regularly with regional authorities through the Dialogue Structure for the Region and Ambatovy (SDRA) that meets regularly in order to exchange information, review progress on the implementation of joint activities, and discuss problems and concerns that may emerge (e.g., security issues, industrial risks, etc.). We also met with members of the Regional Committees for Industrial Risk Management to update the emergency Intervention Preparedness Plans (PPIs) in Toamasina and near the Mine.

## Local Communities and People Affected by the Project (PAPs)

We understand that individuals who make up our communities are the very people who can be most impacted by our activities. They are therefore very important to us and we aim to build enduring relationships with our neighbors to make sure we manage our operations in an open, respectful and transparent manner. The Sustainability team continues to maintain constructive dialogue with various actors in the communities, ranging from traditional local authorities to representatives of the *fokontany*<sup>1</sup>. Our interactions with communities and PAPs take many forms, and community participation in the search for solutions has made enormous progress. In 2018, Ambatovy continued our work supporting farmers’ cooperatives in the districts of Moramanga, Brickaville and Toamasina II through the organization of training, provision of agricultural inputs and facilitation of contacts. The farmers are raising chickens and producing litchis, corn, pineapple, curcuma, ginger and other crops.

## Malagasy General Public

Ambatovy focuses not only on the local communities around our sites but also the general public in Madagascar. Every year, thousands of people visit Ambatovy through our hosted site visits and at our information centers. The Ambatovy “Info van” provides information to our local communities through presentations and face-to-face engagements. Open

<sup>1</sup>In Madagascar, the *fokontany* is a political subdivision equivalent to a village or group of villages.

Doors events are scheduled throughout the year and allow the public to experience Ambatovy and to interact with members of Ambatovy's Communications team. Ambatovy also regularly participates in national and regional fairs, celebrations, and World Day events, such as World AIDS Day, World Environment Day and World Lemur Day. Ambatovy's engagement includes the national audience in Antananarivo, and residents of the urban areas around Moramanga, Brickaville and Toamasina, as well as the rural communities located near the Mine and along the route of our pipeline, in an effort to include all of our stakeholders in the flow of information. Our engagement with the Malagasy general public in at least one of the above-mentioned forms takes place on a regular basis, with larger events and presentations occurring throughout the year.



## International Community

Ambatovy engages with the international community in Madagascar, including diplomatic missions, UN agencies, donors and international non-governmental organizations (INGOs). This engagement helps create and reinforce synergies between Ambatovy and other international groups, and provides valuable opportunities to establish a climate of trust, respect and openness, to exchange information, to develop best practices and to establish partnerships. Such partnerships are extremely important for Ambatovy to maintain our social license to operate, to ensure that Ambatovy's interventions are complementary with other groups, to tap each partner's strengths and expertise in order to have a greater and more sustainable impact, and to share experiences and lessons learned. In 2018, Ambatovy

welcomed several representatives from diplomatic missions and international organizations to visit our sites. We also, for the fourth time, hosted a group of participants from the University of Queensland's short course on Local Economic and Social Development in the Extractives (LESDE) at the Mine and Plant Sites. Approximately 35 people from across Africa, representing government, civil society and extractive companies, took part in the exchange visit.

Ambatovy participated on a panel discussion on strategic partnerships with the private sector at the UN Development Group Meeting held in Antananarivo in March 2018 (a regional meeting for Africa in order to roll out the UNDAF process<sup>2</sup>). Ambatovy was invited to participate and to share our experiences working with UN agencies in order to highlight a positive example of an effective partnership with the private sector.

Two staff members of the Sustainability team attended the 38<sup>th</sup> annual conference of the International Association of Impact Assessment (IAIA) that was held in South Africa in May 2018, as per the suggestion of our Scientific Consultative Committee. It was an opportunity for them to share experiences and exchange on best practices.

## Civil Society Organizations and Local Non-Governmental Organizations (NGOs)

We engage actively with civil society organizations where common interests and concerns exist, whether these are broad policy issues with a national scope or local issues that affect communities around our operations. Consistent with our approach to all stakeholders, we respect the views of civil society groups and seek to build dialogue in a constructive manner. We are pleased to partner with a number of civil society organizations that collaborate with us on the implementation of programs that fulfill our commitments to our stakeholders as well as our above-mentioned objectives. In 2018, we continued our collaboration with the local NGO Mitsinjo on the special conservation program for the Golden Mantella frog near the Mine Site. We also developed a new partnership with the local NGO SAHA<sup>3</sup> for the support and accompaniment of communes that receive royalty payments from Ambatovy.

<sup>2</sup>The United Nations Development Assistance Framework (UNDAF) is a strategic, medium term results framework that describes the collective vision and response of the UN system to national development priorities and results on the basis of normative programming principles. It describes how UN Country Teams will contribute to the achievement of development results based on a common country analysis and UN comparative advantage.

<sup>3</sup>SAHA stands for "Sahan'Asa Hampandrosoana ny eny Ambanivohitra", meaning Rural Development Program.

## Press and Media

The press community constitutes one of Ambatovy's most important stakeholders and is a key partner in information-sharing with the general public. Collaboration with the press and media occurs on a regular basis and is especially important in dispelling rumors and disseminating clear and timely information. Our engagement focuses on broadening public understanding of Ambatovy's activities and providing a more holistic view of our objectives and responsibilities as part of the wider mining industry. Ambatovy regularly issues press releases and newsletters and offers site visits to journalists in order to cultivate a truthful public record of our activities.

Throughout 2018, Ambatovy continued to engage and interact with the media in order to keep them informed about Ambatovy and to build positive, enduring relationships based on trust and transparency. We collaborated with journalists, TV and newspaper editors, and radio presenters; prepared media briefs; held information sessions and organized site visits to the Mine and Plant Sites. Our social media team within the Communications Department, created in late 2017, continued to boost our presence on social media; their work serves as an important complement to our regular media activities.

## Private Sector/Business Community

Ambatovy has an extensive supply chain, and our suppliers are integral stakeholders for us. While we have a range of suppliers around the world, Ambatovy emphasizes local procurement through the Ambatovy Local Business Initiative (ALBI) as part of our commitment to support the Malagasy economy. ALBI sources from and offers technical support to local enterprises. This has resulted in these enterprises supplying a range of goods and services while meeting our high standards, such as caustic soda, workers' uniforms and raincoats, wooden pallets and windsocks. As noted in the section on Economic Performance, Ambatovy purchased more than US\$ 252 million in goods and services from local businesses in 2018, and, as described in the section on Governance and Human Rights, Ambatovy also developed and rolled out a training program during the year for key sub-contractors and suppliers on UNICEF's Children's Rights and Business Principles (CRBPs).

We also engage regularly with the wider business community in Madagascar to discuss issues of mutual interest or concern. We are a member of the Chamber of Mines of Madagascar as well as the Madagascar Business Association (*Groupeement des Entreprises de Madagascar*, GEM), and the Madagascar Industries Union (*Syndicat des Industries de Madagascar*, SIM). Through our engagement with the wider business community, our goal is to contribute to promoting exchanges and learning, strengthening the voice of the private sector, enhancing the business climate in Madagascar, and demonstrating responsible business practices. In 2018, for example, Ambatovy participated in the third edition of the Fair on Corporate Social Responsibility and Sustainable Development Initiatives.

Ambatovy has been an active member of the Private Sector Humanitarian Platform (PSHP) since its creation a few years ago. The Platform brings together companies that are interested in strengthening their contributions to emergency preparedness and response efforts in the country, in collaboration with national and regional authorities and traditional humanitarian actors. This Platform was created with the support of the UN Office for the Coordination of Humanitarian Affairs (OCHA) and the National Office of Disaster Risk Management (BNGRC), as part of the preparations leading up to the UN's World Humanitarian Summit that took place in Istanbul in 2016. In 2018, Ambatovy staff participated in workshops on contingency planning and business continuity activities, and helped launch the Platform's decentralized work in Toamasina and Moramanga for private sector actors working in those areas.

## Our Employees and Contractors

At Ambatovy, we aim to recruit national employees whenever possible and are committed to developing a skilled local workforce. Indeed, recruiting, developing and retaining talented and motivated employees helps us to be more productive, to deliver better business results and to be an employer of choice in Madagascar. Ambatovy employs approximately 9,900 employees, both directly and indirectly. Thousands of Malagasy employees and contractors have, over the years, received technical and administrative training. Investing in such training provides them with the skills required to assume roles with increasing responsibility during the life of our operations. Moreover, the partnerships we maintain with local technical schools ensure capacity building for our workforce and the local population. In 2018, Ambatovy organized internal Open Doors events and a series of Town Hall Meetings in order to keep employees informed and up-to-date about Ambatovy's activities and to encourage dialogue and exchange. We also continued to promote site visits for employees' families in order to inform them about Ambatovy and to give them an opportunity to learn more about our approaches, operations and activities.

## Our Shareholders and Lenders

Our shareholders and lenders play an integral role in supporting our operations. In 2007, Ambatovy partners reached a financing agreement with a consortium of 14 lending institutions.<sup>4</sup> This consortium is comprised of government-sponsored export credit agencies, international development banks, and commercial banks from around the world. We report regularly to the lenders on a wide range of sustainability issues and we communicate through our partner companies to financial and industry analysts who assess commodity markets.

<sup>4</sup> Ambatovy received US\$ 2.1 billion in financing from this consortium. Please see [www.ambatovy.com](http://www.ambatovy.com) for a complete list of these 14 lending institutions.







# Governance and Human Rights

## Objectives

- Endeavor to meet and, when possible, exceed the mandatory and voluntary compliance requirements of our agreements with the Government of Madagascar, our lenders and other stakeholders.
- Ensure that our employees and contractors comply with Ambatovy’s standards of ethical behavior, good governance and human rights.
- Contribute to good governance in the mining sector within Madagascar.

## Approach

Our commitment to working with integrity, transparency, respect and the highest ethical standards provides the framework to ensure that Ambatovy is an organization that respects our communities, our partners, and our employees. Ambatovy is committed to taking into consideration the interests of our stakeholders in our decision-making, and to respecting culture, customs, values and human rights in our interactions with all those affected by our activities. This includes avoiding actual and perceived conflicts of interest, having zero tolerance for corruption of any form, and respecting the rights of all people with whom we interact. We do this by rigorously implementing our Business Ethics Code, Anti-Corruption Policy and Human Rights Policy, and by ensuring we have the systems and programs in place to realize our expectations.

We hold all employees, regardless of their position, responsible for respecting both their fellow employees and the communities around our operations. We also expect that the companies with which we work maintain the same level of ethical behavior. Our suppliers and contractors are required to sign a Supplier Code of Conduct and to fulfill certain labor requirements if they wish to do business with us. Our Supply Chain Management (SCM) team is responsible for educating our suppliers and ensuring their compliance with our standards.

Human rights issues are an inherent risk to all mining sites around the world. To manage this risk, we are aligning with international best practices and expectations regarding human rights, and we take human rights very seriously, in line with our commitment to minimizing actual and potential negative impacts of our operations on our local communities. Human rights protection and awareness have been integrated into our operational and

sustainability strategies. We have a formal Human Rights Policy that affirms the commitment of Ambatovy to operate in a way that respects human rights as set forth in the Universal Declaration of Human Rights (UDHR). Human rights are addressed through the IFC Performance Standards, with which we are obliged to comply, and we are proponents of the Voluntary Principles on Security and Human Rights (VPSHR) in all of our areas. We believe that human rights are everyone’s responsibility and, as a major purchaser of goods and services in Madagascar, we have worked to ensure that human rights violations are not present in our supply chains. Both employees and external stakeholders have access to Ambatovy’s Grievance Management and Whistleblower Systems for filing grievances on any subject, including unethical behavior and human rights violations. We are committed to investigating any violations and ultimately aim to prevent such violations before they take place by informing our employees and key stakeholders of our expectations with regards to respect, honesty and integrity.

## Performance



## Compliance to External Initiatives (Mandatory and Voluntary)

Ambatovy strives to maintain the highest ethical standards, to respect local culture and traditions, and to comply with the laws and regulations of Madagascar. We endeavor to meet and, when possible, exceed the mandatory compliance requirements of our agreements with the Government of Madagascar, our lenders and other stakeholders. We are also committed to several voluntary measures that go beyond our legal obligations.



## Mandatory Compliance

**Law on Large Scale Mining Investments (*Loi sur les Grands Investissements Miniers, LGIM*)** – Madagascar's LGIM establishes the legal framework for developing and operating large-scale mining projects in the country. Ambatovy was certified under the LGIM in 2007. Under the LGIM, we are required to report annually to the Government on a range of sustainability issues, such as local employment, environment measures and community activities.

### **Decree on Rendering Investments Compatible with the Environment (*Décret sur la Mise en Compatibilité des Investissements avec l'Environnement, MECIE*)** –

The MECIE is a national decree that regulates environmental compliance for investment projects in Madagascar. Ambatovy received our environmental permit from the Malagasy authorities in December 2006, six months after filing our Environmental and Social Impact Assessment (ESIA). Following the ESIA, Ambatovy developed an Environmental Management and Social Development Plan (PGEDS), which provides the framework to ensure that all issues identified during the ESIA are addressed through appropriate mitigation and follow-up actions. We submit annual reports to the ONE on our progress against the PGEDS, and ONE officials conduct regular site visits to review our work.

### **International Finance Corporation (IFC) Performance Standards** –

The IFC Performance Standards are an international benchmark for identifying and managing environmental and social risks; they have been adopted by many companies and organizations as a key component of their environmental and social risk management. Our agreement for US\$ 2.1 billion in project financing requires that we adhere to IFC Performance Standards on environment, labor, and social aspects for a major investment project. Our work is closely monitored and regularly reviewed by Independent Engineers sent by our lenders to ensure compliance with these standards.

**Equator Principles** – The Equator Principles are voluntary standards for banking institutions; they have greatly increased the attention and focus on environmental and social/community standards, accountability and responsibility. Since some of Ambatovy's lending institutions are Equator Principles Financial Institutions (EPFIs), our financing agreements require that we uphold these principles. EPFIs pledge to take into account social and environmental criteria in the large-scale projects they finance and to abstain from financing loans where the borrowers are not willing or able to comply with these criteria.

## Voluntary Commitments

### **Business and Biodiversity Offsets Program (BBOP)** –

Since its inception in 2004, BBOP has grown to become a partnership of some 80 leading organizations, companies, financial institutions, governments and civil society groups from around the world. The members aim to develop and test best practices for conservation and biodiversity offsets by following the mitigation hierarchy. The mitigation hierarchy involves a sequence of four key actions – 'avoid', 'minimize', 'restore' and 'offset'. It is a best practice approach to reducing the negative impacts of public and private sector development projects on biodiversity and ecosystem services. In 2006, Ambatovy became a BBOP pilot project and we currently align our offsets vision and design with the guidelines provided by the BBOP Secretariat and Advisory Committee. As an offshoot of this work, Ambatovy continued to collaborate in 2018 with the COMBO Project (COnservation, impact Mitigation and Biodiversity Offsets) to expand and improve the application of the mitigation hierarchy in four African nations (Guinea, Madagascar, Mozambique and Uganda).

### **Voluntary Principles on Security and Human Rights (VPSHR)** –

Established in 2000, the VPSHR are a set of principles designed to guide companies in the extractive sector in maintaining the safety and security of their operations within an operating framework that ensures respect for human rights and fundamental freedoms. The duty to protect human rights rests with governments, but other actors in society, including business, have a responsibility to respect human rights. Extractive industry companies, such as Ambatovy, have a unique opportunity to have a positive impact on peace and stability, and we are continuously engaging with local, national and international entities to educate and raise awareness for the promotion of human rights. Sherritt, our operator, is a member of the VPSHR Initiative. As such, the VPSHR are embedded in Ambatovy's Security Policy and, in order to reinforce shared commitments to the Principles, Ambatovy has developed relationships and agreements with national ministries responsible for security that establish clear expectations for public security forces and Ambatovy under the VPSHR.

### **Extractive Industries Transparency Initiative (EITI)**

– The EITI is a global standard for the good governance of oil, gas and mineral resources. It seeks to address the key governance issues in the extractive sector and to foster transparency along the extractive industry value chain – from the point of extraction, to payments to the government, to production levels, to contributions to the economy. Since Madagascar became an EITI candidate country in February 2008, Ambatovy has been a strong supporter of the EITI process and an active member of the Multi-Stakeholder Group (known as the National Committee in Madagascar), comprised of representatives from government, extractive industry companies, and civil society. Each year, Ambatovy participates in Madagascar's EITI reconciliation report. In late June 2018, the EITI International Board announced the results of the validation process in Madagascar which determines whether EITI Madagascar progresses from a candidate country to a compliant country. The Board noted in its report that Madagascar had made "meaningful progress" in implementing the EITI standard. The engagement of extractive companies was noted as being particularly instrumental in strengthening



the EITI implementation in Madagascar since 2015. There are 15 recommendations to address by the end of 2018 before a second validation is carried out.

The work of the *Tsara Tantara* (Good Governance) project made significant progress in 2018. The project, which is supported through the Social Investment Fund (SIF), aims to promote the transparent, equitable and sustainable distribution and management of mining royalties paid to the Decentralized Territorial Collectivities in Madagascar. Following the adoption by the Malagasy Government of enabling legislation, Ambatovy was able to make our first royalties payment, as required by the Mining Code and the LGIM. A payment of 61,481,250,243 Ariary (equivalent to US\$ 18,548,227) was made on August 31<sup>st</sup> to the General Treasury of Toamasina for royalties accrued from Q4 2012 to Q2 2018, to be split amongst beneficiaries from two Regions and 20 Communes in the zones where we operate. Work also advanced considerably on the development of a partnership with the local NGO SAHA for capacity building, guidance and accompaniment of the Communes in the preparation/update of their communal development plans, with the concept of inter-communal planning being a key factor for effective regional development. SAHA has much experience and is well-regarded for its work in the areas of decentralization, local development and good governance, so we are pleased to be partnering with them on this important initiative.



**Towards Sustainable Mining (TSM)** – Established in 2004 by the Mining Association of Canada (MAC), TSM’s main objective is to help mining companies meet society’s needs for minerals, metals and energy products in the most socially, economically and environmentally responsible way. TSM includes a series of sustainability management protocols to drive improved performance. In 2017, our operator, Sherritt,

joined the MAC, and as such, is required to implement the TSM program at its Canadian operations. It is also encouraged to adopt it at overseas sites. Ambatovy decided to implement TSM as well, which demonstrates our commitment to leadership in sustainability and to continuous improvement, and represents one more step in holding ourselves accountable to a level of performance in sustainability that is quickly becoming the expectation of our stakeholders. In 2018, Ambatovy staff received training on TSM and completed the first round of self-assessments and gap analyses for the seven TSM protocols. The first year of public reporting for Ambatovy will be in 2021 for our 2020 performance.

**International Standard ISO 9001<sup>5</sup>** – The ISO 9001 certification confirms the ability of Ambatovy to provide goods and services meeting the needs of our clients, and the conformity of our products with international market requirements. For example, it is needed to meet the requirements of the London Metal Exchange (LME). In 2014, we received our ISO certification for Refining, Analytical Services and Shipping of Nickel, Cobalt, and Ammonium Sulphate products by AFNOR (*the Association Française de Normalisation*), the certification and standardization body. In February 2017, our certification was renewed, under the new and more stringent 2015 version of the ISO 9001 standard. A surveillance audit in 2018 confirmed that we are compliant with the ISO 9001 requirements and that we have maintained our management system certification. This maintenance of our certification demonstrates Ambatovy’s commitment to quality and to our consumers.

**International Council on Mining and Metals (ICMM)** – The ICMM is an organization established in 2001 to act as a catalyst for performance improvement in the mining and metals industry. The ICMM brings together mining and metals companies with national and regional mining associations and global commodity associations. Ambatovy endeavors to apply relevant ICMM principles and has integrated them, where applicable, into internal planning and strategies. In 2018, a member of Ambatovy’s Sustainability team participated at the ICMM Forum on Partnerships and Collaboration for Sustainable Development in London. The President of Search for Common Ground (SFCG), along with the representative from Ambatovy, presented our experiences of strengthening company-community relations to build trust, in a session called “Partnering to Promote Peace, Stability and Inclusive Economic Development”.

## Business Ethics

Ambatovy’s core values require that we conduct our business in a moral and ethical manner and that our employees comply with all applicable laws. To support this conduct and to provide clear guidance on what it means to act with integrity, Ambatovy has a Business Ethics Code, an Anti-Corruption Policy, a Code of Conduct, a Zero-Tolerance Policy and a policy against discrimination and harassment in the workplace. The requirements of our Anti-Corruption Policy have been established in compliance with the Malagasy law on the fight

<sup>5</sup>The International Organization for Standardization (ISO) is an independent, non-governmental organization and developer of voluntary international standards. It facilitates world trade by providing common standards across nations. Use of these standards ensures that products and services are safe, reliable, and of good quality. ISO 9001 certification is based on quality management principles, including strong customer focus, motivation and commitment of Senior Management, the use of a process and risk-based approach to managing the business, and continuous improvement.

against corruption as well as other applicable international legislation, and our Code of Conduct and Zero-Tolerance Policy outline the company's commitment to ethical conduct, compliance with the law, and avoidance of conflicts of interest. All Ambatovy employees are sensitized on our Anti-Corruption Policy and Code of Conduct upon being hired and compliance is compulsory. Refresher courses are given to our employees each year. All new employees (national and expatriate) are required to complete the SkillMine anti-corruption module as part of their onboarding program, within six months of their employment commencement date. At the end of 2018, 91.5% of new employees had completed the online module within the orientation program. The remainder of the employees were expected to complete the module in 2019.

Our contractors are also required to comply with these policies and codes. A requirement to comply with Business Ethics, Anti-Corruption, and Code of Conduct Policies, such as Ambatovy's Environmental Code of Conduct, is included in all contracts awarded to new contractors to ensure they comply with our expectations in these areas; these policies and codes are regularly renewed and updated. Ambatovy also systematically reaches out to our contractors and provides Training of Trainers (ToT) workshops at each of our sites, where contractor representatives acquire the necessary information with the expectation that they will return to their respective companies and share the knowledge and skills they have acquired with their co-workers.

Ambatovy also requires contractors to disclose familial relationships with Ambatovy personnel and to sign an anti-nepotism agreement to prevent the risk of familial interference and influence during the bidding process and throughout the business relationship.

## Human Rights

### Protection of Children's Rights

Madagascar is a signatory to the Convention on the Rights of the Child (CRC) and the Government has shown a commitment to respecting children's rights. The legal system includes legislation on child labor, human trafficking, sex tourism, birth registration, etc. Unfortunately, despite the existence of these laws, public awareness and understanding is limited and enforcement is often weak. Moreover, the particular vulnerability of Madagascar's children might put them at further risk of not having their rights respected and upheld, such as by being forced into unsupervised and dangerous working conditions.<sup>6</sup> Our Human Rights Policy articulates our commitment to the CRC and the entire workforce must sign our Zero-Tolerance Policy for child exploitation. All of our contractors are also required to adhere to our policies on child and forced labor and fundamental human rights. For example, when a local business is being considered as a potential future supplier or service provider, human rights considerations are part of the assessment process. For our existing suppliers, audits are carried out sporadically by staff from ALBI and our Quality Management System (QMS) team. In the event there is an actual or potential

violation of human rights, the contractor is immediately suspended from our supplier list as a human rights violation is considered a breach of our mandatory Code of Conduct.

Since risks to children were first identified during the construction phase, much work has been done to ensure the rights of children are protected. In 2018, for example, Ambatovy supported the organization of four workshops on the fight against child labor in communities near the Mine (especially, children herding zebu or cattle, and pulling rickshaws), as part of our work with the Child Protection Network in Moramanga, comprised of local authorities, security officials, teachers, community members, and so on.

In order to be in line with best practice for industries around the world, to promote continuous improvement and to demonstrate our commitment to protecting children's rights, Ambatovy staff from the Sustainability, Human Resources and Supply Chain Management (SCM) departments collaborated with UNICEF and the local NGO *Penser* to develop a series of training modules on the Children's Rights and Business Principles (CRBPs) for our suppliers and contractors. The CRBPs are ten principles that UNICEF and the organization Save the Children developed a few years ago to help companies identify pragmatic actions to support children's rights in their activities and operations and to put a child rights lens on their work.

*Penser* organized a Training of Trainers session for our staff so that they, in turn, could provide training to our suppliers and contractors. Approximately 140 people representing 83 companies participated in 14 sessions in 2018 and early 2019. They have been sharing the knowledge and information gained with their colleagues in a cascade manner, and have prepared action plans for implementing the CRBPs in their respective companies. In order to monitor and assess effective implementation, the CRBPs have been integrated into the Ambatovy vendor audit threshold.



<sup>6</sup>According to UNICEF, nearly a third of children aged between five and 14 in Madagascar are involved in economic activities. The problem is more acute in rural areas where children work with their families in agriculture and fishing. 25% of these children perform jobs that are considered the worst forms of child labor and that pose particular health and safety risks: sexual exploitation, domestic help, work in rock quarries and in gemstone mines (artisanal mining), and other dangerous work. In many instances, children are sent to work before or after school, or are removed from school altogether.



## Voluntary Principles on Security and Human Rights (VPSHR)

As noted above, we are committed to safeguarding our people, assets, reputation and the environment, while respecting the rights of the public. Our security policy outlines our principles for creating a safe and secure business environment and for conducting security operations in compliance with local, national and international legal requirements, security standards and law enforcement principles. Our management approach to site security involves identifying, understanding and minimizing security threats and risks; working with local law enforcement authorities to respond appropriately to security incidents; reporting and investigating security-related incidents and complaints and taking actions to minimize the probability of recurrence; and implementing relevant international principles, including the VPSHR.

Ambatovy has taken a series of proactive steps to bring our sites into greater conformance with the VPSHR. When our operations were first getting underway in 2012 and 2013, Ambatovy conducted third-party rights risk assessments that mapped out human rights and security-related risks to both our company and our stakeholders. The results of the risk assessments have been used to strengthen existing policies and procedures as well as to develop new systems and programs to prevent and mitigate the identified risks. We have incorporated VPSHR-related requirements into our agreements with both private and public security providers. Such requirements include pre-employment screening and comprehensive training on security, human rights and the use of force. Human rights awareness is also now a requirement of security companies submitting or resubmitting proposals in our contract tender process.

In 2018, there were no security incidents involving allegations or claims of human rights abuses at Ambatovy. Our security and human rights training over the year improved compared to 2017: 85% of full-time security personnel, 100% of contract security personnel, and 100% of public security officials based near our operations were trained. In 2018, an updated Memorandum of Understanding (MoU) was signed with the public security in Madagascar, including commitments around training and awareness of the VPSHR. New contracts with private security companies were also issued with the Voluntary Principles embedded into them. Ambatovy also provided Advanced

Criminal Investigation Training to the *Gendarmerie* in order to strengthen their investigative skills into security incidents and fraud. Our Security Manager, or his designate, holds monthly meetings with the *Commandant* of the *Gendarmerie* during which the Voluntary Principles are discussed. We also continue to engage with security forces, donor agencies and diplomatic missions, civil society organizations, other extractive companies and other groups that are interested in security and human rights issues at workshops, conferences and round-table discussions.

## The Ambatovy Grievance Management System

According to the Guiding Principles for Business and Human Rights (often referred to as the “Ruggie Principles”), there is a state duty to protect human rights and the corporate responsibility to respect human rights; there is also the need to provide access to remedy for victims of business-related abuses. As such, an important aspect of engaging with our stakeholders and building our social license is listening and responding to community concerns and incidents. Our ongoing community relations activities are designed to capture and resolve most of these issues before they escalate. However, for those issues that cannot be resolved through direct consultation, it is important to provide a credible, confidential and formal mechanism to receive and address grievances. Grievance mechanisms are processes to receive, classify, acknowledge, investigate and respond to community complaints. These are valuable early warning systems that can resolve sources of friction between stakeholders and companies, and can, over time, build trust.

At Ambatovy, remedies for complaints, up to and including potential human rights violations, are provided through our Grievance Management System. Since it was established in 2012, Ambatovy’s Grievance Management System has provided our communities with a transparent, participatory channel through which anyone can raise an issue of concern and be assured of receiving fair and thorough consideration. The system has incorporated best practice guidance from a number of sources in order to ensure it is practical and credible. It includes, for example, an External Grievance Oversight Committee, comprised of respected members of local communities, that meets regularly to review the overall grievance management process (the response time, the fairness of the system, the relevance of resolutions, etc.) and to provide feedback and suggestions for improvement.

In 2018, Ambatovy received 114 grievances, as compared to 85 in 2017 and 106 in 2016. Of the 114 grievances received during the year, most were related to impacts on livelihoods, land access and other issues. During the year, Ambatovy compensated 61 PAPs for grievances related to loss of harvests within the resettlement villages. There were no human rights related grievances reported in 2018.

The increase in grievances filed in 2018 is directly attributable to an instance in which 51 landholders filed the same grievance together yet they were counted individually. Barring this anomalous event, overall concerns regarding Ambatovy continue to decrease as compared to during the construction phase. We attribute the decrease to the success of face-to-



face consultations, significant progress on the completion of rice field restoration (which was a considerable issue during construction) as well as the increasing maturity and stability of our operations.

One workshop was carried out with the External Grievance Oversight Committee in 2018 to help improve the overall grievance management process. The Committee reviewed Ambatovy's processes and procedures and issued six formal recommendations. Based on this advice, new criteria were established to review grievances more effectively, and to better differentiate "requests" from true "grievances". 40 local grievance registry managers also received refresher training in order to improve their capacity to handle complaints that they receive.

A Whistleblower System was put in place and launched during 2017 in order to allow employees to anonymously report issues of concern relating to health, safety and security; theft and fraud; violation of laws, policies and procedures; harassment; manipulation or falsification of records and contracts; unethical

conduct and conflicts of interest. The confidential system offers employees the opportunity to report issues which they are not comfortable discussing with their supervisors or with Ambatovy's Senior Management. A toll free number has been established and callers can speak in Malagasy, French or English; they can also make contact through a web-site. This system is in line with our commitment to respect human rights and with our efforts to create a healthy organizational culture. If we identify adverse human rights impacts, we will take steps to address them promptly (although, to-date, no human rights-related grievances have been reported).

In 2018, 24 reportable concerns were submitted through the Whistleblower System. Of the 24 reportable concerns, nine were deemed to warrant an investigation. The concerns were mainly related to allegations of fraud within Ambatovy, such as inappropriate business relationships with vendors and conflicts of interest. The remaining 15 concerns that were not investigated were deemed to be Human Resources-related matters and were handled and closed by Human Resources.





# Economic Performance

## Objectives

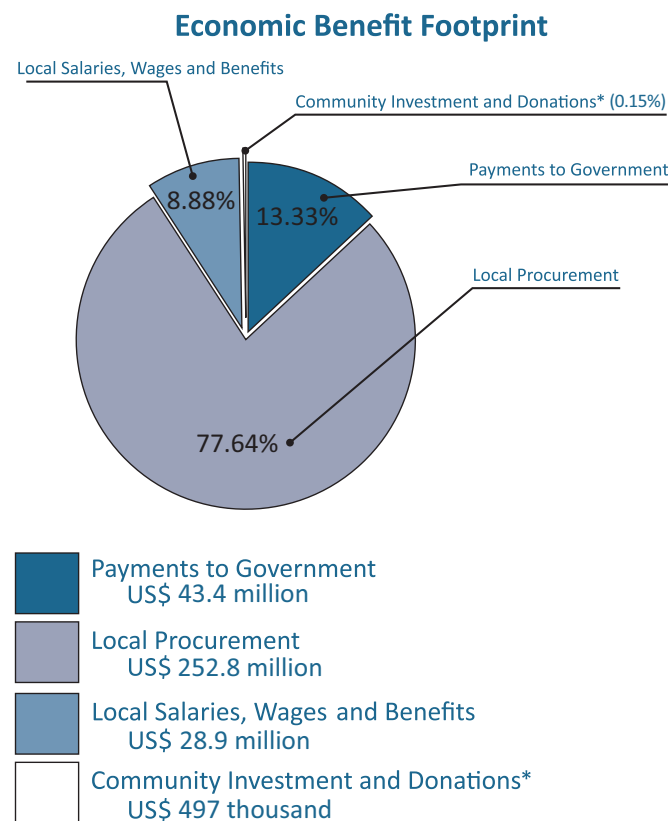
- Position Ambatovy as the most successful nickel laterite operation in the world, with a real competitive advantage over our competitors, in order to secure long-term company sustainability for the benefit of our shareholders, our employees and Madagascar.
- Contribute to Madagascar's growth and development through payment of taxes and royalties, investment in infrastructure, job creation, competency development, local business development, technology transfer, community investment and donations.
- Maximize the economic returns of our operations to our local communities, to the extent possible.
- Prioritize local procurement and invest in local capacity to be able to participate in our supply chain.

## Approach

Ambatovy is aware that our presence in Madagascar can have considerable economic impacts at the national, regional and local levels. Our vision is to significantly contribute to Madagascar's development and to maximize the economic returns of our operations to our local communities. At the national level, with Ambatovy's exports beginning in 2012, nickel has become one of the top exported products for the country. Nickel and cobalt export earnings have helped to curb the external current account deficit, maintain the value of the local currency (Ariary), and build up adequate foreign reserves. Locally, significant economic returns have already been seen in the form of salaries, wages and employment benefits, improved infrastructure, and business opportunities.

In recognition that an operation of this size can create both positive and negative economic impacts, Ambatovy has implemented a number of mitigation measures to counterbalance any undue results. For example, to help control inflation, we purchase our produce from bulk purchasing centers which source from local farmers for fruits and vegetables. Ambatovy also recognizes that with an investment of this size, there is a responsibility to ensure that funds are managed ethically and transparently and that we do our due diligence to lessen the chance of corruption in our transactions.

and employment benefits through our local recruitment efforts; and community investment and donations spending that goes above and beyond our obligations and commitments. In 2018, our economic benefit footprint was approximately US\$ 325.6 million, broken down as follows:



\*Our Community Investment and Donations reporting reflects all community spending above and beyond our legal requirements; it has been assured by LBG Canada.

## Performance



### Economic Benefit Footprint

When evaluating the overall economic impact that our presence delivers at national, regional and local levels, we track our "economic benefit footprint", which includes payment of taxes, royalties and fees to the Government; the procurement of local goods and services; payment of local salaries, wages

## Payments to Government

In 2018, Ambatovy paid approximately US\$ 43.4 million in tariffs, taxes, and other government payments. After enabling legislation was adopted, Ambatovy was able to make the first payment of mining royalties to the Decentralized Territorial Collectivities, including the two Regions and 20 Communes in our operating areas. The payment of more than 62 billion Ariary (approximately US\$ 18.5 million) represented royalties that had accrued since the last quarter of 2012 through the second quarter of 2018. We strive to ensure that these payments are openly and transparently reported so that our contributions to national, regional and local governments are recognized, and to encourage accountability for the spending of those funds. Going forward, Ambatovy will continue to pay the royalties we owe. There were no fines related to environmental or product compliance infractions during the year.

## Local Procurement

Almost 80% of our benefit footprint in 2018 resulted from the purchase of goods and services from local suppliers, reflecting our commitment to maximizing the economic returns to our local communities. We have implemented a range of programs and have made support tools available to local businesses and entrepreneurs so that they can provide Ambatovy with goods and services that meet our standards of procurement and quality. The Ambatovy Local Business Initiative (ALBI) was established several years ago to support this commitment and to uphold our local procurement policy of “buy locally, hire locally.” As of the end of 2018, 4,820 potential vendors were vetted and registered in our database, and, during the year, more than 450 local suppliers provided Ambatovy with goods and services across 40 sectors of business including construction, transportation, cleaning and catering services. Examples of locally sourced materials include the pallets used for our shipments of nickel and cobalt as well as uniforms and raincoats distributed to our employees. These suppliers, in

turn, create much-needed job opportunities. The exact number of jobs created to indirectly support Ambatovy’s procurement needs is difficult to calculate – however, we know that almost 500 jobs were created to build wood pallets, produce uniforms, and recycle plastic, tires and wood.

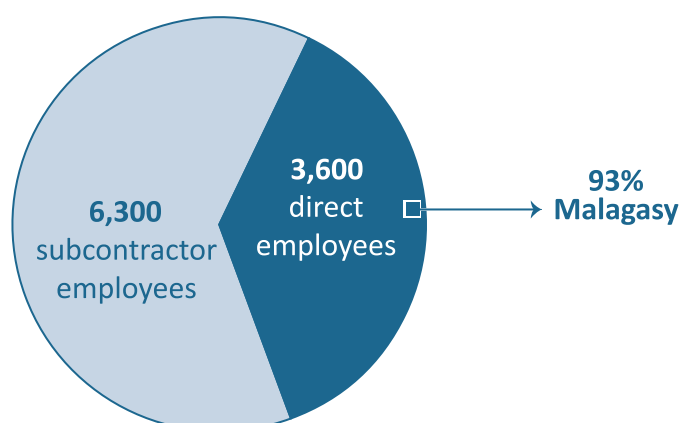
Ambatovy continues to remain dedicated to local procurement and has seen success in emphasizing local sourcing whenever it is possible. Since 2012, Ambatovy has spent approximately US\$ 3.5 billion in local purchases; in 2018 alone, this number was more than US\$ 252 million, an increase of 5% as compared to 2017 (almost US\$ 240 million). Our vendors continue to have access to training modules and mentoring support in areas such as quality, health and safety, environment, the labor code and financial analysis. As described earlier in this report, in 2018 Ambatovy provided training to suppliers and sub-contractors on the Children’s Rights and Business Principles (CRBPs). In total, 144 participants from 83 businesses received training. Audits are conducted periodically to verify our vendors’ capacities to safely and reliably deliver goods and services, in compliance with legal, regulatory and tax requirements in Madagascar, as well as with Ambatovy’s policies and standards with regards to quality, health and safety, our environmental code of conduct, business ethics and human rights. In 2018, 11 local vendors were audited, making a total of 568 audits carried out since 2011.

## Local Salaries, Wages and Benefits

Local salaries, wages and employment benefits accounted for approximately 9% of our benefit footprint in 2018, reflecting our commitment to maximizing employment opportunities for the Malagasy population and our contributions to raising the standard of living and creating wealth in communities near our operating sites through competitive wages and working conditions. For more information on recruitment and training, please see the section A Safe and Rewarding Workplace.



Ambatovy’s workforce



## Community Investment and Donations

We endeavor to achieve maximum local impact with the funds we spend on community investment and with the donations we make. A significant portion of our community investment spending in 2018 was through the Social Investment Fund (SIF), a US\$ 25 million allocation established in 2012 in partnership with the Government of Madagascar. The SIF supports several projects, such as rehabilitating public infrastructure, such as schools and electric generators; and building new ones, like markets and roads. In order to be eligible for SIF funding, projects require support from communities, the Government of Madagascar and Ambatovy. Many of these projects have been completed and the others continue to progress. The conclusion of the SIF in the near future will be a significant milestone in our community commitments.

Every year, Ambatovy also sets aside funds to respond to requests for donations and sponsorships. Our donations have

funded activities related to World AIDS Day, International Women's Day and other such initiatives. In 2018, for example, Ambatovy made donations to contribute to relief efforts after Cyclone Ava and to help in the fight against the measles outbreak that had a particularly devastating effect in Toamasina. We also donated school kits for children at the primary school of Berano near the Mine, and purchased computer equipment for the local employment office in Moramanga and supported youth training in entrepreneurial skills. Ambatovy does not make any donations to political parties, politicians or related institutions.

More information on our community investments (including a complete listing of all the projects supported through the SIF) and our donations can be found in the section on Communities and Social Relations and in Appendix 3.







# Communities and Social Relations

## Objectives

- Develop a climate of mutual trust, transparency and open dialogue between Ambatovy and our neighboring communities.
- Promote positive and sustainable impacts within our communities and contribute to improved living conditions of the local population.
- Mitigate the potential negative impacts on affected populations and their surroundings.

## Approach

Now more than ever, local stakeholders – from local communities to civil society organizations – expect to experience tangible benefits and improvements in their standard of living and quality of life from natural resource extraction and processing. This is particularly true in places where socio-economic development has been lagging, infrastructure is lacking and human development indices are low. Within the industry, there is recognition that mining and energy companies have a role that extends beyond the simple provision of returns to shareholders. For a company to be truly sustainable, it must build broad social license and demonstrate that it delivers a net-positive benefit to local communities and to society as a whole. It is for this reason that benefitting people and helping to catalyze the development of sustainable communities is so important to us.

Ambatovy's activities have significant potential to impact the communities where we operate. The process of how we handle these impacts and the end results, both positive and negative, affect our relationships with local communities. A planned, transparent and constructive approach to community engagement and development is therefore critical to maintaining our social license to operate and ensuring that communities benefit from our presence. We are also conscious of the need to balance government and community expectations against our ability to deliver benefits throughout the life of the Mine, and to ensure that we do not foster dependency or substitute for government services. Our goal is to leave communities no worse off, but ideally much better, than when we arrived.

Community engagement is critical for establishing mutual understanding of one another's needs, interests, aspirations and concerns; for making decisions to support business objectives

related to growth, risk management and operational excellence; and for collaborating to address local priorities.

Constructive relationships with community stakeholders are essential to securing and maintaining our social license to operate, creating mutually beneficial outcomes and ensuring that being our neighbor is a globally positive experience. Our approach to community engagement continues to emphasize open, transparent communication with local communities concerning our activities. Since major extractive operations of Ambatovy's magnitude are still relatively new in Madagascar, we have seen a need to increase community interactions and face-to-face consultations in order to counter wide-spread rumors, fears and misunderstandings.

An important aspect of engaging with our stakeholders and building social license is listening and responding to community concerns and incidents. Our ongoing community relations activities are designed to capture and resolve most of these issues before they escalate, but for those issues that do, it is important to have a credible community grievance mechanism in place. As described in the Governance and Human Rights section earlier in this report, Ambatovy has established a Grievance Management System.

Our Communities and Social Relations (CSR) program focuses primarily on livelihoods development, implementation of projects supported through the Social Investment Fund (SIF), community health and safety, work with resettled families, community engagement and cultural heritage. Collaboration with local authorities and partnerships with NGOs and other civil society groups continue to play a key role in our approach to Communities and Social Relations.

## Performance



### Livelihoods Development

The Livelihoods Development component of our work reflects Ambatovy's commitment to improving the living conditions of the PAPs. The PAPs consist mainly of demobilized employees from Ambatovy's construction phase, of farmers living along the pipeline whose rice fields were damaged during the construction period or may be impacted during maintenance activities, and of families that needed to be relocated due to the construction of Ambatovy's Plant, Tailings and Mine Sites. The Livelihoods Development program aims to enhance food security for the PAPs as well as to ensure and increase their sources of income. Ambatovy supports Livelihoods Development through capacity building, organizational support, the provision of agricultural inputs, and opportunities to network and gain access to markets.

Ambatovy remains committed to restoring impacted land along the pipeline and continues to work with farmers whose rice fields were affected during the construction phase or whose fields may be impacted during maintenance activities. Towards that end, we have invested in technical training, the provision of inputs and small agricultural tools, the dissemination of improved cultivation methodologies, the preparation of demonstration plots and the organization of exchange visits.



In 2018, Ambatovy continued our support to farmers' associations and agricultural cooperatives in the districts of Toamasina II, Brickaville and Moramanga in order to strengthen their organizational and technical capacities and to improve their livelihoods in the areas of seed production, fish farming, vegetable gardening, small animal husbandry (especially poultry raising and beekeeping) and handicrafts. We provided training and inputs to the farmers and helped them make contacts with input suppliers and produce buyers. For example, representatives of seven cooperatives received support from Ambatovy to participate in the 20<sup>th</sup> annual "FIER Mada", an important agricultural and rural development fair that takes place in Antananarivo every year. The cooperative representatives were able to establish contact with potential customers interested in purchasing the turmeric, ginger, and corn that they produce. An exchange visit that was organized after the fair enabled cooperative members to meet other farmers in the Analamanga and Vakinankaratra Regions in order to strengthen their skills, gain new technical knowledge and broaden their network. We also worked with farmers along the

pipeline to establish village nurseries, to plant popular cash crops (e.g., fruit trees, coffee and cloves) and to improve their farming techniques. Further support and training was also provided to Water Users Associations (WUAs) on the management and maintenance of irrigation systems and on watershed protection, in collaboration with the Rural Engineering team of the Regional Directorate of Agriculture and Livestock (DRAE). To-date, Ambatovy has supported 35 WUAs in these zones.

In 2018, Ambatovy launched the "Greenbelt Project" in the vicinity of the Mine. The initiative includes a series of activities to strengthen company-community relations and to help address security issues in the areas surrounding the Mine by engaging more communities, targeting our recruitment efforts, organizing sporting events and social activities, and carrying out joint community projects. For example, in collaboration with local authorities and the Regional Office of Nutrition (ORN), several high-intensity labor projects were identified and implemented to help generate short and medium-term employment opportunities and to enhance incomes by maximizing the use of available local labor. Through this project, local farmers are regularly providing fruits and vegetables to the catering company at the Mine.



### Social Investment Fund (SIF)

In 2012, Ambatovy, in partnership with the Government of Madagascar, created the SIF, with a total value of US\$ 25 million to be used for social and infrastructure projects for the benefit of the local population. These projects have been identified in collaboration with our local communities and Malagasy authorities, and are managed in accordance with Ambatovy's procurement and purchasing policies. By the end of 2018, ten of the 17 SIF projects were completed, five are ongoing, and two were suspended during the year (please see Appendix 3 for a full listing of the 17 SIF projects).

Some highlights of SIF progress in 2018 include:

- The rehabilitation of the Moramanga Tribunal Court was completed in 2018 and the building will be officially inaugurated in 2019.
- A donation of 79 two-way radios and their accessories was made to the public security forces in Toamasina as a sub-activity of the Civil Protection Unit project and as part of the public-private partnership between Ambatovy and the Atsinanana Region; the donation will help strengthen their capacity to provide improved security services, and will contribute to improved coordination and communication between the *Gendarmerie* and the local police.

- As part of the *Tsara Tantana* project, Ambatovy established a partnership with the local NGO SAHA to assist communes receiving royalties in the update and preparation of their Communal Development Plans and in inter-communal spatial planning (please see, also, the section on Governance and Human Rights for more information on this project).
- For the Toamasina Infrastructure project, the rehabilitation of the Andranomadio road was completed in early 2018 and the Scope of Work for a series of post-cyclone projects was updated.
- The two generators that were donated to the city of Toamasina through the “Jirambato” project remain operational; the final acceptance for the project took place in May 2018.

## Community Health and Safety

As good neighbors, it is critical that we ensure that our operations, transportation activities and other business practices avoid unintended or adverse effects on the public. We follow the regulations of our operating jurisdiction, strive to meet the expectations of nearby communities, and regularly engage and collaborate with local stakeholders on health and safety-related risk awareness and emergency preparedness.

### Public Health and Safety

There are natural links between public safety and effective community engagement. Through engagement, we work to understand public concerns and safety risks, evaluate steps we can take to reduce those risks, help clarify misunderstandings and dispel misinformation, and, when appropriate, collaborate with communities on initiatives that make all of us healthier and safer. Through these efforts, we contribute to building a strong safety culture in the communities near our operating sites.

In line with IFC Performance Standard 4, addressing the obligation of a project to “prevent or minimize the risks and impacts on the communities’ health, safety, and security” resulting from the project’s activities, Ambatovy continues to focus on assessing our impacts on the health and safety of our communities and identifying areas where we can assist in strategic community health projects and safety initiatives. According to the IFC Performance Standards, a Health Impact Assessment (HIA) is required for a mining company with the objective to evaluate and understand positive and negative impacts, if any, our operations may have on the local population’s health, and to make appropriate recommendations. An initial HIA was therefore carried out in 2013 and a corresponding action plan was developed and is still being followed.

Some of the health and safety-related actions at the community level during 2018 include:

- Continuing our support for community nutrition activities. For example, as reported in the 2017 Sustainability Report, a tripartite agreement was established between Ambatovy, the NGO Love and Care and the Regional Office of Nutrition (ORN) in Atsinanana, in order to help school feeding programs for vulnerable children at several public primary schools in the Toamasina area. These programs aim to maintain the attendance rate of students and improve their academic performance by providing well-balanced, healthy meals to

the children. In 2018, 758 kg of vegetables were produced on a demonstration plot in Tsarakakana, near Ambatovy’s operations in Toamasina, benefiting three school feeding programs in the *Fokontany* of Ampihaonana. Parents of students at these schools worked on the plot and received training from the Regional Directorate of Agriculture and Livestock (DRAE) on improved agricultural techniques. In addition to providing food to the school feeding programs, the partnership arrangement also ensures the security of the land around Ambatovy’s infrastructure against illegal occupation.

- Supporting nutritional health and improving vulnerable families’ food security through a series of Food for Work (FFW) projects carried out along the Pipeline in collaboration with the ORN. The initiative involved 11,649 man hours of labor across 20 projects, such as the rehabilitation of agricultural infrastructure and rural roads, and resulted in 30 tons of food being distributed to the families during the early months of the lean season.
- Mitigating impacts of increased rail traffic along the extension of the railway line between the Port and the Plant Site and enhancing safety awareness for people living along this corridor where the risk of rail accidents is highest. As background: in order to minimize impacts on the environment and the general public, bulk commodities imported by Ambatovy are transported from the Port to the Plant by rail. This has increased the frequency and intensity of the rail line usage, creating impacts on communities living along the Port to Plant corridor. To mitigate these impacts, Ambatovy installed fencing, level crossings, overhead crossings, traffic signs and automatic gates during the railway upgrade. In 2018, we carried out awareness campaigns to increase people’s understanding of the safety risks associated with railway traffic, to prevent potential incidents from occurring and to improve safety culture. Campaigns were carried out in partnership with the railway company Madarail and targeted populations residing near the Port to Plant Site corridor, particularly students and teachers, customers at nearby cafés and restaurants, people with disabilities and families with members suffering from mental illness.
- Continuing our support for the Child Protection Network in the Moramanga area with representatives of the Ministries of Justice and of Population, local authorities, security officials and parents through joint site visits, public consultations, and awareness-raising sessions on children’s rights at the community level. Efforts focused in particular on sensitizing the local population on dangerous forms of work for children (especially, children herding the family’s zebu or cattle, pulling rickshaws, etc.) and encouraging their re-insertion into schools.
- Providing a permanent, sustainable water supply system for villages downstream of the TMF to address the non-compliance of manganese levels (please see the Environment section for more information on the manganese issue at the TMF). Prior to the hand-over of the system to the Rural Municipality of Fanandrana and the Suburban Municipality of Toamasina in May 2017, 14 local Water Management Committees (COGES) and community members from surrounding areas were trained in the system’s management and use as well as on



WASH<sup>7</sup> practices. In 2018, Ambatovy did some minor repair work on the system, and communities demonstrated their commitment to the successful management of the water system through the timely payment of water user fees and active participation in its maintenance. Villagers living in more than 20 villages located around the TMF continue to benefit and have access to safe, clean drinking water.

- Carrying out preventative actions to improve safety and security around the TMF site and to reduce the risks associated with vandalism, theft and illegal site access. Awareness sessions were held with villages near the TMF and village controls were introduced with Security and Sustainability. Several process and equipment upgrades were also carried out including the installation of motion detection systems, new padlocks and alarms, and a review and re-organization of security resources to improve response capabilities.
- Carrying out awareness raising campaigns regarding electrical hazards and safety measures for the installation of a high-voltage overhead line near the TMF.
- Supporting awareness-raising campaigns and prevention programs on HIV/AIDS and Sexually Transmitted Infections (STIs) in the workplace and in the community (please see below for more information on this work).

## HIV/AIDS

Madagascar has a relatively low prevalence of AIDS (with an adult prevalence estimated at below 0.3%) and the country has fortunately thus far been able to escape the worst of the pandemic that has hit much of Sub-Saharan Africa. However, the limited access to health and social services, the high rates of other STIs plus risky behaviors and other vulnerability factors amongst the population suggest that if HIV/AIDS were ever to gain a foothold in Madagascar, it could spread rapidly, especially in urban areas. HIV/AIDS prevention and awareness therefore remain an integral part of Ambatovy's social commitment in the field of health. Our objective is to contribute to the national goals of keeping the HIV/AIDS prevalence rate low in the general population and of "getting to three zeros": zero new HIV infections, zero discrimination and zero AIDS-related deaths.

Our HIV/AIDS efforts target employees and communities using a participatory approach through collaboration with Government (particularly the Ministry of Health), civil society, youth groups, international agencies and community members.

Within the workplace, the Employee Peer Educator Program has been a key element in both our Zero-Tolerance and HIV/AIDS campaigns. Since 2011, Ambatovy has invited interested employees to serve as volunteers in the program, to receive training and then, in turn, to educate fellow employees and raise awareness of preventive measures. We now consider those who have participated in the program for several years as "Senior Peer Educators" and they have become leaders amongst their colleagues in many aspects of company life, not just HIV/AIDS awareness. In 2018, 67 new peer educators were recruited and received training in Moramanga and Toamasina, bringing the total number of peer educators to 108.

Ambatovy also regularly takes part in World AIDS Day that is held each year on December 1<sup>st</sup> and, in 2018, we organized World AIDS Day events at each of our sites, with awareness-raising, education and voluntary testing activities. Approximately 2,000 employees participated in awareness-raising sessions and more than 600 employees were screened for HIV.

At the community level, 10 youth kiosks, renovated and constructed in partnership with the United Nations Children's Fund (UNICEF), provide local youth along the RN2 national highway with locations for gathering, exchanging information and providing one another with support. The kiosks are managed by a group of young peer educators who have been trained and who then, in turn, provide support and information to other local youth regarding HIV/AIDS and STIs. A few years ago, the kiosks were transferred to the Regional Directorate of Youth and Sports, which now supports and coaches the young peer educators. In 2018, Ambatovy also provided counseling and HIV testing at a football tournament in Ampitambe, where 112 people were screened, and conducted awareness sessions in Vohitrabato and near the TMF.



In March 2018, Ambatovy hosted a meeting with representatives from the National Committee for the Fight against AIDS (CNLS), the Ministry of Health, UNAIDS, the International Labor Organization (ILO), and the Food and Agricultural Organization (FAO) with our pool of HIV/AIDS peer educators in order to share our experiences with regards to HIV/AIDS prevention and awareness-raising in the workplace and in surrounding communities, to get an update on the HIV/AIDS situation in the country and the Indian Ocean region, and to learn about the 2018-22 national strategic plan to combat HIV/AIDS and STIs. Our guests also had the opportunity to visit the Plant Site and the Tamaga Youth Kiosk in downtown Toamasina that Ambatovy has been supporting over the past several years. Later in the year, Ambatovy was invited to participate in two key technical workshops organized by the CNLS, UNAIDS and the ILO to review and assess progress against the National HIV/AIDS Policy in the Workplace (*La Politique nationale de lutte contre le VIH et le SIDA dans le monde du travail*) whose goal is to achieve the "three zeros". Ambatovy shared our experiences and important lessons learned that can be used as a reference for other companies that have yet to develop HIV/AIDS programs for their workplaces.

<sup>7</sup>WASH stands for "water, sanitation and hygiene". Universal, affordable and sustainable access to WASH is a key public health issue and is the focus of Sustainable Development Goal 6.

## Emergency Preparedness and Response

One of the most important ways we protect both communities and our business is through effective emergency preparedness and response planning. At our sites, we develop plans, grounded in scenario/risk assessments, to protect the public, the environment and infrastructure in the event of a significant incident. We also implement actions to limit the severity of impacts, should an incident occur. We coordinate closely with emergency responders in both preparedness and response activities, and we regularly conduct joint training exercises with them. Our work in this area is informed by international practices, including the Mining Association of Canada's Towards Sustainable Mining (TSM) Crisis Management protocol and the United Nations Awareness and Prevention of Emergencies at the Local Level (APELL) program.

In accordance with international standards for industrial risk management, Ambatovy works in partnership with regional authorities to reinforce local capacity in emergency preparedness and response. For example, we have collaborated with local and regional officials to create the Regional Committees for Industrial Risk Management (CRGRI) for the Atsinanana and Alaotra Mangoro Regions. Ambatovy supported the creation of these bodies and continues to provide training and support to the staff, which is led by the Chief of the Region, in order to strengthen emergency response capacities at the regional level. It is through this collaboration that the three Intervention Preparedness Plans (*Plans de Préparation d'Intervention*, PPI), for the Atsinanana Region were developed. These plans focus on possible incidents, however unlikely, with Ambatovy's ammonia, sulphur and TME, and outline the emergency response and procedures to be followed. The PPIs initially only considered ammonia-related risks, but an update in 2015 widened the PPIs to include other industrial risks including Hydrogen Sulphide (H<sub>2</sub>S) and Sulphur Dioxide (SO<sub>2</sub>) as well as dam failure at the TME.

Key accomplishments in 2018 with regards to emergency preparedness and response include:

- Following Cyclone Ava in January, Ambatovy supported disaster relief efforts through the donation of fuel, support for clean-up crews to clear roads and remove debris, and the provision of meals for members of the 4<sup>th</sup> Civil Protection Unit while they worked. There was strong and effective collaboration with regional authorities, UN agencies and local partners for these efforts. Similarly, Ambatovy cooperated and engaged with local authorities and the BNGRC on following the trajectory and assessing the impacts of Cyclone Duamzile in March.



- Ambatovy hosted the BNGRC and the CRGRI at the Mine Site in order to familiarize members with operating procedures there and to finalize the PPI for the sedimentation dams.
- In October 2018, a simulation exercise was carried out by Ambatovy in partnership with the local emergency response team of the Prefecture of Toamasina, the Atsinanana Region, the BNGRC and the CRGRI. The scenario simulated a SO<sub>2</sub> leak from the Acid Plant following the passage of a cyclone. The community of Ambalatenina, located in proximity to the Plant Site, was chosen to partake in this simulation and acted out an emergency evacuation with the assistance of the Civil Protection Unit and the Malagasy Red Cross Society.
- As noted above under the SIF, in May, Ambatovy made a donation of 79 two-way radios to the public security forces in Toamasina in order to improve their communication and emergency response capabilities amongst the members of the Civil Protection Unit.
- A workshop was carried out in Ambatondrazaka on the implementation of the Private Sector Humanitarian Platform (PSHP) regional focal point.
- An external communications plan is in place with local authorities and officials in the event of a Pipeline emergency. The plan has been updated annually since its inception in 2014.

In 2019, we plan to revise and update our collaboration agreement with the BNGRC so that our work with the agency on emergency preparedness and response can continue and be strengthened. Awareness-raising activities and simulation exercises will also continue to be organized in order to ensure stakeholders' readiness in the unlikely event of an incident or emergency.

## Resettlement Communities

### Vohitrambato and Marovato

To facilitate construction, Ambatovy had to resettle villagers living in the vicinity of the Tailings Management Facility and Plant Site. From December 2007 to February 2008, Ambatovy relocated 261 households living at these sites to two resettlement villages, Vohitrambato and Marovato, where they received a range of services and benefits aimed at restoring their livelihoods and improving their quality of life. The construction of the physical infrastructure, such as homes, water points and a school, is complete but has been only part of our commitment to the two relocation villages. Our task over the past 10 years has been to carry out a resettlement program following the World Bank's principles on involuntary resettlement, the IFC's guidelines for resettlement action plans, and guidelines set by Madagascar's national regulatory body. Our work aims to provide support to these communities while also promoting self-reliance, empowerment and long-term sustainable development. Our activities focus on livelihoods (vegetable gardening, handicrafts, small animal husbandry, etc.), health and hygiene, education and sustainable forestry. Communities have demonstrated an active desire to partake in these activities and to invest in their own development.

Collaboration with partners such as NGOs, civil society organizations, local technical schools and private sector

groups is extremely important to help facilitate our work in the resettlement villages. These partners have the skills, knowledge and understanding of the local context to effectively respond to community needs without promoting dependency. Some of the key partners that we worked with in 2018 include:

- **Program for Professional Training and Improved Agricultural Productivity (FORMAPROD):** As part of Ambatovy's commitment to promoting women's development and empowerment, a partnership was formed with FORMAPROD to support the integration of girls and women with no formal education into the professional working world. Women were provided with sewing equipment and trained in cooperative governance, management of equipment, production planning, and tailoring work for exhibitions and tourists.
- **Homéopharma:** A partnership with Homéopharma and farmers from the village of Vohitrambato was formed in 2017 to produce noni, a plant used in medicinal products. The partnership has been renewed and additional opportunities are being investigated for the production of essential oils and other alternative medicines.<sup>8</sup>
- **Support Program for Rural Microenterprise Poles and Regional Economies (Prosperer):** Collaboration with Prosperer, a program supported by the International Fund for Agricultural Development (IFAD), provided farmers with new opportunities in beekeeping. A demonstration site and seven hives were installed in the village of Vohitrambato and beneficiaries received training in marketing and technical practices. The project successfully resulted in a purchase agreement for 100 liters of honey per month.
- **Independent Mission for Development and Education in Madagascar (MIDEM):** A partnership with MIDEM targeted 20 farmers to receive training and inputs in fish farming. Farmers were provided with 6,000 fingerlings and were assisted in expanding their fish ponds. A production of one tonne is expected from the project in 2019.

Microfinance provides an important means of supporting entrepreneurship and alleviating poverty in developing communities. Towards that end and as noted in our previous Sustainability Reports, Ambatovy has played an active role in supporting the creation of self-managed Village Savings and Loan Associations (VSLAs) which have become a core activity of communities and have proven to be very successful. The VSLAs provide members with the opportunity to increase their capital and financial autonomy, and allow them to invest in income-generating activities (vegetable gardening, handicrafts, small animal husbandry, etc.), to market their products, to cover health and education expenses for their families, and to meet certain social obligations. Members of the VSLAs have received training in the principles of microfinance, the culture of savings and credit, and organizational governance. Three new VSLAs were created in 2018, making a total of 14 VSLAs (with the majority of members being women) operating with Ambatovy's support in the resettlement villages, as well as near the TMF and near the Mine.

In addition, Ambatovy supports the management of 36 ha of forest and 69.5 ha of forest plantations near the resettlement villages. Known as the Analabe Forest and comprised of primary and degraded forest, it is located near Vohitrambato. It not only provides critical habitat for flora and fauna, but it is also an essential source of natural resources for the local communities. It is managed in partnership with a local NGO (Miarintsoa) and village-level forest management committees (Fehizoro Federation). In 2018, more than one thousand indigenous seedlings were produced at the village nursery to be used for re-vegetation purposes. Maintenance was also carried-out on 13 ha of firebreaks along the forest boundary. To further encourage forest conservation and to promote sustainable income-generating activities, Ambatovy and the partners have been working on an ecotourism project that will provide new livelihood opportunities for villagers. A management plan for the project was finalized in 2018 and validated by all parties, including Miarintsoa and the Fehizoro Federation as well as the Regional Directorate of Environment, Ecology and Forests (DREEF) and the Regional Directorate of Tourism (DRT). The plan was bolstered by flora and fauna studies and an inventory conducted by the University of Antananarivo as well as by nine community awareness sessions held with local communities. Implementation of the Analabe Ecotourism Development Plan will continue in 2019. Based on the results of the flora and fauna inventory, several new conservation initiatives will be introduced. Activities will include the start-up of bamboo cultivation to ensure a stable food source for lemurs, mitigation against invasive species, and the cultivation of indigenous species, particularly orchids.



As part of our commitment to resettled families and their hosts in Vohitrambato, Ambatovy has agreed to contribute 50% of the school fees for the children under the age of 13 in the village. The 2017-18 school year marked the ninth successful year of the program, with 150 students benefitting. Ambatovy offered scholarships to three university students and offered an internship in our Sustainability Division to one student following her completion of tertiary studies. To promote health education and combat malnutrition, Ambatovy also supported the development of a school gardening program and community nutrition center in Vohitrambato. 34 persons – including teachers, parents and community agents – received training on proper diet, hygiene and nutrition.

<sup>8</sup>Homéopharma is a Malagasy company that focuses on developing and producing natural products for health and well-being; noni is a tree in the coffee family used to help treat a variety of health problems such as diabetes, high blood pressure, arthritis, aches and pains, inflammation, infections, etc.



There are still 159 households living within the vicinity of the TMF that have livelihoods affected by access restrictions to the site. Fourteen families maintain rice fields within the TMF area and one family that initially refused to be re-located is still living within the technical zone. Negotiations are underway to re-locate those remaining rice fields and to re-settle the family living there. An evaluation of land compensation has been completed and Ambatovy is now in the final stages of identifying land for acquisition. This process is being conducted with the same rigor and commitment to international best practice as the initial relocation program.

## Ambolomaro

There is also the “economic resettlement” of 29 families in Ambolomaro, near the Mine Site, which has been underway since 2008. The resettlement involves households that live outside the Mine lease area, but that had cultivated their rice fields within the Mine lease zone and therefore needed to relocate their fields. From 2008 to 2015, we provided rice to families in order to compensate for their lost rice production until their harvests reached the agreed upon yield of two tons per hectare. As noted in previous years’ reports, we adopted a new approach to compensation based on our experiences and on recommendations from the DRAE of the Alaotra Mangoro Region, and have since then noted a significant increase in the number of Ambolomaro farmers cultivating their new rice fields and seen an improvement in their rice yields.

## Community Engagement

A robust stakeholder engagement program takes place at the community level with dedicated CSR teams. Ongoing dialogue through several channels, in both formal and informal settings, with PAPs, community members, local authorities, traditional leaders, representatives of civil society groups and the general public has been, and continues to be, important for building mutual understanding, managing expectations, and earning and maintaining our social license. In 2018, Ambatovy participated in more than 550 community meetings, and we are pleased to report that there were no significant community incidents or disruptions during the year. Topics that were discussed included Ambatovy’s operations, impacts and benefits to Madagascar, livelihoods, emergency preparedness, local governance, royalty payments, public health and safety concerns, water quality, community-based environmental conservation, grievance management, child protection issues, and security awareness.

In order to build a climate of trust and transparency, it is important for stakeholders to understand why and how Ambatovy operates. To this end, 2018 was a year of long-term pedagogy, initiated in response to the consequences and challenges we faced due to the weak global market for commodities. Ambatovy’s engagement strategy went beyond the regular scope of our day-to-day operations and focused on raising public awareness around the different economic forces at play in the mining industry and their repercussions both locally and globally. Awareness campaigns aimed at providing a better understanding of the current economic climate, covering topics such as the value-added of processing and refining metals in Madagascar, the reasons for falling nickel prices internationally,

and the consequences of declining prices on local, national and international economies.

In 2018, Ambatovy continued to participate in the Local Coordination Committee (CLC) meetings that occur four times per year at the district level, within our zones of intervention (Moramanga, Brickaville and Toamasina II). These meetings support an active dialogue between the communities and the company, and provide Ambatovy and communities a chance to address specific issues and concerns, to identify opportunities for engagement and discussion, etc. Topics discussed included royalty distribution, health and safety, security, community development, social investments, etc.



Ambatovy is constantly striving to organize activities that strengthen the transparency of our operations. An important activity in this regards is the Open Doors events that serve as opportunities for Ambatovy to share information, dispel rumors and educate the public about Ambatovy, and for the public to engage with Ambatovy staff. Across our sites, Ambatovy held four Open Doors events during 2018, with more than 8,800 people in attendance. Ambatovy’s Information Centers, located in Moramanga and Toamasina, are also open to the public and provide a valuable place for people to come and learn about the company as well as to exchange with Ambatovy representatives. Every year, Ambatovy hosts thousands of visitors at our Information Centers. We also continued to host guided site visits for government officials, representatives from the media and civil society organizations, members of the diplomatic community, youth from scouting organizations, clubs and school groups, university students, our employees’ family members, and other external stakeholders. During the year, more than 16,200 people visited the Mine and Plant Sites. These visits are valuable opportunities for them to experience Ambatovy first-hand and to learn more about our operations at the Mine and Plant Sites.

2019 will mark an important new phase for community engagement, following the first payment of royalties to Decentralized Territorial Collectivities that was made in 2018 and with the ongoing payments thereafter. Engagement will focus on continuing to be transparent and open about royalty payments, on accompanying Communes in the planning and management of these funds, and on developing effective partnerships. Ambatovy will also work on strengthening the Grievance Management System.

During 2018, Ambatovy continued to collaborate with our partner Search for Common Ground (SFCG) on the *Mazava Project*<sup>9</sup> in order to foster participatory and two-way dialogue between the company and the communities around our sites. In Madagascar, like many places in the world, misinformation and rumors can lead to mistrust and tensions. For Ambatovy, it has always been important to maintain open dialogue in order to share operational updates and news, to receive feedback from community members and to clarify any misunderstandings. During the year, SFCG organized participatory theater events, joint community initiatives, mini “town hall meetings” and training workshops in several communities near our operations. A unique and popular dialogue tool has been the production and broadcasting of the high quality radio drama, “*Miandrandra Maraina*”.<sup>10</sup> There have now been three seasons of the show that has aired locally in Moramanga, Brickaville and Toamasina. Ten Ambatovy employees continue to participate as “actors” in the radio show, along with professional actors. Episodes address topics such as daily life in a fictional community where a mining company is present, citizen participation and good governance, shared responsibilities, etc. In addition to airing the show on local radio stations, SFCG organizes listening groups with civil society organizations and residents near our areas to encourage discussion and reflection on themes raised during the episodes, and also makes special arrangements to have the shows broadcast in more public settings, such as at weekly markets, in order to ensure a wider audience. In addition to the radio drama, in 2018 SFCG also continued to produce and transmit a participatory, interactive radio magazine show, “*Tokotany Iraisana*” (TKI)<sup>11</sup>, which was aired on local radio stations on topics such as the importance of youth participation in local development. This work also includes capacity building of local radio journalists on the principles of responsible journalism.



## Cultural Heritage

Ambatovy’s commitment to our communities includes our respect for local culture, history, and traditions. To preserve cultural heritage, Ambatovy implements a comprehensive archeology program, which involves respecting and protecting cultural heritage sites, artifacts, and archeological remains found in Ambatovy’s intervention areas between Moramanga and Toamasina. Ethnological surveys are also carried out in parallel to the archaeological work in order to understand and preserve the cultural heritage of local communities.

Nearly 260 sacred sites and 5,000 artifacts were identified and placed under protection during the construction period, and as the Mine activities progress, the search for artifacts and archeological items continues as part of the clearing process. In 2018, 1,014 archaeological objects were discovered, dating from between the 15<sup>th</sup> and 20<sup>th</sup> centuries. Artifacts included 15 fragments of glass and 960 pieces of local pottery, 18 of which exhibited decorative motifs. Two new archaeological sites were also discovered, in Ambohibahoaka and Vohitakona along the Pipeline, and 37 sacred sites (including tombs, waterfalls, sanctuaries and commemorative raised stones) were flagged for protection. Artifacts are housed in the Heritage Interpretation Center in Toamasina that was built by Ambatovy and turned over to the Ministry of Culture in 2014.

In accordance with Ambatovy’s commitments in the Environmental Management and Social Development Plan, a preventive archeology program is being carried out in order to preserve Malagasy cultural heritage. In early 2018, a sacred site known as the “*Vazimba Tomb*” was discovered in the village of Andranofasina, at the entrance of Ambatovy’s Mine Site, during a reconnaissance mission conducted by Ambatovy’s archaeological specialists. Ribbons were put at the sacred site for its protection so that it can be seen from afar and in order to prevent people from trampling on it. This was a particularly exciting discovery as the *Vazimba* are considered to be the first settlers of Madagascar.

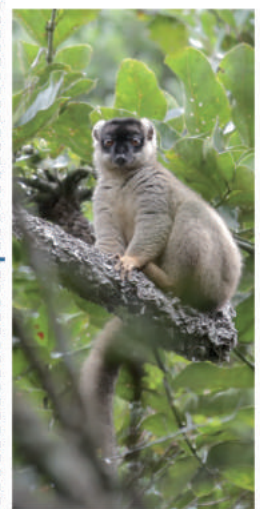


<sup>9</sup>In Malagasy, “*Mazava*” means “light” or “clear”.

<sup>10</sup>“*Miandrandra Maraina*” means “In Search of Dawn”.

<sup>11</sup>“*Tokotany Iraisana*” means “Common Ground” in Malagasy.









# Environment

## Objectives

- Achieve no net loss in biodiversity, and preferably a net gain, throughout our impacted mining sites.
- Support and empower local communities to reduce pressure on conservation areas.
- Manage waste, emissions and water to minimize Ambatovy’s overall environmental impact and footprint.

## Approach: Biodiversity

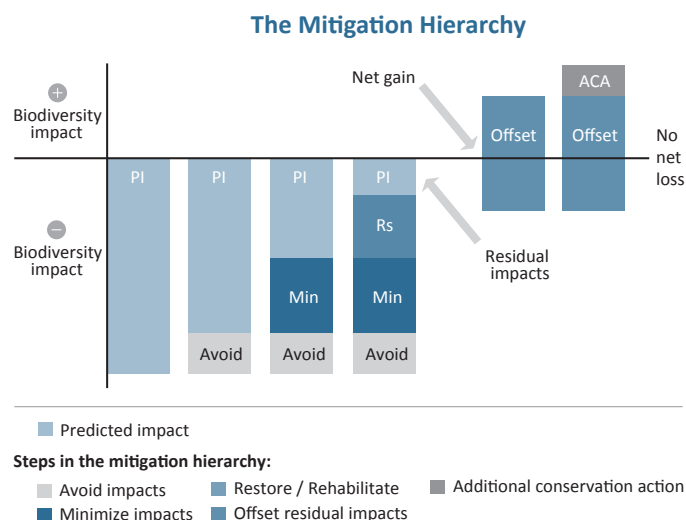
One of Ambatovy’s key goals is to avoid environmental impacts wherever we reasonably can, and to minimize the impact of our mining operations on Madagascar’s environment. With regards to biodiversity, the aim is to achieve no net loss (NNL), and, preferably, a net gain. We plan to accomplish these goals with rigorous mitigation techniques such as avoidance, minimization of risks, timely restoration of a sustainable landscape, and the offsetting of residual impacts.

The main impacts on biodiversity from our activities are related primarily to forest clearance at the Mine (1,614 ha) and around a two km strip of forest along the initial portion of the pipeline. Prior to construction, the forests of the Mine area were threatened by human impacts such as agricultural clearing, illegal timber harvesting, and hunting. The Plant and Tailings Sites were specifically located on modified degraded coastal scrubland habitat with low biodiversity. Nevertheless, impacts on all sites were taken into account in the development of Ambatovy’s comprehensive biodiversity program, which applies to all sites. Its strategy is founded on the following core objectives:

- No net loss of biodiversity and, preferably, a net gain.
- No species loss and no net reduction in the population of any endangered species.
- Minimization of impacts on flora, fauna, and aquatic resources.
- An increase in conservation of critical habitats.
- Priority habitat viability ensured by maintaining or increasing ecosystem connectivity.
- Integration of biodiversity activities with other regional initiatives on biodiversity.

In order to achieve these objectives, Ambatovy applies the mitigation hierarchy, as required by the IFC Performance Standard 6 and the BBOP Standard on Biodiversity Offsets. This includes: avoid impacts where possible, minimize any

unavoidable impacts, restore or repair any damage, and provide offsets for any residual impacts (e.g., through conservation and protection of ecologically comparable conservation areas). Additional conservation actions may further compensate for the impacts on biodiversity.



Source: “Working towards NNL of Biodiversity and Beyond: Ambatovy, Madagascar – A Case Study (2014)”, by Forest Trends and Ambatovy, p. 23.

Following these standards has resulted in a comprehensive approach to ensure that our impacts, as well as some that existed prior to our involvement, are controlled through cooperation with local communities, the Government of Madagascar and other conservation and development NGOs. The program has several focal areas, including flora, fauna, aquatic and marine ecosystems. Each area has specific actions for the construction, operations, and Mine closure phases. In addition, we have specific management plans for the Mine, pipeline, Plant, Tailings and port facilities that include biodiversity elements as well as a separate overall Biodiversity Management System that governs all our programs in this area.

Our biodiversity program is governed by the Ambatovy Environmental Management System (AEMS). This quality assurance – quality control (QAQC) style management system is aligned with ISO 14001 principles in order to comply with IFC requirements for good practice. The AEMS provides for:

- Continuous improvement and an adaptive management process;
- A monitoring and evaluation plan for all activities;
- Indicators against international, national, and internal compliance requirements, scientific conformance requirements and performance standards;
- Real-time updating and management of non-conformities.

The system includes 20 management plans covering the entirety of the Ambatovy environmental program, including plans for each category of fauna and flora identified in our areas. The goal of our biodiversity program is to ensure the continued viability of the fauna and flora populations in Ambatovy's areas of operations. For fauna, this includes pre-clearing inventories and manual rescuing/relocation from mining areas to our conservation zones. Our fauna programs are focused on five groups and animals: lemurs, micro-mammals, birds, fish, and amphibians and reptiles. Each of these groups has its own set of management plans and SOPs (standard operating procedures) that are based on the principle of adaptive management. Species that are characterized on the IUCN's Red List<sup>12</sup> as endangered or critically endangered are considered as Species of Concern (SOCs) and receive specific management actions. For example, our Lemur Management Plan closely monitors and collects data on all lemur species found within our zones, but we focus our long-term monitoring and biomedical surveys on five specific species of lemurs within our program areas – the Diademed sifaka, the Eastern woolly lemur, the Weasel sportive lemur, the Furry-eared dwarf lemur and the Indri – chosen for their status according to the International Union for Conservation of Nature (IUCN), for their ecological niche, and for the number of individuals available for study.



The same can be said for our resident birds, of which there are 118 species, which includes four endangered species (*Anas melleri*, *Ardea humbloti*, *Ardeola idea* and *Sarothrura watersi*)

as well as four vulnerable species and seven near-threatened species. Only the Golden Mantella frog differs in its treatment as it is also the recipient of a breeding program in addition to the salvaging and monitoring program activities. Once an animal has been relocated to one of our conservation zones, they are monitored for population viability and specific needs, the end objective being that of eventually being able to recolonize the Mine area once mining activities and rehabilitation are complete.

The process is similar for our flora populations, which are salvaged and relocated, some to our plant nurseries for cataloging, identification, and seed collection, before being used for rehabilitation or propagation. Ambatovy's flora management activities are framed within the Flora Management Plan, which addresses the three main topics: Species of Concern (SOCs, species which are endemic to Madagascar), Orchid Management and the Herbarium.

For our flora SOCs, Ambatovy's mitigation measures include inventories, identification, and rescue. Missouri Botanical Garden (MBG) has, since the conception of the project, assisted in these activities. 109 SOCs are located within our conservation areas, and four in our clearing area. Of these species, three have been identified as "Red SOCs", meaning that they are only found globally in one specific site: our conservation zone. As a precautionary measure, Ambatovy's rescue program consists of whole plant rescuing (including trees), seed collection, plant propagation and the development of living collections suitable for use in progressive mine rehabilitation. Ambatovy has two orchid parks that house our rescued orchids as well as a herbarium where individual plants are identified and samples collected for taxonomic research.

In addition to our efforts to conserve and support population viability for key species, Ambatovy also works in removing invasive species, one of the most significant potential threats to areas of high biodiversity, from both our aquatic and terrestrial habitats. For fauna, this includes targeted campaigns to eradicate Louisiana crayfish, the Asian toad and three species of exotic rats. For flora, the invasive *Lantana camara* and *Eucalyptus robusta* are removed through targeted clearing and followed by immediate restoration of the cleared area with indigenous plants.

For all of our biodiversity impacts and interventions, specific biodiversity goals have been established to ensure we meet our vision of operating a sustainable and responsible business in Madagascar. These goals and associated key performance indicators (KPIs) are periodically assessed and adapted based on consultations and data gathered from monitoring programs. The KPIs are directly linked to the requirements of Madagascar's regulator, the ONE, and to international standards, including the IFC Performance Standards on Environmental and Social Sustainability (IFC 2012 version) and the BBOP standard. Ambatovy became a pilot project for the BBOP initiative in 2006.<sup>13</sup>

<sup>12</sup>The IUCN Red List of Threatened Species is widely recognized as the most comprehensive, objective global approach for evaluating the conservation status of plant and animal species. The goal of the IUCN Red List is to provide information and analyses on the status, trends, and threats to species in order to inform and catalyze action for biodiversity conservation.

<sup>13</sup>The Business and Biodiversity Offsets Program officially ended in December 2018; however its principles have been adopted by international standards to which Ambatovy adheres, including the IFC Performance Standards and the Equator Principles.

In 2009, Ambatovy established a Scientific Consultative Committee (SCC) on biodiversity as part of our commitment to apply international conservation expertise and bring transparency to our environment program. The Committee includes national and international independent scientists renowned for their expertise in biodiversity, conservation and environmental management. The SCC convenes every two years in order to review our environmental and social programs, to provide impartial advice, and to make important recommendations. The next meeting of the SCC will be in November 2019.

We have also begun implementing the TSM's Biodiversity Conservation Management Protocol.

Ambatovy has established several important, mutually-beneficial partnerships with leading environmental groups. These groups bring valuable technical expertise and a strong understanding of the local context to our biodiversity and conservation activities. For example, for our offsets program, we are working with Conservation International and the local NGO Vohimanana to manage the Ankerana Forest and with Asity Madagascar (an affiliate of BirdLife International) to manage the Torotorofotsy Wetlands Ramsar Site. We have an ongoing collaboration with the Duke Lemur Center of Duke University that focuses on scientific research within our conservation zones; with the local NGO Mitsinjo on the successful captive breeding program for the threatened endemic species of frog, the Golden Mantella; and with the Missouri Botanical Garden on the implementation of our Flora Management Plan. We are very proud and pleased to be partnering with these organizations.

species. During 2018, 124 individuals from 8 species were inventoried in the clearing zones and 121 individuals from 13 species were inventoried in our conservation areas.

In 2018, Ambatovy participated in the 27<sup>th</sup> annual Congress of the International Primatological Society, in Nairobi, Kenya, where we presented our efforts in lemur conservation between 2007-2018. Ambatovy also contributed to the 6<sup>th</sup> Report on Biological Diversity Conservation in Madagascar and participated in various national workshops and exhibitions on the environment.

## Amphibians and Reptiles

Ambatovy's areas are home to 92 species of amphibians and 69 species of reptiles. There are 15 species of amphibians and reptiles (nine and six species, respectively) that have been identified by Ambatovy as requiring specific mitigation efforts due to their IUCN status: two that are critically endangered (CR) and 13 that are endangered (EN). Please see Appendix 4 for a complete list of priority species.

Since 2007, the amphibian and reptile program has manually rescued 10,347 individuals belonging to 70 amphibian species and 30,013 individuals belonging to 57 reptile species from clearing areas. These rescue activities have enhanced scientific knowledge on the amphibian and reptile world in Madagascar and on the populations of endangered species. As Ambatovy continues to clear forests for the Mine footprint, rescue and translocation activities will continue.

For certain amphibians and reptiles, like the Golden Mantella frog (*Mantella aurantiaca*), one of Ambatovy's flagship species due to its critically endangered status, Ambatovy has, in association with the NGO Mitsinjo, developed a successful captive breeding program. For the Golden Mantella, this is the only breeding program of its kind in the world (breeding and reintroduction), and, to date, the program has shown success in the emergence of multiple new breeding ponds, new generations hatched without disease or abnormalities, and data reflecting a high survival rate.

## Performance: Biodiversity



### Lemur and Small Mammal Management

Ambatovy's Lemur Management Plan, within the overall AEMS program, includes a series of mitigation measures to protect lemur species within our sites. There are, in total, 11 species of lemur that frequent the Mine area, of which eight are considered near-extinction based on the IUCN's Red List (2012). A fundamental aspect of our biodiversity management is utilizing a paced directional clearing technique in order to allow mobile fauna to freely migrate away from clearing zones and into surrounding conservation areas. Manual rescue is conducted 48-hours later for those animals that are unable to move and for key flora species. In 2018, 12 lemurs were rescued in that manner. In our conservation zones, 903 lemurs were inventoried during the year, with 10 births observed.

Ambatovy also monitors and mitigates impacts on other species of mammals besides lemurs, including endemic micro-mammals and carnivore species. The Ambatovy/Analamay forest complex is home to 38 species of small carnivores and mammals, other than lemurs, of which 31 are endemic to Madagascar and seven are exotic (introduced species). Since 2007, Ambatovy has collaborated with the University of Antananarivo for the implementation of conservation strategies of these mammal

In 2018, Ambatovy published two scientific publications on the Golden Mantella. "Species Conservation Strategy for *Mantella aurantiaca* (the Golden Mantella frog) 2007-2021", United Nations Decade for the Biodiversity Conservation – Convention on Biological Diversity, and "The First Experience of Reintroduction of the Critically Endangered Golden Mantella Frog in Madagascar" (Amphibian Ark, Newsletter No. 42, March 2018).





Between 2013 and 2018, a decrease in the Golden Mantella was observed in the reception sites; however it is not known if this was due to their inability to adapt or because part of the population migrated to other ponds. After reintroducing new individuals into the receptor ponds in 2017 (25 males and seven females), it was observed throughout 2018 that the behavior of the released Mantella follows the behaviors of those already in the sites. Additionally, the females showed the ability to reproduce, although it is still unknown how many generations they will be able to produce. The success of the reintroduction of these individuals will therefore continue to be evaluated in future studies.

## Fish

Fish species throughout Madagascar are historically relatively unstudied and little was known about the fish in the river systems and lakes around the Mine, pipeline and TMF prior to Ambatovy's arrival. In 2007, Ambatovy initiated scientific surveys of all of the aquatic systems in all of our impact areas. Ambatovy partnered with leading international organizations to conduct genetic tests to assess the taxonomic status of fish species. As a result, 16 species belonging to nine families were identified. These fish species are classified into three categories depending on their characteristics: seven exotic (introduced) species, three native species, and six endemic species. Among the endemic species are five that are potentially unknown to science; they are considered and managed by Ambatovy as priority species.

The population size of these priority species is very limited and, as local endemic species, they are vulnerable. Please see Appendix 4 for a list of priority species.

Genetic analysis of the five potentially new species is ongoing in collaboration with the University of Antananarivo and the South African Institute for Aquatic Biodiversity to determine their taxonomic status and the extent of their presence in Ambatovy's areas. Ambatovy has identified the risks to each of the resident species and designed a series of mitigation measures, including the creation of fish ponds as refuges from clearing areas and exotic/invasive fish species, and support for habitat conservation and restoration. In 2018, 2,491 *Ratsirakia* and 47 *Rheocles* were salvaged from river portions bordering our mining activities and relocated to 16 locations in rivers within our conservation zones. The population remained relatively unaffected except at the end of 2018, when a bloom of blue algae, which had developed because of higher water temperatures due to warm climate conditions, caused the death of a few individuals.



## Bird Monitoring and Mitigation

The objectives of the bird program are to gain knowledge about trends in bird occurrence and abundance, and to monitor trends in the population size of endangered water birds following the construction of a series of large sediment control dams at the Mine Site. In addition to the inventories in the forests and clearing areas, the preservation of active bird nests is the main mitigation measure. Once active nests are identified, they are kept safe from clearing activities until the eggs hatch and the chicks leave the nests by themselves. Future efforts will be made to better understand the food and habitat requirements of species, so that they may better recolonize the mining area once it has been rehabilitated.

There are 113 species of birds found in the Ambatovy-Analamay Forest Complex, 65 of which are endemic to Madagascar. Considered one of the priority species for its status as endangered, the duck *Anas melleri* continues to make our site its home following the recognition of the species' permanence at Ambatovy in 2017. Six habitats were identified as preferable for the bird during the year, with a maximum population size of 29 individuals, which decreased during the nesting season. Ambatovy's six artificial lakes – sediment control dams – have become home to 26 species of birds, including five threatened and four endangered species. One of our dams has now been categorized as a temporary heronry due to the prevalence of birds utilizing the area for breeding and nesting. Studies of bird species in forested areas also occurred during the year. A total of 83 forest bird species were observed between 2013 and 2018, including the observation of two priority species, indicating that Ambatovy's forests provide sufficient habitat to host these rare and important species.

## Flora Management

The mitigation measures for SOC and endangered species in the clearing areas made it possible to inventory 3,833 SOC and endangered species according to the IUCN Red List (2012). In 2018, a second re-evaluation of the IUCN Red List's Species of Concern was conducted in collaboration with the Madagascar Plants Specialists Group to assess the conservation status of 84 species of plants found in our areas. Three were reclassified as critically endangered (CR), and 35 were reclassified as endangered (EN). 1,186 individual plants classified as either CR or EN were salvaged and transplanted to shade houses, including the critically endangered *Aloe leandrii*.



In 2018, a new orchidarium was constructed to allow us to expand our salvaging and flowering programs. Advances were also made in pollination and seedbank techniques following training provided by the Missouri Botanical Garden. By the end of the year, Ambatovy had a stock of nearly 10,000 orchids. While currently being used for research and propagation, these orchids will eventually be transferred back into the rehabilitated forest areas.

## Offsets

In line with BBOP guidance and IFC Performance Standard 6, Ambatovy has developed a multi-faceted offset program comprising several conservation sites and associated activities. This was deemed necessary given the large scope of our operations, part of which fall within sensitive high-biodiversity areas. In addition to direct habitat offsets, Ambatovy is currently evaluating the possible need for priority species offset areas, particularly for the Golden Mantella and endemic fish species.

Although the presence of Ambatovy's Mine has brought improvements to the quality of life in the neighboring communities, there still remains a large percentage of the population living below the poverty line. This state of poverty, coupled with the dependency on natural resources, constitutes a risk not only for the sustainable management of natural resources but also for the conservation of local biodiversity. Since we know that we cannot effectively accomplish the sustainable management of these forests without the support and participation of the local population, we work closely with local communities to implement a range of alternative livelihood activities. These are designed to reduce local dependence and pressure on neighboring forests through the development of other income-generating activities, such as fish farming, eco-

tourism, poultry and livestock breeding (small animal husbandry), improved rice-growing and spice cultivation. We are also working with local authorities and community-based associations, or COBAs, to promote stewardship of forest segments by undertaking regular patrols to deter illegal wood cutting, hunting, trapping, artisanal mining and clearing associated with slash and burn agriculture. Ambatovy and the NGO partners that we work with to manage some of our offset and conservation areas conduct regular awareness-raising and education sessions in the local communities in order to reinforce their understanding of the law, of the need for the responsible use of local natural resources, and of the importance of sustainable forest management.

Ambatovy's offsets include the Mine Conservation Forests, the Analamay-Mantadia Forest Corridor (CFAM), the Ankerana Forest and the Torotorofotsy Wetlands Ramsar Site.<sup>14</sup> Combined, these areas come to a total of more than 14,000 ha, or roughly 9 times the size of the area disturbed through our mining activities, an area of approximately 1,600 ha. More information about our offsets program, including descriptions of the sites, can be found in Appendix 5 and on our website.

## Restoration to a Sustainable Landscape

Ambatovy plans to restore cleared land to a multi-functional forest through progressive reclamation and reforestation. Ambatovy currently has an Orchidarium, a research nursery and a production nursery, and has supported the creation of five community nurseries that supply us with about 250,000 plants per year for our restoration activities. Since 2010, reforestation trials have been underway to determine the best techniques to re-vegetate areas. By the end of 2018, 25.9 ha have been revegetated, using a mix of plants and trees from our nursery and community nurseries.

Ambatovy Net Impact of Mining Activities on Forested Areas			
Forest/Land Areas	Land to be Impacted (ha)	Land to be Reclaimed (ha)	Land to be Conserved (ha)
Mine Footprint* (disturbance area of 1,600 ha + buffer zone)	2,154	2,154	0
Slurry Pipeline	600	600	0
Roads/Infrastructure	100	0	0
On-Site, Adjacent or Nearby Offsets			
Mine Conservation Forests	0	0	3,582
Analamay-Mantadia Forest Corridor (CFAM)	0	0	3,490
Ankerana Forest	0	0	5,715
Torotorofotsy Wetlands Ramsar Site	0	0	1,597
Totals (ha)	2,854	2,754	14,384

\*The Mine footprint includes the Mine area plus a buffer zone.

## Approach: Emissions, Effluents and Waste

Our environment program has defined objectives for air, noise, and water that stem from the Environmental Impact Assessment and approved Environmental Management Plans and that are built into our environmental monitoring activities. For each component, objectives have been established taking into account existing background levels, Malagasy regulations, and

published international standards. A rigorous monitoring program continuously reads information from instruments throughout our facilities that provide real-time data and give us the ability to analyze and mitigate issues as soon as they occur. The program is reviewed and updated in response to observations, project development, consultations, and experiences gained.

<sup>14</sup> Entered into force in 1975, Ramsar is the oldest modern global inter-governmental environmental agreement negotiated by countries and non-governmental organizations concerned about the increasing loss and degradation of wetland habitat for migratory water birds.

The goal of our air quality monitoring is to ensure that changes in ambient air quality resulting from Ambatovy's activities are both well understood and compliant with air quality standards, which are based on international and local criteria for air emissions. Ambatovy monitors air quality around the Plant, Mine, and ancillary structures through fixed continuous air monitoring stations as well as mobile perimeter multi-gas detectors which continuously collect live meteorological and air quality data.

The release of greenhouse gases (GHGs) related to our Operations and the transportation of our personnel and freight are, unfortunately, unavoidable in a project the scale of Ambatovy. However, for those GHG emissions which we can control, as is the case in the transport of our personnel and our commodities, we have put in place multiple initiatives to reduce them wherever possible. This includes the location of our sites, the design of our pipeline to maximize gravitational pull and minimize equipment needs, and a fleet of electrical vehicles to transport our workers around our Plant Site. We are also implementing the TSM's Energy and GHG Emissions Protocol.

Another aspect of air quality, ambient noise, is monitored on the periphery of our operations as well as in our neighboring communities. The purpose of our noise monitoring is to ensure that the ambient noise created by our operations stays within the IFC's guidelines for community noise and to ensure there is no effect on the behavior of the local biodiversity.

Water is central to our metallurgical process for producing nickel and cobalt, and we manage it carefully. At both the Mine and Plant Sites, we conducted baseline studies, continue to assess risks, and have ongoing engagement with stakeholders to inform them of our water management planning. Our comprehensive Water Management Plans are therefore designed to:

- Ensure that all phases of our operations do not adversely affect surface and groundwater quality, and that any wastewater complies with environmental standards.
- Monitor the flow rate and quality of surface and groundwater downstream of mining activities to detect any abnormalities.
- Ensure that Torotorofotsy Wetlands and sensitive aquatic ecosystems are not adversely affected by the activities at the Plant, Mine or along the pipeline.
- Communicate with downstream users to ensure their water needs are met and propose solutions, if problems arise.
- Ensure that domestic water supply and sewage treatment meet the criteria of applicable water quality regulations and guidelines.

To handle the waste created by our facilities, process, and employees, Waste Management Plans have been developed. These Plans include measures and procedures for correct collection, transportation, storage, and disposal of waste. They also emphasize minimizing waste production and continuously improving our recycling efforts. Waste material ranges from industrial waste, such as scrap metal and wood, to domestic waste, such as food or office scraps. All waste is sorted, processed and treated at the waste management facilities in order to reduce its volume and minimize disposal needs.

Ambatovy also operates an integrated reporting system for all environmental, health and safety, and security incidents (the Ambatovy Integrated Management System, AIMS). Spills and incidents are tracked and documented as part of the internal compliance reporting process using the guidelines below.

Level	Consequence
<b>Minor</b>	<ul style="list-style-type: none"> <li>• On-site: Near-source confined and promptly reversible impact (typically a shift).</li> </ul>
<b>Medium</b>	<ul style="list-style-type: none"> <li>• On-site: Near-source confined and short-term reversible impact (typically a week).</li> <li>• Off-site: Near-source confined and promptly reversible impact (typically a shift).</li> </ul>
<b>Serious</b>	<ul style="list-style-type: none"> <li>• On-site: Near-source confined and medium-term recovery impact (typically a month).</li> <li>• Off-site: Near-source confined and short-term reversible impact (typically a week).</li> </ul>
<b>Major</b>	<ul style="list-style-type: none"> <li>• On-site: Impact that is unconfined and requiring long-term recovery, leaving residual damage (typically years).</li> <li>• Off-site: Near-source confined and medium-term recovery impact (typically a month).</li> </ul>
<b>Catastrophic</b>	<ul style="list-style-type: none"> <li>• On-site: Impact that is widespread-unconfined and requiring long-term recovery, leaving major residual damage (typically years).</li> <li>• Off-site: Impact that is unconfined and requiring long-term recovery, leaving residual damage (typically years).</li> </ul>

## Performance: Emissions, Effluents and Waste



In 2018, Ambatovy's waste management focused on implementing a more strategic approach to our waste management operations. All waste is sorted, processed and treated at the waste management facilities in order to reduce its volume and minimize disposal needs. Overall, in 2018, the general waste produced at our sites decreased in comparison to previous years, with the majority of waste either recycled, landfilled or composted. A new "sorting at the source" initiative contributed to these reductions, along with a composting

project designed to reuse biodegradable waste as fertilizer in agricultural demonstration plots and community gardens (see below, under Recycling). Color coded bins were introduced at our sites and provide employees the ability to sort waste as they dispose of it. These bins tied in with our efforts to improve recovery and the reuse of waste items at our sites. At the Mine, the majority of waste was composted for the first time, following the introduction of a new environmental composting program in 2017.



Waste Management 2016-2018			
	2016	2017	2018
Disposal to Landfills			
Ash (m <sup>3</sup> )	15,367	7,021	8,323
General Waste (m <sup>3</sup> )	5,926	15,795	5,529
Industrial Waste (m <sup>3</sup> )	43,364	34,316	42,080
Wood (m <sup>3</sup> )	-	3,071	568
Other (m <sup>3</sup> )	100	280	61
Composting (t*)	164	1,411	2,970
Incineration (t*)	4,393	573	615

\* t: tonnes

## Recycling

Ambatovy strives to minimize our waste production through recycling programs. We integrate our recycling efforts with a commitment to support local businesses and to promote community development. Our recycling efforts still face some challenges related to the introduction of new customs restrictions which affected some of the recycling programs that we have developed with various groups and enterprises because of additional taxes they have to incur relating to estimated residual value of these materials. Composting efforts were also compromised by security threats from people searching in the dumps that required the temporary closure of the compost site.



In previous years, paper, cardboard and used frying oil from the Plant Site were recycled by Sanitec and used in the manufacturing of water filters and domestic soap. The company has since closed so this recycling activity is no longer possible for the time being; the items have either been stored or incinerated.

External Recycling 2016-2018			
	2016	2017	2018
Fly ash for cement (t)	62,946	59,700	49,523
Wood (m <sup>3</sup> )	2,279	1,070	135
Plastics (m <sup>3</sup> )	1,449	670	570
Paper/Cardboard (m <sup>3</sup> )	-	7	-
Cooking oil (l*)	2,130	2,667	2,387

\* l: liters

In 2017, Ambatovy's ALBI team identified the local NGO, *Arovy ny Aina*, to receive food waste from the Plant Site to be made into compost and used at a community garden established on a vacant plot of Ambatovy land. The project was developed to help school feeding programs for vulnerable children at several public primary schools in the Toamasina area. In 2018, the NGO received the first batch of waste and, over the course of the year, succeeded in converting 56 tons of waste into compost.

## Hazardous Waste

Ambatovy does not ship any waste out of the country. Chemical waste is neutralized on site. Paints, hydrocarbon waste and batteries are recycled and treated by local companies. The waste management facilities at the Plant Site handles incineration, separation, and encapsulation for stabilizing hazardous waste materials.

## Overburden

Overburden is composed of waste rock and soil with uneconomic concentrations of nickel and cobalt. At Ambatovy, ore is delivered from open pits to the Ore Preparation Plant. This is designed to separate waste material from the ore and to produce a concentrated metal-containing slurry. In 2018, approximately 7.4 million tonnes of dry ore, waste and low grade materials were mined from the pits in the Ambatovy deposit, and 3.74 million tonnes of ore slurry were transferred from the Mine to the Plant Site via the pipeline.

Material Extracted in 2018	
Material	Amount (in thousands of tonnes)
Ore	5,335
Waste	2,037
Total	7,372

## Materials

In addition to ore, the operation of the process plant requires four key raw input commodities: limestone, coal, sulphur and ammonia. The amounts of these commodities consumed during 2018 are as follows:

Bulk Commodities Consumed in 2018	
Material	Total (t)
Limestone	1,131,270
Coal	421,685
Sulphur	444,829
Ammonia	35,988

Accidental spills, noise and dust resulting from bulk handling operations, are the greatest potential contributors to pollution at the Port. Any accidental spills are cleaned up immediately and sent to the landfill to prevent contamination at the Port.

## Tailings

The Tailings Management Facility (TMF) was designed to meet international good practice standards including the requirements of the Canadian Dam Association and the International Commission on Large Dams. It is managed and monitored 24/7 by a dedicated engineer who is supported by an in-house team, with access to independent consulting engineering advice. An independent engineer of record carries out quarterly inspections, undertakes an annual audit of the TMF and produces a report for Management. In addition, an independent Geotechnical Review Board inspects the Facility on an annual basis and reviews operational reports, policies and procedures. The Facility is also inspected annually by the Malagasy government regulator, the ONE. We have also begun implementing the TSM's Tailings Management Protocol.

The Facility is designed to receive the neutralized waste materials following the extraction of nickel and cobalt. Once the solids settle to the bottom of the tailings area, the clarified supernatant liquid is pumped and discharged into the ocean through a diffuser. The diffused water is similar in composition to the surrounding sea water. Construction at the TMF continued in 2018 with the raising of the dam walls. Monitoring of the surface water, ground water, and ocean discharge occurs through a network of compliance points, interception wells, and nested wells.

In 2018, two incidents occurred along TMF pipelines. For the first incident, a leak occurred in the tailings pipeline running from the Plant Site to the TMF, releasing neutralized slurry near a community. For the second incident, a leak caused by an act of vandalism was identified in the pipeline transporting water from the TMF to the marine outfall. The leak allowed water to flow into local fresh water streams and ponds, temporarily contaminating the drinking supply of six villages. Distribution of potable water started immediately and corrective measures were taken to secure the pipeline.

Although greatly improved from previous years, there were instances when manganese levels in seepage from the dam exceeded water quality standards. In 2018, a number of measures were taken to improve controls. These initiatives include an upgrade of the pump back system, and the installation of a new system to collect and return seepage downstream of the toes of the dam, as well as revisions to the hydrogeological model that helps us to more fully understand the conceptual flow path of ground water in the area.

In 2018, a dam break analysis was completed and the results have been used in the development of an emergency preparedness and response plan, drawn up in consultation with local authorities and the National Office of Disaster Risk Management (BNGRC). The plan has been communicated to downstream villages, and several evacuation drills have already been held, during which villagers make their way to pre-determined assembly points on nearby hills and remain there until the 'all clear' signal is given.

## Water

Ambatovy's Water Quality Monitoring Program covers the analysis of surface water, ground water, and seawater. We conduct semi-annual monitoring programs throughout the Plant while key areas are monitored weekly. All of our water quality standards are established through reference to Malagasy regulations, IFC environmental health and safety guidelines for mining, and the World Bank's Pollution Abatement Manual.

The Mine's Operational Plan is designed to ensure that runoff from mining excavations flows into sediment retention basins, lowering potential impacts on the sensitive watersheds around the Mine. Water run-off collection ponds and flow allowances are designed to meet the World Bank and Malagasy regulations on water quality. Indicators monitored at 17 sites around the Mine include such measurements as total suspended solids, pH, heavy metals, and coliform bacteria.

Annual water requirements for ore preparation at the Mine represent about 0.5% of the mean annual flow of the Mangoro River; during the dry season, Ambatovy's water withdrawal does not exceed 2% of the water flow. Water is mixed with ore to create slurry for transport down the pipeline.



At the Plant Site, water is recovered from the ore slurry and it is augmented with withdrawals from the Ivondro River. A portion of the effluent discharge from the Tailings Facility (up to 300 m<sup>3</sup>/hour or approximately 9% of our total estimated withdrawals) is available to be utilized in the process, if required. The use of processed water at the Plant is primarily for cooling water and boiler-feed water. All process water is discharged to the TMF and treated through neutralization.

Water Withdrawals 2016-2018 (m <sup>3</sup> )			
Source	2016	2017	2018
Ivondro River	18,370,158	17,127,561	15,818,806
Mangoro River	7,351,284	7,579,602	7,247,792
Antsahalava Creek	1,530,507	1,442,539	1,958,023
Sahaviara River	—	—	79,095
Ankaja River	—	—	647
Groundwater	531,724	621,680	613,827

Our total water consumption in 2018 – 25.7 million m<sup>3</sup> – was comparable to previous years. Water for our processes is withdrawn from a variety of sources at the Mine, Plant and port facilities, including the Mangoro River, the Ivondro River and groundwater wells; all withdrawals are monitored quarterly by our regulator, the ONE. At the Mine Site, minor water withdrawals also occurred from the Antsahalava Creek as a mitigation measure for increased chromium levels, especially prevalent during the wet season when there is heavy rainfall; and from the Sahaviara and Ankaja Rivers, for dust control purposes. Waste water at our Mine is directed to supplement the ore slurry process. In 2018, we launched a water usage project to optimize water usage on site and to improve water management at the TMF.

## Air Quality

We have selected the following five major inputs used in our operations that are sources of GHGs for monitoring: diesel, coal, naphtha, liquid petroleum gas (LPG) and limestone. These are contributors of carbon dioxide, methane and nitrous oxide emissions. Based on consumption data, GHG estimates are calculated using conversion factors and specific coefficients of the reactions.



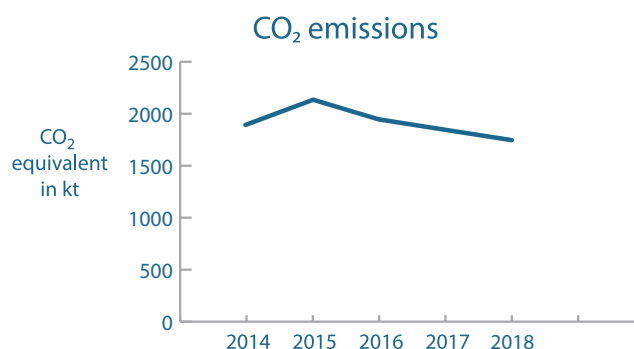
In 2018, Ambatovy's overall GHG emissions for the Mine, Plant and port facilities were estimated at a combined total of 1,715.1 kilotonnes (kt) of CO<sub>2</sub> equivalent, of which 1,637 kt were produced at the Plant Site. Coal, used for electrical power and steam generation, remained the primary source of GHGs. At the Mine, the main source of GHG emissions was diesel fuel. Emissions estimates in 2018 were also the lowest GHG estimates in five years; the decrease being attributed to reduced consumption over the year.

Material	Consumption	Unit	CO <sub>2</sub> emitted (in kt)
Diesel Fuel	37,408,333	l*	102.1
Coal	452,701	t*	1,034.0
Naphtha	25,315	t	80.8
LPG	5,207	t	15.7
Limestone	1,081,054	t	482.5
Total Carbon Dioxides Emission		kt*	1,715.1

\*l: liters; t: tonnes; kt: kilotonnes

Years	2014	2015	2016	2017	2018
CO <sub>2</sub> eq* in kton	1,845.4	2,034.4	1,884.3	1,807.8	1,715.1

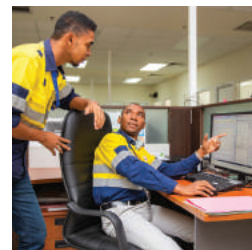
\*eq: equivalent



In 2018, we experienced nine reportable air quality-related incidents that exceeded normal operating conditions on a short-term basis or that related to equipment failures with no identified offsite air quality impact. No employees or community members were harmed as a result of these incidents and, in each case, measures were taken to address the cause and prevent further issues.

Noise monitoring campaigns are done throughout the year at the Mine and Plant Sites, and in surrounding communities. The majority of noise pollution at the Mine comes from the heavy vehicle traffic and the power plant. At the Plant, there are a variety of sources of noise pollution, from vehicle traffic and operational activities to the facilities themselves. However, in comparison to 2017, there were no significant changes in noise pollution detected during the year. In fact, a slight improvement was noted at the Plant Site in comparison to recent years.







# A Safe and Rewarding Workplace

## Objectives

- Maximize local workforce composition in order to have 85% of positions held by nationals.
- Develop a highly skilled and committed Malagasy workforce.
- Provide a rewarding, safe and satisfying work environment for our employees.

## Approach

Our business cannot operate nor thrive without a dedicated, experienced and engaged work force. Indeed, we recognize that our employees are our most valuable asset and that our performance depends on a skilled and committed work force, respect for our employees, effective teamwork and a culture of safety. For our operations phase, we need a team that can meet the engineering, maintenance, technical, administrative and program aspects of our business. We believe that we can create this team by ensuring that our workforce benefits from more than just a paycheck, by providing a rewarding and satisfying work environment. We have a number of policies and strategies for several core areas to ensure that Ambatovy is an employer of choice in Madagascar. These areas include local recruitment, training and capacity-building, internal communications, knowledge transfer, labor-management relations, performance management, health and safety, human rights, workplace discrimination and harassment, and diversity in the workplace. We also promote fairness and equity in the workplace through our company values, ensuring that our employees are represented through their employee representatives and the employee Work Council, as well as voluntary participation in two employee unions active within the company. Our compensation packages include paid vacation, holidays, and medical insurance, among other benefits, and our base wage is significantly higher than the country's established minimum wage.

We recognize that our company's impact on local human resources can be immense and can bring multiple positive improvements to the national economy through employment, capacity building, industrial experience, and payment of taxes and wages. We have also invested significant resources in our training department, with an emphasis on skills-transfer and the promotion of national employees, and have supported technical and trade schools in our areas, including offering internships to local, talented, and motivated youth and young graduates.

The impact of the presence of Ambatovy's workforce on our local communities is inevitable. Overall, these impacts are positive,

such as through contributions to the growth in the housing and construction markets and through increased expenditures in the local economy with more wage earners living in the areas. The impacts can be negative as well, such as through an increased strain on local resources and municipal services that can occur with an influx of new inhabitants. However, to the extent possible, our recruitment process prioritizes local candidates who have the skills required for a position first, before extending to candidates from other regions, in order to promote local job creation and to try to lessen the inflow of people looking for work in our host communities.

The impact of Ambatovy's labor practices and hiring needs will contribute to uplifting the standards and skill sets of Madagascar's labor force and will provide incoming industrial entities with individuals that are trained and experienced, with up-to-standard qualifications and skills in industrial and technical trades. We also hold all of our contractors responsible to maintain their legal right to work as a business in the country and to follow the same codes of conduct and policies as our employees and our company. These policies address Health and Safety, Code of Conduct, Zero-Tolerance, Anti-Corruption and Human Rights. Regular audits of our active suppliers ensure their compliance with these contractual obligations.

## Performance



## Local Recruitment

We have two employment commitments: to optimize national employment and to develop a highly-skilled workforce in Madagascar. By locating our processing facilities in Madagascar, we have chosen to invest in the long-term recruitment, employment, and development of human capital in the country. Our recruitment policy aims to attract and retain Madagascar's top talent through competitive compensation and benefits.



Our success will depend on recruiting a cohort of employees that are committed to our vision, values, and long-term operation.

Ambatovy is creating direct and indirect jobs as a result of our presence in Madagascar as well as our decision to extract and refine in country. Ambatovy directly employs 3,573 workers, 93% of whom are Malagasy. Including our contractors' employees, our operations directly and indirectly employ more than 9,800 people. During 2018, Ambatovy continued to promote recruitment internally and, during the year, 28% of the positions were filled internally and nearly 10% of our supervisory positions – positions that involve considerable skills in guiding and controlling day-to-day work operations, managing staff teams and developing the competencies of other employees – were filled by national employees.

Approximate Project Wide Manpower, December 2018			
	National	Expatriate	Total
Direct Employees	3,339	234	3,573
Operational Contractors	5,486	811	6,297
Total	8,825	1,045	9,870

## Diversity in the Workplace

Diversity is an emerging issue across society, and is particularly relevant to the natural resources sector because of the historically low proportion of women and people of differing backgrounds and abilities in our industry. We know that we will become a stronger, more innovative and resilient company as we continue to attract a spectrum of people of different cultural backgrounds, genders, ages and life experience to our company.



At Ambatovy, our policy is to find the right person for every job, regardless of gender, race, ethnicity, or religion. While we do emphasize local employment as a priority in our hiring practices, positions are filled by the candidate that best suits the required experience and necessary skills. Salary remuneration is directly tied to the position's responsibilities and accountability, and is not determined by gender or age. Although typically a male-dominated environment, Ambatovy has, over the years, seen a steady increase of women in traditionally male positions, including electrical technicians, geologist leaders, forestry engineers, millwrights, truck drivers and electrical motor repair technicians. By the end of 2018, approximately 13% of our direct employee workforce was female, and 4% of non-administrative roles company-wide were filled by women.

Age and Gender Diversity per Employee Group for Direct Employees, 2018						
Age	Under 30		30-50		Over 50	
Gender	Male	Female	Male	Female	Male	Female
Expatriate	6	0	142	13	67	6
National	527	108	2,157	314	223	10

## Employee Benefits and Wages

Ambatovy aims to be an employer of choice in Madagascar. Our Malagasy employees are offered competitive wages and benefits, including innovative programs that target some of the challenges they may face. Ambatovy's standard entry-level wage is significantly above that of the national minimum wage for entry-level unskilled labor. The company also offers training programs and opportunities for advancement as well as review-based pay increases and production incentives.

Ambatovy offers a number of attractive benefits in order to promote a positive working environment and the well-being of our employees. Permanent employees are eligible for:

- A social benefits program, which includes health, death, accident, and disability insurance as well as a retirement program
- Performance bonuses
- Production Incentive Program: certain employees are eligible to receive a variable monthly bonus based on achieving our daily production and safety goals
- Support for career development: all employees are given bi-annual performance reviews to reinforce their skills and to suggest areas of improvement; training opportunities are also available for employees to strengthen or develop new skills valuable to the organization
- Vacation leave
- Retirement benefits

All employees and their families are eligible for medical coverage. In addition, the company provides accident insurance for all employees. The company will also cover expenses and repatriation services for funerals in the event of the death of an employee, and will provide leave and a traditional payment in the event of the death of a close relative.



## Training, Capacity Building and Skills Transfer

Ensuring the right programs are in place to support employee development at all levels is crucial for Ambatovy's long-term success and succession planning. Continued investment in skills development therefore remains a priority for Ambatovy. Ambatovy offers training programs in safety, mining and processing operations, maintenance trades, management and leadership to ensure Malagasy employees have the skills needed to carry out their current work and to take on positions with increasing technical and leadership responsibility. We utilize a range of methodologies including computer-based learning (in our SkillMine system), classroom training and on-the-job instruction. Whenever possible, we leverage opportunities to bring different teams and groups together in order to strengthen our shared values and culture. In addition, expatriate team members are required to transfer specialist knowledge and skills to Malagasy team members to build their capacity and enable ongoing career progression. In 2018, our employees took part in almost 180,000 man-hours of training.

In 2018, a new trades training program was introduced at Ambatovy. This program, with the support of experts in technical trades, has the objective to further enhance the capacity of our workforce by providing specific skills needed at our sites. These include heavy equipment maintenance, instrumentation, and welding. This will provide our technicians with opportunities for specialization and job mobility and ensures that Ambatovy has a competent and capable workforce armed with unique skills needed for our operations. A new pilot program in Leadership Essentials was also rolled out in 2018. This training aims to enhance self-awareness and communications skills amongst company leaders. More than 230 leaders participated in the program in 2018.

The Heavy Equipment Mechanic (HEM) course at Ambatovy provides a 4-year international trade-training program certificate. It is designed to train in the fields of repair, service, and maintenance of the heavy equipment used in the mining and construction industries, and provides a very sound understanding of all aspects of HEM equipment, including hydraulics, electrical, pneumatics, drive systems/engines, transmissions, etc. In 2018, nine groups of Maintenance Technicians and Mechanical Assistants completed the session at the Mine Site and are currently finishing on-the-job practice and projects.

## Labor-Management Relations

One of our core values is teamwork. We believe that in order for us to be a successful enterprise, all employees must work in a spirit of mutual respect, trust, and constructive relationships. In no other relationship is this as important as it is for labor – management relations. Four principles ensure that this relationship is indeed respectful and constructive:

- Treating every employee fairly and with respect
- Exhibiting integrity in our work and amongst all employees

- Respecting employees' privacy and confidentiality
- Nurturing Malagasy talent

By upholding these principles and working with a spirit of effective dialogue, we are confident that our labor – management relations can be constructive, steering the company towards success as we enter our long operations phase. We have policies in place for workplace discrimination and harassment, human rights and business ethics. We are committed to continuous improvement in these areas.

Across our company, we have both unionized and non-unionized employees. We recognize and encourage the right to engage in free association and collective bargaining. In May 2018, Ambatovy's first collective bargaining agreement was signed. This agreement marks a historic moment for Ambatovy and constitutes a common base for future labor relations.

As with all of our relationships, we strive for productive and mutually beneficial outcomes in our discussions with employees and their organized labor representatives. When labor grievances do occur, we investigate and work to reach an acceptable solution for all parties concerned. Once grievances have been resolved, the management team evaluates all of the issues that were raised and determines what process improvements, if any, can be made to ensure we can learn from each one. In 2018, 18 grievances related to working conditions were reported, all of which were resolved during the year. There were no work stoppages as a result of labor unrest in 2018.

## Employee Engagement

Ambatovy understands that the solidarity of our employees is not only at the heart of our operations, but the key to our future success. We have made great efforts to provide our employees with the support they need at work and at home. In 2018, our Internal Communications team focused its activities on strengthening the communication and dialogue process between our management and employees and actively engaging our team members in their work environment to help them recognize that they are Ambatovy's "ambassadors" with their families, friends, neighbors and fellow community members. Effective and regular two-way communication with employees is the foundation of our employee relations programs. We are committed to listening to and understanding the needs and challenges of our employees, taking action to improve the workplace, and supporting employees in reaching their potential.

Some of the highlights of our employee engagement program in 2018 include:

- A series of "Town Hall Meetings" were organized across our sites to keep employees informed about Ambatovy's activities and to present our new strategic plan. 13 sessions were held with more than 2,700 participants.
- Ambatovy encourages employees to volunteer their time in community initiatives as a way to demonstrate that we are a responsible company, to express solidarity with surrounding communities, and to contribute to positive outcomes. We recognize the importance of such volunteer initiatives for both employees and communities alike, so we have developed a policy which allows employees to take time during working

hours in order to do volunteer work, up to one day per year. Through these initiatives, employees dedicate their time and efforts, and use their skills, energy and expertise for the short and long-term benefit of communities. In 2018, approximately 300 employees participated in tree-planting activities and a blood donation drive.

- The “We are Ambatovy” initiative continued during the year. The purpose of this initiative is to gather a group of Ambatovy employees at both the Mine and Plant Sites to help others understand what our company is and how it works, to share information, to celebrate successes together, and to uphold the values of team spirit and solidarity. Apart from social outings and events, the We are Ambatovy group also engages with the local community through volunteering and donations. In 2018, for example, the group donated colorful lanterns to underprivileged children in Toamasina and Moramanga for the celebration of Madagascar’s Independence Day and made a donation of gifts for the children at a local orphanage in the Toamasina area on Christmas Eve.



In order to highlight our commitment to sustainability, to share information about our environment and CSR programs, as well as to engage employees, Ambatovy celebrated “Sustainability Month” for the second time during the month of June. Sustainability Month aligned with World Environment Day (WED), which is celebrated globally on June 5<sup>th</sup> every year. A series of activities were organized that helped connect employees to the work we do and the communities around our operations. For example, an exhibit was organized at the Mine to showcase our environment work, employees participated in a tree planting activity as well as a walking tour to the resettlement village of Vohitrambato, and “Share and Learn” sessions were organized with employees on the topic of our industrial environment program. With the success of these two years’ of celebrations, Ambatovy plans to organize Sustainability Month again in 2019 and intends to make it an annual tradition.

## Approach: Health and Safety

Ambatovy is committed to maintaining a healthy and safe work place for all employees, contractors, visitors and neighboring communities, and health and safety is our top priority. We believe that all injuries are preventable. Our operations are built on a zero harm health and safety culture. We work hard to minimize operational risks to our workforce and nearby communities, and engage with these important stakeholders regularly on matters of safety, security and emergency response. For more information about our work to support health and safety at the community level, please see the section on Communities and Social Relations, earlier in this report.

Our Health and Safety (HS) team identifies hazards, assesses risks, implements controls, monitors performance, and assigns appropriate accountabilities. It also oversees training, work authorization and reporting. We report health and safety performance on a regular, ongoing basis to Management in order to ensure continuous improvement. Our recording and reporting system is compliant with the International Labor Organization’s Code of Practice on Recording and Notification of Occupational Accidents and Diseases.

## Performance: Health and Safety



Ambatovy’s zero harm and health and safety culture include leadership in the field, training, awareness-raising, standards development and inspection, and a business assurance program that validates conformance to fatality prevention standards. In 2018, Ambatovy continued to strengthen our safety culture to prevent avoidable injuries and we achieved our lowest Total Recordable Injury Frequency Rate (TRIFR) in our history at 0.12 (30% lower than the previous best annual result).

In 2018, in an effort to continuously improve our HS results, we shifted our focus from equipment safety to employee safety. This started with increasing leadership presence in the field and in safety discussions with the 3-in-a-row process. This new process involves supervisors, superintendents and managers in the coaching and safety interaction process, ensuring that our safety interactions, started in 2016, are of high quality and have a strong impact in the organization. By increasing our safety interactions and leadership awareness of our employee safety behaviors, we have seen an improvement in both our safety performance and the adoption of a safety culture across our sites. In 2018, for example, over 147,296 interactions between leaders, workers and contractors were recorded across our operating areas.

In 2018, we also expanded our HS measures to our contractors, many of whom work side-by-side with our employees on a daily basis. Beyond requiring our contractors to follow improved HS measures, on our side, we initiated a new process to hold higher accountability for the contract owner by supporting them to embed our HS requirements within their activities from the onset of the contract and throughout its duration.



Increasing our focus on employee and contractor safety resulted in an overall improvement in our HS figures for the year. Ambatovy's overall HS performance for 2018 continued to show improvements over previous years, an encouraging sign that increased leadership involvement and continued emphasis on a safety culture are beginning to bear fruit.

	2016	2017	2018
AIFR	0.86	0.60	0.64
TRIFR	0.20	0.18	0.12
LTIFR	0.01	0.02	0.02

However, there were a number of security incidents at our sites in 2018, with the majority due to attempted thefts. There were also some more serious incidents of a higher order of severity. Ambatovy takes these incidents very seriously, particularly when the health and safety of employees, security guards and community members are threatened. Each incident was investigated thoroughly, and further safety measures were implemented and safety management practices strengthened.



As part of the Safety Supervisor Development program within the Health and Safety department, supervisors from different departments within Ambatovy (Maintenance, Operations and Support Services) completed a 60-hour training program to reinforce their safety knowledge and skills. The program included 20 hours of theoretical sessions and 40 hours of field coaching with the HS team. These supervisors are now called “Safety Leaders” within Ambatovy and have developed the necessary skills to provide support to their respective teams.





# Product Responsibility

## Objectives

- Provide and promote products that are produced and consumed in a socially, ethically and environmentally responsible manner.
- Maintain ISO 9001-2015 certification to demonstrate our commitment to quality and to meet our customers' needs.

## Approach

The Ambatovy Quality Policy is our formal commitment to supplying defect-free products to all our customers. In order to deliver on this commitment, we must:

- Understand the requirements as agreed with our customers;
- Communicate effectively with our customers and suppliers;
- Do our work correctly the first time;
- Supply products at standards that meet our customers' needs;
- Practice effective communications about safety and quality;
- Involve all personnel;
- Continuously improve everything we do;
- Comply with applicable government laws and regulations.

A practical way to implement these strategies is to have a formal Quality Management System (QMS) in place. Our QMS was certified in 2014 as compliant with International Standard ISO 9001-2008. This was a great milestone for the company and paved the way for us to achieve registration of our nickel product on the London Metal Exchange (LME). In 2015 and 2016, Ambatovy had two surveillance audits to confirm our continued compliance with ISO 9001 requirements and, in February 2017, we underwent an audit to renew our certification, this time under the new and more stringent 2015 version of the ISO 9001 standard. In February 2018, Ambatovy had another surveillance audit to confirm the compliance of our QMS with the ISO 9001 requirements and received confirmation from the external auditor that we have maintained our management system certification. This maintenance of our certification demonstrates Ambatovy's commitment to quality and to our customers.

## Performance



### Material Stewardship

Ambatovy's nickel and cobalt are stable unreactive metals, widely used in the production of stainless steel, other metal alloys, specialty chemicals, and in a variety of other applications. However, Ambatovy's production process involves industrial and hazardous materials, such as chemicals and compressed gas. Ambatovy has developed detailed policies and procedures on handling, transporting, storing, recycling, and disposing of such items. We also maintain Safety Data Sheets (SDSs) from suppliers

on all hazardous materials and commodities that we use, and produce SDSs for Ambatovy products and by-products. These data sheets are electronically accessible to employees and we provide our product SDSs to customers in a variety of languages. Training is provided on proper handling procedures and, where relevant, on appropriate personal protective equipment requirements for safe handling and use. Our procurement and transportation handling procedures are based on regulations from the International Marine Organization, the International Air Transport Association, and the European Agreement Concerning International Carriage of Dangerous Goods by Road.

When possible, we try to procure goods and services that have a positive social or environmental return. ALBI continues to work with local businesses to procure a range of items for our operations, such as pallets made from Forest Stewardship Council-certified sources. Other examples of procurement initiatives can be found in the Economic Performance section.

## Customer Relations, Health and Safety

Ambatovy nickel products are marketed and sold through our partner companies and onward to the end customer. Ambatovy cobalt products are marketed directly by Ambatovy, with exclusive distribution arrangements in Europe and the USA. In certain geographical areas including Asia and Africa, cobalt is marketed and sold by Ambatovy directly to the end customer. Ammonium sulphate, used mainly as a fertilizer for soils in the agricultural sector, is also marketed and sold through an exclusive distribution arrangement into the global markets. Ambatovy and our partner companies are committed to ensuring that customers have relevant and reliable science-based information on hand regarding the health and environmental effects of Ambatovy products.

Ambatovy assesses the health and safety aspects of our products via membership in and participation in international industrial organizations established to provide science-based knowledge on the human health and environmental effects of the products and on product qualities. These organizations include the Nickel Institute (NI), the Cobalt Institute (CI) as well as consortia established for the purposes of complying with the requirements of the European Union's Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH) and Classification, Labeling, and Packaging (CLP) regulations. All Ambatovy products have comprehensive SDSs which

provide the hazard classification as well as guidelines and recommendations for safe handling and use procedures. These SDSs provide information that adheres to regulatory standards according to the geographic area of sales.

Customers in the European Union have cooperated in the development of specific Generic Exposure Scenarios to assist with compliance with the REACH regulations. These scenarios provide guidance on the operating conditions that must be met in order to ensure the safe use of both nickel and cobalt with respect to potential impacts on workers handling Ambatovy products as well as guidance on the avoidance of any negative impacts on local populations in the vicinity of facilities producing or using these substances.

Ambatovy products comply with relevant rules and regulations, such as the REACH and CLP regulations, in countries of product destination. Careful attention is given to handling hazardous substances, and warning labels identify important instructions as guidance. Carriers of these substances use these labels as indication of the nature of the products they ship and ensure compliance with international standards such as the International Marine Dangerous Goods Code.

Both nickel and cobalt are sold directly to industrial end-use consumers; however, domestic customers who use the final consumer products rarely come in direct contact with these refined substances. Industrial end-users are generally aware of the health and safety aspects that must be considered.

The international industrial organizations to which Ambatovy belongs promote appropriate and safe uses of nickel and cobalt, and advocate for appropriate science-based regulations. Environmental impacts of our products are considered and communicated in a variety of ways, including via SDSs, product labeling and guidance on safe use, environmental quality standards, and, under REACH, through a variety of exposure scenarios for industrial uses.

World-wide demand for nickel and cobalt is expected to grow over the coming years. Indeed, batteries, which rely on nickel and cobalt, are becoming increasingly important for storing renewable energy and supporting the global goals of sustainability and action on climate change.

The last three decades have seen extraordinary changes in how batteries are made and used. New applications – from storing solar energy to powering electronic vehicles – have emerged. These new applications, in turn, are pushing the limits of battery capacity and power, resulting in greater demands for higher purity metals, such as Class I nickel. Unlike pig iron which is high in iron content, Class I nickel is purer and amenable to battery production – particularly for the fast-growing electric vehicle market. Ambatovy is a producer of Class I nickel.



Product Information Required	
Information required for product labeling	Yes
Content, particularly with regard to substances that might produce an environmental or social impact	Yes
Safe use of the product of service	Available on SDSs and on the NI and CI websites
Disposal of the product and environmental/social impacts	A caution to dispose of materials and containers in accordance with the applicable national, regional and/or local environmental regulations is included on SDSs; due to the high value of nickel and cobalt, global recycling rates are significant

# Letter from our Vice President, Sustainability

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Dear Readers,

As you have just read, despite the many challenges faced by Ambatovy due to the nickel and commodities markets, as well as our own production issues, we managed to continue making progress on our Sustainability programs and maintaining our social license to operate (SLO). With the size and scope of Ambatovy and of our operations, we consider our social and environmental actions as paramount to ensuring that we mine responsibly and continue to function as a fully dedicated member of our community.

On the social front, we continued to provide our support and assistance to our communities for disaster preparedness and recovery, especially following the direct hit of Cyclone Ava to Toamasina, the location of our Plant Site. Employee volunteers and Ambatovy equipment helped in the days following the cyclone to clean up our local communities, remove debris and restore road access. Other projects during the year focused on ensuring the sustainability of our livelihood development activities. This included supporting local farmers in securing partnerships for capacity building as well as identifying market opportunities for their products.

Our environmental activities in 2018 also moved forward during the year. Progress continued to be made in our biodiversity mitigation efforts and our work on ecosystem services, including the continuation of reforestation in previously cleared areas, further studies on potentially new species of flora and fauna, and analyses on the benefits and services that the local population derives from the ecosystem. We worked closely with national and international institutions on these efforts. Our work with local communities is also a priority for our environmental program to ensure that our efforts are sustainable beyond the life of the Mine. We continued to work with villages surrounding our conservation areas in preserving the environment, patrolling for illicit activities, and participating in reforestation preparation with village nurseries. Livelihoods activities for these villages are beginning to thrive as well, ensuring that dependency on forest resources considerably decreases.

Our stakeholder engagement, however, extends far beyond the confines of our environment and social programs.



Understanding the need for transparency in our actions, both for international and national stakeholders, we continue to open our doors to public visits at both our sites, and we regularly participate in scientific conferences, mining workshops and events, and socio-cultural fairs and exhibitions, both in Madagascar and abroad. Our hope is that through our actions, Ambatovy can set an example for responsible mining and provide a new benchmark for our industry in sustainability performance and good governance.

Thank you for reading our report.

Sincerely,

A handwritten signature in black ink, consisting of a stylized 'P' followed by a cursive 'B' and a short horizontal stroke.

Philippe Beaulne  
Vice President, Sustainability



# Appendix 1: The Sustainable Development Goals

The United Nations' Sustainable Development Goals (SDGs), a follow up to the Millennium Development Goals, consist of 17 ambitious targets to address global issues and to ensure a sustainable and resilient future for the world by 2030. The success of the SDGs depends on the participation of a range of actors – governments, communities, non-governmental organizations and corporations.

The nature of the work of the natural resources sector has social, economic and environmental impacts on the jurisdictions where projects and operations are located. As a responsible company working in both a low-income country and a biological hotspot, we aim to ensure that the potential negative impacts of our activities are minimized and mitigated to the greatest extent possible, while also focusing on actions that positively impact our local communities and Madagascar. To this end, the SDGs serve as a reference for us to gauge how and to what extent we are contributing to Madagascar's development and to its achievement of these globally recognized sustainability targets.

Below is a summary of ways in which Ambatovy is contributing to the achievement of the 17 SDGs. More information about our work can be found in the text of the report.



## End poverty in all its forms everywhere

- One of the biggest private sector employers in Madagascar
- Approximately 9,900 employees, both direct employees and operational contractors; 93% of our direct employees are Malagasy
- Hiring practices that emphasize the recruitment of national employees, local to our sites of operations
- Support for skills development, both for our employees and local communities
- Policy of *Buy locally, hire locally*



## End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

- Training in improved agricultural and small animal husbandry techniques as well as new income generating activities (IGAs) for former construction employees and local community members
- School nutrition program at the resettlement village of Vohitrambato
- Support for community nutrition activities through school feeding programs and Food for Work Projects



## Ensure healthy lives and promote well-being for all, at all ages

- Support for youth kiosks along the RN2 to promote HIV/AIDS awareness and reproductive health
- Support for HIV/AIDS awareness-raising and testing with Ambatovy employees and communities
- Development of communities' medical facilities through donations of equipment and rehabilitation/construction of infrastructure



## Ensure inclusive and equitable education and promote lifelong learning opportunities for all

- Construction of schools within our resettlement communities
- Scholarship support for Vohitrambato youth wishing to further their education
- Collaboration with UNICEF on the construction of eco-friendly schools
- Training and capacity building for school administrators in our zones
- Training and leadership development for our employees
- Support to local technical and vocational schools
- Donation of school kits to children at primary schools in our zones



## Achieve gender equality and empower all women and girls

- Equal opportunity employer, even for traditionally male mining roles
- Development and promotion of income-generating activities and VSLAs with predominantly female-headed households
- Promotion of Zero Tolerance policy for sexual exploitation of young girls



## Ensure viability and sustainable management of water and sanitation for all

- Support of Water Users Associations (WUA) in our communities
- Construction of water pumps and water points in villages and on school grounds
- Extensive water monitoring system through all Ambatovy sites



## Ensure access to affordable, reliable, sustainable, and modern energy for all

- Creation of electric vehicle fleet at Plant Site
- Provision and installation of solar panels at Vohitrambato resettlement village



## Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all

- Employment program with comprehensive employment benefits
- Work Council to strengthen employee relations and employee-management interactions
- Requirements for our contractors including respect for health and safety standards and procedures
- Active contracts with more than 450 local suppliers and support for local business creation
- Produce for Ambatovy's canteens sourced from approximately 3,000 local farmers through bulk purchasing centers



## Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

- Extensive rehabilitation and construction of roads
- Rehabilitation and extension of railroad track in Toamasina
- Expansion of Port B in Toamasina
- Investment in infrastructure through the Social Investment Fund
- Support for the rehabilitation of 11 refuge shelters in the Maroantsetra District after Cyclone Enawo to help strengthen communities' resilience



## Reduce inequalities within and among countries

- With nickel as one of Madagascar's top export products, supporting the local currency and narrowing the trade deficit
- Bringing in significant foreign exchange earnings through investment, expatriate salaries and product sales
- Support for anti-corruption measures and firm stance against corruption in all forms



## Make cities and human settlements inclusive, safe, resilient and sustainable

- Installation of railroad safety fences and rail-road crossings
- Work with regions on industrial risks and disaster preparedness
- Support for the responses to the plague and measles epidemics



## Ensure sustainable consumption and production patterns

- Mitigation of inflation in local markets by purchasing produce through centers working directly with local farmers
- Development of local businesses to support industrial sector and to recycle industrial waste products



## Take urgent action to combat climate change and its impacts

- Extensive reforestation work and conservation actions with local community involvement
- Minimization of emissions by utilizing gravity-fed system to transport slurry along the pipeline from the Mine to the Plant and by importing low emission coal for Plant processes
- Coordinated bus transport for employees and installation of electric bus fleet



## Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

- Recycling of process water rather than relying entirely on river water withdrawals
- Conservation activities for rivers in our areas and the native fish species, including control of invasive species
- Waste treatment through the Tailings Management Facility to ensure that water discharged into the sea has the composition of marine water



## Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss

- Extensive biodiversity monitoring, mitigation and restoration program in place
- BBOP pilot project since 2009, promoting avoidance, minimization, and mitigation to achieve no net loss, and preferably a net gain, in biodiversity
- Work with village organizations on monitoring and enforcing the sustainable use of ecosystem services
- Protection of conservation offset sites
- Protection, monitoring, evaluation, and study of flora and fauna in our conservation areas
- Environmental awareness-raising at schools and at community level for communities surrounding our conservation zones
- Awareness-raising on the damage caused by slash-and-burn agriculture, poaching, bush meat consumption, and endangered species trade



## Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels

- Support for the EITI reconciliation process and participation in the Voluntary Principles on Security and Human Rights
- Collaboration with Government and local authorities to develop a mechanism for the safe, transparent, equitable and sustainable management of mining royalties
- Partnership with the local NGO SAHA for capacity building, guidance and accompaniment of Communes receiving our royalties
- Firm stance on business ethics and anti-corruption, which all employees and contractors must adhere to
- Work with the international NGO Search for Common Ground to foster constructive company-community dialogue, to promote mutual understanding and to build trust



## Strengthen the means of implementation and revitalize the global partnership for sustainable development

- Extensive partnerships supporting our activities in health, education, livelihoods, social development, the environment and good governance
- Partnerships and close collaborations with the public, private, NGO, and business communities in Madagascar and around the world



## Appendix 2: Partnerships and Associations

Ambatovy is a member of several industry associations and initiatives. We are a member of the Multi-Stakeholder Group (National Committee) for the EITI in Madagascar, the Chamber of Mines of Madagascar, the Madagascar Industries Union (*Syndicat des Industries de Madagascar*, SIM) and the Madagascar Business Association (*Groupement des Entreprises de Madagascar*, GEM). We also engage with international industry bodies, such as the Nickel Institute and the Cobalt Institute.

Ambatovy is also a member of several regional coordination committees with civil society and local government. Ambatovy works with a number of local, national and international organizations to ensure transparency, to create opportunities, to broaden networks and perspectives, and to develop sustainable operations. These partners and associations include:

### International

- Business and Biodiversity Offsets Programme
- Cobalt Institute
- Conservation International
- Duke Lemur Center of Duke University
- Extractive Industries Transparency Initiative (EITI)
- International Committee of the Red Cross (ICRC)
- Joint United Nations Programme on HIV/AIDS (UNAIDS)
- Medair
- Missouri Botanical Garden (MBG)
- Nickel Institute
- Office for the Coordination of Humanitarian Affairs (OCHA)
- Office of the High Commissioner for Human Rights (OHCHR)
- Population Services International (PSI)
- Prodaire (*Projet de Développement de l'Approche Intégrée pour promouvoir la Restauration Environnementale*), a program funded by the Japanese International Cooperation Agency (JICA)
- Search for Common Ground (SFCG)
- South African Institute for Aquatic Biodiversity
- The Peregrine Fund
- United Nations Children's Fund (UNICEF)
- United Nations Development Programme (UNDP)
- University of Queensland, Centre for Social Responsibility in Mining
- Wildlife Conservation Society (WCS)

### National

- *Action et Développement*
- American Chamber of Commerce (AmCham)
- Asity Madagascar (an affiliate of BirdLife International)
- *Association Nationale d'Actions Environnementales* (ANAE)
- *Association Handicaps Esperance Tamatave*
- *Brickaville Miara-Mitraka* (BRIMIMI)
- *Bureau National de Gestion des Risques et Catastrophes* (BNGRC)
- Canadian Chamber of Commerce and Cooperation (CanCham)
- *Centre d'Études et de Recherches Ethnologiques et Linguistiques* (CEREL)

- *Centre National de Recherches Océanographique* (CNRO)
- *Centre National de Recherche sur l'Environnement* (CNRE)
- *Centre Technique Horticole de Tamatave* (CTHT)
- Chamber of Mines of Madagascar
- *Circonscription de l'Environnement, de l'Ecologie et des Forêts* (CIREEF)
- Cultural and Social Center (CCS)
- Department of Animal Biology at the University of Antananarivo
- Diocesan Development Office of Toamasina (ODDIT)
- *Direction Régionale de l'Environnement, de l'Ecologie et des Forêts* (DREEF)
- *Direction Régionale de l'Agriculture et de l'Elevage* (DRAE)
- *Ezaka ho Fampandrosoana any Ambanivohitra* (EFA)
- *Ezaka Vaovao*
- Fehizoro Federation
- *Fianakaviana Sambatra* (FISA)
- *Fifanampiana Kristiana ho an'ny Fampandrosoana eto Madagasikara* (FIKRIFAMA)
- *Fikambanambe Mivondrona Ampitambe Mahatsara* (FIMIAM)
- FORMAPROD (*Programme de Formation Professionnelle et d'Amélioration de la Productivité Agricole*)
- *Groupe d'Etude et de Recherche sur les Primates* (GERP)
- *Groupe Mavitrika*, University of Tamatave
- *Groupement des Entreprises de Madagascar* (GEM)
- Henry Doorly Zoo (HDH)
- Homéopharma
- Love and Care Organization
- *Maison des Jeunes Moramanga*
- Malagasy Red Cross Society
- *Mamizo*
- Man and the Environment (MATE)
- Miarintsoa
- MIDEM (Independent Mission for Development and Education in Madagascar)
- *Mitsinjo Association*
- Museum of Art and Archeology of the University of Antananarivo (ICMAA)
- *Ny Sahy*
- *Ombona Tahiry Ifampisamborana Vola* (OTIV)
- *Penser*
- Private Sector Humanitarian Platform of Madagascar (PSHP)
- *Programme Prosperer (Programme de Soutien aux Poles de micro-Entreprises Rurales et aux Economies Régionales)*
- Regional Office of Nutrition
- SAF/FJKM
- SAHA (*Sahan'Asa Hampandrosoana ny eny Ambanivohitra*)
- St. Gabriel
- *Syndicat des Industries de Madagascar* (SIM)
- Tourism Office of the Alaotra Mangoro Region (ORTALMA)
- University of Antananarivo
- *Vahatra*
- *Voahary Voakajy*
- *Vohimanana*

## Appendix 3: Social Investment Fund (SIF)

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In 2012, Ambatovy, in partnership with the Government of Madagascar, created the SIF, with a total value of US\$ 25 million to be used for social and infrastructure projects for the benefit of the local population. These projects have been identified in collaboration with our local communities and Malagasy authorities, and are managed in accordance with Ambatovy's procurement and purchasing policies.

There are currently 17 projects that fall under this commitment, with 10 of them completed, 5 ongoing and 2 suspended. These projects are:

- the rehabilitation of the century-old *Bazary Be* market in Toamasina (completed in 2014)
- the destruction of the Zeren ammonia stock stored in two old and deteriorating pressure vessels which represented a serious safety hazard for neighboring communities in Toamasina (completed in 2014)
- the establishment of a social business, an integrated poultry farm known as the Harenasoa Poultry Project (completed in 2016)
- support for JIRAMA in Toamasina, the national water and energy provider, through the donation of two generators producing 12.6 megawatts of power to support electricity supply in Toamasina (completed in 2016)
- provision of equipment and the donation of two fire trucks for the fire brigade in Toamasina (completed in 2016)
- the rehabilitation of the Technical and Vocational High School in Toamasina (completed in 2016)
- the rehabilitation of a portion of road in Ambatondrazaka to improve the road infrastructure quality in the capital of the Alaotra Mangoro Region (completed in 2016)
- the creation of a Civil Protection Unit in Toamasina to strengthen the city's emergency response capacities (completed in 2016; as part of a sub-project, security forces were provided with radios to strengthen their capacity and to improve coordination between the services)
- the construction of a new market facility in Moramanga (completed in 2017)
- the rehabilitation of the market in Brickaville (completed in 2017; awaiting formal inauguration)
- support for the establishment of a mechanism for the good governance of royalties, *Tsara Tantana*, and for the accompaniment and capacity building of communes impacted by our operations (ongoing; please see also under the Governance and Human Rights section)
- the rehabilitation/construction of some small-scale infrastructure in Toamasina (ongoing)
- the construction of a laboratory for the ONE in Toamasina so that it can independently perform analyses (ongoing)
- the rehabilitation of the trial court building in Moramanga (ongoing)
- the provision of an ambulance for Moramanga (ongoing)
- support for the collection and recycling of domestic waste in Moramanga through the "Moramadio" waste management project (suspended)<sup>15</sup>
- support for the collection and recycling of domestic waste in Toamasina through the "Tamadio" waste management project (suspended)

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<sup>15</sup>"Moramadio" is the combination of two words "Moramanga" and "madio" which is Malagasy for "clean"; similarly for "Tamadio" in the case of the waste management project in Toamasina (Tamatave).

## Appendix 4: Priority Species

These priority species are listed by the International Union for Conservation of Nature (IUCN) as endangered (EN), critically endangered (CR), evolutionary significant units (ESU) or Species of Concern (SOC), and are nationally, regionally or locally endemic to our conservation and intervention areas.

LEMURS		
NAME	STATUS	LOCATIONS
<i>Daubentonia madagascariensis</i>	EN	Mine footprint, Mine conservation zone, Pipeline, Ankerana, CFAM, Torotorofotsy
<i>Indri indri</i>	CR	Mine footprint, Mine conservation zone, Pipeline, Ankerana, CFAM, Torotorofotsy
<i>Prolemur simus</i>	CR	Mine conservation zone, Pipeline, CFAM, Torotorofotsy
<i>Propithecus diadema</i>	CR	Mine footprint, Mine conservation zone, Pipeline, Ankerana, CFAM, Torotorofotsy
<i>Varecia variegata</i>	CR	Mine conservation zone, Pipeline, Ankerana, CFAM

OTHER MAMMALS		
NAME	STATUS	LOCATIONS
<i>Microgale jobihely</i>	EN	Mine footprint, Mine conservation zone, CFAM

BIRDS		
NAME	STATUS	LOCATIONS
<i>Anas melleri</i>	EN	Mine footprint, Torotorofotsy
<i>Ardea humbloti</i>	EN	Mine footprint, Torotorofotsy
<i>Ardeola idea</i>	EN	Torotorofotsy
<i>Sarothrura watersi</i>	EN	Torotorofotsy

AMPHIBIANS		
NAME	STATUS	LOCATIONS
<i>Mantella aurantiaca</i>	CR	Mine footprint, Mine conservation zone, Pipeline, CFAM, Torotorofotsy
<i>Boophis boehmei</i>	EN	Mine footprint, Mine conservation zone, Pipeline, Ankerana, CFAM, Torotofotsy
<i>Boophis feonnyala</i>	EN	Mine footprint
<i>Gephyromantis eiselti</i>	EN	Mine footprint, Mine conservation zone
<i>Gephyromantis thelenae</i>	EN	Mine footprint, Mine conservation zone, Ankerana
<i>Mantidactylus albobrenatus</i>	EN	Mine conservation zone, Ankerana
<i>Plethodontohyla guentheri</i>	EN	Mine conservation zone
<i>Rhombophryne kibomena</i>	EN	Mine footprint, Mine conservation zone, Ankerana, CFAM, Torotorofotsy
<i>Cophyla mavomavo</i>	EN	Mine footprint, Mine conservation zone



REPTILES		
NAME	STATUS	LOCATIONS
<i>Brookesia ramanantsoai</i>	EN	Mine footprint, Mine conservation zone, CFAM
<i>Calumma furcifer</i>	EN	Pipeline, Ankerana
<i>Calumma gallus</i>	EN	Pipeline, Ankerana
<i>Phelsuma flavigularis</i>	EN	Pipeline
<i>Phelsuma pronki</i>	CR	Mine footprint, Mine conservation zone
<i>Uroplatus pietschmanni</i>	EN	Mine footprint, Mine conservation zone

FISH		
NAME	STATUS	LOCATIONS
<i>Ratsirakia Mangoro</i>	ESU	Mine footprint, Mine conservation zone
<i>Ratsirakia Sakalava</i>	ESU	Mine footprint, Mine conservation zone
<i>Ratsirakia Vondronina</i>	ESU	Mine footprint, Mine conservation zone
<i>Rheocles Mangoro</i>	ESU	Mine footprint, Mine conservation zone
<i>Rheocles Vondronina/Rianila</i>	ESU	Mine footprint, Mine conservation zone

PLANTS		
NAME	STATUS	LOCATIONS
<i>Dicoryphe sp.nov</i> (Non Orchid)	SOC	Mine footprint
<i>Helichrysum sp. nov. aff.</i> <i>Ambondrombeense</i> (Non Orchid)	SOC	Mine footprint
<i>Hyperacanthus sp. nov. A</i> (‘mangoroensis’ ined.) (Non Orchid)	SOC	Mine footprint
<i>Aloe leandrii</i> (Non Orchid)	CR	Mine footprint, Conservation zone
<i>Ellipanthus razanatsimae</i> (Non Orchid)	CR	Mine foot print
<i>Seringia macrantha</i> (Non Orchid)	CR	Mine footprint
<i>Bulbophyllum uroplatoides</i> (Orchid)	CR	Mine footprint
<i>Aerangis monantha</i> (Orchid)	EN	Mine footprint
<i>Aeranthus polyanthemus</i> (Orchid)	EN	Mine footprint
<i>Angraecum alleizettei</i> (Orchid)	EN	Mine footprint
<i>Angraecum ankeranense</i> (Orchid)	EN	Mine footprint, Conservation zone
<i>Angraecum bicallosum</i> (Orchid)	EN	Mine footprint
<i>Angraecum pseudodidieri</i> (Orchid)	EN	Mine footprint

PLANTS		
NAME	STATUS	LOCATIONS
<i>Angraecum triangulifolium</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum briophyllum</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum callosum</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum cardiobulbum</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum debile</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum horizontale</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum petrae</i> (Orchid)	EN	Mine footprint
<i>Bulbophyllum sulfureum</i> (Orchid)	EN	Mine footprint, Conservation zone
<i>Cryptopus paniculatus</i> (Orchid)	EN	Mine footprint, Conservation zone
<i>Cymbidiella pardalina</i> (Orchid)	EN	Mine footprint
<i>Cynorkis aurantiaca</i> (Orchid)	EN	Mine footprint
<i>Liparis ambohimangana</i> (Orchid)	EN	Mine footprint
<i>Liparis warpuri</i>	EN	Mine footprint, Conservation zone
<i>Pectinariella edmundii</i> (Orchid)	EN	Mine footprint
<i>Pectinariella scroticalacar</i> (Orchid)	EN	Mine footprint
<i>Aspidostemon conoideus</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Coffea liaudii</i> (Non Orchid)	EN	Mine footprint
<i>Cynanchum moramangense</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Eugenia urschiana</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Eugenia wilsoniana</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Melicope discolor</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Melittacanthus divaricatus</i> (Non Orchid)	EN	Mine footprint
<i>Pandanus analamazaotrensis</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Phyllanthus ambatovolana</i> (Non Orchid)	EN	Mine footprint
<i>Psorospermum nervosum</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Baroniella acuminata</i> (Non Orchid)	EN	Mine footprint

PLANTS		
NAME	STATUS	LOCATIONS
<i>Breonia louvelii</i> (Non Orchid)	EN	Mine footprint
<i>Canarium moramangae</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Croton enigmaticus</i> (Non Orchid)	EN	Mine footprint
<i>Croton ferricretus</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Croton humbertii</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Croton radiatus</i> (Non Orchid)	EN	Mine footprint
<i>Decaryochloa diadelpha</i> (Non Orchid)	EN	Mine footprint
<i>Gravesia tanalensis</i> (Non Orchid)	EN	Mine footprint
<i>Ivodea antilahimenae</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Korthalsella taenioides</i>	EN	Mine footprint, Conservation zone
<i>Medinilla lophoclada</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Medinilla mandrakensis</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Noronhia cuspidata</i> (Non Orchid)	EN	Mine footprint
<i>Ochna thouvenotii</i>	EN	Mine footprint, Conservation zone
<i>Tina urschii</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Exacum bulbilliferum</i> (Non Orchid)	EN	Mine footprint, Conservation zone
<i>Psychotria moramangensis</i> (Non Orchid)	EN	Mine footprint, Conservation zone



## Appendix 5: Ambatovy Offset Sites

Offsets are the final step in the mitigation hierarchy, designed to compensate for any residual impacts on biodiversity that cannot be avoided, mitigated, minimized or restored. Given the large scope of our operations and in line with BBOP guidance and IFC Performance Standard 6, Ambatovy has developed a multi-faceted offset program comprising several sites and associated activities. Ambatovy's offsets include the Mine Conservation Forests, the Analamay-Mantadia Forest Corridor (CFAM), the Ankerana Forest and the Torotorofotsy Wetlands Ramsar Site. Combined, these areas come to a total of more than 14,000 ha, or roughly 9 times the size of our Mine area of approximately 1,600 ha.

Incorporated into the offset program is an awareness that sustainable forest management cannot be successful without the support and participation of local populations who depend on forests for their natural resources. Ambatovy promotes community wardenship and has designated peripheral forest segments specific to this use. Through awareness campaigns and livelihood development initiatives, Ambatovy seeks to decrease economic reliance on forest resources and reorient local communities towards alternative income-generating activities.

### Mine Conservation Forests

Two parcels of azonal forest overlapping the ore body have been set aside and will not be mined, despite the valuable nickel lying beneath them. The combined area of these two parcels is approximately 300 ha. During the Environmental and Social Impact Assessment, these azonal forest habitats were considered to be a rare habitat type compared to the more typical zonal forests of the Eastern Forest Corridor. In addition, we have more than 3,300 ha on-site of transitional and zonal forests dedicated to conservation. The conservation zone provides a buffer for receiving the fauna leaving the Mine footprint and serves as a seed bank to facilitate ecological restoration of the Mine footprint. These forests are directly managed by Ambatovy.

### Analamay-Mantadia Forest Corridor

The Analamay-Mantadia Forest Corridor (CFAM) will be part of a proposed new protected area that will ensure habitat connectivity between existing conservation areas in the region including forests around the Mine managed by Ambatovy, the

Ankeniheny-Zahamena Corridor (CAZ), the Mantadia National Park and the wetlands of Torotorofotsy. Formal protection of this corridor, spanning approximately 8,000 ha in size, will result in the creation of one of the largest continuous expanses of protected habitats in Madagascar (over 450,000 ha) that includes several endangered species such as the critically endangered Diademed sifaka (*Propithecus diadema*). Ambatovy continues to support the establishment of this larger, new protected area, which will be called the Torotorofotsy-CFAM Complex New Protected Area, and which is still awaiting final governmental approval. We have also supported patrolling activities of the local NGO, GERP, in order to maintain threats at the minimum level, pending the Government appointment of a site manager. Of particular importance, the creation of this larger, new protected area will ensure protection of a surviving population of the critically endangered Greater bamboo lemur (*Prolemur simus*), one of the rarest lemurs in Madagascar and on the list of the top 25 most endangered primates of the world. According to recent surveys conducted by GERP, with support from Ambatovy, the CFAM area contains about 50-70 individuals of this species or 10-20% of the known wild population. Three COBAs participate in the management of the CFAM and are supported by regional offices and NGOs in their duties.

### Ankerana Forest

Ankerana was the first offset site identified by Ambatovy and remains the centerpiece of our Business and Biodiversity Offsets Program. It is an intact area of low-to-medium altitude forest lying 70 km to the northeast of the Mine and is linked to the Ankeniheny-Zahamena Corridor (CAZ). The area is continuously threatened by local activities, such as slash-and-burn agriculture and poaching. However, since we began our work in Ankerana in 2011, the number of documented threats has significantly declined. The site has a total surface area of approximately 8,000 ha, of which 6,800 ha serve as a core protection zone. We work closely with the communities on the outskirts of this offset site through education programs and through support for the COBA organizations to ensure that our efforts to protect and maintain the delicate ecosystem continue beyond our operations. Several COBAs have been created to continue to strengthen the protection of the Ankerana Forest's resources. Income-generating activities (IGAs) practiced by the surrounding communities continue to improve and include fish farming, and the cultivation of spices, coffee, and vegetable crops. Conservation International and the local NGO *Vohimanana* work with Ambatovy in managing the protection of the Ankerana Forest, bringing valuable expertise to our biodiversity management.

## Torotorofotsy Wetlands Ramsar Site

The Torotorofotsy Wetlands lie immediately to the east of the Mine and cover 10,064 ha of wetlands, forest and other habitats. In 2006, Torotorofotsy was classified as a wetland of international importance under the Ramsar Convention on Wetlands.<sup>16</sup> We support local community associations by reinforcing management capacity and sharing activities that help stop marsh transformation and degradation. The day-to-day management of the Torotorofotsy Wetlands is managed by Asity Madagascar (an affiliate of BirdLife International, the world leader in bird conservation) and supported by

Ambatovy. Patrols conducted by Asity enable Ambatovy to gain an understanding of the range of biodiversity within the wetlands.

The success of Torotorofotsy as an offset site and the sustainability of its protection status will only be successful with the participation of the communities surrounding it. Awareness campaigns are carried out and alternative income generating activities, to alleviate the community members' pressure on forest resources, continued throughout the year.

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<sup>16</sup>Entered into force in 1975, Ramsar is the oldest modern global inter-governmental environmental agreement negotiated by countries and non-governmental organizations concerned about the increasing loss and degradation of wetland habitat for migratory water birds.

## Appendix 6: GRI Content Index

GRI Content Index			
GRI Standard	Disclosure	Report Page	Omission
GRI 101: Foundation <i>[GRI 101 does not include any disclosures]</i>			
General Disclosures: Core Option			
GRI 102: General Disclosures 2016	102-1 Name of the Organization	cover	
	102-2 Activities, brands, products, and services	10	
	102-3 Location of headquarters	back cover	
	102-4 Location of operations	10	
	102-5 Ownership and legal form	14	
	102-6 Markets served	57	
	102-7 Scale of the Organization	10, 11	
	102-8 Information on employees and other workers	53	
	102-9 Supply Chain	30	
	102-10 Significant changes to the organization and its supply chain	8	
	102-11 Precautionary principle or approach	41	
	102-12 External initiatives	23	
	102-13 Membership of associations	23, 62	
	102-14 Statement from senior decision makers	6, 58	
	102-15 Key impacts, risks, and opportunities	16	
	102-16 Values, principles, standards and norms of behavior	10	
	102-17 Mechanisms for advice and concerns about ethics	23, 27	
	102-18 Governance structure	14	
	102-40 List of Stakeholder groups	19	
	102-41 Collective bargaining agreements	53	
	102-42 Identifying and selecting stakeholders	19	
	102-43 Approach to stakeholder engagement	18	
	102-44 Key topics and concerns raised	18	
	102-45 Entities included in the consolidated financial statements	8	
	102-46 Defining report content and topic Boundaries	8	
	102-47 List of material topics	71	
	102-48 Restatements of information	8	
	102-49 Changes in reporting	8	
	102-50 Reporting period	8	
	102-51 Date of most recent report	8	
	102-52 Reporting cycles	8	
	102-53 Contact point for questions regarding the report	8	
	102-54 Claims of reporting in accordance with GRI Standards	8	
	102-55 GRI content index	70	
	102-56 External Assurance	8	



GRI Content Index			
Material Topics			
Economic Performance			
GRI 103: Management approach 2016	103-1 Explanation of the material topics and its Boundary	29	
	103-2 The management approach and its components	29	
	103-3 Evaluation of the management approach	29	
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	29, 30	
	201-4 Financial assistance received from government		N/A <sup>17</sup>
Indirect Economic Impacts			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	29	
	103-2 The management approach and its components	29	
	103-3 Evaluation of the management approach	29	
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	31	
	203-2 Significant indirect economic impacts	30	
Procurement Practices			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	29	
	103-2 The management approach and its components	30	
	103-3 Evaluation of the management approach	30	
GRI 204: Procurement Practices 2016	204-1 Proportion of Spending on local suppliers	30	
Anti-Corruption			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	25	
	103-2 The management approach and its components	25	
	103-3 Evaluation of the management approach	25, 26	
GRI 205: Anti-Corruption 2016	205-1 Operations assessed for risks related to corruption	26, 30	
	205-2 Communication and training about anti-corruption policies and procedures	26	
Water			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	48	
	103-2 The management approach and its components	48	
	103-3 Evaluation of the management approach	49	
GRI 302: Water 2016	303-1 Water withdrawal by source	49	
	303-2 Water sources significantly affected by withdrawal of water	49	
Biodiversity			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	41	
	103-2 The management approach and its components	41	
	103-3 Evaluation of the management approach	43	
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, or managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	45	
	304-2 Significant impacts of activities, products and services on biodiversity	41-49	
	304-3 Habitats protected or restored	45	
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	64	

<sup>17</sup>Not applicable: Ambatovy does not receive financial assistance from the government

GRI Content Index			
<b>Emissions</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	49	
	103-2 The management approach and its components	49	
	103-3 Evaluation of the management approach	49	
GRI 305: Emissions 2016	305-1 Direct GHG emissions	49	
<b>Effluents and Waste</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	45	
	103-2 The management approach and its components	45	
	103-3 Evaluation of the management approach	46	
GRI 306: Effluents and Waste 2016	306-2 Waste by type and disposal method	46	
	306-3 Significant spills	46, 48	
	306-5 Water bodies affected by water discharges and/or runoff	49	
<b>Environmental Compliance</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	41	
	103-2 The management approach and its components	41	
	103-3 Evaluation of the management approach	41	
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	30	
<b>Employment</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	51	
	103-2 The management approach and its components	51	
	103-3 Evaluation of the management approach	51	
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	52	
<b>Occupational Health and Safety</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	54	
	103-2 The management approach and its components	54	
	103-3 Evaluation of the management approach	54	
GRI 403: Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	55	
<b>Training and Education</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	53	
	103-2 The management approach and its components	53	
	103-3 Evaluation of the management approach	53	
GRI 404: Training and Education 2016	404-2 Programs for upgrading employee skills and transition assistance programs	53	
	404-3 Percentage of employees receiving regular performance and career development reviews	52	

GRI Content Index			
<b>Human Rights</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	23	
	103-2 The management approach and its components	23, 26	
	103-3 Evaluation of the management approach	23, 26	
GRI 412: Human Rights Assessment 2016	412-1 Operations that have been subject to human rights reviews or impact assessments	26, 30	
	412-2 Employee training on human rights policies or procedures	26	
	412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	26	
<b>Child Labour</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	23, 26	
	103-2 The management approach and its components	23, 26	
	103-3 Evaluation of the management approach	23, 26	
GRI 408: Child Labour 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	26	
GRI 409: Forced or compulsory labor	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	26	
<b>Local Communities</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	32	
	103-2 The management approach and its components	32	
	103-3 Evaluation of the management approach	32	
GRI 413: Local Communities 2016	413-1 Operations with local community engagement , impact assessments, and development programs	32	
	413-2 Operations with significant actual and potential negative impacts on local communities	32	
<b>Customer Health and Safety</b>			
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	56	
	103-2 The management approach and its components	56	
	103-3 Evaluation of the management approach	56	
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	56	



## Appendix 7: Additional References

Please consult the following websites as additional references for information included in this report.

Ambatovy	<a href="http://www.ambatovy.com">www.ambatovy.com</a>
Business and Biodiversity Offsets Programme	<a href="http://bbop.forest-trends.org">bbop.forest-trends.org</a>
Children's Rights and Business Principles	<a href="http://unicef.org/csr/">unicef.org/csr/</a>
Cobalt Institute	<a href="http://www.cobaltinstitute.org">www.cobaltinstitute.org</a>
Equator Principles	<a href="http://equator-principles.com">http://equator-principles.com</a>
Extractive Industries Transparency Initiative Madagascar	<a href="https://eti.org/Madagascar">https://eti.org/Madagascar</a>
Global Reporting Initiative	<a href="https://www.globalreporting.org">https://www.globalreporting.org</a>
International Council on Mining and Metals	<a href="http://www.icmm.com">www.icmm.com</a>
International Finance Corporation's Performance Standards	<a href="http://www.ifc.org/performancestandards">www.ifc.org/performancestandards</a>
IUCN Red List of Threatened Species	<a href="http://www.iucnredlist.org/">http://www.iucnredlist.org/</a>
Madagascar's National Office for the Environment (ONE)	<a href="https://www.pnae.mg/">https://www.pnae.mg/</a>
Nickel Institute	<a href="http://www.nickelinstitute.org">www.nickelinstitute.org</a>
Sustainable Development Goals	<a href="https://www.un.org/sustainabledevelopment/sustainable-development-goals/">https://www.un.org/sustainabledevelopment/sustainable-development-goals/</a>
Towards Sustainable Mining	<a href="http://www.mining.ca/towards-sustainable-mining">www.mining.ca/towards-sustainable-mining</a>
Voluntary Principles on Security and Human Rights	<a href="http://www.voluntaryprinciples.org">www.voluntaryprinciples.org</a>

## About Forward Looking Statements

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This document contains certain forward-looking statements within the meaning of applicable securities laws. Often, but not always, forward-looking statements can be identified by the use of forward-looking words like “plans”, “targets”, “expects” or “does not expect”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipated” or “does not anticipate” or variations of such words and phrases and statements that certain actions, events or results “may”, “could”, “might”, or “will be taken”, “occur”, or “be achieved”. There can be no assurance that such forward-looking information will prove to be accurate. Forward-looking information is based on the opinions and estimates as of the date such information is provided and is subject to known and unknown risks, uncertainties and other factors that may cause the actual results to be materially different

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