Ambatovy SUSTAINABILITY REPORT



2017



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List of Acronyms

AEMS	Ambatovy Environmental Management System
AFNOR	Association Française de Normalisation (French Standardization Association)
AIFR	All Injury Frequency Rate
AIMS	Ambatovy Incident Management System
ALBI	Ambatovy Local Business Initiative
AMSA	Ambatovy Minerals S.A.
BBOP	Business and Biodiversity Offsets Program
BNGRC	<i>Bureau National de Gestion des Risques et Catastrophes</i> (National Office of Disaster Risk Management)
CAZ	<i>Couloir Ankeniheny Zahamena</i> (Ankeniheny- Zahamena Corridor)
CCS	Centre Culturel et Social (Cultural and Social Center)
CFAM	Analamay-Mantadia Forest Corridor
CI	Cobalt Institute (formerly Cobalt Development Institute)
CIREEF	Circonsription de l'Environnement, de l'Ecologie et des Forêts (District for Environment, Ecology and Forests)
CLC	Local Coordination Committee
CLP	Classification, Labeling and Packaging
СОВА	Community-based Association
CR	Critically Endangered Species
CRBPs	Children's Rights and Business Principles
CRC	Convention on the Rights of the Child
CRGRI	<i>Comité Régional de Gestion des Risques Industriels</i> (Regional Committee for Industrial Risk Management)
CSB	Centre de Santé de Base (Basic Health Center)
CSR	Communities and Social Relations
DMSA	Dynatec Madagascar S.A.
DRAE	Direction Régionale de l'Agriculture et de l'Elevage (Regional Directorate of Agriculture and Livestock)
EFA	Ezaka Fampandrosoana any Ambanivohitra (Rural Development Campaign)
EITI	Extractive Industries Transparency Initiative
EN	Endangered Species
EPFI	Equator Principles Financial Institution
ESIA	Environmental and Social Impact Assessment
ESU	Evolutionary Significant Unit
EY	Ernst & Young

FIMIAM	Fikambanambe Mivondrona Ampitambe Mahatsara (Federation of Formal Entities of Ampitambe)
GEM	Groupement des Entreprises de Madagascar (Madagascar Business Association)
GERP	<i>Groupe d'Etude et de Recherche sur les Primates</i> (Primate Study and Research Group)
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
На	Hectare(s)
HIA	Health Impact Assessment
HIV / AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HS	Health and Safety
ICMM	International Council on Mining and Metals
ICRC	International Committee of the Red Cross
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IGA	Income-Generating Activity
INGO	International Non-Governmental Organization
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
JICA	Japanese International Cooperation Agency
km	Kilometer
КРІ	Key Performance Indicator
kt	Kilotonne
LGIM	Loi sur les Grands Investissements Miniers (Law on Large Scale Mining Investments)
LME	London Metal Exchange
LPG	Liquid Petroleum Gas
LTI	Lost Time Injury
MAC	Mining Association of Canada
MBG	Missouri Botanical Garden
MECIE	Mise en Compatibilité des Investissements avec l'Environnement (Investment and Environment Compatibility Regulation)
NI	Nickel Institute
NGO	Non-Governmental Organization

ODDIT	<i>Organe de Développement du Diocèse de Toamasina</i> (Diocesan Development Office of Toamasina)
OHCHR	Office of the UN High Commissioner for Human Rights
OIF	International Organization of La Francophonie
ONE	<i>Office National pour l'Environnement</i> (National Office for the Environment)
PAP	People Affected by the Project
РРІ	<i>Plan de Préparation d'Intervention</i> (Intervention Preparedness Plan)
QAQC	Quality Assurance Quality Control
QMS	Quality Management System
REACH	Registration, Evaluation, Authorization and Restriction of Chemical Substances
SCC	Scientific Consultative Committee
SDGs	Sustainable Development Goals
SDRA	Structure de Dialogue Region-Ambatovy (Dialogue Structure for the Region and Ambatovy)
SDS	Safety Data Sheet

SFCG	Search for Common Ground
SIF	Social Investment Fund
SIM	Syndicat des Industries à Madagascar (Madagascar Industries Union)
SOC	Species of Concern
SPI	Significant Potential Incident
STI	Sexually Transmitted Infection
ткі	Tokotany Iraisana (Common Ground)
TMF	Tailings Management Facility
TSM	Towards Sustainable Mining
UDHR	Universal Declaration of Human Rights
UN	United Nations
UNICEF	United Nations Children's Fund
VSLA	Village Savings and Loan Association
VPSHR	Voluntary Principles on Security and Human Rights
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization



Message from our President



Stuart Macnaughton President

"For our operations to be conducted in a responsible manner and in order to have an enduring, positive legacy for Madagascar, we must continue to put Sustainability at the core of our planning and decision making." Dear Reader,

I am very pleased to share with you Ambatovy's eighth 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.

For our operations to be conducted in a responsible manner and in order to have an enduring, positive legacy for Madagascar, we must continue to put Sustainability at the core of our planning and decision making. This principle guides our work and is embedded in our approaches to stakeholder engagement, social and economic investments, governance, the workplace, the environment, and safety and security.

In 2017, Ambatovy made great strides in working towards our goal of becoming a low-cost nickel producer that creates lasting prosperity for all stakeholders and that contributes significantly to sustainable development in Madagascar. Ambatovy's operational priorities in 2017 were focused on zero harm and a transition to a steady state of operations. Despite the constraints imposed by a volatile global commodities market, Ambatovy continued to push towards our full production capacity while continuously improving our safety culture. We are pleased that during the year, we experienced no work-related or community fatalities and achieved the lowest All Injury Frequency Rate (AIFR) in our history.

We have a responsibility to conduct our operations in a way that does not create undue environmental, social and economic harm in the zones where we operate. We expect this of ourselves, but our internal and external stakeholders expect such performance as well. To help us in that regard, Ambatovy will be adopting the principles of the Towards Sustainable Mining (TSM) program that our operator, Sherritt, has committed to implementing as a new member of the Mining Association of Canada (MAC). The adoption of TSM represents another step in holding ourselves accountable to a level of performance in sustainability that is increasingly becoming the expectation of our stakeholders, including the Malagasy government, local communities, customers, our shareholders and lending institutions.

During the year, Ambatovy's operations were subject to two emergency events: Cyclone Enawo and a plague epidemic. While we cannot control these occurrences, we can control how we prepare and respond to them. Cyclone Enawo resulted in



serious damages and loss in Madagascar but fortunately, there were limited impacts on our operations and we were able to contribute to local disaster relief in the days and weeks that followed the storm. During the plague epidemic, serious health and safety concerns were raised for our employees, contractors and neighboring communities. Ambatovy's prevention measures helped us to safeguard the health of employees at our sites and, through strong and effective collaboration with local authorities, local organizations and UN agencies, we were able to support treatment centers caring for plague victims.

During the year, we continued to make sure that we met and upheld our sustainability commitments. Some highlights with regards to our performance include:

- The Scientific Consultative Committee (SCC), comprised of independent experts who provide advice on our environment and social programs, held their biennial meeting with Ambatovy's Sustainability team and presented a series of strategic recommendations for our review.
- To improve air quality management, Ambatovy implemented a program of isokinetic stack sampling, designed to measure air emissions directly over the stacks.
- Significant progress was made on projects supported through the Social Investment Fund (SIF), including the completion of the Moramanga and Brickaville markets and the rehabilitation of some roads in the regions where we work.
- In early 2017, we successfully underwent an audit to renew our ISO 9001 certification, this time under the new and more stringent 2015 version of the ISO 9001 standard.
- Manganese concentrations in water near the Tailings Management Facility (TMF) continued, at times, to exceed compliance criteria during the year; however, there are a number of initiatives underway to improve controls, to mitigate impacts, to provide a better understanding of

the root causes of the problem, and to design precise and effective corrective measures.

 The first inter-ministerial order determining the terms of royalties management and their distribution to decentralized territorial collectivities was formally signed in 2017, marking an important milestone in the good governance of mining royalties.

Ambatovy's 2018 sustainability priorities include:

- Continuing to push for zero harm through building a strong safety culture;
- Adopting and implementing the TSM protocols which will help address key sustainability risks, drive improved performance and make our operations more aligned with international best practice;
- Accompanying 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;
- Supporting the Government's efforts to control and eradicate the Asian Toad population.

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 2017, 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.

Sincerely,

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Stuart Macnaughton President

Report Profile

For the eighth 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 2017, following our 7th annual Sustainability Report covering 2016 that was published during the third quarter of 2017.

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 2017 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. Regarding ownership, in 2017, there was a restructuring of the Ambatovy Joint Venture, with the reduction of Sherritt's ownership interest from 40% to 12% and a corresponding increase for the two other partners, Sumitomo and Kores.

Reporting Boundary, Materiality and Scope

Unless otherwise noted, this report discloses material information for the calendar year 2017 (January 1st – December 31st). 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 has been adjusted to reflect 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 sustainability challenges of our industry. Since our last report, we have increased our level of disclosure as per the new GRI Standards and we are proud to offer improved and more complete information to our stakeholders. 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.

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



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 main outputs are nickel and cobalt, produced in briquette and powdered form. We also produce fertilizer grade ammonium-sulphate as a by-product of our refining process.

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Our Vision

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

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: Approximately 9,000 direct and contractor employees; 93% of Ambatovy's 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

2017 Production:

35,473 tonnes of nickel; 3,053 tonnes of cobalt; *111,966 tonnes of ammonium sulphate

Operational Lifespan: Approximately 27 years

Locations: Ambatovy is located in central and eastern Madagascar

Our Operations and Facilities



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. The first planned full shutdown of the operations was completed successfully, without incident or injury, over nine days in September 2017. Essential maintenance work was done during this shutdown to support future production. 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 and ammonia storage tanks. 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.

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.



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 2017, we produced 35,473 tonnes of nickel.



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 2017, we produced 3,053 tonnes of cobalt.



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 2017, we produced 111,966 tonnes of ammonium sulphate.

Highlights



Corporate Governance

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 2017, 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 subcommittees 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 our neighboring communities receive their fair share of benefits from Ambatovy and make the best use of them, 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)¹; 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.



¹Originally called the Ambatovy Biodiversity Management System (ABMS), it was re-named as the Ambatovy Environmental Management System (AEMS) because the physical environment management aspects have been integrated into the system.



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 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.

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. In 2017, for example, we developed and implemented for the first time a Sustainability Scorecard to help us in this regard. The Scorecard allows us to track issues that matter to our stakeholders and to Ambatovy, to gauge our performance with regards to sustainability and to better understand stakeholders' perceptions about us. The goal is to be able to use information gathered through the Scorecard to inform strategies, initiatives and programs so that they are better aligned with stakeholder needs, expectations and aspirations; to help us anticipate issues of concern before they may possibly escalate; and to foster more positive, constructive interactions with our stakeholders.

Through our various stakeholder engagement activities, the following key topics and concerns have been raised:

- 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
- Grievances

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

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 2017, 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) and, in some instances, to inaugurate completed projects, such as the Moramanga market. 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. During 2017, we worked closely with them to discuss the progress of projects funded through the SIF, as well as Ambatovy's support for Cyclone Enawo relief efforts in March-April and for the response to the plague outbreak from August to November. In 2017, we continued to engage regularly with regional authorities through the Dialogue Structure for the Region and Ambatovy (SDRA) that meets every two months 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 inaugurated two renovated district buildings in early November that had been damaged in previous cyclone events back in 2012. It was a joint effort of the district of Moramanga and Ambatovy. The District covered the costs of the demolition work, project studies and supervision, while Ambatovy covered the renovation costs.

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*². Our interactions with communities and PAPs take many forms, and community participation in the search for solutions has made enormous progress. In 2017, Ambatovy provided 100 classroom desks-benches to the Antananambo Public Primary School in the Rural Municipality of Fanandrana, Toamasina II (the pipeline crosses this commune), with approximately 700 students benefitting from this donation. We also continued our work supporting farmers' cooperatives in the districts

²In Madagascar, the *fokontany* is a political subdivision equivalent to a village or group of villages.

of 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 and ginger.

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 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.

To mark International Women's Day in 2017, which had the theme of Women's Empowerment, a delegation from Ambatovy, composed of members of the Sustainability team, the Work Council and the Security Department, visited a women's prison and two maternity wards at hospitals in the Toamasina area. The delegation donated 250 kilos of rice, 5 boxes of household soap, 30 kits for newborns and two bales of clothing. Approximately 40 female prisoners and 30 women who had recently given birth were the main recipients of the donations.

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. For example, Phase II of Ambatovy's partnership with the INGO Search for Common Ground (SFCG) got underway in 2017. Activities are building on the progress made during the first phase and aim to enhance the capacity of Ambatovy staff and local community members to engage in constructive, solution-oriented dialogue in order to build trust and improve mutual comprehension. Our ongoing collaboration with the Duke Lemur Center of Duke University focusing on scientific research within our conservation zones also continued during the year.

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. For example, the Diocesan Development Office of Toamasina (ODDIT) provided training in WASH (water, sanitation and hygiene)³ to community members in villages surrounding the TMF where a new water system was built.

Press and Media

The press community constitutes one of Ambatovy's most important stakeholders and is a key partner in informationsharing with the general public. We recognize the importance of disseminating clear and timely public information about our activities and of dispelling rumors. We endeavor to be open and consistent with the media, providing accurate information both nationally and internationally. 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 2017, Ambatovy continued to engage and interact with the media in order to keep them informed about Ambatovy. We collaborated with journalists, TV and newspaper editors, and radio presenters. In late 2017, we created a team within the Communications Department to boost our presence on social media; their work serves as an important complement to our regular media activities.

³WASH 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.

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.

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 (*Groupement 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 2017, for example, Ambatovy participated in the second annual Corporate Social Responsibility Fair in July as well as the first annual conference of the Chamber of Mines of Madagascar held at the new Mining Business Center in Antananarivo in late November.



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 9,000 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 2017, Ambatovy 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.⁴ 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. During the first quarter of 2017, a delegation from the African Development Bank, one of our senior lender banks, visited our sites in order to carry out an assessment of Ambatovy's social, environmental and economic impacts on the country to-date as well as our contributions to society.

⁴Ambatovy received US\$ 2.1 billion in financing from this consortium. For a complete list of these 14 lending institutions, please see <u>www.ambatovy.com</u>.



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. Many 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 exacerbate 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.

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 significant local benefits including thousands of additional jobs, significant payments to the Government of Madagascar and local suppliers, 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.

Nickel and cobalt prices showed signs of recovery in 2017 following several years of challenging market conditions. Nickel prices improved by 27% while cobalt prices were up 130% in 2017 on a year-over-year basis. The gains were largely driven by improved supply-demand market conditions and the greater understanding that nickel and cobalt play key roles in the manufacture of batteries needed for the growing electric vehicle market.

Over the year, 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. An increasing number of customers, potential customers and industry groups are requesting risk readiness assessments, due diligence reviews and third-party audits of Ambatovy's operations. We are preparing ourselves to support our customers in this endeavor by aligning with international standards, such as the Towards Sustainable Mining, conducting internal audits on responsible supply chain requirements, providing training for our suppliers and sub-contractors, and leveraging industry associations for insight and support.

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 around the Mine has been a key issue since the early planning stages. The partially degraded forests around the Mine have undergone considerable humaninduced pressures for many years, even prior to our arrival to the area, including hunting and gathering, selective logging, slashand-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.

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.

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 2017.





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.

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 team is responsible for educating our suppliers and ensuring their compliance with our standards.

At Ambatovy, 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 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 exteral stakeholders have access to Ambatovy's Grievance Management System 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.



Compliance to External Initiatives

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 and voluntary compliance requirements of our agreements with the Government of Madagascar, our lenders and other stakeholders.

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. The LGIM was developed with the support and assistance of the World Bank. 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. Ambatovy was certified under the LGIM in 2007.

Investment and Environment Compatibility Regulation (*Mise en Compatibilité des Investissements avec l'Environnement*, MECIE)

The MECIE regulates environmental compliance for investment projects in Madagascar. It describes the process and conditions for obtaining the necessary environmental permits and establishes the regulations and penalties. We 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, which covers the following main areas and which is monitored by the ONE:

- The Environmental Management Plan and Program, for environmental performance, providing the framework that ensures that issues identified in the ESIA are addressed.
- The Social Development Management Plan, for social performance, guiding Ambatovy's relationship with local communities.
- The Health and Safety Management Plan and Emergency Response Measures, for safety performance, defining the conditions and manner in which work must be carried out so that potential risks to the health and welfare of Ambatovy personnel are minimized.

We are obliged to report annually to the ONE on our progress against these plans, and ONE officials conduct regular site visits to review our work.

International Finance Corporation (IFC) Performance Standards

The IFC is a member of the World Bank Group established to foster sustainable economic growth in developing countries by financing private sector investment, mobilizing capital in the international financial markets and providing advisory services, among other things, to businesses and governments. 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.

Equator Principles

The Equator Principles are voluntary standards for banking institutions. 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. Presented in June 2003, these principles are consistent with the standards promoted by the IFC and form the basis of responsible financing. The Equator Principles have greatly increased the attention and focus on environmental and social/community standards and responsibility. They require an evaluation of environmental impacts of high-risk projects and, in certain cases, a management plan that addresses socioeconomic impacts, environmental protection, human rights and labor standards.

Voluntary Compliance

With a view to achieving superior safety, environmental and social results, Ambatovy is committed to the following voluntary measures that go beyond our legal obligations.

Business and Biodiversity Offsets Program (BBOP)

BBOP is a collaboration of some 50 companies, financial institutions, governments, and civil society organizations. The members aim to develop and test best practices for conservation and biodiversity offsets by following the mitigation hierarchy. 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.

Extractive Industries Transparency Initiative (EITI)

We are committed to the transparent reporting of payments to the Government and, 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. Throughout the period that the country was suspended from the EITI (2011-14) and since it was readmitted as a candidate country in June 2014, the National Committee has continued to work together to promote the process. Ambatovy remains a committed member of this group 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.

During 2017, EITI Madagascar prepared for the validation process that began in September 2017. This process determines whether Madagascar progresses from a candidate country to a compliant country (the final decision from EITI International is expected in mid-2018). The National Committee also met several times during the year to discuss the release and dissemination of the report reconciling 2014 data and figures, the road map for the new EITI requirement about beneficial ownership, and an institutionalization and governance study that was commissioned by the World Bank and undertaken by Ernst & Young (EY). Ambatovy was also invited to participate in a peer-learning workshop for francophone EITI countries in Yaounde, Cameroon in late November. The work of the Tsara Tantana (Good Governance) Project advanced further in 2017. The project, which is supported through the SIF, aims to promote the transparent, equitable and sustainable distribution and management of mining royalties paid to decentralized territorial collectivities in Madagascar. Under the guidance of the project's Steering Committee, a draft inter-ministerial order for the royalties distribution was prepared and submitted to the Government; it was formally signed by the three concerned ministries in December (Mines and Petrol, Finances and Budget, Interior and Decentralization) and a specific order that will apply to Ambatovy is expected to be issued in 2018. Ambatovy also continued discussions with national and local authorities, civil society, NGOs, and international donors on developing joint initiatives for support, accompaniment and capacity building at the communal level to ensure the good governance of the royalty funds that they will be receiving, such as through participatory, transparent and inclusive budgetary and planning processes.



Voluntary Principles on Security and Human Rights (VPSHR)

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.

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 plans 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.

International Standard ISO 9001

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. The ISO 9001 certification is needed to meet the requirements of the London Metal Exchange (LME). It 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. Ambatovy has embarked on a quality approach through the implementation and the rollout of our Quality Management System (QMS), since 2010, in order to meet the needs of our clients and stakeholders regarding our products and services. The ISO certification remains valid for three years with an audit conducted every year to ensure Ambatovy continues improving and meeting the established standards of the certification. In 2015 and 2016, Ambatovy had two surveillance audits to confirm our continued compliance with ISO 9001 requirements. In February 2017, we underwent an audit to renew our certification and were successfully re-accredited under the new and more stringent 2015 version of the ISO 9001 standard.

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.

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, 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 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.

Our contractors are also required to comply with these policies and codes. A requirement to comply with business ethics, anticorruption, 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 antinepotism agreement to prevent the risk of familial interference and influence during the bidding process and throughout the business relationship.

Minimizing Potential Impacts on 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.⁵ 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 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.

In order to be in line with best practices for industries around the world and to promote continuous improvement, this year three members of Ambatovy's staff participated in a four-part training course on the Children's Rights and Business Principles (CRBPs). UNICEF, in collaboration with the Ministry of Industry and Private Sector Development, organized the training over the course of several months in 2017. 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. The Ambatovy staff that participated in the course have been working on providing briefings to colleagues and members of Senior Management, updating our Code of Conduct and Zero Tolerance Policy, and introducing the CRBPs to contractors in our supply chain via training, accompaniment measures and changes in our contract management process.

In June 2017, Ambatovy participated in a panel discussion organized by the Office of the UN High Commissioner for Human Rights (OHCHR) and the International Organization of La Francophonie (OIF) on the topic of human rights and natural resources and the environment, with a particular focus on extractives. The UN Special Rapporteur on the situation of human rights defenders also participated on the panel. Ambatovy made a presentation on our approach to human rights, especially with regards to supply chain management, community impacts, child protection, security arrangements and our grievance management system.

Voluntary Principles on Security and Human Rights (VPSHR)

We are committed to safeguarding our people, assets, reputation and the environment, while respecting human rights. 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; investigating 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. 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 assessment 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

⁵According 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.



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 2017, there were no security incidents involving allegations or claims of human rights' abuses at Ambatovy. Our security and human rights training over the year remained comparable to 2016: 75% of full-time security personnel, 90% of contract security personnel, and 100% of public security officials based near our operations were trained. In 2017, new private security contracts were issued with the Voluntary Principles embedded into them. During the year, we also engaged with the Gendarmerie's Training Academy to discuss possible areas of collaboration on training initiatives, and took part in meetings with various stakeholders to discuss the VPSHR. These included the OHCHR, the International Committee of the Red Cross (ICRC), and SFCG.

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 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 that he/she will receive a fair and thorough consideration. The system includes 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 2017, the Committee carried out follow-up visits to the field in order to monitor how grievances are truly handled and resolved on the ground. Based on previous years' recommendations, six capacity building sessions were held in 2017 for 40 grievance registry managers in order to strengthen their work and improve their response times.

In 2017, Ambatovy received 85 grievances, a decline from the 116 grievances we received in 2016. Of the 85 grievances received during the year, more than 70 related to impacts on society, predominantly impacted rice fields from construction activities, and a few were linked to livelihoods, land acquisition and other issues. In response to the key issue of impacted rice fields, we worked to restore rice paddies, where possible, to compensate farmers for their losses, and to provide training on improved production techniques. In 2017, 22 PAPs received compensation through this grievance process for harvest losses incurred during the construction phase and during current operations around the TMF area. The remaining grievances were environmental or operational in nature. We attribute the decrease in the number of grievances received 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.

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 rightsrelated grievances have been reported).



Economic Performance

Objectives

- Position Ambatovy as the most successful nickel laterite operation in the world, with a real competitive advantage over our competition, in order to secure long-term company sustainability for the benefit of our shareholders and for Madagascar.
- Contribute to Madagascar's growth and development through payment of taxes and royalties, investment in infrastructure, job creation, 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. On the national level, with Ambatovy's exports beginning in 2012, nickel has become one of the top export 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 four 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.



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

and employment benefits through our local recruitment efforts; and community investment and donations spending. In 2017, our economic benefit footprint was almost US\$ 300 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.

Payments to Government

In 2017, Ambatovy paid approximately US\$ 27.7 million in tariffs, taxes, and other government payments, excluding royalties. Ambatovy is currently accruing royalties to be paid to the Central Government and local collectivities, but the actual payment of the local portion of those royalties has been put on hold, in agreement with the Government, pending the issuance of the official order/act outlining the royalties' distribution and the designation of the collectivities that will be receiving them, as described earlier in this report in the Governance and Human Rights section. With the adoption in late 2017 of the first official inter-ministerial order determining the terms of royalties management and their distribution to decentralized territorial collectivities and with the preparation of the order/ act specific for Ambatovy well underway, we expect that we will begin to pay our royalties, including those already accrued, during 2018. There were no fines related to environmental or product compliance infractions during the year.

Local Procurement

Approximately 80% of our benefit footprint in 2017 results 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 created during the construction period to support this commitment and to uphold our local procurement policy of "buy locally, hire locally." In 2017, more than 550 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 2017 alone, this number was almost US\$ 240 million, an increase of 14% as compared to 2016 (US\$ 210 million). Moreover, in 2017, eight local vendors received mentoring support through the ALBI program on financial management and business planning. Vendors also have access to training modules in areas such as quality, health and safety, the labor code and financial analysis. 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 2017, 17 local vendors were audited, making a total of 557 audits carried out since 2011.

Local Salaries, Wages and Benefits

Local salaries, wages and employment benefits accounted for approximately 10% of our benefit footprint in 2017, 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. We endeavor to attract local talent and invest in the development of our workforce. By the end of 2017, our total workforce was approximately 9,000 employees: around 3,350 direct employees and 5,650 subcontractor employees, with 93% of direct employees positions held by Malagasy. Nearly 10% of our supervisory positions were filled by national employees. For more information on recruitment and training, please see the section on Labor.





employees

subcontractor employees

Community Investment and Donations

A significant portion of our community investment spending was through the 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. By the end of 2017, several of the 17 approved SIF projects were completed or near completion. 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. Ambatovy does not make any donations to political parties, politicians or related institutions. Our donations have funded activities related to World AIDS Day, International Women's Day and other such initiatives. In 2017, for example, Ambatovy made donations to contribute to relief efforts after Cyclone Enawo and to help in the fight against the plague. We also donated solar equipment to basic health centers; desks to a school in Antananambo; and sports equipment, musical instruments and furniture to a youth kiosk in Toamasina.

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.





Communities and Social Relations

Objectives

- Develop a climate of trust, transparency and open dialogue between Ambatovy and our neighboring communities.
- Promote positive socio-economic 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. Throughout the year, we continued 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.

Our Communities and Social Relations (CSR) program focuses primarily on livelihoods development, implementation of projects supported through the SIF, community health and safety, work with resettled families, and community engagement. 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.



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, 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 and the provision of agricultural inputs.

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. Towards that end, we have invested in technical training, the provision of inputs (seeds) and small agricultural tools, the dissemination of improved cultivation methodologies, and the preparation of demonstration plots. In 2017, a re-evaluation of the final, most "difficult" rice fields to rehabilitate was completed in collaboration with technical staff from the Regional Directorate of Agriculture and Livestock (DRAE). This was done in a participatory manner with PAPs who took part in workshops and sanctioned the sign-off on files. The remaining 54 ha of rice fields classified as "difficult" were assessed and prepared for close-out according to three categories: the restoration of plots if technicians deemed it feasible, the substitution of rice for other crops, and the adoption of other income generating activities. Work is now underway to finalize and close out those rehabilitation initiatives.

In 2017, Ambatovy also continued our support to ten agricultural cooperatives in the districts of Brickaville and Toamasina II, which bring together farmers along the pipeline. We provided training and inputs to the farmers, and helped them make contacts with input suppliers and produce buyers. In October, for example, our CSR team organized an exchange visit for 22 of these farmers to meet with other farmers in the Analanjirofo Region in order to strengthen their skills, to help them gain new technical knowledge and to allow them to become more professional. Each cooperative is currently dedicating its efforts to a specific sector, such as chicken breeding, or litchi, corn, pineapple, curcuma, and ginger cultivation. To promote alternative income-generating activities, we also initiated a project to plant popular cash crops in a 40 meter band along the pipeline. 14 village nurseries were established and training was provided to households in order to improve farming techniques. Further support and training was also provided to Water Users Associations in order to improve the management of irrigation canals.

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.

There are currently 17 projects that fall under this commitment, with 10 of them completed, 5 ongoing and 2 on hold. 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 in 2017)
- the construction of a new market facility in Moramanga (completed in 2017; inaugurated in November)
- 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, above, 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 (on hold)⁶
- support for the collection and recycling of domestic waste in Toamasina through the "Tamadio" waste management project (on hold)

⁶"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).

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 risk, 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 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 recent health and safety-related actions at the community level that are either completed or ongoing include:

- · 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 2017, Ambatovy repaired two of the overhead crossings damaged by rust, and put in place a maintenance plan in accordance with Madarail and the Commune of Toamasina. We also carried out awareness campaigns to increase people's understanding of the safety risks and to improve safety culture. Campaigns targeted students and teachers, customers at nearby cafés and restaurants, people with disabilities and families affected by mental illness.
- Organizing a training session for motorcycle taxi drivers on health, safety and hygiene in Ambatondrazaka (the capital

of the Alaotra Mangoro Region) and providing refresher training for them on traffic regulations. In 2017, Ambatovy also financed the installation of 20 road signs and 15 road markings at different points in the city. This project was part of the cooperation between Ambatovy, the Prefecture of Ambatondrazaka and the Alaotra Mangoro Region.

- Providing a 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). More than 955 villagers living in over 20 villages located around the Tailings benefit from the new water supply system that Ambatovy handed over to the Rural Municipality of Fanandrana and the Suburban Municipality of Toamasina in May 2017. The project demonstrates our commitment to improving the villagers' health, wellbeing and living standards through the provision of clean drinking water.
- Organizing awareness-raising and capacity building sessions on WASH for community members near the above-mentioned water supply system in the TMF area. 42 members of 14 water management committees and 1,570 community members from 20 of the villages surrounding the TMF site benefitted from WASH sessions that were carried out in 2017 in collaboration with the Diocesan Development Office of Toamasina (ODDIT). The sessions also covered technical maintenance, financial management and methods for cost recovery through the payment of monthly fees in order to ensure the system's sustainability.
- Continuing our partnership with the local NGO, Love and Care, and the DRAE of the Atsinanana Region to support a community nutrition project and 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 2017, three of the school feeding programs received 342 kilos of vegetables harvested from the Tsaralakana plot that Ambatovy donated to the NGO. 120 parents of students at these schools worked on the plot and received training from the 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.
- Renewing our support for the child protection network in the Moramanga area with representatives of the Ministry of Population, local authorities, security officials and parents through joint site visits, public consultations, and awarenessraising sessions on children's rights at the community level. Efforts focus in particular on sensitizing the local population on dangerous forms of work for children (e.g., guarding the family's *zebu* or cattle) and encouraging their re-insertion into schools.
- Providing equipment for solar electricity to the Basic Health Centers (CSB) of Marovoay, Morarano Gare and Beforona, near Moramanga. With the equipment installed in 2017, the CSBs are now able to offer improved services to the local population. As background: since 2006, Ambatovy has been providing free health care to residents of villages located around the Mine Site, with medical consultations

being offered on a weekly basis by health professionals from Ambatovy's medical contractor. Dental care treatments and HIV/AIDS screening are also carried out every year in collaboration with the District Health Service. Ambatovy will be gradually withdrawing from these activities, while the CSBs will continue to offer services and the infrastructure will remain.

- Organizing awareness-raising sessions on fire prevention with wood sellers near the ammonia storage tanks in Toamasina in order to reinforce preparedness and to prevent any risk of fire. There was also an awareness-raising campaign on bush fire prevention around the Mine Site in the Mangoro watershed area and around the pumping station; the campaign was carried out in collaboration with local level environmental officials (CIREEF, *Circonscription de l'Environnement, de l'Ecologie et des Forêts*), other local authorities and the firefighters of Fanalamanga.
- Donating radio equipment to security entities in Toamasina and installing the necessary accessories in order to improve communication and emergency response, and to help strengthen their capacity to provide improved security services.
- Developing informational and educational programs to align knowledge about Ambatovy's emissions and to improve understanding amongst different stakeholders on these issues (scientific researchers, science professors in middle schools and high schools, physicians who are members of the Tamatave Medical Association, health agents, community representatives, local authorities, religious leaders, and Ambatovy staff) through a process known as "Joint Fact Finding".
- 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, 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 October, 22 employees at the Mine participated in a training given by the local NGO *Mamizo* in order to become part of our pool of HIV/AIDS Peer Educators who convey messages related to the prevention, testing and treatment of HIV/AIDS.



Ambatovy also regularly takes part in World AIDS Day that is held each year on December 1st and, in 2017, we organized World AIDS Day events at each of our sites, with awareness-raising, education and voluntary testing activities. In 2017, approximately 2,000 employees participated in awareness-raising sessions and more than 600 employees were screened for HIV.

At the community level, 10 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 Direction of Youth and Sports, which now supports and coaches the young peer educators. In 2017, Ambatovy donated various items to the Tamaga Youth Kiosk in Toamasina in order to strengthen the services that the kiosk offers to the roughly 300 young people who visit it (sports gear, musical instruments, sound equipment and furniture). 25 peer educators from the center also received training to be able to carry out awareness-raising activities on the fight against HIV/ AIDS and the fight against drug use. The Tamaga Youth Kiosk is particularly dynamic, one that is often frequented by youth in the neighborhood, and Ambatovy plans to continue providing modest support in the future.

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 the regional level, for example, we have collaborated with local and regional officials to create the Regional Committee for Industrial Risk Management (CRGRI) for the Atsinanana Region. Ambatovy supported the creation of this body and continues to provide training and support to its 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 TMF, 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 (H₂S) and Sulphur Dioxide (SO_2) as well as dam failure at the TMF.

Key accomplishments in 2017 with regards to emergency preparedness and response include:

- Ambatovy, through our Emergency Response team, and the Civil Protection Unit in Toamasina entered into an agreement, establishing a program of mutual assistance in the event of natural disasters or industrial emergencies. The agreement supports the development of joint simulation and training exercises to better prepare for potential emergencies in Toamasina. The document is currently with the Ministry of National Defense for review.
- Ambatovy provided financial and logistical support for a twoday training workshop that was held in Moramanga in mid-August for members of the CRGRI in the Alaotra Mangoro Region. Provided by the National Office of Disaster Risk Management (BNGRC), the training aimed to give participants basic knowledge on the management and reduction of risks and catastrophes related to industrial activities. The training session began with a visit to Ambatovy's Mine Site to learn what a large industrial installation is and to see the measures undertaken by Ambatovy to prevent industrial risks related to our activities. Participants also visited the dams at the Mine Site as part of the preparations of the PPI that is being developed, in consultation with key stakeholders (including regional authorities) and in collaboration with the BNGRC in order to identify possible risks near our Mine operations and to outline appropriate emergency response procedures.
- To promote public safety and to prepare for an emergency, a simulation exercise was organized at the TMF site in collaboration with the BNGRC, the Prefecture of Toamasina,

the Atsinanana Regional Office, the CRGRI, the Civil Protection Unit and the Toamasina Fire Department. Two scenarios were simulated and practiced: first, the preventive evacuation in case of a dam failure threat; and second, a siren activation, which requires an actual evacuation. These were a follow-up to the awareness-raising activities that were carried out with the population during the previous year on the risks of dam failure and on safety measures to be carried out in the event there is an accident. 20 villages were targeted (with 205 households or 766 people), with posters affixed and leaflets distributed describing the risks and providing safety instructions (including the identification of 22 high assembly points and nine collection points if there is ever a need to evacuate people). Particular efforts were made to sensitize schoolchildren living in the area as well, since young people tend to be open and receptive to new information and they can reinforce key messages with their parents and families.

- The Category 4 intense tropical Cyclone Enawo made landfall in north-east Madagascar in early March and then moved south as a tropical depression, causing widespread flooding in the eastern half of the country. An estimated 81 deaths resulted and more than 430,000 people were affected. In response, Ambatovy, in collaboration with local officials and the Malagasy Red Cross, provided rice, oil and intermediate bulk containers (for water storage) to communities in our zones. We also organized an aerial reconnaissance flight in order to assess damages between Moramanga and Toamasina and to identify priority actions. We provided a satellite phone to the Toamasina Prefecture to facilitate communications at the local level; organized two volunteer days for Ambatovy staff to clean up debris in communities that were damaged and to rehabilitate a damaged access road in Vohitrambato (more than 140 employees at the Mine and Plant Sites participated in these events); and lent the use of our charter aircraft to bring relief items to Maroantsetra (one of the hardest hit areas), including emergency kits donated by the Japanese International Cooperation Agency (JICA) and a baby incubator donated by the Government of Canada. In addition, 12 small rehabilitation projects were identified in consultation with local authorities, including the repair of several schools, health clinics, community halls and administrative offices. Up to 600 million Ariary (approximately US\$ 200,000) was earmarked for this relief support out of Ambatovy's Social Investment Fund.
- In August, there was an outbreak of plague in Madagascar which spread to large urban areas, including Antananarivo and port towns (including Toamasina). Plague is endemic in the country, where it causes around 400 infections per year, mostly in more rural areas. Bubonic plague, usually caused by the bite of an infected flea, is the most common form of the disease and is responsible for most cases in Madagascar. However, many of the cases in the 2017 outbreak involved pneumonic plague, a less common but more virulent form of the disease that is spread from person-to-person and that is always fatal if left untreated. It was the first time that pneumonic plague had been reported in the densely populated coastal cities in Madagascar. Ambatovy worked closely with local health authorities, UNICEF and the World Health Organization (WHO) to provide medical supplies, personal protective equipment (including masks,

gloves and goggles), furniture, equipment and materials for use at various treatment centers including the Department of Pneumology at the University Hospital of Toamasina and the District Health Center in Moramanga. Donations increased medical staff's capacity and enabled the establishment of a new treatment center with 20 additional beds. We also provided regular information updates to our employees and monitored them for signs of fever and other symptoms.



As part of our contribution to the post-Enawo relief effort, Ambatovy and the Swiss humanitarian organization Medair signed a Memorandum of Understanding to strengthen the resilience of communities in the Maroantsetra District against future natural disasters. Ambatovy's three partners - Sumitomo, Kores and Sherritt - granted funds to support Medair's work to rehabilitate 11 refuge houses in the area so that families can seek safety and shelter during floods and cyclones. Medair's field agents worked with community members on establishing management committees for each shelter to ensure that the shelters will be properly managed and maintained and that they will be sustainable over time. The Medair team also provided training to local craftsmen on techniques for constructing cyclone-resistant homes.

Resettlement Activities

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 these activities. These partners have the skills, knowledge and understanding of the local context to effectively respond to community needs and to allow Ambatovy to invest in social change without promoting dependency. For example, in 2017, Ambatovy continued the partnership with Homéopharma to develop a noni plantation in Vohitrambato.⁷ The objective of the partnership, which was developed with the assistance and facilitation of Ambatovy's Sustainability team, is to help the community gain an additional source of regular, reliable income. Homéopharma is now looking to extend the agreement to include the cultivation of lemon grass and aloe as well. Our teams also worked with Prosperer (Support Programme for Rural Microenterprise Poles and Regional Economies, supported by the International Fund for Agricultural Development or IFAD) and the company Faly Exports to train farmers in market gardening and the production of litchis and honey.

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. In 2017, members of the VSLAs received training in the principles of microfinance, the culture of savings and credit, and organizational governance. Three new VSLAs were created during the year, making a total of 11 VSLAs (with 270 members, the majority being women) operating with Ambatovy's support in the resettlement villages, as well as near the TMF and near the Mine.

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 in the village. The 2016-17 school year was the eighth successful year of the program, with 241 students and their families benefitting. To promote health education and combat malnutrition, Ambatovy also

⁷Homéopharma 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.
supported the development of a school gardening program and community nutrition center in Vohitrambato. 7,960 meals were served to school children in the last school year.



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 process 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.



New Resettlement Initiatives

As noted in last year's report, in 2016, we started developing a plan for the resettlement of two villages, Ampangadiantrandraka and Ankazotokana, located within the Mine lease area. This involves 36 families that we are assisting to re-locate progressively to areas outside the Mine lease zone. In 2017, consultations continued with the families from

these two villages and with the new resettlement committee that was established. Activities are underway to confirm this list of families and to assess the proposed relocation sites, but additional work is needed to document settlement history before final decisions can be made. Throughout this process, we have maintained regular contact with these families to reassure them and to keep them informed.

There is also the "economic resettlement" of 29 families in Ambolomaro, also 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 2 tons per hectare. As noted in last year's report, in 2016, 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 an improvement in their rice yields.

Community Engagement

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, 2017 was a year of longterm pedagogy, initiated in response to the consequences and challenges we faced due to the weak global market for commodities. In light of the significant drops in base metal prices, 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 more holistic understanding of the current economic climate, covering topics such as the economic impact 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.

Open Doors

Ambatovy is constantly striving to organize activities that strengthen the transparency of our operations. One of these activities 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 2017, with more than 40,000 people in attendance. In addition to the Open Doors events, we also organized special mini Open Doors and exhibitions to increase our interaction with students, civil society groups, the general population, and regional and national associations. Through these efforts, Ambatovy was able to engage with more than 50,000 people.

Radio

During 2017, Ambatovy continued to support the production and broadcasting of the high quality radio drama, "Miandrandra Maraina", as part of the Mazava Project⁸ that is being implemented by our partner SFCG. The first season of the show, consisting of 32 episodes, was aired in Moramanga and Toamasina during 2015 and 2016, and production of the second season began in 2017 with an additional 40 episodes. Ten Ambatovy employees have been selected to be "actors" in the radio show, along with professional actors. The radio show reflects situations, daily occurrences, opportunities and dilemmas in the life of a fictional community where a mining company is located. Local elections, community development, challenges at work, households' financial difficulties, and the presence of the mining company are among the many issues that community members must face. 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 2017 SFCG also began to produce and transmit a participatory, interactive radio magazine show, "Tokotany Iraisana" (TKI)⁹, which is being aired on local radio stations in our zones of operations, including in Moramanga, Toamasina and along the pipeline, 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.

Public Information Centers and Site Visits

Ambatovy's Information Centers, located in Moramanga and Toamasina, are 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. In 2017, around 12,500 people passed through our two centers.

Ambatovy also hosts guided site visits, on an appointment basis, to further provide a chance for the public to experience Ambatovy for themselves and to learn more about our operations at the Mine and Plant Sites. In 2017, approximately 9,500 visitors visited Ambatovy's sites, including government officials, representatives from local and international media, members of the diplomatic community, youth from scouting organizations and school groups, university students, and the general public.

Community Participation

A robust stakeholder engagement program takes place at the community level. Ongoing dialogue through several channels, in both formal and informal settings, with community members, local authorities and representatives of civil society groups has been, and continues to be, important for building mutual understanding, managing expectations, and earning and maintaining our social license. In 2017, Ambatovy participated in more than 1,300 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, rumors and misinformation, public health and safety concerns, water quality, community-based environmental conservation, grievance management, and security awareness. The higher than normal number of community meetings in 2017 can be attributed to the relief efforts linked with Cyclone Enawo and the plague epidemic as well as ongoing implementation of the SIF projects. Through SFCG, Ambatovy also participated in mini Town Hall Meetings and participatory theater events in the second half of the year.

In 2017, 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, Ambatovy's contributions and social investments, etc.



⁸In Malagasy, "Miandrandra Maraina" means "In Search of Dawn" and "Mazava" means "light" or "clear".

⁹"Tokotany Iraisana" means "Common Ground" in Malagasy.

Cultural Heritage

Ambatovy's commitment to our communities includes our respect for local culture, history, and traditions. To preserve cultural heritage, Ambatovy implemented a preventive archeology program, which involved respect for cultural heritage sites, artifacts, and archeological remains found in Ambatovy's intervention areas between Moramanga and Toamasina. In total, nearly 260 sacred sites and 5,000 artifacts were identified and placed under protection during the construction period. The artifacts are now housed in the Heritage Interpretation Center in Toamasina that was built by Ambatovy and turned over to the Ministry of Culture in 2014. As the Mine activities progress, the search for artifacts and archeological items continues as part of the clearing process. In 2017, 809 artifacts, including 754 ceramic items and 55 glass fragments, as well as two cultural sites, were identified and protected.







Environment

Objectives

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

Approach: Biodiversity

One of Ambatovy's key goals is to minimize the impact of our operations on Madagascar's environment. With regards to biodiversity, the aim is to achieve no net loss, 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.

Ambatovy's biodiversity program is governed by the Ambatovy Environmental Management System (AEMS). This quality assurance - quality control (QAQC) style management system brings our environmental activities in line with ISO principles and meets IFC requirements for environmental management. 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 flora and fauna identified in our areas: amphibians, reptiles, birds, fish, and multiple species of flora, with specialized plans for the management of our lemur and Mantella populations. A second independent audit of the AEMS was conducted in 2017. The audit indicated substantial progress towards implementation of the AEMS at the data collection and data validation levels, but the data integration and data dissemination components of the system have not been completed yet.

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. As noted earlier in this report, BBOP is a multi-stakeholder initiative that seeks to develop best practice in biodiversity for developers of large greenfield projects. Ambatovy became a pilot project for the BBOP initiative in 2006.

The IFC Performance Standards (IFC 2012 version) include ecosystem services in the mitigation hierarchy, which are defined as the benefits and services that humans draw from the ecosystem. Expressing biodiversity in terms of ecosystem services also serves to make biodiversity more concrete, thus its protection should be facilitated. In our area, the five most important services for the local population that are derived from the ecosystem are, in order of importance: crops, construction wood (timber), water, farming (livestock) and combustible biomass (specifically wood, energy-coal). These are all supply services. An initial assessment was carried out in 2016 to establish baseline information on the status of ecosystem services; a comparative analysis will be integrated into the AEMS status report in 2018. Results will help shape our future actions.

In 2009, Ambatovy established a Scientific Consultative Committee (SCC) on biodiversity in order to be transparent and to apply international conservation expertise to our biodiversity management activities. The Committee includes 14 national and international independent scientists renowned for their expertise in biodiversity, conservation and environmental management. The Committee convenes every two years in order to review our environmental and social programs and to provide impartial advice to ensure that our commitments are being met. At the most recent meeting of the SCC in November 2017, members made some important, valuable strategic recommendations to help improve our program.

The main impacts on biodiversity from our activities are related primarily to forest clearance at the Mine (1,614 ha) and near 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.



Avoidance: Ambatovy was designed, to the extent possible considering laws and regulations and economic/business concerns, to avoid impacts on biodiversity. An example is the diversion of the pipeline route around forest patches and around breeding sites of the critically endangered Mantella frogs. During construction, the pipeline was rerouted or bored under more than 20 locations in order to avoid impacting several pristine forest fragments.

Minimization: Impacts are minimized to the extent possible. As part of our mitigation measures, Ambatovy carries out regular inventories of flora and fauna species present in our conservation zones and Mine footprint, and before any clearing can take place, an inventory and manual rescuing of any animals and priority flora species is conducted. Since the beginning of our operations, Ambatovy has employed a technique called "paced directional clearing", the first initiative of its kind in the mining industry, which allows resident fauna to migrate freely into the adjacent conservation zones. Those that have not or are unable to migrate are manually rescued along with priority flora species, including orchids. In 2017, a total of 168.57 ha were cleared at the Mine Site using this technique.

Rehabilitation/Restoration: Ambatovy will conduct progressive reclamation of the Mine footprint that is compatible with the historical ecology of the landscape. Community greenhouses, as well as Ambatovy's own industrial scale production nursery and research nursery, are essential parts of the research and restoration process. During 2017, 2.78 ha of hydro-seeding and 1.22 ha of ecological restoration were completed near the Mine Site. 136,967 saplings were produced and 4,485 trees were planted for rehabilitation purposes.

Offset: Measures are taken to compensate for any residual, significant, adverse impacts that cannot be avoided, minimized, and/or rehabilitated or restored, in order to achieve no net loss or a net gain of biodiversity.

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 and the Government of Madagascar. The program has several focal areas, including flora, fauna, offsets and 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 programming in this area.



Lemur and Small Mammal Management

Ambatovy's Lemur Management Plan, within the overall AEMS program, includes a series of mitigation measures to frame our work with regards to lemur species within our sites.

Our Lemur Management Plan closely monitors and collects data on all lemur species found within our zones, but we focus our longterm 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. By focusing on these species in particular, Ambatovy's Environment team is able to increase the quantity and quality of the data it can collect. This data provides a more accurate snapshot of the entire lemur population in our areas.

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).¹⁰ Inventories of our conservation

¹⁰The 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.

areas conducted in 2017 have shown an increase of Indri, Diademed sifaka, Common brown lemur, and the Eastern lesser bamboo lemur. Unfortunately, this increase is attributed to the human-pressure on their traditional territories neighboring Ambatovy's conservation areas, usually in the form of slashand-burn agriculture and clearing for cattle grazing.

As noted above, a fundamental aspect of our biodiversity management is utilizing a paced directional clearing technique in order to allow mobile fauna to freely migrate into surrounding conservation areas. Manual rescuing is conducted 48-hours later for those animals that are unable to move and for key flora species. 28 lemurs were rescued in that manner in 2017, 27 of which were from nocturnal species. In our conservation zones, 3,167 lemurs were inventoried during the year. A large brushfire and the passage of cyclones, specifically Cyclone Enawo, had negative effects on our local lemur populations this year; however, 25 births were recorded among our five key species.

Ambatovy also monitors and mitigates impacts on other species of mammals besides lemurs, including endemic micro-mammal 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 species.

The management of mammals other than lemurs aims to:

- ensure the long-term viability of the population of non-lemur mammal species in the Mine area's forests, through the implementation of monitoring, surveillance and mitigation;
- contribute significantly to the monitoring and surveillance of the biodiversity which is potentially affected by Ambatovy's activities;
- carry out an independent and seasonal evaluation on the condition of non-lemur mammal populations in the Mine's conservation forests to assess the corresponding changes.

Amphibians and Reptiles

Ambatovy's areas are home to 92 species of amphibians and 69 species of reptiles. The goal of Ambatovy's amphibian and reptile management activities is to ensure the continued viability of their populations in Ambatovy's areas of operation. The main activities include carrying out pre-clearance inventories and rescuing live animals to conservation forest refuge areas. Since 2007, Ambatovy has collaborated with the Department of Animal Biology of the University of Antananarivo for the implementation of the amphibian and reptile surveillance and environmental monitoring program.



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 3 for a complete list of priority species.

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 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, it has shown success in the emergence of multiple breeding ponds, new generations hatched without disease or abnormalities, and data reflecting a high survival rate. In 2017, 1,522 adults, juveniles and tadpoles were released from our breeding center into four wetland habitat receiving areas, with a 99.6% survival rate. Monthly inventories have shown an increasing presence of the Mantella in Ambatovy's conservation zones: an encouraging sign for the Mantella breeding and conservation program. For this program, Ambatovy works closely with different international and local partners, such as the Mitsinjo Association, as well as the Independent Engineers mandated by our lending banks. This work contributes to our objective of achieving no net loss, and preferably, a net gain, in biodiversity and the environment while strengthening our commitment to being a sustainable and responsible company in Madagascar.

Since 2007, the amphibian and reptile program has manually rescued 9,470 individuals belonging to 70 amphibian species and 28,467 individuals belonging to 57 reptile species from clearing areas. These rescuing activities have strengthened pioneer 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, rescuing and translocation activities will continue.

Aquatic Ecosystems

Ambatovy's aquatic management program demonstrates the full extent of our commitment to ensuring no net loss of Madagascar's unique biodiversity. The aquatic ecosystems of the Ambatovy/Analamay forestry complex consist of 11 rivers that flow into Ambatovy's lease area, and eight of them are impacted by Ambatovy's activities.

Fish species throughout Madagascar were 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 these 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 they are vulnerable as a new local endemic species. Please see Appendix 3 for a list of priority species.

Genetic analysis of the five potentially unknown 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.

The *Rheocles Mangoro* is a newly discovered endemic fish that we identified near the Mine Site. In their native habitat, these fish are sustained by local watersheds and protected from invasive species by natural barriers. Ambatovy has worked hard to sustain this species using innovative methods for rescuing, for creating and restoring habitat, and for protecting against exotic species. The presence of juveniles during this year's inventories is a welcome result of these efforts.



Bird Monitoring and Mitigation

The Ambatovy/Analamay forest complex and the Torotorofotsy Wetlands Ramsar conservation area, combined, are home to 118 species of birds, including four endangered species (*Anas melleri, Ardea humbloti, Ardeola idea* and *Sarothrura watersi*) as well as four vulnerable species and seven near-threatened species. There are 112 species of birds in the Ambatovy-Analamay forest complex, with an endemicity rate of 57%. Ambatovy works with national bird experts from The Peregrine Fund to better understand the avian communities and to implement effective management activities. Special attention is paid to bird species that nest within our clearing areas in order to avoid damaging nest sites until the fledglings have left and the adults have voluntarily migrated.

The objectives of the bird program are to gain knowledge on the specific wealth of water birds, to get an estimate of the populations' size from each species of water birds, and to conduct a bird abundance trends assessment. In addition to the inventories in the 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 nest by themselves.

In 2017, studies carried out on the presence of the bird species near Ambatovy's lakes revealed that one area in particular is home to a population of *Anas melleri*, or Meller's duck, a duck species that is endemic to the eastern coast of Madagascar and that is on the verge of extinction. The birds are now being tracked, recorded and studied in order to determine their conservation needs and the necessary actions our company must undertake to protect this struggling species.



Flora Management

Ambatovy's flora management activities are framed within the Flora Management Plan which addresses the three main topics of flora management: Species of Concern (SOCs, species which are endemic to Madagascar), Orchid Management and the Herbarium.

For our SOCs, Ambatovy's mitigation measures include inventories, identification, and rescuing with the help of the Missouri Botanical Garden (MBG). 109 SOCs are located within our conservation areas, and four in our clearing area. Of these species, five 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 rescuing program consists of whole plant rescuing (including trees), seed collection, plant propagation and the development of living collections of 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 are collected for taxonomic research.

The mitigation measure of the SOCs and endangered species in the clearing areas made it possible to inventory 3,833 SOCs and endangered species according to the IUCN Red List (2012). For orchids, as of the end of the year, 25 species observed in our sites had been classified as new to science. In 2017, an IUCN validation workshop with the Madagascar Plant Specialists Group, with the assistance of the MBG and Ambatovy's Environment team, resulted in the integration of 50 of Ambatovy's plants, including orchids, into the updated IUCN Red List.

 "Ambatovy has adopted a more rigorous, objective, and scientifically recognized global approach that will benefit everyone" –
 Pete Lowry, Director of the Missouri Botanical Garden's Africa and Madagascar Program The Aloe Leandri plant, known locally as Vahona, is a succulent plant belonging to the family Asphodelaeaes. The Vahona has traditionally been used in beauty and health care for centuries. This species of aloe is hyper-endemic, i.e., it is found only at a certain altitude within the azonal forest of Analamay, which is one of Ambatovy's mining areas and also one of our conservation zones. Recognizing the extreme rarity of this plant, Ambatovy's Environment team has been transplanting and implementing rescuing techniques for the Vahona for years. However, following the inclusion of the Vahona in the updated IUCN Red List, we are now developing a specific conservation plan to ensure this rare species continues to thrive. In 2017, more than 1,000 individual Vahona were planted in Ambatovy's conservation area, and 33 were transplanted from clearing areas to Ambatovy's arboretum.



Invasive Species

One of the most significant potential threats to areas of high biodiversity is the introduction of non-native, exotic and invasive species, which can rapidly adjust to new conditions and have an adverse effect on native biodiversity. We have processes in place to control these invasive species at the Mine, Plant and port sites. The following occurred in 2017:

- Norway rats: Extensive capture activities took place in 2016 but the program was put on hold in 2017 due to the plague outbreak that coincided in timing and location. For safety reasons, the program has been re-scheduled for 2018.
- Louisiana crayfish: Crayfish control occurred at two sites during the year. In addition to capturing the crayfish in collaboration with local villagers, who are trained as capturers, we also

organized campaigns to raise awareness about the crayfish and its impacts on agriculture, habitat and biodiversity.

- Asian toads: There was a continued effort to remove Asian toads within the site footprint of the Plant and the surrounding area. The toads are believed to have been introduced via an unidentified container from Southeast Asia at the Port of Toamasina, which is located near our Plant Site. In 2018, upon the recommendation of the Scientific Consultative Committee (SCC), we plan to support the recruitment of an invasive species specialist to provide technical advice for the control and possible eradication of the Asian toad population.
- Invasive and exotic plants: In addition to addressing invasive toads and other fauna, we are also controlling three exotic plant species at the Mine Site, including the removal of *Lantana camara*, exotic pine, and eucalyptus trees. In 2017, an exotic species removal program took place over 11 ha at the Mine Site, and three hectares of that area were planted with native tree species.

Offsets

In line with BBOP guidance and IFC Performance Standard 6, Ambatovy has developed a multi-faceted offset program comprising several 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 sustainability of expected benefits for the 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 and have implemented several community activities. We are working with community-based associations, or COBAs, to promote wardenship of forest segments as well as to decrease the economic reliance of local communities on the forest through other income-generating activities, such as fish farming, ecotourism, livestock breeding (small animal husbandry), and spice

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*	2,154	2,154	0				
Slurry Pipeline	600	600	0				
Roads/Infrastructure	100	0	0				
On-Site or Adjacent Offsets*							
1. Mine Conservation Forests	0	0	3,582				
2. Analamay-Mantadia Forest Corridor (CFAM)	0	0	3,490				
Ankerana Forest (BBOP area)	0	0	5,715				
Torotorofotsy Wetlands Ramsar Site	0	0	1,597				
Sub Totals (ha)	2,854	2,754	14,384				

*The Mine Footprint includes the mine area as well as the buffer zone.

cultivation. Ambatovy and our partners that are managing some of our offset and conservation areas conduct regular awarenessraising and education sessions in the local communities to support the responsible use of local natural resources and 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. 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.

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.

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; a presentation note for the decree to establish this new protected area is currently at the Ministry level for signature. 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 is 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. Eight COBAs were created in 2017 to continue to strengthen the protection of the Ankerana Forest's resources. Income-generating activities (IGAs) practiced by the surrounding communities continued to improve, showing a 13% increase in revenues earned by the communities. Local IGAs 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.¹¹ 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. In 2017, 12 species of lemurs, 85 species of birds, 14 species of amphibians and 18 species of reptiles were observed in the area.

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. As the community management activities only started in 2016, community involvement still remains relatively limited and further activities to improve community participation in the management of Torotorofotsy are ongoing. Following an expression of interest by communities neighboring the wetlands to participate in the management of the natural resources, the establishment of a community association was started in 2017, and two COBAs have already submitted their expressions of interest to manage their respective areas. Alternative income generating activities, to alleviate the community members' pressure on forest resources, also continued throughout the year. A severe drought heavily impacted the years' production; however, farmers were still able to sell 65% of their crops.

Restoration to a Sustainable Landscape

Ambatovy plans to restore cleared land to a multi-functional forest over the Mine's footprint through progressive reclamation and replanting. 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 250,000 plants

¹¹Entered 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.

per year for our restoration activities. Since 2010, reforestation trials have been underway to determine the best combination of flora and soil required to re-vegetate areas. In 2017, a new strategy was introduced that will double the density of replantation. In transition to this new strategy, efforts were made to step-up seed collection and seedling production at Ambatovy's nurseries. In 2017, a total of six ha of land were rehabilitated. Four hectares, located at the Mine Site waste dump, were re-vegetated using a combination of hydro-seeding and the first application of the new intensive planting method. An additional two hectares located in Vohitsara, near the Plant Site, were replanted by employee volunteers on World Environment Day.

Approach: Emissions, Effluents and Waste

Our environment program has defined objectives for air, water and noise that stem from the Environmental Impact Assessment and that are built into our operations. For each component, objectives have been established considering 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.

Ambatovy's Waste Management Plan was developed to put in place measures and procedures for correct collection, transportation, storage, and disposal of waste. Waste material ranges from industrial waste, such as scrap metal and wood, to domestic waste, such as food or office scraps. Ambatovy's waste management strategies consist of minimizing waste production and continuously improving our recycling efforts.

Performance: Emissions, Effluents and Waste 🐼 🗱

At the Mine, solid waste is sorted and disposed of in a number of ways. Vegetable food waste is sorted for composting, while meat waste is incinerated. Paper, plastic and wood are all sorted for recycling.¹²

Mine Site Waste Management, 2017						
Waste Type Quantity (m ³) Method of Elimination						
General/Domestic Waste	1,410	Incinerated				
Operational Waste	5,525	Landfilled				
Rags and Contaminated Soil	424	Incinerated				
Wood	520	Donated to COBAs				
Oil	243	Sent to Total				

At the Plant, waste is composed of ordinary and industrial wastes. These are sorted and minimized at the source. Waste is processed through the Waste Management Area located at the Plant Site, and sent on to the landfill area at the TMF and various recycling companies.

Plant Site Waste Management, 2017					
Waste Type	Method of Elimination				
Food Waste	66 259	Composted Incinerated			
Domestic Waste	15,795	Landfilled			
Industrial Waste	34,316	Landfilled			
Industrial Oil	102	Recycled by local company			

Waste materials that cannot be recycled are sent to the landfill, located 10 km from the Plant Site. Waste is made up of industrial waste, general waste and fly ash. In 2017, the amount of general waste sent to the landfill increased significantly in comparison to previous years. This was largely due to a number of Plant shutdowns and clean-up initiatives that facilitated the removal of unnecessary assets from the Plant Site. However, the volume of industrial and ash waste sent to the landfill site decreased in 2017, contributing to an overall reduction in the total amount of waste disposed. This was due to the large amount of fly ash sent offsite for recycling (fly ash is used in cement production). Reductions in overall waste disposal are consistent with a five year downward trend.

Recycling

Ambatovy strives to minimize our waste production through recycling programs. We integrate our recycling needs with a commitment to support local businesses and to promote community development. In 2017, our recycling efforts faced 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 costs they have to incur. Composting efforts were also compromised by security threats that required the temporary closure of the compost site.

The majority of our recycling concerns fly ash, wood, plastics, paper and cardboard, and industrial and domestic oils. Fly ash is collected for cement manufacturing by Holcim. Wood pallets and crates are provided to the Cultural and Social Center (CCS), a school and training center for disadvantaged youth in Toamasina, and timber is provided to the Federation of Formal Entities of Ampitambe (FIMIAM) near Moramanga. Plastics are recycled by Eco-Aide into raw plastic used in the manufacturing of domestic tools. Paper, cardboard and used frying oil are recycled by Sanitec and used in the manufacturing of water filters and domestic soap.

¹²The tables in this section for waste management at the Mine and Plant Sites have been prepared differently from previous years' reports in order to reflect our new internal processes for tracking waste management and recycling.

Ambatovy's Recycling 2015-2017 (in m ³)								
2015 2016 2017								
Fly ash for cement	59,359	62,946	59,700					
Wood	2,461	1,726	906					
Plastics	1,671	1,449	670					
Paper/Cardboard	-	-	7					
Used frying oil	2,961	2,130	2,667					

In 2017, ALBI identified the local NGOs, *Arovy ny Aina* and Love and Care (that Ambatovy's Communities and Social Relations team has already been working with), to be recipients of our food waste so that they can begin making compost for the community garden and nutrition project that they have developed to help school feeding programs for vulnerable children at several public primary schools in the Toamasina area. This collaboration will begin in 2018.

To help conserve the forests, to maximize the positive impacts of our activities in the surrounding communities and to contribute to job creation, Ambatovy signed an agreement with the Federation of Formal Entities of Ampitambe (FIMIAM), near Moramanga, to be able to donate our used timber from the Mine so that FIMIAM can recycle it in a professional and ecological way and so that FIMIAM's members have an improved source of income. The first delivery of about 10 m³ of used timber was delivered during the second quarter of 2017. FIMIAM will be giving 20% of the wood to the Commune of Ambohibary so that it can be transformed into office furniture by the Vocational School of Moramanga; two youth associations will also receive 20% of the used wood. As noted in last year's Sustainability Report, there is a similar collaboration between Ambatovy and the Cultural and Social Center (CCS) in Toamasina that got underway in 2015. This partnership, which supports vocational training for disadvantaged, vulnerable youth in Toamasina and the responsible management of used materials through recycling, was renewed during the third quarter of 2017 for a period of five years. The CCS receives used wood from Ambatovy and uses it for carpentry students to gain practical, hands-on experience. The CCS also transforms some of the wood into furniture to equip classrooms, local government offices and hospital centers, and to sell as an income-generating activity for the Center.



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 Area at the Plant Site handles incineration, separation, and encapsulation for stabilizing hazardous waste materials.

Overburden

Overburden is composed of pieces of rock and soil with uneconomic concentrations of nickel and cobalt. At Ambatovy, ore is delivered from a surface pit to the Ore Preparation Plant which is designed to separate waste material from the ore and to produce the slurry. In 2017, approximately 10.2 million tonnes of dry ore, waste and low grade materials were mined from the pits in the Ambatovy deposit, and 4.1 million tonnes of ore slurry were transferred from the Mine to the Plant Site via the pipeline.

Material Extracted in 2017				
Material Amount (in thousands of tonnes)				
Ore	7,093			
Waste	3,123			
Total	10,126			

Materials

In addition to ore, the operation of the process plant requires five key raw input commodities: ammonia, coal, limestone, naptha, and sulphur. The amounts of these commodities consumed during 2017 are as follows:

Bulk Commodities Consumed in 2017				
Commodity	Amount (in tonnes)			
Ammonia	34,892			
Coal	473,147			
Limestone	1,219,057			
Naphtha	25,764			
Sulphur	440,742			

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. Waste water from unloading activities is collected and transferred to the Plant pond where it is carefully monitored.

Tailings

We have designed and currently operate our tailings management facility (TMF) to meet or exceed all applicable regulatory requirements. It was also designed to meet the requirements of the Canadian Dam Association, the International Commission on Large Dams, and the Mining Association of Canada's Towards Sustainable Mining (TSM) Tailings Management protocol. Ambatovy has a Tailings Review Board and we work with external consultants, when necessary, for additional technical expertise.

The TMF is a long-term construction project involving the continuous raising of the perimeter dams to meet capacity needs. The first two phases of Ambatovy's TMF are currently operational. Phase III commenced in 2016 and continued in 2017. Once construction is complete, the TMF will provide sufficient storage capacity for the remaining Mine life.

The facility is designed to receive the neutralized solids from the extraction of nickel and cobalt. Once the solids settle to the bottom of the ponds, the liquid is discharged into the ocean through a diffuser that ensures maximum mixing and dilution. The diffused water is similar in composition to the surrounding sea water. To ensure that this discharge does not have negative side effects on local biodiversity, Ambatovy conducts routine monitoring of the fish, coral and plant life in the area surrounding the marine outfall area as well at Nosy Faho, an island located at the mouth of the Pangalanes Canal and which, based on an ocean current study, lies within the flow path of the outfall point. Another island, Ile aux Prunes, is used as a reference site for Nosy Faho. The monitoring of these sites, with the collaboration of the National Center for Oceanographic Research (Centre National de Recherche Océanographique) includes data collection on water and sediment quality, coral reef health, and the presence of heavy metals in fish populations. Marine outfall monitoring in 2017 showed results similar to previous years, with metal concentrations below thresholds, and an increase in coral regeneration at the Nosy Faho site: indicators that the diffusion system is operating well.

Regular environmental and geotechnical monitoring was carried out during the year to ensure continued dam and environmental integrity at the TMF. In 2017, there continued to be concentrations of manganese in water near the TMF that sometimes exceeded our compliance thresholds. Isolated incidents were caused by overflow events at the sediment containment dams, but seepage from the TMF basin remained the greatest underlying factor contributing to non-compliance. Corrective actions were implemented throughout the year, including the installation of new wells, additional pump houses and a pump-back system. Sampling campaigns, hydrogeological investigations and studies have been conducted to better understand the root cause of the problem and to design precise and effective mitigation measures. In 2017, testing commenced on a system to oxidize the manganese and remove it from the seepage water using bacterial action. An upgrade to the marine outfall discharge system is also underway to increase the rate of water removal. The monitoring for manganese continues to be done throughout every week at interception wells and compliance points. In the meantime, impacted communities have been provided a permanent alternative water supply system that is independent from potentially impacted ground water. Ambatovy continues to monitor and manage this closely and is confident in the progress made in 2017.

Approach: Water

As the global population swells, the demand for fresh water continues to grow and societal concerns about water quality and availability increase. We understand and share these emerging concerns.

Water is central to our metallurgical process for producing nickel, 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 Plan is 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 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.

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 300m³/ 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.



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.

Water Withdrawal for Operations 2014-2017							
Course	Actual Amount (m ³)						
Source	2014	2015	2016	2017			
Mangoro River	8,124,629	6,141,629	7,351,284	7,579,602			
Ivondro River	17,802,811	18,870,849	18,370,158	17,127,561			
Antsahalava Creek	-	2,413,160	1,530,508	1,442,539			
Groundwater	-	477,555	531,724	621,680			



Our water consumption in 2017 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. Water withdrawals from the Antsahalava Creek as a mitigation measure for increased chromium levels, especially prevalent during the wet season when there is heavy rainfall, continued through 2017. Options for a permanent solution are still being studied; measures utilized during the year included the continued use of a pump back system and the installation of vegetation filters. Potable water for the Plant Site originates from wells at the facility.

Erosion and silting of the Mangoro River, from which we draw water for mining operations, is a risk we take seriously. Although the erosion and silting is unrelated to our mining activities, it is in our interest to ensure the long-term viability of the river. In 2017, we continued collaborating with Prodaire, a program funded through JICA that promotes an integrated approach to rural development and environmental protection. This twoyear collaboration, which began in 2016 in the Rural Commune of Andaingo with the local NGO *Ezaka Vaovao*, will bring greater focus to reforestation and the prevention of riverbank erosion in the waterbasin area.

Approach: Air Quality

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 Ambatovy's air quality criteria, which are based on international and local criteria for air emissions. Ambatovy monitors air quality around the Plant, Mine, and ancillary structures along the following parameters: sulphur dioxide (SO₂), hydrogen sulphide (H₂S), ammonia (NH₃), nitrogen dioxide (NO₂) and respiratory particulate matter (solid and liquid particles suspended in the air that are less than or equal to ten micron, PM10). This monitoring is conducted through a fixed air quality monitoring station, wireless fixed and mobile multi-gas detectors, and isokinetic stack sampling which was introduced in 2017.

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 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:

- We chose a strategic location for the Plant Site, close to the Port of Toamasina, to lower the cost and environmental impact of transportation of products coming in and out of the Plant.
- The pipeline ensures that the ore coming from the Mine to the Plant Site is transported safely and with a relatively small environmental impact. Most of the energy needed to transport the ore slurry comes from gravity as there is a gradual decrease in elevation of approximately 1,000 meters from the Mine down to the Plant Site.
- All of our imported commodities are transported from the Port to the Plant by rail to further lower impacts on the environment and the local community.
- A fleet of electric vehicules transports workers and stakeholders around the Plant Site. The vehicles are less expensive to run and maintain, as they do not consume any diesel or lubricants, but instead use electricity produced at the Plant. They also do not create harmful emissions and use solar panels to extend their charge.
- We also have a fleet of buses that transport workers to and from our Mine and Plant Sites. This ensures that the cost of transportation is not a burden on our local employees, while also reducing individual transportation footprints.

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.



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

In 2017, Ambatovy's overall GHG emissions for the Mine, Plant and port facilities were estimated at a combined total of 1,808 kilotonnes (kt) of CO_2 equivalent, of which 1,727 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. Our emissions for the year represent a 4% decrease as compared to 2016 emissions; emissions estimates in 2017 were also the lowest GHG estimates in four years. The decrease is due to maintenance and shutdowns that reduced production at the Plant. 2017's GHGs are 67% of the estimated GHGs to be produced annually by the company, but an increase is expected as we continue to work towards full production capacity.

Material	Consumption	Unit	CO₂ emitted (in kt)
Diesel Fuel	41,405,394	L*	114.2
Coal	473,148	Т*	1,081.4
Naphtha	25,764	Т	82.1
LPG	5,217	Т	15.7
limestone	1,219,057	Т	514.4
Total Carbon Dioxides Emission		kt*	1,807.8

* L: liters; T: tonnes; kt: kilotonnes

Year	2011	2012	2013	2014	2015	2016	2017
CO ₂ eq* in kt	373.5	1,395.5	1,682.3	1,845.4	2,034.4	1,884.3	1,807.8

* eq: equivalent



In 2017, we experienced seven 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 while these incidents occurred or while they were addressed.

Noise monitoring campaigns were done during normal operations in April-May and October-November at the Plant Site. Data was collected at five Plant Site monitoring locations and at three community locations. During normal operations, noise levels at the Plant Site were consistent, and improved slightly, in comparison to the past two years. An exception was noted at the north of the Plant fence lines (measured at the continuous air monitoring station and the railcar station) where noise levels increased due to a maintenance activity conducted in April 2017, and an increase in railway traffic due to production rampup demands. Noise observations at the community locations decreased in comparison to 2016.

Environmental Spills and Incidents

Ambatovy operates an integrated reporting system for all environmental, health and safety, and security incidents. Spills and incidents are tracked and documented as part of the internal compliance reporting process using the guidelines below. In 2017, there were no high-severity environmental incidents at Ambatovy; in fact, there have been no highseverity environmental incidents recorded since the first quarter of 2015. Reportable environmental incidents require the notification of local regulators due to permit or license exceedances. In 2017, there were 25 reportable environmental incidents; many were associated with extremely heavy rainfall events, ongoing issues meeting water quality criteria (exceedances), minor oil spills, small brush fires, and minor air emissions.

Level	Consequence
Minor	On-site: Near-source confined and promptly reversible impact (typically a shift).
Medium	 On-site: Near-source confined and short-term reversible impact (typically a week). Off-site: Near-source confined and promptly reversible impact (typically a shift).
Serious	 On-site: Near-source confined and medium-term recovery impact (typically a month). Off-site: Near-source confined and short-term reversible impact (typically a week).
Major	 On-site: Impact that is unconfined and requiring long-term recovery, leaving residual damage (typically years). Off-site: Near-source confined and medium-term recovery impact (typically a month).
Catastrophic	 On-site: Impact that is widespread-unconfined and requiring long-term recovery, leaving major residual damage (typically years). Off-site: Impact that is unconfined and requiring long-term recovery, leaving residual damage (typically years).



Labor

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, 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 to providing 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 for drugs and alcohol on site, Anti-Corruption and Human Rights. Regular audits of our active suppliers ensure their compliance with these contractual obligations.



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.

56 employees at the Mine were awarded long-service awards during a ceremony that was held in Moramanga in early June 2017. In Madagascar, these awards are offered to employees with a certain number of years of service. They are acknowledged by the State and provide different benefits related to social security and retirement. They are evidence of the employees' commitment, dedication and hard work both to Ambatovy and to the country.

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 3,377 workers, 93% of whom are Malagasy. Including our contractors' employees, our operations directly and indirectly employ more than 9,000 people. During 2017, Ambatovy continued to recruit people to support the ramp up of our operations and to fill some specific, critical positions. We also continue to promote recruitment internally; in 2017, 27% 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 2017							
National Expatriate Total							
Direct Employees	3,151	226	3,377				
Operational Contractors	5,048	617	5,665				
Total	8,199	843	9,042				

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 reviewbased 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 and accident insurance. The company will also cover expenses and repatriation services for funerals in the event of death of an employee, and will provide leave and a traditional payment in the event of the death of a close relative.

Diversity in the Workplace

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 2017, approximately 13% of our direct employee workforce was female, and 4% of non-administrative roles companywide were filled by women.

Age and Gender Diversity per Employee Group for Direct Employees, 2017							
Age	Und	Under 30 30-50 Over 50					
Gender	Male	Female	Male	Female	Male	Female	
Expatriate	6	0	144	12	59	5	
National	493	110	2,054	299	187	8	

Training, Capacity Building and Skills Transfer

Continued investment in skills development remains a priority for Ambatovy. Ambatovy offers training programs in safety, mining and processing operations, maintenance trades 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 onthe-job instruction. 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 2017, our employees spent 156,040 man-hours in training.

Subject	Man Hours			Number of trainees		
	2015	2016	2017	2015	2016	2017
Health and Safety	48,017	44,690	77,318	5,099	4,400	4,941
Maintenance	42,389	47,066	58,861	847	1,662	1,444
Operations	2,973	4,060	6,769	497	160	316
Leadership & General Administration	14,871	23,109	10,707	899	739	2,039
E-Learning	498	1,303	2,385	1,425	382	858
Total	108,748	120,228	156,040	8,767	7,343	9,598



Ambatovy training is competency-based, which means that skills learned in SkillMine are assessed on the job by a trainer to ensure the learner is able to perform the task safely in a workplace situation. Some training (particularly safety courses) requires a refresher every two years to ensure competency is maintained at the highest level.

Ambatovy trainers are provided with ongoing skills development. In 2017, 48 trainers from the Human Resources and Health and Safety departments at the Mine and Plant Sites completed courses in Learning Material Design and Development; Facilitation Skills; and Workplace Assessement. This training will help increase the quality of our training programs.

In 2017, we introduced a comprehensive leadership development program to build Malagasy leadership skills. This new program is supported by talent management initiatives to identify highpotential Malagasy employees and facilitate their progression into leadership roles. Such activities include talent reviews, leadership assessments, individual development planning and a mentoring program.

The development of trades training programs to reinforce the technical skills of Malagasy maintenance employees at the Mine and Plant Sites also started in 2017. The full program will be implemented in 2018.





In order to meet our needs for certified welders, Ambatovy set up a specific training program to train Malagasy employees according to international standards. "The job of a welder requires very specific skills and qualifications", said Menja Rakotonirina, Mechanical and Lifting Training Coordinator at the Ambatovy Training Center. "Ambatovy's welder training program allows the company to have the technicians required for the operations, and to develop highly skilled national workers." As a reminder: during the construction phase of the pipeline, Ambatovy had to bring in hundreds of foreign skilled welders due to the lack of local competencies.

Ambatovy's welder training program complies with international standards and provides national welders with the same level and quality of training they can receive abroad. To date, 37 national employees have been trained and qualified as certified welders with different specializations. In 2017, the program had two employee-apprentices seeking qualification in titanium welding every three weeks until the end of the year. Apprentice welders must undergo a threemonth basic training course before going to the field to gain experience. They can then apply for certification for specific welding tasks with the certification body. "Training welders is one of the most costly training programs due to the high cost of welding equipment and consumables," said Menja Rakotonirina.

While the certification of welders is very expensive, it is necessary to comply with international standards. Certification, once obtained, must be renewed every two years by an independent body.

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 labormanagement 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 nonunionized employees. We recognize and encourage the right to engage in free association and collective bargaining. As with all of our relationships, we strive for productive and mutually beneficial outcomes in our discussions with employees and their organized labor representatives.

New employee representatives were elected to the Work Council in mid-2016 and will serve for a two year period. The main objective of the Work Council is to collaborate with all stakeholders in order to have an efficient dialogue between the employer and employee representatives. A process that began in previous years to put a collective bargaining process in place advanced in 2017. In May, a collective bargaining framework was signed with the Work Council members, and a list of employee aspirations was received in October 2017. This list was analyzed and considered in preparation for the first collective bargaining session to be held in 2018. Once in place, the Agreement will apply to all DMSA and AMSA national employees.

In addition to this important role of fostering dialogue, the Work Council aims to renew employees' sense of belonging to the company in order to ensure that Ambatovy remains an employer of choice in Madagascar. Towards that end, the Work Council initiated several activities including: the start-up of some sports, social, and cultural activities (football, volleyball, pétanque, etc.) in order to bring employees together and to encourage teamwork; the organization of a Talent Show, presented during holiday parties, to highlight employees' talents and focus on making Ambatovy a fun and pleasant place to be; and the re-introduction of the Food Committee to improve the quality of catering services. The Work Council and Staff Delegates will continue to act as partners with Ambatovy Management in order to improve the social and employment conditions of employees so that, as per the Work Council motto, "Together, let's aim for the best - for our company and for each employee".

When labor grievances 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 2017, eight grievances related to working conditions were reported, which is comparable to the previous two years of reporting. Four complaints were against a supervisor or coworker, three complaints related to health and safety, and one case was regarding a job evaluation. All eight cases were addressed and resolved during the calendar year. There were no work stoppages as a result of labor unrest in 2017.

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 2017, our Internal Communications team steered its activities toward 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.

Reinforcing the Employee Community

Continuing to strengthen the employee community is an important aspect of Ambatovy's employee engagement process. Engaging our employees to help them understand their importance and role in the success of the company continues to remain vital, especially during the challenging times currently facing our industry. The "We are Ambatovy"



In order to highlight our commitment to sustainability and to share information about our various programs to protect the environment and to support communities, Ambatovy celebrated "Sustainability Month" for the first time during the month of June. Sustainability Month coincided with the celebration of our operator Sherritt's 90th anniversary and aligned with World Environment Day, which is celebrated globally on June 5th 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, over 150 employees participated in a tree planting event, and "Share and Learn" sessions were organized with employees on the topic of sustainable development. With the success of last year's celebration, Ambatovy plans to organize Sustainability Month again in 2018 and would like to make it an annual tradition.

initiative continued in 2017, pulling together 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 2017, for example, the group donated colorful lanterns to underprivileged children in Toamasina for the celebration of Madagascar's Independence Day (it is a tradition for kids to carry lanterns around that day) and donated school supplies at a local primary school.

Employee Volunteer Initiatives

Ambatovy encourages employees to volunteer their time in community initiatives as a way to demonstrate that we are a responsible company, to express our 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 2017, about 140 employees from the Mine and Plant Sites volunteered to assist communities affected by Cyclone Enawo and helped to remove debris. 22 employees also participated in a training given by the local NGO *Mamizo* in order to become part of our pool of Peer Educators in Moramanga in the fight against HIV/AIDS.

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 and occupational diseases 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 and risks, implements controls, monitors performance, and assigns appropriate accountabilities. It also oversees training, work authorization and reporting for occupational incidents and diseases. We report health and safety performance on a continuous basis to management in order to ensure safe operations and 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

There have been several changes and improvements made to our HS program since 2016 because of the fatalities and Lost Time Injuries (LTIs) that occurred in 2015. An HS Plan was developed that was designed to increase hazard awareness, improve performance and strengthen safety culture. It includes leader walks around sites to set the tone from the top, proactive health and safety communications activities, workplace inspections, training, and standards development. As a result of these efforts, we continued to improve our safety performance in 2017 for the second consecutive year, with marked improvements in all injury and medical treatment injuries. We experienced no work-related fatalities at our sites during the year and the All Injury Frequency Rate (AIFR) dropped from 1.31 in 2015 to 0.60 in 2017, which was below our target for the year and the lowest in Ambatovy's history. We continue to work on embedding these initiatives deep within the organization and building a strong safety culture, including consolidating our conformance with Fatality Prevention Standards through an internal risk-based approach and monthly auditing practices. These efforts further support a safer workplace by removing or reducing fatal risks at our sites and unsafe behaviors.

The introduction of three initiatives in particular, has helped us reach this level of performance: "safety interactions", "leadership in the field" and "significant potential incidents" (SPIs).

"Safety interactions" are moments throughout the day during which discussions on behavior related to health, safety and compliance with procedures take place. All Ambatovy leaders at the supervisory level and above were required in 2017, as they were in 2016, to have a certain number of safety interactions with their colleagues, depending on their role and position, and to incorporate them into the Ambatovy Incident Management System (AIMS). Over 226,000 interactions between leaders, workers and contractors were recorded across our operating areas during 2017. We have found that the safety interactions have been extremely helpful to bring about behavior change, improve practice, and encourage a mind-set change about the importance of health and safety; they also reinforce the important message that "safety begins with me".

"Leadership in the field" is an Ambatovy initiative that started in the second quarter of 2016. It is a dedicated time for leaders to spend in the field interacting with employees to give positive reinforcement or to discuss opportunities for improvement in terms of daily safety behaviors and respect for procedures. The time is used to set, establish, and reinforce expectations on critical safety issues and to review our performance in key safety areas. It also allows time for employees to interact with their leaders and to express their opinions and concerns. The aim is to ensure there is two-way communication of expectations, concerns and ideas in order to improve the safety of everyone who works at Ambatovy. Some of the topics discussed during 2017 include: Take 5 (take five minutes to think about safety before doing the job), first aid responders, line of fire, Fatality Prevention Standards, housekeeping, etc.

In 2017, we continued recording SPIs, defined as actual or nearhit incidents that, under different circumstances, could have reasonably resulted in at least one fatality.¹³ In 2017, there were 16 SPIs reported at Ambatovy. They were investigated in the same manner as fatalities. Detailed investigations to understand the cause(s) of each incident were undertaken, and actions to prevent recurrence were identified and implemented. The most common types of SPIs in 2017 related to light vehicles, contractor maintenance, heavy mobile equipment, process safety, and working at heights. We are focusing on efforts to identify and strengthen critical controls in these areas at our sites, and to improve hazard assessments and safe behaviors.



In order to increase the skills and safety performance of employees, to better prepare them for possible dangerous situations and adverse conditions in the field, and to help familiarize them with heavy and sophisticated equipment, Ambatovy installed a new driving simulator at the Mine Site during the first guarter of 2017. The simulator reproduces the functions of surface extraction vehicles, such as loading trucks, excavators, and bulldozers, and under different climactic conditions, in order to expose heavy equipment operators to the various hazards they can come across in the field. The use of this simulator has been included in the training curriculum for both new and veteran operators, and allows employees to practice difficult maneuvers without the risk of personal injury or accidents

¹³The first full year of recording SPIs was in 2016.

Our Senior Management team is confident that the important work done in 2017 will continue to support the further development of our safety culture and will reduce the exposure to potential critical risks for our workers and contractors. Our target continues to be achieving zero harm for our employees, contractors and community members in the zones where we operate. Efforts in 2018 will focus on:

- Consolidating our conformance with the 11 Fatality Prevention Standards;
- Continuing to report and investigate SPIs in order to learn from high risk, near-miss incidents;
- Implementing an audit program throughout our operations areas;

- Implementing a Process Safety Management System;
- Aligning HS standards and practices between the Mine and Plant Sites;
- Enhancing the quality of safety interactions, and tracking them through leaders' Key Performance Indicators and mentoring;
- Embedding key HS management system standards practices, such as incident management, risk management, contractor management, management of change, and training;
- Holding our contractors accountable for adherence to the same standards, controls, improvements, preventive activities and an HS culture as we do for our own workforce.



Objectives

- Provide and promote products that are produced and consumed in a socially, ethically and environmentally responsible manner.
- Maintain ISO 9001-2008 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 9001-2008.¹⁴ 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. 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. The re-certification audit outcomes were excellent. We achieved zero non-conformities, 17 strong points and four opportunities for improvement. With these results, the external auditor was able to announce the renewal of our certification against the new standard. The renewed certification demonstrates our commitment to quality and to our customers.



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 byproducts. 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, India, 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

¹⁴The 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.

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; formerly the Cobalt Development Institute) 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.

In May 2017, Ambatovy made a presentation at the annual meeting of the Cobalt Institute in Marrakech. The presentation focused on Ambatovy's partnership with UNICEF over the past several years, and our work with the agency in the areas of child protection, education and youth development. There was particular interest in this topic in the wake of the Amnesty International report that was published in 2016 that highlighted the use of child labor and hazardous working conditions in cobalt mines in the Democratic Republic of the Congo, and given the importance of being able to demonstrate responsible sourcing and to meet the growing requirements and demands of end-users in the area of ethical supply chain management.

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.

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

"Initially formed in 2014, our Sustainability Division was created to ensure that sustainability is a shared responsibility throughout the company and to provide specific and directed leadership to our sustainability activities."

Dear Reader,

2017 was a year of strengthening our existing programs in order to ensure that we continue to meet and uphold our sustainability commitments to the Government of Madagascar, communities, our shareholders and lenders, and other stakeholders. This included a review of the Sustainability Division's own objectives, approaches, and internal organization. Initially formed in 2014, our Sustainability Division was created to ensure that sustainability is a shared responsibility throughout the company and to provide specific and directed leadership to our sustainability activities. Assessing and taking stock of our Division is part of Ambatovy's commitment to continuous improvement and is in line with best practice.

As described in more detail in this report, some of the highlights for the year for our company in terms of sustainability include:

- An emphasis on continuing and reinforcing partnerships to support our communities in their sustainable development.
- The maintenance and strengthening of our social and environmental programs to meet obligations and expectations in terms of our sustainability performance.
- The launch of a Whistleblower system to allow our employees to anonymously report issues related to health and safety, good governance and corruption, harassment and misconduct.
- A reassessment of the IUCN Red List as it pertains to Ambatovy's surrounding biodiversity, resulting in the inclusion of 50 new plant species in an updated list.
- The further development of the Ambatovy Environmental Management System (AEMS) to incorporate the Physical and Engineering Environment Management Plans for the Mine and Plant Sites, in addition to the Biodiversity Management Plan.

Moving forward, the Sustainability Division will continue to make sure that we are fully compliant with regards to all of our social and environmental commitments, and that we maintain an effective and robust stakeholder engagement program. We will also seek to strengthen our coordination, communication and outreach with other divisions and departments across the company since, in our view, Sustainability depends on the business as a whole and involves all members of the Ambatovy community.



Philippe Beaulne Vice President, Sustainability

As our initial social and environmental programs begin to mature, we, as a Division, are looking ahead and reviewing how we can ensure that our investments in these areas will be sustainable over time, that our efforts can have significant, lasting and positive impacts, and that we foster community ownership and self-reliance. Towards that end, we are adopting a Results-Based Management approach to our work.

We look forward to working with all of our stakeholders in 2018, to improving our sustainability performance even further, and to contributing to a bright future for our company and for Madagascar. Sustainability is truly at the heart of our company's actions, whether it is through our mining and refining operations, our community engagement, or our extensive biodiversity protection measures. We are confident that Ambatovy's legacy will be one of growth, prosperity, and sustainable development and will continue to be felt for generations to come.

Thank you for taking the time to read our report.

Sincerely,

In

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.

1 poverty ∭a∰∰a∰

End poverty in all its forms everywhere

- One of the biggest private sector employers in Madagascar
- Approximately 9,000 employees, both direct employees and operational contractors; 93% of our direct employees are Malagasy
- Hiring practices that emphasize hiring 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

3 GOOD HEALTH AND WELL-BEING

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 residents wishing to further their education
- Collaboration with UNICEF on the construction of ecofriendly schools
- Training and capacity building for school administrators in our zones
- Training and leadership development for our employees

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

6 ELEANWATER Ensure viability and sustainable management of water and sanitation for all

- Support of Water User Associations 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 employeemanagement interactions
- Requirements for our contractors including respect for health and safety standards and procedures
- Active contracts with more than 550 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 response to the plague epidemic

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 school and community level for communities surrounding our conservation zones
- Awareness-raising on the damage caused by slash-andburn 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
- 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

17 PARTNERSHIPS FOR THE GOALS	Strengthen the means
æ	of implementation and revitalize
ED .	the global partnership
	for sustainable development

- Extensive partnerships supporting our activities in health, education, social development, and the environment
- 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 Industrial Union (Syndicat Industriel de Madagascar, SIM) and the Madagascar Business Association (Groupement des Enterprises de Madagascar, GEM). We also engage with international industry bodies, such as the Nickel Institute and the Cobalt Institute through our operator, Sherritt International Corporation.

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 and to develop sustainable operations. These partners include:

International

- 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)
- 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)
- Wildlife Conservation Society (WCS)

National

- Action et Développement
- 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)
- 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 Centre (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
- Fianakaviana Sambatra (FISA)
- Fifanampiana Kristiana ho an'ny Fampandrosoana eto Madagasikara (FIKRIFAMA)
- Fikambanambe Mivondrona Ampitambe Mahatsara (FIMIAM)
- 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)
- Love and Care Organization
- Maison des Jeunes Moramanga
- Malagasy Red Cross Society
- Mamizo
- Man and the Environment (MATE)
- Mitsinjo Association
- Museum of Art and Archeology of the University of Antananarivo (ICMAA)
- Ny Sahy
- Ombona Tahiry Ifampisamborana Vola (OTIV)
- Private Sector Humanitarian Platform of Madagascar
- SAF/FJKM
- St. Gabriel
- Syndicat Industriel de Madagascar (SIM)
- Tourism Office of the Alaotra Mangoro Region (ORTALMA)
- University of Antananarivo
- Vahatra
- Voahary Voakajy
- Vohimanana

Appendix 3: Priority Species

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

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

OTHER MAMMALS			
NAME	STATUS	LOCATIONS	
Microgale jobihely	EN	Mine footprint, Mine conservation zone, CFAM	

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

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

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

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

Appendix 4: GRI Content Index

	GRI Content Index		
GRI Standard	Disclosure	Report Page	Omission
GRI 101: Foundation [GRI 101 does not include any disclo	osures]		
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	74	
	102-4 Location of operations	10	
	102-5 Ownership and legal form	14	
	102-6 Markets served	61	
	102-7 Scale of the Organization	10	
	102-8 Information on employees and other workers	54	
	102-9 Supply Chain	29	
	102-10 Significant changes to the organization and its supply chain	8	
	102-11 Practitionary principle or approach	41	
	102-12 External initiatives	23	
	102-13 Membership of associations	23, 66	
	102-14 Statement from senior decision makers	6, 62	
	102-15 Key impacts, risks, and opportunities	20	
	102-16 Values, principles, standards and norms of behavior	10	
	102-18 Governance structure	14	
	102-40 List of Stakeholder groups	17	
	102-41 Collective bargaining agreements	56	
	102-42 Identifying and selecting stakeholders	17	
	102-43 Approach to stakeholder engagement	16	
	102-44 Key topics and concerns raised	16	
	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	70	
	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	69	
	102-56 External Assurance	8	

Material Topics			
Economic Performance			
GRI 103: Management approach	103-1 Explanation of the material topics and its Boundary	28	
2016	103-2 The management approach and its components	28	
	103-3 Evaluation of the management approach	28	
GRI 201: Economic Performance	201-1 Direct economic value generated and distributed	28, 29	
2016	201-4 Financial assistance received from government		N/A ¹⁵
Indirect Economic Impacts			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	28	
2016	103-2 The management approach and its components	28	
	103-3 Evaluation of the management approach	28	
GRI 203: Indirect Economic	203-1 Infrastructure investments and services supported	30	
Impacts 2016	203-2 Significant indirect economic impacts	29	
Procurement Practices			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	28	
2016	103-2 The management approach and its components	29	
	103-3 Evaluation of the management approach	29	
GRI 204: Procurement Practices 2016	204-1 Proportion of Spending on local suppliers	29	
Anti-Corruption			•
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	25	
2016	103-2 The management approach and its components	25	
	103-3 Evaluation of the management approach	25	
GRI 205: Anti-Corruption 2016	205-1 Operations assessed for risks related to corruption	26, 29	
	205-2 Communication and training about anti-corruption policies and procedures	26	
Water			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	49	
2016	103-2 The management approach and its components	49	
	103-3 Evaluation of the management approach	49	
GRI 302: Water 2016	303-1 Water withdrawal by source	50	
	303-2 Water recycled and reused	49	
Biodiversity			•
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	41	
2016	103-2 The management approach and its components	41	
	103-3 Evaluation of the management approach	41	
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	
	304-3 Habitats protected or restored	45	
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	67	

¹⁵Not applicable: Ambatovy does not receive financial assistance from the government.

Emissions			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	50	
2016	103-2 The management approach and its components	50	
	103-3 Evaluation of the management approach	50	
GRI 305: Emissions 2016	305-1 Direct GHG emissions	51	
Effluents and Waste		I	
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	47	
2016	103-2 The management approach and its components	47	
	103-3 Evaluation of the management approach	47	
GRI 306: Effluents and Waste 2016	306-2 Waste by type and disposal method	47	
	306-3 Significant spills	52	
	306-5 Water bodies affected by water discharges and/or runoff	49	
Environmental Compliance		I	
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	41	
2016	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	29	
Employment			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	53	
2016	103-2 The management approach and its components	53	
	103-3 Evaluation of the management approach	53	
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	54	
Occupational Health and Safety		· · ·	
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	57	
2016	103-2 The management approach and its components	57	
	103-3 Evaluation of the management approach	57	
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	58	
Training and Education			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	54	
2016	103-2 The management approach and its components	54	
	103-3 Evaluation of the management approach	54	
GRI 404: Training and Education	404-1 Average hours of training per year per employee	55	
2016	404-2 Programs for upgrading employee skills and transition assistance programs	55	
	404-3 Percentage of employees receiving regular performance and career development reviews	54	
Human Rights			
GRI 103: Management Approach	103-1 Explanation of the material topics and its Boundary	23	
2016	103-2 The management approach and its components	23, 26	
	103-3 Evaluation of the management approach	23	
GRI 412: Human Rights Assessment 2016	412-1 Operations that have been subject to human rights reviews or impact assessments	26	
	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	

Local Communities				
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	31		
	103-2 The management approach and its components	31		
	103-3 Evaluation of the management approach	31		
GRI 413: Local Communities 2016	413-1 Operations with local community engagement , impact assessments, and development programs	31		
	413-2 Operations with significant actual and potential negative impacts on local communities	31		
Customer Health and Safety				
GRI 103: Management Approach 2016	103-1 Explanation of the material topics and its Boundary	60		
	103-2 The management approach and its components	60		
	103-3 Evaluation of the management approach	60		
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	60		

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

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

About Forward Looking Statements

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 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

from those expressed or implied by such forward-looking information. Key factors that may result in material differences between actual results and developments and those contemplated by this document include business, economic and political conditions in Madagascar. Accordingly, readers should not place undue reliance on forward-looking information. The forward-looking information contained in this document is made as of the date hereof and Ambatovy undertakes no obligation to update publicly or revise any forward-looking information, whether as a result of new information, future events, unexpected occurrences affecting the statement afterwards, or otherwise, except as required by applicable securities laws. The forward-looking information contained herein is expressly qualified in its entirety by this cautionary statement.





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