Mineral rights to human rights:
mobilising resources from the Extractive Industries for water, sanitation and hygiene

Case Study: Madagascar

WaterAid

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October 2018

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Cover photo: Rochel, 8, and Léonie, 4, children of Francine, washing their hands by their toilet in Ambohijafy Village, Mangasoavina Commune, Ankazobe District, Analamanga Region, Madagascar. January 2018. Credit: WaterAid/ Ernest Randriarimalala

Glossary and abbreviations	
ANCIB	Anti-Corruption Independent Bureau
BAT	Bottleneck Analysis Tool
BF	'Bornes-Fontaines'
BP	'Branchements Particuliers'
CSO	Country Status Overview
DRM	Domestic Resource Mobilisation
EI	Extractive Industries
EIA	Environmental Impact Assessment
FDI	Foreign Direct Investment
FPMH	'Forage Equipé de Pompe à Motricité Humaine'
FTT	Flat Tax on Transfer
GDP	Gross Domestic Product
INSTAT	National Statistics Institute
ITWA	Income Tax on Wages and Assimilated
JIRAMA	Jiro sy Rano Malagasy
JMP	Joint Monitoring Program
LMIA	Large Mining Industries Act
MAF	Mining Administration Fees
MDG	Millennium Development Goal
MECIE	Law to ensure investments are compatible with the environment
MEAH	Ministère de l'Eau, de l'Assainissement et de l'Hygiène
MEEH	Ministère de l'Eau, de l'Energie et des Hydrocarbures
MGA	Malagasy Ariary
MNE	Multinational Enterprise
MSG	Multi-Stakeholder Group
N/A	Not available
OAFL	Organic Act on Finance Law
ODA	Official Development Assistance
OMNIS	Office des Mines Nationales et des Industries Stratégiques -Office of National Mines and Strategic Industries
PEE	Environmental Commitment Plan
PPMH	'Puits Equipé de Pompe à Motricité Humaine'
QMM	QIT Madagascar Minerals
SDG	Sustainable Development Goal
USD	United States Dollar
VAT	Value Added Tax
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WSP	Water and Sanitation Program

1. CONTEXT

The United Nations (UN) Addis Ababa Action Agenda, the outcome of the Third Financing for Development Conference in 2015, states that "for all countries, public policies and the mobilisation and effective use of domestic resources, underscored by the principle of national ownership, are central to the common goal of sustainable development, including achieving the sustainable development goals."[1] Domestic Resource Mobilisation (DRM) is often at relatively low levels in developing countries, and in the current economic context, marked in particular by the volatility of commodity prices, there is an increasing focus on how DRM can better support and finance national efforts to reduce poverty and achieve shared prosperity.

Mineral-rich countries paradoxically have some of the highest number of people living in poverty. The World Bank estimates that for more than 80 countries non-renewable mineral resources play a dominant role in the economy, and that these countries include nearly 70% of people worldwide living in extreme poverty. High international commodity demand has offered the opportunity for substantial benefits, but these benefits are not always sufficiently shared at national or local levels, or used effectively to reduce poverty. Poor management of natural resource wealth is also a cause of corruption, environmental damage and conflict.

While progress has been made in recent years towards better governance and sustainable development of the EI sector, a large proportion of people in mineral-rich countries still face extreme poverty, malnutrition, lack of access to clean, safe water and sanitation, and remain vulnerable to natural disasters and preventable diseases. Despite the availability of domestic and international finance, including revenue from the EI, there are still major financing gaps to address these development challenges and achieve the Sustainable Development Goals (SDGs).

Improving DRM can bring multiple benefits: strengthening government fiscal positions, reduced exposure to the volatility of Official Development Assistance (ODA), increasing the pace of government policy, strengthening accountability and achieving greater development impact countrywide. In mineral-rich countries, effective DRM for sustainable development, including SDG 6, which focuses on clean and safely-managed water and sanitation, depends on a strong and positive contribution from the EI sector.

Since 2010, the UN General Assembly explicitly recognised the human rights to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights. Therefore, it is important to assess whether mineral-rich governments are doing enough *vis-à-vis* their responsibilities towards the EI sector, and whether there is an opportunity to capture and channel increased resources for sustainable development.

2. SCOPE OF THE WORK

This study examines the extent to which the EI sector, through its contribution to the economy and government revenues, has enabled socially-productive spending and investment in the water, sanitation and hygiene (WASH) sector in Madagascar.

This was achieved through analysis of the EI contribution to government revenue and its resultant impact on the capacity of government to spend, invest and extend coverage in the WASH sector.

As stated in the Terms of Reference, the study includes data collection, research and analysis covering the following areas:

[1] http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf

- Government budget and spending data, segregated by sector; past and current data in regard to the budget allocated to the WASH sector from government revenue, development partners, non-governmental organisations and communities;
- Assessment of the fiscal space granted to government by the EI for spending and investment on WASH and other social sectors. This includes an assessment of historical and current budget deficits or surpluses and in particular how this affected planned spending and unplanned government responses to unanticipated WASH or other sector needs;
- Past and current allocations and expenditure to the WASH sector, how successful this has been in extending WASH coverage, and whether the current spending and investment path is likely to be adequate for achieving SDG 6 and national WASH targets. This includes assessment of national WASH plans, allocated budgets, funding flows, implementation arrangements and capacity;
- The transparency of the sector, including information on whether the country is compliant with the Extractive Industries Transparency Initiative (EITI), and an assessment whether joining the EITI programme contributed to improvements in natural resource management and administration;
- Assessment of the strengths of government institutions and systems at national and local levels, and the effectiveness of the administrative regime for the EI; study of the impact of the EI on the environment, including water resources, and, where relevant, on conflict; and assessment of the short, medium and long-term outlooks for EI, taking into account key domestic and international factors, including commodity supplies, demands and prices, national sustainable development needs, ongoing or planned diversification of the economy and the climate change agreement of Paris (COP 21);
- Development of recommendations for governments, EI and civil society groups, which will help strengthen the contribution of natural resource wealth to sustainable development and the achievement of SDG 6 and national WASH targets.

3. KEY CHALLENGES

3.1. Data availability and quality

The availability and quality of data was one of the main constraints for the study. The necessary data is not readily available in one location, but is rather held across several ministries and institutions. Additionally, the reliability and consistency of the data cannot always be assured: the relevant institutions are not always able or willing to make the data available. This was mainly due to a combination of the sensitivity of the data, cases of past corruption, as well as a lack of systematic recording of information in the institutions we approached for obtaining these data.

The Moore Stephens team in Madagascar was able to find reports and information on-line, which has served as a key source for the study. The team also received relevant WASH data directly from the Ministry of Water. In addition, the team held discussions with key stakeholders, including representatives from the Ministry of Water, WaterAid Madagascar and members of the local WASH network.

3.2. Attribution and impact of EI contributions

The revenues derived from the EI sector are part of overall government budgetary revenues, which collectively fund government spending and the delivery of services and outcomes: there is no specific part of EI revenue which can be directly linked to government budgetary allocations and spending on WASH. This evaluation is therefore based on the identification of the main trends in the contribution of the EI sector to government budgetary revenue, the trends in government spending and investment in the WASH sector, and any significant changes in policy and impact.

4. APPROACH AND METHODOLOGY

4.1. Countries for study

WaterAid requested that three countries be selected as case studies. The assessment and the selection criteria include: (i) resource-rich countries (ii) at least two of the countries in Sub-Saharan Africa, and (iii) a WaterAid presence in all selected countries. Based on these criteria, it was agreed to select Madagascar as one of the case-study countries.

4.2. Methodology

The impact assessment was undertaken in five main stages for each case study.

Table 1: Five stages of the methodology

1. Baseline/inception	- Collection of baseline data - Review of EI and WASH sector policies, statistics and relevant documents - Correspondence with authorities - Reports from other sources
2. Desk review/monitoring	The team carried out a desk review of available country-level documentation, following up on specific issues before starting the fieldwork.
3. Stakeholder interviews	When necessary, further data were collected through structured interviews, with a questionnaire sent to key stakeholders.
4. Validation of findings with stakeholders	The draft country report was circulated to national stakeholders for comment. It was amended on the basis of feedback received.
5. Reporting	The country case study provides information on a consistent set of parameters. This enables a cross-comparison with other case studies and relevant lessons to be learned as part of the overall three-country evaluation.

5. CONTEXTUAL INFORMATION ON THE EXTRACTIVE INDUSTRIES SECTOR

5.1. Overview of Madagascar and the Extractive Industries (EI)

Madagascar is the fourth largest island in the world, located off the south-eastern coast of the African continent.[2] The total area of the country is 587,041 km² and it is administered according to 6 provinces, 22 regions, 119 districts, 1,500 communes and 17,500 fokontany. The population was estimated at 24.9 million in 2016, growing at 2.72% a year and with 80% living in rural areas and 20% in urban areas. Nearly two-thirds of the population are under 25 years of age and nearly half under 15.

Madagascar is also one of the poorest countries in the world: it is estimated that 75% of the population live below the national poverty line. Its Gross Domestic Product (GDP) is US$9.99 billion (2016), and general government revenue 13% of GDP (2016).[3] Agriculture, including farming and fishing, accounts for about 30% of the GDP and employs about three-quarters of the workforce, many of whom are small-scale subsistence farmers. There is a significant informal sector. Madagascar is ranked 166 out of 187 countries for the Human Development Index (HDI). Madagascar's eighteen ethnic groups speak the national language, Malagasy. The literacy rate is 64.66%.

The WHO/UNICEF Joint Monitoring Programme (JMP) reported that in 2015 just over half (51%) of the national population had access to at least basic water. The statistics for at least basic water in urban and rural areas were 82% and 34% respectively. For sanitation, the JMP reported that only 10% had access to at least basic sanitation, or 16% in urban areas and 6% in rural areas. There are no estimates yet for current baselines for safely-managed water and sanitation, the SDG target 6.1 and 6.2, although it is known that they will be significantly lower than the reported access levels for access to at least basic water and sanitation.[4]

5.1.1. Mining sector overview

Madagascar combines its unique biodiversity with a wide variety of mineral resources. These include precious and semi-precious stones, bauxite, chromite, coal, cobalt, gold, graphite, ilmenite, iron, nickel, uranium and rare earth elements. In 2014 the country accounted for 2.5% of the world's mined and refined production of cobalt, 1.6% of mined nickel and 1% of mined zircon.[5]

According to the report 'Madagascar: The New Eldorado for Mining and Oil Companies':

- The French Atomic Energy Commission (CEA) began the exploitation of uranium reserves in 1946 in the areas of Vinanikarena and the river Mandraré. This continued for 22 years.
- Towards the end of the 1950s the French company 'Société de Traitement des Sables du Sud de Madagascar' (Sotrassum) mined monazite, ilmenite and zircon from the black sands of the beaches and dunes in the south-east of the country;
- Chromite has been mined in Andriamena by Comina ((Companie Miniere d'Andriamena) since 1968 (Comina became Kraoma, in 1975 following nationalisation);
- Sapphires, rubies, aquamarines, tourmaline, topaz, amethysts and emeralds have been mined informally in recent years.

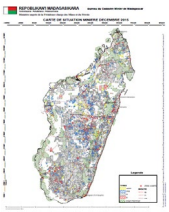
The mining sector in Madagascar has shown significant growth over recent years, with production increasing for many of the nation's minerals. According to the United States Geological Survey (USGS), crude petroleum production increased by 261%; beryl, by 59%; amazonite, by 50%; ammonium sulphate, by 49%; chromite, by 48%; refined nickel, by 47%; refined cobalt, by 40%; mined nickel, by 39%; and mined cobalt, by 31%. The production of rutile decreased by 45% in 2014; ilmenite and zircon, by 43% each; quartz, by 30%; agate, by 20%; and mica, by 13%.

[2] The three largest are Greenland, New Guinea and Borneo.
[3] World Development Indicators, World Economic Outlook, African Economic Outlook, 2016.
[4] Progress on Drinking Water, Sanitation and Hygiene, WHO/UNICEF 2017.
[5] USGS Minerals Yearbook 2014

There have also been examples of major increases in informal mining activity. In October 2016, a sapphire rush of an estimated 45,000 miners occurred at Bemainty, about 35 km east of Ambatondrazaka, Madagascar.

Mining rights are set out in the Mining Code and are categorised as follows: the Exploration Permit (PR), the Exploitation License (PE), the Permit reserved for small operators (PRE) and the Exclusive Perimeter Reservation Permit (AERP).

Figure 1: Mining zones in Madagascar, 2015

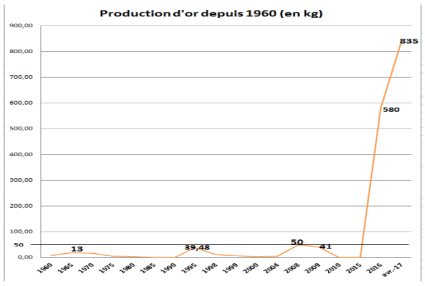


Source: EITI, 2018

5.1.2. Gold mining

The creation of the National Gold Agency (ANOR) in 2015 has brought an increase in transparency in the gold sector. Between 2012 and 2015 the Central Bank of Madagascar had a monopoly on the purchase and export of gold, though estimates suggest that there was significant illicit traffic in gold (see below). ANOR's analysis shows that the production and export of gold has increased dramatically in recent years, potentially providing significant revenue to the Government through royalty payments. However, the 2015 EITI report highlights continuing challenges in the regulation of the gold sector, including the inability of ANOR to trace activities and transactions at local level across the country. Figure 2 illustrates the growth in reported gold production. According to the report, gold exports rose rapidly in 2017 to reach 2,834 kilogrammes.

Figure 2: Gold production in Madagascar, 1960- 2017



Source : ANOR

5.1.3. Oil and gas sector review

Oil exploration in Madagascar began over a hundred years ago, when two giant oil fields, Bemolanga and Tsimiroro, were first discovered. The French company Syndicat des Études et Recherches Pétrolières (SERP) set up operations in Madagascar and started drilling for oil in the 1930s, followed by the company 'Société des Pétroles de Madagascar' (a subsidiary of Elf) in the 1950s. Additional exploration was carried out by Mobil, Occidental, Agip, Amoco, Shell, BP and Maxus on the west coast of the island after the country's independence in 1960.

Estimates suggest that of the 600,000 square miles that make up Madagascar, half of the island is potentially covered by the heavy oil-rich sedimentary basins of Morondava, Majunga and Ambilobe.[6] According to the Madagascar EITI Report 2014, all of the following blocks were at the exploration stage:

- Tsimiroro, West Manabolo, Morondava, Manandaza, held by Madagascar Oil;
- Ambilobe, held by Sterling Energy Ltd.;
- Berenty, Mandabe, held by Tullow Madagascar;
- Manja held by AMICOH; and
- Bemolanga held by Total E&P.[7]

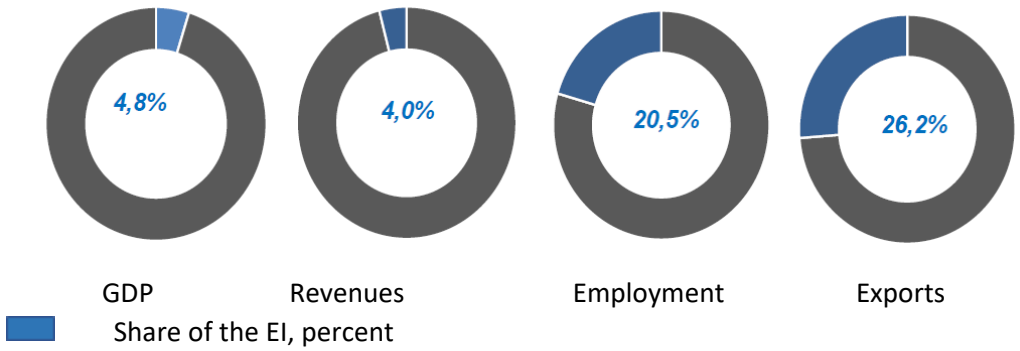
Madagascar Oil announced in April 2015 that it had been granted Madagascar's first upstream mining title, with a 25-year development licence for the Tsimiroro block. The company began the first phase of development of an oil deposit identified to hold an estimated 1.7 billion barrels. Madagascar Oil holds the largest amount of onshore exploration and production licenses in the country. Bemolanga deposit holds 16.6 billion barrels of oil in place and recoverable probable and possible reserves of 9.9 billion barrels. Although it is not as well delineated as the Bemolanga deposit, Tsimiroro is expected to hold up to 200 million barrels of potential oil.[8]

Sterling Energy Ltd. completed its withdrawal from Ambilobe block in April 2016. Exploration rights are now held by Pura Vida Mauritius, which holds a 100% stake.

5.1.4. Share of EI sector in the economy

Data from the latest Madagascar EITI Reports shows that growth in the EI sector overall is continuing, accounting for 4.8% of the country's GDP in 2015, up from 4.18% in 2014, and 3.43% in 2013.[9] It accounts for 4.0% of Government revenues, 20.5% of employment and 26.2% of exports.

Figure 3: Share of EI sector in the economy



Source: EITI, 2015

5.1.5. State ownership of the EI sector organisations

The Madagascan state owns or part owns some of the organisations operational in the EI sector. Table X below shows that there are four companies in which the government has a significant shareholding. These are Kraoma (97.2%), the Société Marbre et Granit de Madagascar (the Madagascar marble and granite company, 4.77%), Madagascar Consolidated Mining S.A.(20%) and QIT Madagascar Minerals S.A. (20%). According to the Direction Général du Trésor there was no dividend payment made by any of the companies in 2015.

[6] https://www.rigzone.com/training/heavyoil/insight.asp?i_id=285
[7] Section 2.1.2, report released in December 2016.
[8] Ibid
[9] Madagascar EITI reports, 2015 and 2014.

Table 2: State ownership of the Extractive Industries, 2015

Company	Sector	% Participation
KRAOMA	Mining	Madagascan State (97.2%)
Société Marbre et Granit de Madagascar	Mining	Madagascan State (1.12%), Province of Fianarantsoa (2.35%), OMNIS (1.30%)
Madagascar Consolidated Mining S.A.	Mining	NASSCO (National Supply and Services Company) 20%
QIT Madagascar Minerals S.A.	Mining	OMNIS (20%)

Source: Annual report of the General Directorate of the Treasury, 2014 and 2015

5.2. Reforms undertaken to increase transparency

5.2.1. Identified Challenges in the past

Public financial management in Madagascar is relatively weak and it has seen little progress over the past decade. The self-assessment of the Public Expenditure and Financial Accountability (PEFA) conducted in 2014 highlighted the urgent need to strengthen public expenditure management.[10] The reforms have not yet produced the desired results, however. Evaluation of public expenditure reveals inconsistencies between the budget forecast and budget executions, both in amounts and in their composition. With regard to expenditure, the periodic profile of budget execution is unbalanced, as most of the commitments are deferred to the end of the year. The Organic Act on Finance Laws (OAFL), which aims to address some of these issues, has been agreed by parliamentary vote, but has yet to become effective. The weaknesses in budget execution mechanisms prevent effective control and undermine the quality of public spending.

Strengthening public financial management is an essential pillar for effective recovery of the economy and delivery of essential services. Faced with the results of the 2014 PEFA, the authorities adopted a Priority Action Plan (PAP) in October 2014 to reform Public Finance Management. Progress in the implementation of the PAP can be identified, through steps taken to strengthen certain public bodies and services, including tax and customs, procurement and social security.[11] Other signs of progress include improvements to settlement legislation and public expenditure management, as well as increased transparency, the introduction of multi-year budgeting and more rigorous procurement procedures.[12]

5.2.2. Extractive Industries Transparency Initiative (EITI)

Madagascar was accepted as a candidate country by the EITI International Secretariat in 2008. This led to communication and dissemination of information related to payments and transactions in the EI sector. A National Multi-Stakeholder Group (MSG) was set up, composed of members from government, mining companies and civil society.

In October 2011, the International Secretariat suspended Madagascar as a candidate country, following the decision by the international community no longer to recognise the Government. However, in December 2011, the EITI International Secretariat expressed its confidence in the MSG to continue the implementation of the EITI Programme and to produce a reconciliation report under the 2011 standards.[13] The new report was presented to the International Secretariat on 24 September 2012. Given the efforts undertaken, the International Secretariat decided to extend the suspension of

[10] PEFA is a partnership programme, initiated and managed by seven international development partners: the European Commission, the International Monetary Fund, the World Bank, and the French, Norwegian, Swiss and UK Governments.
[11] IMF country report 16/273, August 2016.
[12] Support Programme Management Reforms Economic, March 2016
[13] The MSG appointed Ernst and Young to prepare a reconciliation report of financial flows between the State and the principal taxpayers of the extractive industry during the fiscal year 2012.

Madagascar rather than disbar the country altogether. The extension of the suspension allowed Madagascar to continue to be among the countries implementing the EITI.

On 6 June 2014, the International Secretariat lifted the suspension and restored Madagascar to the status of candidate country.[14] The reintegration of Madagascar as a candidate country was subject to conditions, including the publication of annual EITI reports, which met the requirements of the EITI.[15]

The 2015 EITI report was published in April 2018. The report provides detailed analysis of the EI sector and reconciles the declared payments by EI corporations and the receipts declared by the state. The revenues generated by the EI amounted to 124 988 million Malagasy Ariary (MGA) for the year 2015 (US$42.6 million). The report identified a difference of 17.6 million MGA (19% of total reconciled State revenue) between amounts declared by the State and those reported by EI companies, principally explained by reporting forms not submitted by some companies.

The report makes recommendations under ten different areas, including timeliness of declarations, reliability of production data, level of detail and recentness of EI data provided, publication of production sharing contracts, and updating of the EITI database.[16]

5.2.3. Anti-corruption policies

The establishment of the Anti-Corruption Higher Council in 2003 was an important milestone in the government's strategy to combat corruption. The Council was given responsibility for developing relevant corruption laws as well as designing the national strategy and institutional framework for combating corruption.[17] The Anti-Corruption Independent Bureau (ANCIB) was set up in October 2004 and given operational autonomy to drive forward the implementation of the National Anti-Corruption Strategy. This includes:

- the implementation of anti-corruption legislation;
- the prevention of opportunities for corruption in the public and private sectors;
- the education of citizens on the harmful effects of corruption and community engagement in the fight against corruption.

Through these and other measures, ANCIB seeks to enable Madagascar to become a benchmark of probity, equity and prosperity. The challenges remain very significant however with corruption contributing to the country's fragility and instability. The World Bank is currently undertaking with the agency of financial investigations (SAMIFIN) an assessment of compliance with Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) standards. It sheds light on the risks created by the large informality of the economy and the proliferation of traffics. The World Bank is planning to support measures for the justice sector and the financial sector.[18]

5.3. Institutional and legal framework for the EI

5.3.1. Institutional Framework

Table 3: Key institutions in the EI sector

[14] The International Secretariat took note of the commitment of the new government of Madagascar to implement the EITI Standard and recognised that the structures needed for effective implementation of the EITI were in place and able to be supported.
[15] Reforms undertaken as part of the 2014 EITI work plan included: publishing the licensing procedures and the list of licensees on the web; publishing the list of companies where the State is a shareholder; making public the methods of computing amounts payable to state-owned companies; publishing oil contracts; and producing a reconciliation report covering two fiscal years (2012-2013).
[16] https://eiti.org/publishers/eiti-madagascar
[17] Thus the 2004-030 Act "the fight against corruption" was promulgated on 9th September 2004 and published on 16th September 2004.
[18] World Bank, Country Partnership Framework for the Republic of Madagascar for the period FY17-FY-21, May, 2017.

Institution	Mission
Ministère auprès de la Présidence chargé des Mines et du Pétrole[19]	Ministry responsible for government policies related to the mining and petroleum sectors. Includes the former ministries of mines and hydrocarbons (see below).
Ministry of Mines[20]	Ministry previously responsible for the design, implementation and monitoring of government policies on mining.
Office of the Mining Cadastre of Madagascar	The Office's main purpose is the management of permits, including the filing of applications to their renewals and removals.
National Gold Agency	The National Gold Agency is a government entity. Its role is to support and regulate the gold sector in Madagascar. It was set up by the Ministry of Mines and Oil to counter the illegal traffic of gold in the country.
The Mines' Police	This institution's main responsibilities are to deal with all mining offences under the Mining Code. This includes tackling the traffic, possession and illegal marketing of mineral products.
Decentralised Regions[21]	These Regions and Communes receive revenue from companies operating in the EI sector.[22]
Ministry of Water, Sanitation and Hygiene (MEAH) [23]	The Ministry of Water, Sanitation and Hygiene is responsible for the design, management, coordination and implementation of the National Development Plan and general government policy in the water, sanitation, and hygiene sector. It took on these responsibilities from the former Ministry of Water, Energy and Hydrocarbons (MEEH) .
Ministry of Energy and Hydrocarbons (MEH)	The Ministry of Energy and Hydrocarbons is responsible for government policy in the sectors of energy and hydrocarbons. It was created in June 2018 following machinery of Government changes, which established MEAH, the independent WASH Ministry.
OMNIS (Office des Mines Nationales et des Industries Stratégiques)	The Office of National Mines and Strategic Industries is a state-owned agency, created in 1976. Its mission is to manage, develop and promote the national petroleum and mineral resources in Madagascar.

5.3.2. Legal framework

[19] Ministry near the Presidency in charge of Mines and Petroleum, the International Mining and Petroleum.
[20] Madagascar EITI Report 2013 published in January 2015, Section 2.4.1, states that the former Ministry of Mines merged under a ministry responsible of strategic resources.
[21] The democratic transition of the early 1990s provided the context for decentralising some powers to lower levels of the Madagascan government. Communes became the focal point of Madagascar's decentralisation strategy and central ministries increased their local presence through administrative deconcentration.
[22] Madagascar EITI Report 2014 published in December 2016, Section 7.3
[23] There has been significant machinery of government changes over recent years in the EI sector. For example, Madagascar EITI Report 2014 published in December 2016, Section 1.3.1, stated that the former Ministry of Hydrocarbon was under the management of the Ministry responsible for Mines and Petroleum.

The legal framework of the mining sector is primarily defined by the Mining Code of 1999, amended in 2005 and completed in 2007. It oversees all mining companies, except those covered in two specific pieces of legislation: the Convention of Establishment, signed between the Madagascan State and QIT-Fer et Titane Inc., and the Large Mining Investments Act (LMIA).[24] To date, only the Ambatovy Project is under the LMIA. The upstream oil sector is governed by the Petroleum Code and a 1997 decree, as well as oil contracts signed between OMNIS and relevant companies. The Petroleum Code has recently undergone a revision.[25]

In September 2014 a law came into force to differentiate between the role of the State as "public authority" and its role as "shareholder". This was designed to improve the management of relevant companies by strenthening their operational independence. The measures also concentrate state involvement on the Boards of Directors with the Finance Ministry. The law applies to regions and districts as well as central government.

(i) Mining sector

The mining sector has been governed by successive laws and amendments, dating back to 1896. These included the Law of 31st July 1896, Ordinance No. 60-090 of 5th September 1960, Ordinance No. 62-103 of 1st October 1962, law No. 90-017 of 20th July 1990 and No. 95-016 of 9th August 1995. In 1998, the Government judged that these legal texts were insufficient to optimise the contribution of the mining sector to Gross National Product (GNP), leading to the adoption of a new mining policy, through Decree No. 98-394 of 28th May 1998, and the Mining Code Law No. 99-022 of 19th August 1999.

The measures aimed to simplify and modernise the mining system, taking into account the constitutional provisions of the transfer of certain powers to the Autonomous Provinces. They also sought to align the law with the spirit of the Convention for the Environment as applied to Madagascar.[26] The 1999 law harmonised the Madagascan approach with those commonly applied in countries in Latin America, Africa and Asia. It aimed to improve the mining sector's role as one of the levers of economic development, by stimulating private investment and the involvement of private operators. Administrative fees were reformed and the state sought to exercise its control through an effective management role.

The law seeks to bring mining codes in line with international standards. It is designed to improve the management of mining permits and eliminate conflict between different parties. Under the principle of free access, mineral resources are open to all, without exception, and the first to arrive is able, under conditions specified in the legislation, to have the mineral rights to the land. The prospecting organisation has the exclusive right to prospect or research and, if discovery is made, the assurance of the right to exploit the newly found mineral resource.

The law stipulates the allocation methods for access to mineral substances on land owned by the State, the terms of acquisition, the procedure for renewal of mining licences, as well as other administrative areas.

The law focuses on the environmental aspects of mining, and integrates related measures adopted by the relevant specialist government departments. It also specifies mining offences and establishes the list of crimes and offences, and their respective sanctions. Protection of rights' holders and those of the environment, including protected areas are the focus of the new list of mining infractions.[27]

[24] For the Convention of Establishment the Madagascan Government was represented by OMNIS. It concerns the Qit Madagascar Minerals (QMM) ilmenite project.
[25] Madagascar EITI 2014 Report, Section 1.3.2.
[26] To promote the development of the country's mining potential in a healthy climate and with the support of all.
[27] The laws aim to prioritise a market economy system, characterised by the development of an attractive and favorable socio-economic environment for the domestic private sector and for foreign investment, combined with the withdrawal of the State from the productive sector. In compliance with these principles, the law limits the role of government to one of overall management, monitoring, control of licencee obligations and the application of laws and regulations on mining and the environment. The implementation of this modernisation is largely based on the establishment of a national computerised mining

This Mining Code was subsequently amended by Law No. 2005-021 of 17 October 2005.

One of the key principles of the Mining Code is that all mineral substance spots located on the surface, in the soil, water and marine depths of the National Territory are State property. The Code requires that these spots are reported to the relevant responsible authorities of central government and the decentralised territorial communities.

Prospection, exploration and mining are prohibited within protected areas. Some areas may also be declared reserved and not available for research or exploitation of minerals or fossils without the written agreement of the rights' holder of the block.

The plans governed by the Mining Code relate to prospection, exploration and exploitation of minerals, such as gold, as well as the exploration and exploitation of fossil deposits. Quarries are managed by the municipalities within whose jurisdiction they are located.

Any mining licence-holder is subject to an *environmental provision* for the rehabilitation and protection of the environment. All gold mining authorisation holders pay an *environmental assessment* fee to the issuing municipality. The licence-holder must also be committed to conducting environmental prevention and rehabilitation works on the sites of gold mining in accordance with the programmes set up by the municipality.[28]

The authorisation of gold-washing is issued by relevant municipalities in accordance with the Mining Code. Gold-washing authorisations are personal and cannot be leased, sold or transferred.

Fossil deposits are classified into three categories:

- first class fossiliferous spots that are part of the national heritage;
- fossil deposits of second order which may may be subject to permission for scientific studies and samplings; and
- fossil deposits of third order which may be subject to collection or extraction under a pickup licence or a mining licence.

Aragonite and celestite are classified as rare substances. The operating authorisation of aragonite or the extraction authorisation of celestite are subject to compliance with environmental regulations.

Decree No 2006-910 of 19 December 2006 is related to implementation of the Mining Code. The decree specifies that the grid of the entire national mining area should be set up on all mining cadastral maps at the same scale. The Office of Mining Cadastre defines the technical standards to be observed in the mining cadastre.

The resulting maps extracted from the mining cadastral maps published by the Office of the Mining Cadastre are recognised as authentic for operations on land or, in case of disputes on the delimitation of a mining perimeter.

It is a requirement that the National Committee of Mines is consulted before a reasoned Order of temporary reserve statement is issued (the Order relates to geological and environmental studies, or for the supervision of small-scale or gold miners).[29]

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cadastre (records showing the extent, value and ownership/occupancy of land) and an improved, more efficient geological database.

[28] The research permit "R licence" and permits reserved for small farmers "licence PRE" are subject to the Environmental Commitment Plan (PEE). The business licence "permit E" is subject to an Environmental Impact Assessment (EIA). Any application for an operating permit or "E licence" and/or for a mining permit for which an EIA is required, must be accompanied by a letter of commitment not to commence any mining activity before obtaining an environmental authorisation. The sale and transfer of mining permits are free to any eligible person. All individuals, regardless of nationality, are eligible to apply for mining permits, with the exception of small artisanal permits, which require that the holder be Madagascan. The holder of a mining licence may at any time waive all or part of the block subject of the permit. After operations are complete, the licence-holder can only receive permission to discharge from the authority which issued the initial environmental authorisation. It also requires *in situ* observation of the completion of rehabilitation works. Mining permit holders must receive a discharge certificate from the National Office of the Environment, which gives the environmental clearance after *in situ* observation of the completion of rehabilitation works.

[29] The absence of a reply from the National Committee of Mines is synonymous to consent that the applicant can proceed.

The filing of any application for a mining licence can be done from any office of the Mining Cadastre. The mining licence and the rights and obligations attached to it are transferable or assignable.

The non-payment of mining administrative costs or of the mining tax or fee leads to the cancellation of the corresponding mining licence. The cancellation of a mining licence is dependent on the agreement of the Mining Cadastre.

A mining permit-holder who is in dispute in the region is required to contact the mayor of the relevant municipality, the relevant district or regional manager, and possibly the National Committee of Mines or the Provincial Committee of Mines. The permit-holder can also seek a direct order from the president of the court in the relevant territorial jurisdiction for a security presence to protect the perimeter of the area covered by the mining permit.

Municipalities are responsible for enforcement of the environmental regulations applicable to the mining sector in their respective areas. Decentralised departments of the Ministry of Environment assist municipalities in enforcing these environmental protection measures.

The mining licence-holder takes on the following obligations: entering into a lease agreement with the landowner, reporting to the mayor of the municipality before the commmencement of mining activities, maintaining good relations with local populations, traditional occupants and landowners.

Ministerial Decree No. 21985-2007 of 20 December 2007 defines the methods of collecting royalties and other fees.

Madagascar has also adopted two specific pieces of mining legislation. These are: (i) the Agreement, signed between the Madagascan State and the Rio Tinto Group, and (ii) the Large Mining Investment Act. The Agreement with Rio Tinto Group is published in the Official Gazette and governs the ilmenite mining operations of the mining company QMM S.A. in the Anosy region. The Agreement sets out the participation of the State in the project, which is conducted through OMNIS, and amounts to 20% of the capital investment. The Large Mining Investment Act (LMIA) applies to any company which invests a minimum of 50 billion MGA as well meeting additional eligibility conditions.[30] It provides for temporary exemption from corporation tax, reduced tax rates on profits, capital income, property, transfers, exemption from VAT on imported goods and low or no custom fees on certain items.[31] To date, only the Ambatovy Project is governed by this law.

Some non-sectoral legislation such as the Environmental Charter, several Finance Acts and the Décret Mise en Compatibilité des Investissements avec l'Environnement (MECIE) are also applicable to the mining sector.

The Government signalled its intention at the end of 2016 that it was considering further steps to reform the Mining Code, including the creation of a national mining company (Société Nationale Minière).[32] The reforms are designed to increase taxes and royalties for the Government, but have drawn opposition from mining companies and investors. The latter have argued that the country risks losing competitiveness, especially given the lack of national infrastructure.[33] In September 2017, the Government indicated that it might not proceed with the long-debated reforms.[34]

(ii) Oil sector

The upstream (exploration and production) of oil and gas is governed by two main sectoral legal texts: Law No. 96-018 Petroleum Code 4th September 1996 and Decree No. 97-740, which covers mining exploration titles, exploitation and the transportation of hydrocarbons.

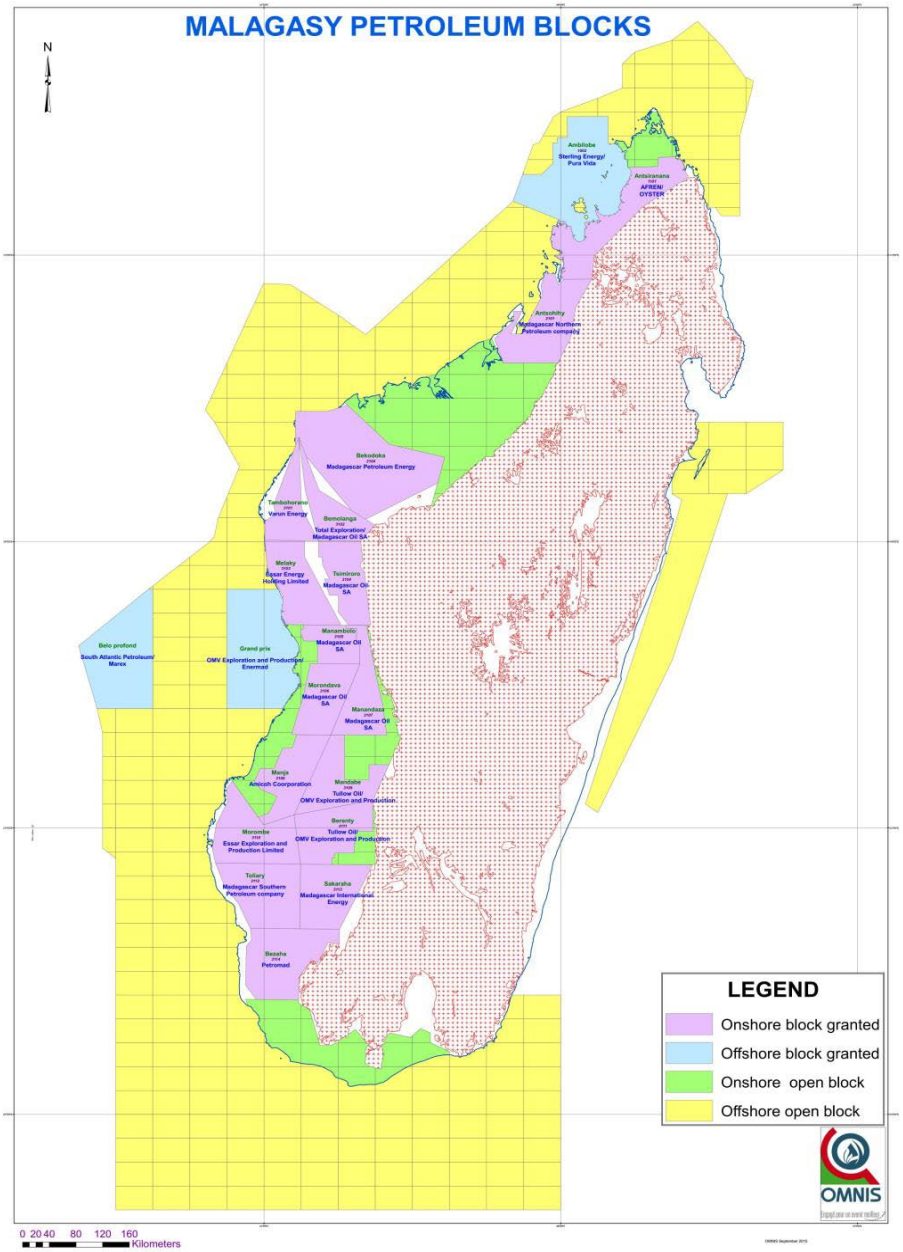
[30] Law No. 2001-031 of 8th October 2002, called LMIA, as amended by Act No. 2005-021 of 2nd August 2005 and Decree No. 2003-78408 of January 2003, setting out the conditions of their application.
[31] The law does not specify the amount of State involvement.
[32] Madagascar EITI Report 2014, Published in December 2016, Section IV
[33] News Mada, 'Reforme du code minier : menace sur l'attractivité de Madagascar', (7/07/2016)
[34] See http://af.reuters.com/article/topNews/idAFKBN1951NJ-OZATP.

Based on the principle that "the hydrocarbon deposits are not subject to private ownership", companies operating in the upstream oil sector are required to have a contract with OMNIS. This takes the form of either a Production Sharing Contract (PSC) or a Joint Venture (JV) agreement. The corresponding mining permit is issued by Presidential decree. These contracts are part of the legal regime applicable to the sector.

OMNIS assists the other contracting party in its relationship with the authorities and local governments and provides data and information concerning the scope and terms of the contracts. As for mining, several non-sectoral pieces of legislation such as MECIE are also applicable to the sector.

It should be noted that the revision of the Petroleum Code is currently under consideration. The key potential changes are: an update to the Petroleum Code to bring it to the standards of neighbouring countries, especially in East Africa; to make it more attractive to investors; to improve the transparency of Madagascan oil sector revenue streams and allow accurate and fair distribution of royalty payments received from the oil sector.

Figure 4: Onshore and offshore petroleum block allocations



Source: EITI, 2018

Beneficial ownership

The Madagascar EITI 2014 Report confirms that the country has no public registry of the actual beneficial owners of companies operating in the Extractive Industries (EI) sector. The Ministry of Commerce collects information on shareholders, but this falls short of providing information on beneficial ownership. Twenty-five companies wilfully provided information on their legal owners to the EITI Independent Administrator. In some cases, owners are individuals, but the report does not specify whether they are legal or beneficial owners.

Neither the government nor the legislature has yet ruled on their position regarding the disclosure of beneficial ownership in the EI sector. The National Committee of Mines is still considering the best strategy for the disclosure of beneficial ownership information in order to comply with the requirements of EITI.[35] This includes consideration of the best approach to confirm the accuracy of the information companies provide concerning their beneficial owners.

(iii) Transfer Pricing

Transfer pricing is scrutinised in every sector in the economy. In the Mining industry, for example, the taxable income is determined in accordance with the provisions of the General Tax Code, as supplemented by the mining code. According to the Mining code, transfer payments for goods supplied or services rendered to mining company affiliates must be justified in relation to the prevailing market prices for similar goods or services.[36]

There is a provision in the tax law allowing the tax authority to claim a tax adjustment in cases where the transactions between a Madagascan entity and a foreign entity controlling or controlled by the Madagascan one, are not concluded at fair market value.

The Madagascan government considers the following transfer pricing methodologies to be acceptable: comparable uncontrolled price method;[37] resale price method;[38] cost plus method;[39] transactional method on net margin;[40] and transactional method on profit split.[41]

The law requires that the effectiveness of services and fair market value must be justified by appropriate documentation, specifying the following information:

- the nature of the relationship between the company and one or more businesses carried out with companies or group companies based in or outside Madagascar;
- the Transfer Pricing Method used in determining the transfer price of the industrial, commercial or financial transaction performed. This also needs to cover the enterprises, companies or groups of enterprises involved, how the transfer price is justified, supported by comparable information and data where applicable;
- the transactions performed by the enterprises, companies or group enterprises;
- the tax treatment of the transactions carried out by companies residing outside of Madagascar or the companies or groups that directly or indirectly hold a majority of the capital or voting rights.

[35] EITI standard 2.5, 2016.

[36] Transfer Pricing Country Summary, Madagascar, July 2015

[37] OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, paragraphs 2.13-2.20, July 2010

[38] OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, paragraphs 2.21-2.38, July 2010

[39] OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, paragraphs 2.39-2.55, July 2010

[40] OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, paragraphs 2.58-2.107, July 2010

[41] OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, paragraphs 2.108-2.145, July 2010

The Madagascan government has demonstrated its intention to improve its monitoring of Transfer Pricing. In 2015, it set up the Transfer Pricing Unit through the Directorate General of Taxation.

5.3.3. Fiscal framework

(i) Features of State and Local Taxes

The fiscal framework of the EI sector is set out in the Mining Code or the Petroleum Code and under common law, the Tax Code.

Table 4: fiscal framework of the EI sector

Description	Mining Code
Stability commitment by the State	8 to 20 years.
Royalties upon first sale	2% of the value of mining products when the first sale takes place
Income Tax	Common law : 20% Minimum levy: MGA 100,000 + 0.5% of turnover (VAT excluded)
Income Tax on dividends	20% of dividend amount received
VAT	20% of sales
Income Tax on wages and similar	>MGA 250.000 : 20%

The special regimes in the mining sector (the Convention of Establishment and LMIA) have their own fiscal framework, which also refers to the General Tax Code. A description of the types of flows is set out below.

Table 5: fiscal framework of special regimes

Framework	Content
Mining Agreement	The unique mining agreement has been signed beetween the Government and QMM. The company is not required to pay the rates of common law, but has specific fiscal advantages as summarised below. (1) Reduction of tax payable on income and mobilised capital.[42] (2) A decrease of the tax base for the flat rate tax on transfers; (3) VAT at 0%; (4) Exemption from registration fees; (5) A lower single rate for the Tax on Insurance Contracts; (6) A decrease in the rate of Property Tax on property constructed; (7) The stability of fiscal rates and thresholds.
Large Mining Investment Act (LMIA)	This law applies to companies with an investment volume of more than MGA 50 billion. Only the Ambatovy Project is currently under the LGIM. The mining company is therefore subject to the following fiscal regime: (1) A reduction of the tax base to the flat rate tax on transfers; (2) The right to reimbursement of VAT credits; (3) A lower tax rate and cap on registration fee; (4) A lower tax rate and cap on property constructed; (5) The stability of fiscal rates and thresholds.

In the oil sector, a single tax is applicable in the production phase. During the exploration phase, the tax system is one of common law, under the Tax Code.

- Direct Tax on Hydrocarbons, based on income. Oil companies are exempt from paying Income Tax and Capital GainsTax;
- Tax exemption on dividends;

[42] Madagascar EITI Report 2014, published in December 2016, Section 1.2.4

- Common law for all other taxes: VAT, Payroll taxes , etc.

The Petroleum Code does not provide for the stability of fiscal rates and thresholds. In 2014, the government announced a Reform Project of Mining and Petroleum Codes.[43] However, this has not yet led to tangible outcomes or change.

(ii) Royalties and levies

1) Mining sector

Royalties and levy rates stipulated by the Mining Code[44] are respectively at 0.6% and 1.4% of the value of products realised upon their first sale. The distribution of revenues between decentralised authorities is stipulated as follows in the Inter-Ministerial Order No. 8887/2014 of 21 February 2014:

- 60% for communes where mining operations are located;
- 25% for communes in which mineral extracts are treated and processed;
- 15% for communes in which other aspects of mining activity are located.

The decree also stipulates that each allocation category that would apply to a commune still to be established, must be shared equally among other communities.[45] In practice, this measure will cover the Autonomous Provinces, which are not yet operational.

2) Oil sector

Royalty rates under the Petroleum Code vary between 8% and 20% for crude oil and between 5% and 20% for natural gas. The government does not collect any in-kind or non-cash revenue from the EI.[46]

5.4. Contribution of the EI to the economy

5.4.1. The contribution of the EI to GDP

According to Requirement 3.4 of the EITI standards, each country should disclose information about the contribution of mining to the economy for the fiscal year covered by the EITI report. The table below presents data on the contribution of the mining sector to the GDP of Madagascar, gathered from the National Statistics Institute (INSTAT), Central Bank of Madagascar and EITI reports.[47]

Table 6: EI contribution to GDP

Indicators	2014			2015		
	US$ millions	MGA billions	%	US$ millions	MGA billions	%
EI sector	10.67	27.78	4.18%	11.28	33.10	4.84%
GDP (constant prices)	255.24	649.18	100%	232.99	683.50	100%

***Source**: Madagascar EITI Report 2014, 2015 and Central Bank of Madagascar*

This table shows a contribution of the EI to GDP of 4.84% in 2015, rising from 4.18% in 2014. Growth of the mining sector has been almost constant during the last ten years, rising by 0.1% to 0.2% per year. From 2012 to 2013, a significant increase in the weight of the mining sector in GDP (0.7% in 2012 to 3.43% in 2013) took place, due to the start of operations of the two large mining projects, namely QMM and Ambatovy.[48]

[43] Madagascar EITI Report 2014, published in December 2016
[44] Article 294 of decree n°2006-910 of 19 August 2006
[45] European Centre for Development Policy Management, n°185, April 2016: Extractive sector in Madagascar: What support for civil society?
[46] Madagascar EITI Report, published in December 2016, first line on page 82
[47] GDP is defined as an economic indicator of the wealth produced annually in the country, calculated from the value added in each sector
[48] Madagascar EITI Report 2012, Section 2.1.4.1, published in January 2015; Madagascar EITI Report 2014, Section 3.2.1, published in December 2016.

It is expected that the share of EI in GDP will continue to grow in significance over time, as the majority of companies are still in the exploration phase and therefore do not generate gross operating profits.

The figures above are the official data and represent the best available, but there is an issue of data reliability. INSTAT's database has not been adjusted in line with all developments in the EI sector since 1984, including the development of the petroleum sector.

Significant amounts of Madagascar's minerals are not reflected in the official data, however. Estimates suggest that 30% of sapphire and 4% of precious stones that reach the world market come from Madagascar, with US$200 million a year and 10% of GDP lost to Madagascar from informal markets and large-scale illegal trafficking.[49]

5.4.2. Contribution of the EI to Foreign Direct Investment

The EI sector has been the principal source of Foreign Direct Investment (FDI) for Madagascar. The table below shows that for some years its share in total FDI has been above 80%. Large scale mining companies, mainly Ambatovy and QMM, invested around US$ 8.13 billion between 2005 and 2013. This represented significant change from previous decades: FDI across sectors had not exceeded US$ 256 million for every five years between 1970 and 2004. Ambatovy and QMM accounted for 39 percent of total investment in-country between 2005 and 2009. Ambatovy's significant contribution extended to 2013, representing 65 percent of total investment between 2010 and 2013.[50]

Table 7: EI and Foreign Direct Investment (FDI), US$ millions

Title	2007	2008	2009	2010	2011	2012
Total amount of EI FDI	886.20	1637.50	2069.80	1360.00	1000.60	750.50
Total amount of FDI	1456.90	1914.80	2532.50	1689.10	1639.90	1783.40
Part of the FDI in EI in total of FDI	61%	86%	82%	81%	61%	42%

(Source Study of FDI in Madagascar, Central Bank of Madagascar, January 2014)

More recently total FDI flows have fallen. In 2016, the country received USD 438 million in FDI inflows, compared to 320 million in 2015 (UNCTAD World Investment Report 2017). The Government enacted various reforms to attract investors. Three reforms stand out: company creation, granting construction permits and trans-border trade.[51] France, Mauritius, China and the United States are the principal investors in Madagascar.

5.4.3. Production and Exports

Nickel, mineral sludge and ilmenite generated the highest production values in 2015. Nickel represented over 70% of total production value. Production of this and other minerals is set out in Table 8 below.

Table 8: Production of minerals, 2015

Mineral	Quantity (tonnes)	Production value (MGA billion)	Production value (US$ million)	%	Regions
Ilmenite	166,290	122.0	41.6	5.9%	Anosy

[49] EITI report, 2015, page 91
[50] Economic contributions from industrial mining in Madagascar, World Bank et al., 2013
[51] https://en.portal.santandertrade.com/establish-overseas/madagascar/investing-3

Mineral	Quantity (tonnes)	Production value (MGA billion)	Production value (US$ million)	%	Regions
Labradorite	6,831	6.4	2.2	0.3%	Atsimo Andrefana
Graphite	3,607	6.0	2.1	0.3%	Atsinanana
Zircon	11,879	5.1	1.7	0.2%	Anosy
Nickel	47,271	1,491.7	508.5	71.8%	Atsinanana
Mineral sludge	4,817,997	335.2	114.3	16.1%	Alaotra-Mangoro
Cobalt	3,464	110.6	37.7	5.3%	Atsinanana
Totals	5,057,339	2,077.1	708.0	100%	

Source: EITI, 2018

The companies which generated the highest values in 2015 were Dynatec Madagascar, S.A. (US$ 546 million) , Ambatovy Minerals S.A. (US$ 114.2 million) and QIT Madagascar Minerals S.A. (US$ 43 million).

Table 9: Production of minerals by company, 2015

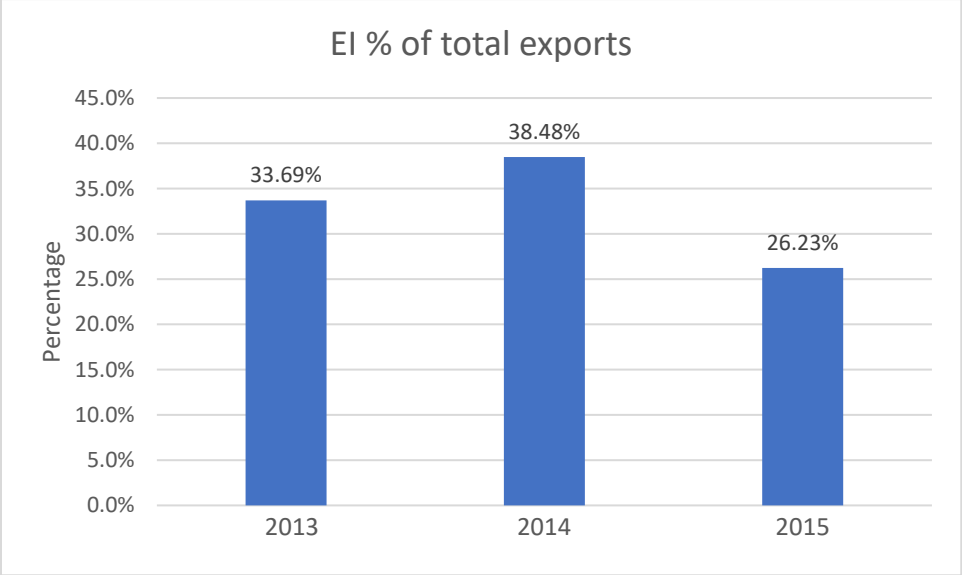
Company	Commune	Region	Mineral	Tonnes	Value (MGA billions)	Value (US$ millions)	Ownership
Ambatovy Minerals S.A.	Morarano Gare	Alaotra-Mangoro	Mineral sludge	4,817, 997	335.2	114.2	Canada, Japan, South Korea
Dynatec Madagascar S.A.	Amboditan-droho	Atsinanana	Nickel	47,271	1,491.7	508.5	Canada, Japan, South Korea
	Amboditan-droho	Atsinanana	Cobalt	3,464	110.6	37.7	
Etablissement Gallois SA	Marovintsy	Atsinanana	Graphite	1,851	2.8	1.0	Macau, China
	Atsirakambo	Atsinanana	Graphite	1,756	2.8	1.0	
Labrador Madagascar S.A.R.L	Ianapera	Atsimo Andrefana	Labradorite	2580	1.5	0.5	Madagascar
Mada-Aust S.A.R.L	Remengoke/ Manire	Atsimo Andrefana	Labradorite	757	N/A	N/A	N/A
	Behabihy/ Maniry						
QIT Madagascar Minerals S.A.	Mandena, Ampasy Nahampoana	Anosy	Ilmenite	166,290	122.0	41.6	Madagascar (Rio Tinto)
			Zircon	11,879	5.1	1.7	
Red Graniti Madagascar S.A.R.L.	Benonoka	Atsimo Andrefana	Labradorite	3,494	4.9	1.7	France
Graph Mada S.A.R.L.	Mahatsara	Atsinanana	Graphite	1,444	0.4	0.1	Mauritius
Totals				5,058,784	2,077	708.0	

Source: EITI, 2018

The volume of mineral exports provides another important indicator of EI activity. As required by EITI Requirement 3 (2013 Rules), contextual information, including data on the production of export companies, are an integral part of the reconciliation report. Export and mining companies disclosed the total production volumes, the amount of raw materials used in the production process, and the volume and value of exports

The EI sector contributed 26% of total exports in 2015, down from 38.5% in 2014. Nickel contributed the most to total exports from the EI sector, accounting for 82.9% of exports in 2015. This was followed by titanium ore and concentrates (4.9%), chrome ore and concentrates (4.6%) and precious stones (other than diamonds) (4.1%).

Figure 5: EI contribution to exports, 2015



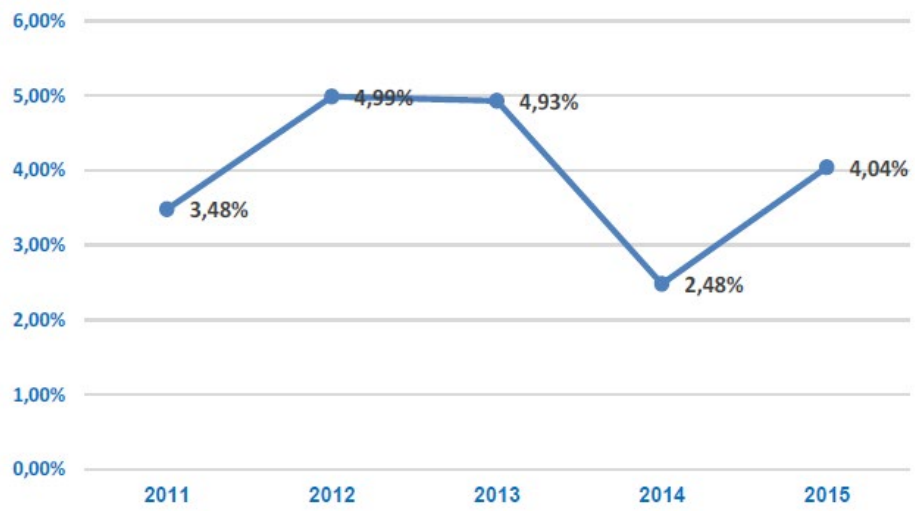
Source: EITI, 2018

5.5. Collection and distribution of revenues from the EI

5.5.1. Collection of EI revenues

The total amount of tax collected by the government from the EI for the fiscal year of 2015 amounted to MGA 125.0 billion or US$ 42.6 million. This represents an increase from 2014, but a lower level of revenue compared with 2013 and 2012. Figure 6 and Table 10 below illustrate the revenue from the EI over recent years. The total amount of revenue collected by the government from the EI has fluctuated between 2% and 5% of total government revenue over recent years.

Figure 6: EI contribution to the State budget



Source: EITI, 2018

The revenue comes from several different sources. These include non-recovered Value Added Tax (VAT), non-reimbursed VAT, Income Tax on Wage and Assimilate (ITWA), Mining Administration Fees, Administration fees paid to OMNIS and non-resident tax payments.

Table 10: EI contribution to Government revenue

Indicators	2013			2014			2015		
	MGA billions	US$ millions	%	MGA billions	US$ millions	%	MGA billions	US$ millions	%
Total revenue	8599.0	3896.6	100	3670.5	1413.5	100%	3092.8	1054.3	100%
EI receipts	423.93	192.1	4.93	91.03	35.05	2.48%	125.0	42.6	4.04%

Source: EITI 2018, 2015 and WaterAid calculations (2013)

The government agencies collecting the most revenue were: DGI (General Directorate of Taxes, 25.9%), BCMM (Office of the Mining Cadastre of Madagascar, 22.3%) and DGD (General Directorate of Customs, 17.8%).[52] Mining companies provided 62.8% of the revenue, cement 21.6% and petroleum 14.8%. This is set out in Table 11 below.

Table 11: Revenue from the Extractive Industries, 2015

Government Institution / Mineral	Revenue from Extractive Industries (MGA million)	Revenue from Extractive Industries (US$ millions)	% of total payment
DGI (General Directorate of Taxes)	32,397	11.0	25.9%
BCMM (Office of the Mining Cadastre of Madagascar)	27,847	9.5	22.3%
DGD (General Directorate of Customs)	22,220	7.6	17.8%
Others	18,389	6.3	14.7%
OMNIS (Office of National Mines and Strategic Industries)	8,378	2.9	6.7%
CNaPS (National Social Security Fund)	6,032	2.1	4.8%
Social Payments	5,116	1.7	4.1%
DGM (General Directorate of Mines)	3,422	1.2	2.7%

[52] EITI 2013 Report

Government Institution / Mineral	Revenue from Extractive Industries (MGA million)	Revenue from Extractive Industries (US$ millions)	% of total payment
ONE (National Office for the Environment)	914	0.3	0.7%
Payments to CTD (Decentralised Territorial Communities)	273	0.1	0.2%
Totals	124,988	42.6	100%
Mining	78,448	26.7	62.8%
Cement	26,980	9.2	21.6%
Petroleum	18,513	6.3	14.8%
Other	1,048	0.4	0.8%
Totals	124,988	42.6	100%

Source: EITI, 2018

Government revenue from the EI sector is disaggregated by company in the table below. It shows that the largest contributions were made by Holcim Madagascar (21.6% of the total), Dynatec Madagascar S.A. (13.6%), QIT Madagascar Minerals S.A. (10.5%), Ambatovy Minerals S.A. (8.6%), and Kraoma (6.7%).

Table 12: Revenue from the Extractive Industries by company, 2015

Companies	Revenue from Extractive Industries (MGA million)	Revenue from Extractive Industries (US$ millions)	Percentage of total Extractive Industries revenue
Holcim Madagascar	26,980	9.2	21.6%
Dynatec Madagascar S.A.	17,025	5.8	13.6%
QIT Madagascar Minerals S.A.	13,068	4.5	10.5%
Ambatovy Minerals S.A.	10,783	3.7	8.6%
Kraoma S.A.	8,418	2.9	6.7%
Madagascar Oil S.A.	5,613	1.9	4.5%
Tullow Oil	5,281	1.8	4.2%
Total Exploration	3,756	1.3	3.0%
Mainland Mining S.A.R.L.U.	3314	1.1	2.7%
Nova Resources S.A.R.L.U.	2133	0.7	1.7%
Others	28616	9.8	22.9%
Totals	**124,988**	**42.6**	**100%**

Source: EITI, 2018

5.5.2. EI sector payments to local authorities

Decentralised authorities, such as regions and districts, receive income from the EI sector. This income is raised through a number of means: direct and indirect taxation, mining royalties, mining ristournes, revenue from domain and services, heritage taxes, property taxes on land, tax on income, profits and gains, property taxes on built property and contributions from third parties.[53]

[53] Mining ristournes are a local tax due on mining products based on their value at the point they are first sold. It is paid by mining companies during the exploitation phase and is calculated as a percentage of the quantities exported by mining companies. The

There is a wide disparity in the methods used to allocate mining royalties, ristournes and other income from the EI sector to the different authorities concerned. These allocation rules are set out in the Mining Code and related legislation, but they make it difficult to ensure the traceability and consistency of the mining revenues received by the government agencies and by the decentralised authorities (municipalities and regions).

Income from the EI at local level is used for different economic, social and environmental purposes. The 2015 EITI report shows that EI companies made MGA 11.5 billion (US$3.9 million) of social investments in 2015, the majority of these mandatory payments by Dynatec. Table 13 shows how these disaggregate between the different operational companies.

Table 13: Social payments made by EI companies, 2015

Companies	Mandatory social payments	Voluntary social payments (MGA billions)	Total (MGA billions)
Ambatovy Minerals S.A.	-	0.30	0.30
Dynatec Madagascar S.A.	10.76	0.05	10.8
Holcim Madagascar	-	0.20	0.20
Madagascar Consolidated Mining S.A.	-	0.001	0.001
Mpumalanga Mining Resources S.A.U.	0.03	2.9	0.03
QIT Madagascar Minerals S.A	-	0.04	0.04
Madagascar Oil S.A.	0.03	0.13	0.15
Total	**10.8**	**0.72**	**11.53**

Source: Company declarations, EITI 2018

5.5.3. Communes benefiting from EI income

A summary of the communes benefiting from income from the major mining companies Kraoma, Dynatec, Ambatovy, QMM and Holcim is set out in table 14 below. Income enabled local spending on road-building, bridges, rehabilitating basic health centres, schools, as well as covering operating costs of relevant municipalities. Several of the communes followed participatory budgeting principles, which allow community members to influence how their budgets are spent. In 2015, the following communes adopted participatory budget principles: Ambohibary, Ibity, Andranomanelatra, Ampasinampoana, and Mandromondromotra.[54]

Table 14: Communes receiving income from the EI sector

Municipality/Region	Company	EI revenue (MGA)	EI revenue (US$)[55]	Notes
Commune Rurale de Brieville	Kraoma	163,730,055	55,814	Operational spending for the community (including hygiene services and education)

rates of distribution of ristournes are as follows: 60% to the municipality; 30% to the region; and 10% to the Autonomous Province (in the suspense account of the Public Treasury). Source: Madagascar EITI Report 2013, published in January 2015.

[54] The Rural Communes of Brieville and Amboditrandroroho and the Rural Municipality of Sonierana received funding from the EI sector, but did not adopt participatory budgets.

[55] Central Bank of Madagascar, average exchange rate for 2015 is: USD 1 = MGA 2933.51

Municipality/Region	Company	EI revenue (MGA)	EI revenue (US$)[55]	Notes
Commune Rurale d'Amboditandroho	Dynatec S.A.	93,324,811	31,813	Operational spending for the community (including hygiene services and education)
Commune Rurale d'Ambohibary	Ambatovy S.A.	383,255,658	130,647	Operational spending for the community (including roads, industrial services, hygiene services and education)
Commune Rurale d'Antanimbary	Kraoma	39,592,172	13,497	Operational spending for the community (including local services)
Commune Rurale d'Antsiafabositra	Kraoma	21,417,166	7,301	Operational spending for the community (including hygiene services and education)
Commune Rurale de Mandromodromotra	QMM S.A.	294,342,165	100,338	Operational spending for the community (including local services)
Commune Rurale de Sonierana	QMM S.A.	9,522,515	3,246	Operational spending for the community (including local services)
Commune Rurale de Tritiriva	Holcim	33,246,891	11,333	Operational spending for the community (including hygiene services and education)
Total		**1,038,431,433**	**353,989**	

Source: EITI, 2018

5.5.4. Investments in water, sanitation and hygiene

It is possible to identify spending on water, sanitation and hygiene by communes as a result of income from the EI. The 2013 EITI report shows that ristournes from the QMM project funded investments in water supply for the Commune Rurale d'Ampasy Nahampoana. Together with investments in road rehabilitation this amounted to US$ 125,000. Other fees from the QMM project funded water supply interventions in the commune and a local hospital, although at low levels. Madagascar Oil provided WaterAid Madagascar with MGA 24 million (US$8000) to install waterpoints at Soaloka as part of an obligatory social payment. Table 14 indicates that five communes used EI income in 2015 to fund hygiene services and education.

A 2015 World Bank report provides additional detail on the water and sanitation investments made by QMM at Fort Dauphin. In partnership with the national utility JIRAMA and the World Bank, QMM contributed $2 million towards the rehabilitation of Fort Dauphin's potable water treatment plant and the construction of a new water plant (including a sewage collection system). It also financed the construction of 20 water wells throughout Fort Dauphin's communes, and provided a further US$ 2 million for a new electricity generator for the city.[56]

These contributions from the EI help supplement chronically low levels of local government finance. A study conducted in eight sub-Saharan African countries, including Madagascar, showed the weaknesses of local community budgets. The financial resources, including amounts received from the central government, represented only 1% of GDP on average. This can be explained by the

[56] Integrated Growth Poles Project, Implementation, Completion and Results report, World Bank, 2015.

inadequate tax structure and the low number of taxpayers paying their taxes, demotivated by the lack of transparency in local public fiscal management.[57]

5.6. Assessment of the short, medium and long-term outlooks for the EI

Based on various studies conducted by analysts and international institutes, Madagascar is seen as a less competitive destination for mining investors. According to the results of studies conducted by the Fraser Institute in 2015, the risks associated with operating in Madagascar have acted as a deterrent for foreign investors and major mining companies.

The operating environment is affected by a combination of economic, political and legal uncertainties. These include deficits in infrastructure and energy and a shortage in members of the local workforce with the necessary skills and expertise (Madagascar is among the lowest 20 in the world for this latter benchmark).

Corruption is also a major problem facing the country. The Government adopted an Anti-Bribery National Strategy in 2003 and an Anti-Bribery Act and a Money Laundering Act in 2004 to tackle corruption in both the public and private sectors at different levels.[58] Despite this, weak implementation undermines efforts to tackle corruption. The U.S. Department of Commerce's International Trade Administration commented that "a lack of enforcement of existing legislation opens the door to widespread corruption. High levels of corruption exist in all sectors, but are most pervasive in the following areas: judiciary, police, tax, customs, land, trade, mining, industry, environment, education, and health."[59]

The 2013 EITI report shows that the government ban on export of gold has not been effective. The report refers to the United Nations Conference on Trade and Development, which estimates that US$ 10 million and US$16 million worth of gold were illegally exported to the United Arab Emirates alone in 2012 and 2013. The report estimates significant losses in government revenue due to mineral smuggling.

According to the Corruption Perceptions Index (CPI) 2013 of Transparency International (TI), Madagascar ranked 127th out of 177 countries. The country scored 28/100 in 2013 Compared with 32/100 in 2012, leading to a decline of 9 positions. According to the TI report, 58% of inhabitants surveyed believe that the level of corruption had increased over the last two years (2012 and 2013), with the legal sector seen as the most corrupt public body, followed closely by the police and public authorities and officials.[60] In the 2016 TI report, Madagascar's position had declined to 146th.

The Madagascan judicial system adopts a light-touch approach when the issue concerns financial or management irregularities. The Minister of Finance and Budget is responsible for judging referrals to the Accounts Court and the Council of Budgetary Discipline. Criminal proceedings are not considered appropriate in the case of financial or management irregularities committed by public officials and accountants.

Despite the existence of written anti-corruption rules and legislation, the Madagascan judicial system does not seem to enforce the legal sanctions available. In 2016 the U.S. Department of Commerce's International Trade Administration commented: "High-profile traffickers of rosewood and other natural resources, rumoured to have high-level government connections, continued to escape prosecution in 2015. There continues to be a widespread perception of impunity for the well-connected".[61]

The problem of corruption in the EI sector and elsewhere is also identified by the International Monetary Fund (IMF). Rose wood and precious stone traffic, smuggling of rare and protected species,

[57] Gérard Chambas, Elsa Duret, Mobilisation of local resources in Sub-Saharan African communities, April 2000
[58] Mainly the anti-bribery national strategy (2004-030 anti-bribery act, 2004-020 money laundering act)
[59] Madagascar-Corruption, U.S. Department of Commerce's International Trade Administration, 11 July 2016
[60] Transparency International, Global corruption Barometer 2013.
[61] Madagascar-Corruption, U.S. Department of Commerce's International Trade Administration, 11 July 2016

corruption among customs and tax officials, the rigging of public procurement markets, drug smuggling, and kidnapping are some of the symptoms of generalised corruption.[62] Because of the weakening of institutions, activities such as money laundering through real estate purchases and trafficking in precious stones, to cite just some examples, are spreading and cannot easily be punished by the legal system. At the same time, lack of information (e.g. inadequate property registry), imperfect tax and bank records, and limited international cooperation are obstructing the use of domestic and foreign information to tackle financial crime. Since 2004, only four cases of suspected money laundering have been tried and this resulted in two convictions.

[62] IMF, Republic of Madagascar, Selected Issues, July 2017.

6. FINANCING OF WATER SUPPLY AND SANITATION IN MADAGASCAR

6.1. Access to water, sanitation and hygiene

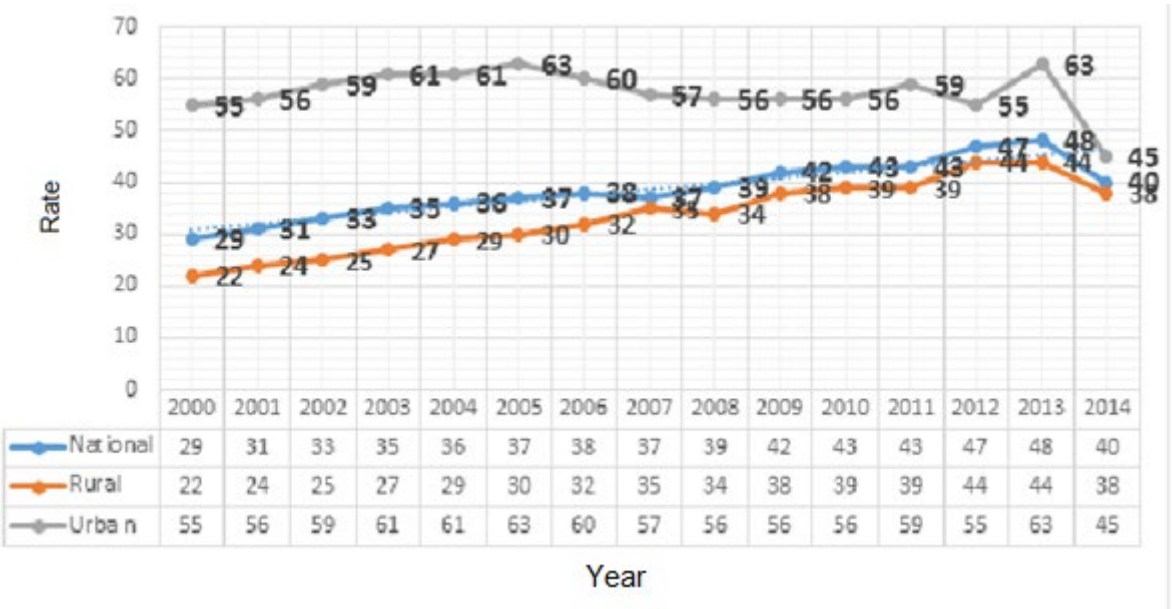
6.1.1. National access levels to drinking water

The WHO/UNICEF Joint Monitoring Programme (JMP) reported that in 2015 just over half (51%) of the national population had access to at least basic water. The statistics for at least basic water in urban and rural areas were 82% and 34% respectively. For sanitation, the JMP reported that only 10% had access to at least basic sanitation, or 16% in urban areas and 6% in rural areas. There are no estimates yet for current baselines for safely-managed water and sanitation, the SDG target 6.1 and 6.2, although it is known that they will be significantly lower than the reported access levels for access to at least basic water and sanitation.[63]

Data below from the Ministry of Water, Sanitation and Hygiene provides further detail on access levels, trends, infrastructure and services. Madagascan legislation defines drinking water as water intended for human consumption which, naturally or after treatment, meets organoleptic, physicochemical, bacteriological and biological standards prescribed by decree.[64] Different definitions lead to slightly different headline totals for access to water and sanitation. However, the data illustrate unequivocally that Madagascar remains a country with limited access to clean and safe water, sanitation and hygiene.

National data shows that access levels to drinking water improved steadily until 2013, where up to 48% of people had access to drinkable water, but then underwent a deterioration as the rate fell to 40% in 2014, reflecting falls in both urban and rural areas.

Figure 7: Trends in access to drinking water situation 2000-2014



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
National	29	31	33	35	36	37	38	37	39	42	43	43	47	48	40
Rural	22	24	25	27	29	30	32	35	34	38	39	39	44	44	38
Urban	55	56	59	61	61	63	60	57	56	56	56	59	55	63	45

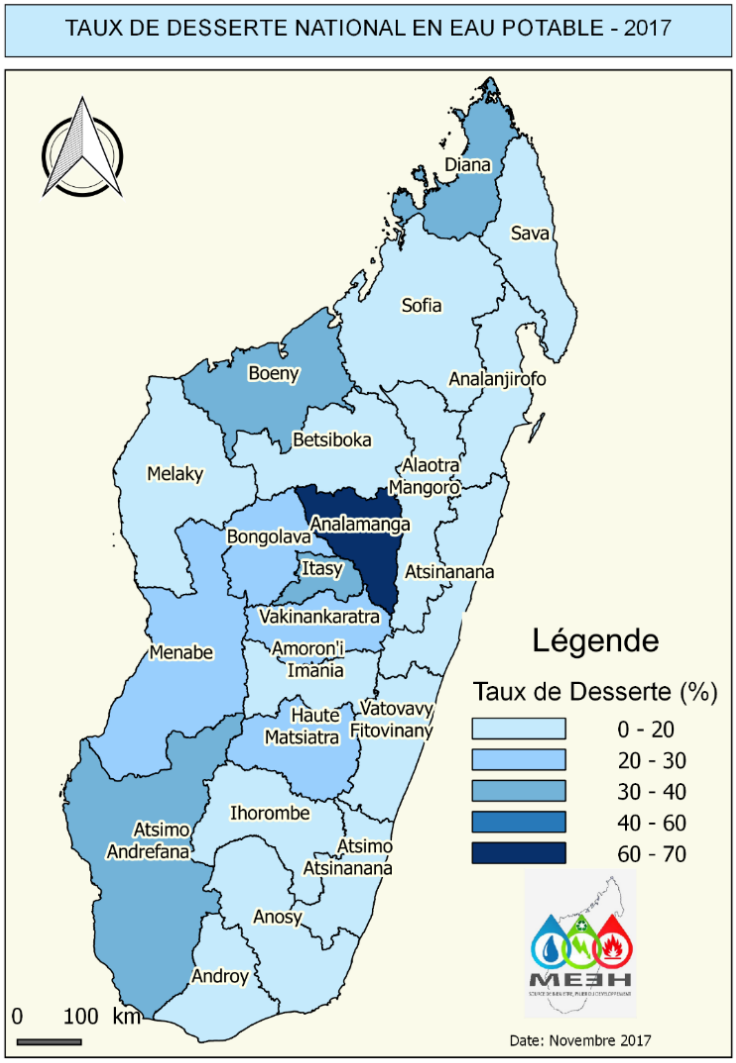
Source: Ministry of Water, Sanitation and Hygiene

2015 saw a partial recovery in access levels to 43% of the population, however data from Madagascar's WASH TrackFin initiative suggest that the downward trend has continued, falling to 26% in 2016-2017. Disparities also exist between rural and urban areas, but also between regions, as shown on the following map. The highest coverage rate is found in the Analamanga region (75%

[63] Progress on Drinking Water, Sanitation and Hygiene, WHO/UNICEF 2017.
[64] Article 38 of Law n ° 98-029 of 20 January 1999.

access levels), with low rates recorded in the regions of Androy, Alaotra Mangoro and Atsimo Atsinanana (less than 10%). In addition, the country faces problems related to the maintenance of water infrastructure, which also impacts schools and health facilities. Figure 8 illustrates access levels across the different regions.

Figure 8: National access levels to drinking water



Source: Ministry of Water, Energy and Hydrocarbons, November 2017

Table 15 below illustrates access levels by region, and by type of infrastructure. Each item of water infrastructure is assumed to supply numbers of people with access to drinking water as follows: *1 BP*[65] *= 10 people; 1 BF*[66] *= 250 people; 1 FPMH*[67] *= 300 people; 1 PPMH*[68] *= 300 people.*

Table 15: National drinking water status in 2015

[65] 'Branchements Particuliers' or "private connections"
[66] 'Bornes-Fontaine' or "water points".
[67] 'Forage Equipé de Pompe à Motricité Humaine' or bore-hole with human-operated pump.
[68] 'Puits Equipé de Pompe à Motricité Humaine' or well with a human-operated pump.

Region	Population	PPMH	FPMH	BF	BP	BF non Fonctional	BP non Fonctional	Population served	% in 2015
ALAOTRA MANGORO	1 053 692	52	8	1 661	5 745	7	-	411 028	39
MORONI MANIA	733 534	14	18	2 097	1795	14	-	370 800	51
ANAIAMANGA	3 435 466	141	16	7 013	207 415	540	-	2 579 952	75
ANALANJIROFO	1 061 924	33	107	2 356	1 660	300	-	306 587	29
ANDROY	752 926	10	573	30	436	-	-	183 094	24
ANOSY	689 189	48	582	464	3 369	-	-	281 229	41
ATSIMOANDREFANA	1 350 833	305	708	1402	14 872	120	-	510 791	36
ATSIMOATSINANANA	921 961	2	59	199	1 056	-	-	79 944	9
ATSINANANA	1 303 565	227	94	753	10 319	18	-	331 753	25
BETSIBOKA	301 120	23	73	592	827	83	-	126 039	42
BOENY	825 374	135	47	448	10 658	11	2	210 141	25
BONGOLAVA	469 209	29	12	662	2 426	38	-	171 733	37
Diana	718 135	74	104	865	11 582	91	-	292 718	41
HAUTE MATSIATRA	1 230 214	53	94	2 305	14 780	213	-	501 511	41
IHOROMBE	320 391	6	395	225	608	44	20	111 456	35
IM	751 600	-	-	3 209	1 756	76	4	532 629	71
MELAKY	305 090	10	91	98	216	4	-	57 677	19
MENAGE	616 439	619	154	508	4 381	27	-	342 890	56
SAVA	1 006 197	77	12	1 241	2 968	3	-	324 118	32
SOFIA	1 279 321	291	246	1 213	2 844	137	-	475 350	37
VAKINANKARATRA	1 849 975	47	1	5 774	9 122	151	-	870 589	47
VATOVAVY FITOVINANY	1 453 123	196	349	2 341	2 800	66	-	509 121	35
TOTAL	22 429 478	2 392	3 743	35 456	311 635	1963	26	9 581 150	43

Source: Ministry of Water, Sanitation and Hygiene

An estimated 9,581,150 people had access to drinking water in 2015. The majority of people have access by means of the 35,456 water points built across the country. The number of wells and boreholes with human-operated pumps are respectively 2,392 and 3,743. They have capacity to supply up to 1,840,500 persons.[69]

Table 16: Rural drinking water status in 2015

Region	Population	PPMH	FPMH	BF	BP	BF non Fonctional	BP non Fonctional	Population served	% in 2015
ALAOTRA MANGORO	856 313	52	8	1 326	216	7	-	282 042	33
AMORQN'I MANIA	651 762	13	18	2 012	64	14	-	338 635	52
ANALAMANGA	2 102 762	141	16	5 930	64 156	527	-	1 331 419	63
ANALANJIROFO	830 888	26	99	2 052	876	257	-	249 925	30
ANDROY	637 956	10	541	18	173	-	-	169 014	26
ANOSY	504 136	48	577	288	680	-	-	214 021	42
ATSIMO ANDREFANA	1 127 367	304	708	712	1 453	120	-	475 970	42
ATSIMO ATSINANANA	722 415	2	33	90	132		-	37 256	5
ATSINANANA	965 127	226	94	447	440	18	-	194 379	20
BETSIBOKA	239 687	17	72	532	393	83	-	104 884	44
BGENY	517 864	135	41	83	692	10	2	84 914	16
BONGOLAVA	395 390	29	12	590	893	38	-	141 905	36
DIANA	366 157	57	86	411	131	74	-	112 007	31
HAUTE MAT5IATRA	907 656	46	60	1 630	611	149	-	358 736	40
IHORGMBE	247 880	6	389	136	384	26	2	91 116	37
¡TASY	629 152	-	-	2 764	1 038	76	4	458 424	73
ME LAKY	244 031	7	90	77	216	-	-	40 195	16
MENABE	435 558	494	141	284	861	27	-	222 671	51
SAVA	704 382	73	12	766	73	3	-	194 990	28
SOFIA	964 992	255	223	1 040	86	137	-	386 837	40
VAKINANKARATRA	1 530 233	47	1	4 508	655	151	-	760 234	50
VATOVAVY FITOVINAN	1 298 767	191	342	2 277	918	77	-	479 953	37
TOTAL	16 880 515	2 179	3 563	27 973	75 151	1 794	8	6 729 527	40

Source: Ministry of water, sanitary and hygiene

Tables 16 and 17 illustrate the status of rural and urban drinking water in 2015. Coverage in urban areas, according to national data, is 11% higher than coverage in rural areas, which was estimated at only 40%. Coverage in rural areas differs widely across the country, with access levels in Itasy

[69] The actual number of people estimated to have access is less than the total supply capacity due to the location and concentration of the population, which does not precisely match the maximum supply capacity of all water infrastructure.

estimated at 73% but in Atsimo Atsinanana at only 5%. In urban areas there are similar disparities between regions with Analamanga estimated to have access levels of 94% but Androy only 12%.

Table 17: Urban drinking water status in 2015

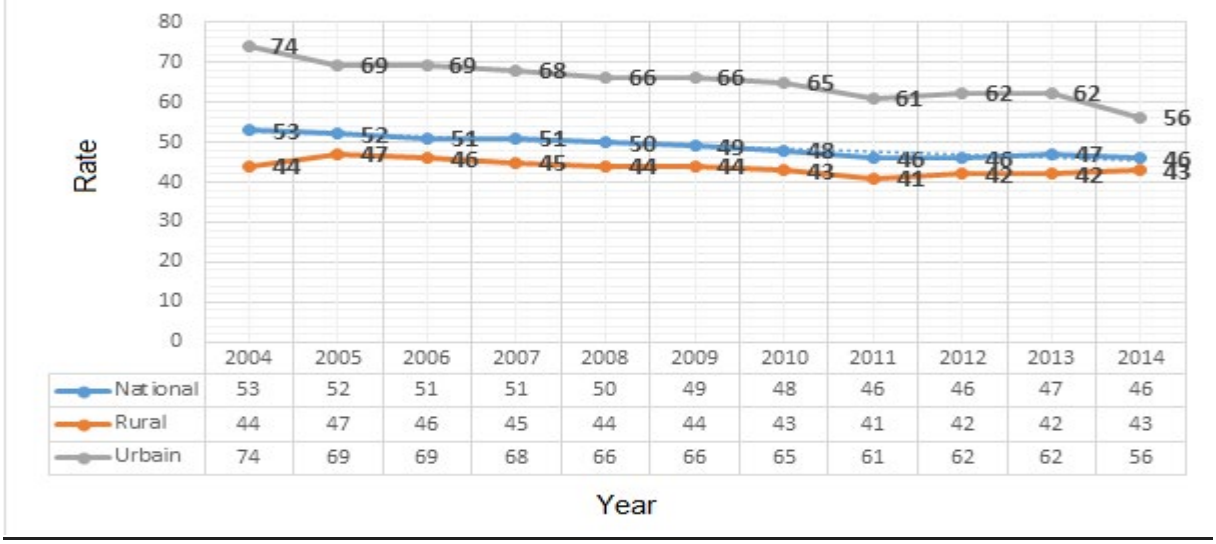
Region	Population	PPMH	FPMH	BF	BP	BF non Fonctional	BP non Fonctional	Population served	% in 2015
ALAOTRA MANGORO	197 379	-	-	335	5 529	-	-	128 986	65
AMORON'I MANIA	81 772	1	-	85	1731	-	-	32 165	39
ANALAMANGA	1 332 704	-	-	1 083	143 259	13	-	1 248 533	94
ANALANJIROFO	231 036	7	8	304	784	43	-	56 662	25
ANDROY	114 970	-	32	12	263	-	-	14 080	12
ANOSÏ	185 053	-	5	176	2 689	-	-	67 208	36
ATSIMO ANDREFANA	223 466	1	-	690	13 409	-	-	34 821	16
ATSIMO ATSINANANA	199 546	-	26	109	924	-	-	42 688	21
ATSINANANA	338 438	1	-	306	9 879	-	-	137 374	41
BETSIBOKA	61 433	6	1	60	434	-	-	21 155	34
BOENY	307 510	-	6	365	9 966	1	-	125 227	41
BONGOLAVA	73 819	-	-	72	1 533	-	-	29 828	40
DIANA	351 938	17	18	454	11 451	17	-	180 711	51
HAUTE MATSIATRA	322 558	7	34	675	14 169	64	-	142 775	44
IHOROMBE	72 511	-	6	89	224	18	18	20 340	28
ITASY	122 648	-	-	445	718	-	-	74 205	61
ME LAKY	61 059	3	1	21	-	4	-	17 482	29
MENABE	180 881	125	13	224	3 520	-	-	120 219	66
SAVA	301 815	4	-	475	2 895	-	-	129 128	43
SOFIA	314 329	36	23	173	2 758	-	-	88 513	28
VAKINANKARATRA	319 742	-	-	1 266	8 467	-	-	110 355	35
VATOVAVY FITOVINANY	154 356	5	7	64	1 882	9	-	29 168	19
TOTAL	5 545 963	213	180	7 483	236 484	169	18	2851623	51

Source: Ministry of water, sanitation and hygiene

6.1.2. National access levels to sanitation

Madagascan legislation defines sanitation broadly as any measure designed to eliminate the causes of poor health, including the protection of water resources, the cleanliness of the neighbourhood, the health and safety of populations, public health, agriculture, the protection of nature and the environment, and the conservation of sites and monuments. In urban environments sanitation also includes the evacuation of storm water and waste water as well as its discharge into natural outfalls in ways compatible with the requirements for good public health.[70]

Figure 9: Trends in access to basic sanitation 2004-2014



[70] Article 19 of Law n ° 98-029 of 20 January 1999

Source: Ministry of water, sanitary and hygiene

According to the data received from the former Ministry of Water, Sanitation and Hygiene, access to basic sanitation fell over the decade 2004-2014, decreasing from 53% in 2004 to 46% in 2014. The decline was more marked in urban areas, where the number of people having access decreased from 74% in 2004 to 56% in 2014 as shown in Figure 9 above. Access to basic sanitation in rural areas declined from 44% in 2004 to 43% in 2014.

Table 18: National basic sanitation status in 2015

Region	Population	Population served in 2014	in 2014	Realisation 2015	Additional population served in 2015	Population served in 2015	% in 2015
ALAOTRA-MANGORO	1 053 692	744 576	71	-	-	744 576	71
AMORON'I MANIA	733 534	699 750	95	-	-	699 750	95
ANALAHANGA	3 435 456	2 293 164	57	-	-	2 293 164	57
ANALANJIROFO	1 061 924	408 691	38	-	-	408 691	33
ANDROV	752 926	51 114	7	55	330	51 444	7
ANOSY	689 189	151 415	22	21	126	151 541	22
ANTSINANANA	1 350 833	741 365	55	-	-	741 365	55
ATSIMO-ANDREFANA	921 961	207 012	22	4 342	26 052	233 064	25
ATSIMO-ATSINANANA	1 303 555	68 652	5	11 660	69 960	138 612	11
BETSIBOKA	301 120	68 200	23	-	-	68 200	23
BOENY	825 374	272 226	33	241	1 446	273 672	33
BONGOLAVA	469 209	186 629	40	-	-	186 629	40
DIANA	718 135	162 775	23	-	-	162 775	23
HAUTE MATSIATRA	1 230 214	916 818	74	-	-	916 818	75
IHOROMBE	320 391	63 359	20	42	252	63 611	20
ITASY	751 800	751 800	100	-	-	751 800	100
HELAKY	305 090	40 016	13	904	5 424	45 440	15
MENABE	616 439	112 671	19	23	138	112 809	13
BAVA	1 006 197	629 681	63	431	2 586	632 267	53
SOFIA	1 279 321	170 981	13	-	-	170 981	13
VAKINAKARATRA	1 849 975	1 457 343	79	439	2 634	1 459 977	79
VATOVAVY-FITOUINANY	1 453 123	317 758	22	660	3 960	321 718	22
MADAGASCAR	**22 429 478**	**10 533 210**	**47**	**18818**	**112908**	**10 628 909**	**47**

Source: Ministry of water, sanitary and hygiene

Table 19: Rural basic sanitation status in 2015

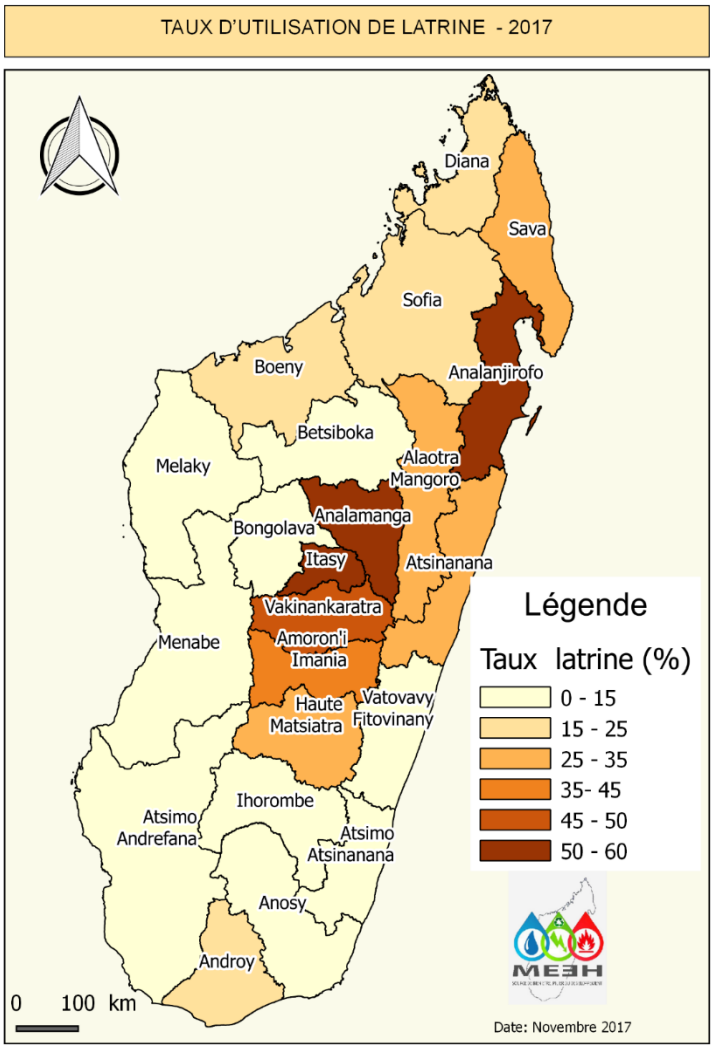
Region	Population	Population served in 2014	% in 2014	Realisation 2015	Additional population served in 2015	Population served in 2015	% in 2015
ALAOTRA-MANGORO	853 537	603 433	71	-	-	603 433	71
AMORON'I MANIA	650 377	579 433	89	-	-	579 439	89
ANALAMANGA	2 105 364	1 322 803	63	-	-	1 322 803	63
ANALANJIROFO	868 569	570 405	66	-	-	570 405	66
ANDROY	687 882	28 735	4	55	330	29 065	4
AN0SY	501 167	104 993	21	21	126	105 119	21
ANTSINANANA	1 127 546	530 455	47	-	-	530 455	47
ATSIMO-ANDREFANA	719 431	127 660	18	4342	26 052	153 712	21
ATSIMO-ATSINANANA	965 222	84 644	9	11 660	69 960	154 604	16
BETSIBOKA	238 788	50 611	21	-	-	50 611	21
BOENY	511 917	88 493	17	202	1 212	89 705	18
BONGOLAVA	394 411	149 213	38	-	-	149 213	38
DIANA	347 601	69 420	20	-	-	69 420	20
HAUTE MATSIATRA	906 310	659 690	73	-	-	659 690	73
IHOROHBE	246 777	50 227	20	42	252	50 479	20
ITASY	627 547	647 196	100	-	-	647 196	100
HELAKY	235 135	27 191	12	819	4 914	32 105	14
MENABE	456 271	52 400	11	23	138	52 538	12
SAVA	699 383	544 973	78	431	2 586	547 559	78
SOFIA	960 068	127 917	13	-	-	127 917	13
VAKINAKARATRA	1 530 669	913 291	60	439	2 634	915 925	60
VATOVAW-FITOVINANY	1 297 359	277 917	21	660	3 960	281 877	22
MADAGASCAR	**16 931 971**	**7 611 106**	**45**	**18634**	**112 164**	**7 723 270**	**46**

Source: Ministry of water, sanitary and hygiene

There was an upturn in rural areas in 2015 with access estimated at 46%, however the decline in urban areas continued with access of the urban population to basic sanitation estimated at 54%.

Overall this contributed to a small increase in the total coverage nationally to 47% of the population, or 10,628,909 people overall (see tables 18, 19 and 20). However, the TrackFin report, suggests that access to basic sanitation has fallen significantly since 2015, with access levels in 2016-17 reported to be at only 25%.

Figure 10: National access levels to basic sanitation



Source: Ministry of Water, Energy and Hydrocarbons, November 2017

There are wide disparities in access across regions. Amoron'i Mania, Itasy and Vakinakaratra are estimated to have 100%, 95% and 79% access levels to basic sanitation respectively, compared to Androy and Atsimo-Atsinanana with 7% and 11% respectively. Sofia and Menabe regions are only slightly higher with 13% of the population having access.

Analamanga region has the highest number of the population with access to basic sanitation with 1,322,803 in rural areas and 1,088,321 in urban areas.

Table 20: Urban basic sanitation status in 2015

Region	Population	Population served in 2014	in 2014	Realisation 2015	Additional population served in 2015	Population served in 2015	% in 2015
ALAOTRA-HANGORO	201 460	126 354	63	-	-	126 354	63
AM0R0N1 MANIA	83 463	83 463	100	-	-	83 463	100
ANALAHANGA	1 334 350	1 088 321	82	-	-	1 088 321	32
ANALANJIROFO	194 666	70 616	36	-	-	70 616	36
ANDROY	65 978	22 379	34	-	-	22 379	34
ANOSY	188 877	46 422	25	-	-	46 422	25
ANTSINANANA	224 959	231 770	100	-	-	231 770	103
ATSIMO-ANOREFANA	203 671	63 022	31	-	-	63 022	31
ATSIHO-ATSINANANA	339 958	34 147	10	-	-	34 147	10
BET5IB0KA	62 703	17 589	28	-	-	17 589	23
BOENY	309 468	157 403	51	39	234	157 637	51
BONGOLAVA	75 345	33 736	45	-	-	33 736	45
DIANA	371 425	119 714	32	-	-	119 714	32
HAUTE MATSIATRA	325 431	206 988	64	-	-	206 988	64
IHCFIOHBE	74 010	13 132	18	-	-	13 132	13
ITA5Y	125 184	73 650	59	-	-	73 650	59
MELAKY	62 322	14 255	23	85	510	14 765	23
MENABE	151 917	47 861	32	-	-	47 861	32
BAVA	308 053	84 708	27	-	-	84 708	27
SOFIA	320 826	47 313	15	-	-	47 313	15
VAKINAKARATRA	321 598	321 598	100	-	-	321 598	100
VATOVAVY-FITOVINAFfY	157 546	60 171	33	-	-	60 171	33
MADAGASCAR	**5 503 210**	**2931354**	**54**	**124**	**744**	**2 965 355**	**54**

Source: Ministry of water, sanitary and hygiene

6.2. Water, Sanitation and Hygiene Sector Governance

6.2.1. Water Supply and Sanitation governance

The WASH sector is integrated into Madagascar's National Development Plan within the context of the human resources required for development. Management of the WASH sector has undergone several machinery of government changes over recent years. The Ministry of Water, Energy and Hydrocarbons (MEEH) was established in 2017 with responsibility for the design, management, coordination and implementation of the National Development Plan (PND) and General Government Policy (GGP) in the water supply, sanitation, hygiene, energy and hydrocarbon sectors. MEEH replaced the Ministry for WASH (MEAH), which had been in place for nearly two years previously. In June 2018, the Government re-established a dedicated Ministry for WASH. Key strategic documents include the National Program for Access to Drinking Water and Sanitation (PNAEPA) 2008-2012, the National WASH strategy 2013-2018 and the guidelines of the WASH sector 2015-19. There is also a recently-updated Water Code, which includes water resource management, water quality monitoring, financing and organisation of the water and sanitation sector. The Ministry has also established a single database to collect data at all levels.[71]

There are different structures for the management of water resources and water supply in rural and urban areas. Management in urban areas is by the national utility JIRAMA, and in rural areas, generally through community or private providers. At the institutional level, in addition to central government, it is the Regional Directorates for WASH who coordinate the management of the sector, including drinking water. Municipalities typically the project owners of water supply infrastructure.

Regional Directorates also coordinate the sanitation sector at the regional level. However, when it comes to latrine management, it is either the communities, through Community-led Total Sanitation

[71] TrackFin initiative, WHO and MEEH, Madagascar, 2018.

(CLTS), or the households themselves with responsibility. The organisation of this sub-sector is therefore much more community-based and still faces many challenges, including behavioural ones. Madagascar's National Policy and Strategy for Sanitation is divided into 7 strategic areas: the accountability framework and institutional strengthening, the sharing of responsibilities, measuring progress on the performance of sanitation services; the development of a financing system that responds to the efficiency and protection of users; technological innovation and affordable costs; a special focus on behavioural change on hygiene; the development of a surveillance system to deal with emergencies and crises. Liquid sanitation is defined in the National Sanitation Strategy as including wastewater and rainwater management and excreta management in both urban and rural areas.[72]

6.2.2. Agenda 2030 for Sustainable Development

Although the country has seen major political instability over the past decade, which has led to volatility in its relations with international partners, Madagascar has consistently aligned its policies and activities with the global principles and goals for the development and improvement of access to water, sanitation and hygiene. These principles were embodied by commitments at international level, such as the Millennium Development Goals (MDGs), and now by the Sustainable Development Goals (SDGs) and the Agenda 2030 for Sustainable Development.

As a member of the United Nations Organisations, Madagascar endorsed the Millennium Declaration of 2000, which represented the international road map for reducing poverty and hunger and improving outcomes in health, gender, education and access to water, sanitation and hygiene. For water, sanitation and hygiene, the relevant commitment was Goal 7 on Environmental Sustainability, target c, which aimed to reduce by half the percentage of people in developing countries without access to safe drinking water and basic sanitation services by 2015.

For Madagascar this target translated into achieving coverage of 68% of the population for drinking water and 54% for sanitation. The WHO/UNICEF JMP 2015 assessment judged Madagascar to have made only moderate progress against the MDG drinking water target and (achieving 52% access to an improved water source), and limited or no progress on sanitation (achieving 12% access to improved sanitation). The new SDG targets, 6.1 and 6.2, to achieve universal access to safely-managed water and sanitation represent a significantly increased challenge for the country.

6.2.3. Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) survey

Many of the policies and frameworks required to make progress in delivering WASH services are in place. The Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) report 2017 states that Madagascar has clear legal and policy frameworks for water resource management, urban and rural water supply, sanitation and hygiene promotion, although there is only a low level of participation by service users and communities. The GLAAS report also showed that Madagascar has policies and plans which include an equity dimension, with specific measures to ensure women, poor populations and people living with disabilities could be reached.[73] Madagascar also has examples of institutional tariff subsides to improve affordability for low-income households as well as subsidy support for microfinance institutions that provide loans to low-income households that need to finance latrine construction or connect to a local water supply. Despite these initiatives, Madagascar still performed less well in comparison with other surveyed countries when it comes to having specific measures in its financing plans for targeting resources at vulnerable populations

Madagascar also has in place a defined financing plan and budget for the WASH sector (see Table 21 below). This is the case for rural and urban water and sanitation as well as hygiene promotion at national level. Expenditure reports are also publicly available and allow comparisons of committed funds to expenditures. The country has also taken some important steps to coordinate donor funds. The Permanent Technical Secretariat for the Coordination of Aid has been established to coordinate

[72] Ibid.
[73] Financing universal water, sanitation and hygiene under the Sustainable Development Goals, Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) report, 2017.

frameworks at the central level with development partners, donors and international Non-Governmental Organisations (NGOs). It uses a database as a key instrument to centralise subsector commitments and disbursements disaggregated by subsector and regions and updated on a quarterly basis. Madagascar also conducted a Joint Sector Review, involving government and key development partners in 2015, and which developed an investment plan for the sector. These factors contribute to relatively good performance in the financial absorption of external funds. The GLAAS report indicates that over 75% of external funds in each of the rural, urban, water and sanitation subsectors were used.

Further indications of the country's willingness to improve performance in the WASH sector is its participation in the World Health Organisation's TrackFin initiative. This process involves a detailed assessment of all financial flows in the WASH sector (public, private, domestic and external). Although the initiative is at an early stage, TrackFin workshops have drawn high-level participation from the government, including the Prime Minister, Finance Minister and Minister of Water, Sanitation and Hygiene.

6.3 Cost of low access levels to water, sanitation and hygiene

The relatively low levels of access to WASH shown above lead to damaging impacts on the nation's health. 2558 children under 5 died from inadequate WASH in 2012, or 72.6 per 100, 000.[74] Madagascar has one of the highest child stunting rates in the world. 49.2% of children under five are stunted, and 15.9% suffer from wasting.[75]

In monetary terms, poor sanitation is estimated by the World Bank to cost Madagascar MGA 201 billion each year, equivalent to US$ 103 million.[76] This amount is equivalent to US$ 5 per person per year in Madagascar, or 1% of the national GDP. The analysis shows that 12 million Madagascans use unsanitary or shared latrines, 6.6 million have no latrines at all and practise open defecation. The costs of poor sanitation are unevenly distributed: the poorest quintile are 12 times more likely to practise open defecation than the richest and the economic burden weighs disproportionately on the poor through adverse impacts on health, education and livelihoods.

Open defecation in Madagascar is estimated to cost more than US$ 48 million per year.[77] The cost per person is higher than any other type of unimproved sanitation, with additional costs due mainly to time spent finding a safe place for defecation. Other costs related to inadequate sanitation include the time spent going to public toilets, standing in line and paying user fees. These costs are not included in the estimates above due to difficulties in calculating the proportion of users of public latrines in the category of shared latrines.

It is also difficult to assign costs in terms of health by categories of latrine. Sanitation, or the absence of it, is a public health hazard: people's health is affected not only by their own state of sanitation, but also by that of their neighbours. Waterborne disease resulting from open defecation or other unsafe sanitation practises can spread to any member of the community. Open defecation also has significant social costs. The loss of dignity and privacy or the risk of physical attacks and sexual violence cannot be easily measured in monetary units, but these issues are nevertheless a daily reality for those unable to access safe sanitation facilities.

6.4 Financing the sector

Table 21 illustrates the contribution of the Government and donors to financing the sector. It shows that total funding has been volatile over the period 2010-2017. Its highest level was MGA 71.3 billion

[74] GLAAS report, 2017.
[75] Towards effective integration of nutrition and water, sanitation and hygiene - the Madagascar experience, WaterAid, Action contre la Faim, 2018.
[76] Water and Sanitation Programme, March 2012: Economic impacts of poor sanitation in Africa.
[77] Ibid.

in 2010 (US$32.3 million) and the lowest level MGA 31 billion (US$14 million) in 2015. The GLAAS report confirms a recent government budget for WASH at similar levels, US$24 million. Table 21 shows an increase in the budget for 2017 to MGA 118.8 billion, or US$ 53.8 million.

Table 21: Government WASH budget 2010-17, including on-budget donor funding

Sector	2010		2011		2012		2013		2014		2015		2016		2017	
Water	56,018	79%	53,549	83%	20,468	64%	34,623	65%	20,455	63%	20,871	67%	22,246	57%	94,470	80%
Sanitation	15,239	21%	11,065	17%	11,357	36%	18,691	35%	12,134	37%	10,125	33%	16,680	43%	24,281	20%
HYGIENE		0%		0%		0%		0%		0%		0%		0%		0%
TOTAL in MGA million	71,257	100%	64,614	100%	31,826	100%	53,314	100%	32,589	100%	30,996	100%	38,926	100%	118,750	100%
TOTAL in USD million	32.3	100%	29.3	100%	14.4	100%	24.2	100%	14.8	100%	14.0	100%	17.6	100%	53.8	100%

Source: Ministry of Water, Sanitation and Hygiene (translated to USD at a constant exchange rate[78])

The progressive decline in the level of public expenditure allocated to the WASH sector after 2009 by successive Finance Acts is the result of reductions in both internal and external funding. Political instability between 2009 and 2014 resulted in a suspension of external funding from several key donor agencies, including the African Development Bank, the European Union (EU) and the World Bank. This necessitated systematic annual budget cuts and a scaling back of programmes and activities by government agencies. Political instability also contributed to a slowdown in private sector activity, which in turn led to a decline in the internal revenue for the government. An additional reason has been the current prioritisation of the Government of Madagascar of sectors that it perceives are more directly linked to economic growth for the country.

The water supply subsector received significantly more priority over the period than sanitation and hygiene, with sanitation receiving only 17% of total funding in 2011. The percentage increased in the following years to reach 43% of total funding in 2016, and although this fell back to 20% in 2017 the budget increased in absolute terms to MGA 24.3 billion, or US$ 10.8 million. The Government reported a zero budget for hygiene throughout the period.

External finance from donor agencies accounts for around 70% of non-household investment in the sector, although in absolute terms it is still relatively low. Gross disbursements of ODA 2014-2016 to water supply and sanitation were US$ 21.3 million, US$ 12.4 million and US$ 11.0 million—an annual average of US$ 14.9 million. The largest donors in recent years have been the African Development Bank/Fund (US$12.2 million, US$ 3.1 million and US$ 0.01 million respectively for 2014-16), Agence Française de Développement (US$ 3.9, US$ 4.0 and US$ 3.6 million), the European Union (US$ 2.2 million, US$ 1.8 million and US$ 2.4 million) and UNICEF (US$1.2 million, US$1.7 million and US$1.2 million). Urban areas and the national water company, JIRAMA, have often been the priority for funding from Madagascar's development partners.[79]

Madagascar is a signatory of the African Union e-Thekwini and Sharm El Sheikh (2008) declarations as well the Ngor declaration (2015). The Ngor declaration includes a commitment to establish and track sanitation and hygiene budget lines that consistently increase annually to reach a minimum of 0.5% of GDP by 2020. The US$ 24 million WASH budget reported to GLAAS represents 0.24% of GDP, and with the relatively low priority allocated to sanitation and hygiene (ranging from 20% to 40% of the total WASH budget), this suggests that the Government is only allocating between a fifth and a tenth of what is required by 2020 under the Ngor commitment.

6.5 Financing gaps

[78] Central Bank of Madagascar, average exchange rate for 2013 is: USD 1 = MGA 2,206.91
[79] See for example, TrackFin 2018.

Several studies have identified insufficient financing as a major barrier to progress in the WASH sector. These include the World Bank's Country Status Overview (CSO) for Madagascar, WaterAid's "Off Track, Off Target" 2011 report, the UNICEF WASH Bottleneck Analysis Tool (BAT) as well as the 2017 GLAAS report.[80] The CSO analysis revealed insufficient funding for data and performance management as well as a more general financing gap. Contrary to GLAAS, the CSO analysis of Madagascar identified financial absorption constraints and a lack of equity in programme delivery as barriers to progress, with exclusion of those living in extreme poverty.[81]

UNICEF has also sought to quantify the challenges of financing of the sector. Its report "Investing in Water, Sanitation and Hygiene in Madagascar" stated that given the low sustainability levels and the need for proper capital investment for operations and maintenance, the current level of expenditure of around US$1 per person per year was not sufficient to make appropriate progress.[82]

The report records that key interim outcomes in WASH to be achieved by the Madagascan Government by 2019 include increasing improved sanitation coverage from 12% to 17% and increasing improved water coverage from 52% to 68%.[83] These outcomes have an estimated investment cost of between US$ 475 million and US$ 847 million over the next 4 years.[84] The GLAAS report states that Madagascar has US$ 516 million WASH investment needs for 2017-19, but the Ministry of Financing and Budget and the Secretariat for the Coordination of External Aid estimate that only 38% of these are currently funded.

UNICEF estimate that the investment cost required to provide the whole population with access to sustainable water and sanitation is around US$ 1.5 billion in total. This compares with estimates from the World Bank that access to basic WASH will cost US$ 149 million a year from 2015 through to 2030. The cost of not-providing this access is even higher, however. Poor access to water and sanitation costs Madagascar up to US$ 567 million per year or US$ 25 per person per year. This translates into an estimate of the economic benefits of reaching water and sanitation targets of 1.67 for sanitation and 3.2 for water. This means for every US dollar invested in water supply interventions the return could be US$ 3.2.[85]

The costs of achieving SDG targets 6.1 and 6.2 are significantly higher still. The World Bank estimates that the cost of delivering safely-managed water and sanitation services will cost the country US$1.02 billion per year, or 9.07% of GDP. [86]

Estimation of costs of WASH development and of the water and sanitation interventions should take into account the full investment and annual running costs. The financing shortfall is therefore also relevant for operations and maintenance (O&M) needs. The financial sustainability of water services represents a significant challenge for the Government. The GLAAS report showed that less than 50% of operations and basic maintenance for water supply services are covered by tariffs and household contributions.[87]

6.6 Impact of the EI on the WASH Sector (funding and spending)

[80] UNICEF "Madagascar WASH Sector Service Provision: Bottleneck Assessment" 2014 report

[81] Since 2006, Country Status Overviews (CSO) have provided an assessment of the WASH sector and the main bottlenecks to progress. These studies identified the ways in which investments can be made to overcome systematic bottlenecks in the sector, from policies and strategies to outputs, service uptake and use. The CSO tool was developed by the World Bank Water and Sanitation Programme and has been rolled out in Africa through a partnership of organisations including the African Ministers' Council on Water (AMCOW), UNICEF, the UNDP and others

[82] UNICEF « Investing in Water, Sanitation and Hygiene in Madagascar", July 2016

[83] UNICEF « Investing in Water, Sanitation and Hygiene in Madagascar", July 2016

[84] Ibid

[85] UNICEF « Investing in Water, Sanitation and Hygiene in Madagascar", July 2016

[86] The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene; (Table 2.1), Guy Hutton and Mili Varughese, January 2016

[87] The UNICEF report also points out that achieving sustainability for rural water supplies, proportions of total investments to be incurred post-construction are approximately 76% when piped systems are used and 50% when using wells or boreholes with hand pumps.

The EI financial contribution to progress in the WASH sector is indirectly through the tax paid to central and local government, in the areas they operate. In the Tamatave and Fort Dauphin municipalities, for example, mining companies were the largest taxpayers, and through participatory budgeting, citizens in these municipalities influence how to allocate revenues. Funds in these municipalities have been used to pay salaries of local staff at the commune, and infrastructure for local communities, including water supply infrastructure, schools and road maintenance.[88]

It is not possible to determine directly where revenues from the EI sector end up in the national budget, as there is no traceability of its contribution to any particular sector. At local level, authorities rarely provide detailed information on how EI taxes are spent. WASH interventions are also often managed by civil society organisations.

Nevertheless, based on the information available and as transparency in public finances, the EI sector and WASH sector improves (the EITI and GLAAS/TrackFin contributing to the latter two), it is possible to assess how Madagascar can derive better value from its natural resource wealth for achieving progress in the WASH sector and sustainable development more broadly.

[88] See https://eiti.org/ . More detail is also provided above in sections 5.5.3 and 5.5.4.

7. CONCLUSIONS AND RECOMMENDATIONS

Madagascar's national and local governments face multiple challenges in delivering their commitment to ensure all of the country's citizens have access to safely-managed water and sanitation services by 2030 (SDG targets 6.1 and 6.2). The 2017 WHO/UNICEF JMP estimates that just over half, 51%, of the population has access to at least basic water services and only 10% access to at least basic sanitation services. Although there is currently no estimate, access to safely-managed services will be lower still: over 22 million of the country's 25 million people therefore do not have at least one of the rights to water and sanitation fulfilled. The population is also projected to increase by a further 11 million people by 2030.

The scale of the challenge is reflected in the capital investment needed to achieve the SDG targets: 9.07 percent of GDP, or over US$1.02 billion per year through to 2030. This compares with recent government budget budgets to WASH (recurrent and capital combined) of US$24 million (2016), or a combined government and donor total spending reported to GLAAS of US$90 million (US$ 26 million by government and US $64 million by donors). Although service users are estimated to spend similar sums to government on accessing services, these figures nevertheless point to a major annual financing gap. The GLAAS 2017 report confirmed that Madagascar has less than 50% of the necessary financing required to meet its national targets in all four subsectors of rural and urban water supply, and rural and urban sanitation.

Although the EI sector is not at the scale of many of Madagascar's African neighbours, there is nevertheless scope to meet part of this financing gap from domestic resource mobilisation linked to the EI. Some EI companies support local development objectives, including WASH, but not in a coherent, planned manner that strengthens local services and the WASH sector more generally. Progress in addressing the financing gap will require action from Government, business and civil society to strengthen transparency and address tax loopholes, transfer mispricing and corruption. Success in these areas also requires continuing and enhanced international support and cooperation from countries and institutions outside of Madagascar.

There is significant scope for the Government to deepen and broaden the tax base from current levels. General government revenue as a percentage of GDP was only 13% in 2016. This is one of the lowest in the world and compares with a Sub-Saharan average of 17.4% of GDP and a level of 29% of GDP in South Africa, the continent's second largest economy. There is increasing evidence that countries with tax revenues below 15 per cent of GDP have difficultly funding even basic state functions.[89] Unless general government revenue increases above this threshold, it will prove difficult for Madagascar to make real progress in improving key social indicators.

Strengthening governance in the EI sector is a crucial part of tackling public and private corruption. This requires action across several fronts. UNCTAD estimates that the government loses significant revenue through mineral smuggling: US$ 26 million of gold was exported illegally to one country alone in 2012 and 2013. Legislative reform is key to an effective anti-corruption strategy, accompanied by strengthening the independence of relevant institutions, capacity building, transparency and an empowered civil society.[90] The Government has a strategy in place, which aims to strengthen anti-corruption legislation, increase the independence and resources of the public anti-corruption agencies and improve the integrity of the judicial system.[91] Implementation is the key

[89] Gaspar, Vitor, Laura Jaramillo and Philippe Wingender, (2016). *Political Institutions, State Building, and Tax Capacity: Crossing the Tipping Point*, IMF Working Paper WP/16/233.
[90] See, IMF, 2016.
[91] Other aspects include developing an information system to track all legal anticorruption cases and making the Council of Budget and Financial Discipline fully operational, IMF 2016.

challenge, and the international community should be prepared to support the Government in this critical endeavour.[92]

It is vital to sustain the momentum behind increased transparency and accountability. The IMF recommends that the Government provide more information on the data and activities of multinational corporations and state-owned enterprises operating in the EI sector.[93] As part of its compliance with the EITI, the government should seek to improve transparency and address corruption at all relevant stages of the extraction process, including licence allocation, negotiation of licence terms, tax collection, as well as government revenue allocation. The Government also needs to include in legislation the requirement for disclosure of beneficial ownership of companies. Since 1st January 2017 this has been a requirement for compliance with the EITI standard. In this case, the country is lagging behind many other African countries, particularly EITI countries. The hidden ownership of companies in the EI sector is wide open to abuse, and in addition to legislation, effective steps include the need for new institutions and officials trained to deal with beneficial ownership. The international community should also seek to strengthen civil society structures to enable enhanced cooperation across development sectors and increased and more effective accountability.

Closing tax loopholes and ending unnecessary discretionary tax treatments associated with the sector can contribute significantly to increased DRM.[94] Low tax collections are the result of a combination of corruption, non-compliance and tax exemptions, with the domestic tax administration performing far below international best practice, according to the IMF. The main tax exemption is provided to about 600 so-called free-zone companies that are exonerated from payment of profit tax during their first five years and later pay a reduced profit tax of 10 percent. The country should also strengthen the steps it is taking to prevent transfer mispricing by multinationals in the EI sector. Given the complexity of the issue, the Government should seek technical assistance from experience in this field, since each sector of the EI (e.g. petroleum, gold, bauxite, iron ore) has its own specific characteristics and risks.

The Government could increase the incentives for the repatriation of illicit funds and the capture of increased funds from the EI through a ring-fenced fund, dedicated to resourcing the SDGs, including SDG 6. The interlinkages between the different SDGs provide an opportunity for increased cooperation and coordination between sectors**.** With oversight from the central and local government and civil society, a ring-fenced SDG fund could act as a powerful mechanism and incentive for capturing additional revenues, improving public financial management and spurring sustainable development in Madagascar through to 2030.

These steps can make a major contribution to strengthening Madagascar's DRM, raising much-needed funds for WASH and sustainable development, consistent with SDG 17.[95] Several international initiatives support the achievement of SDG 17, and they offer opportunities for Madagascar to strengthen capacity in this critical area. They include the Addis Tax Initiative, Tax Inspectors Without Borders, Base Erosion and Profit Shifting (BEPS) and the Platform for Collaboration on Tax.[96]

[92] The anti-corruption agencies must also be provided with sufficient financial resources and be free from political interference. Many of these entities were originally financed by donors. Concerns remain about BIANCO's attachment to the Presidency. The government's aim is to allocate 0.3 percent of GDP the general government budget (about $30 million) to the fight against corruption (SNLCC, 2015). Total 2017 budget allocations to the anti-corruption centers, BIANCO, SAMIFIN, and CSI amounted to about $2.5 million compared with requests of about $6.5 million, IMF 2016.

[93] The extractive industries—industrial and artisanal mining and logging—need adequate monitoring and rule-based operations to ensure that the economic benefits are shared equitably and not captured by insiders. Equitable sharing requires that the government captures an adequate share of the profits through an appropriate fiscal regime and uses the additional revenues to improve the supply of public goods and services, IMF 2016.

[94] The IMF has also emphasised the need to improving tax administration and collection systems, improving compliance and reducing tax loopholes (IMF, 2016).

[95] SDG target 17.1 includes a commitment to strengthen domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.

[96] See also, http://www.africa.undp.org/content/rba/en/home/presscenter/articles/2017/08/stopping_illicit_financial_flows_to_boost_growth_in_africa.html

Finally, it is important that the government plans on the basis of a long-term horizon in terms of its management of the EI. Countries that have successfully managed their EI sector, such as Botswana or Norway, have shown the ability to put in place effective governance, transparency and long-term planning. A failure to regulate the EI effectively will cause the country long-term environmental problems and ultimately undermine development. The current unregulated deforestation, destruction of biodiversity and damage to water resources, coupled with injudicious, almost unlimited allocation of land on-shore and off-shore for mineral and heavy oil extraction, risk destroying Madagascar's unique heritage and potential. The country is one of the most vulnerable countries to the effects of climate change, due to its low access levels to safe water and sanitation, dependence on rain-fed agriculture, exposure to extreme weather events and high levels of poverty. The country has significant opportunity in terms of wind and solar power, and as the world seeks to effect a transition to a low-carbon economy, the Government should think carefully about its energy mix and export plans, what this entails for the management of its EI. It should also reflect how it can best conserve and safeguard its critical water resources, forests and unique biodiversity for the benefit of current and future generations.