



United Nations Development Programme  
 Government of Madagascar  
 Global Environment Facility

**PROJECT DOCUMENT**  
*English version*

**A Landscape Approach to conserving and managing threatened Biodiversity in Madagascar with a focus on the Atsimo Andrefana Spiny and Dry Forest Landscape**

<p><b>Link to UNDP Strategic Plan (2014-2017)</b></p> <p><b>Primary Outcome:</b> (1.3) Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste <a href="#">[Link]</a></p> <p><b>Secondary Outcome:</b> [From <i>UNDP's Biodiversity and Ecosystems Global Framework 2012-2020:</i>] (<i>Signature Programme #1</i>): Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing. <a href="#">[Link]</a></p>
<p><b>UNDAF 2015-2019 Outcome(s):</b></p> <p><b>Outcome #1)</b> Vulnerable populations, living in the project intervention zones, have improved opportunities to access to income generating activities and jobs, improve their resilience, contributing to inclusive and equitable growth for sustainable development.</p>
<p><b>Expected CP 2015-2019 Outcome(s):</b> [derived from UNDAF's and stated above]</p> <p><b>CPAP component 2) Sustainable and inclusive development</b></p> <p><b>Expected CPAP Outputs:</b></p> <p><b>Output #4)</b> Structural transformation, the strengthening of sustainable productive capacities and the good environmental governance are effective and help create jobs and livelihoods for the benefit of the poor or vulnerable populations, especially women and the youth.</p>
<p><b>[Project Objective]:</b> To protect biodiversity within the Atsimo Andrefana Landscape from current and emerging threats, and to use it sustainably, by developing a collaborative governance framework for sectoral mainstreaming and devolved natural resource management.</p>
<p><b>[Project Outcomes]:</b> (1) Landscape level planning and economic analysis support the mainstreaming of biodiversity into management of the Atsimo Andrefana Landscape, covering three districts and totalling ~2.4 million; (2) Community-based production and resource use activities incorporate the conservation and sustainable use of biodiversity into management practice including through the establishment and operationalisation of Community Conservation Areas.</p>
<p><b>Implementing Partner:</b> Ministry of Ecology, the Environment and Forests (MEEF)</p>
<p><b>Responsible Parties:</b> UNDP, Tany Meva, Sage</p>

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### Brief Description

The project is designed to strengthen conservation across the multi-use Atsimo-Andrefana Spiny and Dry Forest Landscape, straddling an area of 2.4 million hectares. The landscape harbours spiny thickets and dry forests that rank amongst the most distinctive, yet least protected, ecosystems in Madagascar. It is rich in biodiversity, but faces accelerating anthropogenic pressures. Historically, land conversion for subsistence agriculture has comprised the major threat. However, large-scale projects such as road construction, irrigation schemes, oil & gas developments and mining activities present a future threat- potentially opening the landscape to large scale commercial agriculture (e.g. cotton farming), open pit mining and other developments which may also lead to an influx of economic migrants. These emerging threats are not unique to the target landscape. They are likely to prevail to a greater or lesser extent across large swathes of the country. Government lacks an effective management framework for ensuring that such development does not come at unacceptable price in terms of biodiversity loss. There is an urgent unmet need to mainstream biodiversity management into development and to influence the trajectory of development, to contain pressures in the most ecologically sensitive areas, including protected areas (PAs) and their adjacent areas, and important ecological corridors. The project will address this need through a two-pronged approach. First, it will strengthen resource use governance at the landscape level by developing and implementing a Landscape Level Land-Use Plan that explicitly incorporates biodiversity conservation needs and prescribes land uses with a view to mitigating threats—the BD LUP. It will work with national and sub-national level stakeholders to engage economic sectors, and negotiate the application of biodiversity conservation and sustainable use measures, and bring about necessary policy change. Second, the project will work with local communities to strengthen conservation on communal lands, addressing existing threats to biodiversity linked to artisanal livelihoods and subsistence activities. The project will work with communities to establish and operationalise multi-use 'Community Conservation Areas' (CCAs), including by putting in place measures to ensure the sustainable utilisation of wild resources and conservation-friendly farming. In order to secure the buy-in from local communities, the project will support sustainable livelihood activities that effectively generate socio-economic benefits and build their capacity to achieve development goals.

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**[A] Total resources allocated to this award \$5,379,452**

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## List of Acronyms and Abbreviations

ADER	: Development Agency for Rural Electrification (Agence de Développement de l'Electrification Rurale)
AfDB	: African Development Bank
BCMM	: Madagascar Mining Registry Office (Bureau Cadastre Minier de Madagascar)
BD LUP	: Biodiversity and Land Use Planning
CBD	: Convention on Biologic Diversity
CBO	: Community Based Organization
CCA	: Community Conservation Areas
CFM	: Forest Management Contract Agreements (Gestion Contractualisé des Forets)
CI	: Conservation International
COAP	: Code des Aires Protégées (Protected Area Code)
COBA	: Community based organization (Communauté de Base)
CPAP	: Country Programme Action Plan
CSO	: Civil Society Organisation
DIDE	: Directorate in charge of Mainstreaming Environmental Measures (DIDE)
DREEMF/ RDEESF	: Regional Directorate for Environment, Ecology, Sea and Forest (Direction Régionale de l'Ecologie, l'Environnement, la Mer et les Forets)
DTPA	: Directorate in charge of Terrestrial Protected Areas
DTPM	: Directorate in charge of Land-Use Planning and Management (DAGT)
EAP	: Environmental Action Plan
SEA	: Strategic Environment Assessment
EIA	: Environment Impact Assessment
EP	: Environment Program
ESSA	: Ecole Supérieure des Sciences Agronomiques (High School for Agronomic Sciences)
FAMARI	: Fati-drà Miaro ny Ala sy ny Riake (Local Association for protection of the Forest and Marine environment)
FDI	: Foreign Direct Investment
FIMAMI	: Fikambanana Miaro ny Ala Mikea (Association to protect Mikea Forest)
GDP	: Gross Domestic Product
GEF	: Global Environment Facility
GELOSE	: Gestion Locale Sécurisée (« Secured Local Management of natural resources»)
HDI	: Human Development Index
ICCA	: Indigenous Community Conservation Areas
ICMM	: International Council on Mining and Metals
IUCN	: International Union for Conservation of Nature
KBA	: Key Biodiversity Area
MECIE	: Decree regulating Environment Measures within Productive Sectors (Miser end Compatibility des Investissements avec l'Environnement)
MEESF/ MEEF	: Ministry for Environment, the Ecology, the Sea and Forests (Ministère de l'Ecologie, de l'Environnement, de la Mer et des Forets)
MEPATE	: Ministère d'Etat en charge des projets présidentiels de l'aménagement du territoire et de l'équipement (Ministry in charge of presidential projects, territory planning and equipment)
MINAGRI	: Ministry of Agriculture
MGA	: Malgache Ariary (national currency)
MNP	: Madagascar National Parks
MPA	: Marine Protected Areas
MRPA	: Managed Resources in Protected Areas
NEB	: National Environment Board (ONE)
NEP	: National Environment Policy/Program

NGO	: Non-Governmental Organisation
NR	: National Road
NPA	: New Protected Area
NPC	: National Project Coordinator
NPD	: National Project Director
NRM	: Natural Resources Management
NSSMB	: National Strategy for the Sustainable Management of Biodiversity
NTFP	: Non Timber Forest Product
OMNIS	: Office Regulating National Mining and Strategic Resources (Office des Mines Nationales et des Industries Stratégiques)
ORBE	: Observatory for Regional Biodiversity and Ecosystems
SAPM	: Protected Areas System of Madagascar
PRLUBC	: Plan of Recommendations for Land-Use with Biodiversity Considerations
PA	: Protected Area
PAG-T	: Community Homeland Management Plan
PCD	: Municipal Development Plan (Plan Communal de Développement)
PCU	: Project Coordinating Unit /Project Coordinator
PEDD	: Environment Program for Sustainable Development (Programme Environnemental pour de Développement Durable)
PIC	: Pole for Integrated Growth (Pôle Intégré de Croissance)
PoWPA	: Programme of Work of Protected Area
PPG	: Project Preparation Grant (Phase de Développement du Projet)
PRBM	: Project to rehabilitate the Bas Mangoky infrastructure (Projet de Réhabilitation de Bas Mangoky)
PRIASO	: Project to rehabilitate agricultural infrastructure in the South West (Projet de Réhabilitation des Infrastructures Agricoles dans le Sud-Ouest)
PRODOC	: Project Document
QMM	: Quebec Iron & Titanium of Canada and Madagascar Minerals, acronym for the joint venture
RCTP	: Regional Committee for Territory Planning
RDP	: Region Development Plan
REDD	: Reducing Emissions from Deforestation and forest Degradation
SAGE	: Support Agency for Environment Management (Service d'Appui à la Gestion de l'Environnement)
SC	: Steering Committee
SMNR	: Sustainable Management of Natural Resources
SNAT	: National Land-Use Plan (Schema National d'Aménagement du Territoire)
SNOST	: National Plan for Sectorial and Transversal Land-Use Planning Guidelines (Schéma National d'Orientation Sectoriel et Transversal)
SRAT	: Regional Land-Use Plan (Schema National d'Aménagement du Territoire)
TDG	: Resource Management Transfer Contract (Transfert de Gestion- TDG/Transfert de Gestion de Ressources Naturelles -TGRN)
CU FEM	: Coordination Unit for Global Environment Facility (Unité de Coordination du Fond pour l'Environnement Mondial –UC)
UNDAF	: United Nations Development Assistance Framework
UNDP	: United Nation Program for Development
WCS	: Wildlife Conservation Society
WHH	: Welt Hungerhilfe
WWF	: World Wild Fund

# 1 Situation Analysis

## 1.1 Introduction

1. This project is designed to build national conservation management capacities for the conservation and sustainable use in Madagascar, with a focus on the dry and spiny forest landscape of the Atsimo Andrefana Region, located in southwestern part of the island and which harbour unique spiny thickets and dry forests, and within them a number of globally important species. Although spiny and dry forests are considered as one of the most distinctive ecosystems of Madagascar, their landscape still remains among the least protected in the country. Natural resources and biodiversity in the Region are subject to increasing and emerging pressures, which are mostly of anthropogenic origin.
2. Historically, human activity has already resulted in the massive loss of the unique biodiversity that characterises Madagascar and led to substantial ecosystem degradation. Across the country, the average forest cover makes up only 10% of what it used to be 1,500 years ago, which is when human presence started to have a more marked footprint on the island.<sup>1</sup> Of note, the pace of forest loss and degradation has accelerated over the last decades and it has today reached a critical level. In the Atsimo Andrefana Region, land conversion for the purpose of subsistence agriculture has until now posed the most significant threat to biodiversity and ecosystem services. This is however changing as new economic trends are taking shape.
3. New threats to ecosystems and biodiversity are currently emerging due to large-scale extractive and agriculture investments, such as oil and mining and commercial agriculture projects. The Atsimo Andrefana Region holds e.g. the highest number of environmental permits granted to mining and oil & gas companies in the country. The Marombe district harbours one of the largest commercial agricultural projects in the country, currently being revived with new investments in irrigation and mechanisation. With the current levels of underdevelopment and social deprivation that characterises Madagascar, these new investments are expected to generate jobs and revenues, and to boost the uptake of new technologies and techniques. At the same time, without adequate support to counter the actual and potential disruptive impacts of these new investments on the environment, they could cause a rapid and possibly irreversible degradation of Atsimo Andrefana's natural assets. Yet, for the positive socio-economic gains to realise, an adequate negotiation of trade-offs needs to take place, along with the introduction of mainstreaming measures that will help decision-makers and the population in general avoid and manage the negative impact. Moreover, these economic and environmental emerging trends are not exclusive to the target landscape, but they have also been increasingly experienced in other parts of the country. Hence, positive changes that the project may bring about could also apply to other regions.
4. Currently, the Government indicates that it does not have an effective framework for the protection and management of Atsimo Andrefana's landscapes. Also, in spite of expected changes in the economic profile of the Region, it will still take a while before local communities are able to fully participate in these changes and reap benefits. Subsistence agriculture and extraction of local natural products are likely to remain the basis of their livelihoods, which is also likely to have an impact on the integrity of ecosystems, unless land-use can be more appropriately governed. There are very few incentives in place for local communities to changing harmful production practices and adopt more sustainable ones.
5. The project is designed to strengthen conservation management capabilities across the multi-use Atsimo Andrefana Spiny and Dry Forest Landscape, straddling an area of some 2.4 million hectares. There is an urgent unmet need to mainstream biodiversity management into development and to influence the trajectory

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<sup>1</sup> Goodman, 2008; Humbert, 1927.

of development, to contain pressures in the most ecologically sensitive areas, including protected areas (PAs), their adjacent zones and important ecological corridors.

6. The project will address this need through a two-pronged approach: First, it will strengthen resource use governance at the landscape level by developing and implementing a Landscape Level Land-Use Plan, in support of the Regional Plan, that explicitly incorporates biodiversity conservation needs and prescribes land uses with a view to mitigating threats—the BD LUP. It will collaborate with stakeholders from the national and regional levels so as to involve development sectors, as well as the private sector and negotiate the implementation of environmental and biodiversity conservation measures, with the aim of mitigating the impacts of large-scale investments on fragile ecosystems. Second, the project will work with local communities to strengthen conservation on communal lands—addressing existing threats to biodiversity linked to artisanal livelihoods and subsistence activities. It will also address the exclusion of communities from decision-making processes relating to large-scale economic projects by raising their awareness on their right to public consultation. The project will work with communities to establish multi-use ‘Community Conservation Areas’ (CCAs), put in place the necessary institutional framework for management, and install measures to ensure the sustainable utilisation of wild resources, while reinforcing local participation in decision-making processes.

## 1.2 Development and Environmental Management Context

### 1.2.1 National development context

#### *Key development data*

7. Madagascar is a vast island located southeast of Africa. With a surface area of 592,000Km<sup>2</sup>, it is the fourth largest island in the world. The country ranks among the poorest of the world when it comes to income per capita (USD 950 per annum). With a population of 21 million (two thirds of which live in rural areas), it has low adult literacy rates (64%) and high child mortality (61/1,000 live births). In spite of a wealth of natural resources, the economic and social development of the Malagasy population remains low. With a Human Development Index of 0.480, it ranks 151<sup>st</sup> out of 185 countries.<sup>2</sup>
8. Poverty is widespread. Seventy-one point five percent (71.5%) of the Malagasy population lives under the poverty line, including 52% under the extreme poverty line. Twenty-eight percent (28%) are affected by food insecurity. The poverty rates reach close to 80% or more in nine (9) out of the country’s twenty-two (22) regions. The most affected Regions are Androy and Atsimo Andrefana, with rates of poverty prevalence respectively estimated at 97% and 93%. Such large social, economic, and regional disparities pose a risk to the stability and unity of the country as a whole. The national economy essentially relies on the primary sector (agriculture, but also forestry and fishing), which employs 80% of the active population, but accounts only for approximately 25% of the GDP.<sup>3</sup>
9. The country is currently recovering from a long political crisis that formally ended in 2013, but which had a profound negative impact on the economy. Low rates of economic growth for the past years five also meant that the poverty and deprivation continued to be widespread and that the government has been struggling to provide vulnerable groups with generalized access to basic social services, income generation, or jobs, extreme poverty and social, economic, and regional disparities were exacerbated. Social sectors,

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<sup>2</sup> (1) Income per capita is GNI per capita, PPP (current international \$), from WB Data 2011; (2) percentage of urban/rural population (*ibid.*); (3) literacy rate, adult total (% of people ages 15 and above) (*ibid.*); (4) mortality rate, under-5 (per 1,000 live births) is from WB Data 2010; (5) HDI is from UNDP HDR 2012.

<sup>3</sup> Madagascar's National Statistics Institute (INSTAT), 2013. Madagascar Millennium Development Goals National Monitoring Survey.

such as health and education, have been and continue to be heavily dependent on external aid. (See more about this topic in Annex 5-D).

10. Although the context in the past years was not favourable to investments, requests for lands for agribusiness development purposes were maintained and some permits were issued to foreign companies.<sup>4</sup> In the same way, emerging industries of the oil and gas sectors, as well as industrial mining are expected to develop rapidly in the next few years. Attracting investments in these sectors is at the heart of government's development policies. It is estimated that the mining sector currently generates approximately 15% of the GDP against less than 1% in 2010.<sup>5</sup> Although oil and gas developments are mostly at the exploration phase, the launching the production phases for one or two extractive projects could be sufficient to trigger an economic boom in the Malagasy economy. The Oil Code dates back to 1996 and is largely considered as outdated, although a revision is currently being undertaken.

### *The country's natural endowment and recent trends*

11. Madagascar constitutes one of the world's most important storehouses of biodiversity. The country is one the seventeen "Megadiverse States", harbouring up to three quarters of the World's estimated species. Madagascar and its neighbouring island groups are considered one of Conservation International's 34 Conservation hotspots, housing an astounding total of 8 plant families, 4 bird families, and 5 primate families that are found nowhere else on Earth. Moreover, Madagascar shelters 4 of WWF's Global 200 terrestrial ecoregions (forests and shrub lands; dry deciduous forest, spiny thicket and mangroves) and 1 freshwater ecoregion. The known species count includes 210 species for mammals (98% endemic), 310 species for the avifauna (60% endemic), 630 species for hepetofauna (98% endemic), 164 species for freshwater fish (60% endemic), and 13,700 species for higher plants (>90% endemic). (For a related discussion on **Madagascar's biodiversity endowment**, refer to Annex 5, section B, on 'Natural Assets and recent trends in NRM', and a sub-section under C on 'The Biodiversity of global significance in Atsimo Andrefana')
12. The natural endowment of Madagascar in terms of natural habitats is the first line of economic resources used by its population, constituting 49% of the country's total wealth.<sup>6</sup> This includes both the diversity of ecosystems and species, but also valuable assets generated by ecosystem services. It is estimated that protected areas alone provide water services to at least 430,000 ha of irrigated perimeters and potable water to 17 major towns in Madagascar.<sup>7</sup> Biodiversity rich land- and seascapes equally attracts tourism to the country. It is estimated e.g. that 70% of the tourists who come to Madagascar visit at least one Protected Area. Tourism in turn generates jobs and help the country earn hard currency, even though the number of foreign visitors remains limited, when compared with those of other Indian Ocean countries.
13. Another aspect of Madagascar's natural capital is its geology, which from many accounts is very promising with respect to metals and minerals. Historically, mining has always had a role to play in the economy, where the focus was on gold mining and gem stones mainly. Numerous deposits of commercially interesting minerals, as well as petroleum and gas, were either confirmed or newly discovered. Some are expected to enter into production phase in the next few years.
14. The past governments of Madagascar have all placed mining at the heart of their strategic vision for development. Although the recent launching of the Ilimite Project at Fort Dauphin (also know as "QMM") and the Ambatovy megaproject denote a clear change in scale. They represent a turning point in the country's development model.
15. **Refer to Annex 5 for more details on:**

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<sup>4</sup> Official figures on requests for land lease are however not available.

<sup>5</sup> Banque Mondiale (2010) Opportunités et défis pour une croissance inclusive et résiliente, Ch. 8 Le secteur minier.

<sup>6</sup> Country Environmental Assessment (CEA), World Bank (2013).

<sup>7</sup> Ibid.

- The consequences of the political crisis (section **A**)
- Natural assets and recent trends in NRM (section **B**)
- The regional development context (section **C**)
- Emerging sectors: mining, oil, and large scale commercial agriculture (section **D**)



Fig1



Fig2

*Figure 1: Lemur catta, emblematic lemur species of the region of Atsimo Andrefana*

*Figure 2: Dry spiny forest, Atsimo Andrefana, Madagascar*

[Click here to access images](#)

### 1.2.2 Threats to Biodiversity and Drivers of Ecosystem Change

16. In this section, the general threats to biodiversity in Madagascar and their drivers are discussed. For an analysis of threats to and impacts to biodiversity that are **specific to the target landscape Atsimo Andrefana**, refer to **Annex 5, section E**, with focus on:
- Land use changes and habitat loss
  - Loss of high value species
  - Emerging sectors: potential threats, examples
  - Climate change
  - Tourism sector
  - The 'park-edge' effect
  - Dune shifting

#### *Direct Threats*

17. Overall, the different terrestrial and marine landscapes of Madagascar are faced with multiple anthropogenic threats. Under the typology of the Millennium Ecosystem Assessment (MEA, 2003), there are five groups of threats that endanger biodiversity survival: (i) changes in land use, including habitat transformation; (ii) irrational use (or over-exploitation) of biological resources; (iii) the impact of invasive alien species; (iv) pollution; and (v) climate change. These threats impact biodiversity either at the level of ecosystems or species, or both.
18. **Land-use / habitat change.** Currently, the most significant threat to Madagascar's biodiversity is associated with changes in land use, i.e. transformations made to the natural habitats of animals and plants.
19. In forest ecosystems, land use change often takes the form of **deforestation**, which is mainly associated with slash-and-burn subsistence farming, commercial production of maize, logging to produce fuel wood and timber, as well as hunting and poaching. Deforestation may also be linked to land clearance for the establishment of roads, mining sites and human settlements. In the medium and long term, deforestation leads to significant habitat loss and gradual fragmentation of terrestrial landscapes.
20. When clearing for the establishment of croplands, local farmers practice slash-and-burn farming and shifting cultivation and generally start by clearing the forest cover in places located far from inhabited areas. These practices are very traditional and rudimentary. Although they may well have been sustainable in the historical past, tod they have become unsustainable due to demographic pressure and poverty. The drivers

behind the persistence of unsustainable agricultural practices includes: limited access to both knowledge on improved farming techniques and to rural credit, as well as outdated land tenure practices.

21. More than 90% of the island's primary forests have already been lost or degraded, with intensified rates of conversion over the past 50 years, culminating in large-scale deforestation.<sup>8</sup> According to the Global Forest Watch, the estimated surface area of Madagascar's forest cover in the year 2000 amounted to 17 million hectares. Between 2001 and 2013, 1,616,374 hectares of this cover was cleared.<sup>9</sup> The cleared area only over a 3-year period corresponds to almost 10% of previously remaining forests. This is significant, especially in light of the fact that large parts of the country's biodiversity is forest-depend. When complex forest ecosystems are degraded beyond a certain threshold, their inter-dependent ecological functions collapse. At scale, this can trigger loss of endemic species, or an increased threat level to them, due to habitat loss. Restoring forests is both very costly and, in the case of Madagascar, technically difficult to carry out.
22. **Bushfires** also contribute to clearing and degrading forests and related ecosystems, especially in the western region of the country where rainfall rates are low. Fires are linked to slash-and-burn farming and charcoal production further aggravate degradation.
23. **The over-exploitation of biological resources** exercises a strong pressure on woody, fauna, and reef resources. Populations of specific species suffer heavy losses that sometimes lead to their extinction at the local level. This also leads to overall depletion of ecosystem resources. Species with high commercial value are particularly vulnerable to exploitation, which is often illicit. The species affected by irrational use are *palissandre* and rosewood, lemurs, amphibians and reptiles, and a long list of halieutic resources.<sup>10</sup> The exploitation of turtles as well as lemurs has strongly increased in recent years, probably in relation to the progressive lifting of taboos prohibiting their hunting as game, along with other factors such as food insecurity and lax controls.
24. **Invasive alien species (IAS)** have tended to be overlooked in Madagascar but their impacts can be quite severe and highly persistent. In natural forests, IAS may become established as a result of partial forest fragmentation or logging. An example includes the scrubby tree *Ziziphus mauritania* and the flowering plant *Lantana camara*, both of which have severely hindered natural regeneration and led to major ecological imbalance in forest areas in the western part of Madagascar. Selective logging conducted 50 and 150 years ago have led to persistent changes caused by alien invasive plants<sup>11</sup> and can have long-term impacts on lemur population densities.<sup>12</sup> IAS have also had significant impacts in freshwater ecosystems and could even threaten some of the country's unique freshwater species. The parthenogenic crayfish, *Procambarus* sp. ('Marmokrebs') has recently appeared in Madagascar and is known to be highly invasive elsewhere in the world. The exact impacts are still to be determined.<sup>13</sup>
25. **Pollution.** Madagascar remains for the most part a rural country. However, the country seems to be entering a new phase of development that will lead to the development of infrastructure and industry and possibly also the sprawling of urban centres. In such scenario, loss of the natural environment and pollution could become significantly more important. Currently, the tools being employed to measure and control these impacts require strengthening.
26. **Climate change.** Natural climate change during the Pleistocene has been enormously influential in shaping patterns of Malagasy diversity and endemism. Hence, one may reasonably anticipate that there is considerable intrinsic resilience within Madagascar's biodiversity, even though the predicted rates of

<sup>8</sup> Cinquante années de déforestation et de fragmentation forestière à Madagascar. Conservation environnementale (Harper et al. (2007).

<sup>9</sup> [www.globalforestwatch.org/country/MDG](http://www.globalforestwatch.org/country/MDG)

<sup>10</sup> Madagascar: le commerce illégal de bois de rose continue (Madagascar: illegal trade of rosewood continues), IRIN(2012) and Activités de pêche non signalées, population affamée et troubles politiques : la recette pour une crise d'insécurité alimentaire à Madagascar ? (Menach et al. (2011) in Politique marine.

<sup>11</sup> Brown, K.A. & Gurevitch, J. (2004). Long-term impacts of logging on forest diversity in Madagascar. PNAS.

<sup>12</sup> [http://icte.bio.sunysb.edu/pdf\\_files/whiteetal1995.pdf](http://icte.bio.sunysb.edu/pdf_files/whiteetal1995.pdf).

<sup>13</sup> See: <http://www.springerlink.com/content/w4635m7327471764/>.

climate change in the coming years are almost certainly unprecedented. Likely impacts climate change on biodiversity will include: (i) a break in ecosystem resilience, e.g. of forest blocks, now subject to a different fire, rainfall or temperature regime, phenomena that will affect fragmented ecosystems more strongly than the less fragmented ones, which could then play a *refugia* role; (ii) changes in species' ranges, as climate changes locally and certain species cannot adapt, possibly leading some to extinction; and (iv) and unforeseen proliferation of invasive species, pathogens or vectors that can be attributed to sudden or extreme changes in climatic variables.<sup>14</sup>

### *Emerging sectors: potential threats and drivers*

27. The profile of threats affecting biodiversity at the landscape level is changing. This is due to the rising importance of mining, oil, and gas development, as well as agribusiness. These sectors are also likely to attract migration and the establishment of informal settlements, generating a number of **secondary impacts**. These are often difficult to manage with tools designed to directly regulate the industry and its activities. In addition to being negatively impacted by the scale of infrastructure developments and other localised inevitable impacts, if un-managed, cumulative and secondary impacts persist unabated, biodiversity could be deeply and irreversibly affected. Some damages are already visible and will become even more so in the future.
28. **Mining and oil production.** The main direct threats resulting from mining are manifested in different forms. The most tangible is the clearing of forests, soil extraction, and relocation of large masses of soil, plus construction of related infrastructures such as feeder roads, processing plants, etc. These works are large-scale and will alter the landscape profile and cause habitat degradation and fragmentation. Works at such scale will unavoidably affect the local environment in significant ways.
29. “Valuing natural resources”, including minerals, features among country’s strategic choices for future development (see e.g. the new National Development Plan (2015-2019), analysed further down). However, only under ideal conditions is mining beneficial to a country or to the local population in the long term. The experience from a swath of developing countries undergoing an “extractive boom” show that it rarely results in equitable benefits for the host region, or country, for at least two reasons: (i) the mining methods are generally chosen in the best interests of the operator, without consistently applying the measures foreseen in the ‘**mitigation hierarchy**’ for minimising environmental harm<sup>15</sup>; and (ii) the trade-offs or compromises negotiated for balancing the interests of biodiversity or local communities on the one hand, and of extractive sector operators on the other, are not always equitable – they are often at the expense of the local population’s long-term benefits, including those derived from ecosystems services. This last issue is linked to the poor negotiation capacity of the local administration, when faced with experts from foreign companies at the negotiating table, where decisions on trade-offs and environmental mitigation measures are made. At this current stage, the mitigation hierarchy is not being systematically applied in Atsimo Andrefana with respect to mining projects throughout the projects’ cycle. These projects are beginning to become more widespread in the region. (See e.g. Figure 5 and Box 5 in Annex 5 for more details.)
30. Indirect impacts are also frequently overlooked although they are not minor. For instance, the air and water systems may be at risk of pollution, which can very quickly get out of hand due to the fluid nature of these environments. Also, new and poorly controlled agglomerations and population settlements around new infrastructures may pose threats. In addition, the loss of certain species and widespread ecological disturbances may prove to be irreversible, which is at times difficult to foresee in the planning phase of extractive projects, when key ‘go ahead’ permits are issues.
31. Furthermore, in the case of Atsimo Andrefana, small mining production are extremely abundant and scattered. They have also historically been poorly controlled. This makes it especially difficult to monitor

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<sup>14</sup> Deuxième communication nationale to the UNFCCC, MINENVEF (2010).

<sup>15</sup> See more on the Mitigation Hierarchy in Box 2.

the cumulative sectoral impact. Moreover, small mines tend to enable illicit exploitation that violates existing regulations.

32. **Commercial agriculture.** Some negative impacts of commercial agriculture development are associated with competing land uses, in addition to the use of pesticides. Market incentives drive populations to find additional farm land. Forest soils are some of the most sought lands due to their high fertility. The resulting land conversion encroaches on the forest cover, pushing back the forest edge. In addition, pesticide use is extremely common in commercial farming—mainly in mono-crop plantations, as they are more vulnerable to pests. The products most commonly used to this end in Madagascar are DDT-based products<sup>16</sup>, even though DDT is known for being highly harmful to natural living organisms that are key parts of the ecosystems. DDT use is banned in Northern countries and many African countries, but not yet fully in Madagascar.

### 1.2.3 Environmental Management in Madagascar

#### *Institutional framework for mainstreaming environment management in landscape governance*

33. The government of Madagascar is making efforts to promote environmental considerations within other development planning sectors and through the decentralized territorial authorities and services. The **Ministry of Environment, Ecology, Sea and Forest** (MEESF or MEEF, to use the French acronym) is the main government body responsible for the management of the environment and renewable natural resources. As an important line ministry, beyond its environmental protection mission, MEEF is also tasked with mainstreaming the environmental measures within development policies and ensuring that development investments are compatible with environmental sustainability.
34. Beyond these basic objectives, its role is to strengthen the management of **Protected Areas (PA)** and to safeguard the biodiversity land and seascapes contain, for the development and the wellbeing of local populations. Article 1 of MEEF's statutes indicates its goal to be to "[...] increase the area of marine and terrestrial PAs and ensure the sustainability of their management for the preservation and promotion of biodiversity for development".
35. Under MEEF, a number of directorates, including national (tallying 4) and regional (tallying 22), as well as different subordinate entities, play a key role in environmental management in Madagascar and can facilitate the mainstreaming of environmental concerns in other sectoral entities. (See the Box 1 for more details on the institutional structure of MEEF.)
36. Since 2002, the Directorate of the Environmental Dimension Mainstreaming (DIDE), has ensured the coordination of activities, harmonization and establishment of Environmental Units or "green units", which operate within sector ministries, and cross-sector environment working groups. In some cases, the Environmental Units are directly attached to the Minister's office. There are now dedicated Environmental Units within each line ministry and regional government throughout the country.
37. In the Atsimo Andrefana Region, a Regional Environmental Unit has not yet been established, but its creation is scheduled for very soon. This unit will work as a cross-sector multi-stakeholder platform, engaging various decentralized authorities from relevant ministries. Coordinated by the DREEMF, the Environmental Unit for Atsimo Andrefana will be led by regional authorities.

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<sup>16</sup> DDT (or Dichloro-diphenyl-trichloroethane) is a Persistent Organic Pollutant (POP). It is harmful to human beings, as well as to the environment. It transfers and accumulates in the food chain.

38. Currently under development, the Environmental Units' Platform programme will aim to engage different sectors in an exchange and dialogue concerning landscape planning, helping to identify potential development investments in the region, and mainstream environmental measures within these projects, taking Environmental Impact Assessment (EIA) and existing legal outlines for conflicts resolution (MECIE) into account. The mainstreaming of environment considerations within the different planning instruments will be a result of information technical exchanges and discussions among different development actors, followed by decisions within the Environmental Units' Platform.
39. At least three other key government sectors, led by both line ministries and ministers attached to the Presidency, are highly relevant to the subject matter of this project:
- Agriculture, governed by the Ministry of Agriculture of Madagascar, whose mission is to implement the government's policy on agricultural development and to improve food security and nutrition for the Malagasy population;
  - Extractives, governed by the Minister at the Presidency in charge of Mines and Petroleum, along with the line Ministry for Energy and Hydrocarbons, in charge of policies and key decisions, with the support of the state-owned agency, Office of National Mines and Strategic Industries (OMNIS), as the operational arm of the sector – OMNIS being in charge of managing, developing and promoting the national petroleum and mineral resources in Madagascar, often working in partnership with oil and mining companies; and
  - Land-use planning and infrastructural development, governed by the Minister of State for Presidential Projects, Spatial Planning and Machinery (METAPE), with key directorates and subordinate agencies in charge of spatial planning (including of seascapes), land-use planning, land tenure governance, settlements, housing, urban and rural development, as well as social infrastructures.

Other entities could be mentioned and play a role (refer to section [Stakeholder Analysis](#) for a discussion).

#### **Box 1. Institutional structure of MEEF**

The MEEF has a General Secretariat (GS) and four General Directorates (DG). Under the General Directorate of Environment, is found the Directorate of the Environmental Dimension Mainstreaming (DEDM), which is in charge of mainstreaming the environment within "all public sectors, regional and local authorities, and private sector". One of the missions is to establish *Environmental Units* within each sector ministry.

The four General Directorates are:

- (i) The General Directorate of Forests (GDF), responsible of coordination, monitoring and controlling the implementation of the technical activities by MEEF, and those conducted by bilateral or multilateral cooperation projects related to "forests". This unit is responsible for the Terrestrial Protected Areas Network, promoting forest resources, and controlling forest regulations
- (ii) the General Directorate of Environment (GDE) has the mission to protect, enhance and work towards Sustainable Development. It is in charge of designing and coordinating activities in accordance with the Government's Environment Policies and monitoring and controlling their execution. Some tasks include fighting against pollution, climate change, conducting data collection and information sharing, mainstreaming the environmental dimension across development sectors, implementing international environment conventions, supervising the implementing the Environmental Impact Assessment law (regulated by the MECIE decree);
- (iii) the General Directorate of Seas is responsible for the conservation of the coastal zone and Marine Protected Areas; and
- (iv) the General Directorate of Ecology, which aims to promote respect of the ecology to protect the country's natural heritage, is responsible for soil conservation and development of Green Partnerships.

The MEEF and its different departments are represented at regional level through 22 Regional Directorates of Environment, Ecology, Sea and Forests (RDEESF).

Specialized agencies associated to the MEEF complete the institutional framework for environmental management at the government level. These agencies are under the administrative and technical responsibility of MEEF. Two key institutions are: (i) Madagascar National Parks (MNP)<sup>17</sup>, established in 1990 as an independent non-profit association is in charge of managing PAs under IUCN categories I, II and IV, and; (ii) the National Environmental Board (NEB)<sup>18</sup>, founded that same year, to regulate the environmental impact of economic and development investment, monitor the quality of the environment and facilitate the implementation of environmental measures within investment projects.

In addition to MNP, the EAP helped build a variety of civil society associations involved in developing, implementing and monitoring environment programs in support to PA management, such as the Support Service for Environment Management (SSEM), and two foundations with complementary roles in conservation funding, the Foundation for Protected Areas and Biodiversity of Madagascar (FPABM), created in 2005 to fund conservation activities, and Tany Meva, created in 1996 to support community development initiatives around PAs, with the aim to reduce pressures on the parks. Their current assets amount to USD 50 million and USD 18 million, respectively.

Source: PPG Report, Study #1 in Annex 7.

### *Policy and Legal Frameworks*

45. For a thorough discussion of **Key Policy Instruments and Governance Framework** that are pertinent to environmental management in Madagascar, refer to **Annex 5-F**, which contains the following:

- Frameworks for governing the extractive sector
- Frameworks for governing the agricultural and tourism sectors
- Other legal, policy and institutional frameworks for managing the environment
- The Protected Area System of Madagascar (SAPM)
- Community natural resource management within the SAPM

Herein is a summary of key features, including overarching policies and practices.

### *The new National Development Plan (2015-2019): valuing natural capital*

46. The Government of Madagascar has adopted a new National Development Plan (NDP) for the period 2015-2019). The document states the national guidelines taking a “*new path for comprehensive and sustainable development*”.<sup>19</sup> The NDP makes reference to the need to address the deep impact that the political and social crisis has had on the country by way of an “*effort towards national reconciliation, by implementing a set of deep institutional reforms and by the immediate realization of emergency actions and measures that will have an immediate impact*”. The NDP action plan was developed to implement these guidelines.

47. Axe number 5 of NDP 2015-2019 aims to “Value Natural Capital and reinforce the resilience to natural disasters and risks”. This axe mentions, as a priority, “mainstreaming natural capital in the process of economic and social development planning, and within the national accounting system”. Moreover, program 19, contained in the action plan, states that “Natural Resources, are a legacy for future generations.” The expected outcomes of these guidelines are the responsible management of natural resources in sync with economic development policies.

<sup>17</sup> MNP manages most of the PAs in the categories mentioned. However, there are PAs within these same categories that are managed by other environment operators. Such is the case of the Makira Park under category II, Natural Park, that is managed by WCS and the recent PA, under category IV, Ambatotsirongorongo, neither of which are managed by MNP.

<sup>18</sup> The Office National de l'Environnement (ONE), in French.

<sup>19</sup> Ministry of Economy and Planning website, April 2015.

48. An important aspect of the new NDP is the land-use basis for development planning, emphasizing the importance of land-use planning tools. Additionally, the strategy emphasizes economic growth, enhancing development investments and the need to reinforce the rule of law throughout the country.
49. The Government of Madagascar has set up a National Policy for Land-Use Planning (NPLUP). This policy promotes the importance of having an integrated vision for land-use planning by combining sector based development policies, such as economic growth policies with environmental safeguards; and emphasizing the need to coordinate land-use planning with different planning processes across sectors.
50. Founded on a sustainable development vision, one of the guiding principles of the NPLUP is: “*Anticipation*, by conducting prospective analysis to understand the socio-economic changes at the national level, which enable to provide support to sustainable practices and address undesired changes”.
51. The National Outline for Sectorial and Transversal Guidelines for Land-Use Planning, was developed for the next 10 years (2015-2025). It is based on the NPLUP and confirms this vision, stressing the need to search for coherence, synergies and to coordinate different public development sector and cross-cutting programs to ensure sustainable growth.
52. The National Outline for Land-Use Planning contains both sector and spatial planning tools and analysis. This document guides the development of the National Development Planning in the PND.

#### *The Environment Action Plan*

53. The Government of Madagascar in 1990 adopted the Environment Charter (Law No. 90-33 and Law 97-012), which defines the basic framework for the implementation of the National Environment Policy (NEP) for Madagascar. An Environmental Action Plan (EAP) was developed to implement these guidelines, containing a long term plan to be set up through 3 consecutive cycles ending in 2009. This enabled the country to set up a comprehensive institutional framework to manage the environment, which focuses on biodiversity management and conservation. The Environmental Charter was revised and endorsed at the beginning of this year 2015. Currently, the government is developing the Environmental Programme for Sustainable Development (EPSD), which will build on and succeed the EAP, for the next five years.
54. Madagascar’s National Strategy for the Sustainable Management of Biodiversity (NSSMB) and current action plans have been developed for the period 2002-2012. Action plans were defined for each of the six provinces of Madagascar.
55. The NSSMB 2002-2012 guiding principle underlie the need to improve the welfare of population’s in the effort to overcome poverty, based on traditional knowledge and knowledge that is yet to come. Strategic measures defined by the NSSMB focus on the establishing management structures and plans, improving the capacity of human resources, decentralizing biodiversity and natural resource management, strengthening monitoring and control actions, developing national policies on access and benefit sharing (ABS), developing partnerships and funding mechanisms for financial sustainability and adapting policies and legislation enable the implementation of the NSSMB.<sup>20</sup>
56. The EAP has enabled to set up a strong institutional structure, both based on government and civil society management structures that together ensure sound environmental governance.

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<sup>20</sup> Fifth National Report: Convention on Biological Diversity – Madagascar (2014).

### Land-use planning at the regional level

57. **The regional level** is in charge of implementing the Regional Land-Use Plan (*Schéma Régional d'Aménagement du Territoire*, SRAT), which is the main legal planning tool at the landscape level, providing the various elements for the development of the National Land-Use Plan (*Schéma National d'Aménagement du Territoire*, SNAT). The SRAT is developed for each of the twenty-two regions of Madagascar, for a period of 30 years. Municipal governments set up local integrated development plans. These documents are not necessarily based on spatial planning, but they enrich significantly the SRAT, which is the key tool used to develop the Regional Development Plan (*Plan de Développement Régional*, PDR).
58. In the SRAT and the PDR, authorities focus mainly on economic and social development for the regional landscape, with little reference to biodiversity and environment conservation.
59. **A Regional Committee for Land-Use Planning** is (*Comité Régional de l'Aménagement du Territoire*, CRAT), led by regional authorities and composed of representatives from all the development sectors, is set up to develop the SRAT. A consulting firm commissioned by the CRAT coordinates studies and activities, consulting the CRAT throughout the different phases of development of the SRAT: diagnose, consultations, programming. The finalized document is validated by the members of the CRAT. This committee ensures and monitors its implementation, and is in charge of updating the information contained in the document. The CRAT issues a Charter engaging the different sector actors to respect and comply with the SRAT within their sector plans.
60. Each region through the decentralized sector ministry services, such as the DREEMF/MEEF provide the support required to this process.

### Protected Area Management

61. In the landscape of the Atsimo Andrefana Region there are **7 key biodiversity sites that have been included within the Protected Area System of Madagascar (SAPM)**, all of which have been granted formal PA status:
- The New Protected Area Complex of wetlands known as Mangoky-Ihotry (IUCN category V)
  - The National Park of Mikea (Cat. II)\*
  - The New Protected Area of PK 32 Ranobe (Cat. V)
  - The New Protected Area of Tsinjoriake (Cat. V)
  - The New Protected Area of Amoron'i Onilahy (Cat. V)\*
  - The Special Reserve of Beza Mahafaly (Cat. IV)\*
  - The National Park of Tsimanampesotse (Cat. II)\*
- Of the above list, the **four sites** marked with an asterisks (\*) are those for which **METT** were applied at the baseline, even though this is not required for this project, whose fit is with the GEF's Strategic Objective 2 on Mainstreaming.
62. At least **1.2 million hectares** of land, within 2.4 million hectares that correspond to the Atsimo Andrefana target landscape, are composed of protected areas (PAs) – i.e. half of the targeted landscape is under protection. PAs are important 'storehouses' of biodiversity within the landscape. In a mainstreaming approach, it is important that PAs have ideal conditions to play this role. Yet, this is not a given. The new PAs e.g. (Mangoky-Ihotry, Ranobe and Tsinjoriake) have received little management attention. In addition, there are gaps in the management of the more established PAs, as the threat analysis has shown.
63. **Governance frameworks for PAs.** IUCN category V and VII PAs in Madagascar are governed by a management structure co-governed by local communities, and where land use should tend towards

conservation compatible activities – the concept is through relatively new in the SAPM.<sup>21</sup> In turn, category II PAs are, of course, of strict use and fall under MNP’s responsibility, but they are also conceived to have a community support structure within their buffer zones, where communities live and conduct productive activities that are sustainable. In practice, the management of buffer zones is not always fully integrated within PA management – there are gaps in knowledge about conditions on the ground and at times in terms of the physical demarcation of sites, where a “tangible frontier” is needed. Also, without support, the management of category V and VII PAs may not always follow the guidelines provided by the COAP on sustainable use.

64. Both in category V & VI sites and in the buffer zones of national parks, there are efforts by government and partners for establishing resource management transfer contracts (TDG) and for applying regulations (GELOSE), so as to devolve management of natural resources to local communities. Only when these conditions are fulfilled, can it be said that the PAs are able to fulfil their essential role of ‘biodiversity storehouses’ within the wider landscape.
65. In general PA management in the region needs strengthening. Priority should go to supporting support critical management measures to ensure PAs’ integrity in the face of multiple threats, either from impact-heavy sectors or from communities living in PA fringe areas. These measures will reinforce management of the recently proclaimed new PAs (the NAPs or *nouvelles aires protégées*), as well as already established PAs, including the both buffer zones and core protected areas. (Refer to Annex 5-F, subsection on the SAPM for more background.)

## 1.3 Barrier Analysis and Long Term Solution

### 1.3.1 The preferred long-term solution

66. A landscape level approach to biodiversity conservation in Madagascar is still a novelty. The concept of a landscape approach stems from the understanding that ecosystems processes happen at the larger landscape level, outside the boundaries of PAs. The processes that enable ecosystem sustainability are hence subject to a variety of stakes and interests held by different groups, including small and large scale productive sectors such as mining and commercial agriculture. Maintaining the integrity of Biodiversity rich areas goes beyond the site based protection approach which the country has applied for biodiversity protection up until now, and requires a landscape approach which takes into consideration the needs and interests of multiple stakeholders in land use, and understands the risks and trade-offs involved in the planning processes. This approach in turn acknowledges the value of ecosystems processes and natural resources for local economic and social development, highlighting the benefits of biodiversity conservation and ecosystem sustainability for the well-being and long term interests of local and regional stakeholders in addition to the its global importance.
67. The **current scenario** for the Atsimo Andrefana region is that of emerging large scale productive sectors (oil, gas, mining, agriculture), in a context of complex decision making mechanisms and governance systems and weak legislative frameworks to deal with these emerging sectors.
68. Relevant codes and legislation (e.g. mining and oil codes) contain environmental safeguards. However, they are restricted to EIA and do not enable a holistic approach to ecological processes within the larger landscape. Moreover, the government has weak technical capacities when it comes to developing

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<sup>21</sup> These are generically referred to in Madagascar as “MRPAs” or managed resources protected areas, a network of which is being supported by another GEF project.

environmental mitigation measures and plans and conducting oversight of the measures contained in the EIA and private sector contracts, due to their complexity.

69. Information on biodiversity remains dispersed among partners and sector specific, remaining unknown and difficult to access by sectors making decisions on development investments.
70. Hence, safeguarding biodiversity remains weak within land use and development planning.
71. **The long-term solution** is to engineer a paradigm shift in the management of biodiversity from site focused conservation towards effective land and resource use governance at the landscape level. This includes taking into consideration the multiple uses of the landscape, the various interest groups that have stakes in it, but also the role of government at different administrative levels. The paradigm shift implies an anticipatory approach to addressing threats to biodiversity. This implies providing the local government with the enabling tools to conduct land use planning with environmental considerations and taking into account the value of biodiversity for local development. Local authorities must also be provided with the necessary information to actively and effectively apply the mitigation hierarchy for safeguarding biodiversity where significant impacts can be foreseen (avoid, mitigate, compensate, off-set).<sup>22</sup>
72. This paradigm shift will be operationalised by *mainstreaming* biodiversity within land use planning at all levels- national, regional, communal and local. The project proposes to reinforce land use planning and enable informed decision making by: (1) developing tools that highlight and develop biodiversity and ecosystem processes relevant information; (2) by promoting the mainstreaming of these elements at all land use planning levels including across sector ministries, by (3) promoting active participation by the private sector, by mobilizing partnerships and negotiating environmental considerations, and; (4) engaging civil society, from the grass roots, in order to improve their knowledge on the rights they have to be informed and to participate in the planning stages of productive investments before the full implementation of projects.
73. Information on the environmental trade-offs and consequences of large scale productive investments, such as mining and oil extraction, in the region, are key inputs to government decision making. With key information at hand, decision makers may apply a mitigation hierarchy that enables to anticipate, manage and reduce potential environmental impacts rather than off-set its consequences.
74. To reach this goal the project aims to reinforce the following management and planning elements:
- Spatial planning
  - Stakeholder consultations
  - Negotiation, conciliation and mitigation hierarchy techniques between environment and productive sectors
  - Stakeholder platforms for decision making
  - Integration of an ecosystem approach and biodiversity conservation within spatial planning
  - Community based sustainable natural resource management (CBNRM), including devolving responsibilities to local communities through support to Resource Transfer Decrees (TDG)
  - Right to access to information by all stakeholders, with emphasis on community free access to information, regarding potential and future large scale investments, including consultations within context of the application of environmental impacts due diligence procedures
  - Environmental sustainability within productive investments
  - Environmental due diligence and integrated strategic environmental evaluations processes, enabling a common vision for Regional and Local development and conservation.

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<sup>22</sup> See more on the Mitigation Hierarchy in Box 2.

### 1.3.2 Barriers to achieving the solution

75. The project adopts a barrier-removal approach to the biodiversity management issues at the landscape level, as outlined in the previous sections. **There are two sets of barriers** that apply to this project:

#### *Barrier #1. Weakness in landscape-level management decision-making processes*

76. Decision-making on land use at the landscape level is complex. It is subject to an evolving legal and policy framework, and it falls under the responsibility of various entities with asymmetrical management capacity. In fact, it has not yet been effectively applied in Madagascar, where approaches to conservation have been site based and PA focused.
77. While PAs are critical for protecting forest remnants and threatened species, the current approach has not halted their degradation and will certainly not be enough to mitigate the emerging threats resulting from large scale high-impact projects. These will take place not only in the Atsimo Andrefana Region but in many other parts of the country -- with considerable secondary impacts.
78. An effective response that combines both investment in PAs and ecosystem management, within land use plans at the land-scape level (e.g. the SNAT, SRAT and derived planning instruments), and within development plans (PRD), enabling to integrate sustainable development measures beyond PA sites. A broader understanding is required of: the complexity of the landscape, both rich in extractive resources and biodiversity, and; the needs that each sector has (conservation and development). Land use planning and decision making with a full understanding of the impacts and consequences that productive investments have on the natural capital is lacking. A broader effort to manage threats and adopt mitigation measures is missing. The trade-offs inherent in land-use allocation within a landscape, that is both rich in extractive resources and biodiversity, will need to be negotiated on an informed and consultative basis.
79. Additionally, it is necessary to invest in PA management in light of the threats to ecosystems in the surrounding landscape and develop mitigation measures accordingly.
80. The key barriers relate to:
- (i) Limited capacity to access, combine and use biodiversity information (there is a wealth of information and data, but it is not being effectively used);
  - (ii) Difficulties in enforcing and regulating land use (diffuse responsibility, weak governance frameworks); and,
  - (iii) The insufficient level of protection afforded biodiversity rich ecosystems, including Protected Areas.
- We elaborate:
81. First, while much of the spatially based biodiversity data are publicly available, it is held by different entities and is not always available in a format that can be readily used for planning. There is limited capacity for analysing and using the data—with much of the capacity residing outside of Government.
82. With respect to investments in land-uses that typically impact biodiversity (mining, oil, gas and agri-business developments), biodiversity information is not being actively used in the current land allocation and permitting systems. E.g. the ONE has guidelines on both Strategic Environmental Assessment (SEA) and EIA applied to 'sensitive zones', wetlands, protected areas, etc. It lacks spatial analysis tools for applying these guidelines.
83. The ONE, which is the entity in charge of coordinating the monitoring activities pertaining to the application of environmental mitigation measures contained in EIA's, does not count with resources at the Regional level. Consequently, in the Region of Atsimo Andrefana, where multiple mining projects are in the exploration phase, the capacity of the Regional authorities, as well as the capacities of the DREEMF,

remain weak to conduct oversight. Moreover, due to lack of budgetary resources, the ONE does not have the ability to provide training to regional actors. Without strong regional capacity, the government is not equipped to provide technical inputs nor a landscape vision, or propose mitigation measures to safeguard biodiversity and ecosystems. Currently, only private companies investing in the Region conduct the studies required to complete an EIA, through company human and financial resources.

84. Although many ministries have created 'Environment Units' ('Green Units' or sector-based), that are in charge of providing support and expertise, in order to monitor the process of the EIA for sector based projects, their participation remains weak when it comes to providing technical expertise concerning large scale investments. Many investment projects are consequently approved without having had technical oversight or having been approved by the Environment Units.
85. Moreover, the environmental units are often ignored, referring uniquely to the DREEMF for technical expertise. They also often have insufficient technical capacities to provide support to EIA processes.
86. Another example pertains to land-tenure management—the *régime foncier*. Even though there have been tangible improvements in recent years, the national land cadastre is yet to adopt geo-referenced data in land allocation. Furthermore, it often happens that different entities will issue different permits for the same geographic space without mutual knowledge of other permits and interests (e.g. logging, mining, community property titles, all targeting the same area). This generates conflict at the local level, and fuels ecosystem degradation.
87. There are interesting and emerging initiatives, such as the new SNAT/SRAT that can potentially provide useful tools for spatial planning. However, more is needed in terms of fully incorporating biodiversity values into these processes.
88. Specifically at the regional, district and commune levels, the technological and infrastructural capabilities to access and disseminate spatially-based information are severely constrained. In their current model, the SNAT and SRAT have been mostly concerned with poverty alleviation, social infrastructure and transport sectors, as well as with addressing regional asymmetries in development. Communal plans are in turn concerned with basic local needs (a school, a road, a health post, reforestation of communal lands etc.). The SNAT and SRAT always include an environmental chapter, but the plans have yet to be connected with landscape level decisions pertaining to investment-heavy sectors, such as oil & gas, mining and agri-business. These decisions are considered strategic and are made centrally, under the Cabinet's purview. These projects are all subject to environmental impact assessment and permitting.
- However, although projects undergo environmental impact assessments and are issued permits, land use planning remains ill aware of the consequences they may entail.
89. Moreover, identifying local development priorities requires spatial planning integrating communities within the process (PAG-T), in order for the planned activities to be rendered compatible with environmentally sustainable activities at the community level. However, the government has few means to ensure such planning processes take place in the vast national territory. Most participatory community spatial planning initiatives have been made possible thanks to the both financial and technical support by donors and partners, rendering efforts erratic and disperse.
90. Likewise, at all government levels, technological and infrastructure capacities that enable access to spatial information are, to date, extremely limited. Additionally, support must be provided at all administrative levels, in order to fully integrate the value of biodiversity within land use and development planning
91. Second, planning land use allocation is meaningless, if responsibilities for implementation and enforcement are unclear, and if the regulatory and policy environment is not conducive.
92. Many of the key decisions that affect biodiversity locally are made at the national level. Applicable regulations tend to be sector-specific. Consultation of affected stakeholders in land use decisions is still incipient in Madagascar. Also, of all the four tiers of sub-national government recognised in Madagascar,

the district level has a somewhat unclear, but potentially positive role to play in land-use planning, regulation and enforcement. It remains poorly explored.

93. Platforms allowing inter-sector dialogue and technical exchanges are lacking, such that would enable to exchange and negotiate the needs that each sector has within land use planning. The Region does contain an informal platform which brings environment sector partners together, however it remains inactive. The MEEF's current work plan includes the creation of an Environment Unit that will function as a regional inter-sector platform, however it has not yet been set up.
94. In many of the countries of origin, mining companies are confronted with strong legislative and institutional frameworks that are considered constraining, benefitting social and environment protection. Contrasting with this scenario, Madagascar, seeks to attract Direct Foreign Investments, such as mining and oil companies, offering favourable conditions for large scale investments companies, in detriment of its natural capital, although the latter represents currently 49% of the country's wealth.<sup>23</sup>
95. Thirdly, one aspect that is specific to the Atsimo Andrefana Spiny and Dry Forest Landscape relates to the fact that key protected areas within it have weak management structures which are insufficient safeguard biodiversity.

There has been steady progress in proclaiming various 'locally managed marine areas'. Presently they comprise nine MPAs and cover more than 180,000 hectares of seascapes along a coastline of at least 350 km from Makongy to Baie de Sakoa. However, terrestrial PAs which are meant to guarantee the protection of the dry and spiny forest landscape of the Region of Atsimo Andrefana, although they have recently obtained permanent protection status, continue to have weak management structures.

Since the adoption of the PAE and thanks to the recently revised PA Code (COAP), there have been legislative and institutional advances. The country, today may extend PAs in a larger extended territory, providing support to conservation of ecosystems and KBA's within the PA IUCN category types V and VI.<sup>24</sup>

96. However, PAs must still be integrated, beyond the PA sites, in a larger landscape where there exists a multiplicity of productive land uses. These areas must also be aware of the needs of PAs. The institutional system that enables to mainstream biodiversity and PA within land use planning is still insufficient to safeguard the region's natural capital, especially in the face of new emerging productive sectors.

### ***Barrier #2. Weaknesses in conservation action at the community level***

97. There has been a wealth of experience in the implementation of community-based approaches to conservation in Madagascar (GELOSE, TDG, GCF...), but not all of them have successfully "married" conservation with community aspirations and livelihood needs—and thereby producing tangible conservation results. It is notable that the current livelihoods baseline at the target landscape has a strong local development focus, but it misses opportunities for integrating biodiversity concerns.
98. A weakness found in the implementation of these approaches by communities has been the strong dependency on external support through technical and financial aid, and strong involvement by local decentralized authorities, which is mostly project based and does not guarantee sustainability.
99. The UNDP-GEF project Madagascar Environment Programme III (PIMS 2762), which ended in 2012, drew important lessons on the application of TDG and *Dinas* in conservation. These lessons were outlined in the project's Terminal Evaluation (TE) report and point out to the following determinants of 'success' for achieving lasting conservation results:

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<sup>23</sup> Country Environmental Analyses (CEA), Banque Mondiale (2013).

<sup>24</sup> Refer to Annex 5-E on the Protected Area System of Madagascar (SAPM) and to PRODOC Table 13: Legal framework.

- (iv) Limited capacity to access, combine and use biodiversity information (there is a wealth of information and data, but it is not being effectively used);
  - (v) Difficulties in enforcing and regulating land use (diffuse responsibility, weak governance frameworks); and,
  - (vi) The insufficient level of protection afforded biodiversity rich ecosystems, including Protected Areas.
100. With respect to these conditions, there are specific barriers to be overcome by local communities within the Atsimo Andrefana Landscape. We elaborate:
101. First, at the scale of a community's *terroir* and beyond, land allocation among households is still poorly defined. The issue of migration is not adequately dealt with by local governments. As a result, land and resource use conflict are rife. Few mechanisms exist for supporting communities to obtain tenure security, stabilising land use and managing conflict.
102. Second, the effectiveness of a *Dina* depends directly on the level of community participation in developing the TDG contract and in enforcing it. In practice, the process requires time and intensive facilitation, which are not always available. Furthermore, the process of endorsing *Dinas* by court authorities can be bureaucratic. There is scope for incorporating biodiversity considerations in the TDG, but more is needed. Under the right enabling conditions, CCAs represent a globally tested model for achieving conservation results.
103. We note also that the internationally recognised PA category 'Indigenous and Community Conservation Areas' (ICCAs) are purportedly the oldest form of protected area dating back from millennia.<sup>25</sup> In Madagascar, up to date, the system that may be compared to the ICCA is the CCA (APC for its French denomination, Aire Protégée Communautaire) which is included in current PA legal frameworks (loi de Refonte du COAP, GELOSE).<sup>26</sup> If strategically located in sensitive areas, ecological corridors and PA fringes, CCAs could be instrumental in stabilising land use across the landscape and in engaging communities in the conservation and rehabilitation of forest fragments and other ecosystems.
104. Yet, specific experience from Madagascar in the establishment and operationalisation of proclamation of CCAs is incipient. It was only in early June 2013, that the TAFO MIHAAVO network of locally based CSOs has been accepted as member of the ICCA Consortium. To date, only one official CCA from Madagascar is currently registered in the global ICCA registry.<sup>27</sup>
105. Lastly, the absence of a clear national legal framework for CCAs, combined with complex bureaucracy and insufficient economic incentives at the community level, have impeded the strategic use of CCAs. The recent revision of the COAP (*loi de refonte* du COAP) seems to address this gap, and open new possibilities to secure biodiversity in co-management schemes with communities. However, it remains to be observed – and practiced – if this legal framework is sufficient to promote and ensure the sustainability of CCAs and hence biodiversity.

<sup>25</sup> Refer to ICCA Registry website [[Link](#)].

<sup>26</sup> Refer to section 2, Legal and Institutional Framework.

<sup>27</sup> Refer to the ICCA Registry website [[Link](#)].

## 1.4 Baseline Analysis

### 1.4.1 The Status Quo of Landscape Level Management in the Atsimo Andrefana Region

106. The current '**baseline scenario**' for the project zone, the Atsimo Andrefana Region, points out to a strong commitment from various partners to support conservation action in different ways. However, there are visible gaps in the baseline.
107. Many of the programmes on PAs have a narrow site focus and do not take into account the fact that PAs are part of a wider landscape. Livelihood activities produce socio-economic results, but they do not do enough to stabilise land-use change in an anticipatory and sustained way. Also, the SNAT/SRAT programme is yet to fully consider biodiversity in the Master Plans. SNAT custodians seem mostly concerned with plotting protected areas onto maps. While helpful, this is neither enough in terms of charting biodiversity values and ecosystem services at the landscape level, nor in terms of planning interventions that take biodiversity into account.
108. In the baseline scenario, physical development in the Atsimo Andrefana Landscape will accelerate in the upcoming years without any significant measures to safeguard biodiversity, nor avoid and mitigate threats. Some threat mitigation measures will be carried out by industry, but they will not prevent loss of biodiversity and will likely not tackle secondary impacts. Investment in conservation will continue to be limited, focusing solely on PAs, and missing an opportunity to engage the investment-heavy private sector to address management needs.
109. Key ecosystems and relict forest patches will remain unprotected. The management of existing PAs (e.g. Mikea Forest, Onilahy Beza-Mahafaly, and Tsimanampetsoa) may continue to be carried out in isolation, without their integration into local development processes and policies or without the full involvement of local communities.
110. If not addressed at the landscape level, the various threats will result in a further degradation of the dry and spiny forest ecosystems, reinforcing the trend of biodiversity loss.

### 1.4.2 The project's financial baseline

111. The baseline investment for this project in the target landscape may be sub-divided into three main groups of programmes, namely: (1) land use planning and management; (2) protected areas management; and (3) sustainable livelihoods. These investments refer both to Components 1 and 2 of the project on a pro-rata basis, as shown in Table 1 and were based on PPG baseline studies.
112. **First group of baseline investments.** A new land use planning programme is particularly relevant to this mainstreaming project, because spatial planning is a key tool to be applied under Component 1. An overhaul in the SNAT/SRAT system is being piloted by Ministry in charge of Land Use Planning and presidential project (MEPATE) with the aim of preparing the first geographically-based SNAT. At the regional level, SRATs will also be prepared and on finer scale GIS. The process is supported by a consortium of donors, UN agencies and non-governmental partners (UN Habitat, WWF, GIZ, Swiss Cooperation, Tany Meva, MNP, plus the ministries in charge of agriculture, decentralisation and environment). Together with annual budgets for land use planning from of the concerned communes in the Astimo Andrefana Region, the baseline contribution of programmes under this category is estimated at \$9.1 million for the duration of the project. This amount includes co-financing from GIZ to the project at \$1.1 million, which is allocated to land use management support in the region.
113. In turn, UN-HABITAT provides support to communes to improve land security issues, relating to Component 2 and it is estimated at \$2.0 million for the duration of the project.

114. **Second group of baseline investments.** MEEF is the prime governmental agencies responsible for PA management in Madagascar. As ‘storehouses’ for biodiversity, PAs are an important part of the landscape. Furthermore, as another result of long-term international engagement, a national conservation trust fund was established in 2005, the Fondation pour les Aires Protégées et la Biodiversité de Madagascar (FAPBM). It currently generates an income stream, some of which is dedicated to PAs in the target landscape. For the duration of the project, the applicable governmental investments, alongside with the relevant financial baseline from bilateral and multilateral partners and FAPBM dedicated to PAs in the Atsimo Andrefana Region has been estimated at \$5 million for the duration of the project, contributing to Component 1 of the project, as it relates to the management of PAs across the landscape.
115. Also, environmental NGOs are very active in PA management in Madagascar. Several of them, primarily international NGOs, mobilise significant PA finance every year and implement various programmes. Among them are WWF, Conservation International (CI), Missouri Botanical Gardens (MDGs), the Wildlife Conservation Society (WCS), Kew Garden, Fanamby and many others. Parks and reserves such as Beza-Mahafaly, Tsimanampetsoa and Mikea in Atsimo Andrefana have benefitted considerably from the support provided by these NGOs. WCS, Blue Ventures and SAGE are active in supporting the various community managed marine areas within the Atsimo Andrefana Landscape (see map). The baseline investment associated with these NGO driven programmes at the landscape level has been estimated at \$3 million for the duration of the project and it relates to Component 2 of the project.
116. **Third group of baseline programmes.** The focus is on the sustainable energy (energy access and sustainability), food security, and integrated water resources management and local area development. These livelihoods programmes are important for the project because, without fulfilling basic needs and providing economic benefits to local communities, it is unlikely that conservation friendly development can be fostered. Sustainable livelihoods will therefore help address the threats to biodiversity that emanate from communities.
117. Various entities contribute to six major programmes active in the Atsimo Andrefana Spiny and Dry Forest Landscape. Two of them are jointly financed by the African Development Bank (AfDB) and the Ministry of Agriculture (MINAGRI), and focus on ‘agriculture & agro-industries’ and ‘water supply & sanitation’.<sup>28</sup> The third programme is the country-wide rural electrification programme implemented by Agence de Développement de l’Electrification Rurale (ADER) and partners; it receives EU funding.
118. The project PIC-2 (*Pôle Intégré de Croissance*), implemented by the MINAGRI, promotes ecotourism and agri-business development, and it is estimated at \$6.0 million for the Region. The PRIASO project, is also implemented by the MINAGRI and contributes to the region’s development through capacity building for agricultural extension services with respect to three intervention topics: (i) strengthening the capacity of water users’ association, estimated at \$6.0 million and relating to Components 1 and 2 on an equal manner; (ii) support towards land tenure security, estimated at \$3.0 million and relating to Component 2 of the project; and (iii) strengthening of agricultural value chains, estimated at \$30.0 million and relating to Components 1 and 2 on a two-thirds / one-third manner. The total co-financing by the MINAGRI for the three above-mentioned topics amounts to \$38.0 million and is also part of the project’s co-financing. Both the PIC-2 and the PRIASO projects promote good governance and infrastructure development for the region.
119. With respect to investments in energy through rural electrification, the contribution from the ADER’s as a baseline investment will cover 2014 and 2020 and represent \$0.9 million, which also contributes to co-financing the project under Component 2.
120. In addition, two CSOs, WHH (Welt Hunger Hilfe) and HELVETAS Swiss Intercooperation, promote the development of agriculture through agro-ecological approaches, in areas adjacent to PAs. The latter

<sup>28</sup> These include the following AfDB projects: (P-MG-AAB-002 and AAC-004) *Projet de réhabilitation du périmètre du Bas Mangoky I et II*; (P-MG-A00-001) *Projet de réhabilitation du périmètre de Manombo*.

organisation provides support to BioCoton development in the areas surrounding the Mikea Forest. Their baseline investments represent respectively \$1.8 million and \$1.6 million and contribute also respectively to Components 1 and 2 of the project. This amount also contributes to co-financing the project.

121. **Total.** In total, the amount of baseline investments represents \$67.4 million for all three groups mentioned further up and estimated for the duration of the project. Of the co-financing mobilised, amounting to \$43.8 million (see Annex 1), only \$350K from Tany Meva does not come from the baseline. Regardless, all contributions are a strong token of commitment from project partners. The apportionment of baseline investments described above can be thus summarised:

*Table 1: Baseline overview*

<b>Baseline investment group and description</b>	<b>Comp 1</b>	<b>Comp 2</b>	<b>TOTAL</b>	<i>Also co-financing?</i>
<b><i>1st Group: Land use planning and management</i></b>	<b><i>9.1</i></b>	<b><i>2.0</i></b>	<b><i>11.1</i></b>	<i>(as below)</i>
Overhaul of the SNAT/SRAT system, contributions from WWF, Swiss Cooperation, Tany Meva, MNP, plus the ministries in charge of agriculture, decentralisation and environment (GIZ excluded)	8.0	0.0	8.0	<i>no</i>
Overhaul of the SNAT/SRAT system, GIZ contribution only	1.1	0.0	1.1	<i>yes</i>
UN Habitat support to communes to improve land security issues	0	2.0	2.0	<i>no</i>
<b><i>2nd Group: PA management</i></b>	<b><i>5.0</i></b>	<b><i>3.0</i></b>	<b><i>8.0</i></b>	<i>(as below)</i>
Investment in formal PA mgt across the landscape: Governmental investments, alongside with the relevant financial baseline from bilateral and multilateral partners and FAPBM	5.0	0.0	5.0	<i>no</i>
CSO investments in PA mgt: WWF, Conservation International (CI), Missouri Botanical Gardens (MDGs), the Wildlife Conservation Society (WCS), Kew Garden, Fanamby and many others	0.0	3.0	3.0	<i>no</i>
<b><i>3rd Group: Sustainable livelihoods</i></b>	<b><i>28.7</i></b>	<b><i>19.6</i></b>	<b><i>48.3</i></b>	<i>(as below)</i>
Pôle Intégré de Croissance - PIC 2	3.0	3.0	6.0	<i>no</i>
PRIASO: strengthening the capacity of water users' associations	3.0	3.0	6.0	<i>yes</i>
PRIASO: support towards land tenure security	0.0	2.0	2.0	<i>yes</i>
PRIASO: strengthening of agricultural value chains	20.0	10.0	30.0	<i>yes</i>
ADER - investments in energy through rural electrification	0.9	0.0	0.9	<i>yes</i>
WHH (Welt Hunger Hilfe) and HELVETAS Suisse Intercooperation	1.8	1.6	3.4	<i>yes</i>
<b>Total baseline</b>	<b>42.8</b>	<b>24.6</b>	<b>67.4</b>	<i>(as above)</i>
<b>Total baseline that contributes to project co-financing (with mgt costs incorporated)*</b>	<b>26.7</b>	<b>16.6</b>	<b>43.3</b>	<i>(as above)</i>

\* Refer to Annex 1: Co-Finance Letters.