PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND: GEF TRUST FUND
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PART I: PROJECT INFORMATION

Project Title:	A Landscape Approach to conserving and managing threatened Biodiversity in Madagascar with a focus on the Atsimo-Andrefana Spiny and Dry Forest Landscape		
Country(ies):	Madagascar	GEF Project ID:	5486
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5263
Other Executing Partner(s):	Ministry of Environment and Forests (MEF) in collaboration with 'Fondation TANY MEVA' and 'SAGE'	Submission Date:	August 19, 2013
GEF Focal Area (s):	Biodiversity	Project Duration (Months)	7 years
Name of parent program:	n/a	Project Agency Fee ($):	506,297.94

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Trust Fund	Indicative Grant Amount ($)	Indicative Co-financing ($)
BD2 – Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors	GEFTF	5,329,452	26,050,000
Total Project Cost		5,329,452	26,050,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: 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.

Project Component	Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Cofinancing ($)
1. Effective Landscape-level Conservation Mainstreaming	TA	*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:* -Reduction in pressures to PAs (Area ~240,000 hectares): deforestation, fire-induced impacts and poaching of threatened species *Key tools to BD mainstreaming are applied:* (i) landscape level planning (SEA; biodiversity concerns integrated into the SNAT / SRAT); (ii) EIA and key sectoral permitting systems that affect biodiversity at the	1.1 **Spatial Planning.** Participatory landscape-level economic assessments, ecological assessments, open access mapping, and management planning generate a Landscape Level Land-Use Plan (BD LUP). The BD LUP facilitates (i) land use allocation for major developments that makes due account of the impacts of production activities on biodiversity; (ii) demarcation of the boundaries of existing Protected Areas; (iii) identification of areas of high biodiversity to be afforded higher protection status (as new PAs and Community Conservation Areas - CCAs); (iv) prescribing appropriate management practices in ecologically sensitive areas (including PA adjacent landscapes). 1.2 **Threat Management.** Land use allocation practices and applicable regulations at the regional, district and commune levels are revised, in light of the BD LUP, and contribute to enforcing it, by: (i) avoiding, reducing and mitigating the impacts from physical development (in particular from road construction, oil & mining developments, and large scale agricultural projects); (ii) stabilising adverse land-use change in PA fringe areas (e.g. engaging district and commune governments in managing bushfires, curbing illegal logging, developing alternative energy sources, and improving land productivity to reduce slash and burn farming); (iii) the BD LUP becomes enforceable by appending it to the Atsimo-Andrefana regional land use plan (the SRAT) 1.3 **Landscape Governance.** Collaborative landscape and sectoral governance framework is developed and provides a platform for monitoring and ensuring	GEFTF	2,080,000	10,550,000

Project Component	Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Cofinancing ($)
		landscape level; (iii) addressing the 'park edge' effect in critical PAs and improved management of ecologically sensitive areas.	compliance with prescribed land-uses (involves national, regional, district and commune level government officials responsible for PA mgt, environment, forests, fisheries, agriculture, mining, EIA etc., but also CSOs and CBOs and the private sector). A key product coalescing this collaboration will be a Strategic Environmental Assessment (SEA) for the Atsimo-Andrefana Spiny and Dry Forest Landscape. 1.4 **PAs' integrated into Landscape Mgt**. Critical measures for completing pending PA proclamation processes and boundary demarcation (including of buffer zones and strict protection zones within existing and new PAs) are supported, in Mikea, Onilahy, Bezaha Mahafaly and Tsimanampetsotsa.			
2. Community-based conservation and sustainable use operationalised	Inv	*Community-based production and resource use activities incorporate the conservation and sustainable use of biodiversity into management practice:* - At least 100,000 ha of new CCAs and *transfert de gestion* areas with sanctioned *dinas* are proclaimed across the landscape in sensitive areas (abutting existing PAs and in ecological corridors) - Conversion of natural habitats for agriculture is significantly reduced in CCAs - Sustainable use management practices in agriculture, forestry, NTFP exploitation and freshwater fisheries are established and respected.	2.1 **CCAs Establishment.** Selected habitats with high conservation value in target communes are set-aside through formal proclamation as 'Community Conservation Areas' (CCAs) and their management is operationalised through a two-pronged approach: *(1)* local-level spatial planning (applying the PAG *terrior*[1]) and *(2)* community-based resource use monitoring and enforcement mechanisms. 2.2 **Local-level Resource Use Governance codified.** Local governments (commune, *fokontany*) and participating local communities collaborate to sanction into by-laws (*dinas*) the proclamation and sustainable management of CCAs. The *dinas* define: (i) location and delimitation of the *terroir*; (ii) resource mapping and zoning within it; (iii) the agreed boundaries of CCAs and of areas where harvesting activities can take place; and (iv) sustainable resource off-take limits. This collaboration will make use of established, tested and nationally legislated mechanisms for devolved natural resources management (*transfert de gestion*), implying a binding contract between the local government and communities, but also increased land tenure security to community land users. 2.3 **Local Capacity for BD Management.** Strengthened and functional CBOs in targeted local communities establishing CCAs provide a vehicle for building community capacities to: (i) plan and monitor conservation measures; (ii) define clear rules, roles and responsibilities for implementing those measures; (iii) collectively enforce resource off-take limits and manage potential conflict; (iv) manage bush-fire and other hazards; and (v) foster and implement mechanisms for equitable benefit sharing. 2.4 **Local Economy and Benefits.** Livelihood activities carried out by targeted local communities are managed sustainably, ensuring conservation of biodiversity and its use within sustainability thresholds, but equally the generation of socio-economic benefits.	GEFTF	3,000,000	14,050,000
Subtotal					5,080,000	24,600,000
Project Management Cost (PMC)				GEFTF	249,452	1,450,000

[1] *Plan d'aménagement et gestion (*PAG*) au niveau du terroir*. The *terroir* here means the zone immediately around a community's settlement area.

Project Component	Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Cofinancing ($)
Total Project Cost					5,329,452	26,050,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, ($)

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount ($)
National Government	Ministry of Agriculture through investment relevant projects focusing on sustainable production	Cash	10,000,000
National Government	Ministry of Environment and Forestry, Madagascar National Park and others (PA related investments)	Cash	1,500,000
Local Government	Government from the concerned communes within targeted landscapes	In-kind	200,000
National Government	ADER - Agence de Développement de l'Electrification Rurale	Investment	5,000,000
CSO	Fondation TANY MEVA and SAGE	Investment	9,000,000
GEF Agency	UNDP	Cash	350,000
Total Cofinancing			26,050,000

D. INDICATIVE TRUST FUND RESOURCES ($) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY

GEF Agency	Type of Trust Fund	Focal Area	Country Name	Grant Amount ($) (a)	Agency Fee ($) (b)	Total ($) c=a+b
UNDP	GEFTF	Biodiversity	Madagascar	5,329,452.00	506,297.94	5,835,749.94

E. PROJECT PREPARATION GRANT (PPG)

	Amount Requested ($)	Agency Fee for PPG ($)
• (up to) $150k for projects up to & including $6 million	150,000.00	14,250.00

PPG AMOUNT REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY(IES) -- *n/a—*

PART II: PROJECT JUSTIFICATION

PROJECT OVERVIEW

A.1. Project Description.

1. ***Overview***. 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. 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 to biodiversity. However, large-scale projects such as road construction, irrigation schemes, oil & gas developments and mining present a future threat, 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. However, the Government lacks an effective management framework for ensuring that such development does not come at an 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), their adjacent zones 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. 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 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.

2. ***Context and Issues.*** Madagascar constitutes one of the world's most important storehouses of biodiversity. The country has been classed amongst 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 shrublands; 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 fishes (60% endemic), and 13,700 species for higher plants (>90% endemic). Madagascar is at the same time among the poorest countries in the world in terms of its income per capita ($950). With 21 million people (67% rural), adult literacy is low (64%), child mortality is high (61/1000 live births) and the country's Human Development Index (0.480) ranks 115 among 185 countries.[2] Although well endowed with natural resources, this has not yet translated into concrete development results for the Malagasy people. Political instability has negatively affected governance and development funding in recent years, but steps are being taken to lead Madagascar back to the path of democracy and sustainable growth. Interest from extractive industries and other sectors to invest in Madagascar is on the increase. The IMF assess that Madagascar will possibly enter the ranks of resource-rich economies over the next two decades, as at least two large-scale industrial mining projects entered the production phase since 2010.[3]

3. ***The Target Landscape*** . The Atsimo-Andrefana Spiny and Dry Forest landscape has been targeted for intervention because of its global biodiversity significance, the level of threat it faces, and also the fact that these threats may rapidly evolve with the expected development of large scale projects in the region (oil, gas, mining, electrification, irrigation). The situation is symptomatic of what is occurring in other areas in Madagascar. The landscape covers three contiguous districts within the Atsimo-Andrefana administrative region: Morombe, Toliara II and Betioki. Together, they have a surface area of 2.4 million hectares and a population of approximately 800,000 people. The landscape harbours important existing and proposed protected areas, (Mikea, Onilihi, Besa Mehafaly and Tsimanampetsotsa), plus several locally managed marine conservation areas. This project will focus on the terrestrial environment. A summary of the biodiversity and socio-economic status of the target landscape is annexed to the PIF, together with a map of the region.

4. ***Threats and Root Causes of Biodiversity Loss.*** Biodiversity, across varied landscapes and seascapes in Madagascar, faces multiple anthropogenic threats. More than 90 percent of the island's original forest has already been lost or degraded; threats have intensified in the past 50 years, culminating in widespread deforestation.[4] This is significant, as much of the biodiversity is forest-dependent. The Mikea Forest, which marks the transition between dry and spiny forests ecosystem, has lost 28% of its primary forest cover in the last three decades.[5] The most prominent direct threat to biodiversity stems from the clearance of forests for agriculture, which is leading to habitat loss and fragmentation. Local farmers, with limited access to capital and technology, resort to slash-and-burn and shifting cultivation, often far from immediate habitations. The dry and spiny forests zone is particularly susceptible to bushfire, and such cultivation practices can lead to devastating wildfires. If degraded beyond a certain threshold, interdependent ecological relationships in these forests collapse and may not easily be rehabilitated. Also, the overexploitation of biological resources exerts strong pressure on woody, faunal and reef resources, with populations of individual species suffering a heavy toll, at times leading to local extirpations. It also results in a general impoverishment of ecosystems. Species with high commercial value are particularly vulnerable to often illegal exploitation beyond carrying capacity (e.g. rosewood and fisheries resources[6]). Both tortoises and lemurs have seen a steep increase in harvest offtakes, possibly linked to the erosion of taboos that prevented their hunting for bushmeat, coupled with other drivers such as food insecurity and lax controls. In addition, climate change is an emerging concern, and is expected to adversely impact vulnerable species.

5. With the shifting political economy in Madagascar and the emerging importance of mining, oil & gas, agri-business, plus the related investments in infrastructural development, the threat profile affecting biodiversity at the landscape level is changing. Mining and hydrocarbon developments on terrestrial sites involve the cutting of forest and earthworks associated with construction. This inevitably causes habitat loss and fragmentation, and it results in a negative impact on biological communities. It also involves significant abstraction, diversion and containment of both surface and ground water. A tar sands project is at the exploration phase in at least four sites across the Atsimo-Andrefana Landscape, including on the fringes of Mikea Forest.[7] Tar sand projects are known to both displace large quantities of soil and require large quantities of water. In the process, there will be erosion, siltation of water courses and irreversible changes in hydrology—all of which will negatively affect biodiversity in different ways. As for large-scale irrigation projects (needed for agri-business undertakings), even if located in an already cleared area (hence minimising the loss of forest), these will also abstract, store and divert large quantities of water, with marked changes to hydrological cycles. The associated commercial plantations may also involve the application of fertilisers and pesticides that have a known negative effect on the environment. Although the habitat loss engendered by individual large scale projects may be localised, and mitigation measures can be applied to contain both pollution and other negative effects on water, soil and biotic communities, these measures need to be carefully considered in the context of the ecological fragility and the current pressures on biodiversity in the Atsimo-Andrefana Landscape. Perhaps the most worrisome impact of these projects is their potential secondary impacts. Road opening and road improvements will function as a magnet to destitute populations. Over the years, it may result in a substantial influx of people into the affected communities. These additional impacts (new housing settlements etc) will multiply the impact footprint of the original project through demand for water, wood, charcoal and agricultural land. It may also result in additional poaching of threatened species and may likely open new pathways to IAS infestation. Although unintended—at times ignored

[2] Sources: (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.
[3] Resource-rich countries are defined as (a) having a share of fiscal revenues from the petroleum or mining sector that is larger than 25% over a certain period and (b) the share of export revenues from the petroleum and mining sector is larger than 25% over a certain period. See World Bank (2010): Madagascar: *Governance and Development Effectiveness Review. A Political Economy Analysis of Governance in Madagascar*. WB Report No. 54277-MG. [Link]
[4] See e.g. Harper et al. 2007. *Fifty years of deforestation and forest fragmentation in Madagascar*. *Environmental Conservation* 34(4): 1–9. [Link]
[5] Atlas of Our Changing Environment: Mikea Forest (online, no date).
[6] See e.g. (1) IRIN Jan 2012: *Madagascar: Illegal rosewood trade continues* [Link]; and (2) Menach et al. (2011): *Unreported fishing, hungry people and political turmoil: the recipe for a food security crisis in Madagascar?* Marine Policy, v. 36/1, 218–225. [Link]
[7] Toliara Sands Exploration had permits issued for total exploration target of more than 4,700mt at Ranobe, Ankililoaka, Basibasy and Morombe.

and often downplayed in EIA reports—the acceleration of threats to biodiversity and ecosystem services from secondary impacts' is expected to be substantial at the target landscape level. They need to be taken into consideration.

6. ***Biodiversity Management Practices at the Landscape Level and Applicable Governance Frameworks.*** Protected Areas have heretofore constituted the main vehicle for biodiversity conservation in Madagascar. The Ministry of Environment and Forests (MEF) holds the primary responsibility for the management of biodiversity—charged with policy development and oversight and management delegation, including for the PA system. The MEF delegates responsibility to 'Madagascar National Parks' (MNP), for the management of national parks. MEF also involves national and international NGOs in PA management, and where possible, private sector operators. The government recognises that NGOs have a role to play in brokering the relationship with community-based resource users living in and around PAs. There has been marked progress in the PA front. It is noteworthy that until 2007, only 3% of the country's terrestrial ecosystems were protected—various threatened ecosystems and species were under-represented in the PA estate. Since then, a concerted effort has been made to carry out gap analyses and establish new PAs (*nouvelles aires protégées*, NAPs) within the SAPM (*Système d'aires protégées de Madagascar*). The current SAPM Action Plan (2012), submitted to the CBD in fulfilment of PoWPA reporting requirements, proposes a significant increase in the PA and MPA coverage.[8] According to the Plan, the SAPM would grow, over an unspecified timeframe, to encompass 6 million hectares of terrestrial sites, plus 1 million hectares of MPAs. Of these sites, approximately 90% have been afforded temporary protection status to date. This will increase PA coverage to reach approximately 11% of the national territory. Yet, there is currently a legislative vacuum with respect to PAs. The PA Code now in force dates from 2000 and makes provision only for strict protection PA categories (IUCN categories I, II and IV). In 2005, a regulating decree was passed to expand the set of nationally recognised PA categories and include IUCN categories V and VI (these fall under the national nomenclature managed resources PAs or'MRPAs'). Yet, the decree is brief and does not provide an explanation on how these categories are to be interpreted at the national level. A new PA Code was subsequently prepared. Although the proposed text for the Code was completed in 2008—it has not yet been approved. This new draft code (the 'COAP') would fill the above-mentioned legislation vacuum and clarify the role of local communities (and of other stakeholders) in the management of PAs, e.g. through the national category *aire protégées communautaire* ('Community Conserved Areas'). Notwithstanding the progress being made on protected areas, there is a need to address threats at a wider landscape level that have a bearing on PAs (because they are leading to habitat loss and thus the fragmentation and ecological insularisation of PAs, or because threats in the landscape spill over to PAs—as when wild fires started by swidden farmers cross the PA boundary. Furthermore, upstream water abstraction for irrigation purposes could have an impact on downstream PAs). In short, there is a need to develop and adapt a landscape approach to biodiversity conservation, requiring the development of capabilities for mainstreaming biodiversity into development.

7. Landscape level governance in Madagascar, which includes both 'planning' and 'execution' of policies and decisions, is complex. There are various administrative levels, consultation spheres and a diversity of sectors and stakeholders involved. Below the central level State administration system, there are four sub-national spheres of government: regions, districts, communes and *fokontanys*.[9] The latter are the community-based administrative subdivision of a commune and may be comprised of settlements, villages, areas and neighbourhoods. There is also an intricate set of reporting lines and ways of influencing decisions that have a stake in landscape level governance (E.g. the district and *fokontany* government structures are linked to the Ministry of Interior; they are charged with the operational role of representing the State at the decentralised level and upholding the law. The regions and communes are, in turn, linked to the central level executive body responsible for 'territorial management' affairs; they are the Decentralized Territorial Authorities (*Collectivités Territoriales Décentralisées*). Currently, the Deputy-Prime Minister's Office (*Vice-Primature*) is in charge of 'territorial management' through the *Vice-Primature en Charge du Développement et de l'Aménagement du Territoire* - VPDAT.[10]) A key legislated tool used by VDAT for landscape level planning is the National Land-use Master Plan (*Schéma National d'Aménagement du Territoire* or SNAT), which integrates the various inputs generated by Regional Land-use Master Plans (SRATs). Communal governments also prepare local integrated development plans. These are not necessarily spatially-based plans, but are key to providing inputs to the SRAT.

8. Landscape governance in Madagascar is subject to national priorities defined by the central government (e.g. on environment, forests, agriculture, transport, tourism and extractive sectors). These are reflected in national sectoral policies, whose execution is the responsibility of sectoral ministries. These policies provide inputs into landscape level planning (*aménagement du territoire*), but the actual planning process follows mostly a 'bottom-up' approach, and counteracts the 'top-down' policymaking. 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.

9. In terms of the permitting systems that affects biodiversity at the landscape level, a number of frameworks and mechanisms are in place. The allocation of oil blocks to interested petroleum companies are made centrally by the *Office des Mines Nationales et des Industries Stratégiques* (OMNIS), while mining concessions are allocated by the *Bureau du Cadastre Minier de Madagascar* (BCMM).[11]

[8] Madagascar's reporting under the CBD's Programme of Work on Protected Areas (PoWPA) [Link].
[9] The regions became the highest subdivision level when the provinces were dissolved in accordance with the results of the 2007 referendum. The regions are further subdivided into 119 districts, 1,579 communes, and 17,485 *fokontany*s.
[10] The Ministry with the same name was recently abolished.
[11] Currently, all new permits are waiting till the electoral process is concluded.

The Ministry of Agriculture (MINAGRI) is in turn responsible for negotiating the terms of large-scale agri-business projects. Regional governments are kept informed of all such permit applications and are generally consulted, but consultation mechanisms at the commune levels remain limited and are industry-led at the initial stage. Logging and plantation forestry permits are issued by MEF and are subject to a forest management plan. Depending on the scale (smaller or larger than 1,000 ha), these permits will be issued either at the regional level or the national one. Access to marine resources is regulated by the Ministry of Fisheries. Prevailing practices and policies make a clear distinction between the needs and conditions of artisanal fishermen and those of commercial ones; permits for the former are issued locally and for the latter centrally. All economic activities that can potentially harm the environment must undergo an environmental screening and due diligence process. Thus, they require environmental permits, in addition to sectoral specific permits. Environmental safeguard policies and regulations in place in Madagascar are called *Mise en Compatibilité des Investissements avec l'Environnement* (MECIE). Land-use request dossiers subject to MECIE are reviewed by the National Environment Office (*Office National pour l'Environnement*, ONE) in charge of screening project applications and their EIA reports, carrying out public consultations at the appraisal stage and passing decision on the environmental permits. ONE is also in charge of auditing compliance with the plans for impact mitigation and responsible for upholding environmental safeguards (these plans are required from the requester and ONE approves them). ONE is however absent in all regions and therefore has a very limited ability to carry out due diligence on the ground. Their capacity to handle complex reviews and to enforce compliance with companies' impact mitigation and compensation plans is limited.

10. Two other aspects that are important for this project are: *1)* decentralisation policies that were emplaced in the late 1990's; and *2)* the land tenure regime. As regards the former, different mechanisms exist to delegate authority to the local communities for the management of natural resources. These imply responsibility for the management, but also full ownership of the benefits derived from it. This process is generally called '*transfert de gestion*' (TdG). The main TdG mechanisms in use are based on the GELOSE legislation (*Gestion Locale Sécurisée des Ressources Naturelles Renouvelables*) and the formalised GCF (*Gestion Contractualisée des Forêts de l'État*)—the former pertains to renewable natural resources and the latter specifically to forests.[12] For operationalising both GELOSE and GCF, local by-laws are enacted and enforced by the communities at the *fokontany* level and serve to regulate resource use on a contractual basis. These contracts are called *dinas* and need to be endorsed by Communal Courts to be enforceable. As regards the second aspect, the legal framework that regulates land tenure (*Régime foncier*), the entire legal package and implementation framework on land were reformed in 2005, in an attempt to reconcile customary and statutory laws. Hence, it works in tandem with the TdG mechanism. The current *régime foncier* provides improved tenure security to small-holders and also recognises private property. Both the communal administration and local communities play a key role in the land titling and certification processes the latter through land commissions, which assess tenure rights as part of the process.

11. There are however issues in some of the sectors described that are worth considering as part of the context analysis for landscape and sectoral mainstreaming: *(1) Commercial Agriculture:* In the past few years there has been a surge in demand for land for agri-business development in Madagascar and some permits have been issued to foreign entities in an *ad hoc* way, possibly rushing the prescribed communal consultations. Large-scale, irrigated agriculture, based on private property, and targeting commodity exports, is still a novelty in Madagascar. There is thus limited experience with managing impacts at the landscape level, including secondary ones. *(2) Extractive Industries:* While artisanal mining has historically been important, the oil & gas sector and industrial mining are nascent industries, though both are projected to grow quickly. The mining sector is currently estimated to account for ~15% of GDP, compared to <1% in 2010.[13] Oil and gas developments are for now only exploratory, but just one or two development projects could cause another boom in the economy. The petroleum code dates from 1996 and is seen as largely outdated. The current Mining Code was completed in 2002 and foresees the adoption of a special legal framework for large-scale mining investments and a privileged tax regime for mining projects above an investment threshold. The threshold of $100 million was lowered to $25 million in 2005 to foster new investments. This contrasts with the many small-scale artisanal mining operations, still found in many locations across the country—which have significant impacts. With facilitated access, and a weak overarching legal and enforcement framework, there are concerns, within the development assistance community, that Madagascar's mining and hydrocarbon rents are being undervalued—and at the expense of the country's unique biodiversity endowment. At the local level, the sheer scale of projects can cause social disruption.[14] There is also a need to "clean up" the mining permit registry from "legacy mining permits", which do not bode well with the new context and would add to land use competition.[15] *(3) Logging:* There has also been controversy linked to logging operations, as available forest resources are dwindling and mostly found within PAs. As a norm, logging within PAs category I and II is not allowed and it is highly restricted within IV and V (MRPAs). However, controls and enforcement measures are often very weak and logging activities have been reported within national parks and reserves, even though this is technically illegal. It should also be noted that several of the 'legacy mining concessions' overlap with NAPs. New regulations passed by MEF in 2004 attempted to clarify the situation by affording a priority in resource use allocation to "*sites de conservation*" (conservation sites). Potential and actual land use conflicts may also have been responsible for the delays in the fulfilment of the PA expansion plans in many parts of the country. With the push from investors to gain access, the efforts in the

[12] GELOSE was made effective by law in 1996. The legal regime evolved with a few amendments in subsequent years. GELOSE contracts are the formalisation of negotiations between the local government administration and local communities to simultaneously ensure (1) the transfer of responsibility from the State to local communities with respect to the management of renewable natural resources, under which communities also derive the exclusive benefit of this management; and (2) "relative" land tenure security to all land users (as opposed to "absolute" security of tenure, which can only be provided through titling and by land cadastre services). GCFs are also contracts and refer specifically to State owned forest resources. Under the GCF management plans, communities are expected include a geographically distinct "living space" for their dwellings, as well as areas strictly dedicated to habitat conservation, subsistence hunting, farming logging.

[13] WB (2010).

[14] Time Magazine Online, Feb. 3013: *The White Stuff: Mining Giant Rio Tinto Unearths Unrest in Madagascar*. [Link]

[15] Much of the country's territory is covered by mining exploration concessions of one sort or another issued during colonial times. It had been relatively easy and inexpensive for a permit-holder to maintain and renew their mining permits—one reason why the artisanal mining sub-sector has flourished.

upcoming years should be to strategically assess the benefits and trade-offs of the presence and operations of extractive industries, large scale agri-business and commercial logging in Madagascar, vis-a-vis the country's conservation policies and the needs of local communities.

12. ***Baseline Programmes.*** 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.

13. Within the first group, a new land use planning programme is particularly relevant to this mainstreaming project, because spatial planning is a key tool to be applied. An overhaul in the SNAT/SRAT system is being piloted by VDAT 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 en**v**ironment). 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 $0.2 million.

14. With respect to the second group, MEF and MNP are 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 Atsimon-Andrefana Region has been estimated at $1.5 million. 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, Tsimanampetsotsa 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, the total estimated baseline contribution for PA management has been estimated at $4.5 million, of which $1.5 million will co-finance the project.

15. Under the 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. 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'.[16] The third is co-financed by MINAGRI and EU, and focuses on food security. The fourth programme is the country-wide rural electrification programme implemented by *Agence de Développement de l'Electrification Rurale* (ADER) and partners; it receives EU co-funding. The fifth programme relates to food security and is supported by the EU; part of the funding benefits target communes in the Atsimo-Andrefana region. With respect to energy, the contribution from the ADER's energy access baseline will cover investments between 2014 and 2020. Programme managers for both the AfDB and ADER initiatives have expressed an interest in collaborating with this project through Fondation TANY MEVA and are willing to co-finance it. MINAGRI, AfDB, ADER and EU co-financed programmes that are directly relevant to the project, have been estimated at $15 million for the period 2013-2020.In addition, Tany Meva, and partners are also implementing livelihood programmes with their own funding and are active in the Atsimo-Andrefana Region. The programmes focus on income generating activities (mostly from agriculture), sustainable energy for cooking and lighting, and local infrastructural development (micro-irrigation dams, grain and produce storage etc). These programmes are valued at $9 million. The total value of all livelihood programmes mentioned herein add up to $24 million for the duration of the project.

T**he financial baseline for this project amounts to $25.5 million**.

16. ***The Current 'Baseline Scenario'*** points out to a strong commitment from various partners to support conservation action in different ways. However, there are visible gaps in the baseline. 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. 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 only on PAs, and missing an opportunity to engage the investment-heavy private sector to address management needs. Key ecosystems and relict forest patches will remain unprotected. The full

[16] 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*.

gazettal of Mikea Forest and Onilahy may be considerably delayed and the management of existing PAs (e.g. Beza-Mahafaly, Tsimanampetsotsa) will continue to be carried out in isolation, often without the involvement of local communities. If not addressed at the landscape level, the various threats will result in a further degradation of the dry and spiny forest ecosystems and lead to the loss of biodiversity.

17. ***The Long-Term Solution***. 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 and the active application of the mitigation hierarchy for safeguarding biodiversity where significant impacts can be foreseen (avoid, mitigate, compensate, off-set).

18. ***Barriers.*** There are two overarching barriers that stand in the way of advancing the preferred long-term solution:

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

19. 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. 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. An effective response that both combine an investment in PA management, 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, need to be negotiated on an informed and consultative basis. 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. 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. 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. 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. 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. Specifically at the regional, district and commune levels, the technological and infrastructural capabilities to access and disseminate spatially-based information are severely constrained. 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. 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. 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 are still not fully proclaimed. 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, a key protected area such as Mikea—which is undoubtedly critical and has received much attention and conservation investment—has only temporary status which will expire in June 2014. With Mikea and Onilahy PAs (the latter also has temporary status), protection of terrestrial landscapes within Atsimo-Andrefana Spiny and Dry Forest Landscape would reach 18% coverage. Without them, it is less than 0.1%, which is insufficient to secure biodiversity.

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

20. There has been a wealth of experience in the implementation of community-based approaches to conservation in Madagascar, 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 misses opportunities for integrating biodiversity concerns. A glaring legislation gap is the fact that the PA Code does not consider Community Conservation Areas (CCAs) as a recognised PA category. In the meantime, the approaches at hand involve TdG and *dinas* as proxies, even though they lack a clear conservation orientation (e.g. GELOSE pertains to 'renewable natural resources' and GCF to 'forest resources', these themes are respectively broader than and different from 'biodiversity'). 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: (i) the level of land tenure security enjoyed by communities' households; (ii) the

effectiveness of *dina* contracts for TdG and the extent to which biodiversity considerations are part of these frameworks; and (iii) the capacity of resource users to achieve tangible improvements in their income or well being on the basis of conservation-compatible production activities. With respect to these conditions, there are specific barriers to be overcome by local communities within the Atsimo-Andrefana Landscape. 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. 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. The internationally recognised PA category 'Indigenous and Community Conservation Areas' (ICCAs) are purportedly the oldest form of protected area dating back from millennia.[17] 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. 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.[18] Lack of formalised national recognition of CCAs in the current PA Code, alongside with complicated bureaucracy and poorly negotiated trade-offs at community level, have so far hampered the wider realisation of their potential benefits as a PA category in Madagascar.

21. ***Expected Outcomes and Components of the project.*** The project is designed around two Components—described below.

Component 1. Effective Landscape-level Conservation Mainstreaming.

The project 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. Targeting the Atsimo-Andrefana Spiny and Dry Forest Landscape, four outputs are planned. ***Output 1.1 (Spatial Planning)*** will focus on building the capacity of MEF and other partners at the national regional, district and commune levels to undertake biodiversity spatial planning. A key product will be the Landscape Level Land-Use Plan (BD-LUP) that will spatially define areas of biodiversity importance in the districts of Morombe, Toliara II and Betioki, and map out appropriate land uses to be supported in these areas. It will be underpinned by economic assessments and be made openly available through mapping tools and other means. The project will provide technical assistance and IT infrastructure support. During the PPG phase, collaboration arrangements with the SNAT Consortium and other data-holders (e.g. the Digital Observatory for Protected Areas - DOPA[19]) will be negotiated to ensure that planned activities complement and cross-fertilise each other. The project will focus on the mainstreaming of biodiversity planning into the on-going SNAT/SRAT processes. The BD LUP is conceived to become a specific planning layer to Atsimo-Andrefana SRAT. One important aspect will be disclosure. The results and tools of the BD LUP will be made publicly available in various forms, as a means to influence decision-making. ***Outputs 1.2 and 1.3 (Threat Management and Landscape Governance)*** are designed to create the enabling conditions for the implementation (including enforcement) and monitoring of the BD LUP. The project will develop the capacity to apply the mitigation hierarchy to safeguard biodiversity with respect to road development, oil & mining developments, and large scale agricultural projects. The BD LUP will identify critical areas for conservation to be afforded protection status, either as formal protected areas or CCAs. The approved BD LUP will get appended to the Atsimo-Andrefana SRAT and become thereby part of an official plan for land use allocation, which also feeds into the national plan, the SNAT. Applicable regulations at the regional, district and commune levels may be revised to ensure that the BD LUP is enforceable. Under Output 1.3, a multi-institutional land management platform will be developed to coordinate land use planning and will work around a specific Strategic Environmental Assessment (SEA) for the Atsimo-Andrefana Spiny and Dry Forest Landscape. Private sector stakeholders from investment heavy sectors will be invited to participate in the SEA process, to facilitate their engagement and compliance with the BD LUP. It has been noted that it has not yet been widely applied in Madagascar. However, ONE has guidelines for SEA and the use of ecologically sensitive areas. ONE is also making rapid progress in mastering this methodology through the 'REDD+ readiness' process. ***Output 1.4 (PAs' integrated into Landscape Mgt)*** is concerned with the further integration of protected areas into the overall landscape. It will support critical management measures in to ensure PA integrity in the face of multiple threats, either from impact-heavy sectors or from communities living in PA fringe areas. These measures may be pending the completion of PA proclamation processes and boundary demarcation (including buffer zones and protection zones within existing PAs). Four PAs will be targeted, namely: Mikea, Onilahy, Beza Mahafaly and Tsimanampetsotsa.

Component 2. Community-based Conservation and Sustainable Use operationalised

22. Work under this Component will ensure the incorporation of conservation and sustainable use of biodiversity into local communities' production activities and land and resource management practices. There are two key aspects. One is linked to peoples' own livelihoods, where food security and income generation are essential. The second is linked to need to change predominant land use practices – from itinerant slash-and-burn agriculture and charcoal production based on unregulated access to forest resources to practices

[17] Refer to ICCA Consortium website [Link].
[18] Refer to the ICCA Registry website [Link].
[19] During the PPG phase, a focused study covering the Atsimo-Andrefana Landscape will be carried out in collaboration with the Digital Observatory for Protected Areas (DOPA), developed by the Joint Research Centre of the European Commission (JRC) to identify indicator species and key threats parameters.

that do not require land clearing and make a more rational use of land and forest. Both need to be pursed, but noting that the project strategy recognises that there are a number of baseline activities that are already addressing food security and income generation issues. These will be taken into account in the choice of sites and in the development of project activities. The GEF co-support will ensure that land-uses are compatible with conservation. A key focus is on how a network of CCAs, strategically located across the landscape, can contribute to reducing habitat loss. These CCAs will also serve as a key vehicle for governing communities' *terroirs* and their zone of influence. The project will simultaneously promote the incorporation of conservation and sustainable use of biodiversity into local production practices.[20] Under ***Output 2.1 (CCAs Establishment)***, the project will work with local communities to follow key steps in the identification, selection and proclamation of CCAs. The project will also help communities to plan and zone the use of their space and resources through the PAG *terrior*, which will include: (i) location and delimitation of the *terroir*; (ii) resource mapping and zoning within it; (iii) the agreed boundaries of CCAs and of areas where harvesting and subsistence activities can take place; and (iv) sustainable resource off-take limits. Participating communities will work with national NGO partners to seek CCA recognition, including through the international ICCA registry. ***Output 2.2 (Codifying Local-level Resource Use Governance).*** Irrespective of the timing for approval of the new COAP, TdG and *dinas* will be applied for the purpose of CCA recognition and for the codification of the its governance mechanisms. GELOSE and GCF are legislated frameworks for TdG and will provide legal support for drawing up, approval and enforcement of a *dina*. There are two distinct and complementary aspects to be engineered under this output: 1) defining roles and responsibilities and formally endorsing the PAG *terroir* by the mandated authorities as the effective mechanism local land use planning in the concerned communities; 2) establishing the "rules of the game" with respect to biodiversity management, including resource off-take limits and enforcement measures, but equally conflict resolution and benefit sharing. Fully endorsed PAG *terroirs* are expected to both respond to communities' aspirations and conservation needs. The role of women and marginalised groups will be duly taken into consideration. Also under this output, the CCA's boundaries will be demarcated, the *dinas* approved and collaborative governance mechanisms will be enforced. NGO facilitated techniques for conflict resolution will apply and their support will also be solicited to obtain increased land tenure security as another means of stabilising land use. Altogether, activities under this output will build on the sustainability principles of the Declaration of Anja by the umbrella organisation TAFO MIHAAVO on the community-based management of natural resources. It implies making local communities co-responsible for the sustainable management of resources in their terrior and engendering efforts to efforts to attain organizational and financial autonomy for pursuing these goals.[21] ***Output 2.3 (Local Capacity for BD Management)*** will focus on integrating biodiversity values in local by-laws, but also with operationalising the transition to more sustainable practices through capacity building. Capacity development activities to be financed by GEF will include: (i) PA planning and ecological monitoring; (ii) resource use governance; (iii) enforcement and conflict resolution; (iv) management of bush-fire and other hazards; and (v) inclusive benefit sharing. Locally tailored training is expected to improve communities' awareness on the values of biodiversity and on the steps that they can take to conserve and use it sustainably. ***Output 2.4 (Local Economy and Benefits).*** Under this output the project will support livelihoods' production activities to be carried out by targeted local communities. Fondation TANY MEVA's revolving fund, combined with support from development partners within the agricultural, food security and energy provision sectors, will provide co-finance for strengthening and lifting the local development baseline. Activities may include conservation agriculture applied to food crops and pastoral activities, essential oils pressing, and where feasible, cultivation of niche products, such as rice, corn peas, etc.). Where needed, basic infrastructure will be also supported.

23. ***Incremental Cost Reasoning.*** The project's alternative from the baseline and expected global benefits follows:

Current Baseline	*Alternative*	*Global Biodiversity benefits*
In the business-as-usual (BAU) scenario, deforestation and forest degradation trends experienced at the Atsimo-Andrefana Spiny and Dry Forest Landscape will continue and likely accelerate. Forest patches will become further fragmented. Species that are forest-dependent will be increasingly threatened and may even become locally extinct. The existing threats to biodiversity from subsistence activities will be compounded by threats associated with large scale development: road opening, irrigation schemes, oil & gas developments and mining activities. Large scale projects will rapidly establish themselves in the region, bringing significant investments that are bound to transform landscapes and lead to biodiversity loss. There will be little if any investment in conservation, and any environment safeguards that may apply will be weak from a biodiversity perspective. At the landscape level, the "development accelerator effect"	With the project, Madagascar will implement concrete measures for conserving, sustainably using and safeguarding biodiversity in the Atsimo-Andrefana Landscape covering three contiguous districts (Morombe, Toliara II and Betioki). In terms of response to the current, and emerging threats to biodiversity, the project promotes a paradigm shift from site based work to a landscape approach. The project will develop a collaborative governance framework for sectoral biodiversity mainstreaming involving public, private, CSO and CBO actors. Biodiversity considerations will be integrated into the development of economically relevant sectors across the landscape, in particular agriculture, forestry, extractive industries, energy production and transport, but also in the livelihoods and land use patterns of local communities. A two-pronged approach will apply. First, it will strengthen resource use governance at the landscape level by developing and implementing 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	The highly threatened dry deciduous forest and spiny thickets totalling 2.4 million ha will enjoy increased conservation security and, at the wider landscape level, biological resources will be used more sustainably and essential ecosystem services maintained. Adverse land-use change will be stabilised in the fringes of core PAs (existing and new terrestrial PAs sum 240,000ha), thereby reducing the level of threats to biodiversity in PAs that emanates from their periphery. Forest fragments and extensive areas of high biodiversity value outside PAs (minimal estimated surface is 100,000 ha) will be brought under conservation management and will function as connectivity corridors. Threatened species found within the landscape will enjoy improved chances of survival among them emblematic species of lemur (*Propithecus verreauxi*, *Lemur catta* and *Cheirogaleus medius*), red-listed birds (*Monias benschi* and *Uratelornis chimaera* among others), as well as reptiles and amphibians (e.g. *Furcifer antimena*

[20] The exact communes and communities that will be targeted by the project for Component 2 activities will be defined during the PPG phase. Proposed selection criteria will include biodiversity values, but also social-economic feasibility—the willingness of communities to adapt production practices.

[21] See e.g. the Declaration of Anja [Link] and a case study on Anja Miray Association highlighted by the Equator Initiative [Link]

Current Baseline	*Alternative*	*Global Biodiversity benefits*
will add to the pressures, as increased economic activities will attract migrants. There will be more demand for firewood, charcoal, land and water resources. This will in turn exacerbate deforestation and forest degradation.	policy change. Second, the project will work with local communities to strengthen conservation on communal lands by establishing and managing multi use CCAs. It will put in place measures to ensure the sustainable utilisation of wild resources and conservation-friendly farming through a focused sustainable livelihoods and capacity building programme.	and *Ptychadena mascareniensis*). The current and emerging negative impacts on biodiversity from production sectors will be more effectively avoided, and managed at the landscape level, in particular within the agriculture, forestry, extractive industries, energy production and transport sectors.

24. ***Co-financing.*** The indicative amount co-financing amounts to $25.1 million and will be availed by (i) the national government (through MEF, MINAGRI and MNP) and local government, (ii) the parastatal ADER, which plans to extend access to energy to various communes in Morombe, Toliara II and Betioky districts; and (ii) NGOs Tany Meva, Sage. UNDP will also be co-financing the project from its own resources. This coalition of co-financiers will ensure the full engagement of baseline livelihood interventions.

25. ***Innovation*** is embedded in the novelty of the project's landscape approach and the move away from site based work to addressing diffuse and indirect threats to biodiversity from both the economically emerging sectors in Madagascar and from communities' subsistence activities. In the current setting, there is a need to do both. Another innovation aspect pertains to the PA approach to community conservation and its link to the internationally recognised ICCAs. This is also not sufficiently tried in Madagascar. The BD LUP use of technology and the PAG *terroir* approach also bring innovation in terms of how they intertwine the spatial, socio-economic and ecological dimensions, while fostering participation, both remotely and on the ground. ***Sustainability and replicability of the project***. The sustainability elements of the project derive from two aspects. First, the concerted landscape governance approach, involving public, private and CSO actors in biodiversity mainstreaming. Second, the socio-economic benefits that the project is expected to generate through livelihoods activities. On the later, Fondation TANY MEVA's revolving Fund is a key instrument in securing financial sustainably and encouraging communities to establish community funds. On the replication potential of the project, it should be noted that the land use governance challenges faced by the Atsimo-Andrefana Landscape are also seen elsewhere in the country. While the project needs a scope that is compatible with the funding available, its approach is highly replicable and should also be applied elsewhere in the country. ***Gender considerations*** will be fully integrated into the project strategy: the project will work closely with women's associations. Rural women in Madagascar play a crucial role in NRM. They carry a heavy burden from household chores, including from early age. Yet, they are often marginalised in the decision-making process pertaining to land and resource use. The project will develop means to counteract this, by carrying out gender scoping of activities and tailoring them to provide women with a more equitable share of benefits.

A.2. Stakeholders

Stakeholder	***Relevant Role***
Local communities in target districts	This group is a key stakeholder in the project. Their involvement and action will be determinant of the project's success. The role of local communities will first and foremost be to articulate their aspirations vis-a-vis the process of TdG and realise their responsibilities in it. Through facilitation availed by the project, local communities will be involved in biodiversity & livelihoods spatial assessments and planning, and thereafter, with adequate resources, in the management of their *terroir* and its zone of influence. They will also lead the CCA proclamation process as well as the management of these areas.
Fondation Tany Meva & SAGE	Fondation TANY MEVA and SAGE are the project proponents. The exact role of these two CSOs in implementing the project will be confirmed following an in-depth capacity assessment that will be carried out during further project preparation (a rapid assessment has been carried out). A number of activities foreseen under Component 2 linked to TdG and livelihoods fall into their domain of expertise.
MEF and MNP	MEF is a key project stakeholder for Component 1. Together, they will lead the Landscape Level Land-Use Plan exercise and function as the custodians of the 'BD LUP system'. MEF also defines environmental policies, ensures their application and effectiveness, and oversees the operationalisation of SAPM, where DCPSAP, SAPAM Commissions and MNP play a pivotal role. MNP is primarily responsible for the management of PAs category I and II, including Beza Mehafaly, Tsimanampetsotsa, and Mikea.
Land use regulating agencies	The national entity in charge of land use planning (*aménagement du territoire* – currently VDAT) and agencies such as ONE, BDDP, OMNIS, the *Guichets Fonciers* and the *Observatoire du Foncier*, have a key role to play in supporting and adopting the BD LUP and mainstreaming activities and with respect to communities' own spatial planning and tenure security issues.
Sub-national government	Decentralised government at the regional, district and commune levels will play a key role in supporting NRM across the landscape, mainly for the TdG schemes. They will be among the beneficiaries of capacity building activities under Component 1.
Ministry of Agriculture (MINAGRI)	The Ministry is a key co-financier in the project, levering AfDB programmes that will co-support the implementation of livelihoods activities under Output 2.4. It will play a key role in the provision of agricultural extension services (or facilitating those). MINAGRI staff will also benefit from capacity building activities under Component 1.
ADER	ADER is a key co-financier in the project, levering funds for energy access programmes at the site level. Their involvement is crucial, as some of the forest degradation is directly driven by demand for energy in rural areas.
CSOs, Academia Research and partners	Key CSO partners active in the region include WWF, Blue Ventures, WCS, especially in marine sites and CI in Tsimanampetsotsa. The TAFO MIHAAVO network of CBOs involved in NRM will also be engaged. Yale University in partnership with Essa Forêts has been active in Beza Mahafaly, alongside with local CBOs. Involvement of these CSOs, academia, research and alongside with other SNAT partners will be important, in particular in the BD LUP and related activities.
Private Sector	The project will actively engage relevant private sector entities through mainstreaming activities in Components 1 and 2. Output 1.3 will also include a dialogue with extractive industries' stakeholders active in the landscape. They will be invited to participate in the SEA and

A.3 Risk.

Risk and Rating	**Management Strategy**

Risk and Rating	Management Strategy
Political instability may ensue, in spite of the on-going democratisation process. ***[H]***	UNDP has played a key role in brokering the transition process out of the political crisis and elections are due soon. UN Security monitors country and project risk on a rolling basis and adapts strategies accordingly. Currently, the approach is to continue to invest in the success of the elections and then engage with the elected government after the ballot and through renewed dialogue.
Difficulties in reconciling institutional mandates and conflicts in administrative jurisdiction ***[H]***	Through Output 1.3, the project will create a platform for collaborative landscape and sectoral governance. All the relevant administrative levels of government will be engaged in the process and represented in the platform. UNDP has previous and useful experience with developing such platforms, e.g. from the UNDP-GEF EP3 project but also from its governance programme (Decentralisation Project) and Joint-UN programme with UNICEF and others (*Gouvernance par le mobil* Project). Conflict resolution techniques and facilitation will apply to make all processes smoother. In addition, the process of landscape level planning (BD LUP) and at the level of *terroirs*, plus the coordination with DCPSAP and MNP, will together ensure coordination and harmonisation between these plans with PA planning. All partners will have a voice and will be given a chance to present their stakes. Where possible, formal agreements/MOUs will be used to better define roles and responsibilities.
The landscape mainstreaming approach is proven overly ambitious for the prevailing managing capacities in Madagascar. ***[M]***	With adequate scoping, the landscape approach is also feasible in Madagascar. First, capacity building in emended in every activity foreseen under Component 1. Second, there are tested models for the application of the landscape mainstreaming approach, from which Madagascar can draw inspiration from. The Grasslands' project in South Africa and other examples have proven that 'biodiversity spatial planning' is a powerful tool for mainstreaming and that it is not difficult to be mastered and applied. With the right balance between planning and enforcement, and by explicitly targeting key decision-making processes, the approach has good chances of success. The threats' and baseline analyses in this project have explicitly focused on the relevant sectors and the decisions-making processes and the interventions have been planned accordingly.
Some investment-heavy private sector stakeholders will not collaborate with the project as certain recommendations in the BD-LUP may go against their short-term interests. ***[M]***	In spite of the difficulties in the governance terrain faced by Madagascar in the last few years, there is a framework in place for EIA that has many strengths. Any corporation involved large-scale developments within the Atsimo-Andrefana Landscape will need to abide by the rules set by this framework for obtaining due permits to their projects. This is the minimum baseline. The project obviously introduces a strengthening of the application of this framework through spatial planning and enforcement. The leverage for applying them comes from the regional and local level. The both the regional government and directly affected communes have in various occasions manifested an interest in fully gauging the impacts of these large scale projects at the landscape level and are therefore fully supportive of the project. This will oblige private sector stakeholder to seek compromise and collaborate with the project. Also, many of these corporations respond to a board of investors and need to safeguard their reputation, as part of their long-term interests. In this light, the project will engage the private sector within extractive industries, transport and agri-business. With support from specialised technical assistance, the project will offer them opportunities to develop and implement actions within their CSR programmes that are in line with the BD-LUP. This is bound to create a win-win situation for both project and corporate stakeholders, thereby reducing the risk of non-collaboration.
Limited acceptance of sustainable use models by local communities lead to continued encroachment into PAs, resource pillage and further degradation and fragmentation of habitats. ***[M]***	The TdG approaches from Tany Meva and Sage with respect to the involvement of local communities and in the realisation of their aspirations have been demonstrated, including in terms of producing results in the sustainable management of natural resources. Compliance and enforcement measures will be community-based. The project will define and monitor key ecological indicators as a means of monitoring this risk. An adaptive management approach will also apply, so will lessons from EP3.
Consultations at sub-national level with respect to investment decisions that favour high-impact physical development projects in the Atsimo-Andrefana Landscape remain limited. ***[L]***	The involvement of key policy-making players at both the national and regional levels will ensure that opportunities and benefits from biodiversity mainstreaming will be duly understood and used accordingly. Until now, the buy-in has been high. Furthermore, the BD LUP will be designed to be availed openly with full disclosure. The project will apply a pro-active approach to the engagement of high-impact physical sectors and conduct an informed dialogue with them, in particular with extractive industries. The collaborative governance framework for sectoral mainstreaming proposed by the project will provide the best changes to promote consultations and disseminate key information that affects biodiversity across the landscape.
There are considerable delays in the approval of COAP, hampering the envisaged recognition of CCAs. ***[L]***	There are on-going policy reform initiatives and supported by MEF and other partners to ensure that revision of the COAP can be completed and approved without any further delays. Although the pace of progress is currently slow due to the transition, prospects are good that the dialogue will be picked up again after the elections. UNDP will address the need to finalise the PA policy revision -- as part of its on-going policy dialogue with the Government-- working with other development partners.

A.4. Coordination

Programmes, and Initiatives	Proposed collaboration
On-going and recently closed UNDP-GEF BD projects and SGP	During the PPG, the project will work with the SGP to scope the relevance of past and prospective SGP projects in the Atsimo-Andrefana Landscape. As for FSPs, two projects are worth mentioning: PIMS 2762 "Madagascar EPIII Third Environment Programme" (or EP3) and PIMS 4172 "Madagascar Network of Managed Resource PAs" (or MRPA). EP3: The UNDP-GEF EP3 project ended in 2012 and revolved around the development of 'sustainable natural resource management' practices with communities within Protected Areas Support Zones. The WP-GEF EP3 project complemented it, by focusing on operationalising the core PAs. Mikea Forest was one of the Southern sites that benefitted from both EP3 projects. This project will build from the positive legacy of EP3. MRPA: There is significant scope for learning, collaboration and cross fertilisation with respect to TdG, but equally in the dialogue with extractive industries and product certification. There are no site overlaps.

Programmes, and Initiatives	Proposed collaboration
Recently submitted UNEP-GEF national BD projects	Two FSPs were recently submitted to the GEF by UNEP but the PIFs await clearance: (1) "*Strengthening the Network of 'New Protected Areas' in Madagascar*" (or NAP Strengthening) and (2) "*Conservation of Key Threatened, Endemic and Economically Valuable Species in Madagascar*" (Threatened Species). The NAP Strengthening project will work in core sites, one of which (Ranobe PK 32 NPA) is within the Atsimo-Andrefana Landscape. A third MSP PIF on SLM was recently cleared and may be relevant with respect for ecosystem services. Collaboration will be sought with UNEP once FSPs are Council approved. There are no risks of overlap, only opportunities for synergies. The current project focuses on terrestrial ecosystems within the landscape and adopts a mainstreaming approach. The UNEP NAP Strengthening project adopts a PA approach and Ranobé is a MPA (incidentally also the site of the Tar Sands mining project). As for the Threatened Species Project, there is significant potential for collaboration with respect to the BD LUP and the community-based biodiversity & livelihoods spatial assessments and planning.
Conservation initiatives in core PAs	Besides the above cited NAP Strengthening project, partner organisations are implementing a suite of activities in core PA sites within the Atsimo-Andrefana Landscape. Currently, knowledge of their concrete activities is limited, but sufficient to indicate that there are no potential overlaps. During the PPG phase, it will be important to chart the work of these partners, engage with them and find concrete collaboration areas.
Baseline programmes of MINAGRI, donor partners, Tany Meva and Sage	These partners will play a pivotal role in supporting and complementing GEF funding for advancing with issues of food security, livelihoods and energy under both Components 1 and 2. These are central development issues that need to be taken into consideration, in order for the GEF project to secure global biodiversity benefits. Periodic information exchange sessions with partners working in the rural development will be developed throughout project implementation to define and harmonise priorities and interventions.
Initiatives on policy reform and spatial planning	A few partners are currently working on issues of policy and legislation reform, though moving slowly due to the political transition. The project will work closely together with Helvetas Swiss Intercooperation, the SNAT Consortium, VDAT, MEF and other to explore synergies and collaboration topics related to policy reform and spatial planning.

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 National strategies and plans or reports and assessments under relevant conventions

26. The project will contribute to Madagascar's achievement of the Aichi Targets as follows: Target 5, to the extent that the project will contribute to stabilising land-use in the fringes of core protected areas thereby reducing threats to PA's biodiversity; Target 11, to the extent that (i) the project will contribute to making the protected areas system more effective in conserving biodiversity within the surrounding landscapes; and (ii) it includes other area-based conservation measures that are not just than formal PAs, in particular through the incorporation of CCAs into the system; Target 12, as it contributes to reducing the loss of known threatened species, possibly preventing their extinction across the landscape; Targets14 and 15, as it relates to the enhancement of ecosystems' functions, their structure and resilience, including in the face of climate change, through a landscape mainstreaming approach.

27. This project is country-driven and consistent with, and supportive of, national development strategies and plans that relate to green growth and sustainable development, with focus on MDGs and the Post-2015 development goals. It is supportive of the 1990 National Environment Charter (PNAE), the National Biodiversity Strategy and Action Plan (from 1997 and currently being update/revised to incorporate the Aichi Targets), and the principles of the Environment Programme III (2005), which are still valid. Together, they outline the basis and strategic axes for environmental governance and sustainable development in Madagascar. Specifically as the decentralised NRM policies, the project is in line with the general developmental principles enshrined in various sectoral policies related to agriculture, oil & gas, mining, energy provision, and infrastructural development. Much of the project's effort will though focus on ensuring that biodiversity considerations are more actively taken into account in those sectoral frameworks.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities

28. The project will contribute to Objective 2 of the GEF5 Focal Area Strategy (BD2), '*Mainstream biodiversity conservation and sustainable use into production landscapes, seascapes and sectors*'. The mainstreaming approach has been chosen because it allows the project impact to go beyond site-based action and focus on sectoral impacts and the wider landscape. It also creates scope for ensuring that policies on decentralised and devolved NRM, as well as community-based co-management practices, can be incorporated into the overall landscape governance frameworks through CCAs. Two BD2 Outcomes are relevant for the project: 2.1 '*Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation' and 2.2 'Measures to conserve and sustainably use biodiversity incorporated in policy and regulatory frameworks*'. The project will engage in the sustainable management of a multi-use landscape mosaic that includes PAs and a variety of other land and resource uses outside of protected sites. It will also influence polices and regulations governing sectoral activities, so that biodiversity conservation and sustainable use can be effectively integrated into them. Much of the effort will go into catalysing a shift from the current simplistic land use planning system, which does not account for biodiversity values or for the adverse cumulative direct and indirect impacts of different production activities across economic sectors on biodiversity. The project will seek to avoid, reduce and mitigate the impacts of roads and other physical infrastructure in sensitive areas.

B.3 The GEF Agency's comparative advantage for implementing this project

29. UNDP approaches the issues of biodiversity management from a development and governance point of view. The agency's goal is to capacitate beneficiary countries to maintain and enhance the beneficial services provided by biodiversity and ecosystems to secure livelihoods, fight poverty and promote development. In 2012, UNDP's Ecosystems and Biodiversity Framework 2012-2020 was approved by UNDP's Executive Group. It establishes the benchmark of achievements and strategic thinking behind UNDP's

programming in the Ecosystems and Biodiversity domain. UNDP aligns its programming cycle with that of the Agencies of the United Nations Group Development Group in Madagascar. The current cycle covers the period 2011-2013 and focuses strongly on MDGs. A Country Programme Action Plan (CPAP) for UNDP was signed with the Government of Madagascar as an interim framework for programming that the contributes to the achievement of UNDAF objectives. Those linked to MDG7 are particularly relevant to the project (e.g. 'Environment in and surrounding targeted conservation zones is protected'). UNDP Madagascar participates in joint initiatives within the framework of coordination with partners on advocacy for the Millennium Development Goals. The Country Office counts on two dedicated environment programme officers, one of which is senior, plus support from other programme staff (including one dedicated M&E officer), operations and the Country Offices senior management staff. UNDP maintains well-developed working relationships with all of the key stakeholders for this project. The Country Office team is supported by the UNDP-GEF Regional Coordination Unit.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Christine Ralalaharisoa Edmé	Director General for the Environment	Ministry of Environment and Forests	25/07/2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**DATE** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email Address**
Adriana Dinu, UNDP/ GEF Officer-in-Charge and Deputy Executive Coordinator		August 19, 2013	Fabiana Issler, Regional Technical Advisor, Ecosystems & Biodiversity, Africa, UNDP-GEF	+27-12-3548128	fabiana.issler@undp.org

ANNEX. THE ATSIMO-ANDREFANA SPINY AND DRY FORESTS LANDSCAPE

DESCRIPTION

The target landscape is located in the transition zone between dry deciduous forest and spiny thickets. The former is more common further north in Madagascar, while the latter is dominant in the southwest. Strips of xerophytic growth are also found in the landscape where soils are particularly poor. The coastal environment is characterised by sandy beaches and coves. 'Madagascar Spiny Thicket' is one WWF's Global 200 Ecoregions. The climate is dry, with average temperature around 18°C, rainfall around 400mm with a marked dry season between June and September (see graphs for more detail).

The targeted area is comprised of three contiguous districts within the Atsimo-Andrefana region: Morombe (7,624 sq km), Toliara II (6,776 sq km) and Betioki (9,103 sq km)—or 2.4 million hectares altogether. The area is prone to hazards, such as cyclones, drought and wildfires.

The northern part of the landscape contains several large forest patches – that remain relatively intact. It features the Manombo River and the Mikea Forest with 321,771 hectares, listed as a 'future protected area' in MEF documentation. Management of Mikea will be likely delegated to Madagascar National Parks, though it is expected that they involve local communities through co-management models. The status, boundaries and management arrangements for Mikea are still being negotiated. Although Mikea has lost 28% of its primary forest cover in the last three decades, its importance for protecting dry and spiny forests cannot be understated. It contains remarkably diverse plant and reptile assemblages, including several taxa that are found nowhere else. The unusual *Didierea madagascariensis* (found also in spiny thickets) and *Euphorbia stenoclada*, as well as the more common *Adansonia fony* are found in Mikea. It is also home to many endemic reptile and bird species. Two bird species that are unique to the Mikea Forest, the sub-desert mesite (*Monias benschi*) and the long-tailed ground-roller (*Uratelornis chimaera*), are classified as vulnerable.[22] Mikea sustains small mammal fauna, among them, three emblematic species of lemur: the Verreaux's Sifaka (*Propithecus verreauxi*), the Ring-tailed (*Lemur catta*) and the Fat-tailed Dwarf Lemur (*Cheirogaleus medius*). Other remarkable mammals include the threatened *Microgale jenkinsae*. Home of the Mikea people, the forests are affected by slash and burn agriculture and illegal logging. In its south-eastern flank, forest loss and degradation is now driven by charcoal production that supplies the regional capital, Toliara.

Along the coast, as many as nine locally managed marine areas have been designated between 2006 and 2008 (see map). Coastal communities are working with supporting partners, including WWF, WCS and Blue Ventures, to achieve sustainable co-management of coastal resources and fish stocks.

Towards the south, dry forests transition to spiny thickets and the landscape features the Fiherenana river basin, which has its delta just south from Toliara. The zone features unique forest patches, mostly unprotected, with the exception of the Bezaha Mahafaly Reserve (recently expanded to 5,000 ha upon request from local communities). Some of the forest fragments are proposed incorporated into Onilahi riverine PAs with 52,580 ha and straddling both sides of the river.

The extreme south of Betioky district, features the Tsimanampetsotsa National, a wetland of international importance with 45,604 hectares. The lake with the same name serves as habitat to an important colony of Greater Flamingos. With typical spiny thicket vegetation, threes from the endemic family Didiereaceae are common, alongside with those Burseraceae, Euphorbiaceae, Anacardiaceae and Fabaceae families of plants. The park also harbour specimens of Radiated turtle (*Geochelone radiate*), a Mongoose (*Galidictis grandidieri*) and it provides habitats to globally threatened birds such as *Charadrius thoracicus* and *Coua verreauxi*. A species of blind fish (*Typhleotris madagascariensis*) lives underground in a cave of Tsimanampetsotsa. At least five lemur species can be found in the park.

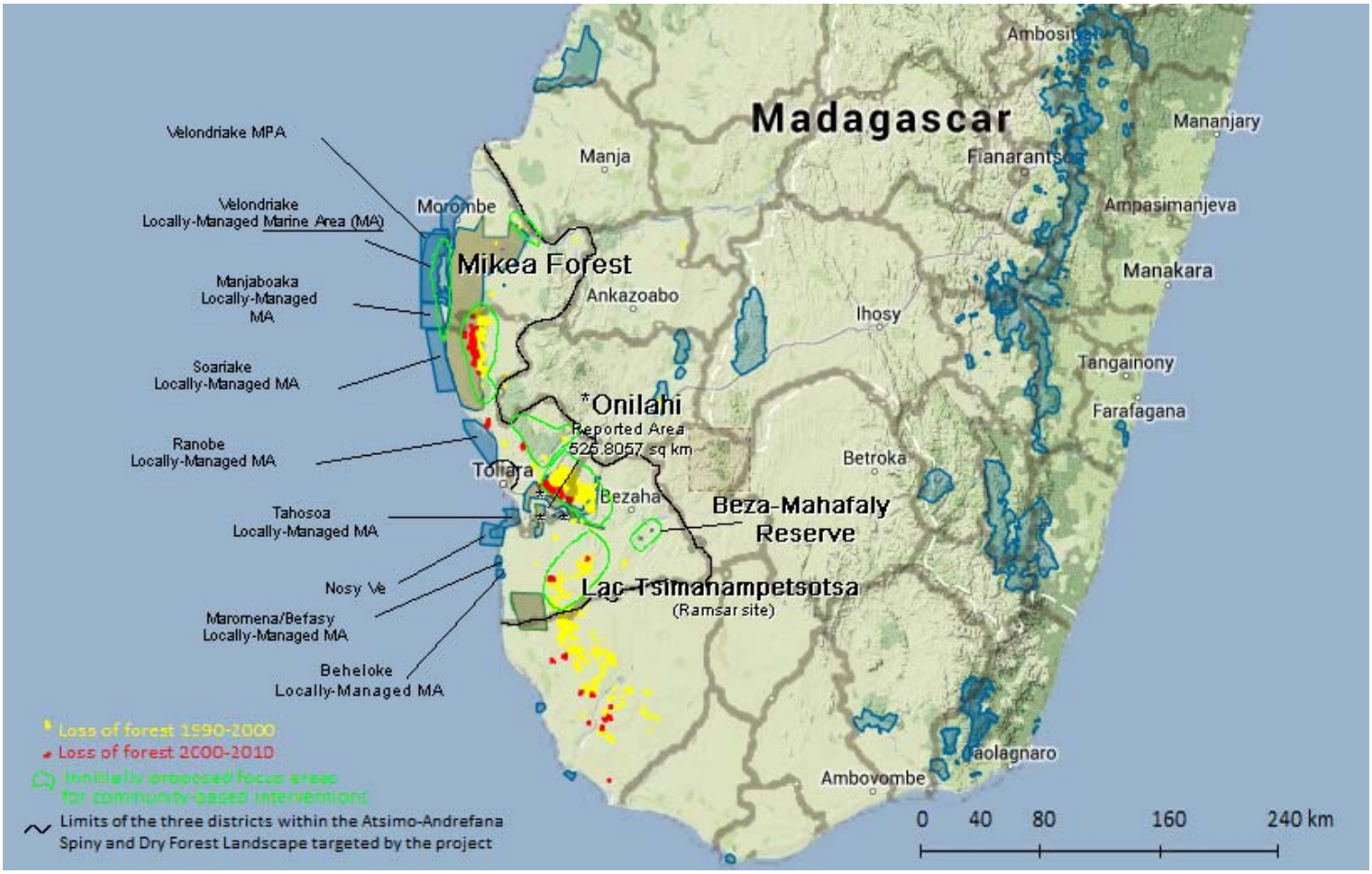
The total population in Morombe, Toliara II and Betioky districts was 600,000 in 2001 (as per census data) and is probably around 800,000 inhabitants today.[23] There are 46 communes within the three districts, of which 16 are coastal. Poverty and vulnerability levels are high according to various measures (e.g. only 3 of the 46 communes have income above the national poverty line[24]). The number of *fokontanys* and communes within the three districts varies according to source. One source mentions 46 communes, another 36, while fokontanys may be as few as 80 and as many as 270. According to the 2001 census, 61% of the communes in the three districts had agriculture as their primary economic activity, 25% livestock rearing, 10% fisheries and 5% other. Farming activities focus on subsistence crops, primarily rice, followed by maize and manioc. Cotton and maize for animal feed are becoming increasingly important cash crops. Irrigation was incipient some 10 years ago. Only 6 out of 46 communes had >50% of their fields irrigated (ibid); this is now expanding. A large-scale irrigated agricultural scheme (Lower Mangoky Irrigation Area) is located north from Mikea Forest and taps water from the Manombo river. It is bound to attract workers to agri-business activities.

Mining permits of different sorts and duration have been issued for locations within the landscape. A clear overview of them is still lacking. In 2001, industrial-scale mining was found in 6 out of 46 communes and artisanal mining in one.[25] A new tar sands and a surface mining project have been reported active and with exploration permits (Toliara Tar Sands and Ranobe Mine are under development by Australia-based World Titanium Resources). Three large on-shore oil blocks overlap the landscape (3110, 3112 and 3114) and several off-shore blocks of smaller size have been defined. None of the oil blocks are currently productive, but exploratory activities are on-going and moving fast. There were recent announcements of confirmed oil reserves in Bezaha Commune, Betioky District, and gas near Sakahara town, though the latter lies outside the borders of the targeted landscape. Ownership of oil and gas interests changes dynamically. There is currently no clear overview of them either.

Both the Spiny and Dry Forests of Madagascar have high conservation value and render essential ecosystem services to local people linked to the water cycle and soil retention. In degraded state, both spiny and dry forests become poor in biodiversity, with soils compacted and susceptible to fire. Beyond a certain degradation threshold, it is very difficult to rehabilitate these ecosystems.

[22] Atlas of Our Changing Environment: Mikea Forest (online, no date).
[23] Source for 2001 is the *Commune Census of by the ILO program of Cornell University in collaboration with FOFIFA and INSTAT*. [Link] No new census has been available since. The current figure is an extrapolation based on the average population growth in Madagascar.
[24] INSAT / WB (2008)
[25] Census 2001.

MAP



CLIMATIC GRAPHS FOR THREE LOCATIONS IN THE LANDSCAPE

Bezaha, Toliara and Lake Ihotry

SOURCE: World Bank Climate Change Knowledge Portal