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Network of Managed Resource Protected Areas

Brief description

Madagascar's combination of elevated overall biological diversity and exceptional endemism is globally unique. The proposed project aims to build upon recent successes in creating Managed Resource Protected Areas (MRPAs) that are well-adapted to the country's cultural, social and economic conditions. It will help to establish an influential MRPA network within the Madagascar Protected Areas System that will include all MRPA stakeholders. The new network (SAPM) will contribute to an update of the National Protected Areas System Management Plan that includes MRPAs. As in many developing countries, Malagasy Category V PAs do not exactly conform to IUCN guidelines and the GOM will negotiate with this global conservation body to create a new sub-category. The project will add five MRPAs covering 1,527,151 ha to the national PA register and facilitate a further 1,286,816 ha through partner interventions. These additions account for 4.9% of the national territory or almost half of the country's commitment to have 10% of the country under PAs. The targeted MRPAs are deemed to be among the most critical for ensuring adequate representation of Malagasy biodiversity and are judged to have excellent long-term viability prospects as they are deemed resilient to climate change impacts and other stresses. The project will focus on building capacity at national, regional and local levels with a strong emphasis on the latter. Establishing effective local stakeholder governance and management systems will be a key factor in long-term MRPA success and sustainability. MRPAs have the dual role of ensuring effective biodiversity conservation *and* stimulating economic growth. The project will therefore put considerable effort into developing innovative mechanisms that stimulate economic growth among local stakeholders through partnerships with the private sector to develop added-value markets for labeled products and services. These measures will help to break the perpetual subsistence cycles that maintain rural poverty and generate direct revenues for the MRPAs. The latter is aimed at avoiding persistent donor dependence through financial self-sustainability.

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Acronyms

ADAPS	Association for the Development of Agriculture and Farmers in Sambirano
AFD	Agence Française de Développement/French Association for Development
BCMM	Bureau des Cadastres Miniers de Madagascar/Madagascar Mining Registry
CBD	Convention on Biological Diversity
CCD	Convention to Combat Desertification
CI	Conservation International
CITES	Convention on International Trade of Endangered Species
CMS	Convention on Migratory Species and Wildlife
CNFEREF	Centre National de Formation, d'Etudes et de Recherche sur l'Environnement et Foresterie
COAP	Code des Aires Protégées/Protected Areas Code
COGES	Comité de Gestion (des Aires Protégées)/PA local Management Committee
COI	Indian Ocean Commission
CSR	Corporate Social Responsibility
CTD	Collectivité Territoriale Décentralisée
DCBSAP	Directorate of Biodiversity Conservation and the Protected Areas System
DPPSE	Directorate for Programs Planning and M&E
DREF	Regional manager of Environment and Forest
DSRP	Poverty Reduction Strategy Document
DWCT	Durrell Wildlife Conservation Trust
EIA	Environment Impact Assessment
EIR	Extractive Industry Review
EITI	Extractive Industry Transparency Initiative
FAPBM	Foundation for Protected Areas and Biodiversity of Madagascar
FDI	Foreign Direct Investment
FFEM	French Global Environment Facility
FID	Development Intervention Fund
FLO	Fair-trade Labeling Organizations International
FRAM	Parent Associations at primary school
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GFIC	Inter-Commune Land Tenure Services
GEF	Global Environment Facility
GOM	Government of Madagascar
IUCN	International Union for the Conservation of Nature
KfW	German Development Bank
MBG	Missouri Botanical Garden
MECIE	Décret de Mise en Compatiblité des Investissements avec l'Environnement/ Decree on Investments' Due Diligence with respect to Environment
MEF	Ministry in charge of Environment and Forest
MEM	Ministry Mines and Hydrocarbons
MRPA	Managed Resources Protected Areas
MDAT	Ministry in charge of Decentralization and Land Management
MNP	Madagascar National Park

MSC	Marine Stewardship Council
NEAP	National Environmental Action Plan
NGO	Non-governmental Organization
OED	Oxford English Dictionary
ONE	National Environment Office
OPCI	Public organism for inter-commune cooperation
PA	Protected Area
PBM	Project Board Meetings
PGRM	Programme for the Management of the Mineral Resources
PoWPA	Program of Work on Protected Areas
PPG	Program Preparation Grant
PRD	Regional Development Plans
PSDR	Rural Development Support Project
QMM	Quit Mineral Madagascar
REDD	Reducing Emissions from Deforestation and Forest Degradation
SAPM	Madagascar Protected Areas System
SEA	Strategic Environment Assessment
SNAT	National system of territory management
SRAT	Regional System of territory management
UCPE	Environmental Projects Coordination Unit
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VPDAT	Vice Primature chargée du Développement et de l'Aménagement du Territoire
WCPA	World Commission on Protected Areas
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund (for Nature)

SECTION I: Elaboration of the Narrative

PART I: Situation Analysis

INTRODUCTION

1. The global importance of Madagascar's biodiversity is well known. The combined overall levels and endemism, particularly at the higher family and genus taxonomic levels are unparalleled in any other comparable ecoregion. Taking vascular plants and vertebrates as an example, the country has 23 endemic families and more than 470 endemic genera, as well as fully one-fourth of all of the world's primate species. Notwithstanding its relatively small land area, nearly 4% of all plants on earth occur only on Madagascar and the diversity and endemism of its herpetofauna is one of the highest on earth.

2. Biological inventories carried out over the previous 30 years have demonstrated that a significant proportion of endemic species were not afforded security through existing protected area coverage. For this reason, the Government of Madagascar publicly launched an ambitious program to triple the extent of its protected area network. The aims were to meet IUCN-recommended targets of at least 10% coverage of the national territory and to ensure that biodiversity representation was as complete as possible. Not unexpectedly, this move was widely hailed internationally and rallied efforts to provide resources to achieve this goal.

3. The 2003 initiative became known as the Durban Vision and later as the Madagascar Protected Areas System (SAPM - *Système des Aires Protégées de Madagascar*). State-of-the-art computer modeling helped to identify potential future PAs and environmental groups successfully lobbied for a moratorium on extractive industries in these areas. Today, around 5 million hectares are under temporary protection status and awaiting full PA status.

4. PA promoters quickly realized that a radical new paradigm was required if the new PAs were to succeed. This departed from a wide acknowledgement that the traditional IUCN Category I, II and IV PAs presented limitations vis-à-vis the newly-formulated national policy, which aimed at having PAs act as drivers for poverty reduction and economic growth. While there was no doubt that these stricter PA categories have a key role to play in conservation, they are too restrictive with respect to local sustainable development. For this reason, most of the new PAs were designated as Category V and VI PAs that are increasingly termed Managed Resource PAs[1] or MRPAs. Combining local development aspirations and effective biodiversity conservation of course presents a significant challenge but a wide range of stakeholders is willing to take it on.

5. MRPAs are new but are already beginning to attract financial support among traditional large donors. However, MRPA promoters are highly cognizant of the risks of massive donor aid,

[1] In French: *Aires Protégées de ressources naturelles gérées*

having seen that Madagascar National Parks (the agency responsible for the management of IUCN Category I, II and IV PAs) has become overly dependent on long-term donor support. Promoters recognize that, by their very definition, MRPAs can be and should be able to create their own financial sustainability based on their own resources, albeit after a period of investment in good governance and effective management capacity.

6. As MRPAs have the dual role conserving biodiversity and promoting economic development, there is a growing perception that they are a means to break the persistent rural poverty linked to subsistence farming. Subsistence also translates into continued encroachment into natural habitats in search of land and other resources, thus causing continued loss or degradation. Transferring natural resource management responsibility has already encouraged communities to conserve and wisely use these resources, but now it is timely to promote innovative approaches that will eventually stimulate more entrepreneurial activities that stimulate rural economic growth as a means to break the poverty/subsistence cycle. Among others, these may include REDD and REDD++, selective high-value timber, ecotourism and improved enhanced-revenue agricultural productivity.

7. A recent massive upsurge in mining, oil and gas investment is undoubtedly welcome for a poor nation like Madagascar. If these industries develop, there may be a risk of conflict and even closure of PAs, especially as mining concessions and oil exploration blocks largely overlap with biodiversity-rich areas and many MRPAs. However, many companies have shown quite remarkable sensitivity to biodiversity conservation goals: indeed, there are a clear signs that coexistence is possible and even opportunities for PAs to benefit from CSR programs and perhaps direct capital investments.

8. Finally, periodic political crises in Madagascar appear to constitute a repeated threat to PA creation and successful establishment[2]. Political priorities may shift away from a strong biodiversity focus, increased economic stress may combine with reduced law enforcement to lead to higher levels of direct threats to PAs, and donor support may be temporarily withdrawn. MRPAs must identify and consolidate resilience measures to override these periodic crises and be sufficiently independent from the negative effects of these crises.

CONTEXT AND GLOBAL SIGNIFICANCE

Biodiversity context

Madagascar's exceptional biodiversity

9. Madagascar is widely considered to be among the world's highest conservation priorities because of a combination of overall high diversity, exceptional endemism and high levels of threat. For example, it has been identified as a global hotspot by Conservation International and is one of WWF's 35 priority places, the most important areas on the planet for biodiversity. Most bioclimatic models indicate that there are at least five distinct ecoregion ranging from the year-round humid forests in the east through more strongly seasonal environments to the

[2] Within the last two decades, crises have occurred in 1991, 2002 and 2009.

succulent and spiny forests and bush in the arid lands south. More recent analyses of existing data demonstrate also that biological and ecological heterogeneity is also marked within each ecoregion resulting in exceptionally high local endemism. This characteristic is most marked in the seasonally dry western forests and the arid southern environments but is also clearly evident in the humid eastern and central forests that were long believed to be relatively heterogeneous[3]. One at least partial explanation is linked to the existence of high-altitude Pleistocene refugia and associated corridors of redispersal or centers of micro-endemism[4]. Whatever the mechanisms, the result is that Madagascar boasts a combination of overall diversity and endemism unparalleled in any comparable major ecoregion on earth.

10. Indo-Madagascar separated from Africa and other Gondwanaland continents some 160 million years BP and subsequently split again around 65 million years ago. Since then, natural colonization has been rare and the flora and fauna has evolved in isolation from other regions of the earth. While strong Gondwanaland connections remain quite evident, the isolated biota is truly unique, reflected in the exceptional degree of family- and genus-level endemism that has no comparisons elsewhere on earth. In effect, Madagascar is a living laboratory that helps scientists understand how 'primitive' ecological communities long since replaced elsewhere may have evolved.

11. Most of Madagascar's terrestrial biota is dependent on healthy natural habitats and ecosystems. At the present, forest loss is generally irreversible as anthropogenic pressures normally persist and natural regeneration is difficult. If left to itself, Eastern humid forests appear to be able to slowly regenerate through successive stages over a long period of time, but the slower growing Western seasonal forests are less resilient to marked degradation or clearance and seldom, if ever, become re-established.

12. Remaining natural terrestrial habitats form a broken ring around the island (see Annex 1, Map 2). There are numerous relatively large blocks but many are fragmented to differing degrees. Large blocks are critical for the long-term viability of their communities and component species. Besides maintaining a diverse genetic group and sufficient space for populations to recover from natural events such as cyclones or disease outbreaks, larger blocks are important in terms of climate change resilience. Regarding the latter, the large lowland Menabe block in the mid-west and upland areas such as the Northern Highlands are known climate refugia. The Northern Highlands also are arguably critically important for natural climate change population displacement and should thus help to buffer the current short-term warming trends emanating from emissions. It should be noted that while large natural blocks are generally the most appropriate for conserving healthy ecological communities, it is not always possible to exercise this option. Some ecological communities are naturally limited spatially and have receded over the last two millennia as a result of human activities, sometimes to very small areas indeed. Notable among these are the Eastern littoral forests. All of the remaining blocks are relatively small but are definitely worth conserving as their levels of floristic and invertebrate endemism are exceptional.

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[3] For example, see Kremen. C. *et al.* (2008). Aligning conservation priorities across taxa in Madagascar with high resolution planning tools. Science 320: 222-226.

[4] Wilmé, L. *et al.* (2007). Biogeographic evolution of Madagascar's microendemic biota. Science 312: 1063-1065.

13. The Eastern humid forests have attracted most attention from conservation groups and they are the best protected through protected areas and species programs. However, much of the more accessible lowland regions have been deforested as well as many of the higher elevations, notably in the central area of Madagascar. Much of what remains occurs on the steep eastern escarpments and in some of the most remote and rugged terrains. Some of the most critical conservation needs at present are to maximize conservation efforts for remaining lowland and littoral forest, but it should be noted also that much of the Northern Highlands remain unprotected even though they are important for climate change resilience. These highlands comprise the only high elevation Pleistocene refugia that are still intact. They are also vast and abut natural vegetation corridors that span more than 2,000 m in altitude, more than any other region in Madagascar. For this reason, it is important to target the entire mountain system including its lower flanks for conservation and sustainable development, notably in the distinct north-western Sambirano floristic domain and the northern slopes further to the east. While the floristic distinctiveness of the Sambirano has long been known, it has only recently become clear that faunal local endemism is also exceptional. Similarly, research during the previous 10 years has shown that the northern slopes of the Northern Highlands constitute a marked ecotone wherein diversity is exceptional and local endemism high.

14. Many scientists believe that the Western seasonal forests are the most vulnerable to human pressure and are thus of very high priority for conservation[5]. These forests are highly fragmented compared to those of the east and relatively few large blocks remain. The latter are usually on fairly infertile sand or in rocky areas. Recent inventories clearly demonstrate that heterogeneity and local area endemism are the most marked in the country, meaning that it is essential to target all significant blocks for conservation if biodiversity is to be maintained. Several western lakes and mangroves are also key to the survival of rare and threatened freshwater turtles and aquatic birds.

15. The arid Southern Ecoregion was once believed to be relatively well protected naturally owing to its unpredictable and harsh climate, and lack of surface water. However, the growing human population and lack of fertile land have fueled a migration into this area during the last decade and it has experienced a dramatic rise in natural habitat loss, the reverse of trends elsewhere in the country. Furthermore, several mining ventures have been initiated and a significant proportion does not appear to be well-regulated. It is therefore encouraging to see that the protected areas coverage of this ecoregion is being rapidly expanded through the efforts of Madagascar National Parks and a small number of NGOs.

16. Recent evaluations conducted under the auspices of the Indian Ocean Commission and led by WWF show strong indications that the importance of Madagascar's coastal biodiversity has been underestimated in the past. The coasts, measuring more than 5,000 km are home to the largest and most diverse mangroves in the Western Indian Ocean and support the planet's third largest near-continuous barrier reef system. The diversity of certain taxonomic groups such as corals and mollusks in Madagascar appear to be higher than in any other part of the Western Indian Ocean including the Red Sea. Also, the northern Malagasy coral reef systems may be source areas for the Southwest Indian Ocean, and the country's coastal waters are vital to sea

[5] Several articles in *The Natural History of Madagascar* (2004) (eds. S.M. Goodman & J.P. Benstead) and Malagasy Nature **1** (2009) make this point.

turtles and cetaceans, and there appear to be permanent populations of coelacanths in the southwest of the country.

17. Some coastal and marine habitats are directly stressed by human activities. These include mangrove clearance, artisanal overfishing of selected species, unregulated tourism and, locally at least, pollution. These stresses may be further compounded by terrestrial forest loss in major watersheds as increased sediment run-off may add to the risk of greater marine ecosystem vulnerability. These combined pressures significantly increase the risk of climate change vulnerability within marine ecosystems.

18. With respect to the present project, the north-western coastal waters off the Diana Region are deemed to be the most critical as they are the most biologically diverse and productive of all Malagasy seas and, indeed, within the Western Indian Ocean coastal areas. The most important sites for reducing anthropogenic stress on the Diana seas are the Ampasindava Peninsula and the Northern Highlands. The present project will therefore contribute to multi-stakeholder efforts to reduce climate change vulnerability by acting to reduce land-based stresses. It may be noted, also, that climate stresses will also undoubtedly be a significant issue in terrestrial ecosystems and all project sites will have a strong climate change component.

19. Madagascar's biodiversity constitutes an essential resource for its people but its potential values are as yet largely untapped. Some 80% of the country's population is entirely dependent on natural habitats for traditional medicines for which there are many hundreds of species utilized and a plethora of treatment applications. Rural communities in particular are dependent on other ecological goods and services such as clean water, and are beginning to benefit from nature-based tourism.

20. The growing national and international markets for essential oils from endemic Malagasy species (Mandravasarotra, *Cinnamosma fragrans*; Katrafay, *Cedrelopsis grevei*) together with positive results from recent bioprospecting indicate that many opportunities to develop organic and fair trade in favor of local people are still unexplored.

Protected area system: Current status and coverage

The National Network of Parks and Reserves

21. Protected areas in Madagascar were first established in 1927 and were among the first in the African Region. The early sites were Category I strict nature reserves, but national parks (Category II) and special reserves (Category IV) were added. In 1991, the National Association for Management of Protected Areas (ANGAP)[6] was created to manage this national network that at the time comprised 23 PAs. These categories were inscribed within a new Protected Areas Code, or COAP. No other PA categories were recognized. Category I PAs were created to represent outstanding near-pristine habitats and their ecological processes. The only activities authorized therein are management (protection, surveillance and monitoring) and approved research. This was deemed to be too restrictive with respect to potential tourism and all but two

[6] Please note that ANGAP was renamed Madagascar National Parks in 2008.

of the original Category I reserves have been transformed into national parks. Category II sites are generally considered to be areas of outstanding biodiversity value where sustainable tourism is possible because of natural beauty, ease of access and/or high-interest species. Special reserves were originally created to conserve particular species or ecological communities but they are essentially indistinguishable from national parks and many are popular tourism destinations. Furthermore, these Category IV sites do not fit easily into IUCN's definitions where this type of PA involves direct management in favor of particular habitats or species.

22. All categories of PA must have a clear internal zoning system. The most important zones are the core areas where biodiversity is strictly conserved. The surrounding areas within the PA can be zoned for settlement, traditional sustainable use, research and tourism. Theoretically, there should have been no settlements in the PA when it was established but, in a few cases, this was the case. However, it is more common to encounter settlements established during the 1970s-1980s, a period when PAs were all but abandoned by the administration. Zoning for settlement and traditional resource use is defined in written agreements between ANGAP and the communities involved.

23. From the beginning of its existence, ANGAP adopted a policy of sharing entrance fees, with 50% allocated to local communities. Representatives from neighboring communities allocate funds to projects of their choice. The only restriction is that projects must not conflict with the PA's conservation objectives, and most involve social infrastructure development or restoration such as granaries, schools and dispensaries. Popular PA tourism venues can generate more than the funds attributed to the communities by the state. There is no doubt that PA revenues are welcomed by local people and help to engender goodwill. However, there are challenges that require resolution. Firstly, revenues are significant only at a handful of PAs, notably Isalo, Andasibe and Ranomafana. Secondly, less than half of all PAs in the network currently attract tourists as many are too remote and/or accessible. ANGAP has tried to resolve these issues by sharing revenues from high earners with non-tourist PAs and by allocating other budgets to development projects.

24. In 2001, Madagascar's first national PA system plan[7] confirmed what many conservation practitioners had increasingly suspected: the existing network of 47 parks and reserves, covering 1.7 million hectares, did not adequately represent the country's biodiversity. Most of the surviving natural forest was not represented, freshwater ecosystems were largely excluded and there were virtually no marine PAs. PA coverage at that time was only 2.9% of the national territory (See Annex 1, Map 1), far below IUCN recommendations of at least 10%. Of significant concern were the results of new field surveys showing that numerous species and some types of habitat did not occur within the network. These new data were beginning to show that: (a) diversity had been significantly underestimated during older surveys; and (b) numerous species have limited geographical ranges thus helping to explain the island's extraordinary richness and endemism.

25. At the same time, conservationists began to conclude that the relatively strict PAs in Category I, II and IV might not always be the most effective means to conserve biodiversity as

[7] This is the National Protected Area System Management Plan developed by ANGAP now known as Madagascar National Parks. The plan is frequently referred to as the PlanGRAP based on its French acronym.

they only allow for limited integration of traditional natural resource use. Local community dependence on these resources was well known, and their 'closure' within PAs can lead to resentment. Many PA practitioners also felt that having greater local involvement in PA affairs may also help to lower management costs and therefore contribute to sustainability, a major preoccupation for all.

26. These new lines of thinking encouraged the GOM and conservation NGOs to propose innovative approaches that would radically improve biodiversity representation in PAs and, at the same time, bring into play innovative governance systems emphasizing local ownership. The opportunity to launch these approaches came at the 2003 Vth World Parks Congress in Durban, South African.

The Durban Vision and the new Madagascar Protected Areas System

27. At the World Parks Congress, the president of Madagascar announced that his country would immediately work towards a tripling of the national PA system through new parks and reserves. He also announced that Madagascar would develop innovative approaches to PA management that effectively protected biodiversity while also contributing to sustained economic growth. In short, Madagascar would become a world leader in biodiversity management. Soon after, the Ministry of Environment and Forests (MEF) invited conservation stakeholders – principally ministries responsible for natural resources and environmental NGOs – to form a national commission to guide the process of steering this early Durban Vision towards the more formal Madagascar Protected Areas System (*Système des Aires Protégées de Madagascar*, SAPM). This SAPM Commission eventually broadened to include other stakeholders in the tourism sector and even attracted people from the mining industry. As the scale of the Durban Vision became clearer, a range of thematic sub-commissions formed to develop guidelines and other tools in such fields as prioritization of potential new PAs, management categories, governance, legislation, management effectiveness, sustainability, community safeguards, and monitoring and evaluation. Regional commissions also formed to examine local issues more closely. IUCN was invited to send experts to ensure compliance with this body's global recommendations and guidelines as well as those of the Convention on Biological Diversity (CBD).

28. Appreciating the vast scope of SAPM, the Ministry of Environment and Forests (MEF) created a new Directorate of the Protected Areas System (Direction du Système des Aires Protégées, DCBSAP). This new directorate was given responsibility to coordinate the development of SAPM, including policy, legislation and implementation. SAPM includes all PAs in the national register, including those managed by Madagascar National Parks and those promoted as Category V or VI PAs by other. In effect, what we see today are two distinct sub-sets or networks, each with a different management philosophy. Thus, Category I, II and IV sites under Madagascar National Parks have a realtively strict focus on conservation with somewhat limited local engagement, whereas the Category V/VI network balances conservation with economic growth while also promoting local governance. It is for this reason that the latter network is increasingly considered to comprise Managed Resource Protected Areas, or MRPAs.

29. Through a long participatory process, the commissions identified the national priorities with regard to the creation of new PAs based upon biodiversity conservation objectives. Criteria included representation of distinct habitats, ecological communities and species, as well as the need to create viable PAs. The latter translates most efectively into large blocks of relatively intact habitat. Given the remarkable biological heterogeneity of Madagascar ecoregions, it is not surprising that virtually all of the country's remaining natural forest habitats were deemed a priority for the future SAPM. Forests were prioritzed using MARXAN and ZONATION software, with the former including socio-ecomic data and the latter ristricted to biodiversity measures. Lakes, rivers, mangroves, small islands and coral reefs were also prioritized based on shared knowledge and expert opinion.

30. Government guidelines stated that the target for SAPM was to be 6 million ha or roughly 10% of the national territory (although this original guidelines did not take into consideration marine priorities adequately). By 2008, the SAPM commissions did indeed identify some 6 million ha of remaining terrestrial habitats as priorities but it became evident that there were insufficient promoters or financial resources to bring them into new PAs.

31. National policy requires that PAs should contribute to poverty reduction and sustainable development. Similarly, the creation of new PAs must avoid harmful effects on local stakeholders and, where appropriate, be accompanied by suitable compensation measures. Guidelines were established to help stakeholders develop a community safeguards plan, a document mandatory for all new PAs. The economic values of PAs are now widely appreciated by political decision-makers, witnessed by their inclusion into regional development plans.

32. The desire to create pro-poor PAs meant that new categories of PAs were needed where local people took responsibility for managing their own natural resources. Following extensive consultations with IUCN, the GOM chose to modify the COAP to include all IUCN PA categories – I-VI. The added categories – III, V and VI facilitate direct management by local communities and the private sector. The latter two also more fully integrate development and biodiversity conservation.

33. The SAPM commissions and their constituent members working actively on establishing new PAs opted to create Category V and VI sites, with most being in the former. It should be noted that Category V sites in Madagascar differ conceptually from those in many European countries where traditional activities have created a highly modified environment that retains significant scenic and/or biodiversity interest. In Madagascar, the sites were prioritized on the basis of their intact or little-modified natural habitats, and evolved as Category V due to the ongoing interactions between local communities and these habitats. The Category VI sites include some large natural forest blocks wherein few local communities exist.

34. Opting for Category V and VI immediately raised significant technical challenges, notably how do we move from management by a relatively well-financed professional organization to a scenario where governance is primarily local, multi-stakeholder and essentially inexperienced? A second major question was sustainability: most new PAs we dependent on limited NGO funding and few of the international donors would commit long-term support based on arguments that they needed to guarantee their previous investmets into Madagascar National

Parks and its established national network. Clearly, new and innovative sustainable financial mechanisms would be needed that capitalize on the intrinsic values of each of the new MRPAs and, at the same time, buffered them from the vagaries of donor/government commitment. In effect, the Category V and VI MRPAs would need to demonstrate tangible benefits and become an integral part of the regional/local development landscape.

35. The first step in creating new PAs was temporary classification. A dossier was drawn up for each new PA and included a map, signed assent by stakeholders, a safeguard plan, a Social and Environmental Impact Assessment (SEIA) based on comprehensive local consultation, and a simplified management plan. Temporary protection allowed for a nominal two-year period during which delimitation, zoning and planning were to be completed in order to obtain full legal protection signed off by the Council of Ministers. Some new PAs created by Madagascar National Parks did obtain full protection at Category II national parks during this period. However, new sites that were promoted by NGOs still have only temporary protection. The reason for the latter appears to be the more complex nature of Category V and VI PAs. The vast majority of temporarily protected new sites have now completed their dossiers for full legal status. These will be submitted when the current political crisis is over.

36. Officially today, 50 new PAs covering 3,528,922 ha have been added to the national Register which now accounts for a total of 5,248,922 ha (see Annex 1, Map 3).[8] (Most are still under temporary protection but a few are now fully protected). As many as 29 sites covering 2,308,000 ha are classified as Category V, whereas five sites covering 785,000 ha are in Category VI (the future classification of some temporarily MRPAs has yet to be determined).[9] PAs in both categories are collectively known as 'Managed Resource Protected Areas' (MRPAs)[10], clearly reflecting the linkages between livelihoods, economic development and biodiversity conservation. The relative importance of Category V reflects the number of sites where human interactions with natural habitats is particularly evident and where dependence on them is marked.

37. All MRPAs are zoned in a manner similar to PAs managed by Madagascar National Parks. Virtually all MRPAs now have Priority Conservation Zones (PCVs) defined in agreements between NGOs, government representatives and local communities. Theoretically, these are similar to the core zones in Category I, II and IV PAs but in practice may allow for some traditional resource uses. PCVs are essentially identical to Category II PAs. Few promoter NGOs have developed zoning outside of the PCVs at present although a few have begun to identify zoning for sustainable economic development. Ultimately, there may be an opportunity to have the MRPA zoning officially recognized by regional government (and therefore not just by the MEF-SAPM). This would probably help to ensure that the MRPA's goals were widely accepted. It is equally desirable to integrate MRPA zoning into larger-scale regional land use management planning.

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[8] These figures are presented in an Inter-Ministerial Order signed by the MEF and MEM in 2008. (Arrêté Interministériel 18633 / 2008 / MEFT / MEM du 17 octobre 2008).

[9] It should be noted that there are several 'official' documents summarizing current PA coverage and that the figures differ somewhat depending on the source.

[10] Although 'managed resources protected areas' is commonly known as the definition of Category VI PAs.

38. It should be noted that the GOM allocated a four-year period to create the new PAs. In part, this was believed to be an adequate time frame but was also based on agreements between MEF and the Ministry of Energy and Mines (MEM)[11] calling for a moratorium on mining in potential new PAs identified through the prioritization process (more details on this agreement are presented below). The allotted time turned out to be unrealistic for several reasons: (a) MRPAs presented entirely new challenges for which there was no prior experience, particularly with respect to negotiating with a broad gamut of stakeholders; (b) the need to balance more effectively local development interests and biodiversity conservation; and (c) developing new standards and formal guidelines for MRPAs was conducted through broad participation requiring considerable time.

39. The impact of limited time are expressed not only by the fact that new MRPAs still await full legal protection, but also by the existence of several areas of the country now identified as priorities but where the process of establishing new MRPAs has still not begun. The latter is explained by the following. The importance of some new sites required time-consuming biological and social inventories conducted by experts such as the research NGO Vahatra or Conservation International's (CI) Rapid Assessment Program. Secondly, some potential PAs are in some of the remotest areas of the country, with many being relatively vast. The Northern Highlands targeted in the present proposal constitute a good example, and will require the combined efforts of several NGOs to create a sustainable PA. Fortunately, the GOM conferred an open-ended temporary protection status for such areas.

40. The present PA coverage is shown in Annex 1, Map 3. For comparison, the results of the ZONATION priorities are also presented (Annex 1, Map 5). It is clear that, once completed, Madagascar's natural forest and freshwater habitats will be adequately covered by the national PA system based on our current knowledge of biodiversity dispersion patterns. In addition, the close similarity between actual PA coverage and ZONATION priority areas indicates an effective representation of species, as this analysis is based primarily on taxonomic priorities.

41. Finally, the fact that new PAs created by Madagascar National Parks are all category II sites whereas those promoted by NGOs and the private sector are all Category V or VI (albeit there are a few small Category III sites) means that there are essentially two quite distinct sub-systems or networks within SAPM. This was not an intentional or even an anticipated outcome. These are marked by quite different approaches to governance and management objectives, and these are examined below.

MRPA network development

42. Firstly, it must be stated very clearly that there is ***one unique and coherent SAPM***, even if it does comprise two quite distinct sub-networks. As we will see, there is also no difference in their respective contributions to biodiversity representation and conservation of biodiversity. Indeed, it must be stressed that MRPAs were identified and prioritized primarily on the basis of biodiversity criteria. Integrating local development ambitions at the site level does not compromise conservation goals; indeed in the long term they are expected to enhance them.

[11] Inter-Ministerial Order 18633 / 2008 / MEFT / MEM du 17 octobre 2008

These complementarities, combined with the differences, are best presented in a comparative table (Table 1).

Table 1. Similarities and Differences between the Madagascar National parks and MRPA networks

Feature	Madagascar National Parks	MRPA network
IUCN Category	I, II and IV	Primarily V and VI, some III (usually integrated)
Biodiversity representation and conservation	– Ranges from centers of exceptional diversity/endemism to sites with distinct communities and/or flagship species – Most sites moderately large, others either very large or small (potential long-term viability indicator)	– Ranges from centers of exceptional diversity/endemism to sites with distinct communities and/or flagship species – Many sites very large, many moderately large, smaller number relatively small
Promotion (proposing establishment)	– Category I sites limited to GOM (Madagascar National Parks or SAPM) – For Categories II and IV, open to any private party	– Open
Zoning system	– Core conservation zones where only surveillance, monitoring and research are permitted – Internal buffer zone where settlement, subsistence use and tourism areas are defined	– Priority Conservation zones where non-management and research activities are limited – Land-use management planning for investment/development initiatives
Reporting framework	– Internal – park/reserve, inter-regional direction, head office – Annual reporting to national board of directors and general assembly	– SAPM and SAPM commissions – Region – Commune and local community structures – Private sector partners
Governance/ management	– Internal three-tiered hierarchy – Possible delegation to third-party NGOs or professional organizations – Co-management committee with local stakeholder representation at park/reserve	– Complex partnerships and role designation involving ministry representatives in the region, local communes, local economic interest groups, private sector (including NGOs and research bodies)
Private land ownership	– Not permitted	– Permitted
Private investment	– Limited to tourism concessions for lodges and other facilities, or research stations	– Encouraged based on land-use management objectives – Tourism, agriculture, livestock, other
Community development	– 50% tourism revenue shared with neighboring communities for projects of their choice – Mostly social infrastructures – Occasional additional local development grants	– Trend towards stimulating entrepreneurship among local interest groups – Focus on high added-value products and services (certified) – Private sector – community partnerships

Feature	Madagascar National Parks	MRPA network
Integration strategy	– Integration intro regional development strategies – Full integration into commune development plans	– Full integration into regional development and land-use management planning – Full integration with commune development plans
Sustainability strategy [a]	– Revenues from tourism, research and filming fees – Continued dependence on donors – Partnerships with NGOs	– Requires NGO or other donor funding for establishment phase – Trend towards self-sustainability based on improved private sector investment, local revenue generation and off-take – Payments for environmental services (local and international)[b] – Direct conservation payments [c] – Industry corporate social responsibility programs (mining, oil, agribusiness etc.) – Seeking private sector endowments through the Madagascar PA and Biodiversity Foundation

Notes:
[a] These may include local services such as water supply and international opportunities such as carbon offsets.
[b] Includes community events (games, competitions, festivals, etc.) and payments for community-based ecological monitoring.

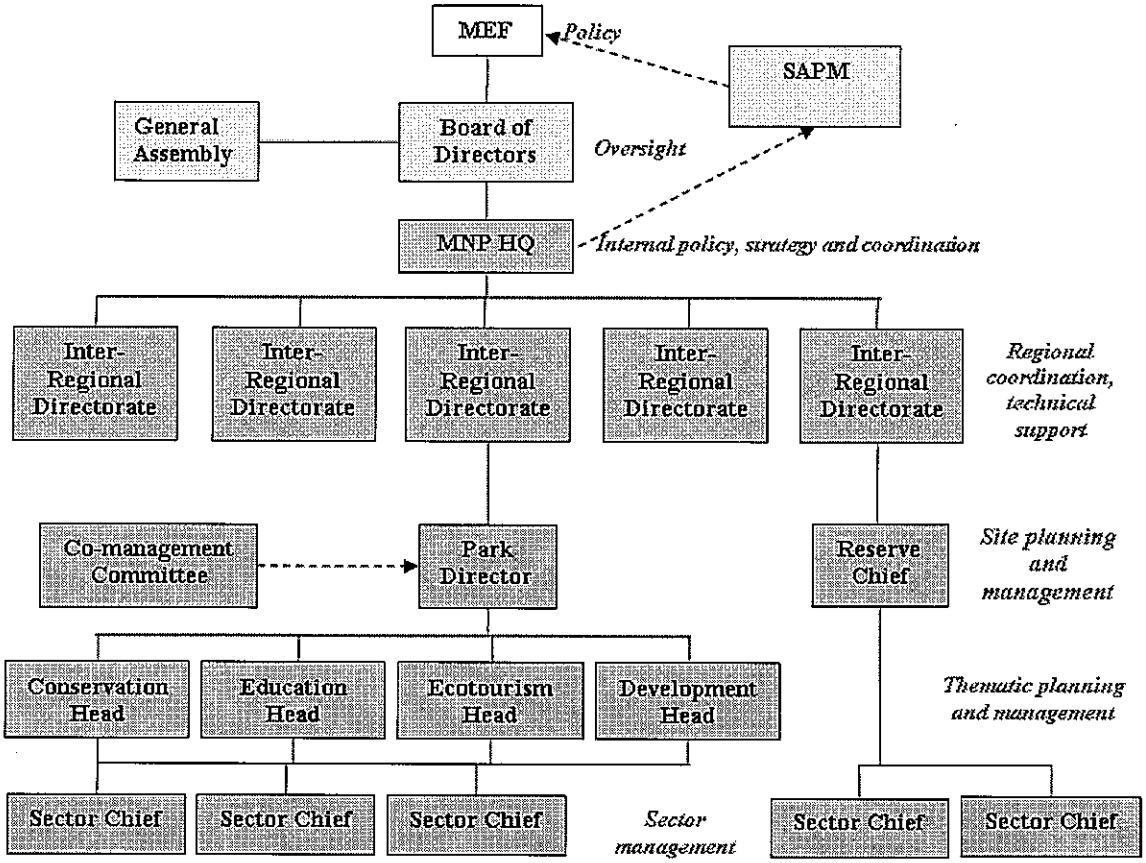
PA Management Regimes

43. The MEF has overall responsibility for all registered PAs through DCBSAP. Although Madagascar National Parks falls under the MEF, it has its own internal management system. This entity has a Head Office in Antananarivo, five Inter-Regional Directorates (Direction Inter-régionale, DIRs) based in the former provincial capitals[12], and a park or reserve office on site. Management hierarchy is shown in Figure 1.

[12] Antsiranana, Mahajanga, Toamasina, Fianarantsoa and Toliara.

Figure 1. Madagascar National Parks management hierarchy

The two site-level hierarchies can vary depending on the size and relative importance of the park or reserve. Smaller reserves tend to have no thematic heads, but large reserves may have them. Thematic areas may vary between sites. For example, there may be no need for an ecotourism leader. A local co-management committee advises the park director or reserve chief. Local people may also work with staff on management issues. The role of SAPM is still unclear.



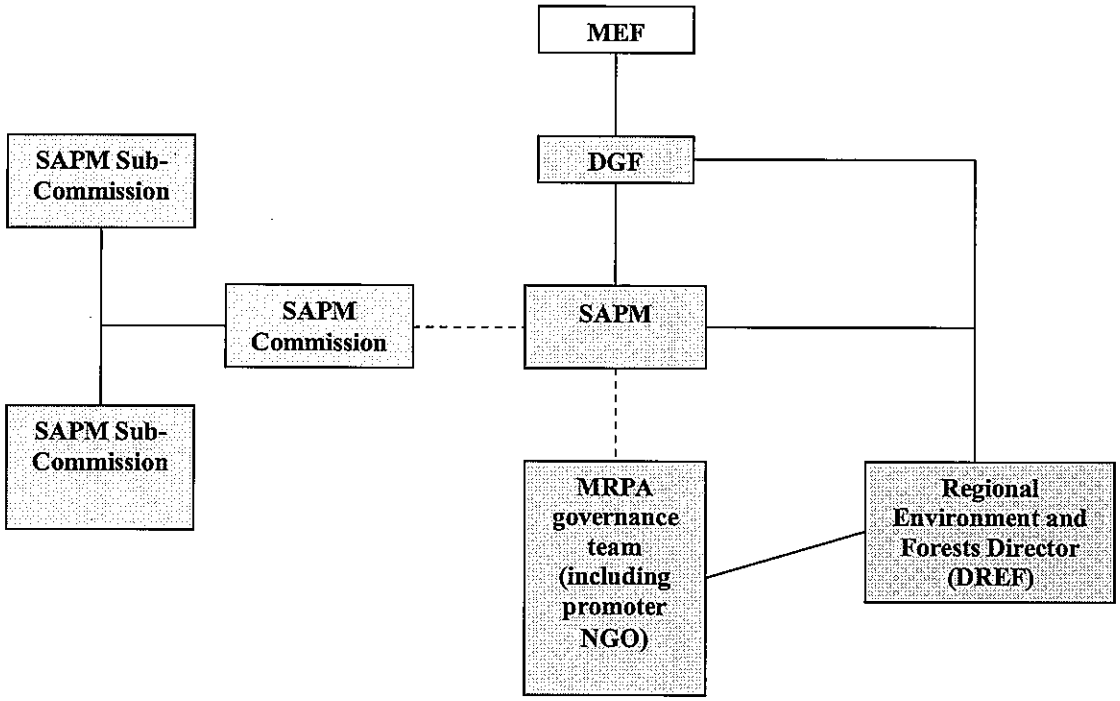
44. This structure has long been in place. The DIRs were established at a time when the country was shifting from having six provinces towards the current 22 regions. Their purpose is to decentralize support to parks and reserves. Each DIR has a Finance & Administration staff plus a technical and science expert. The latter two visit individual PAs to provide support as required.

45. The local co-management committee helps to ensure that stakeholder interests are upheld. Where money is available for development, projects are prioritized by this committee. It also organizes local surveillance groups to inform staff of problems or other significant issues. Park or reserve staff may ask these groups to assist them in surveillance or monitoring.

46. The Madagascar National Parks hierarchy has stood the test of time but it is not considered the best solution for the new MRPAs. First, it is relatively costly to have permanent full-time staff at three levels. Secondly, it does not readily encourage local people to take responsibility for the PA as there is already a professional team in place.

47. MRPA governance structures are still evolving and, for the time being, most are heavily dependent on the promoter NGOs. It requires time to determine the most effective local structures, particularly the respective roles of the region, communes and local stakeholder groups. Larger MRPAs may eventually opt to recruit a full- or part-time staff, but this must be paid for from revenues accrued by the PA. It is highly likely that local governance structures will vary between sites, and it is one of the aims of the present project to determine what works best. Each site is supported by its respective promoting NGO and SAPM (Figure 2).

Figure 2. Simplified representation of current MRPA management responsibilities.



48. The governance and implementation structures within the MRPA vary between sites but there are some common elements. At the present time, each MRPA governance structure is catalyzed by the promoting NGO that usually has a small staff on site. These individuals mobilize local interest groups or associations that represent either particular interests (such as farmers, fishers or artisans) or individual communities. It is also common for the NGOS to provide financial and technical support for multi-commune groups called Public Organizations for Inter-Communal Cooperation (*Organisme Public pour la Coopération Inter-communale*, or OPCI). OPCIs are legally-recognized entities and comprise mayors from adjacent communes working together on common development interests. Acting with one voice, the OPCI is a more

powerful influence group than individual mayors. In many cases, the NGOs have helped to create OPCIs with a view to have them focus primarily on the MRPA. Experience to date suggests that this is not always effective, and it seems to be better when OPCIs deal with all development interests including, but not limited to, the MRPA.

49. The region are also implicated in MRPA management, but incentives ought to be created for a stronger engagement from their part. Most importantly, MEF and by corollary SAPM is represented in the region by their Regional Directorate for Environment and Forests (*Direction Régionale de l'Environnement et Forêts*, DREF). The DREF is responsible for MRPA oversight and is required to provide technical support such as control of illegal activities. At the present time, the degree to which this is happening varies between regions.

50. Decentralized bodies representing ministries other than the MEF are also important at the regional level. In particular, we cite the Regional Directorate for Land Use Management (*Direction Régionale de l'Aménagement du Territoire*, DRAT) under the Ministry responsible for decentralization and land use planning. The role of the DRAT will be particularly critical when MRPAs develop their internal zoning plans and then move towards having them integrated into regional development and land use management plans, a factor that is considered to be essential for long-term MRPA sustainability.

51. Establishing durable and effective governance structures remains one of the biggest challenges for MRPA promoters and will be a focus of this project.

Political expectations for MRPAs and reality in the field: Rural Poverty Reduction and Economic Development

52. Madagascar adheres to the UN's Millennium Development Goals (MDGs). From this, the overarching policy, '*Madagascar naturally*' and the Madagascar Action Plan (MAP) which specifically refer to PAs as motors for development. While it is not clear whether these documents are still valid during the current political crisis, the perceived role of PAs in development has not changed. In this respect, MRPAs may be considered to be particularly pro-poor as they directly link rural development to biodiversity conservation. It is of great interest therefore, to examine whether MRPAs are rising to this challenge and, if so, how they are doing so. It is equally interesting to briefly examine how other rural development initiatives contribute to either poverty reduction, economic growth or both.

Traditional agricultural practices and markets

53. Madagascar's population is largely rural with 70% dependent on extensive and low-productivity agriculture. Agricultural activities are primarily orientated towards supplying two principal markets:

- Providing crop and livestock products to meet the country's internal markets. These markets are far from being fully satisfied in part because production is close to stagnation levels whereas demographic growth is estimated at 2.5%. Effectively, most farmers and pastoralists are tied to subsistence production, a situation difficult to break free from. A

further difficulty is that most farmers are cash-strapped and often forced to sell their produce when prices are at their lowest: i.e., peak harvest times when produce is most common in the market. Furthermore, the same producers are obliged to buy crops for their own families' food needs during the pre-harvest period when prices are highest. It may be noted that few subsistence farmers know about or have opportunities for increasing the price of their produce through organic/fair trade certification. Such market opportunities are likely to be relatively limited for the coming few years (for example, hotels, the national airline, major supermarket outlets) but new markets conceivably could be found abroad, perhaps in neighboring SADC countries where basic crops are not produced locally but potential clients exist.

- Selling cash crops such as coffee, cocoa, spices and essential oils for export markets. Malagasy products are well-known for their intrinsic qualities due in particular to favorable soil and climatic conditions, as well as non-intensive production practices (essentially organic) that are perceived to enhance their value in terms of flavor and aroma. However, cultivation practices remain highly traditional and volume is rather low.

54. There are two clear challenges and opportunities for MRPAs with respect to the above. Firstly, these sites are characterized by a dominance of subsistence farming and pastoralism. Subsistence can be interpreted as sustained poverty and hardship, so there is an opportunity for MRPA development activities to focus on breaking the cycle and bring about real economic growth for at least some communities. The second opportunity is closely linked to breaking this cycle. Added-value product lines (fair trade and organic) can be developed and sold in existing or new markets, raising local incomes significantly.

Rural development programs

55. Once completed, the national Poverty Reduction Strategy Document (DSRP) was integrated into the Madagascar Action Plan. Financing for development social infrastructures was provided by the Development Intervention Fund (FID) and special funding was allocated for rural development assistance through the Rural Development Support Project (PSDR). Several donors also focused funds on specific rural development sectors. These include: relatively large-scale funding from the World Bank, UNDP and GEF for extensive Sustainable Land Management (SLM) noted earlier; USAID sustainable livelihoods programs in support of targeted PAs; French Government support to sustainable development around selected PAs, notably in the arid south; German Government funds for forest management; and Swiss support for forestry and rural agriculture. All such projects are required by the GOM and the funding nations to have a clear environmental focus, and, as can be seen from the above summary, several had an additional clear supporting role for selected PAs. We estimate the amount made available to PAs was approximately US$ 1,200,000/year prior to the current political crisis, while the amount for all sustainable development was considerably higher.

56. Most, if not all, environmental NGOs have initiated rural development programs around their targeted PAs, most notably in an around Category V and VI MRPAs. Much of the funding base comes from the larger multi-and bilateral donors noted above, but some NGOs have been

able to mobilize internal institutional funding or have been supported by private foundations. In general, NGO-mobilized funding for rural development is relatively limited with a consequent impact on geographical scale of interventions and the likelihood of durable positive impacts.

57. Some of these rural development projects have achieved measurable success with respect to improved livelihoods and environmental/biodiversity benefits. Success appears to be linked to the long-term commitment of the donors and implementing partners, but it is also clear that political support for the national and regional government, including local representatives from technical support ministries is an important factor. Some rural development programs, however, appear to have had less durable positive effects on rural livelihoods and the environment. It is useful to examine some of the keys to success.

58. An interesting case concerns the complementary actions of the FID and the Rural Development Support Program (PSDR). While it is an oversimplification of their programs, the process essentially involves a diagnosis of local needs and aspirations, followed by feasibility/impact assessments and implementation. The FID assesses social development needs in each commune and, as may be anticipated from its mandate, the assessments generally include a list of infrastructures as a priority for financing. Projects tend to focus on these infrastructures and provide once-off support with little or no follow-up. This is perhaps not surprising given the vast geographical scale of the PSDR's mandate and its rather limited resources. Thus, while the good intentions of the FID and PSDR are not in question, there must be some doubts regarding sustainability of many of the interventions. We may also question the focus on social infrastructures. These are no doubt of general utility but they appear to divert funds for direct poverty reduction schemes. Using the poverty index ratings for the project's targeted MRPAs as a proxy for rural communities (see Annex 4), it is highly apparent that poverty must be a major preoccupation and a target for intervention.

59. Large-scale rural projects implemented by well-funded professional development agencies have had measurable impacts on livelihoods and have built upon existing economic sectors and even introduced new options. Many have linked infrastructure development to improve access to isolated communities and to open up markets. However, successful as these have been, many such projects appear to be working on improving subsistence conditions rather than encouraging aspirations to move above this socio-economic barrier.

60. USAID's Ecoregional Initiative (ERI) has, however, shown some promise in breaking the subsistence barrier. This project involved a 'full-package' health-population-environment approach focusing on improved well-being and revenues. One of the keys to success was ERI's ability to identify and bring into play improved markets for local agricultural products.

61. Another approach with considerable promise is that of the Malagasy environmental NGO Fanamby. This NGO focuses on private partnerships for sustainable tourism and certified[13] value-added products such as spices and essential oils. With regard to tourism, Fanamby financed the construction of a forest lodge at the Anjozorobe MRPA and assisted local communities to develop an agreement with a private tour operator. The resulting agreement

[13] Fairtrade Labelling Organizations (FLO) standards are used by Fanamby. The NGO facilitates both fair trade and organic labelling.

covers rental fees, and guaranteed local employment and produce purchase. The increase in revenue flow to households is summarized in Table 2.

Table 2. Revenues generated by the Saha Lodge for the Antsahabe community at Anjozorobe MRPA

YEAR	2006	2007	2008	2009
Visitors	262	650	604	1,199
Guide fees	192	433	418	578
Hotel salaries	42	-	686	8,206
Community income [a]	169	112	3,660	4,389
Market gardening [b]	-	-	171	327
Total income	403	545	4,935	13,500

Notes: All monetary values in USD calculated from average annual exchange rates for MGA and discounted for inflation. The lodge was opened in 2006 and refurbished in 2007 when in was closed for some months.
[a] The community receives a fixed percentage of hotel and guide revenues.
[b] 28 families grew local produce for the hotel in 2008, 45 families in 2009.

62. In parallel, Fanamby established a fair trade/organic marketing organization (*Sahanala*, translating as the field in the forest) for certified products produced by farmers neighboring MRPAs. The increased revenue flow to local people (see Table 3) has encouraged a voluntary percentage off-take that is used for MRPA recurrent costs. The 2009 household incomes from ginger, red rice and vanilla respectively represent a 400%, 80% and 285% rise over pre-intervention incomes (MGA 25/yr at Anjozorobe, MGA 28 at Daraina). This situation is unique in Madagascar and augers well for both breaking the subsistence cycle and PA financial sustainability. These approaches were developed with support from a grant from UNDP/GEF at Anjozorobe (Project MAG/03/G31/A/1G/72) and replicated at the Daraina MRPA. The clear success of Fanamby's MRPA projects has now begun to attract the attention of other NGOs working at similar PAs and wanting to adopt similar approaches. The potential is described in Annex 6.

Table 3. Revenues by household generated from three improved crops at Anjozorobe and Daraina MRPAs

Product [a]	Households [b]	2006	2007	2008	2009
Ginger	60	9	12	81,667	125
Red rice	30	14	18	48	45
Vanilla [c]	83-169 [d]	45	69	151	108

Notes: All monetary values in USD calculated from average annual exchange rates for MGA and discounted for inflation.
a Essential oil production began in 2009 and is not included.
b Yearly figures are income/household/year.
c Vanilla is produced at Daraina. Other crops were produced at Anjozorobe.
d The number of producers rises each year.

Protected Areas Funding and Future Sustainability

63. Madagascar National Parks has enjoyed more than 15 years of generally consistent financing from major donors and NGO partners. Before the recent political crisis, donors were organizing future efforts to maintain support following closure of the current three-phased 15-year Environmental Action Plan within which PAs were a continuing high priority. Today, this

commitment is less certain but some significant funding may be anticipated as it is unlikey that all donors will abandon entirely their past investments and sucesses in biodiversity conservation.

64. In 2004, the Foundation Law governing trust funds was revised and enacted. Immediately after, the government, CI and WWF created the Madagascar Protected Areas and Biodiversity Foundation (FAPBM). This body was designed to act as a trust fund supporting PAs and related biodiversity conservation activities. Once established and functional, it set a rather modest intitial capital acquisition goal of USD 50 million, the greater part of which has been secured. The interest generated from the capital will be allocated to individual PAs based on a rigorous selection protocol. Additional draw-down funds are also available but are usually earmarked for specific sites or activities. Donor interest is high and many are channeling much of their PA financial support through the Foundation, including the World Bank as well as German and French bilateral aid. Many of the donors earmark their funds to Madagascar National Parks sites and only a relatively small proportion is available for MRPAs at present (USD 400,000-500,000). The combination of a rather limited interest generation, the focus on Madagascar National Parks and temporary donor withdrawal from Madagascar, on account of the recent political crisis, means that there are few prospects for funding MRPAs through the Foundation at least for the near- to medium future. A positive sign, however, is that one of the present project's MRPAs will be funded by the Foundation in the immediate future (Mahavavy-Kinkony).

Box 1. MRPA sustainability approaches.

- ***The MRPA must be appreciated and appropriated by local communities and decentralized authorities, leading to clear commitment to its goals.***
  The most likely means of achieving this aim is to improve livelihoods based on increased revenues linked to the MRPA.
- ***The long-term viability of the MRPA must be guaranteed and visibly verifiable, and demonstrate a clear contribution to representing and conserving Madagascar's exceptional biodiversity.***
  Donors and decision-makers will be most interested in well-managed and MRPAs that demonstrate effective conservation and revenue generation.
- ***The MRPA must safeguard the interests of all stakeholders with respect to traditional activities and benefits emanating from the site, and that these interests should be integrated through the course of MRPA definition, establishment, planning and management.***
  Traditional utilisation should be seen as an opportunity rather than a threat, and be fully integrated into management.
- ***Private sector interests such as oil, mining and agribusiness do not necessarily conflict with local conservation or community development goals, and can be integrated into MRPA and regional planning.***
  These businesses should be viewed as opportunities for long-term financing and livelihood improvement.
- ***Sustainable financing options and opportunities must be identified and established.***
  The MRPA network should eventually be able to pay for itself.

65. The potential risk of becoming too dependent on scare donor funds means that many MRPA promoters are looking for alternative approaches that will help to ensure long term financial sustainability. Some of the most promising options appear to be centered on finding ways in which the MRPA improve local income generation, offsetting a proportion for recurrent management costs such as surveillance and monitoring. In this respect, the approaches adopted by Fanamby at Anjozorobe and other MRPAs seem to indicate potential winning solutions.

66. Carbon offsets with large international companies have been used to raise funds for two MRPAs, Makira and the Mantadia-Zahamena Corridor. These deals were quite substantial but were once-off arrangements. Carbon offsetting is a relatively new phenomenon in Madagascar.

The necessary regulatory frameworks have still to be developed. However, the Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD and REDD++) programs indicate that carbon markets may be an attactive option in the future, especially with repect to voluntary markets. It may be noted that NGOs currently developing carbon market strategies face a significant hurdle: it is as yet uncertain whether and when carbon contracts will be made with the result that local communities are not convinced that they will reap any advantages.

67. The challenges related to sustainability have recently encouraged a small group of NGOs (notably Durrell, Fanamby, CI and WWF) to identify the issues involved and to propose innovative responses. The emergent strategies have subsequently caught on within SAPM and are summarized in Box 1. In addition to this, rates of natural regeneration in Malagasy forests are generally low, especially in the strongly seasonal Western Dry Forest Ecoregion.

Policy and Legislative context

Environmental and Development Policies and Charter

68. GOM policy highlights the importance of the country's biodiversity with respect to development and appear to rank it on par with petroleum, mining and agribusiness as means to reduce poverty and stimulate rapid economic growth

69. Madagascar approved a national Environmental Charter and updated it in 1997 and 2004. This instrument sets out the countr'y policy regarding the environment and is the base law for sectorally specific laws including the Protected Areas Code (COAP) and the Compatibility Law for Investment With Respect To Environment (MECIE) as well as providing a framework for the environmental articles in the Minining Code and soon to be published Petroleum Code (see below).

Protected areas code (COAP)

70. The COAP came into law in 2001. It set out the principles for the existence of the network, notably the need to represent Madagascar's diverse ecosystems through a mosaic of territories in order to represent and conserve the national natural heritage. Madagascar National Parks was mandated to manage the national network comprising parks and reserves in IUCN categories I, II and IV, but was also called upon to encourage and support the creation and consolidation of privately owned and managed reserves known as volunatary protected areas.

71. With the onset of the Durban Vision, it became apparent that the COAP needed a thorough revision to accommodate the inclusion of IUCN categories III, V and VI as well as to allow for new governance systems and management authorities. These new elements were developed by a multi-stakeholder sub-commission within SAPM with advice from IUCN experts. They have been integrated into a revised COAP but enabling laws have yet to be passed. Subsequently, as the new Petroleum Code was being prepared, the Ministry of

Environment and Forests engaged legal and environmental experts to revise the COAP once more and the revised code was passed into law in 2008.

72. It should be noted that those PAs that are currently classed as Category V sites in Madagascar do not quite fit the definitions developed by IUCN. Normally, Category V sites should be areas where long-term interactions between people and their environment have produced a harmony between traditional land/resource use and biodiversity maintenance. In contrast, the Madagascar situation deals with traditional uses that are often destructive over time if not better regulated. Similar situations are found in many developing countries and IUCN is fully aware of the problem. Work on Category IV sites in Madagascar should therefore contribute to a resolution of the problem by IUCN.

73. The new COAP allows for privately owned land to be included in category III, V and VI PAs, most of which is traditionally owned and untitled. However, considerable ambiguity remains regarding the COAP and the national land tenure policy that awaits future inter-ministerial meetings to resolve these issues. This does not prevent natural resource management transfers to communities from being integrated into new PAs but there are persistent concerns that the owners of these agreements could shift their priorities and thus potentially impact the goals of these PAs.

74. Enabling legislation emanating from the COAP includes safeguards for the environment and local communities. As a precondition for PA establishment, PA promoters must implement a Social and Environmental Impact Assessment as well as develop a safeguard plan to protect the interests of local communities. The enabling legislation also require adherence to standards and practices governing PA creation and management and these are described in guidelines developed by SAPM.

Decentralization, land use management planning and land tenure

75. These factors are critically important to the long-term sustainability of PAs, especially MRPAs. Decentralization has long been a goal of successive government administrations but has only recently began to make significant progress through devolution of authority to the country's 22 new regions. Each of the region is required to develop a sustainable development plan (Plan Régional du Développement, PRD) and an accompanying land use management plan. Both must include management and protection of PAs and environmentally sensitive areas.

76. MRPA internal zoning or land use management planning parallel those of the regional plans insofar as they have essentially the same goals: sustinable development and protection of the natural heritage. There is thus an excellent opportunity to reinforce political support for the site within the region by integrating MRPA plans into the larger regional plans. Such a move eventually may also help MRPAs to access government development funding.

77. MRPAs and Category III sites differ from other PAs within SAPM in that private land holdings are permitted by the COAP. In some cases, the land may be titled before the MRPA is created but the vast majority of land is under customary ownership. As part of the aim of MRPAs is to promote sustainable economic growth through private investment, there is a clear

advantage in supporting local customary landowners in obtaining legal tenure. However, under current tenure laws, this is not possible. All Malagasy PAs are considered to be 'special reserve areas' within which the land tenure services are not allowed to title land. This must be resolved if MRPAs are to encourage private investment in compatible economic growth.

Mining and petroleum

78. Madagascar is rich in minerals, although many deposits are likely to be too small for commercial exploitation. The Mining Code was revised in 2005 in order to encourage investment in this sector. In broad terms, the Code permits a first-come, first served concessions system and regards concession ownership as a right that cannot be withdrawn except as a result of unlawful behavior. This presented a problem when MEF claimed set-aside areas as potential future PAs to be included in SAPM. Many of these areas were already under mining concessions. In the event of PAs being confirmed in such areas, mining companies would not be obliged to relinquish their claims and could demand financial compensation if they opt for abandonment. In response to strong protests from the mining sector, the Ministry of Mines and Hydrocarbons (MEM) and the MEF signed an Inter-Ministerial Order to place a moratorium on mining in the proposed potential SAPM areas for a two-year period followed by a second term of the same duration, the maximum the Mining Code would permit. Remarkably, the mining sector agreed and worked with MEF and its partner NGOs to resolve case-by-case conflicts.

79. Notwithstanding the moratorium, there are many remaining potential conflicts with respect to pre-SAPM concessions. In general, larger more established mining companies are prepared to work out acceptable coexistence agreements with MRPA promoters and some are even willing to consider contributing financially to future MRPA strategy development (see the letters in Section IV, Part I). Such companies seem to express a genuine interest in demonstrating corporate social and environmental responsibility, a move that will certainly help in their drive to secure investment backers. However, it is less clear how less well-established companies will behave, especially those with little or no history of corporate responsibility and/or dependent on less demanding investors. The scale of overlapping interest between mining and PAs is summarized in Map 4. For more details with respect to individual MRPAs, see the maps in Annex 1.

80. With respect to the oil and gas sector, a new Petroleum Code is expected in 2010. The GOM sought technical assistance from the Norwegian Government during its development and it is expected that its recommendations for good governance and environmental problem avoidance/minimization will be retained.

81. Petroleum licenses are provided by the GOM through a special body coordinating strategic minerals and metals (*Office des Mines Nationales et des Industries Stratégiques*, OMNIS). This process is based on a system of bidding for fixed blocks. The vast majority of blocks that have been taken up include sensitive land and sea ecosystems, and many cover MRPAs (see Map 4 in Annex 1). No blocks have entered into production at the present time but two are believed to be commercial viable.

82. As we have seen earlier, mining and petroleum development is permitted within MRPAs, subject to certain conditions. Mining and petroleum ventures are required to conduct Environmental Impact Studies (EIAs) at every stage of project. This is an obligation under MECIE. The National Environment Office (*Office National pour l'Environnement*, ONE) reviews these analyses and issues permits to proceed. Summarized EIAs are also made available to the public, following an earlier period of on-site public consultations. MECIE EIA standards are based upon recognized international norms (ISO 14001) but they do have some limitations. Briefly, although they focus on the most obvious threats and risks to biodiversity and society associated with a development project, they do not take into account the full range of local stakeholder interests such as traditional fishing, commercial tourism development or the uniqueness of several Malagasy ecosystems. As a result, there have been recent calls to conduct broader Strategic Environmental Assessments (SEAs) that look at multiple investments and other stakeholder interests over a larger geographical sea- or landscape. SEAs have proven to be more effective than EIAs in establishing land use management plans that integrate and/or protect these different interests.

83. Finally, several extractive industry companies are experimenting with the voluntary Business and Biodiversity Offset Program, BBOP. BBOP calls for a hierarchical approach beginning with avoidance of negative impacts on biodiversity and eventually providing options for compensation in the form of offsets. BBOP calls for no net biodiversity loss but some companies in Madagascar are considering a net gain policy: i.e., they will contribute to project-related biodiversity conservation schemes beyond their contractual obligations with the GOM.

THREATS, ROOT CAUSES AND IMPACTS

84. The threats, risks and impacts that are most important for the newly created MRPAs can be broadly summarized under three main headings: (i) habitat/land use change; (ii) overexploitation of natural resources; (iii) invasive alien species; (iv) pollution; and (v) climate change.

85. It is important to distinguish between *existing* threats and *potential* threats (risks). Existing threats are immediate and usually tangible, and, when relatively severe, must be the focus of mitigation/reversal efforts. Some risks may be future possibilities that can be planned for and thus hopefully avoided or minimized.

Habitat/land use change

86. The majority of Madagascar's endemic species are forest-dependent. The most important direct threat leading to habitat loss and/or land use change is clearance for shifting agriculture. Most of Madagascar has relatively infertile soils and few farmers have the financial resources to invest in fertilizers. Apart from irrigated bottomlands, land under natural forest is generally more fertile than fields that have been cultivated or fallowed for several years. Farmers cut forest to allow the wood to dry and subsequently burn it to provide ash that enhances soil

fertility. Shifting agriculture is undoubtedly a long-standing tradition that may pre-date human colonization of Madagascar and is widely practiced. This practice is also driven by lack of access to fertile irrigated land and/or by new markets opened such as an increased demand for maize and other crops for livestock feed. Economic migration fuelled by limited availability of suitable cultivatable land coupled with rapid demographic growth and high unemployment also means that people seek untouched forest areas for their crops.

87. Freshwater lakes are often converted into rice paddies and the altered landscape may be unsuitable for many endemic species. Mangroves were once traditionally left alone as there was sufficient land elsewhere that was less risky with respect to periodic flooding and over-mineralization of the soil. The same demographic and economic drivers noted above fuel recent clearance of mangroves for cultivation and settlement.

88. Settlement may result in habitat loss but it is usually associated with land clearance for cultivation. New roads may cause habitat loss and fragmentation but it is currently rare to see this happening in pristine forests.

89. The production sites of mining and petroleum activities may coincide with natural habitat (compare e.g. Maps 6 and 7 with Map 5 in Annex 1). Many types of mining require rather large areas to be cleared but responsible companies may be expected to opt for biodiversity offsets to ensure no net loss. In general, the size of oil wellheads is smaller than a typical mining area and it is possible to offset the drilling stations through lateral drilling from areas that are less environmentally sensitive. Historically, oil companies bulldozed seismic lines regardless of habitat type. This practice has been replaced by pedestrian seismic practices and is unlikely to be a significant problem in the future. However, older bulldozed lines have facilitated settlement, habitat clearance and illegal logging that have had persistent negative impacts on ecosystem viability. Both mining and oil ventures may require extensive land for on-site processing. They may also need to develop extensive road or pipeline facilities.

90. Like many countries in the African region, the GOM is setting up land-lease agreements with developed nations for the purposes of agricultural production or, in the case of richer arid countries, water access/export rights. These Foreign Direct Investments (FDIs) are claimed to be mutually beneficial to the host and lesor countries. The German Tehnical Cooperation Agency, GTZ, and the European Union recently reported that even though a land lease covering 1.3 million ha has been cancelled in the last year, the area under contract still amounts to 1,660,000 ha, with 1,231,000 ha allocated to agro-fuels, 386,500 ha to food production and the remainder unspecified (see Annex 1, Map 9).[14] Some of the land leases overlap with new MRPAs but the companies have so far acted responsibly and taken care to work with their promoters in order to avoid forest clearance or other forms of negative land use change. However, it is not clear whether such responsible behaviour will be observed in future FDI arrangements.

[14] Foreign Direct Investment /FDI) in Land in Madagascar:
http://capacity4dev.ec.europa.eu/eu-working-group-land-issues/foreign-direct-investment-land-developing-countries

Overexploitation of Natural Resources

91. Charcoal production is perhaps the most severe form of overexploitation in natural forests. It is somewhat localized as this industry depends on having nearby urban markets, but can radically alter the structure and composition of forests. As terrestrial forest resources are exhausted, some charcoal production has shifted to mangrove areas. Theoretically, these ecosystems are more robust than terrestrial forests and can regenerate quicker, but the intensity of harvesting can lead to significant degradation. Charcoal is driven by a high demand in large towns and cities where it is the least expensive fuel for cooking. Alternative energy sources such as gas or coal briquettes have failed or had limited success in attracting users because of their high price or because people are conditioned to relying on charcoal.

92. Commercial forestry practices involving selective logging have an impact on forest biodiversity. Known direct effects are changes in forest composition and structure that appear to favor alien invasive species. In addition, logging access roads facilitate new settlement that is invariably accompanied by forest clearance for cultivation. However, the domestic needs are so constant and export prices so high that the GOM has legitimate reason to continue exploitation. As a result of non-respect for forestry regulations, there is currently a widespread moratorium on large-scale commercial forestry but this can be expected to lift once capacity to enforce the law is strengthened. Commercial forests have also formed associations in an attempt to enforce best practices through peer pressure.

93. Unfortunately, illegal logging is rife and can have a long-lasting, marked influence on forests. This threat has increased sharply during the current political crisis when law enforcement has been weakened. The drivers of illegal timber extraction are varied. Some of Madagascar's hardwoods are very valuable and can fetch high prices on the international market, attracting some of the less scrupulous operators in the country. Secondly, the demand, especially from East Asia, is extraordinarily high and purchasing companies usually do not have policies for environmentally responsible practices. Finally, poverty and unemployment may drive local people to illegal logging ventures.

94. Illegal logging is often accompanied by hunting animals for food and can facilitate the establishment of alien invasive species.

Invasive Alien Species

95. Alien invasive species have tended to be overlooked in Madagascar but their impacts can be quite severe and highly persistent. In natural forests, these species may become established as a result of partial forest fragmentation or logging. Good examples of fragmentation effects include invasion by the scrubby tree *Ziziphus mauritania* that has severely hindered natural regeneration and led to major ecological imbalance in parts of the Menabe-Antimena MRPA. Similarly, elsewhere in the seasonal Western Ecoregion forests *Lantana camara* has had similar persistent negative effects. With regard to timber exploitation selective light logging conducted

50 and 150 years ago have led to persistent changes caused by alien invasive plants[15] and can have long-term impacts on lemur population densities.[16] It is no wonder, then, that most of recent effort that has gone into creating new PAs in Madagascar has focused on maintaining large viable natural forest blocks and, where possible reversing or stabilizing historical fragmentation and degradation.

96. Alien invasive species have had significant impacts in freshwater ecosystems. Deliberate introductions of food and/or game fish have led to extirpation of some of the country's unique freshwater species. The parthenogenic crayfish, *Procambarus* sp. ('Marmokrebs') has recently appeared in Madagascar and is known to be highly invasive elsewhere in the world. Fortunately, it is still restricted to the environs of Antananarivo but could spread and threaten the endemic species in the genus *Astacoides*.[17]

Pollution

97. Pollution is generally not yet a major threat in MRPAs. Various experts have suggested that pollution from irrigated sugar cane may be contributing to a gradual die-off among baobabs (*Adansonia grandidieri*), a landmark species dominant in the Menabe-Antimena MRPA but to date there is no evidence for or against. Similarly, irrigated sugar cane production may be releasing effluent into river systems and their mangroves in the Mahavavy-Kinkony MRPA no effects have been noted. However, the risk of pollution is likely to increase in the future if and when mining and oil production occur within or near MRPAs. We may expect that responsible companies will make efforts to avoid spillage or pollution but accidents can occur. Pollution may occur at then production site or may occur during transportation to ports and at sea. In principle, pollution risks are identified during the EIA process but may not always be adequately addressed during operations and monitoring.

98. The national Marine Pollution Control Unit (*Organe de lutte contre la pollution marine*, OLEP) has a well-trained staff and has standing response plans in all of the coastal regions. OLEP can also mobilize other administrations to combat oil spills and has worked with NGOs to control pollution in seasnsitive marine areas. However, there is no service dedicated to terrestrial pollution and we must depend promarily on the capacity of the polluter company to take action.

99. The FDI land lease agreements for agro-fuels and food production noted above may also increase the risk of pollution if they are ever to materialize. Pesticides and fertilizer-laden pollution may significantly impact natural habitats, even those at some distance from crop production areas.

Climate Change

[15] Brown, K.A. & Gurevitch, J. (2004). Long-term impacts of logging on forest diversity in Madagascar. PNAS.
[16] http://icte.bio.sunysb.edu/pdf_files/whiteetal1995.pdf.
[17] See: http://www.springerlink.com/content/w4635m7327471764/.

100. As we have seen, natural climate change during the Pleistocene has been enormously influential in shaping patterns of Malagasy diversity and endemism. In this regard, we may reasonably anticipate that there is considerable intrinsic resilience within Madagascar's biodiversity, even thought the predicted rates of climate change in the coming years are almost certainly unprecedented.

101. The national meteorological office periodically reports that some climate change impacts are beginning to appear in Madagascar, notably more severe and frequent weather events such as convection storms and cyclones. Whether these trends are short-term or real, it is clear that climate change will be a key factor affecting viability of PAs in the future. In the previous three years, the MacArthur Foundation has funded CI, WCS and WWF in order to identify likely impacts and to test appropriate adaptation measures. These same NGOs were also tasked with identifying the regional climate change vulnerability within the country.

102. Some of the outcomes of this work are predictable: (i) larger, relatively intact blocks of forest are more likely to be resilient that isolated or fragmented blocks; (ii) there will be changes in species ranges as climate changes locally; and (iii) altitude-dependent species ranges are expected to change. Many animal species may be expected to adapt to climate change-induced range shifts fairly easily, especially those with large population ranges. Mountainous areas with a good altitudinal span of forest cover may be key refugia and range shift areas. Some more localized species may not have the same degree of flexibility, and climate models indicate that the rate of change may be too rapid for forest tree species and coral reef ecosystems to adapt in time.

103. Most MRPAs are relatively large, a measure considered to be a natural adaptation to climate change stress. Additional proposed adaptation measures focus on minimizing non-climate anthropogenic stresses such as pollution and overexploitation. The same rationale is applied in other regions of the world where climate change impacts are believed to be particularly important. WWF is leading efforts to train environmental agencies in assessing climate change impacts together with adaptation approaches. This expertise will continue to be provided during the present project.

LONG-TERM SOLUTION AND BARRIERS TO ACHIEVING THE SOLUTION

104. The **long-term solution** is to establish an effectively-managed and well adapted MRPA sub-network that demonstrably contributes to biodiversity representation and conservation. At the same time, it must also be able to demonstrate that the underlying philosophy of integrating biodiversity conservation, poverty reduction and sustained economic growth is indeed an apt and effective means of mainstreaming biodiversity in national development policies and strategies.

105. The MRPA network must be able to deliver upon, and demonstrate three critically important parallel outcomes. First, the MRPA network must be able to demonstrate that: (i) it

includes some of the most important biodiversity areas in Madagascar, and (ii) it can safeguard these sites in perpetuity ***at least*** as well as the existing more traditional, stricter Category I, II and IV PAs managed by Madagascar National Parks. The most important barriers will be establishing and subsequently demonstrating that the new and innovative governance and management goals are well adapted to local aspirations and are effective. Secondly, the MRPA sub-network must be able to demonstrate that it contributes significantly to poverty reduction and sustained economic development at regional and local levels. This is critical with respect to attaining local community appropriation and buy-in, as well as active support form regional decision-makers responsible for development planning. Thirdly, each MRPA must be able to demonstrate its ability to attract financial support from government and donors, particularly during its initial investment phase, as well as establish long-term revenue streams that contribute to its sustainability.

106. Based on the above, the long-term solution is based upon three pillars: (a) the selection and creation of six[18] fully legally protected MRPAs chosen on the basis of their contribution to representation and conservation of Malagasy biodiversity, their social acceptance, and opportunities to attract private sector investment; (b) consolidation of locally adapted, effective and motivated governance structures that clearly respond to regional/local sustainable development aspirations and national conservation strategy goals; and (c) the development of business strategies that seek to promote business opportunities in and around individual MRPAs, attract offsets and CSR support from industry, and develops additional funding sources through the Foundation and carbon offsets. Underlying these pillars is the need to ensure that regional and communal administrations together with local communities value their respective MRPAs and thus commit to their long-term goals and sustainability.

107. As we have seen, there is a formidable array of barriers to be addressed if the long-term solution is to be attained. No single project can hope to address the gamut in its entirety, and several different stakeholders and projects will need to combine their efforts towards the commonly held MRPA goals. However, the present project is the best placed to spearhead the process of removing MRPA barriers, either directly or indirectly. Direct barrier removal by DCBSAP and NGO project partners will focus on regional and local solutions adapted to different sites. This will be accompanied by support to MEF and the voluntary SAPM commissions working in the capital with regard their efforts to lobby for policy, legal and strategy modifications in favor of MRPAs and sound rural land use planning.

108. There are three key barriers that must be removed if this project is to succeed and these are presented below. It should be remembered that each barriers is multifaceted, and the solution to each sub-component requires a specific approach.

Barrier1. The role of MRPAs in conserving Madagascar's biodiversity while at the same time contributing to sustainable development remains unclear, and the policy and legal frameworks are as yet incomplete.

109. This barrier has four sub-components: (a) selection and design; (b) the strengths and weaknesses of existing governance and management approaches, and their adaptation to

[18] Two MRPAs will be operationally treated as a cluster, making it therefore five project sites.

MRPAs; (c) establishing an MRPA network as a means to share experience and lobby more effectively for MRPA support; and (d) policy and legislation.

MRPA selection and design

110. MRPAs represent a new approach to biodiversity conservation and, although there is wide agreement on their value and social acceptance, there is neither sufficient experience to provide guidelines on why certain sites should be designated as either Category V or VI as opposed to Categories I-IV, nor is there a clear consensus on how these sites should be designed.

111. Fortunately, a relatively large body of biological information has been collated and analyzed to identify the highest priorities for terrestrial and freshwater conservation in Madagascar.[19] However, beyond confirming the biodiversity importance of individual sites, these do not provide any guidance on what PA category is most appropriate or whether a given site would benefit from multi-category zoning. For this reason, the SAPM Commission has produced a guide to determining the most appropriate category and the steps required to create an MRPA. The guide is based on IUCN recommendations and in-country experience.

112. History and internal preferences also mean that different institutions opt *a priori* for a particular category, with no real consideration of its aptness. For example, Madagascar National Parks has opted to establish only new Category II national parks in their network expansion drive, even though this may not be the best designation for accommodating social concerns e.g. Similarly, some conservation NGOs tend to favor Category VI as it places more emphasis on conserving 'wilderness' areas rather than an integration of biodiversity and local development aspirations more strongly emphasized for Category V. When tested using IUCN's updated category evaluation framework[20], several such proposed Category VI MRPAs emerged as being most closely aligned with Category V and their status has been corrected.

113. Based on the above, there is a clear need to set clearer guidelines on establishing decision frameworks to determine whether new PAs should be Category V or VI, or indeed a different category. The present project aims to do this based on prior experience and knowledge attained during the present project. Criteria may include the spatial configuration of the proposed MRPA with respect to occupancy, land use practices, distribution of natural areas and their condition, local dependency on natural areas, social acceptance, and the existence of options to develop business opportunities. It is of course a given that each MRPA must be a national conservation priority and be in good enough condition to be viable, resilient, and attractive to donors.

114. MRPA design presents a new set of challenges compared to Category I-IV PAs. While the site must be designed to ensure sustained areas of biodiversity value, the MRPA must be conceptualized spatially in such a way as to maximize potential with regard to local social aspirations and economic development opportunities. A further challenge is that Category V

[19] MARXAN analyses conducted by SAPM, Pleistocene refugia and micro-centers of endemism published in 2006 (Science 312: 1063-1065), ZONATION analyses published in 2008 (Science 320: 222-226), and preliminary reports by CI, WCS and WWF on climate change resilience.

[20] Dudley, N. (Editor) (2008). *Guidelines for Applying Protected Area Management Categories.* Gland, Switzerland: IUCN. x + 86pp.

MRPAs often have fragmented natural habitat cover interspersed with settlement, agriculture and pastoralism, and, like Category VI sites, often involve significant local community dependence on these natural areas. Highly fragment natural habitats require innovative design that captures all of the most important sites for conservation while at the same time allows for a full integration of local land ownership and use. In turn, heavy dependence on natural habitats means that certain species or ecological communities may be overly stressed and/or degraded. Although these may be initially interpreted as significant barriers, good MRPA design and zoning should be able to turn them into opportunities. For example, stresses on natural ecological communities could be reduced by better use of transformed land through new or improved agriculture, hedged carbon-based sylviculture, or through well-designed and marketed ecotourism, with both creating new economic opportunities to local people.

MRPA networking

115. A limited degree of networking has occurred in recent years, with stakeholders from selected MRPAs meeting annually to share experiences under the umbrella of USAID's Miaro program. These encounters have not been particularly well structured, have not addressed some of the most pressing MRPA issues such as governance structure effectiveness and sustainability, and probably have had little lasting impact. Such meetings are rather costly but may be key to identifying and addressing barriers to successful MRPA establishment and sustainability, especially during the early stages of MRPA creation and consolidation.

116. In the mid- to long-term, it may be sufficient, and certainly less costly, to organize meetings between MRPA promoters (largely NGOs but perhaps regions) to address key issues, and then subsequently rely upon them to relay information to stakeholders at their respective sites. In order to be effective, barrier and solution issues must be based upon experience gained in the field, rather than at a more theoretical level. A parallel approach would be to ensure good communications facilities at the MRPA allowing for regular knowledge sharing between sites.

117. At present, MRPA lobbying for political and financial support tends to be based on either individual site needs or on the goals of particular promoting institutions, in the case where one NGO or other entity is involved in several sites. There is no solid lobbying block to defend the common interests of all MRPAs with respect to integration into national, regional and local land use and development policy and planning, sustainable financing, improved legislation and law enforcement. One of the critical issues in the near future may be land use policy reform that places MRPAs clearly in the development landscape and therefore potentially less vulnerable to competing sectors such as mines and oil. A second is likely to be competitiveness with respect to traditional donor support for PAs; at present, many donors may not be convinced that new MRPAs are as important for biodiversity conservation as the existing Madagascar Parks Network or perhaps not as effective. It is therefore critically important to create an influential network with enough credibility and influence to address these and other issues.

118. The DCBSAP will responsible for establishing an MRPA Network. It would seem clear that MRPA operators would be willing to join such a network and contribute to its development. The Network would essentially be similar to the SAPM sub-commissions but could act as a lobbying force to promote MRPA interests.

Policy and legislation

119. Policy and legislation are indisputably the responsibility of the GOM although the regions may enact additional conservation legislation locally.[21] However, responsible governments take care to listen to civil society and make any amendments that are well reasoned and justified. Based upon its principal implementing partners, the role of the present project will be to identify policy and legislation barriers, and to propose improvements based on direct experience within MRPAs. As we have seen, there are several key barriers that need to be addressed, several of them apparently having been partly or entirely unrecognized before the PPG's analysis.

COAP

120. Since it was revised in 2008, the COAP may be considered to be a solid legal framework for PAs in general, as well as an adequate base for MRPAs. However, its draft enabling laws must be carefully reviewed to take into account a range of issues including land tenure and governance structures/roles (with some flexibility).

Land tenure and PAs

121. Current land tenure legislation is adapted to Category I-IV PAs that are the direct property of the state. This creates difficulties for MRPAs where there is mixed state and private tenure. Private tenure with MRPAs is particularly complicated when it is customary and the farmer or other type of stakeholder wishes to legalize ownership in order to secure current and future investments. Under the present land tenure law, the GOM considers all PAs to be special areas where the land tenure agency is not permitted to allocate fully legal ownership. As most, if not all, MRPAs have considerable customary tenure; this is a major barrier to long-term MRPA goals.

Mining and Petroleum Codes

122. The Mining Code and the forthcoming Petroleum Code appear to address issues relating to environmental loss or degradation in some detail but it is not clear whether they will respect either the COAP's interdiction on exploration and production in either Category I-IV PAs or priority conservation zones that are essentially equivalent to Category II PAs within MRPAs. The Mining Code is specifically unclear regarding pre-existing concessions obtained before MRPA temporary protection status. Effectively, it is possible for concession owners to propose exploration and production and let the EIA results convince government whether it is justified and approved. While companies with clear corporate responsibility policies and ethical investors may prefer to avoid conflicts with conservation interests, we may anticipate that less responsible companies may not face the same constraints. An additional factor may be the quality of individual EIAs as the ONE has limited personnel in this domain.

[21] Legal instruments government decentralization covers legislation by the regions but the mechanisms are still unclear.

123. By law, any oil or mining company must compensate stakeholders for environmental degradation or destruction, and social or economic impacts on local communities. One problem with this is that the value of biodiversity has never been evaluated in Madagascar, and existing studies carried out elsewhere would likely provide only vague guidance. A second barrier is that MRPA stakeholders, primarily government, are legally bound to compensate mining or oil companies should they succeed in forcing abandonment of pre-existing concessions. If this were to occur it would be well beyond the capacity of either government or NGO partners.

124. The Petroleum Code calls for mandatory SEAs as a more holistic complementary support to project-focused EIAs. SEAs are certainly welcome but they do present drawbacks. An SEA would be the primary responsibility of government, and there is currently no mechanism to allocate funding responsibility to individual extractive industry projects as a means to cover SEA costs, usually significantly higher than those of an EIA. For these reasons, ONE has expressed reluctance regarding mandatory SEAs.

125. There are some potential solutions to the above barriers. One possibility is to successfully lobby and convince appropriate ministries that the codes and their enabling laws are modified to interdict mining or oil development in MRPA priority conservation zones. However, it is not at all sure that the MEM would close of this option through legal means. A second option would be to ensure that EIAs and, should they become mandatory, SEAs are an effective means to convince mining and oil companies that operations in priority conservation zones would be unwise and potentially costly ventures. In addition, well-reasoned large-scale land-use planning may be a means to find a compromise between MRPAs, mining and oil projects and other pertinent sectors such as agriculture and tourism. Based on recent experience and PPG analyses, this last option may be the most likely means of solution.

Barrier 2. Institutional experience, capacity and motivation for MRPA development are relatively weak, and mechanisms for governance and coordination are still relatively poorly defined.

126. Until the mid-2000s, all but a few private PAs were managed by a single national agency, Madagascar National Parks. Government, donors and NGOs were able to invest considerable funding and technical support into training and capacity building for this institution. However, the Durban Vision and SAPM provide an ambitious geographical and conceptual expansion of the PA system that cannot be absorbed by the existing institutional framework as the capacity within Madagascar National Parks is already fully stretched. In addition, this institution does not feel that its mandate should be expanded to MRPAs, preferring to focus on stricter Category I, II and IV PAs. Therefore, the main bulk of MRPA creation and development was handed over to NGOs working with decentralized institutions operating at the regional level and more locally. The regions, communes and local communities essentially had had no prior experience with PAs. In parallel, the experience of environmental NGOs was largely limited to supporting communities in establishing management transfers (GELOSE and GCF[22]) aimed at ensuring

[22] These two forms of management transfer enable local communities to sign a contract with the GOM for the right to manage natural resources in a well-defined area. The approaches were widely tested during EP II and EP III. All such areas must have a clear conservation function. NGOs have often supported management transfers in environmentally important areas in order to

conservation and sustainable utilization of key biodiversity areas. In addition, NGOs and local communities have no law enforcement authority.

127. Promoting MRPA governance options largely centered on partnerships between NGOs, local government, communities and the private sector is a marked shift from have a single professional agency operating nationwide. This shift could not possibly happen overnight and the most effective MRPA governance mechanisms still await identification through on-site testing, a major objective of the present project. The shift also requires institutional realignment and cooperation, both of which are often slow in coming about.

128. The decentralization process that has been on-going through the past decade has set a clear framework for local multi-stakeholder MRPA governance. Decentralization is based on the principal of subsidiarity[23], or the transfer of responsibility to local stakeholders. However, integrating the new concept of multi-stakeholder MRPAs has created a steep learning curve, not least because PAs have been traditionally perceived as somewhat of a luxury and hardly pertinent to local sustainable development aspirations. Fortunately, these perceptions are changing and MRPAs are generally viewed more positively by regional governments and local communities. Indeed, a slowly growing number of regional administrations and communes now actively call for MRPA establishment in their respective development plans.

129. Notwithstanding these positive trends, creating well-managed MRPAs faces a series of important barriers. These may be best considered as: (a) governance and coordination; (b) capacity and motivation; and (c) integration into broader political and development landscapes.

Governance and coordination

130. One of the most important motivational forces behind the concept of MRPAs is the belief that management costs should be lower than those of Madagascar National Parks sites, given that one does not have to finance a permanent local, regional and national staff and their respective infrastructures.

131. However, as experience accrued, MRPA promoters were faced with an apparent dilemma regarding MRPA costs. Compared to Madagascar National Parks sites where only a single Management Committee (*Comité de Gestion*, COGES) is required to integrate local aspirations, MRPAs by definition must integrate the interests of a far larger array of stakeholders. The latter not only involve representatives from local communities as in the majority of COGES, but extend to the regional administration and its line ministry representatives and private sector operators. Apart from the potential financial costs getting all of these interests into working flora (discussed below), the sheer complexity appears to condemn MRPA management and coordination to a morass of meetings and potential conflicts of interest that are likely to hinder – or even effectively block – progress.

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encourage conservation and sustainable resource use. The acronyms for GELOSE and GCF translate as 'Secure Local Management' and 'Community Forest Management,' respectively.

[23] The on-line OED defines subsidiarity as: *'(In politics) the principle that a central authority should perform only those tasks which cannot be performed at a more local level.'*

132. Experience from a range of sites seems to confirm that governance complexity is indeed a significant barrier to MRPA development at the present time. Most of the variations currently being tested are proving to be highly cumbersome and/or essentially ineffective. Governance streamlining is therefore a priority preoccupation for promoters along with the closely related need to establish of sustainable financing mechanisms. It is thus important to define the principal governance barriers as precursor to developing solutions.

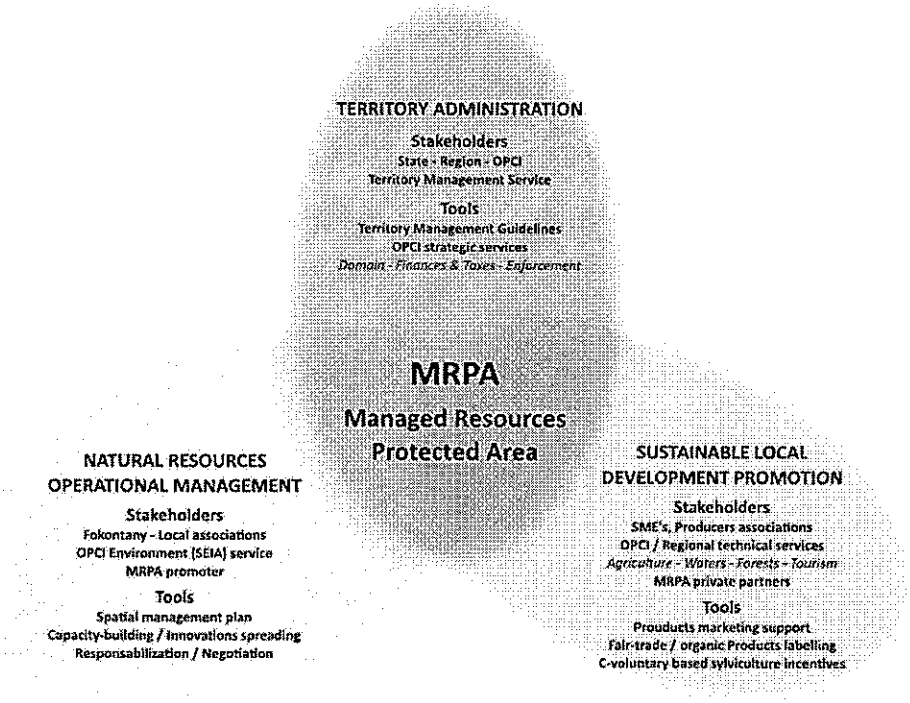
133. A primary barrier is enabling and motivating local communities, communes and OPCI – those most directly concerned with the MRPA – to take an active role in the site's protection and management. Given their role in setting local development goals, OPCIs would appear to be a promising vehicle for promoting the interests of MRPAs under their jurisdiction. This appears to work best when the OPCI is enabled and motivated to develop multi-sect oral plans including infrastructures, social services and environmental management as part of broad development plan that corresponds to their perceived priorities. However, many OPCIs have arisen through support from NGOs promoting MRPAs and tend to overly focus on biodiversity with respect to more pressing development priorities. Such an approach is almost doomed to failure from the start because they fail to motivate OPCI interest.

134. Legally, the OPCI is mandated to call upon the region and its line ministry representatives to implement specific development activities it deems to be priority. In practice, neither the communes/OPCI nor the regions have budgets to respond to more than a fraction of requests. In addition, there are regular conflicts between the regional line ministry services and OPCIs and/or communes regarding national policy and local aspirations. In effect, the OPCIs are often felt to have no real teeth at the present time and are consequently overridden by the region's perceived priorities which may or not include local MRPAs. This barrier could be removed by strengthen capacity among OPCI to lobby regions more effectively and/or acquire their own funding from donors.

135. Active regional participation in MRPA development is ultimately critical to the success of these new PAs. MRPAs must benefit from the region's active support if they are to be taken seriously as sustainable economic development drivers and/or opportunities. If this is achieved, the MRPA will automatically be integrated into PRDs and accompanying land use management plans, and thus enjoys strengthened political backing. Daraina, one of the prospective project sites, has already had some success in this regard.

136. The complexity of stakeholder interests and institutional roles is summarized in Figure 3. It is highly simplified by indicates the overlapping relationships between territorial land use planning interests and those of sustainable rural development and natural resource/biodiversity management. MRPAs appear to be uniquely positioned to bring these three interests together within one well-defined geographical area.

Figure 3. MRPA stakeholder interests and institutional roles



137. A future challenge involves moving from the current weakly effective management organization found in most MRPAs today towards a more effective, streamlined and cost-effective governance system. Table 4 indicates possible scenarios for positive change over a period estimated before the current political crisis to be a minimum of 5 years depending on the complexity of individual MRPA and how effective capacity building will be. Given the difficulties caused by the crisis, the dates are likely to be too optimistic.

Table 4. Potential future shifts in MRPA lead and implementation

	CURRENT	3 YEARS	5 YEARS (OR LONGER)
Biodiversity/ sustainable natural resource management	Management: DREF Support: DGF / NGOs Partners	Management delegates : Mandated NGOs/ Association / CTDs With involvement of DREF Support : DGF/ DREF	Management: Mandated NGOs/ Association / CTDs With involvement of DREF Technical Partner support may be periodically required

	CURRENT	3 YEARS	5 YEARS (OR LONGER)
Territorial planning and administration	Managing entity: DREF Support/Implementation: NGO partners, Region, VPDAT , DRAT, MEF	Management: Mandated NGOs/ Association / CTDs/Identified management structure Implementation: Regional land tenure office, DREF	Management: Mandated NGOs/ Association / CTDs/ Identified management structure Implementation: DRAT and GFIC, DREF
Economic development	Management: Partner NGO/DREF Implementation: Local interest groups/communes and in some cases private sector	Management : Mandated NGOs/ Association / CTDs/STD/ Identified management structure Implementation: NGOs/ Associations / Local economic interest groups, OPCI and private sector,	Management: Mandated NGOs/ Association / CTDs/STD/Identified management structure Partners: private sector, local associations and economic interest groups

Explanations:
All the previously existing MRPA management contracts have expired by end 2012. Instead, a delegated management contract for the sites is in the process of finalisation.
MEF has a leading role in the project's oversight, coordination and M&E.
NGOs, associations and site-level stakeholders are service providers and ensure project implementation together with UCPE, which functions as the PRODOC implementing partner.
MEF is expected to play a lead role throughout as per its mandate to set policy and facilitate the operationalisation of the SAPM.
GFIC = *Guichet Foncier Intercommunal* (Inter-Commune Land Tenure Service). These entities are only now beginning to emerge and are designed to provide service to a number of neighboring communes. It is cost-prohibitive to have one service per commune.
The time intervals are indicative only. Depending on the level of current progress and resource availability, time required may be shorter or longer.
The model is based on analyses of MRPAs managed by a range of promoters.

138. In order to be effective, capacity and motivation among all stakeholders involved in MRPA management must be strengthened and this is addressed in the following section. Whatever decision-making/oversight body emerges at the site level, it may wish to create a professionally-trained full-time executive unit responsible for communications, coordination and conservation actions such as surveillance and monitoring. The unit would be best recruited from local communities and may need to comprise geographical sub-units when the MRPA is large. The range of skills in the executive unit would not cover all the skills required for MRPA management, and regional services would need to provide technical input.

139. It would seem that the OPCI will be a key player within the decision-making/oversight body. However, the PPG analyses indicate that additional interests should be represented, particularly those of the regional administration and the private sector. Environmental NGOs may also wish to be included to safeguard biodiversity values.

140. In cases where MRPAs are very small and involve only a single commune, there is little interest in taking the OPCI approach. In such cases, the commune or individual communities may take upon this role.

141. It is still unclear how long it will take for promoter/mandated NGOs should be involved in MRPA governance and management. While phased withdrawal is generally preferred by NGOs, there may be cases where they remain to play a reduced role such as endangered species management.

142. Ideally, MRPA governance and management should be modeled on standard business practices. Thus, governance/management structures should comprise the equivalent of an executive body responsible for management implementation, a board of directors responsible for approving management strategy proposals as well as ensuring the MRPA adheres to an agreed vision, and thirdly, a general assembly representing all stakeholder interests. However these may eventually be articulated, the MRPA will need to develop sustainable financing mechanisms to cover their operational costs. This is addressed under barrier 3.

Capacity and motivation

143. A considerable effort has been made to develop management tools that address the needs of MRPAs. These include planning tools for technical management plans, monitoring and management effectiveness evaluation, drawing upon CBD and IUCN/WCPA guidelines. These tools have engendered considerable interest and generated positive results when tested in the field, and are now widely in practice. However, while capacity to apply these tools has increased sharply (they are designed to be simple to use by a wide range of stakeholders), capacity and motivation to organize efficient management structures and to implement MRPA plans is still seriously weak. Similarly, capacity for conflict resolution, an important aspect in MRPA start-up, is also very low.

144. One of the biggest barrier is the almost total lack of experience among regional and local stakeholders regarding MRPA (or indeed any PA) governance and management. The rapid expansion of the national PA system, largely through the creation of MRPAs has led to more than 3 million hectares under legal protection together with an increase of literally thousands of new stakeholders. It is therefore not surprising that capacity remains weak at the present time.

145. An additional barrier to local stakeholder capacity strengthening revolves around the traditional livelihoods of local communities and their access to education. As we have seen, rural communities are largely preoccupied by the day-to-day issues involved in subsistence farming or livestock rearing, and it is a challenge to promote a longer-term perspective that embraces biodiversity conservation. Education and literacy correlate positively with wealth and economic security, and it is therefore no surprise that most rural people have not invested more than a minimum in their own education. This situation is not helped by the tendency to concentrate secondary education schools in larger towns that may be a considerable distance from many rural communities.

146. The decentralization of decision-making authority within the ministries from the capital to the regions is a welcome move. However, it does present some potential capacity barriers. First, most of the MRPA experience and capacity within the MEF are concentrated in the various directorates within the capital, notably in SAPM. Individual DREFs in the regions are mandated to promote and coordinate all of the MEF's different policies, and in practice PAs are often

lowest on the list. The underlying reasons are quite understandable as DREFs have been exposed to a training regime that focuses on traditional commercial forestry and not on community-based sustainable management or PAs. A similar phenomenon is also reflected in other ministries such as those responsible for mining, oil and land use management planning, where training and experience has focused on economic development where PAs have little or no perceived value.

147. The country's 22 regional administrations largely have limited experience either in governance in general or in biodiversity management in particular. While it is encouraging to see that successive central governments have placed considerable emphasis on environmental management and biodiversity protection, experience indicates that overall economic, land-use and environmental planning capacity is growing at a pace that cannot meet the current challenges of SAPM, especially with respect to MRPAs. In general, we can observe the same barriers at the commune level. Both the regions and communes are obliged to establish and implement sustainable development plans for their respective geographical areas. These plans must have a clear environmental component that protects important biodiversity areas and reduces or prevents loss of essential natural resources. However, overall capacity to plan, especially with respect to land use management integrating biodiversity concerns, is clearly constrained by current capacity limitations. This is perhaps most clearly demonstrated by: (a) the small number of PRDs that have been finalized, and (b) the quality of environmental plans within many of the PRDs and most of the CRDs. It is particular interest to recall the apparent disconnection between the real needs of the communities and commune-level development plans noted earlier. Thus, planning experts and advisors have tended to convince communes that their main priorities are new or restored infrastructures such as new schools, clinics, irrigation systems and even administrative offices. In contrast, poverty indices strongly suggest that local communities are in dire need of support to develop improved economic activities aimed at breaking the persistent poverty/subsistence cycle.

148. OPCIs exist somewhere between regions and their constituent communes. It should be recalled that OPCIs were legally mandated to recommend development initiatives of common interest to several or all of their member communes. Their ability to execute their mandate in real terms faces two barriers. One barrier concerns governance, coordination and financing, but this will be addressed below. The second concerns capacity within the communes to program development priorities (including the MRPA) across commune boundaries. As OPCIs should play a major role in defending MRPA interests, it will be important to focus on strengthening their capacity.

149. Madagascar National Parks is entirely focused on its own network of Category I, II and IV parks and reserves. The MEF has therefore been obliged to create SAPM in order to fill the void regarding MRPAs. SAPM comprises a small, highly-motivated team responsible for coordinating policy legislation, strategy development and new PA establishment. The small size of the team and responsibility for such a broad mandate are obvious causes of limited SAPM internal capacity. A second factor is the overall lack of team experience, especially with respect to promoting and coordinating the creation of viable MRPAs. SAPM have regularly sought support from CBD, IUCN and Madagascar-based NGOs in order to build internal capacity as rapidly as possible.

150. Most well-established oil, gas and mining corporations have developed responsible environmental and social policies and strategies. These are seen as prerequisites for a social and environmental license to do business and help to attract investors. Such companies usually have full-time, well-trained and experienced staff overseeing compliance to these policy commitments. Many companies of this kind have demonstrated a degree of sensitivity to biodiversity that goes beyond that required by Malagasy law. The same companies have generally ensured that they consult with environmental groups before they become operational in ecologically sensitive areas. Unfortunately, this is not the case for many mining and oil companies that are emerging in some Asian countries (but by no means restricted to them) where national legislation and limited corporate history combine to create a company mindset that excludes or minimizes sensitivity regarding the environment and societal concerns. As mining, oil and gas are undergoing rapid expansion in Madagascar, involving many investors that lack responsible corporate policies, we are clearly faced with an urgent need to build understanding of these concerns as well as capacity to address them.

151. Finally, it should be noted that the capacity challenges posed by MRPAs are new to their supporting NGOs as well. MRPA champions that they undoubtedly are, few NGOs have taken time to reflect on how to build their own internal capacity for these challenging new approaches in the great rush to create MRPAs in the aftermath of the Durban declaration. If this situation does not improve rapidly, many MRPAs will be little more than paper parks. Fortunately, many NGOs have become acutely aware of their capacity limitations and are seeking solutions. The present project is perceived to be a major opportunity to help bring this about.

152. In practice, environmental NGOs will have to continue to take the lead in building capacity, especially at regional and site levels. A common barrier to ensuring this role has been the difficulty in motivating well-trained personnel to be based for long periods in the field. Most would prefer to be based in Antananarivo or other large towns where social services are concentrated. NGOs involved in MRPA development must be prepared and able to offer salary and benefits package that makes it attractive to competent individuals to be based in the field.

153. The term 'motivation' has only recently crept into the jargon of the environmental community in Madagascar and, at present, few institutions understand its implications. It is, however, critically important to emphasize the role of motivation in MRPA development and sustainable resource management. The present project recognizes the importance of motivation as a driver for successful MRPA establishment. For example, local community members directly benefitting economically from MRPA projects will be motivated to improve their livelihoods and, in parallel, should become progressively more aware of the advantages of the protected status. Similarly, regional and commune decision-makers should be motivated by tangible development in their respective territories emanating from leverage exerted by the MRPA. Finally, it is clear that SAPM and its national SAPM commissions are already highly motivated. However, demonstrated success at the site level is a strong motivation with respect to meeting ministry and even higher-level government demands for a functional and effective SAPM. Although there are exceptions, most MRPAs have generated only weak motivation at best. As it is such a potentially powerful driver in favor of MRPAs, motivation will be addressed more fully in discussions on the third barrier below.

154. To conclude, addressing capacity weakness among a wide range of stakeholders must be a major priority for the present project. The most urgent solutions involve actors directly involved in MRPAs: these are local communities and their internal interests groups, the OPCIs, the communes, and the MRPA executive management body together with its oversight and advisory organs. Each of these actors is central to MRPA sustainability as they are either permanently presents (communities and executive body) or elected by local people (communes and OPCIs). These actors should provide a degree of resilience during times of political instability. National and regional governments may change during such events, but communes and communities are generally stable. Capacity strengthening will also be important with respect to regional administrations, NGOs promoting MRPAs, the private sector including extractive industry companies, and ministry personnel in the capital.

MRPA integration into broader political and development landscapes

155. It is sufficient to recall here that each MRPA must be considered as an individual land use planning initiative in its own right with a dedicated governance/management system. This has been discussed at length in the governance discussion above.

156. However, we have noted earlier that MRPAs would significantly benefit from being integrated into their respective regional development and land use management plans. This would confer a significant degree of political protection, especially in the face of competition/threats from such activities as mining, oil or agribusiness. MRPA promoters are free to recommend such actions to the regions.

157. There are several known and potential barriers to MRPA integration within regional plans. To begin with, national and regional land use planning attempts have consistently failed for several reasons, most notably due to the lack of coordination and cooperation within and between ministries. However, the strong push for government decentralization together with the clarity and coherence of the most recent regional planning analyses/proposals indicate that future efforts may bear fruit.

158. Perhaps the second most significant barrier is the relative importance attributed by the regions to MRPAs relative to other land use options. For example, if oil or gas is discovered, the region may prefer its development rather than having an MRPA.

159. The two barriers may be overcome by a combination of demonstratively effective land use management planning *within* the MRPA and well-formulated lobbying at the regional level. Internal land use management planning in MRPAs is indeed a priority strategy within the present project, and will be accompanied by lobbying for broader MRPA integration.

Barrier 3. MRPAs have so far been unable to attract sufficient donor interest for initial investments, and have rarely been able to develop economic opportunities to generate revenues for enhanced local development and MRPA management needs.

160. Traditionally, the bulk of Malagasy PA funding has come from donors and NGOS. Funds tend to be allocated unevenly between PAs, with Madagascar National Parks still preferred by some of the larger biodiversity donors. Donors and NGOs have consistently aimed to progressively reduce their funding to individual PAs in the reasonable anticipation that, once they are fully functional, they should be able to generate a significant proportion of their own revenue needs through ecotourism and other economic activities. Within Madagascar National Parks, the national network has been able to meet less than 10% of operational costs, even after 15 years of existence and a steady rise in visitor numbers. The lesson would appear to be that heavy reliance on visitor fees is not a solution to sustainability, at least as currently practiced within national parks.

161. There are several lessons to be learned from Madagascar National Parks. Firstly, donor support to biodiversity in Madagascar is not unconditional. It is therefore less reliable as a long-term strategy for the long-term financial sustainability of PA management.

162. The recently created Madagascar Foundation for Protected Areas and Biodiversity (Fondation pour les Aires Protégées et la Biodiversité de Madagascar, FAPBM) was intended to fulfill an increasing important funds coordination role for all Malagasy PAs. In the long-term, the Foundation is expected to become the principal funding source for PAs but the current rate of capital acquisition indicates that this role will not be fulfilled for several years. The current target is a capital base of US$ 50 million, and interest generated from this investment would only cover a relatively small investment of Malagasy PA needs. Regarding MRPAs, a current barrier is a persistent preference for some of the Foundation's largest donors to fund Madagascar National Parks PAs on the reasonable logic that they wish to protect their prior long-term investments. MRPAs have not been excluded from funding, but the proportion allocated to date is very small. In an ideal world, the Foundation should advocate for a more equitable distribution among different PA categories. Perhaps this will occur in the future when its board of directors gains more confidence and MRPAs begin to demonstrate more clearly their importance to biodiversity conservation and management effectiveness. Greater funding equity would also necessitate a massive increase in the Foundation and/or funds specially earmarked for MRPAs.

163. It is widely considered that MRPAs should be less dependent on long-term donor support than other PAs. By definition, these sites should be able to generate revenues from their own natural resources, albeit with the bulk going to local communities. There is also a willingness among several MRPA promoters to engage with business, thus opening a diverse array of financial opportunities. Potential options include certified organic/fair trade products such as spices and essential oils, ecotourism concession, and mining and petroleum corporate social responsibility programs, but so far only a few MRPA promoters have explored options and only to a limited extent (but see engagement letters in Section IV – Part I).

164. Few PAs have developed business plans even though virtually all sites have reasonably credible technical land use and operational plans. Most donors require business plans as a precondition to funding. The existence of good-quality adaptable business plans must be an imperative for all MRPAs.

165. Conditions for trading high value products such as spice and essential oils appear to be very favorable. The in-country and international demand is steadily rising, licensed traders abound, and the quality in Madagascar is highly appreciated. Certified organic/fair trade products are particularly lucrative due to their higher prices. The current barriers are as follows. Product options are relatively limited in the Western dry forest ecoregion. NGOs are largely unfamiliar with the business world and lack experience or knowledge in creating opportunities. NGOs may be reluctant to venture into new business opportunities and prefer to maintain focus on improving subsistence production. Buyers generally require minimum volumes and consistent quality. The start-up years are also problematic as producers must be gain confidence in their products and may be dismayed if they cannot sell owing to failure to meet production quotas. Experience in Fanamby indicates that product quality can be maintained but requires constant oversight. Finally, there is only one trader[24] that specifically markets MRPA products and this is not yet a fully functional commercial operation.

166. Even leaving aside the value of gate fees, ecotourism is unquestionably a significant potential revenue earner and experience clearly demonstrates that is possible to establish private sector-community-NGO partnerships for professional services. Potential barriers include: difficulties in marketing particular sites that are still poorly known; successfully competing with other PAs on existing circuits and packages offered by tour operators; and periodic political unrest that causes massive drops in visitor numbers.

167. The potential for offsets linked to mining and petroleum is evident from Rio Tinto's QMM project. QMM's willingness to match funding from a major donor and its NGO partners for PA creation is also a positive sign, as it Total's willingness to invest up to € 5 million in local community development. Several reputable companies have committed to establishing CSR programs and biodiversity schemes worldwide. The principal barriers in Madagascar are likely to the following: to varying degrees, NGO fear that proven economic mineral and oil reserves could cause government reversal on PA commitments in favor of industry, and many remain hesitant to engage with corporations for ethical reasons; most projects are still in the exploration/confirmation stage and companies may reasonably decline social and biodiversity commitments until production decisions are made; signs are positive regarding potential mineral and oil reserves, but these may prove unfounded and the sector declines; the extractive industry sector is increasingly attracting companies with little or no history/interest in doing any more than their minimal contractual requirements with respect to compensation and environmental protection. Political instability may act in favor of such companies as responsible corporations may consider the risks to be too high and withdraw.

168. Carbon projects offer potentially valuable sources of long-term financing in favor of MRPAs and their local communities through traditional CDM or REDD mechanisms. However, several significant barriers exist and have not been eased by recent COP15 decisions. The vast majority of natural forest is state property and questions remain about how revenues are allocated between the state and local communities. Delays in negotiating global and national conditions and contracts may lead to community unwillingness to invest in long-term agreements that are still unproven. Slow forest regeneration coupled with low carbon density is also typical in the drier regions in Madagascar where biodiversity priorities are particularly high. On the positive

[24] This is *Sahanala*, created by Fanamby.

side, voluntary carbon projects may be an interim solution and the can generate upfront payments. They may involve both forest maintenance and reforestation to create new carbon sinks.

169. None of the above barriers are insurmountable. The solution appears to lie in diversifying options and adapting them to local conditions. Diversification would help to protect MRPAs from fluctuating market demands or other unforeseen factors and, if wisely planned, could form the mainstay of revenue streaming for both the MRPA recurrent costs and its neighboring communities.

INTRODUCTION TO PROJECT SITE INTERVENTIONS

170. The PIF originally identified seven target MRPAs that have either temporary protection or have been identified as priority areas in national biodiversity analyses. Section was based on four criteria: (a) biodiversity representation (habitats and species); (b) social receptivity to conservation goals; (c) prospects for establishing partnerships with the private sector; and (d) acceptable governance threshold in local government which assures institutional performance. Based on the analysis and consultations carried out during the PPG phase, it was possible to confirm selection for five of these sites, with remaining two dropped on the basis of criteria (a) and (d). Two additional sites (Ampasindava and Daraina) are now included as they are deemed to meet all criteria and offer exceptional opportunities with respect to (a) and (c). Table 5 summarizes the qualities of each site together with their current status and potential partnerships[25]. Note that MEF is a full partner at all sites. More detailed site profiles are presented in Annex 2.

Note: Several CSO operating in Madagascar are currently active in different MRPA sites throughout the country and have contributed substantially to improving the management of these PAs (there are over 40 MRPAs the whole country). Other sites are however at very incipient stage of operationalisation, including some that have been selected to benefit from this project. A more thorough survey on the state of project sites from a point of view of operationalisation and standing partnerships between MEF and different CSOs with respect to site promotion will be carried out by UCPE prior to any relevant procurement decision with respect to project funds.

[25] These are already indicated for four of the five MRPAs in the Inter-Ministerial Order 18633 / 2008 / MEFT / MEM du 17 octobre 2008

Table 5. Summary presentations of targeted MRPAs.

MRPA NAME, AREA, STATUS/ CATEGORY AND ECOREGION	KEY CHARACTERISTICS
[1] Menabe-Antimena Proposed area: 219,304 ha Status/ Category: Temporary and full (a) protection (V) Part of Menabe forests, mangroves and Bedo Lake (125,320 ha), Baobab's Alley (320 ha) already in temporary status. Andranomena Special Reserve (6,420 ha) already in definitive status. Ecoregion: Western dry forest, Mangroves	Western seasonally dry forest dominated by 3 Red-listed endemic baobabs. This site is considered to be one of the most important for conserving rare, locally endemic threatened species. A range of species only occur here, including *Pyxis planicauda* (EN), *Hypogeomys antimena* (CR) and *Microcebus berthae* (EN). Mangroves are extensive and are beginning to be under threatened in some areas. The mangroves are important for two rare endemic aquatic birds: *Halaeetus vociferoides* (CR) and *Anas bernieri* (EN). Traditional activities are based on subsistence rice (where irrigation is available), maize, peanut production and extensive pastoralism. Offshore and onshore may be present and rare earth elements are indicated in the MRPA. The MRPA is a popular tourism venue because of the ease of seeing wildlife including 'difficult' species such as the Fossa and because of its Baobab Alley known worldwide. Fanamby was earlier mandated by the MEF to create and manage this MRPA. The Region also asked the NGO to lead in establishing a new Category III PA within the larger MRPA. Asity identified this MRPA and has since been the primary on-site promoter. It has acted to have the MRPA temporally protected and to develop initial management structures. Project partners wish to have Fanamby continue this role, working eventually towards a take-over by the DREF. The roles of the partners are: CNFEREF – training; DWCT – flagship species management, ecological monitoring; community participation; DPZ ecological research: MNP – Andranomena Special Reserve; CI – finance; WWF – Community-based mangrove management.
[2] Mahavavy-Kinkony Proposed area: 278,642 ha Status/ Category: Temporary protection (V)	This area is one of the most important for its aquatic birds and vast numbers are present year round. The estuaries attract vast numbers of waders, including flamingos. Notable endemic species include *Halaeetus vociferoides* (CR), *Anas bernieri* (EN) and *Amaurornis olivieri* (EN). Lake Kinkony harbors endemic fish species and the dry forests support healthy populations of lemurs even though they are somewhat fragmented. Industrial production occurs within the MRPA but traditional economic activities include extensive pastoralism, rice and fishing. Iron ore deposits are known south of the MRPA and are likely to be mined. Oil prospects seem to be promising. The MRPA has some ecotourism potential because of the high diversity and numbers of aquatic birds. The most

MRPA Name, Area, Status/ Category and Ecoregion	Key Characteristics
Ecoregion: Western dry forest, lakes, mangroves, estuaries	likely tourism would be likely be specialized for bird tours. However, it is far from existing circuits. Asity identified this MRPA and has since been the primary on-site promoter. It has acted to have the MRPA temporally protected and to develop initial management structures. Fanamby has been supporting Asity with respect to management and governance. FAPBM have provided financial support.
[3] Daraina Loky-Manambato Proposed area: 248,409 ha of which 70,619 ha in temporary status Status/ Category: Temporary protection (V) Ecoregion: Transitional between Western and Eastern	With a surface area of 240,000 ha, the Protected Area of Loky-Manambato (Daraina) brings a diversity of in ecosystems and unique fauna and flora including the emblematic golden crowned lemur (*Propithecus tattersalli* EN). 127 species of birds, and 111 species of Herps were inventoried. 1,517 species of plants, of which 4 new gender and 50 new species. Wetlands and coastal habitats host Bernier's Teal (*Anas bernieri EN*), Madagascar Heron (*Ardea humbloti* CR), Madagascar sacred Ibis (*Threskiornis bernieri* EN) and a colony of several Terns species (*Sterna fuscata*). The fragmented landscape reflects the ancient practice of slash and burn and the persistence of cattle farming. Despite important irrigated rice-fields, herding is responsible of bushfires. The traditional gold mining impacts locally and sporadically through alluvial gold deposits in the forests. The seasonal inaccessibility of the site limits the management measures by relevant departments, but local radio brings an efficient tool. Fanamby has long been the only NGO promoter at this site. It enjoys excellent relations with the SAVA DREF, the municipalities official platform (OPCI LMM) and numerous local community cooperatives and associations.
[4] Ampasindava Peninsula & Galoka chain Proposed area: 187,305 ha: 150,675 ha for Ampasindava 36,630 ha for Galoka Status/ Category: Unprotected (V) Part of Ampasindava (89,950 ha) and Galoka chain (8,150 ha) already in temporary status. Ecoregion: Eastern humid forests (Sambirano transitional), mangroves	These two sites presents similar natural and human context and conservation issues and opportunities; thus, they are considered as one site. Forests are highly transitional expanding from the low-altitude sandstone sclerophyllous forests (5 endemic *Sarcolaenaceae* family species), typical humid/subhumid Sambirano forests to sub-montain humid forests on the summits. The biodiversity of this area, the heart of the Sambirano floristic domain, is relatively poorly known but recent inventories and surveys indicate a highly distinct flora with numerous local endemics (*Mimusops sambiranensis* (CR), micro-endemic succulent species on rocky outcrops) and many new to science. The Sambirano has numerous locally endemic faunal species including lemurs (*Microcebus sambiranensis* (EN), *Mirza zaza* (DD) and *Avahi unicolor* (DD)), reptiles (*Phelsuma vanheygeni*) and birds (*Haliaetus vociferoides* (CR), *Threskiornis bernieri* (EN), *Ardea humbloti* (EN)). The people living in the area mostly belong to the Sakalava ethnic group, with numerous Tsimihety migrants, who are primarily responsible for increasing pressure being placed on local forests as a result of slash and burn agriculture. Some significant massifs are sacred for the local Sakalava and thus are traditionnaly protected. The mangroves are important for shrimp and crab production. Traditional economic activities are largely based on shifting rice cultivation and much of the forest has been cleared. This area has high potential for organic/fair trade vanilla, cocoa, coffee and essential oil production. Offshore and onshore oil is taking place and significant reserves of rare earth elements are reported.

MRPA Name, Area, Status/ Category and Ecoregion	Key Characteristics
	At present, tourism is restricted to coastal resorts but these could be extended to mangrove and forest circuits. Both Fanamby and MBG have long targeted this site as a future MRPA, and MBG has conducted extensive forest inventories. WWF is particularly interested in developing climate change adaptation strategies at this site as it influences the Diana marine area, a target for this NGO.
[5] Ambohimirahavavy-Marivorahona (b) Proposed area: 593,491 ha Status/ Category: Unprotected (VI) Part of Ambihimirahavavy corridor (230,187 ha) already in temporary status. Ecoregion: Eastern humid forests, northern sub-region	Only three massifs reach above 2000 m, one in the north (Tsaratanana), one in the centre (Ankaratra), and one in the south (Andringitra), each of which is a source area for a network of rivers that are potential "retreat-dispersion" watersheds. The Northern Highlands comprise the most extensive and complex of the three and this scenario predicts several centers of endemism in this region. Amongst the most threatened biodiversity specific to this area: *Propithecus candidus* (CR), *Plethodontohyla guentherpeters* (EN), *Platypelis mavomavo* (EN), *Platypelis tetra* (EN), *Brachytarsomys villosa* (EN), *Sarothrura watersi* (EN). The area is mostly uninhabited, but some anthropogenic pressures occur on the Eastern and Western lower altitude flanks (slash-and-burn, logging). Promoter: WWF was mandated by MEF to re-establish management systems for two neighbouring PAs. These are now managed by MNP but WWF has continued in the area with projects on lemur conservation, community-based forest management and REDD. This is one of the most difficult future MRPAs to manage and requires the overall size and influence of WWF to mobilize partners, and the organization's long history in the area is a key asset. Site partners: The roles/interests of site partners are: Madagascar National Parks – extending the Tsaratanana Strict Nature Reserve further into Northern Highlands; Fanamby and CI -

Notes:
(a) Most of Menabe-Antimena has a temporary protection status, awaiting transfer to full protection after the current political crisis. The Andranomena Special Reserve is a Category IV site managed by Madagascar National Parks but has now been integrated into the MRPA management regime.
(b) These sites are grouped together as parts of a single PA complex that cover the extremely rich biodiversity of the Northern Highlands and their foothills, an area increasingly seen to be quite distinct from other Eastern Ecoregion forests. The complex also includes a Category I site (Tsaratanana), one Category II site (Marojejy) and two Category IV sites (Manongarivo, Anjanaharibe-Sud).

STAKEHOLDER ANALYSIS

171. The MEF is responsible for all of SAPM and coordination is carried out by DCBSAP. One significant challenge for the project will be to strengthen capacity and motivation for MRPAs among Malagasy NGOs as most of these PAs are supported by international bodies. Most of the latter are either fully or largely staffed by Malagasy but we believe there is a need to expand the strength and participation of truly indigenous institutions. The Voahary Gasy national NGO platform includes only three fully national organizations that are promoting MRPAs, Fanamby, Asity and Voakajy Madagasikara, although others are involved in similar conservation/ rural development initiatives.

172. Table 6 summarizes the major categories of stakeholders and their involvement in the project.

Table 6. Key Stakeholders and roles and responsibilities

STAKEHOLDER	ROLES AND RESPONSIBILITIES
MEF	MEF has overall responsibility for the environment and forests. The MEF has a main directorate called DPPSE (Directorate for Programs Planning and M&E). It also has two general Directorates, one in charge of the environment, the other in charge of the forest. The DCBSAP exists within the DG of forestry. MEF is responsible for delivery of protection status for all PAs. In the regions, the DREFs represent all directions within the ministry, including SAPM. DREFs will be offered training in MRPA management and will be updated on MRPA progress. In Menabe, the MEF's semi-autonomous CFPF is a direct project partner. Its main interests at present are ecotourism, research and training.
DCBSAP	DCBSAP is responsible for coordinating SAPM (and its commissions) although Madagascar National Parks has its own mandate to manage all Category I, II and IV PAs within its own national network. Most of the Category V and VI MRPAs under SAPM are promoted and supported by environmental NGOs with guidance from SAPM, the primary agency responsible for project delivery. SAPM is responsible for elaborating proposing policy to MEF, PA legislation and management guidelines, and for coordination of all CBD activities. Policy reform is based significantly on information emanating from site practitioners. SAPM approves all MRPA management and business plans.
ONE	ONE is part of the MEF but has a considerable degree of autonomy. ONE is responsible for applying MECIE and reviews and approves project EIAs. This institution also ensures that new PAs are in compliance with obligations to develop population safeguard plans. Should they become legally binding, ONE will be a key player coordinating SEAs. ONE regularly collaborates with environmental NGOs to evaluate mining and oil EIAs and activities on the ground.
Madagascar National Parks	This institution is collaborating with the project in the Menabe Region. The project will provide support to Andranomena Special Reserve and help to build ecotourism expertise and products. The Northern Highlands group of MRPAs is adjacent or close to existing parks and reserves managed by this institution. Their creation and effective management will provide added protection of this important biodiversity region through mutual buffering and collaboration. It is hoped that Madagascar

STAKEHOLDER	ROLES AND RESPONSIBILITIES
	National Parks will also benefit for innovative revenue generating initiatives.
MEM	MEM periodically collaborates with MEF and its environmental NGO partners to resolve potential or real conflicts between PAs, mining and oil. There are also infrequent but regular open exchange meetings. MEM appreciates being well informed about conservation initiatives.
FAPBM	The Foundation is mandated to provide significant financial support to all Malagasy PAs.
UCPE	UCPE is an association with as a mandate to coordinate environmental projects. UCPE has been identified to implement the PEIII project financed by the World Bank. UCPE will function as the Executive Implementing Partner for this project
Donors	The primary stakeholders are UNDP and GEF. The present project is a logical follow-on of earlier projects funded by these agencies and thus offers further progress towards MRPA sustainability with respect to earlier investments. USAID has invested significantly in MRPAs and information obtained in the present project will provide guidance when it decides to renew their investments. KfW supports Madagascar National Parks in Menabe. Several other donors are increasingly interested in making linkages between MRPAs, poverty reduction and rural development, such as AFD and FFEM. Exchanges will be of mutual interest.
Environmental NGOs involved in PA management	The project strategy implies the engagement of CSOs/NGOs in the operationalisation and management of sites on the ground. Several environmental NGOs have been active in Madagascar in the field of PA management. These include Fanamby, Asity, CI, DWCT, MBG, WCS and WWF. Some of these NGOs have previous and specific experience in the co-management of MRPAs, others less so, and some have already been involved in the management of some of the site, upon government's request. The mentioned NGOs have expressed an interest in working in MRPAs and in the project as a vehicle to doing so.
Other NGO	The project will exchange information with a range of environmental NGOs, especially those promoting MRPAs and/or local community development in key biodiversity areas. The forum comprising Malagasy NGOs is a good platform for this collaboration.
Regions	Regional decision-makers are a key partner. The project will support land use management planning, MRPA development and tourism development.
Communes	Communes associated with MRPAs will be one of the most important target groups. The project will invest heavily in capacity building with respect to land use management planning, economic development and MRPA management. OPCIs will benefit from the same support.
Local communities, associations and economic interest groups	Local communities together with their associations and economic interest groups are a key partner and their effectiveness is critical to project success. The main aims are to increase their organizational and management skills while at the same time supporting their efforts to develop and manage more lucrative economic options. These actions should have the added value that community members will be strong advocates for their respective MRPAs and actively participate in management.
Private sector	The project will foster local community-private sector partnerships of mutual interest on e.g. ecotourism.
Extractive industries	While mining and oil development are often perceived negatively by environmental groups, we believe that there are opportunities for win-win situations. Cooperation with environmental groups presents an opportunity to obtain a social and environmental license, as well as clear opportunities for CSR and offset initiatives.

STAKEHOLDER	ROLES AND RESPONSIBILITIES
	The MRPA in turn may benefit from investments into site management and support to local development initiatives. It is also possible that large-scale mining or oil projects may contribute to an MRPA sustainability fund through the FAPBM.
Certified/labeled product operators	Linking organic/fair trade markets to MRPAs offers an attractive opportunity to marketers as it not only is seen to support Madagascar's wildlife in general but can be further tagged with a high biodiversity PA or even species.
Research groups and higher education institutions	Vahatra and MBG will be among those invited to fill knowledge gaps with regard to biodiversity. The project will explore possibilities to strengthen and continue the professional masters training with the University of Antsiranana for PA practitioners.

BASELINE ANALYSIS

173. Knowledge gaps. The biodiversity of several sites, notably in the Northern Highlands complex is not adequately inventoried. However, more general national- and ecoregion-level biodiversity analyses have allowed us to estimate the relative importance of these sites. On the social and economic front, the same sites have faced similar data gaps but we were able to obtain general impressions from rapid visits, government statistics and satellite imagery. A general overview of oil gas and mining has been possible, together with an analysis of trends and major MRPA/extractive industries issues. However, development in these industries is likely to be somewhat fluid, necessitating regular updating. All of the above gaps must be addressed when the project commences in order to have good baseline data for planning and implementation.

174. Protected area coverage and design. The NEAP provided significant time and resources to strengthen the national PA system. Today, Madagascar benefits from an extensive network that should ensure that at least the most important sites are represented. Newer PAs are designed to be robust in the face of anthropogenic pressures, natural catastrophes and accelerating climate change.

175. Many of the newer PAs still await definitive legal protection and some critically important sites have not even obtained the intermediary protection status. The present project will address these issues for seven new PAs. SAPM maintains a PA register that is regularly updated.

176. Since the launch of the Durban Vision and the creation of SAPM, there has wide consensus that Category V and VI MRPAs are well-adapted to Madagascar's particular social and biodiversity protection needs. However, the newness of this concept and the need to integrate a host of multi-stakeholder interests presents some formidable challenges. While most MRPAs have succeeded in establishing at least minimal conservation success, few have been able to catalyze effective *managed resource* strategies in favor of either sustainable economic development or biodiversity protection, let alone both.

177. In part, this is due to a lack of experience and knowledge among environmental NGOs that promote new MRPAs. Traditionally, their focus has largely centered on biodiversity conservation with little serious attempts to develop innovative sustainable and profitable economic opportunities. An understanding of the need to improve capacity and performance in this respect is now gaining momentum.

178. MRPAs, by definition, must be able to integrate the interests of multiple stakeholder interests. Some of these may be inherently unpalatable to conservation NGOs, such as sustainable timber extraction, mining, oil and agribusiness. Be that as it may, many such ventures could bring long-term benefits to the MRPA and its surrounding communities and therefore merit serious consideration when harmonious co-existence is a possibility.

179. From the analysis of MRPA management and land use plans (PAGs) during the PPG, it is apparent that several environmental NGOs (albeit a decreasing number) continue to view many traditional community-based economic activities as direct threats to conservation goals. Many of these activities have to be integrated into the MRPA strategies as they are critical with respect to local livelihoods and may even offer a platform for improving economic practices.

180. MRPA governance and management. The rather complex nature of MRPAs and their varied stakeholder interests require innovative governance and management structures and strategies. These are inherently more complex than those of the stricter Category I, II and IV parks and reserves managed by Madagascar National Parks. Several approaches have been adopted in the country's new MRPAs but it is fair to state that none have been consolidated to provide models for other sites. Effective governance and management structures remain an elusive goal for all Malagasy MRPAs, although some emerging models are beginning to show promise.

181. Most of the more promising governance/management models involve some form of role-sharing between communes and their OPCIs, village-level interest groups, and the regional authorities including the DREF. Depending on the MRPA examined. The above entities are roughly comparable to the board of directors or the executive in a commercial business, depending on how they are organized. Our PPG analyses indicate that, at least for larger multi-commune MRPAs, the OPCI is the most promising entity for the equivalent of a board of directors and could play the role of the executive, at least in part. Alternative executive options include paid or unpaid local community members. The third broadly comparative group within a standard business model is the general assembly. This concept is less difficult to apply to MRPAs as it translate into representation of all stakeholder interest groups that may either recommend strategies and actions to the 'board' or respond to the latter's decisions.

182. The above corporate is likely to be an over-simplification in many MRPAs. For example, many environmental NGOs supporting an MRPA may have specific interests in terms of particular habitats or species. Their knowledge and management skills would be very useful when designing, approving or implementing specific management strategies. Similarly, private tourism operators may be invited to develop community-owned and co-managed lodges and circuits and they are thus part of the executive team.

183. As we have noted, the OPCI appears to play a key role in MRPA governance and management. Our PPG analyses indicate their commitment to the MRPA is strongest when the protected site is part of a broader sustainable development/conservation rather than the main focus. Having an MRPA focus for the OPCI has been the strategy of several NGOs and has generally had mixed results.

184. MRPA governance and management capacity. Capacity to establish and govern/manage MRPAs in Madagascar is growing steadily but some important barriers must still be overcome. The most critical targets are the executive and decisional entities with the MRPA management structure and must be a major focus of the project. There is also a need to continue to focus on organizational capacity building among a wide spectrum of target groups, notably community level associations, economic interest groups and communes. The likelihood of project success will be further enhanced by strengthening capacity among regional leaders and the MEF, in particular SAPM and the DREFs. Finally, all of the NGO partners that aspire a role as MRPA promotor must review their own internal capacity to deliver on this project. Such an analysis will be of considerable interest to other NGOs supporting MRPAs and to donors funding PAs in general. In summary, capacity strengthening is on a par with governance/MRPA structures as game-changing project priorities.

185. Target and well-designed capacity strengthening expanded beyond direct MRPA needs/ interests may help to establish a more secure future for MRPAs by building a broader understanding of the role of PAs in Madagascar developmental landscape. The existing professional masters diploma course developed recently by the University of Antsiranana and MBG could be integrate into a broader public administration curriculum. This may attract present-day and future influential decision-makers.

186. MRPAs in the broader political and development landscape. PPG analyses strongly indicate that MRPAs are more likely to succeed in the long-term if they are integrated into national and regional land use management planning. This process would provide a stronger political commitment to MRPAs. To date, only a few regions have prioritized MRPAs or other parks and preserves. MRPAs themselves offer a powerful opportunity to demonstrate the economic, social and environmental values derived from sound land use management planning: they are spatially well-defined and focused on clearly identified local aspirations and biodiversity goals.

187. MRPA sustainability. MRPAs cannot count on GOM funding, at least for the foreseeable future. There is some possibility in the more distant future that financial legislation will be clarified in the more distant future and that green taxes (XX review financial barriers and context sections) will begin to flow, but there is no indication that MRPAs will be beneficiaries.

188. In addition, notwithstanding its good intentions, the Foundation's contribution to MRPAs is also likely to quite limited, in part because of donor ear-marking for Madagascar National Parks sites. The Foundation's interest-generating capital investments are likely to remain modest for some time to come meaning that funding for all types of PAs will be limited.

189. As we have seen, MRPA sustainability is multi-faceted but we focus here on sustainable financing. Funding for the initial investments in MRPA development may prove difficult for many sites and their promoters, although there are signs that interest among Madagascar's traditional donor community is growing. Large-scale donor funding is certainly attractive – even essential – for the initial MRPAs investment phase (infrastructures, capacity strengthening, analyses...) but it would be unwise for sites to become reliant on these incomes once they are operational and shifting to recurrent costs. Indeed, MRPAs would be failing in their mandate if donor dependence persists as they should be aiming for sustainability through their use of natural resources.

190. There are numerous options for sustainable revenue generation including high added value bio-products, ecotourism and agreements with extractive industries. While a few MRPAs have begun to tap these opportunities, we are still just at the tip of the iceberg. These potential avenues must be explored thoroughly, barriers must be identified and removed, and follow-through targeted action and investment mobilized. The key to success will undoubtedly be establishing community-private-NGO partnerships to bring the professionalism and marketing advantages of the private sector to finding mutually beneficial, workable solutions for equitable development.

191. The near total absence of business plans within the MRPA sub-network is a glaring weakness. Donors and private sector partners will be less likely to seriously consider MRPA proposals without a well-founded plan.

192. Extractive industry risks and opportunities. Malagasy PAs have enjoyed robust political support within the GOM when challenged by mining and the oil industries, including MEM. To a considerable extent, industry has shown considerable sensitivity when exploring business options.

193. However, these industries are continually evolving and there are signs that interest among responsible corporations is increasingly being overtaken by companies with less social and environmental sensitivity. This could reverse recent positive trends if action is not taken.

194. There is no legal interdiction on mining or oil extraction in MRPAs. However, it must be hoped that the GOM and individual companies would avoid the core priority conservation zones and any potential off-site risks that may be identified. In addition, a thorough EIA should provide guidance on whether mining or drilling should be allowed.

195. The MECIE may be considered adequate for EIAs. For the most part meet Extractive industry EIAs international standards (but there are some glaring exceptions). However, there are some problems to be resolved. There is limited capacity to interpret the often technically complex reports, and there is considerable room for improving public consultation.

196. SEAs offer a more robust and multi-sectoral means to evaluate the broader impacts and risks emanating from extractive industries. They also offer a means to evaluate the long-term interests of a wide range of economic activities and social values, including MRPAs. Mandatory