

Report of the International Advisory Panel

Integrated Growth Poles Project (IGP2)

Projet Pôles Intégrés de Croissance (PIC)

July 2014

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The Panel conducted its work in close collaboration with the PIC team. Nevertheless, the Panel takes responsibility for any errors of fact in the report and notes that the views expressed herein represent the independent conclusions of the Panel members.

Executive Summary

E.1 PIC Project and the Role of the International Advisory Panel

E.1.1 Project Background

The Integrated Growth Poles Project [hereafter referred to as PIC – *Projet Pôles Intégrés de Croissance*] is an initiative of the Malagasy Government (GoM), which aims to create a favorable environment to investors in order (i) to stimulate and achieve sustainable economic growth in three regional Poles in the areas of Antananarivo-Antsirabe, Nosy be and Taolagnaro (Fort Dauphin) and (ii) to ensure equitable and sustainable economic growth through construction and rehabilitation of critical infrastructures, regulatory reform and strengthening capacity of national and local institutions. The Project was approved by the World Bank in the amount of US\$129.8 million (Credit 4101) in July 2005 and became effective that same year. The closing date was extended from December 31, 2011 until December 31, 2014. A supplemental credit (Credit 4399) provided an additional US\$40 million in 2008. The closing date for that credit was extended from December 31, 2012 until December 31, 2014. The Project's five components are:

- A. Strengthening the Business Environment
- B. Export-led growth in Antananarivo-Antsirabe¹
- C. Tourism-led growth in Nosy be
- D. Mining and Tourism-led growth in Fort Dauphin
- E. Program and Project Implementation, Monitoring and Evaluation (including safeguards).

In March 2009, the Bank suspended disbursements for both credits in the context of OP 7.30 (Dealings with De Facto Governments) because of the political situation (accession to power by a *de facto* government that had not been recognized or regularized). Subsequent to the suspension, the ability of PIC to disburse and commit funds was greatly constrained. In August 2009 and October-November 2010, the Bank authorized exception measures as well as priority activities (financed under designated accounts). The Bank gradually allowed PIC to resume additional work with certain activities starting in late 2011, such as the *voiries urbaines* in Fort Dauphin and corrective and protective measures to control erosion for the Centre Régional de Formation Professionnel Technique de l'Anosy (CRFPTA). In Nosy be, infrastructure activities, such as the Hellville and Ankify ports, resumed in 2013.

As of June 30, 2014, all of Credit 4101 had been committed and disbursed; as of the same date, approximately 96 percent of Credit 4399 has been committed and 79 percent disbursed. Thus, the Project has a remainder of approximately US\$ 1.4 million (amount can vary according to exchange rate). These funds are already reserved for some important infrastructure repairs and to cover the exchange rate fluctuation.

¹ Due to sociopolitical events (known as “la crise”), which occurred in 2009, the Antananarivo-Antsirabe Growth Pole was closed.

E.1.2 International Advisory Panel

A first advisory Panel was appointed in 2004. That Panel completed its third and final mission focusing on issues of project design and the early phases of implementation in December 2007. The August 2009 World Bank Supervision Mission expressed the need for a new “International Advisory Panel,” because the Project was shifting toward the operational phase and the focus was to be on operations, maintenance and sustainability of the Project Investments.

The PIC contacted three potential members of a new International Advisory Panel (IAP) in 2010 and entered into contracts in the first half of 2011; the Panel conducted its first mission from June 26 through July 17, 2011. The draft report submitted in August was finalized in December 2011. At that time, the IAP focused on emerging and pending issues and made recommendations for priority actions that could be undertaken within the context of OP 7.30 in order to protect and secure the viability of investments already made. The Panel recommended that the two credits be extended through at least 2013 and, preferably, December 2014 in order to allow development of a PIC 2, assuming that the political situation would be resolved within that timeframe. Presidential and legislative elections took place at the end of 2013 and the new President, Hery Rajaonarimampianina took office in January 2014. OP 7.30 ceased to apply on April 18, 2014, the date when the new government was formed.

The Panel formulated a set of principles to guide its work, based on the challenges and issues confronting PIC, subsequent to the political crisis. These principles (outlined in detail in Chapter 1) focus on improving the livelihoods of people and protecting the environment, avoiding negative legacies, managing risks, ensuring that investments maintain their value and their *raison d’être* and learning lessons applicable generally and to PIC 2.

E.2 Nosy be Growth Pole

E.2.1 Key Findings

The Panel visited Nosy be from July 14 to July 18, 2014 and, in addition to visiting project sites, held discussions with project stakeholders. PIC has continued to have a positive impact in the Nosy be growth pole and has completed additional infrastructure, including construction of the landfill site, installation of new generators at the site of the new JIRAMA central, construction of the Pont Joby, rehabilitation of the ports at Hellville and Ankify, planting of a mangrove offset (as recommended by the IAP in 2011), reforestation in the watershed of Lake Amparihibe (water supply source), continued installation of water points [translate as bornes fontaines] and continued rehabilitation of the electricity network. Although tourist arrivals had been growing by 2012, the murder of three persons in September 2013 resulted in massive cancellations for the 2014 season. Commercial shrimp production remains depressed as it was in 2011 and SIRAMA sugar production continues to be closed.

The Panel determined that requirements of both the Malagasy environmental assessment procedures and the Bank's safeguard policies have been respected. The EIAs and RAPs were done in conformity with international standards; however there are some details of processing and some additional studies that the Panel recommends.

The absence of proper RAP closure documentation or basic audit and accounting information in an

accessible form, caused considerable concern to the Panel. Resettlement evaluation reports under preparation by consultants were delayed such that the Panel could not review them and/or in an unsatisfactory state. The Panel does not doubt that appropriate information is retained in the project in different forms and places, and in unfinished documents. Monitoring, outcome reporting and audit are formal explicit requirements of OP 4.12 that have yet to be met. The Panel regrets that it was not able to benefit from the consultants' resettlement evaluation reports, which are a key requirement to meet Bank OP 4.12. (See Recommendation NB 13, below).

The recommendations of the Panel for the Nosy be pole are summarized in Table E-1. These recommendations are listed by priority 1 (High), 2 (Medium) and Other.

Table E-1: Nosy be Growth Pole Recommendations

Priority	Recommendation
1	Recommendation NB 2. In order to complete the environmental risk assessment of the disposal of the dredged material, the Panel strongly recommends that PIC conduct additional characterization and analysis of the dredged material, as deposited, including full hydrocarbon-based contaminants (PAH and MAH (BTX), PCBs and organo-chloride and organo-phosphate pesticides. Furthermore, the Panel recommends determining the eventual allowable land use, based on the results of the analysis and with reference to acceptable norms. In the absence of such norms in Madagascar, the Panel suggests use of the criteria from the Netherlands or Québec to establish allowable land uses for rehabilitated or contaminated terrain.
1	Recommendation NB 13. In order to be ready for closure, satisfactory documentation reports must be available for review not later than the beginning of November 2014, the proposed date of the final Bank mission and the commencement of ICR preparation.
1	Recommendation NB 14. At Pont Cassé: Faced with the impracticality of forcing people to move against their will, which would risk major unrest, or filling the lagoon with aggregate over large pipes to carry the water flow, the only remaining course of action is to deeply intensify the two-pronged approach currently under way, as noted below. <ul style="list-style-type: none"> • Intensify work with the community on public health education and the risks and costs of the present situation, doubling the clean-up effort and the active engagement of the municipality; and • Put in place throughout the town in the watershed above the lagoon, an effective system of solid waste collection and watershed protection, with fines for uncontrolled solid waste dumping.
2	Recommendation NB 1. PIC to prepare a brief PGES for the upgrading and extension of the electricity supply lines and pay particular attention to the replacement and disposal of transformers.
2	Recommendation NB 4. PIC to carry out inspection of the small dam at Lake Amparihibe and prepare an estimate of the nature, extent and cost of corrective of sealing measures.
2	Recommendation NB 5. PIC to examine the feasibility and costs of sound proofing, including fencing around the "new" power plant. PIC to install noise mitigative measures, if possible within project budget. As for the "old" JIRAMA plant, because of its limited use but also the dangers it presents, as an urgent matter, PIC to commission an environmental risk assessment study (Étude de danger) and develop a contingency plan in case of an emergency caused by accidental spills of fuels or burning of PCB-bearing transformers.

Priority	Recommendation
2	Recommendation NB 6. The Panel recommends that PIC assist EGEDEN and the commune authorities, to the extent possible, to collect and transfer the RDS and TOM. If funds are available, PIC should kick-start EGEDEN, with material support and equipment (collection vehicles). PIC is advised to encourage and provide training to EGEDEN to produce and market compost for an internal island market, specifically the golf course, which could potentially benefit from locally-produced compost. In addition, EGEDEN should also be advised to seek additional financing resources.
2	Recommendation NB 7. PIC socio-economic team to intensify its effort to organize and assure adequate waste collection and management at Marodokany and in the surrounding urban watershed.
2	Recommendation NB 9. The Panel recommends that PIC share lessons learned with the World Bank preparers of PIC 2 concerning the need for a CSER and assist ONE and a regional authority to install a CSER for the Diana-Diego Suarez region in preparation for the surveillance and monitoring of PGES documents related to PIC 2.
2	Recommendation NB 10. The Panel recommends that PIC gather documentation and previous studies concerning the geothermal resources of Madagascar; establish contact with geophysicists and researchers of the University of Antananarivo to update available information; and communicate the information to preparers of PIC 2 so they might consider geothermal resources and/or make recommendations to JIRAMA to consider geo-thermal energy in their long-term planning.
2	Recommendation NB 11. PIC should invest some effort in fully documenting the planning, process and outcome of the Ankify market resettlement, on grounds that it could form a good practice example to be used for training and capacity building of local authorities.
2	Recommendation NB 12. At Ankify PIC should look for a donor to finance the passenger footbridge or consider including the footbridge in PIC 2.
Other	Recommendation NB 3. PIC to install a temporary handrail on the passenger ramp at Nosy be Port.
Other	Recommendation NB 8. The Panel recommends that PIC inform tour operators of the limited “capacité d'accueil” of Nosy Tanikely, examine the actual number of daily visitors and discuss with ORT and tour operators the desirable limits for visitors.

E.3 Fort Dauphin Growth Pole

E.3.1 Key Findings and Observations

The Panel visited Fort Dauphin from July 8 to July 13, 2014 and, in addition to visiting project sites, held discussions with various stakeholders, including Rio Tinto/QMM (hereafter QMM), the major player in economic growth. The most visible and lasting achievements have been PIC’s participation in the construction of the Ehoala Port, the completion of the rehabilitation of Provincial Road (RIP) 118, the paving or rehabilitation of rural and urban roads, and the contributions to water distribution, waste management and power supply. Constructed primarily for shipping of ilmenite, the Ehoala Port is a success story in the transport of non-mining related goods and containers, as an attractive destination for cruise ships, and as a potential hub port for the southern Indian Ocean.

After the suspension or limitation of activities in 2009, PIC entered what one of the Panel’s interlocutors called a “discreet” mode. The permitted activities, largely related to environmental and social safeguards and measures of “accompagnement,” constrained the ability of PIC to continue infrastructure development. The large contrast between conditions of civil infrastructure and the

livelihood of the general population versus superior conditions associated with QMM were a source of social tension. The rehabilitation of the voiries urbaines, in particular the urban section of RN 13 and the electricity system as well as the landfill construction by PIC appears to have eased social tensions and discontent with QMM.

The slow progress in the development of Ehoala Park (industrial and commercial) at the Ehoala Port site, considered the “moteur du developpement de la Region Anosy,” has meant that the anticipated jobs, outlets for local products and stimulation of the local economy remain unavailable. Job-producing activities taking off at the Park will result in welcome benefits, long-promised to the local population, which would also lead to further easing of social tensions.

The Panel determined that requirements of both the Malagasy environmental assessment procedures and the Bank's safeguard policies have been largely respected. The EIAs and RAPs were done in conformity with international standards; however there are some details of processing and some additional studies that the Panel recommends.

In August 2013, QMM released a “*Bilan des suivis sociaux et environnementaux 2009-2012- Phase opérations minières*” covering the period from January 2009 to December 2012. The *Bilan* is responding to the requirements of eight PGES prepared for the various installations, infrastructure and activities between 2006 and 2009, in addition to an original PGEP (Plan de Gestion Environnemental du Projet”) prepared in 2001, prior to any World Bank involvement. The Panel articulated seven comments and questions concerning issues mentioned in the Bilan or absent from it that the Panel believes necessitate clarification or complementary information concerning environmental incidents, hazardous waste, water quality, radioactivity, complaints and other issues.

As described for Nosy be, the same delay has occurred in the receipt of the Fort Dauphin QMM and PIC resettlement evaluation/audit reports, which were not available for the Panel to review. As for Nosy be the inability to review these reports was of concern to the Panel. The recommendations of the Panel for the Fort Dauphin growth pole are summarized in Table E-2. These recommendations are listed by priority 1 (High) and 2 (Medium).

Table E-2: Fort Dauphin Growth Pole Recommendations

Priority	Recommendation
1	Recommendation FD 4. The Panel requests that PIC follow-up on the application and realization of the <i>Charte</i> proposed by the PUDE and the Cahier de Charges and support their wide diffusion to the communal authorities and the Ehoala Park administrator in order to spell out the conditions of investment. PIC will provide considerable benefit to the sustainable implementation of the EP by preparing a briefing note on the concept of industrial ecology and promoting this idea now and as part of an eventual PIC 2.
1	Recommendation FD 6. QMM is advised to include Ambinanibe and Lohalovoky in its new community-wide development programme, monitor outcomes and document results.
1	Recommendation FD 9. PIC should urge the Regional administration to issue the Arrêté that would conclude the process of awarding title for replacement lands for Ilafitsinanana. PIC should continue to communicate to PAPs that the land will be kept available for five years.

Priority	Recommendation
1	Recommendation FD 12. The resettlement evaluation/audit reviews should include (if necessary under separate contract) a thorough examination to demonstrate whether the Bank's compensation standards for the assets of occupants without title have been satisfied, or an estimation of the monetary gap between actual payments and full replacement cost of the asset.
1	Recommendation FD 13. Readiness for closure should be subject to the condition of receipt of satisfactory documentation not later than early November, the proposed date of the final Bank mission and the commencement of the ICR. See also Recommendation NB 13.
1	Recommendation FD 14. The Bank should consider an early high-level dialogue to bring clarity and closure to outstanding issues in relation to land expropriation, compensation and adherence to international standards, particularly in relation to the Mandena mining concession.
2	Recommendation FD 1. PIC to prepare a brief self-audit of the upgrading and extension of the electricity supply lines with particular attention to the replacement and disposal of transformers.
2	Recommendation FD 2. PIC to push for progress to implement protective measures in the perimeter of Lac Lanirano, now that PUDI has been approved by the Government in June 2014. In addition, PIC should request the responsible authorities to monitor the water quality supplied by the municipal treatment plant at appropriate intervals and verify potability, including the possibility of requesting the assistance from the QMM physico-chemical laboratory set up in 2011.
2	Recommendation FD 3. PIC to examine in detail the reasons for the unexpected failure of the management and maintenance of RIP 118 by interviewing the six associations concerned (road damage appears to have been variable according to location), the truckers and the regional government as well as drawing upon the experience of the NGO in Fort Dauphin and elsewhere. PIC is urged to investigate the extent to which different design features contributed to failure. PIC should produce a report summarizing the findings and providing guidance for future road projects in the region.
2	Recommendation FD 5. PIC to commission a brief feasibility study for an artificial reef accessible to Libanona fishermen to increase marine productivity particularly for crustaceans. The suggestion that additional compensation might be payable to this community is not supported.
2	Recommendation FD 7. QMM should consider conducting training in employment skills for unemployed men and women in the village of Ambinanibe, which includes Lohalovoky, with a view toward future employment opportunities in the Ehoala Park.
2	Recommendation FD 8. QMM is advised to include Ilafitsinanana in its community-wide development program, monitor outcomes and document results. QMM should provide unemployed adults with information on future employment opportunities.

Priority	Recommendation
2	Recommendation FD 10. QMM is advised to work with the local fishing community prior to removing the Andrakaraka seuil and changing back to a brackish lagoon system; in this case and even if the decision is made to retain the seuil, QMM is advised to establish a program that would sensitize the community to the issues of optimal offtake and overfishing. In conjunction, QMM is advised to determine and respond to needs for additional livelihood supplementation or diversification as may be appropriate where fishing resources are insufficient to maintain livelihood levels.
2	Recommendation FD 11. PIC should conduct a public campaign, focusing on schools to educate children on the possible dangers of trucks entering and leaving the Ankarefo landfill site; this effort should be accompanied by a safety awareness campaign for garbage truck drivers.

E.4 Lessons Learned

The Panel drew several lessons from the PIC project that could be applicable to many other projects in Madagascar and elsewhere.

E.4.1 General

- The operational and maintenance requirements for infrastructure projects are critical to their long-term sustainability. Worst case scenarios that take into account potential failures to achieve quality operations and maintenance should be carefully assessed. Not doing so can prejudice the outcome of the investment.
- The capacity, resources and commitment of state/parastatal enterprises should not be overestimated, especially in a fragile national context.
- The team preparing a project typically has high expectations that the anticipated benefits will be fully realized. In situations such as those encountered in Madagascar, cautious confidence, not elevated optimism, is advised.

E.4.2 Safeguards Overall

- An initial underestimation of social and environmental impacts and risks can result in trust problems during implementation. If remedies have to be put in place to mitigate after the fact, they may exceed in costs and complexity what might have been done initially and it is too late to consider avoidance.
- When activities, especially those subject to a framework approach such as a CGES or CPR, are subsequently defined, when there is a significant (more than one year) passage of time between the assessment and start of construction or implementation, or when activities are modified during construction, the environmental and social safeguards implications should be immediately re-assessed in full and in detail.
- Appropriate operational procedures are needed to assure continuing respect for environmental and social safeguards. Often safeguard documents give much attention to construction phase impacts, but the safeguard-related requirements for operations are overlooked or vague. This situation can be exacerbated by insufficiently detailed attention to remedying impacts that arise during operations.

E.4.2 Resettlement Safeguards

- Budgets (and schedule) are a required section in a RAP compliant with OP 4.12. However, the cost estimates should not be publicly disclosed in a way that might lead affected persons to have exaggerated and unrealistic expectations of compensation.
- The time, effort and interactions that are required to accomplish land rights transfers are often insufficiently appreciated. The transactions costs are high and involve researching land rights, understanding applicable codes and communicating information to PAPs and other stakeholders.
- Systematic record keeping and documentation of resettlement activities is a vital and indispensable part of the resettlement process. Good records and documentation will permit and should lead to timely final evaluations, once a resettlement program implemented. Greater community consultation and participation in safeguards monitoring and evaluation would have enhanced and potentially have strengthened the beneficiaries' ownership of the results.

E.5 Reflections Toward PIC 2

The Panel recommended in 2011 that the Anosy Region (expanding upon the Fort Dauphin growth pole) and the Nosy Be growth pole (linked to the larger Diana Region in the north) be included in a future PIC 2. The Panel supports the inclusion of both of these regions together with Atsimo-Andrefana, the country's poorest region. The Panel considered in 2011 that the achievements and accomplishments of PIC 1 demonstrated good gains and value to the respective growth poles, despite the difficulties of the political crisis and the suspension of funding in 2009. The Panel maintains this view.

The Panel continues to believe that PIC 2 will (i) allow for follow-up on aspects of growth that were not foreseen under PIC 1; (ii) extend the gains acquired; and (iii) accelerate the momentum of growth already achieved. Further, the Panel believes that both PIC 1 poles merit further technical assistance and institutional support (as indicated in the recommendations of Sections 2 and 3), in order to enhance and strengthen the sustainability of growth.

The Panel maintains its 2011 recommendation that PIC 2 adopt the concept of Green Growth Poles, where green connotes explicit recognition of ecosystem services in a green economy, environmentally and socially sustainable management of resources and compensation for resource restrictions through provision of development benefits and opportunities.

Tourism development in the areas planned for PIC 2 will require attention to the regional, national and international dimensions of tourism. The Panel appreciates that the development and enhancement of tourism circuits rather than single destinations is already incorporated within PIC 2. In addition, the Panel recommends that PIC 2 address strategies and mechanisms to weather the ups and downs of interest or lack of interest (often fueled by fear and inaccurate perceptions) in international tourist destinations.

Planning for rural development, agricultural strategies and sustainable fisheries will be essential components of Green Growth. The Panel understands that an Environmental and Social Framework will be prepared for PIC 2. The Panel still believes that a Strategic Environmental Assessment (which could

be called a strategic green growth plan or similar) would be useful to inform the future development of agriculture.

Attention should be paid to issues of land lease for agribusiness that could be seen as "land grabbing" or land appropriation by foreign interest to the detriment of the local economic development and the risk of creating poverty through landlessness.

Provision of reliable sources of energy is critical to the growth envisioned under PIC 2. In the Diana Region, the Panel believes that it is essential to explore and consider investment in the development of the demonstrated geothermal energy potential of Nosy be. Similarly, the demonstrated potential for aeolian energy in the Fort Dauphin region should be considered. In all regions, support for local solar-based energy is recommended.

The Panel wishes to emphasize the importance of paying attention to the environmental, social and financial sustainability of infrastructure by considering operations and maintenance as an integral and fundamental part of planning and designing infrastructure. Further, the Panel emphasizes the need to reinforce training and funding for operation and maintenance of infrastructure.

PPPs are to be encouraged under PIC 2 for shared infrastructure, including airport expansion to serve the northern corridor. While a good way to increase capital investment, PPPs are inherently difficult to manage in terms of safeguards because it is not easy for the private sector to see why it should be bound by Bank policies. It is also key to work with ONE and Madagascar's MECIE in order to facilitate harmonization and application of the country's policies consistent with national law and practice.

The Panel recommends that PIC share lessons learned with the World Bank preparers of PIC 2 concerning the need for a CSER and assist ONE and the relevant regional authorities to install a CSER for the relevant regions.

- The Panel especially recommends that PIC builds on the human resources and capabilities developed during PIC 1 and as much as possible keep intact the team that oversaw the environmental and social safeguards.
- The Panel recommends that PIC 2 preparation and safeguards compliance be facilitated with a small learning workshop bringing together PIC safeguards and community relations staff, QMM and others with relevant country experience. This would be an occasion to familiarize the participants with recent approaches and convergence in safeguards among various parts of the World Bank Group, the Equator Banks and others.
- The underlying issue of securization of mining rights is relevant to the "unlocking" of the mining sector. To this end, sharing the experience and expertise of QMM with others could be valuable. This recommendation could appropriately feed into a country policy dialogue on land policy and safeguards with the aim of establishing a greater degree of consensus and ownership over policies, practices and institutions dealing with land, land alienation including subsurface rights, and

compensation.

E.6 Next Steps

In accord with the Panel's TOR, this report will be shared with the Bank Project Manager and the Bank will disclose it on the Infoshop website. The Panel's report must be made accessible to the target population and stakeholders; the Panel recommends that the report (or its Executive Summary) be provided to agencies, NGOs and local authorities in Nosy be and Diana and in Fort Dauphin and Anosy.

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ABBREVIATIONS and ACRONYMS

AfDB	African Development Bank
APCM	Aire Protégée de Conservation Marine
APMF	Agence Portuaire Maritime et Fluviale
APD	Avant-Projet Détaillé
APS	Avant-Projet Sommaire
CFTH	Centre de Formation en Tourisme et Hôtellerie
CGES	Cadre de gestion environnemental et social
CRD	Comité Régional du Développement
CTE	Comité Technique de l'Évaluation Environnementale
CNRO	Centre National de Recherches Océanographiques
CSER	Comité de Suivi Environnemental Régionale
CRFPA	Centre Régional de Formation Professionnel Technique de l'Anosy
DAO	Dossier d'Appel d'Offres
DCA	Development Credit Agreement
DIANA	Région de Madagascar incluant Diego, Ambanja, Nosy be, Ambilobe
EDBM	Economic Development Board of Madagascar
EIE	Etude d'Impact Environnemental
EIES	Etude d'Impact Environnemental et Social
FID	Fonds d'Intervention pour le Développement
GES	Gaz à Effet de Serre
GoM	Gouvernement de Madagascar
HIMO	Haut Intensité de Main-d'œuvre (Labor-Intensive Works)
IAP	International Advisory Panel
ICMM	International Council of Mines and Metals
IGP2	Integrated Growth Poles Project
JIRAMA	Société Nationale de l'Eau et de l'Electricité
MECIE	Mise en compatibilité des investissements avec l'environnement
MNP	Madagascar National Parks
MOU	Memorandum of Understanding
NAP	Nouvelle Aire Protégée
ONE	Office National de l'Environnement
ONG	Organisation non-gouvernementale
OP ou PO	Operational Policy (of the World Bank)/Politique opérationnelle (de la BM)
PAD	Project Appraisal Document (de la Banque Mondiale)
PAPs	Populations Affectées par le Projet
PARAR	Plan d'Action pour la Restriction d'Accès aux Ressources (Process Framework OP 4.12/Cadre Fonctionnel)
PARC	Programme d'Appui au Renforcement des Capacités
PDS	Président de la Délégation Spéciale (maire)
PGDI	Programme de Gouvernance et de Développement Institutionnel
PGES	Plan de Gestion Environnementale et Sociale
PGRM	Programme de Gestion des Ressources Minières

PIC	Projet Pôles Intégrés de Croissance
PO	Politique opérationnelle de la Banque
PME	Petites et Moyennes Entreprises
PNUD	Programme des Nations Unies pour le Développement
PRD	Plan Régional de Développement
PSDR	Programme de Soutien au Développement Rurale
PUDI	Plan d'urbanisme directeur
QMM	QIT Madagascar Minerals
RDS	Redevance Déchets Solides
RFT	Réserves foncières touristiques
RIP	Route d'Intérêt Provinciale
RN	Route Nationale
SRAT	Schéma Régional d'Aménagement du Territoire
SIRAMA	Société anonyme Siramamy Malagasy
S.A	
SPGAAN	Société du Port à Gestion Autonome d'Antsiranana-Nosy be
TOM	Taxe Ordures Ménagères
WCS	World Conservation Society
WWF	World Wildlife Fund

1. Introduction

1.1 Integrated Growth Poles Project (IGP2) – Projet Pôles Intégrés de Croissance (PIC)

The Integrated Growth Poles Project (IGP2) is an initiative of the Malagasy Government (GoM). As stated in the PAD and in the Development Credit Agreement (DCA) for the project restructuring in December 2007:

“The overall objective of the Project is to help provide an adequate business environment to stimulate and lead economic growth in three regional poles in the areas of Antananarivo-Antsirabe, Nosy be and Taolagnaro (Fort Dauphin). The specific objectives are to assist the GoM to (i) construct and rehabilitate critical infrastructure essential for sustained economic activity in the tourism, manufacturing, agribusiness and mining sectors; (ii) put in place appropriate incentive measures to achieve rapid growth; (iii) develop the instruments to ensure equitable, sustainable growth; and (iv) strengthen the capacity of local authorities to formulate, prepare, implement, and manage medium- and long-term integrated regional development projects in the future.”

The Secretariat National designated for PIC is implementing the project on behalf of the GoM.

The Project was categorized as Category A under OP 4.01 (Environmental Assessment) and this categorization remains unchanged. The original Project (Credit 4101 MAG) was for US\$129.8 million (IDA) with another US\$16 million committed by IFC. The Project was approved on July 12, 2005 and became effective on September 28 of that year. The Project was scheduled to close on December 31, 2010. The closing date for Credit 4101 was subsequently extended in 2009 to close on December 31, 2011, and then, because of the political crisis, extended again to close on December 31, 2014.

The Project’s five components are:

- A. Strengthening the Business Environment
- B. Export-led growth in Antananarivo-Antsirabe²
- C. Tourism-led growth in Nosy be
- D. Mining and Tourism-led growth in Fort Dauphin
- E. Program and Project Implementation, Monitoring and Evaluation (including safeguards)

The Project was formally restructured on December 14, 2007 to align it better with the Madagascar Poverty Reduction Strategy for 2007-2012, the Madagascar Action Plan (MAP) and the Bank’s Africa Action Plan. The Project Development Objective was not changed. The restructuring focused on strengthening implementation arrangements, specifically support to the Economic Development Board of Madagascar (EDBM), reallocation of funds to provide for 100 percent of the financing of all eligible expenditures in each component and funding of some new activities under existing sub-components.

² Due to sociopolitical events (known as “la crise”), which occurred in 2009, the Antananarivo-Antsirabe Growth Pole was closed.

The Project's Mid-Term Review, launched in December 2007 (ahead of schedule) and completed after a June 2008 World Bank supervision mission, confirmed satisfactory progress in implementation, but also documented the presence of major financing gaps. Filling these gaps was necessary to enable the Project to meet its development objectives. By January 2008, disbursement of Credit 4101 had already reached 43 percent with another 45 percent already committed.

The Bank had expected that the difference between the estimated total cost (US\$304 million) of the Project in 2005 and the credit amount would be filled by GoM, other donors and the private sector. The estimated total cost (especially infrastructure) had increased and the anticipated funding by others was lagging. (Further details about the financing gap can be found in the Memorandum and Recommendation of the President of IDA for the proposed additional credit.) Thus, the Bank agreed to put in place additional financing of US\$40 million (Credit 4399 MAG) to complete the originally-planned activities that were not funded. The additional financing focused on three areas: Strengthening the business environment, infrastructure upgrading in Nosy be/Diana Region and Fort Dauphin and project implementation and strengthening of local institutions. Credit 4399 was approved in April 2008, signed in May 2008 and became effective in August 2008.

In March 2009, the Bank suspended disbursements for both credits in the context of OP 7.30 (Dealing with De Facto Governments) because of the political situation (accession to power by a *de facto* government that has not been recognized or regularized). The National Project Secretariat staff decreased from about 100 total to a little over 50 of which only 18 were full-time professional staff. After the suspension, the ability of PIC to disburse and commit funds was greatly constrained. As a result of supervision missions by the World Bank in August 2009 and October-November 2010, exception measures as well as priority activities (financed under designated accounts) were authorized. Gradually, the Bank authorized PIC to resume additional expenditures in late 2011 and especially in 2013-2014. Staffing levels rose to 61 in 2012 and to 126 in 2013 of which 119 were permanent/full-time. During 2014, staffing levels have declined to a little over 50 (38 of which are permanent) in anticipation of closure.

The current financial situation, as of June 30, 2014, is that all of Credit 4101 has been committed and disbursed. About 96 percent of Credit 4399 has been committed and 79 percent has been disbursed. Thus, the Project has a remainder of approximately US\$ 1.4 million (subject to variations in the exchange rate). These funds are already reserved for some important infrastructure repairs and to cover the exchange rate fluctuation.

1.2 Context for the International Advisory Panel (IAP)

1.2.1 First Panel

A first advisory Panel (also referenced in Bank and PIC documents as the Environmental and Social Advisory Panel) was appointed in 2004 to fulfill a requirement under OP 4.01 related to the Project's complexity. It carried out its first mission in December 2004. That Panel whose term expired in 2008 (Aide-Memoire, August 2009) completed its third mission focusing on issues of project design and the early phases of implementation in December 2007.

1.2.2 Second Panel

The World Bank Supervision Mission of August 2009 explicitly expressed the need for a new “International Advisory Panel,” because the Project was shifting toward the operational phase and the focus was to be on operation, maintenance and sustainability of the Project Investments. In various other documents, the panel has been referred to as an Environmental Social and Advisory Panel and/or an Independent Advisory Panel. The Panel has adopted the term International Advisory Panel [hereafter the Panel] referencing the terms used in the Aide Memoires of August 2009 and October-November 2011. Members of the second Panel were identified and contacted in 2010 and the Panel mobilized for a mission in June-July 2011. The Panel’s Report of August 2011, finalized in December 2011, was distributed to QMM, Ministry of Finance, Office National de l’Environnement (ONE), members of the QMM Biodiversity Panel and the World Bank.

In 2014, the PIC mobilized the IAP for a second mission that took place in from July 1 to July 27, 2014 with submission of a draft report anticipated in August 2014.

1.2.3 Members of the IAP

Three members comprise the Panel:

- Charlotte Bingham, Team Leader and Regional Development Planner with expertise in environmental and social safeguards;
- Michel A. Bouchard, Mining Expert with expertise in environmental assessment and environmental capacity building; and
- J. Keith Rennie, Social Development and Institutional Expert with expertise in social development and social safeguards, including resettlement.

1.3 Mandate and Scope of the IAP

1.3.1 Objectives

The specific objectives of the Panel’s mandate, as stated in its Terms of Reference (TOR), are to:

- (i) “Provide decision tools and recommendations, which aim to assess the environmental and social performances of the completed and/or ongoing actions. This will enable the Project to preserve the natural environment and to fulfill accepted international standards;
- (ii) Advise the GoM on the ongoing preparation of the IG2P closure.”

PIC has also asked the Panel members to:

- (i) Evaluate the implementation of the Environmental Social Management Plans and the Resettlement Action Plans with respect to the Safeguard Policies of the World Bank; and
- (ii) Propose the way forward to sustain [proposer des démarches pour la pérennisation] the activities conducted or under way in a regional perspective.

The Panel held initial meetings with the Environmental & Social Responsible, Harizo Rasolomanana, of the National Project Secretariat (NPS). Based on the PIC presentations and group discussions, the Panel

took into account the current circumstances of the Project, specifically that fewer than six months remained prior to project closure and most of the funds had been committed.

1.3.2 Scope

The scope of the IAP is to focus on environmental and social performance, including the World Bank safeguards aspects of Component C (Tourism-Led Growth in Nosy be) and Component D (Mining and Tourism-Led Growth in Fort Dauphin). As in 2011, the Panel did not address Component B (Export-led growth in Antananarivo-Antsirabe).

1.4 IAP Guiding Principles

The Panel formulated a set of principles to guide its work, based on the aim that projects should achieve sustainability for people and the environment as well as attain the objectives of the Bank's safeguard policies. These principles are:

- Pay attention to the livelihoods of people and the protection of the environment so that the benefits of infrastructure investments are enhanced, specifically:
 - Protect the world-recognized biodiversity of the growth poles that is critical to their tourism growth potential and
 - Protect the interests of project-affected persons (PAPs).
- Identify measures needed to ensure that PIC activities, once the Project is closed, do not create a negative legacy, e.g., compromise health and safety, degrade the environment or fail to restore the livelihoods and standards of living of PAPs.
- Characterize external factors and disabling circumstances that the Project cannot control, but are risks for Project activities.
- Recommend how to secure and protect the value of PIC activities such that:
 - Investments do not deteriorate prematurely or disappear with diminished or no future value;
 - Investments are environmentally, socially and economically sustainable and capable of being self-supporting without continued Project support.
- Describe the lessons learned from the PIC, both generally and with specific application to PIC 2.

1.5 IAP Work Program

The Panel received and reviewed many documents relating to the two Bank credits during the first mission and the second, including, a suite of Aide-memoires, previous Panel reports, various PIC and World Bank reports, sets of Environmental Impact Assessments (EIAs)/*Etudes d'Impact sur l'Environnement* (EIEs), Environmental and Social Management Plans (ESMPs)/*Plans de Gestion Environnementale et Sociale* (PGES), Resettlement Action Plans (RAPs)/*Plans d'Action de Reinstallation* (PARs) and TORs for resettlement evaluations. No final or final draft, comprehensive evaluation reports on resettlement activities, anticipated to be available to the Panel prior to their mission, were received prior to the Panel's completion of its mission. The absence of these reports constrained the accomplishment of the resettlement work according to the Panel's TOR.

The Panel members arrived in Antananarivo during the first week of July, 2014. After orientation by PIC in the Antananarivo headquarters office, the Panel conducted site reconnaissance and met with various PIC stakeholders, project beneficiaries and public and private sector representatives in Fort Dauphin from July 8 through July 13. The Panel conducted the same type of work in Nosy be during the period July 14 through July 18. During the week of July 21 through 25, the Panel interviewed additional stakeholders and debriefed the PIC National Secretary and the World Bank Task Team Leader in Antananarivo. A full itinerary and list of persons contacted and interviewed is presented in Annex A.

1.6 PIC Resilience

The Panel notes the resilience and adaptability of the Project to a variety of changing and challenging circumstances from 2005 through 2014. During the first four years, the PIC experienced Project restructuring, a high percentage of disbursement and commitment of funds leading to an early mid-term review, followed by an additional financing of \$US40 million that became effective in August 2008. But the PIC had hardly begun to spend the additional funding, when seven months later the Project was affected by the Madagascar political crisis in 2009, resulting in the suspension of all activities other than those designated as excepted measures and the loss of technical staff.

During the post 2011 years, as additional funds have been authorized, PIC has recovered and rallied. Important infrastructure has been contracted for and built. Most importantly, PIC has re-established itself as a stabilizing influence, especially in Fort Dauphin, and as an important liaison with beneficiaries and other stakeholders in both Nosy be and Fort Dauphin.

Despite the ups and downs of the socio-political situation, the constraints of spending and insufficient staff, the Project has attained satisfactory ratings on the accomplishment of the PDO and, depending on the rating period, satisfactory to moderately satisfactory ratings on implementation.

1.7 Panel Report Distribution and Disclosure

A draft Panel report in French was presented to PIC end July 2014. Based on comments provided by PIC on August, the Panel revised the report and submitted its Final Report in French on September 4th. As stated in the TOR for the IAP, the Panel's report will be made accessible to the affected populations and stakeholders. The World Bank will disclose the Report on its Infoshop Website.

1.8 Organization of Report

Chapter 2 focuses on the Nosy be growth pole and is divided into these sections: (i) Introduction; (ii) Environmental Safeguards and Sustainability Review; and (iii) Resettlement and Social Issues. Chapter 3 focuses on the Fort Dauphin growth pole and follows the same structure as Chapter 2. Chapter 4 summarizes lessons learned. The Panel's observations on the PIC 2 concept are presented in Chapter 5. A concluding Chapter 6 outlines next steps. There are seven annexes, providing a list of the persons met, list of references cited, illustrative photos, maps of the Nosy be and Fort Dauphin areas, and the two Terms of Reference for consultants to conduct PIC and QMM final resettlement evaluations, respectively.

2. Tourism-Led Growth in Nosy be

2.1 Introduction

The Panel visited Nosy be from July 14 to July 18, 2014 and, in addition to visiting project sites, held discussions with project stakeholders. PIC has continued to have a positive impact in the Nosy be growth pole and has completed additional infrastructure, including construction of the landfill site, installation of new generators at the site of the new JIRAMA central, construction of the Pont Jôby, rehabilitation of the port at Hellville and the port at Ankify, planting of a mangrove offset (as recommended by the IAP in 2011), reforestation in the watershed of Lake Amparihibe (water supply source), continued installation of water points (translate as bornes fontaines) and continued rehabilitation of the electricity network. Although tourist arrivals had been growing by 2012, the murder of three persons in September 2013 resulted in massive cancellations for the 2014 season. The shrimp production remains depressed as it was in 2011 and sugar production of the bankrupt SIRAMA continues to be closed.

Overall, the environmental and social performance of the project at the Nosy be pole is noteworthy and no major environmental or social problems have resulted as a result of anticipated and unanticipated impacts of the project. Clearly, PIC's achievement and contributions in infrastructure and facilities are visible and impressive in the case of the ring roads, port facilities and Mont-Passot (access road and observation deck {plate-forme d'observation panoramique}). With respect to Nosy be, the Panel concurs with the view expressed by the Bank's Fifteenth Implementation Support Mission for the Project (March 31-April 18, 2014) that the environmental and social safeguards rating remains *Satisfactory*. This mission also concluded that the ESMPs (PGES) [use PGES in French] of the ongoing civil works in Nosy Be were handled correctly by the contractors and met the requirements of the ESIAs (EIES) [use EIES], a conclusion which the Panel's mission essentially confirms.

2.2 Environmental Safeguards and Sustainability Review³

2.2.1 Safeguards Documentation

During project appraisal it was anticipated that the following policies would be triggered, namely PO/OP 4.01 on Environmental Assessment, PO/OP 4.04 on Natural Habitats, PO/OP 4.09 on Pesticide Management, PO/OP 4.12 on Resettlement, PO/OP 4.36 on Forests, PO/OP 4.11 (then OPN 11.03) on management of cultural property and finally PB/BP 17.50 on public disclosure. In the end, PO/OP 4.09 and PO/OP 4.36 were not triggered but all others were. For the purpose of the Panel's assessment, PO/OP 4.01 on Environmental Assessment, PO/OP 4.04 on Natural Habitats and PO/OP 4.11 on management of cultural property are discussed together; PO/OP 4.12 on resettlement is discussed at Section 2.3.

In accord with the objective "to provide decision tools and recommendations which aim to assess the environmental and social performances of the completed and/or ongoing actions" (TOR of the Panel), the Panel has paid particular attention to the environmental and social safeguard issues and impacts as well as to compliance with national and international standards and guidelines. Abundant documentation on post-2011 EIEs, PGES and RAPs (PARs) [use PAR in French], in various forms, in

³ Social and resettlement safeguards and sustainability are discussed separately at 2.3.

addition to the original Framework Environmental and Social Management Plans (Cadre de Gestion Environnementale et Sociale or CGES, 2005) were provided to and examined by the Panel. The safeguard documentation provided included a PGES for Mont-Passot, EIES, PGES and PARs for the Hellville and Ankify ports, the Madagascar equivalent of a PGES of the JIRAMA power station that was planned at the time to be 4.5MW, EIES and PAR for the landfill site, and EIES and PGES for the voiries urbaines and other structures, such as the water standpipes [use in French bornes fontaines]. While every document was not read in detail, all were examined to for critical implementation issues.

A mangrove biodiversity offset, a mitigative measure recommended by the Panel in 2011 to compensate for the loss of mangrove area upstream of the tidal gate at the Pont Cassé, entailed planting 25 ha of three species of mangroves (same species as existed at the Pont Cassé) within an existing 50-ha terrain domaniale (domain of the state). PIC prepared a technical note to document selection of the site where the three species already existed and establishment of a Communauté Locale de Base (COLBA) for the care and maintenance of the site and its limited exploitation (5 ha on a rolling basis). Reforestation at Lake Amparihibe was included as a mitigative measure in the EIES for Lac Amparihibe and a technical note was also prepared. No resettlement was involved and, thus, the Panel concluded that no additional safeguard documentation was needed.

Following the field visits and the examination of the documentation, observations and recommendations of the Panel are grouped into the following issues: (a) processing of subprojects under the CGES; (b) risk assessment and health and safety; (c) outcomes, management and sustainability; and finally (d) regional and longer-term issues.

2.2.2 Processing of Sub-projects under the “Cadre de Gestion Environnementale et Sociale (CGES)”

In general, all activities in the Nosy Be pole have complied with the requirements of both the Malagasy environmental assessment regulation and the Bank's safeguard policies. However, in one instance related to very modest works to improve the electricity supply, the activity was mis-categorized due to a discrepancy between the requirements of the Bank's PO/OP 4.01 and the Décret MECIE⁴.

In Nosy Be improvements for electricity supply entail the upgrading of several kilometers of 5.5kV lines to 20kV, the replacement of 706 rotten wooden poles by concrete poles (92 completed, 614 planned), replacement of pole-mounted transformers, and the construction of an additional 2km of 20kV lines and approximately 6 km of LV lines. The replacement of the poles, indeed, alleviates a safety hazard created by broken poles and live wires [poteaux endommagés et des fils à découvert] of which citizens have complained. .

As stated in the CGES (2005), all PIC activities are subject to both the Bank's Safeguard and Disclosure policies and to the Décret MECIE; in this context, the most stringent requirement would be selected. While the refurbishment of the power lines is not subject to environmental review according to the

⁴ Décret no 99/954 du 15 décembre 1999 modifié par le décret no 2004-167 du 3 février 2004 relatif à la Mise en Compatibilité des investissements avec l'Environnement.

MECIE, these works, however modest and with limited impacts, do fall under Category B of the Bank's PO/OP 4.01. Therefore, some EA instrument as defined in PO/OP 4.01⁵ should be applied.

- **Recommendation NB 1.** PIC to prepare a brief PGES for the upgrading and extension of the electricity supply lines and pay particular attention to the replacement and disposal of transformers.

2.2.3 Risk Assessment and Safety

The Panel identified environmental risk and safety issues for the following sub-projects or components: (a) the disposal of dredged material from the Hellville harbor front; (b) the temporary installations at the Hellville port for embarking and disembarking passengers; (c) the small dam at Lake Amparihibe (source of the Nosy be water supply) and finally, (d) the JIRAMA installations, including the "downtown" [use centre-ville] power station and the noise levels associated with it and the new power station.

Nosy be Port: Disposal of dredged material

As part of the rehabilitation and emergency works for the Hellville port, the harbor was dredged to recover the initial depth (- 3m). Such dredging was part of the rehabilitation plan from the very start. The 2005 EIES⁶ examined this component of the work and provided the analysis of 16 sediment samples from the dredging site. The analysis showed high levels of heavy metals and contaminations by PAH (Polycyclic Aromatic Hydrocarbures); contamination levels in some samples were above the threshold defined for marine disposal in eastern Canada (Saint-Laurent). The conclusions were:

Dans l'ensemble, les résultats obtenus indiquent que les sédiments présents devant les postes à quai et qui devraient faire l'objet d'un dragage permettant de redonner au port ses profondeurs initiales, affichent une qualité médiocre, notamment en raison de leurs teneurs en arsenic, chrome, cuivre, nickel, plomb et zinc. Les teneurs également élevées en hydrocarbures aromatiques polycycliques (HAP) témoignent par ailleurs d'une lourde contamination par des produits pétroliers qui fait en sorte que la qualité globale des matériaux apparaît incompatible avec un rejet en mer suivant les directives en vigueur au Canada et ailleurs dans le monde...

Un des problèmes important dans la gestion des sédiments de dragage à Madagascar est la non existence de barge à fond ouvrant qui permettrait le transport des sédiments dragués et leur déversement dans les hauts fond en dehors des zones sensibles. Dans ce contexte, les deux modes de gestion qui apparaissent, a priori, les mieux adaptés sont :

- *Le confinement des sédiments contaminés dans le remblai de la construction des nouvelles parties du port.* Cette possibilité doit être soigneusement planifiée dans l'étude

⁵ Footnote 13 of OP 4.01 states: Depending on the type of project and the nature and magnitude of the impacts, this report [for a Category B] may include, for example, a limited environmental impact assessment, an environmental mitigation or management plan, an environmental audit, or a hazard assessment. For Category B projects that are not in environmentally sensitive areas and that present well-defined and well-understood issues of narrow scope, the Bank may accept alternative approaches for meeting EA requirements: for example, environmentally sound design criteria, siting criteria, or pollution standards for small-scale industrial plants or rural works; environmentally sound siting criteria, construction standards, or inspection procedures for housing projects; or environmentally sound operating procedures for road rehabilitation projects.

⁶ Évaluation environnementale et sociale du pôle de Nosy Be; Tecsalt International, volume 2, document 05-13072, Juin 2005, 201 pages

technique détaillée (APD) car cela demande une planification particulière lors des travaux. Cette solution permet de garder la contamination aux abords du port.

- *Le confinement des sédiments dans les bassins étanches et leur traitement sur place jusqu'à la réduction du niveau de contamination acceptable pour une autre mode de gestion (rejet en mer, séchage et utilisation comme remblai terrestre, autre).*

After the works were allowed to proceed in 2012-2013, a specific EIES was produced in April 2013.⁷ By that time, the confinement of dredged material in an enclosure to the north of and within Hassanaly jetty [môle is the translation to be used for Hassanaly jetty] was integrated in the design. The EIES presented the partial chemical analysis of three additional sediment samples, which confirmed contamination with heavy metals and hydrocarbons above the thresholds of the Netherlands. However, the testing did not address possible PAH⁸ or MAH (notably BTX) contamination, specific testing for PCBs or possible contamination by organo-chloride and organo-phosphate pesticides. These types of pesticides were found as contaminants in surface and groundwater in parts of Nosy be in the survey conducted by the Office National pour l'Environnement (ONE) through the EMC (Environnement Marine et Cotière) in 1999.⁹

For technical reasons as well as difficulties in using the proposed site (several shipwrecks limiting access to the confinement site, insufficient structural integrity of the jetty and the presence of a private owner), COLAS (the construction enterprise) proposed an alternative mode for disposal of dredged material.¹⁰ Instead of storing and confining the contaminated sediments within and near the Hassanaly jetty, the decision was taken to dispose of them on land at a site owned and agreed to by SIRAMA. The World Bank authorized this change (email exchange between PIC and the Bank's Madagascar Office, September 11, 2013) with the following conditions:

Dans le cas de l'indisponibilité du site prévu dans l'EIES... il est nécessaire de garder les principes retenus dans l'EIES en référence à la qualité physico-chimique des boues de dragage et à son volume et de trouver un site de dépôt répondant aux exigences et dispositions de l'EIES :

- *Pas d'acquisition de terrain*
- *Mesures prévues : confinement du site de dépotage + pas de lessivage.*

Le nouveau site qui sera retenu sera détaillé dans le rapport de clôture environnementale du projet port sans compromettre les impacts résiduels attendus dans l'EIES.

⁷ Étude d'impact environnemental et social, Travaux d'urgence : Port de Nosy Be et Débarcadère d'Ankify, 155 pages.

⁸ PAH : Polycyclic Aromatic Hydrocarbons; MAH : Monocyclic Aromatic Hydrocarbon, including BTX: Benzene-Toluene-Xylene

⁹ Document not seen. Referenced in the EIES but not indexed in the reference list.

¹⁰ Mission De Gestion, Contrôle Et Surveillance Des Travaux De Réhabilitation Du Port De Nosy Be Et Du Débarcadère D'ankify-Region Diana-Madagascar; Note justificative des changements apportés au mode de gestion des produits de dragage ; Groupement COMETE INTERNATIONAL/ J.R.SAINA pour COLAS, 31 pages, Novembre 2013

Additional testing (four samples) and analysis of the dredged material were carried out. The analysis was limited to heavy metals and total hydrocarbon with no further characterization of other specific carbon-based contaminants or pesticides. Based on these limited physico-chemical parameters, the analysis concluded that : « *les taux de métaux lourds dans les sédiments ne présentent pas des contaminations dominantes pour le sol* ». ¹¹ Subsequently, the PGES was modified and a convention was signed between COLAS and SIRAMA. Approximately 3500 m³ of dredged material were disposed of; the disposal entailed pre-sorting of coarse debris (such as tires and large rocks) and isolation using a geomembrane over the original ground surface.

- **Recommendation NB 2.** In order to complete the environmental risk assessment of the disposal of the dredged material, the Panel strongly recommends that PIC conduct additional characterization and analysis of the dredged material, as deposited, including full hydrocarbon-based contaminants (PAH and MAH (BTX), PCBs and organo-chloride and organo-phosphate pesticides. Furthermore, the Panel recommends determining the eventual allowable land use, based on the results of the analysis and with reference to acceptable norms. In the absence of such norms in Madagascar, the Panel suggests use of the criteria from the Netherlands or Québec¹² to establish allowable land uses for rehabilitated or contaminated terrain.

Nosy be Port: Temporary installations for the movement of passengers at Nosy be Port

This observation is relatively minor, but given the safety hazards, the Panel believes that mitigation is warranted. While the Nosy be port has been considerably improved, embarking and disembarking from small boat shuttles between Nosy Be, Ankify, Nosy Tanikely and other surrounding islands is done via the side of the main slipway. Passengers have to walk onto a narrow concrete ramp, which at places stands 1.5 m directly above the water on the one side or above the slipway on the other side. The Panel was advised that this mode of passenger movement is temporary until the works are fully completed. Given the large number of people using this walkway and the danger of falls, a temporary protective measures should be envisaged.

- **Recommendation NB 3.** PIC to install a temporary handrail on the passenger ramp at Nosy be Port.

Dam safety at Lake Amparihibe

The water pumping station at Lake Amparihibe is set in a remarkable landscape of an ancient volcanic crater. During its mission in 2011, the Panel noticed evidence of the effects of deforestation in the immediate watershed of the lake and expressed concern both for loss of forest ecosystems and erosion of sediments into the lake, with eventual effects on water quality. The Panel also expressed the view that the management of the immediate watershed of Lake Amparihibe required special and increased protection. During the present mission, the Panel observed, with satisfaction, the results of reforestation efforts by PIC. However, the Panel had also observed that the dam was showing sign of

¹¹École Supérieure Polytechnique d'Antananarivo; Laboratoire Chimie Générale; Ref No 63/LAB/GC2013

¹² Gouvernement du Québec, 'Ministère de l'Environnement, du Développement Durable et de la Lutte contre les Changements Climatiques; Politique de Réhabilitation des terrains Contaminés; Annexe 2. Les critères génériques pour les sols et les eaux souterraines.

age and some water was seeping under it and through it. Originally designed to regulate water for downstream SIRAMA sugar cane irrigation and now functioning to maintain the water level in the lake for water supply purposes and some small-scale irrigation, this dam structure was built more than 50 or 60 years ago, possibly more (actual date is unknown). While this is a small dam, with no permanent residential population directly downstream, its old age and apparent poor conditions warrant carrying out a risk assessment of its structural integrity and, based on that, installation of some corrective or sealing measures.

- **Recommendation NB 4.** PIC to carry out inspection of the small dam at Lake Amparihibe and prepare an estimate of the nature, extent and cost of corrective of sealing measures.

JIRAMA Power Stations

Electricity supply in Nosy be is provided by the JIRAMA through two thermal power plants. The new power plant, supported by PIC, became operative in 2013, while the “old” plant, located within the city, was commissioned around 1958. PIC has supplied two new generator sets (total 4MW) as of May 2014, which complement JIRAMA’s thermal generation installed capacity of 4.8MW (three rented units) in the new plant. In order to satisfy the peak demand, the JIRAMA also maintains intermittent/limited capacity to operate in the old facility with a theoretical installed capacity of 4.6 MW. Both the new power plant and the old one pose environmental challenges, which are summarized in a document dated June 2013.¹³ These environmental challenges include conformity to the Décret MECIE for the old plant, eventually the need for a decommissioning plan as well as the need for an overall environmental management system for the new facility. Specific and major issues include handling hydrocarbons, handling, storage and disposal of PCB-bearing transformers and air and noise emissions standards.

While some of these challenges will be addressed and met as a result of requirements from ONE and the obligation of JIRAMA to meet the requirements of the MECIE, some health and safety issues require immediate attention from PIC. Both power plants produce loud noise, which is above the standards for residential areas. The “old” power plant, given its location in an urban setting, also has the potential for immediate danger from fire or explosion hazard, especially given the storage of PCB-bearing transformers. Noise levels at the old plant have been measured as ranging from 65 to 93 decibels at 100 and 5 m distance respectively. Noise levels at the new power plant have been measured at 100 decibels within the plant, can be heard at distance of up to 1 km and are reportedly heard along the beaches frequented by tourists. At the time of JIRAMA’s preparation of the PGES (the Madagascar equivalent called a PREE), noise mitigative measures for the surrounding population were not foreseen, although PIC reports that document was approved by the Bank under another multi-donor program for the development of JIRAMA. PIC’s involvement in supplying generators and reinforcing the short access way to the plant came later.

- **Recommendation NB 5.** PIC to examine the feasibility and costs of sound proofing, including fencing around the “new” power plant. PIC to install noise mitigative measures, if possible within project

¹³ Madagascar. Assistance technique pour la mise en place d’une Direction autonome de JIRAMA à Nosy Be. Section 5. Mission de formation en Gestion Environnementale; SEURECA, 17 pages (Section 5 seulement), Juin 2013

budget. As for the “old” JIRAMA plant, because of its limited use but also the dangers it presents, as an urgent matter, PIC to commission an environmental risk assessment study (*Étude de danger*) and develop a contingency plan in case of an emergency caused by accidental spills of fuels or burning of PCB-bearing transformers.

2.2.4 Outcomes, Management and Sustainability

The Panel, as noted earlier, is impressed with the positive and visible impacts of PIC’s initiatives and accomplishments in the Nosy Be pole. This conclusion is convergent with the evaluation of the Fifteenth Supervision Mission stating: *“The Project is on target to achieve nearly all objectives outlined in the results framework—some of them with a positive margin.”* The fall in tourist numbers following deaths of tourists in late 2013 and the “orange flag” that the French Government attached to the Madagascar destination was an unexpected interruption to the increased rhythm of tourism growth. (This was an exceptional event that should not be construed as general hostility to foreign tourists.) The unreliability (frequent departure delays and cancellations) of Air Madagascar’s domestic flights continues to deter travelers to visit unless there are direct charter flights, such as those organized by the Italian tour industry. Thus, PIC’s investments in upgrading and providing new infrastructure have not had the full outcome that might have been foreseen.

The Panel also observed unanticipated outcomes of various PIC investments in Nosy be. The Panel’s analysis of these outcomes has resulted in lessons learned vis-à-vis the long term sustainability of the activities, for example the anticipated (or calculated) outcomes may not materialize or the unexpected post-construction difficulties of operation and management of the infrastructure may affect long-term results. The Panel draws conclusions from three cases: (a) the Nosy be landfill; b) the “Pont Cassé” repairs, and (c) Nosy Tanikely National Park.

Ambalamanga Landfill

The Ambalamanga landfill was completed during 2013-2014 and is operational as of May 2014. The landfill was conceived as critical infrastructure for waste management on Nosy be. The EIES and PGES for the facility conform to international standards. The infrastructure was carefully planned and designed. However, in order for waste to reach the landfill, there must be an adequate, upstream waste collection system, which was to be financed from a combination of the commune fiscal revenue and users’ fees – the *Redevance Déchets Solides* (RDS) and *Taxe Ordures Ménagères* (TOM). A further source of anticipated income was the downstream processing [in French use valorization] of the organic waste component for composting. The management of this scheme has been transferred to a public-private organization, known as EGEDEN (*Etablissement pour la Gestion de Déchets à Nosy be*¹⁴).

At the time of the Panel’s visit, both the upstream and the downstream activities that were part of the waste management scheme were in trouble.

- Madacompost, the partner for the end-use of the waste through composting, was no longer involved. The nature of the waste was not foreseen, specifically, its heavy metal content related to the naturally high levels of trace metals in Nosy be volcanic soils, which find their way into the

¹⁴ EGEDEN is an *Établissement Public à Caractère Industriel et Commercial*.

waste basket. The Panel was told that Madacompost claimed that the metal levels exceed the accepted norms for tradable compost in Madagascar and internationally. In addition, Madacompost demanded an unexpectedly high level of fees for its participation in the scheme.

- At the upstream end, EGEDEN and the waste collection activities are underfinanced, due in part to delays in transfers of commune taxes. The only presently successful and efficient waste collection is through an NGO, Tanamadio, which has been active and organized for several years in selected fokotany in the western part of the island. The Panel concurs with the views expressed by the Fifteenth supervision mission: “The mission notes that the financial viability of the new management scheme is fragile since EGEDEN is expected to face operating losses during the first two years (2014-15) while the quality of services provided by the Municipality will depend on its income streams.”

As a result of these unexpected external factors, and despite a carefully planned and integrated operation, the Panel believes that there is a risk that the landfill becomes an “*éléphant blanc*” and remains under-used, while, at the same time, the waste management on the island remains sub-optimal.

- **Recommendation NB 6.** The Panel recommends that PIC assist EGEDEN and the commune authorities, to the extent possible, to collect and transfer the RDS and TOM. If funds are available, PIC should kick-start EGEDEN, with material support and equipment (collection vehicles). PIC is advised to encourage and provide training to EGEDEN to produce and market compost for an internal island market, specifically the golf course, which could potentially benefit from locally-produced compost. In addition, EGEDEN should also be advised to seek additional financing resources.

The Marodokany (Pont-Cassé) Repairs

PIC successfully restored a bridge at this location with a tidal gate assuring adequate hydrological conditions for a fully functioning tidal-mangrove ecosystem. Nevertheless, the outcome in the end is undesirable, as the mangrove ecosystem was effectively lost, because of continued human occupation of the site (residents refused to be resettled). The hydraulic structure serves to flush sewage into the bay and creates a barrier where all manner of wastes from the residential area and the surrounding urban watershed accumulate. PIC has already provided a mangrove-offset, making-up for the habitat loss. However, 238 habitations (337 households) remain in suboptimal sanitary and health conditions for which some complementary efforts to manage solid and sanitary waste are required.

- **Recommendation NB 7.** PIC socio-economic team to intensify its effort to organize and assure adequate waste collection and management at Marodokany and in the surrounding urban watershed. See also recommendations under Section 2.3, Resettlement and Social Issues.

Nosy Tanikely

PIC facilitated the establishment of Nosy Tanikely as a National Park (also referenced as an Aire Protégée de Conservation Marine or APMC) and documents were signed to this effect in early 2012; a complete and sound PGES was prepared. The Operational Manual (Manuel d’Exploitation du site) limits the

number of daily visitors in order to avoid pressure on the sensitive marine and littoral resources. During informal discussion with a tour operator, the Panel learned that the APCM is indeed a success story as it attracts numerous visitors and is a standard excursion offered by hotels and tour operators. Despite low overall tourism numbers, especially during 2014, tour operators perceive that there is overcrowding and too much waste accumulation at the site. According to the MNP statistics, the limit of 150 visitors at one time has never been exceeded and the typical number is between 30 and 50.

- **Recommendation NB 8.** The Panel recommends that PIC inform tour operators of the limited “capacité d’accueil” of Nosy Tanikely, examine the actual number of daily visitors and discuss with ORT and tour operators the desirable limits for visitors.

2.2.5 Regional and Long-Term Issues

Comité de Suivi Environnemental de l'ONE

The environmental assessment process of Madagascar (Décret MECIE) has created a *Comité de Suivi Environnemental National* to ensure and monitor correct applications of the various PGES that have been approved by ONE. Surveillance and monitoring of the application of PGES by the regulating authorities is a crucial tool for credible and correct application of environmental mitigation. In Fort Dauphin, for example, the number and importance of tasks related to the regulators’ suivi and surveillance of QMM have led to the creation of a “*Comité de Suivi Environnemental Régionaux*” (CSER), a reasonably efficient tool for the purpose. Such a CSER was not instituted for the Nosy be Growth Pole. In the anticipation of PIC 2, a regional CSER will be useful at the scale of the whole Diana-Diego Suarez region, in order to assure credibility, better regulation and efficient environmental management.

- **Recommendation NB 9.** The Panel recommends that PIC share lessons learned with the World Bank preparers of PIC 2 concerning the need for a CSER and assist ONE and a regional authority to install a CSER for the Diana-Diego Suarez region in preparation for the surveillance and monitoring of PGES documents related to PIC 2.

Energy planning

Energy supply at Nosy provided by JIRAMA is entirely produced from fossil fuel through thermal power plants with high levels of Greenhouses Gases emission (GHG). In its 2011 Report, the Panel sought to determine if potential alternative sources have been or could be considered in the short-term, or as part of an eventual PIC 2 and a Green Growth Pole approach. During the present mission, the Panel learned with satisfaction that PIC has examined solar, hydro and aeolian sources of renewable energy. Two masts are collecting wind data at Ampilao and Mandre since September 2013; measurements should allow for an objective assessment of the wind potential on the island. However, the recommendation by the Panel in 2011 to examine potential geothermal energy sources appears not to have been addressed sufficiently in study of renewable energy. The Panel’s comment from 2011 remains valid:

- “Since Nosy be is located in the volcanic terrains of Madagascar, geothermal energy sources were considered a potential alternative. The Panel was informed that the geothermal energy potential of Madagascar, as a whole, was studied almost thirty years ago, under funding by

the UN, and apparently the World Bank¹⁵. The Panel met with specialists from the École Supérieure Polytechnique of the University of Antananarivo for an update to that reconnaissance study and to learn more about the potential for geothermal energy production in Nosy be. According to Prof. Andrianaivo, there are two thermal sources on Nosy be which together could provide a potential of 5 and up 10MW of power, with a lead time of as few as 5 years to establish a geothermal power plant with presently available technology¹⁶. Such a supply would amply meet the local power demand (around 3,8MW) and its anticipated growth for several years.”

- **Recommendation NB 10.** The Panel recommends that PIC gather documentation and previous studies concerning the geothermal resources of Madagascar; establish contact with geophysicists and researchers of the University of Antananarivo to update available information; and communicate the information to preparers of PIC 2 so they might consider geothermal resources and/or make recommendations to JIRAMA to consider geo-thermal energy in their long-term planning.

2.3 Resettlement and Social Issues

2.3.1 Introduction

The Panel's TOR for social safeguards focus on compliance with Bank PO/OP 4.12 on Resettlement. The Panel has placed particular emphasis on the need for PIC project closure to proceed in compliance with that policy. While verifying resettlement compliance is a central issue, the Panel thinks it appropriate to take a wider perspective of social benefits and social risk across the project, particularly in relation to outcomes, sustainability and future social risk. The Panel situates the issue of compliance within that perspective.

In addition to site-specific questions, the Panel's field investigations on social safeguards were informed by the following concerns:

- What was the overall socio-economic impact of the project in the area and what issues might affect sustainability of outcomes?
- Were resettlement issues appropriately handled in relation to Bank policy and guidance? What was done well, and what was done acceptably? Were the Panel's 2011 recommendations followed?
- Are there any unresolved resettlement issues to be addressed during closure where outcomes or process have not met Bank standards?
- Have any new social risk issues emerged in this project that were not evident in 2011 and, if so, how should they be addressed?

¹⁵ Gunnlaugsson, E., Arnórsson, S., and Matthíasson, M., (1981): Étude de reconnaissance des ressources géothermiques de Madagascar, Projet MAG/77/104, Contract 141/79 VIRKIR, Traduction française, 1, 1- 101. See also Gunnlaugsson, E., Arnórsson, S., and Matthíasson, M., 1981: Madagascar: Reconnaissance survey for geothermal resources. *U.N. Report: Virkir*, Consulting Group Ltd. Reykjavik, Iceland. Vol. 1 of 2, 4.2-6.

¹⁶ Andrianaivo, L., 2011, Caractéristiques générales des systèmes et des régions géothermiques de Madagascar; Madamines, vol 2. p.11-21.

2.3.2 Site Visits

Of the 16 activities with resettlement issues, five are in Nosy be. These are listed below in Table 2-1, together with the applicable RAP volume number as it appears in the Bank project document database. The Panel visited almost every site in which resettlement had been identified as an issue in 2011, together with additional sites where issues had been identified.

Three sites visited in 2011 were not included in the 2014 itinerary:

- Nosy Tanikely APMC (Resettlement Process Framework [PARAR]) was not visited, as there were no issues reported.
- Nosy be northern ring road [ceinture] where the resettlement outcomes covered in 2011 were satisfactory and issues were well investigated in 2011.
- Lokobe nature reserve has been reclassified as a National Park and is now administered by the MPM and the World Conservation Society. The Panel confirms that it is outside of the scope of PIC.

Two additional sites, not visited in 2011, were included in the 2014 Nosy be itinerary:

- Hassanaly jetty (translate as môle), at the eastern extremity of the PIC works for the Hellville port;
- Ankify, the sister port of Hellville on the main island, for which a new RAP had been prepared in 2013, but not explicitly included in the PIC contracts for resettlement evaluations/audits.

Table 2-1: Resettlement Sites and PARs

Area	Site	Instrument	Vol No ¹⁷	Outstanding issues	Panel visit	Issues
Nosy be	All	CPR covered Nosy be and Fort Dauphin	02	TBD (Coverage of land occupation issues) ¹⁸		Closure documentation for all sites not yet satisfactory.
PIC-Nosy be	Tanikely Protected area	PAR, PARAR	1, 8, 9	None noted	2011	none

17 In the Bank project database, 14 resettlement documents are listed. There is no direct one-to-one correspondence between the volume numbers and the 16 resettlement sub-project sites. The marine reserve now National Park of Nosy Tanikely had three separate revisions (vols 1, 8 and 9: 2005, 2008).

18 In Madagascar 'occupation' refers to agricultural use (clearance, planting), not to residence. Occupation traditionally establishes recognized rights, although not formal title. It contrasts with usufruct and pasturage, which are areas of community use.

Area	Site	Instrument	Vol No ¹⁷	Outstanding issues	Panel visit	Issues
PIC-Nosy be	Northern Ring Road [ceinture nord]	PAR	5	None noted	2011	None
PIC-Nosy be	Roads and infrastructure [tronçons et voiries]	PAR	06	Pont Cassé living standards unacceptable (community refused resettlement). Dzamazdar pavillions used for accommodation not trading.	2011, 2014	Public health intervention for Pont Cassé to be substantially intensified and maintained (education, clean-up, solid waste collection and disposal)
PIC-Nosy be	Mont Passot roads and tourism	PAR	13	None noted	2011, 2014	none
PIC-Nosy be	Hellville & Ankify ports	PAR	14	None noted	2011 (Hellville); 2014 (both)	none

Throughout its field visits, the Panel was accompanied by PIC field staff. It preferred, in most cases, to gather information in situ from the field staff in preference to direct interviews with PAPs and other local residents. The Panel was impressed by the extent to which the Nosy be field staff, had free and easy relations with the local population and by their in-depth knowledge of the local situation.

2.3.3 Socio-economic Impacts

In comparison with the observations of 2011, a clear if modest upturn in the local economy was evident. While some of this is likely due to the general national recovery of stability and return to normalcy, it is evident that the PIC sub-projects and interventions have played a noteworthy role in bringing a sense of renewed prosperity and optimism to Nosy be. In 2011 there had been some fear that large hotel expansion and package tourism might swamp the local economy. In fact, the local economy has thrived partly through trickle down, such as tourism-related services (scooter hire, local restaurants and crafts, diving and snorkeling services) and partly through niche development. For example, a small woman-owned restaurant serving primarily local clientele has in the last three years added four well-built and furnished guest bedrooms and the owner now has a computer and a vehicle. Road rehabilitation has allowed easier vehicle circulation and facilitated the recent proliferation of the popular yellow, three-wheeled scooter taxis, *bajaj*, which charge much less than the traditional taxis and appear to be

replacing them. The increased penetration of mobile phones and mobile money has greatly facilitated transactions. Signs of a positive impact from port rehabilitation are already evident. The Nosy Tanikely National Park has become a popular destination.

Among the constraints to future growth, the Panel notes the following obstacles:

- the uncertain performance of Air Madagascar and the “orange alert” of the French government deterring tourists from France;
- the obstacles to liberating land for economic development, SIRAMA being a particular obstacle: a moribund company, technically bankrupt, but not relinquishing its land assets; and
- the difficulties in putting in place a functioning solid waste system; and

Despite implementation delays and the presence of wider constraints, PIC has begun to achieve its overall objectives, benefits are reaching the poor and Nosy be is ready for the next phase of integrated sustainable regional growth.

2.3.4 Social Safeguards Compliance

Delayed Resettlement Evaluation/Audit Reports

One major hindrance arose at the outset of the Panel's mission and persisted through to the time of its report preparation. The April 2014 Bank mission reported that the Panel would be able to review the social safeguards evaluation/audit, to be prepared for the PIC activities by a local consultant managed by PIC. The TOR for the PIC projects for Nosy be and Fort Dauphin are provided in Annex E. These reports were to have been ready in time for the arrival of the Panel in June. Despite the postponement of the mission until July, the report for Nosy be was not available even in draft. The Panel endeavored to interview the consultant for PIC in order to learn as much as possible about the conduct of the study and its provisional findings, but this attempt was unsuccessful.

In view of the centrality of the task of reviewing the consultant studies and the paucity of information available to the Panel except for selected documents that were made available during the mission, little reliable statistical information was made available. This situation is exacerbated by the many inconsistencies in numerical information among the various documents from 2005 – 2014, which makes tracking, comparisons and conclusions difficult. Since it was not the role of the Panel nor was there time to redo work contracted to a consultant, the Panel chose to develop a general view of the outcome of resettlement activities through interviews and field observations that were informed by an extensive photographic record together with the use of ad hoc indicators described below.

Aire Protégée Nosy Tanikely and Route de Ceinture Nord

As noted, the Panel did not visit the Nosy Tanikely National Park or the Ceinture nord road rehabilitation in the 2014 mission. Based on the previous 2011 observations and information provided by PIC staff, the Panel believes that social safeguards have been done satisfactorily. What remained then and still remains, in common with all other PIC sites, is a final report and audit to confirm these conclusions.

Rehabilitation de Tronçons de route (Voiries urbaines et voies de desserte sud) à Nosy be

The Panel revisited these sites, which it had previously viewed in 2011, including Pont Cassé (see section 2.3.5, below). The road rehabilitations have raised the general character of the place; economic activity has increased, not only in volume but also in variety and sophistication, for example the *bajaj* tricycle

scooter taxis referred to earlier. Two specific sites had features worthy of comment.

- **Dzamandzar market.** The rehabilitation of a secondary street, which was a busy commercial area, had necessitated the displacement of 26 informal traders who were blocking the route. For them, pavillions [use pavillons in French] had been constructed on a vacant (municipal) plot on the other side of the main road. However, the PAPs mostly refused to operate from there on the grounds that all the business was on the other side of the street. One restaurant and one shop selling pesticides and agrochemicals were evident. The remaining pavilions had been converted into small residences rented by the PAPs. Because this is illegal, the commune is planning to repossess the pavilions, which had been allocated on lease with the first year rent-free. The Panel does not consider this a safeguards compliance issue.
- **Ambatoloaka market, Dar es Salaam** was a good example of a successful market relocation. The PAPs had done well individually and the market had grown substantially, so that it was now impossible to know who was a PAP and who was a non-PAP, a very positive resettlement outcome.

Ports Ankify and Hellville

The Panel welcomed the decision to improve the port at Hellville and its sister port at Ankify on the mainland, some 20 km distant. These ports provide the main route of exchange between Antananarivo (goods arriving by road, a distance of 750 km now paved) and Nosy be.

On Ankify, some 30 traders had been displaced from the port and adjacent road and installed in a new market nearby. The marketeers comprise three groups: (a) sellers of fresh fruit and vegetables, from a large communal stall in the centre; (b) gargotiers, sellers of “fast food snacks” cooked on the spot; and (c) general shops and restaurants.

Substantial and highly informative interviews were held with one male representative of the marine association (not PAPs, but with an office in the market) and one women, representative of the marketers. The translocation was recent, only two months old, but the market was bustling with activity. Some PAPs had rented out their places and had returned to operate a business on the side of the main port road, thereby doubling their income. The grievance handling mechanism appeared to be working effectively, grievances being small and manageable. Compensation seems to have been handled appropriately.

The Ankify market relocation appears to be an example of good practice. This is important because in the not-too-distant future the commune and APMF (port management authority) plan to relocate roadside traders and stalls, both within the port boundary and along the first hundred or so meters after. The RAP experience can serve as a training example that will help to ensure continuity of good practice even after PIC withdraws.

The market population expressed strong interest in the construction of a pedestrian passenger bridge between the market and the embarkation area of the port, originally included in the plans, delayed for technical reasons and initial local opposition and then dropped because of insufficient funds. A well-constructed bridge would be highly desirable for passengers and the marketers, as this improvement

would separate pedestrian and vehicular traffic resulting in greater safety and bring additional life to the market. The Panel feels that PIC should use its good offices to find a solution.

- **Recommendation NB 11.** PIC should invest some effort in fully documenting the planning, process and outcome of the Ankify market resettlement, on grounds that it could form a good practice example to be used for training and capacity building of local authorities.
- **Recommendation NB 12.** PIC should look for a donor to finance the passenger footbridge or consider including the footbridge in PIC 2.

Conclusions

In comparison with the Fort Dauphin-QMM situation, PIC in Nosy be has faced modest challenges in implementing resettlement policies according to the Bank's requirements. Process and outcomes have been generally satisfactory, with a sense of learning on the job, building capacity, and improving performance. As noted above Ankify, the most recent RAP, is considered by the Panel to be best practice whose results are worth documenting, disseminating and using in training and capacity building.

The absence of proper RAP closure documentation, or basic audit and accounting information in an accessible form, causes considerable concern to the Panel, particularly when taken in conjunction with the unsatisfactory state of consultant reports. The Panel does not doubt that appropriate information is retained in the project in different forms and places, and in unfinished documents, but it also infers that a considerable amount of real information (as distinct from data) is tacit institutional knowledge.

Insufficient attention to safeguards documentation and outcome reporting is not uncommon in the Bank or other donor institutions, particularly in comparison with the level of effort and achievement in RAP preparation.¹⁹ In fact, PIC has a good story to tell, that deserves to be told both for its own sake and for wider learning. But more particularly, monitoring, outcome reporting and audit are formal explicit requirements of OP 4.12 that have yet to be met. The Panel regrets that it was not able to benefit from the resettlement evaluation reports, which are a key requirement to meet Bank OP 4.12 performance standards. Therefore, the Panel makes the following recommendation:

- **Recommendation NB 13.** In order to be ready for closure, **satisfactory documentation reports must be available** for review not later than the beginning of November 2014, the proposed date of the final Bank mission and the commencement of ICR preparation.

2.3.5 Social Risks to be addressed before Closure

The Panel considered what social risks might lie ahead, how to assess them and how they might be mitigated. It also considered whether any were of sufficient urgency and importance as to require attention before closure.

Pont Cassé

Pont Cassé is a tidal lagoon and former mangrove swamp, which has become an urban slum. PIC was originally involved because it financed the construction of the tidal gate. As noted in Section 2.2.4, the

¹⁹ IEG, 2010, pg. 31 and pg. 45.

project had planned to resettle the population adjacent to the lagoon, for reasons of public health and safety. The population refused to move, there were demonstrations and local politicians supported the population. . The Panel in 2011 recommended that PIC obtain signed statements from the inhabitants that they refused to move, were willing to forego the benefits of resettlement and accepted the consequences of remaining. PIC obtained 377 statements from household heads residing in the 238 Pont Cassé houses (some houses are occupied by more than one household).

PIC and the commune have worked with the community to sensitize them to public health matters and to arrange weekly communal clean-ups of the trash that characterizes the site. These efforts have had limited success. By the time of Panel's 2014 visit, the situation had become worse to an unacceptable degree. The area adjacent to the bridge and the tidal gate was choked with all kinds of floating garbage including the rotting carcass of a dead dog. The Panel learned that some—perhaps half—of the trash is swept down from upstream urban quartiers, where solid waste collection is still quite inefficient. The chef de Fokotany Camp Vert, one of the quartiers involved (the other two are Ambodivato and Senganinga) made a formal written agreement to clean up the site, that has yet to be honored. To leave this legacy that is associated with a Bank-financed intervention, should be considered unacceptable and a corporate reputational risk.

- **Recommendation NB 14.** Faced with the impracticality of forcing people to move against their will, which would risk major unrest, or filling the lagoon with aggregate over large pipes to carry the water flow, the only remaining course of action is to deeply intensify the two-pronged approach currently under way, as noted below.
- Intensify work with the community on public health education and the risks and costs of the present situation, doubling the clean-up effort and the active engagement of the municipality; and
 - Put in place throughout the town in the watershed above the lagoon, an effective system of solid waste collection and watershed protection, with fines for uncontrolled solid waste dumping.

Hassanally Jetty

Here within the Hellville APMF domaine (translate as la domaine portuaire), the Panel encountered an anomalous situation. Immediately adjacent to the perimeter of the new port is the privately owned jetty Hassanally, belonging to a locally prominent landowner. This jetty is included within the perimeter of the APMF port domaine. The jetty is currently occupied at the landward end by an informal chandlers' workshop, with small boats under repair nearby. The owner has argued that he was not notified or compensated, but he is willing to be expropriated for compensation or to allow public use of the jetty provided the Chandler's workshop is moved. This would not be a major resettlement exercise, but the Panel judged that this situation is an induced effect of the larger APMF port operation and not directly connected to the port rehabilitation conducted by PIC and financed by the Bank. It therefore makes no recommendation on this matter.

Apart from these two issues, the Panel did not find any significant social risk or project closure issues in Nosy be.

3. Mining and Tourism-Led Growth in Fort Dauphin

3.1 Key Findings

The Panel visited Fort Dauphin from July 8 to July 13, 2014 and, in addition to visiting project sites, held discussions with various stakeholders, including Rio Tinto/QMM [hereafter QMM], the major player in economic growth. The most visible and lasting achievements have been PIC's participation in the construction of the Ehoala Port, the completion of the rehabilitation of Provincial Road (RIP) 118, the paving or rehabilitation of rural and urban roads, and the contributions to water distribution, waste management and power supply in the urban area. Constructed primarily for mineral shipping, the Ehoala Port has become a success story in the transport of non-mining goods and containers, as an attractive destination for cruise ships and as a hub port for the southern Indian Ocean.

After the suspension or limitation of activities in 2009, PIC entered what one of the Panel's interlocutors called a "discreet" mode. The permitted activities, largely related to environmental and social safeguards and measures of "accompagnement," constrained the ability of PIC to continue infrastructure development. The large contrast between conditions of civil infrastructure and the livelihood of the general population versus superior conditions associated with QMM roads and facilities were a source of social tension. PIC's resumption of works (such as rehabilitation of the voiries urbaines, in particular the urban section of RN 13, the electricity system as well as the Ankarefo landfill construction) appears to have helped ease social tensions by providing better amenities for the Fort Dauphin population. Because of the dominant presence of QMM in the area, QMM is often perceived, rightly or wrongly, as the source of problems or as the "seigneur" who should be solving them.

3.2 Environmental Safeguards and Sustainability Review

The Panel determined that requirements of both the Malagasy environmental assessment procedures and the Bank's safeguard policies have been largely respected by PIC's projects and initiatives. QMM activities, which fall under safeguards obligations by its association with PIC's investment in the Ehoala Port facilities have also been respected, with special provisions to be discussed in the application of P.O/O.P. 4.12 on resettlements (see separate discussion in Section 3.3).

In addition to field visits, interviews and meeting, abundant documentation on post-completion environmental surveillance and monitoring were provided to and examined by the Panel. For the purpose of this report, observations, and comments are grouped in two sets, pertaining respectively to the QMM operations and specifically QMM environmental suivi and surveillance, on the one hand, and to environmental considerations for the PIC Fort Dauphin growth pole, on the other hand.

3.2.1 Safeguards Documentation

QMM Bilan and CSER Evaluation

In August 2013, QMM released a "*Bilan des suivis sociaux et environnementaux 2009-2012- Phase opérations minières*" covering the period from January 2009 to December 2012. The report is voluminous, (424 pages with 334 pages of Annexes covering all activities of QMM, including mining/mineral extraction, Ehoala Port, quarry sites, and numerous other installations, including roads, housing, a water treatment facility and others. The *Bilan* is responding to the requirements of eight PGES prepared for the various installations, infrastructure and activities between 2006 and 2009, in

addition to an original PGEP (*Plan de Gestion Environnemental du Projet*) prepared in 2001, prior to any World Bank involvement.

A separate evaluation of the continuous and successive responses of QMM to requirements of the several PGES was published by the Comité de Suivi Environnemental Régional (CSER) of ONE in Fort Dauphin, for the period 2006-2011.²⁰ This independent evaluation is equally impressive; it compares, for each topic or theme, what was required in the PGES with what has been monitored and reported by QMM. The CSER evaluation does not contain a pass/fail type of evaluation, but, instead, contains assessment of all components of the projects in sufficient detail to conclude that, fundamentally, QMM is meeting the environmental and social obligations contained in the various PGES.

In addition to the examination of the documentation, the Panel also met with QMM environmental personnel and visited the several QMM sites, including the port and the quarry and the mined zone in Mandena with emphasis on the rehabilitation program. The Panel was informed that environment and social responsibilities at QMM have recently been reorganized with two complementary departments, one focusing on Biophysical and Industrial Environment and the other focusing on Community Relations and Sustainable Development [translate as Relations Communautaires et Développement Durable]. Furthermore, QMM has developed a Social and Environmental Management Plan, which includes commitments to best practices and aims at acquiring, in addition to all required environmental authorizations, a “social license” to operate.

The Panel found the *Bilan* (made available to the Panel in paper and electronic format) informative, thorough, in conformity with PGES requirements and beyond. By international standards, QMM is achieving high marks in environmental management of its activities and meets all environmental Bank safeguards (see also Section 3.3 for a discussion of Involuntary Resettlement). The Panel recognizes that environmental monitoring of the PGES is well-documented and as far as can be judged, results are being effectively and fully communicated to the Comité Technique d’Évaluation, ONE and the Comité de Suivi Environnemental Régional (CSER) as well as to local authorities.

The Panel also wishes to articulate several comments and questions concerning issues mentioned in the *Bilan* or absent from it that the Panel believes necessitate clarification or complementary information.

No.	Comment or Question
1	Bilan Chapter 6, Section 11 accounts for all environmental incidents. Most of the incidents are related to spills of various hydrocarbon products or hazardous waste. A total of 140 incidents have been reported of which 7 were considered “serious” ²¹ ; all were confined to the Mandena mining

²⁰ Évolution des composantes de l’environnement, autour du projet Ilménite de RTIT/QMM, Site de Mandena, 2006-2001; Ministère de l’environnement et des Forêts, Office National pour l’Environnement, 102 pages

²¹ «Un incident dont l’impact est confiné près de la source sur le site entraînant un dommage environnemental réparable à long terme ou un incident hors site dont l’impact est confiné près de la source entraînant des dommages non immédiatement réparables.»

	site. One serious incident reported in 2011 was the spill of hydraulic oils, stated to be report entirely recovered. The Panel recognizes that QMM internal policy allows for quick reporting and keeping track of all incidents. Because some mechanism must be foreseen to inform the responsible authorities in case of such accidents, the Panel recommends that PIC seek information on (a) the threshold or the magnitude of the incident that triggers immediate reporting to the responsible authorities, (b) how many incidents have been reported to the communal authorities and/or to ONE, and (c) what are the mechanisms foreseen to inform the population in the case of an immediate danger as a result of a major environmental accident.
2	QMM is using a number of hazardous products, including TBE (tetrabromoethane). Given the possible environmental hazard associated with spills or loss of TBE, the Panel recommends that PIC be informed regarding (a) the total amount of TBE used per year (or months); (b) disposal methods for TBE after its use; and (c) tracing and accounting for TBE from its entrance to and exit from Fort Dauphin; and (d) other halogenic hydrocarbons used.
3	The <i>Bilan</i> mentions a bioremediation site that was to be effective in May 2013. The Panel recommends that PIC obtain information on the progress in establishing this facility, and enquire about the volume of hydrocarbon-contaminated material expected to be treated annually.
4	Water treatment appears to be sub-optimal; QMM reports numerous analyses where various norms are exceeded, particularly, the effluents from the “base-vie” and from the “usine” treated at <i>Campement Pionnier</i> . While the report seems to identify correctly the problems and the operational deficiencies, the Panel recommends that PIC enquire about the nature and progress of remedial measures, which QMM is or will put in place.
5	In 2011, the PDS (Président de la Délégation Spéciale or Mayor) at Fort Dauphin. informed the Panel about shoreline recession. It was not clear if this phenomenon was attributable to the normal process of bank recession or was related to the changing coastal erosion pattern as a result of the <i>Port d'Ehoala</i> . The PDS indicated that the latter was a common belief among the population and/or was related to climate change. Already in 2008, technical studies had been conducted by QMM and the Ehoala Port authorities on shoreline recession and beach erosion as a result of the Port and changes in ocean currents related to climate change. ²² Monitoring of a number of shore profiles was planned and a final report was to have been prepared. The Panel urges PIC to follow-up and obtain the data on monitoring of shoreline recession as such data are not found in the <i>Bilan 2009-2012</i> and no final report appears to be available.
6	The QMM <i>Bilan</i> provides indications and measurements that indicate a higher level of radioactivity in areas that have been mined and are awaiting rehabilitation, which appears to be related to use of topsoil in preparation for re-vegetation. QMM is planning further in-depth studies to understand the phenomenon. PIC should enquire about these studies and QMM's plan to communicate information to responsible authorities.
7	As of 2012, QMM reported handling 95 complaints, mostly related to matters of compensation or occupation of land. However, a number of complaints concern halieutic resources presumably affected by the weir installed by QMM to regulate the water flow in the lagoon system (Lac Lanirano – Lac Ambavarano). QMM has also informed the Panel that the weir is no longer a critical installation as the water demand for the mining process is satisfied by other means. The Panel recommends that PIC enquire about restoration of the original lagoon system and if QMM envisages this.

PIC-related safeguards information

As for the Nosy Be growth pole, following the field visits and the examination of the documentation, observations and recommendations of the Panel are grouped into the following issues: (a) processing of subprojects under the CGES; (b) risk assessment and health and safety; (c) outcomes, management and sustainability; and finally (d) regional and longer-term issues.

²² Rio Tinto, June 2008, *Bilan Social et Environnemental*, Section 7, Chapitre 4, Addenda Sols: "Suivi des berges de la Baie d'Ehoala, pp.1-11.

3.2.2 Processing of Sub-projects under the Cadre de Gestion Environnementale et Sociale (CGES)

In general, activities in the Fort Dauphin growth pole have complied with the requirements of both the Malagasy environmental assessment regulation and the Bank's safeguard policies. However, in one instance related to very modest works to improve the electricity supply, the activity was mis-categorized due to a discrepancy between the requirements of the Bank's PO/OP 4.01 and the Décret MECIE. This situation is similar to that described for electricity rehabilitation in Nosy be. In Fort Dauphin, improvements for electricity supply entailed the upgrading of 19 km of 20kV lines, 90 km of LV lines and the installation of 1000 concrete poles to replace rotten wooden poles, plus the installation of 384 street lighting units and 116 spares. Based on the same rationale provided for the similar activity in Nosy be (see Section 2.2.2), some EA instrument as defined in PO/OP 4.01 should be applied. The principal difference is that the refurbishment has already occurred in Fort Dauphin, whereas it has not yet occurred in Nosy be.

- **Recommendation FD 1.** PIC to prepare a brief self-audit of the upgrading and extension of the electricity supply lines with particular attention to the replacement and disposal of transformers.

3.2.3 Risk Assessment and Health and Safety

Water supply

PIC contributed significantly to water and sanitary infrastructure in Fort-Dauphin (115 fontaines, 15 lavoirs and 5 blocs sanitaires). The Panel noted in its 2011 report that the perceived quality of commune drinking water by the general population was that it had much worse quality than the water supplied by QMM, which operates a separate treatment plant. In fact, both QMM and the commune take their water from the same source, namely Lac Lanirano, and the two plants are adjacent to each other. Both water intakes are equipped with a treatment plant presumed to be capable of achieving potability, as per Malagasy norms. The QMM plant has been operational since 2008; the plant has required adjustments both in equipment and treatment methods over time and provides water that meets or exceeds standards for potable water. A second water treatment plant, to which PIC contributed some equipment, is supposed to provide similarly potable water to the commune. Both treatment plants use a classic treatment system based on successive oxidation (sodium hypochlorite), oxygenation, pH balancing, flocculation, sieving and disinfection. However, the water distributed from the municipal treatment plant appears to be frequently below the norms for bacteriological components.

- In the words of the CSER: “ À noter toujours que les paramètres bactériologiques sont toujours au rouge, même après traitement. Il est donc recommandé de faire attention à l’Ingestion directe des eaux du robinet à Toleagnaro » (CSER’ Évolution des composantes de l’Environnement autour du projet Ilménite de RTIT/QMM, Site de Mandena, 2006-2001, p.30).

In an ironic twist of circumstances, the laboratory equipment to test the water at the Fort Dauphin treatment plant was sent to Tulear, because the promised building in which to house the laboratory had not been supplied.

The root issue is the contamination of the water in Lac Lanirano, attributed to improper and uncontrolled use of the lake and its shores as a toilet and sewage runoff, and insufficient management of the watershed. This situation is of concern to the Panel, because the poor quality of the water, at the water intake and as supplied by the community water treatment plant, compromises the usefulness of having contributed significantly to improved water distribution system in the commune. As noted by the 15th Supervision Mission of the Bank (April 2014), a policy dialogue on implementation of protection measures of Lac Lanirano continues to be held but enforcement was awaiting the approval of the PUDI by the Government. Uses of Lac Lanirano are prescribed by the Code de l'Eau. Arrêté n°1305/2008 allowed for an inquiry into the impact of private properties around the perimeter of the lake, but no actions resulted.

- **Recommendation FD 2.** PIC to push for progress to implement protective measures in the perimeter of Lac Lanirano, now that PUDI has been approved by the Government in June 2014. In addition, PIC should request the responsible authorities to monitor the water quality supplied by the municipal treatment plant at appropriate intervals and verify potability, including the possibility of requesting the assistance from the QMM physico-chemical laboratory set up in 2011.

3.2.4 Outcomes, Management and Sustainability

Route d'Interet Provincial (RIP) 118

PIC has contributed significantly to road improvements in the growth pole. One of the major activities has been the rehabilitation and upgrading of RIP 118 (piste en terre) leading north from Fort Dauphin into areas of forest exploitation and agriculture. Upgrading was realized over a distance of 67 km, at a cost of \$8M, and completed in 2011. Planning for the management and maintenance of this road was carefully done and involved the participation of road users, regional authorities and an NGO (Lanana) specialized in working with local associations to regulate road use (use of rain barriers and tolls) themselves. This model developed by the NGO had already been successful elsewhere in Madagascar.

Despite planning ahead to prevent road deterioration, the road has become severely deteriorated, especially in the length from Fort Dauphin for about 20 km north. Damage to the road was accelerated by inappropriate use by trucks and their failure to respect the rain barriers. The commune associations were not able to prevent truckers from respecting the barriers and the length of time they were not allowed to travel after a rain. It is reported that the associations asked for help from the regional government to enforce the respect for the rain barriers, but none was provided. The problems of managing pistes en terre in Madagascar so they have long term utility (perennisation) is critical. The Panel members share the view that PIC obtain a clear understanding of the reasons for this unanticipated and that lessons learned be applied to any road infrastructure under PIC 2.

- **Recommendation FD 3.** PIC to examine in detail the reasons for the unexpected failure of the management and maintenance of RIP 118 by interviewing the six associations concerned (road damage appears to have been variable according to location), the truckers and the regional government as well as drawing upon the experience of the NGO in Fort Dauphin and elsewhere. PIC is urged to investigate the extent to which different design features contributed to failure. PIC

should produce a report summarizing the findings and providing guidance for future road projects in the region.

3.2.5 Planning and Long-term Issues

CSER

The role of CSER and the need for its continuing long-term role should not be underestimated. The Panel understands that the CSER will continue to exist and receive financing as part of the payments that are due to ONE from QMM for environmental monitoring over the long-term.

PIC's Role in Regional and Commune Planning

The role of PIC in development planning merits attention. PIC helped finance the 20-year Schéma Régional d'Aménagement du Territoire (December 2012) and the Plan Régional de Développement (December 2012) as well as the PUDI (approved June 2013, with formal decree in June 2014). In doing so, PIC has helped promote better planning for the region and Fort Dauphin. PIC also worked with the region on the Schema d'Aménagement Intercommunale (SAIC) financed by the Bank's PGRM project and has worked with QMM regarding the PUDE (validated in June 2013) for the Ehoala Park. The planning documents need to be "marketed" and their promoters are in search of investors, in particular Ehoala Park. The commitment and dedication of the Comité de Développement Régional (CRD) that existed from 2009 until the crise has not been rekindled. Because regional and urban planning require the commitment and influence of committed stakeholders (the plans do not do much on their own), redynamising the CRD or similar will be a task of PIC 2.

Parc Ehoala

Ehoala Park (EP) is part of a PPP concession between GoM and QMM; the EP covers 442 ha of land adjacent to the port. This parcel of land is to be developed by QMM/Ehoala Port as a multi-purpose industrial, logistics and commercial facility. The combined Park/Port is seen as critical anchor for Fort Dauphin's development and the entire Anosy Region. Until now, there has been very modest progress and no investors are yet operating in the zone. While EP development is slow to start (Aide-Mémoire of the 15th Supervision Mission), more than 15 application permits are being studied at the present time. Those applications include various activities ranging from educational (SOS Village) to granite cutting (red Granite, Agrico) agro-industrial processing including fish processing (MADASEA) and an *abattoir* (BOVIMA).

The Panel focused its reflection on environmental and safeguards issues related to the future development of the port/industrial complex. The PIC has followed-up on the PGES derived from the EIES of the Port/Park as well as the PAR and these are being monitored by the CSER with no major issues unfolding. In addition, the successful, development of a marine ecosystem offset at Itapera is in accordance with requirements of O.P. /P.O. 4.04 on Natural Habitat.²³

²³ The biodiversity offset at Itapera (20 km as the crow flies from Fort Dauphin) for construction of the port d'Ehoala had been established in May 2006 by an Arrêté defining a marine protection zone of about 300 ha in Mananivo Bay. The plan of action for this marine protected zone, suspended in 2009 because of the sociopolitical crisis, was resumed in 2013. This work entailed implementing a Dina, marking three different fishing zones and

The development of the Park will present environmental and social challenges, at the scale of individual *permissionnaires'* installations and activities and, also, at the scale of collective and cumulative effects. The appropriate types of land use, have not been fully determined, nor agreed to by the stakeholders. For example, the 15th Supervision Mission of the Bank, strongly advised against putting a feedlot inside EP, which is advocated by the EP developers. The Panel is in agreement that a feedlot as part of an industrial and commercial park is inappropriate.

Environmental issues at the scale of individual development will be safeguarded by Malagasy regulation and the Décret MECIE, which will require individual EIES and PGES for each permissionnaire, to be later supervised by the CSER. Collective and wider environmental and social challenges have been directly addressed by the PUDI (see *Révision du Plan d'Urbanisme Directeur de Fort Dauphin, Rapport définitif*, Page 26, Table 9, Décembre 2012), which recommended the preparation of a Strategic Environmental Assessment. The SEA was carried out as part of the preparation of the *Plan d'Urbanisme de détail de Eohala Park*, (July 2013). This SEA has not yet been submitted to ONE. The PUDE was validated in June 2013, but the formal decree had not yet been signed as of July 2014. The PUDE (Chapter (« Livre ») 4) proposes a *Charte De Qualite Environnementale De La Zone Economique Speciale Ehoala Park*, which would involve EP administration, the local and communal authorities and all individual permissionnaires. A Cahier des charges providing the conditions for exploitation in the EP was validated in June 2013, but has not yet been published.

The Panel recognizes that application of the Charte and the Cahier de Charges might pose important challenges. It is not clear that the Charter has been proposed to the present developers of the Park, or is being discussed in negotiations with permissionnaires. Until the Cahier de Charges is published, investors do not know the conditions they must meet. Further, the Panel is concerned that the needs for solid waste management, disposal of water from industrial or agro-processing activities, including a slaughterhouse, have not been given sufficient attention.

In addition to the Charter proposed by the PUDE and the Cahier de Charges, the Panel recommends that the EP administration also consider the application of concepts of industrial ecology to develop as much as possible synergies among the various activities at the Park so that the waste of one may become the resource of others and energy may be used more efficiently. The brief definition of “industry ecology” is summarized below.

- « L'écologie industrielle consiste en un bouclage de flux de matières et d'énergie au sein d'un système industriel, suivant le modèle des écosystèmes naturels où rien ne se perd. Il s'agit donc d'un système réfléchi vers lequel il est possible de tendre pour mieux participer au développement durable en visant des collaborations interentreprises permettant des échanges de flux qui seraient autrement rejetée en pure perte. Une entreprise peut aussi appliquer le concept d'écoefficiente, soit une consommation plus efficace des ressources dans son fonctionnement interne, permettant de réduire son empreinte écologique. Ces synergies éco-industrielles se révèlent à la suite d'un diagnostic des flux de matières entrantes et sortantes au

training fishermen's associations. The Panel was unable to visit the zone because it was not accessible. The June 2014 report on Itapera and the findings of the 15th Supervision Mission (March-April 2014) of the Bank confirm that the offset and the plan of action have been accomplished.

sein du parc d'activités. » (Sorel-Tracy Technopole en Écologie Industrielle) (www.technopole.ei.com).

The Panel notes that the receiving end of the ships leaving Port Ehoala with ilmenite is the treatment plant of Rio Tinto in Sorel-Tracy, Québec, Canada, (the receiving end of the ships leaving the Ehoala port with ilmenite) is set in an "eco-industrial park" that promotes precisely such an approach.

- **Recommendation FD 4.** The Panel requests that PIC follow-up on the application and realization of the *Charte* proposed by the PUDE and the Cahier de Charges and support their wide diffusion to the communal authorities and the EP administrator in order to spell out the conditions of investment. PIC will provide considerable benefit to the sustainable implementation of the EP by preparing a briefing note on the concept of industrial ecology and promoting this idea now and as part of an eventual PIC 2.

3.3 Resettlement and Social Issues

3.3.1 Introduction

The TOR for social safeguards, the perspective of the panel and the overarching questions and concerns on social safeguards that are reviewed in Section 2.3.1 on Nosy be remain applicable to Fort Dauphin. As described there for Nosy be, the same delay has occurred in the receipt of the Fort Dauphin QMM and PIC resettlement evaluation/audit reports, which were not available for the Panel to review (see detailed discussion at Section 2.3.4). As also stated there, the Panel chose to develop a general view of the outcome of resettlement activities through interviews and field observations that were informed by an extensive photographic record together with the use of ad hoc indicators as described in Section 3.3.4 and following.

3.3.2 Site Visits

The Panel specifically requested that the mission begin in/Fort-Dauphin to ensure that sufficient time (five-day visit from 8- 12 July) could be allocated to a thorough investigation of the social safeguard issues, which were expected to be more complex, particularly in the case of QMM, than in Nosy be..

Of the 16 activities with resettlement issues, 11 are related to the QMM operations and the PIC Fort-Dauphin growth pole. These are listed below in Table 3-1 together with the applicable PAR volume number as it appears in the Bank project document database. The Panel visited almost every site in which resettlement had been identified as an issue in 2011, together with additional sites where issues had been identified.

In addition to the sites visited in 2011, the following additional three sites were included:

- Ilafitsinanana area, including the resettled village community, the training center, and the site of alternative agricultural replacement lands for those displaced from the quarry site;
- Ambinanibe²⁴ fishing village on Lake Ambinanikely, including PAPs who lost land to the Ehoala Port industrial area;

²⁴ The panel passed through but did not stop in Lohalovoky, a neighboring village settlement, which has essentially the same characteristics as Aminanibe.

- QMM Mandena mining site in Mandena forest reserve, on the grounds of possible new issues to be investigated.

Table 3-1 Resettlement Sites and PARs

Area	Site	Instrument	Vol No ²⁵	Outstanding issues	Panel visit	Recommendations
Fort Dauphin and QMM	All	CPR covered Nosy Be and Fort Dauphin	02	TBD (Coverage of land occupation ²⁶ issues)		Approach to future social impact on 3 mining areas requires clarification. Closure documentation for all sites not yet satisfactory.
QMM						
QMM	Ehoala Port and industrial park	PAR	04 (2005); 07 (2007 rev)	Fishery access; Land alienation and compensation	2011, 2014	To be confirmed for Libanona fishermen:
QMM	Quarry	PAR	04 (2005); 07 (2007 rev)	Agricultural land replacement/ compensation	2014	Replacement land issue to be resolved by closure
QMM	Quarry-port road	PAR	04 (2005); 07	None noted	2011, 2014	none

²⁵ In the Bank project database, 14 resettlement documents are listed. There is no direct one-to-one correspondence between the volume numbers and the 16 resettlement sub-project sites. Four QMM sites are covered in vol. 4 (2005) revised in vol. 7. The Fort Dauphin PAR on Réhabilitation de Voiries Urbaines does not seem to have been given a volume number and could not be found in the Bank database. Neither the Mandena mining site nor the weir [seuil de déversoir] near Andrakaraka are covered by a PAR although both have possible displacement or livelihood impacts. The weir and the mine-quarry road were, however, added in the PIC terms of reference for the QMM evaluation (Annex X). In addition, the Panel considers that it might have been appropriate to include the Mandena mining site within the scope of the QMM PAR, a matter discussed in the main text in the next section under social risk.

²⁶ In Madagascar 'occupation' refers to agricultural use (clearance, planting), not to residence. Occupation traditionally establishes recognized rights, although not formal title. It contrasts with usufruct and pasturage, which are areas of community use.

Area	Site	Instrument	Vol No ²⁵	Outstanding issues	Panel visit	Recommendations
			(2007 rev)			
QMM	Quarry-mine road	PAR	04 (2005); 07 (2007 rev)	Originally excluded from PAR scope, included in evaluation TOR	2014	none
QMM	Andrakaraka Weir	None included		Possible impact on livelihoods		Included in evaluation/audit. Possible livelihood (fishery) issues to be identified and appropriate action taken.
QMM	Mandena mining area	None		Residences, agricultural occupation within concession: widespread confusion over rules of the game.	2011, 2014	Land occupation issue should be systematically reviewed clarified; consensus required on clear actions and responsibilities agreed.
PIC-Fort Dauphin						
PIC-Fort Dauphin	RN 13	PAR	03	None noted	2011, 2014	
PIC-Fort Dauphin	Ankarefo landfill	PAR	10	Possible quality of life impact on adjacent residences	2014	none
PIC-Fort Dauphin	Corniche	PAR	11	None noted	2011, 2014	none
PIC-Fort Dauphin	RIP 118	PAR	12	None noted	2011, 2014	none

Throughout its field visits, the Panel was accompanied by PIC and QMM field staff, according to the site. It preferred, in most cases, to gather information in situ from the field staff in preference to direct interviews with PAPs and other local residents. The Panel was impressed by the extent to which the Fort

Dauphin PIC field staff, had free and easy relations with the local population and by their in-depth knowledge of the local situation.

3.3.3 Socio-economic Impacts

The improvement in economic life in Fort-Dauphin is substantial in comparison to 2011. The Panel has not attempted to research what or how much is attributable to general conditions, QMM or PIC. The city is cleaner, people are investing in new and improved buildings, and there is a general air of optimism. The penetration of mobile phones, mobile money, and other innovations have reduced transaction costs. The rehabilitation of the roads, improved solid waste collection, improved water availability (even if quality still leaves much to be desired), street lighting and other amenities have all contributed to this improved situation.

Still, this recovery is uneven and fragile and disappointing in comparison with the expectations of a decade ago. Part of the fragility can be attributed to a lack of social capital. Fort Dauphin, and the Anosy Region as a whole, reputedly has a strong sense of individualism and a relative lack of social cohesion in comparison to other parts of the country. This means that local, small-scale projects designed for community participation, empowerment and ownership are difficult to implement. External sponsorship and resources may start a group initiative, but soon tensions and dissensions arise that cause the initiative to founder. Protests are easy to organize; constructive solutions are difficult to implement. These characteristics may even extend to the higher levels of regional administration. The Panel was struck by how often this theme about social attitudes emerged in discussions with different stakeholders of different backgrounds and in different contexts. While this observation is impressionistic, it appears to explain why building trust and achieving shared objectives are significant challenges in Fort Dauphin.

3.3.4 Social Safeguards Compliance – QMM Resettlement

During the visits to QMM and its sites, the Panel and the PIC Responsable Environnemental et Social worked with QMM's Community Relations and Sustainable Development [Relations Communautaires et Développement Durable] team. This team has been established separate from Environment, as described above in Section 3.2.1. The Panel views this enhanced attention to social issues as a positive step, as it has enabled a new direction to the unit. It with a focus on the broader issue of maintaining social license to operate. As a January 2014 protest illustrated, QMM still has progress to make before a sufficiently high level of trust and harmony with the surrounding population is reached. This new approach has provided QMM with space to focus on resourcing and guiding small community-based participatory sustainable development projects and local voluntary associations which are aimed at reducing poverty in the surrounding area.

While some residual social safeguards issues still need attention and while some new issues may be emerging, the Panel welcomes QMM's decision to treat resettlement as a development process, oriented to diminishing the culture of expectations for and dependency on compensation [use culture of revendication in French], which is still very much alive. The Panel also acknowledges QMM's provision of resettlement and community-related documentation.

Below are a series of site-specific observations related to QMM resettlement, followed by those for PIC. The compliance issues for each are rather different and they have separate PARs. QMM's displacement refers primarily to land acquisition made through a Décret d'utilité publique, or DUP, based on the Code minière.²⁷

Ehoala Port

The construction of a deep water port on the Ehoala peninsula, required a land area of 157 ha, and involved the displacement of two homes with 11 inhabitants. The primary impact was the loss of access to the sea for 344 marine fishermen (number was underestimated in the 2005 PAR) at Somatrah during construction and as a consequence of port operations.

A suitable site for the beaching of canoes adjacent to the breakwater has now been agreed upon and is used. The fishermen received monetary compensation for loss of income and technical assistance to compensate them for loss of access. The acquisition of motors has enabled them to travel longer, to use multi-hook lines, and to increase the ratio of fishing time to travel time. The port has provided trailers (remorques) to enable the transport of the canoes to the other side of the peninsula when the monsoon direction changes.

For the majority of these fishermen, there has now been a substantial increase in productivity, without the risk of overfishing. Moreover, the rocks for the breakwater and port enclosure have been rapidly colonized by marine life and have become a nursery for a wide variety of species including crustaceans and fish. The greatly improved relations between QMM port and the local fishermen suggest to the Panel that this is a success story.

In addition, a training center, developed on the site of the construction camp for the quarry near Ilafitsinanana, is providing supplementary income-generating activities for the wives of fishermen, development of fish processing, freezing and packaging, and the construction of fiberglass pirogues.

By contrast, the (mainly lobster) fishermen from Libanona on the opposite side of the bay, who also fish in this area, complained that the port greatly reduced their harvest and claimed financial compensation. Compensation was provided to these fishermen for the period 2008-2011 for the loss of fisheries resources. As a result of a complaint in 2013, QMM recognized the additional loss in 2007 during port construction because of the movements of boats within the bay. QMM has signed protocols and accords with APELIFO (Association des Pêcheurs Libanona Fort Dauphin) and a support program is being implemented by an NGO (Aquatic Services). Whether or not the Libanona fishermen still suffer net uncompensated losses as a result of restriction of access to the port area is not possible for the Panel to determine. This is a contested and insufficiently understood issue, which the Panel hopes the final evaluation and ICR will address.

The Panel does not support the idea of additional monetary compensation, which is unlikely to bring closure to a never-ending story. The Panel again draws attention to successful cases elsewhere of

27 Décret 910/2006; Loi 99.027, modifiée par 2005-021.

artificial reefs from inert solid waste [dechets inerts] (tires, decontaminated vehicle bodies etc.) which have greatly improved artisanal fishing. Provided such a facility was well-planned, taking into account the local knowledge of the fishermen, suitably located and accepted by all the relevant authorities and, an artificial reef might provide a sustainable source of biodiversity productivity within a few years. It would also demonstrate to the Libanona fishing community that their interests had not been neglected.

- **Recommendation FD 5.** PIC to commission a brief feasibility study for an artificial reef accessible to Libanona fishermen to increase marine productivity particularly for crustaceans. The suggestion that additional compensation might be payable to this community is not supported.

Ehoala Park

The 440 ha set aside for EP (see Section 3 above) involved the expropriation with compensation of about 50 ha of low-productivity, small-scale agricultural cultivation (including cleared or fallow land [aires en friche] that the PAR expected would affect 314 people, some of whom are counted among the 344 marine fishermen. Some received compensation for loss of access to the sea and loss of agricultural land, but information is not available to determine who received one or both types. Nearly 90 per cent of those losing agricultural land were judged to be “vulnerable” under the criteria of the CPR. These areas, which were not titled, were considered eligible for compensation for lost agricultural effort and crops. People complained that they had been compensated only for “cultures” and not for the loss of land. QMM paid a “bonus” of 100 ariary per m2, which is apparently still considered by the recipients to be insufficient. The Panel visited the village Ambinanibe, which includes Lohalovoky, the residence of the majority of the PAPs who were displaced from the Port installation (see above) and the EP. The villages stretch along the eastern shore of Lake Andriambe, a lagoon of brackish water characteristic of those along the coast. The main economic activity is marine fishing, shrimp capture and lagoon fishing, supplemented by minor agricultural activity and the raising of pigs and poultry. The agricultural and grazing sources of subsistence from the EP are now lost.

The compensation paid for the loss of the port area and the EP lands was used in many ways, such as purchase of an electricity generator; replacement of a thatched roof; purchase of a zebu; purchase of nets for shrimp traps, etc. These decisions were specific to each PAP according to their particular situation and perceived opportunities. These choices improved quality of life but did not necessarily enhance incomes.

QMM has made consistent efforts to improve household incomes and living standards; health education, literacy, support to fishing, supply of pigs for pig-raising and provision of poultry -- broilers and layers. Their attention to local development issues is commendable. PIC has provided water and facilitated community interventions, e.g., campaigns to collect and dispose of solid waste. Nevertheless, the Panel considers that the outcome of the income-generating activities have been disappointing, particularly in relation to original expectations and taking into account the substantial resources and high level of effort expended in mounting these programs and evaluating them. It is possible that the standard of living prior to displacement has been maintained, although there are no presently available statistics to support this conclusion. There has not been sufficient attention to the restoration of property (biens).

Monitoring has primarily focused on the restoration or improvement of incomes, although this has not been demonstrated quantitatively.

An analysis of the wider picture suggests the following explanations for the flat socioeconomic results in this community.

- **Economic crisis.** The last five years have been marked by an economic crisis nationally, which appears to have affected Fort-Dauphin particularly. The majority of the population appears to have suffered an overall (but non-catastrophic) decline in living standards. As such, a comparison of PAP vs non-PAP incomes would be useful as well as a before and after project comparison.
 - **Insufficiently adapted programmes d'accompagnement.** The attempt to convert lagoon fishermen to open-sea fishing failed. The adult literacy program appears not to have been well-received and was dropped through insufficient participation. The broiler program was dropped in favor of layers for profitability reasons. The piggery project is in its early stages. When the training center established in the village was relocated to the former quarry camp, some participants considered that it was too distant. A revitalized programme d'accompagnement adapted to their specific way of life would likely have better results. The program should continue adaptive management approach and engage the community in looking for new opportunities.
 - **Decline in lagoon fishing productivity.** The general productivity of Lake Andriambe has declined in recent years, through overfishing and possibly environmental pollution, but has recovered with moratoriums on fishing. The decline in fish resources has probably caused the greatest decline in incomes.
 - **Slow development of Ehoala industrial park.** No physical development has taken place in the industrial park, so there has been no job creation that might benefit the local population. The Panel notes that the slow pace of development constitutes a serious gap with earlier plans and expectations in terms of creation of local employment opportunities. The Panel is pleased to see that PIC 2 addresses this issue.
 - **Whether full replacement cost for land assets was paid.** Because of the importance of this question and its broader applicability to all the resettlement activities, it is dealt with in full in Section 3.3.6.
- **Recommendation FD 6.** QMM is advised to include Ambinanibe and Lohalovoky in its new community-wide development program, monitor outcomes and document results.
- **Recommendation FD 7.** QMM should consider conducting training in employment skills for unemployed men and women in the village with a view toward future employment opportunities in the EP.

Quarry (Ilafitsinanana)

The displacement of 118 inhabitants from the quarry area proved particularly stubborn as they were

initially informed that displacement would be temporary but later that it would be permanent. The entire village was moved to new houses in a new location. Replacement land proposed in 2008 was found to be unacceptable and not of equivalent quality. Monetary compensation was paid, when replacement land proved problematic. Additional land was identified, but the Arrêté to allow title in the name of the PAPs has not been issued.

The Panel visited the village briefly and found that the housing was of acceptable quality. There are few signs of prosperity; it is hard to discern to how the compensation payments have been put to beneficial use. Some PAPs have acquired their own plots for cultivation nearby by local purchase.

In 2011 the Panel believed that if the Ilafitsinanana people refused land and demanded monetary compensation instead, this refusal might not produce a sustainable result. However, the PAPs continue to believe that if they refuse the land, they will be given additional monetary compensation in lieu. Meanwhile squatters have begun to occupy the alternative lands, which itself is an indication of its suitability.

The conclusion of the Panel is that continued attention should be given to the issue of supporting Ilafitsinanana living standards through the QMM community development program. At the same time, although this community has received significantly more than Ambinanibe and Lohalovoky, it would be appropriate to verify that the compensation actually awarded met the Bank's OP 4.12 (IFC PS5/Equator) standard.

- **Recommendation FD 8.** QMM is advised to include Ilafitsinanana in its community-wide development program, monitor outcomes and document results. QMM should provide unemployed adults with information on future employment opportunities.
- **Recommendation FD 9.** PIC should urge the Regional administration to issue the Arrêté that would conclude the process of awarding title for replacement lands. PIC should continue to communicate to PAPs that the land will be kept available for five years.

Route Carrière-port and Route Mine-port

The Route Carrière-Port and Route Mine-Port involved the displacement of structures and activities affecting 148 people and 118 people respectively. Compared to an initial higher estimate of 381. Resettlement was minimized by optimizing the road layout. The Panel visited these roads in 2011 and 2014 and found no matters requiring comment.

Andrakaraka (Seuil de déversoir)

The lagoonal system has adapted to freshwater. The freshwater halieutic resources are depleted, although they return when there is a moratorium on fishing. QMM has studied and monitored the state of the resources and QMM attributes depletion of the halieutic resources to overfishing. QMM is currently debating the need for the weir or seuil de deversoir, which would allow a return to brackish water. But the issue of sufficient resources in relationship to livelihoods is likely to remain.

Recommendation FD 10. QMM is advised to work with the local fishing community prior to removing the Andrakaraka seuil and changing back to a brackish lagoon system; in this case and even if the decision is made to retain the seuil, QMM is advised to establish a program that would sensitize the community to the issues of optimal offtake and overfishing. In conjunction, QMM is advised to determine and respond to needs for additional livelihood supplementation or diversification as may be appropriate where fishing resources are insufficient to maintain livelihood levels. .

Conclusion: QMM Compliance with Social Safeguards

The site-specific observations and reviews above indicate to the Panel that QMM is substantially fulfilling its safeguard obligations in the PAR. However, two qualifications apply. First, good practice indicates that the work of restoring incomes and livelihoods should be continued and deepened for a number of years, with a short supplementary evaluation before resettlement can be considered to be complete and sustainable.

Second, there is a **need for satisfactory closure documentation**. QMM has produced a substantial quantity of high quality documents in this regard. These documents are still not complete. An initial follow-up review of the 2005 PAR amended in 2007 began in 2008 to produce a baseline. At mid-term QMM launched a contract to review the effectiveness of the resettlement support programs and a contract was awarded in 2010 and was commented upon by the Bank. To rectify gaps, a second study was conducted in 2012 and a second improved report was provided to QMM for review. In November 2013, QMM and the ATW agreed that to finalize the report the 2010 baseline had to be used and the 2012 data would be annexed. The 2013 report produced also resulted in comments. Rather than this iterative series of revisions, it might have been better to have completed the Resettlement mid-term review closer to the mid-term point and then to have concentrated on producing a separate and final evaluation report for PIC and the Bank.

As it stands, the Panel considers that the PIC-commissioned evaluation of QMM resettlement, still in early draft stages, requires very substantial recasting, revision and additional work. Any additional information on compensation, restoration of living standards, public communication and the handling of complaints that QMM can provide is likely to be of considerable use. This work should be completed by the beginning of November to feed into the ICR process. Such final documentation is important given that public controversy is still swirling around QMM's compliance.

Finally, an unresolved land tenure and compensation issue of some complexity remains within the mining area itself. This is dealt with under social risk below, as it is not strictly a compliance issue and relates to future exploitation in the next 5 – 10 years.

3.3.5 Social Safeguards Compliance – PIC Fort Dauphin Resettlement

By contrast with the mining displacements, PIC's public works interventions have involved relatively minor displacements, mainly of roadside vendors and partially affected structures. Compared to 2011, the 2014 mission found a clear improvement in the general level of economic activity in Fort Dauphin, as noted above, to which the PIC works may be considered responsible to a considerable extent.

RN 13 (Route Marechal Foch)

The five km of urban road rehabilitation involved the temporary displacement of a market to a nearby site in order to allow works to take place. These long-delayed works have positively transformed the center of Fort-Dauphin town. The Panel considers that the works were done in compliance with Bank requirements and no compliance issues have arisen.

Ankarefo Landfill

The Panel visited the recently-completed solid waste landfill site in the neighboring commune of Soanierana on RN 13, six km from Fort Dauphin. This facility required the expropriation of 13.5 ha of domanial land used for pasture by local villagers. Construction is complete but the site is not yet operational. Fifty-two villagers from Ankarefo, Antsahabe, Masihanaka and Begiava were affected, owning a total of 161 animals in 2007. The Panel considers that, in view of the ample pasture locally available, the compensation paid seemed generous (although it was for loss of a continuing benefit), and no compliance issues arise.

The Panel noted however two social issues. One is danger to children from trucks entering and leaving the site, as there are three schools in the vicinity; 235 PAP children were present at the time of census in 2007, an average of 4.5 per family. The second issue is a possible odor nuisance to a few neighboring residences within a 500 m radius of the site, which might give rise to claims for compensation.

- **Recommendation FD 11.** PIC should conduct a public campaign, focusing on schools to educate children on the possible dangers of trucks entering and leaving the site; this effort should be accompanied by a safety awareness campaign for garbage truck drivers.

Corniche Tolagnaro

The Panel reviewed the PAR report of the Corniche and found it to be satisfactory.

RIP 118

RIP 118, as noted in Section 3.2 cannot be considered a success because of acute sustainability issues. The Panel visited an affected business at Isaka Ivondro, which is the only structure that was physically and economically impacted along the route. This small grocery lost its verandah and was compensated. The occupant responded freely to an impromptu interview. The grocery has maintained its modest level of business and the owner paid for improvements from sale of land. The resettlement along RIP 118 has appeared to meet compliance standards.

Voiries Urbaines

The rehabilitation of 9 km of urban roads in Fort Dauphin was presented in a PAR dated December 2011, i.e., after the Panel had completed its 2011 mission report. The Panel was aware of the proposed works and of the rather minor impacts foreseen. The results of this road rehabilitation, drainage and street lighting are impressive.

The displacement entailed 94 roadside merchants of whom five had structures that were removed. The majority (86 percent) of the merchants were women. Displacement was to a new market site, appropriately equipped with stalls, garbage containers and water supply. No compliance issues were

found.

3.3.6 Compensation for Assets

OP 4.12 requires compensation for the full replacement cost of assets. The answer to the question of whether this occurred in Fort Dauphin awaits final confirmation. There have been complaints and expressions of dissatisfaction with the amounts for land compensation. The Panel briefly investigated whether there may be a valid collective complaint in this respect. One question was whether OP 4.12 principles for recognized but untitled lands had been sufficiently adopted by the Administration Evaluation Commission (Commission administrative d'évaluation/CAE) that awarded compensation. The question is pertinent, because previous evaluations, e.g., at mid-term, did not address the question of whether full replacement cost principles were applied to lost assets. The question arose as to whether the Commission compensated people only for land clearance, crops and trees, or whether the land itself was compensated. It has been alleged that only areas under actual cultivation and any standing crops or trees were compensated.

The same procedure for agricultural or pasture land compensation was applied throughout the PIC and QMM project components. The standard of full replacement cost for lands appear to have been applied. Typically, land compensation was calculated on the basis of a unit price [prix unitaire] which took into account current land prices and transaction costs.²⁸ The PAP was accompanied by an NGO representative to ensure that the PAP's interests were fully taken into consideration. The PAP had 15 days to appeal this award, but, in practice, appeals were entertained up to two or three years later. The delayed consultant evaluation reports are expected to verify that compensations were in fact paid as agreed and/or to identify any anomalies.

When PAPs complained that their land had not been fully compensated and because compensation cannot be paid twice, QMM paid an additional "bonus" of 100 ariary/m² (\$0.05) (around 2007) across the board, leading people to assert that this was the price at which QMM was acquiring their land.²⁹ It is now recognized that this "bonus," paid unilaterally to acquire social peace at a time of uncertainty and unrest, set an unwelcome precedent. The costs of demarcation and titling of a property were not included in the compensation total, as OP 4.12 expects. The amounts would have been of the order of 500,000Ar (\$250) per plot for an individual, which is less than the "bonus" already paid. Thus, it can be argued that the "bonus" is sufficient to cover titling costs. Thus, the Panel considers that Bank standards have technically been complied with in respect of full compensation for assets in land.

- **Recommendation FD 12.** The resettlement evaluation/audit reviews should include (if necessary under separate contract) a thorough examination to demonstrate whether the Bank's compensation

²⁸ $P_u = (P_o + P_{mev} + P_{cult} + P_{arbres}) * Coeff_{act}$. (Unit price is the sum of land plus development (mise en valeur) + cultivation plus trees, times the actualization coefficient to reflect current prices and inflation). The actualization coefficient could be typically of the order of 50 percent or more, and was an innovation to standard national practice applied specifically for the PIC project. It caused adverse comment by mining and other companies elsewhere in the country that were seeking to acquire land.

²⁹ The Panel was informed that when the PAR was disclosed, it included budget figures including estimated cost of land. This figure became widely known and served to inform expectations of the amounts to be received by each individual.

standards for the assets of occupants without title have been satisfied, or an estimation of the monetary gap between actual payments and full replacement cost of the asset.

3.3.7 Social Risks to be Addressed Before Closure

The Panel considered what social risks might lie ahead, how to assess them and how they might be mitigated.

Documentation

The importance of documentation has been discussed at the end of Section 2.3.4 for Nosy be. It is even important to have adequate document for the QMM and PIC activities in Fort Dauphin, considering past protests and controversies. PIC and QMM have a generally good story to tell, and it deserves to be told both for its own sake and for wider learning. Therefore, the Panel recommends

- **Recommendation FD 13.** Readiness for closure should be subject to the condition of receipt of satisfactory documentation not later than early November, the proposed date of the final Bank mission and the commencement of the ICR.

The Special Issue of QMM – Land tenure issues in the Mandena Mining Site

It is an apparent paradox that the substantial QMM resettlement documentation has not addressed the land tenure issue in Mandena. The Panel wishes to point out that responsibility for not addressing this issue does not lie solely with QMM, as the Bank did not request the inclusion of land tenure in the mining concession. The central issue, which can and should be resolved at least in principle before closure, is that the Bank's standards for full compensation of lost land (which are virtually those of IFC's PS5 and the Equator Group principles) should be applied throughout the Mandena mining area.

- When the Bank project was being prepared and the CPR developed (2004-5), those involved apparently believed that the resettlement impacts of a mining concession in a designated forest area would be negligible and limited to some “usufruitiers” whose interests could be, and were, compensated through offsets in which collection activities could occur outside the mining area. Therefore, the QMM PAR excluded the mining area and no DUP was applied to the forest area. The mining areas of Petriky and St Luce were also not included within the QMM PAR as their exploitation lay far in the future. Facts on the ground are now apparent that were not fully appreciated at the time of the PAR. These are noted below. Parts of the forest, both at the northern end and in the south, had been occupied for years by local farmers and used for agriculture and pasture.
- In recognition of this, an Arrêté³⁰ amended the 1943 boundaries of the forest reserve and reclassified it as a “périmètre de reboisement et de restauration”.
- In terms of the Bank's (and IFC-Equator) classification of land occupation, these populations are not squatters and are considered to have recognizable land rights.
- A survey in 2013 plotted the “mise en valeur” according to actual occupation, but did not take account of the contiguous claims of traditional land rights, which were mapped in January-

³⁰ 3527-MAER/FOR 3 déc 1965.

February 2014 by the NGO SIF³¹ following local demonstrations.

- The mining area is clearly a “linked project” in terms of OP 4.12 para 4 and, therefore, should have been considered for inclusion in the PAR.

These facts were unknown to the Panel in 2011, when the Panel was assured that the only traditional interests in the mining concession were those of the usufruitiers. They were also apparently unknown to QMM until the Director of Community Relations and Sustainable Development became aware of them at the beginning of this year. During the 2014 mission, the Panel visited one of the three sites and verified on the ground the validity of the participatory mapping exercise done early in 2014.

Possibly, incorporation of the mining concession in the QMM PAR might have helped avoid some confusion and mitigated the emerging controversy. The present situation is that SIF has written to the President in March 2014 challenging the legality of the mining concession and raising the issue of the rights of local inhabitants. The UN Commission of Human Rights has also been contacted.

QMM intends to move into affected areas within the next five years and has indicated willingness to sign a lease with the occupants as required by the mining law and its application decree of 2006. QMM has subscribed to the Equator principles and is willing to meet these compensation standards, which the Panel considers to be equivalent to Bank standards. Different positions are being taken within the government administration and there is a lack of agreement on the way forward. Thus, the issue of the “securisation” of the mining rights remains unresolved.

The Panel deems that this situation poses a reputational risk to the Bank. If controversy escalates, the Bank becomes vulnerable and could be considered remiss in the application of its own safeguard policies.

The Panel urges the Bank to consider the provision of BP 4.12, para 17, which states that if the “objectives of resettlement may not realized, the ICR assesses the appropriateness of the resettlement measures and may propose a future course of action, including as appropriate, continued supervision by the Bank.” Considering the absence of high-level country dialogue in recent years and the numerous mining companies awaiting concessions in Madagascar, the Panel recommends that the Bank initiate a dialogue in relation to the various laws affecting land tenure and their application. Such a dialogue might take into account:

- Achievements made in practice by PIC in helping the regional administrations to apply Bank resettlement standards to national expropriation and compensation procedures;
- Need to continue the PIC practices by extending them to the QMM mining concession; and
- Value of clarifying definitively the legal instruments applicable, given that legal issues have been raised.

➤ **Recommendation FD 14.** The Bank should consider an early high-level dialogue to bring clarity and

³¹ Société des intervenants foncières. The acronym also supports the equivalent Malgache terms.

closure to outstanding issues in relation to land expropriation, compensation and adherence to international standards, particularly in relation to the Mandena mining concession.

4. Lessons Learned from PIC 1

4.1 Overall Lessons Learned

The Panel has drawn a series of lessons from PIC. These lessons are potentially applicable to PIC 2 and to other projects of a similar nature in Madagascar and in other countries where institutional capacity and resources are limited.

4.1.1 Operations and maintenance

The operational and maintenance requirements for infrastructure projects are critical to their long-term sustainability. Success in operating and maintaining infrastructure facilities depends in good measure on assumptions about the behavior of people and institutions. These assumptions should be thoroughly realistic. Worst case scenarios that take into account potential failures to achieve quality operations and maintenance should be carefully assessed. Not doing so can prejudice the outcome of the investment. RIP 118 is a significant example of this situation.

4.1.2 Institutional capacity

The capacity, resources and commitment of state/parastatal enterprises should not be overestimated, especially in a fragile national context. JIRAMA's capacity to implement environmental mitigation plans for its power plant at Nosy Be and observe water quality norms in Fort Dauphin are two examples.

4.1.3 Elevated optimism.

The team preparing a project typically has high expectations that the anticipated benefits will be fully realized. In situations such as those encountered in Madagascar, cautious confidence, not elevated optimism, is advised.

4.2 Safeguards Lessons Learned

4.2.1 Environment and Social

Underestimated Impacts and risks

An initial underestimation of social and environmental impacts and risks, in particular with reference to the ways to avoid such impacts and risks and the costs of mitigating them, can result in trust problems during implementation. If remedies have to be put in place to mitigate after the fact, they may exceed in costs and complexity what might have been done initially and it is too late to consider avoidance.

Changes in footprints and construction scenarios

When activities, especially those subject to a framework approach such as a CGES or CPR, are subsequently defined, when there is a significant (more than one year) passage of time between the assessment and start of construction or implementation, or when activities are modified during construction, the environmental and social safeguards implications should be immediately re-assessed in full and in detail. For example, the implications of noise pollution at the JIRAMA power plant site in Nosy be were not re-assessed at the time that PIC became involved in supplying generators. Modifications in the site for disposal of dredged sediment should have led to a more complete characterization of the dredged material.

Application of safeguards in operations to ensure environmental and social sustainability

Appropriate operational procedures are needed to assure continuing respect for environmental and social safeguards. Often safeguard documents give much attention to construction phase impacts, but the safeguard-related requirements for operations are overlooked or vague. This situation can be exacerbated by insufficiently detailed attention to remedying impacts that arise during operations. Examples are the continued operation of the old, downtown JIRAMA power plant and the continued insalubrious conditions at Pont Cassé. Concerning land and natural-resource-based livelihoods, e.g., agriculture, fishing, use of forest products and grazing, insufficient attention to the intricacies of how and when the resources are used, can easily cause complications in determining rights and appropriate compensations.

4.2.2 Resettlement Lessons Learned

Disclosure of resettlement cost estimates

Budgets (and schedule) are a required section in a RAP compliant with OP 4.12. However, the cost estimates should not be publicly disclosed in a way that might lead affected persons to have exaggerated and unrealistic expectations of compensation. This is reported to have occurred with respect to the amounts eventually calculated as replacement costs for Ehoala Park. Budgets in a PAR are estimates and do not constitute entitlements.

Complexity of land rights transfers

The time, effort and interactions that are required to accomplish land rights transfers are often insufficiently appreciated and this occurred at the outset for several resettlement activities in Fort Dauphin. The transactions costs are high and involve researching land rights, understanding applicable codes and communicating information to PAPs and other stakeholders.

Record keeping and documentation

Systematic record keeping and documentation of resettlement activities is a vital and indispensable part of the resettlement process. Good records and documentation will permit and should lead to timely final evaluations, once a resettlement program implemented. This is particularly helpful where, as in PIC, there are several distinct sub-projects. In 2011, the Panel found that the resettlement evaluation report for the Nosy be ring road (ceinture nord) was a good model, because it presented a clear list of actions that would be necessary to bring the ring road PAR to final closure, and recommended that this model be followed for other RAPs. Had this been done for the other PARs, a synthesis evaluation report could have been produced more efficiently.

Community safeguards monitoring and evaluation

Greater community consultation and participation in safeguards monitoring and evaluation would have enhanced the success of several PIC activities and potentially have strengthened the beneficiaries' ownership of the results. For example, the resettlement process implemented in the Nosy be markets of Ambataloka, and Dzamandzar, while more than adequate, would have benefited from ongoing monitoring and evaluation by the marketeers themselves. In Ankify, this approach could still be adopted.

5. Reflections Toward PIC 2

5.2 Introduction

Based on the draft Project Concept Note (PCN) and the February 2014 Integrated Safeguards Data Sheet (ISDS)) made available to the Panel, “the proposed project [PIC 2] would also incorporate lessons learnt from eight years of project implementation and draw upon recommendations that are presented in the ISN, the WDR 2011 and 2013, and the revised Policy Notes Collection.”

PIC 2 would boost job creation and promote shared prosperity through targeted interventions to overcome barriers to private investment in three poor regions with high growth potential. Apart from an implementation component, its four other substantive components would deal with (i) institutional and policy reforms to improve the investment climate for private sector investment, Public Private Partnerships (PPPs) and linkages between larger commercial enterprises and smallholders, including select support for land titling to remove a key constraint to investment and growth; (ii) upgrade infrastructure and basic services for poor communities in Atsimo-Andrefana (Region in which Tulear is found) and improve value chains for agriculture and develop tourism, through PPPs, with tourism, agribusiness and mining; (iii) development in Anosy region to promote, through incentives and technical support but without major infrastructure, existing initiatives in agribusiness value chains as well as Ehoala park and port, together with some capacity support for regional and local governments; (iv) in the “northern growth corridor” of Antsiranana and Ambanja/Nosy Be, improve communications infrastructure and services (road and air) and promote tourist-led and agribusiness growth and value chain improvements. (See the ISDS and PCN for fuller information.)

The current proposed safeguards rating for the PIC 2 indicates the potential substantial environmental and social risks to be taken into account, a judgment with which the Panel agrees.

5.2 Panel Recommendations in 2011

The Panel recommended in 2011 that the Anosy Region (expanding upon the Fort Dauphin growth pole) and the Nosy be growth pole (linked to the larger Diana Region in the north) be included in a future PIC 2. The Panel supports the inclusion of both of these regions together with Atsimo-Andrefana, the country's poorest region. The Panel considered in 2011 that the achievements and accomplishments of PIC 1 demonstrated good gains and value to the respective growth poles, despite the difficulties of the political crisis and the suspension of funding in 2009. The Panel maintains this view.

The Panel continues to believe that PIC 2 will (i) allow for follow-up on aspects of growth that were not foreseen under PIC 1; (ii) extend the gains acquired; and (iii) accelerate the momentum of growth already achieved. Further, the Panel believes that both PIC 1 poles merit further technical assistance and institutional support (as indicated in the recommendations of Sections 2 and 3), in order to enhance and strengthen the sustainability of growth.

The Panel maintains its 2011 recommendation that PIC 2 adopt the concept of Green Growth Poles, where green connotes explicit recognition of ecosystem services in a green economy, environmentally and socially sustainable management of resources and compensation for resource restrictions through provision of development benefits and opportunities.

5.3 Regional, National and International Dimensions

Tourism development in the areas planned for PIC 2 will require attention to the regional, national and international dimensions of tourism. These include airline service safety, reliability and availability of other transport options, such as access by boat and cruise ship as well as promotion of non-European markets, such as South Africa and niche tourism such as sport fishing and wind surfing. The Panel appreciates that the development and enhancement of tourism circuits rather than single destinations is already incorporated within PIC 2. In addition, the Panel recommends that PIC 2 address strategies and mechanisms to weather the ups and downs of interest or lack of interest (often fueled by fear and inaccurate perceptions) in international tourist destinations.

Agribusiness, tourism, infrastructure and PPPs all raise environmental and social issues. If not handled right, these can even pose potential reputational risk, particularly in a fragile and volatile context. There is an inherently risky context for environmental and social safeguards and outcomes.

5.4 Sectors

5.4.1 Agribusiness

Planning for rural development, agricultural strategies and sustainable fisheries will be essential components of Green Growth. The Panel understands that an Environmental and Social Framework will be prepared for PIC 2. The Panel still believes that a Strategic Environmental Assessment (which could be called a strategic green growth plan or similar) would be useful to inform the future development of agriculture in the context of opportunities such as specialized fruits, vegetables, rice or cereals, with or without local transformation, for export or local (tourism-led) market, niche production (e.g., essential oils for export market), or medium to large agribusiness investment.

Attention should be paid to issues of land lease for agribusiness that could be seen as "land grabbing" or land appropriation by foreign interest to the detriment of the local economic development and the risk of creating poverty through landlessness. Although the acquisition of land rights is important in order to promote investor confidence is not prominent in the project concept, it is potentially a contentious issue. For this reason it would be important to have (i) a much greater degree of consensus at higher levels, and (ii) a much more detailed understanding of facts on the ground relating to prevailing popular or traditional concepts, and how rights are acquired, secured and transferred, than was evident in PIC 1 in Fort Dauphin.

5.4.2 Energy

Provision of reliable sources of energy is critical to the growth envisioned under PIC 2. In the Diana Region, while some supply may eventually be provided by hydroelectric development on the main island and/or a submarine power line, the Panel believes that it is essential to explore and consider investment in the development of the demonstrated geothermal energy potential of Nosy be. Similarly, the demonstrated potential for aeolian energy in the Fort Dauphin region should be considered. In all regions, support for local solar-based energy is recommended.

5.4.3 Infrastructure: O&M

The Panel wishes to emphasize the importance of paying attention to the environmental, social and financial sustainability of infrastructure by considering operations and maintenance as an integral and fundamental part of planning and designing infrastructure. Further, the Panel emphasizes the need to reinforce training and funding for operation and maintenance of infrastructure. There remains a critical need to establish mechanisms for institutionalizing this function within regional and local governments and community committees and association.

5.4.4 Public-Private Partnerships

PPPs are to be encouraged under PIC 2 for shared infrastructure, including airport expansion to serve the northern corridor. While a good way to increase capital investment, as the Ehoala Port and Park experience shows, PPPs are inherently difficult to manage in terms of safeguards because it is not easy for the private sector to see why it should be bound by Bank policies. By contrast, the Bank's policy on applicability to linked projects is explicit for Resettlement (OP 4.12, para 4) and implicit in the OP 4.1 reference to ancillary activities and the area of influence. The move to harmonize Bank safeguards across the Bank group and with the associated Equator Principles subscribed to by commercial banks, will facilitate the consideration of the safeguards. It is also key to work with ONE and Madagascar's MECIE in order to facilitate harmonization and application of the country's policies consistent with national law and practice.

5.5 Safeguards Applications

The Panel recommends that PIC share lessons learned with the World Bank preparers of PIC 2 concerning the need for a CSER and assist ONE and the relevant regional authorities to install a CSER for the relevant regions.

A considerable wealth of experience has been gathered and internalized in the PIC offices (Nosy be, Fort-Dauphin and Antananarivo) on the preparation and implementation of plans to manage environmental and social impacts. This experience will be of great value as PIC 2 preparation continues.

- The Panel especially recommends that PIC builds on the human resources and capabilities developed during PIC 1 and as much as possible keep intact the team that oversaw the environmental and social safeguards.

QMM also has gained experience in resettlement-related land acquisition and compensation in a climate of social and political suspicion and misunderstanding and, occasionally, tension; recently, QMM has experienced the complexities of securing mining rights in situations where there is land occupation.

- The Panel recommends that PIC 2 preparation and safeguards compliance be facilitated with a small learning workshop bringing together PIC safeguards and community relations staff, QMM and others with relevant country experience. This would be an occasion to familiarize the participants with recent approaches and convergence in safeguards among various parts of the World Bank Group, the Equator Banks and others, such as AfDB, and with projects by these other donors that

specifically relate to PIC 2.

- Although mining does not presently feature in PIC 2 components other than in PPP initiatives, the underlying issue of securization of mining rights is relevant to the “unlocking” of this sector. To this end, sharing the experience and expertise of QMM with others could be valuable. This recommendation could appropriately feed into a country policy dialogue on land policy and safeguards with the aim of establishing a greater degree of consensus and ownership over policies, practices and institutions dealing with land, land alienation including subsurface rights, and compensation.

6. Next Steps

6.1 Communication and Dissemination of the IAP Report

In accordance with the Terms of Reference for the Panel, this report will be shared with the World Bank Task Team Leader and others. The Panel recommends that the safeguard issues be discussed with the Africa Region Safeguards team, in particular the issues regarding resettlement.

The Terms of Reference also require that the Panel's report be made accessible to the target population and stakeholders. The World Bank is expected to disclose the Panel report on its Infoshop website. Because the first report of the Panel was not disclosed at the Infoshop, the Panel recommends that this report and the first report be disclosed at the Infoshop prior to project closure. The Panel's reports should also be referenced in the Implementation Completion Report.

The Panel recommends that the report (or its Executive Summary) be provided to the agencies, NGOs and local authorities in Nosy Be and Diana as well as in Fort Dauphin and Anosy. In Fort Dauphin, the Panel specifically recommends that PIC and the Bank discuss the contents with QMM.

6.2 PIC Actions

Based on the Panel's findings and recommendations and review with the World Bank Project Team, the Panel expects that the PIC will to the extent feasible act upon the recommendations made in Chapters 2 and 3 of this report.

Annexes

Annex A	List of Persons Met
Annex B	References Cited
Annex C	Photos Nosy be
Annex D	Maps of Nosy be
Annex E	Photos Fort Dauphin
Annex F	Maps Fort Dauphin
Annex G	Terms of Reference for Resettlement Evaluations/Audits