

## 7 MADAGASCAR

### 7.1 Constitutional Requirement for Environmental Protection in Madagascar

The Constitution of the Republic of Madagascar (2007-001) states that:

*“Everyone must respect the environment” (Article 39); and  
“The State guarantees the freedom of enterprise so long as it operates within the limits of the public interest, public order and the environment.” (Article 37).<sup>1</sup>*

The concept of sustainable development underpins all the environmental policy and legal documents and the Decree No 2004-167 relating to *‘Mise en Compatibilité des Investissements avec l’Environnement’* (MECIE) is founded on the notion of sustainable development recognising the needs of the present, while safeguarding the needs of future generations. The three objectives of sustainable development to be achieved include:

- Maintenance of ecological integrity;
- Improvement of economic efficiency;
- Improvement of social equity.<sup>2</sup>

### 7.2 Institutional and Administrative Structure for EIA in Madagascar

#### 7.2.1 Ministry of the Environment, Forests and Tourism

The Ministry of the Environment, Forests and Tourism (MEEFT) is responsible, *inter alia*, for the environmental impact assessment (EIA) process. Its specific tasks relating to EIA include:

- Participation in the EIA process, as well as in the control and monitoring of projects;
- Implementation of the processes set out in the Decree MECIE;
- Authority to whom an aggrieved proponent can request a second opinion in the event that his request for an environmental permit is refused by the *Office National de l’Environnement* (ONE).<sup>3</sup>

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<sup>1</sup> [www.pnae.mg](http://www.pnae.mg)

<sup>2</sup> *Presentation du Decret MECIE* on [www.pnae.mg](http://www.pnae.mg)

<sup>3</sup> Op. Cit. Footnote 2.

The remit of the Minister of Environment, Forests and Tourism as well as the general organisation of the ministry, are set out in Decree No 98-962 of 18<sup>th</sup> November 1998.

The organisational chart for MEEFT is presented in Figure 7.1.

## 7.2.2 Office National de L'Environnement

The National Office for the Environment (*Office National de l'Environnement, (ONE)*) is situated in the Ministry of the Environment. It was set up specifically to administer the Decree MECIE and has recently been formalised in terms of Decree No 2008.600 of 23<sup>rd</sup> June 2008. Its stated mission is to make sure that economic activities and development are not detrimental to the environment. This is carried out through a number of interventions including: the development and management of the EIA processes set out in Decree MECIE; the management and prevention of pollution; monitoring of the marine and terrestrial environments to better manage the unique biodiversity of Madagascar; dissemination of environmental information and tools; environmental awareness training; as well as the preparation of national and regional State of Environment reports.<sup>4</sup>

The main tasks of ONE in relation to EIA include:

- Co-ordination of the EIA process;
- Co-ordination of the work of the *ad hoc* Technical Evaluation Committee (*Comité Technique d'Evaluation (CTE)*) and monitoring of the Environmental Management Plan (EMP);
- Co-ordination of the evaluation of environmental audits;
- Issuing Environmental Permits;
- Issuing Environmental Closure Certificates on project closure.<sup>5</sup>

## 7.2.3 Comité Technique d'Evaluation (CTE)

The Technical Evaluation Committee (*Comité Technique d'Evaluation (CTE)*) is an *ad hoc* committee constituted by ONE, which is charged with the evaluation of the EIA dossier. It comprises members of the sector Environmental Units (see section 7.2.4 below), representatives of the sector ministries, the MEEFT and ONE.

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<sup>4</sup> www.pnae.mg

<sup>5</sup> Op. Cit. Footnote 2.

## 7.2.4 Inter-sectoral Co-operation

Other line ministries responsible for development in their sectors are expected to participate in the EIA process and to control and monitor the implementation of the EMP. To achieve effective implementation of this, Decree No 2003-439 of 27<sup>th</sup> March 2003 provides the framework for the establishment of an Environmental Unit in each sector ministry which directly affects the environment. The Environmental Units are responsible for: evaluating and approving the Programmes of Environmental Engagement (PREEs) and for the integration of the environment into sector policies in order to ensure sustainable development.

## 7.3 Policy and Legal Framework for EIA in Madagascar

### 7.3.1 National Policy

Environmental policy in Madagascar is informed by the *Plan National d'Action Environnemental* (PNAE) or National Environmental Action Plan (NEAP). This document came into force through Law 90-033 on 21<sup>st</sup> December 1990. It provides predictions and strategies for a period of 15 years, up to 2015, divided into three 5-year programmes for the environment known as PE1, PE2 and PE3.<sup>6</sup>

### 7.3.2 Charte de L'Environnement

The *Charte de l'Environnement* was promulgated as Law 90-033 on 21<sup>st</sup> December 1990 and amended by Laws No 97-012 of 6<sup>th</sup> June 1997 and No 2004-015 of 19<sup>th</sup> August 2004. Article 10 makes provision for EIAs by stating that all public or private investment projects which may have an impact on the environment must undertake an impact study, taking into account the technical nature, the scale and magnitude of the project, as well as the sensitivity of the receiving environment. Investment projects submitted for authorisation or approval by an administrative authority are equally required to be subjected to an EIA under the same conditions as other projects.<sup>7</sup>

### 7.3.3 Decret relative à la Mise en Compatibilité des Investissements avec l'Environnement (MECIE)

The Decree MECIE has evolved over time and has been repealed and/or amended several times, as follows:

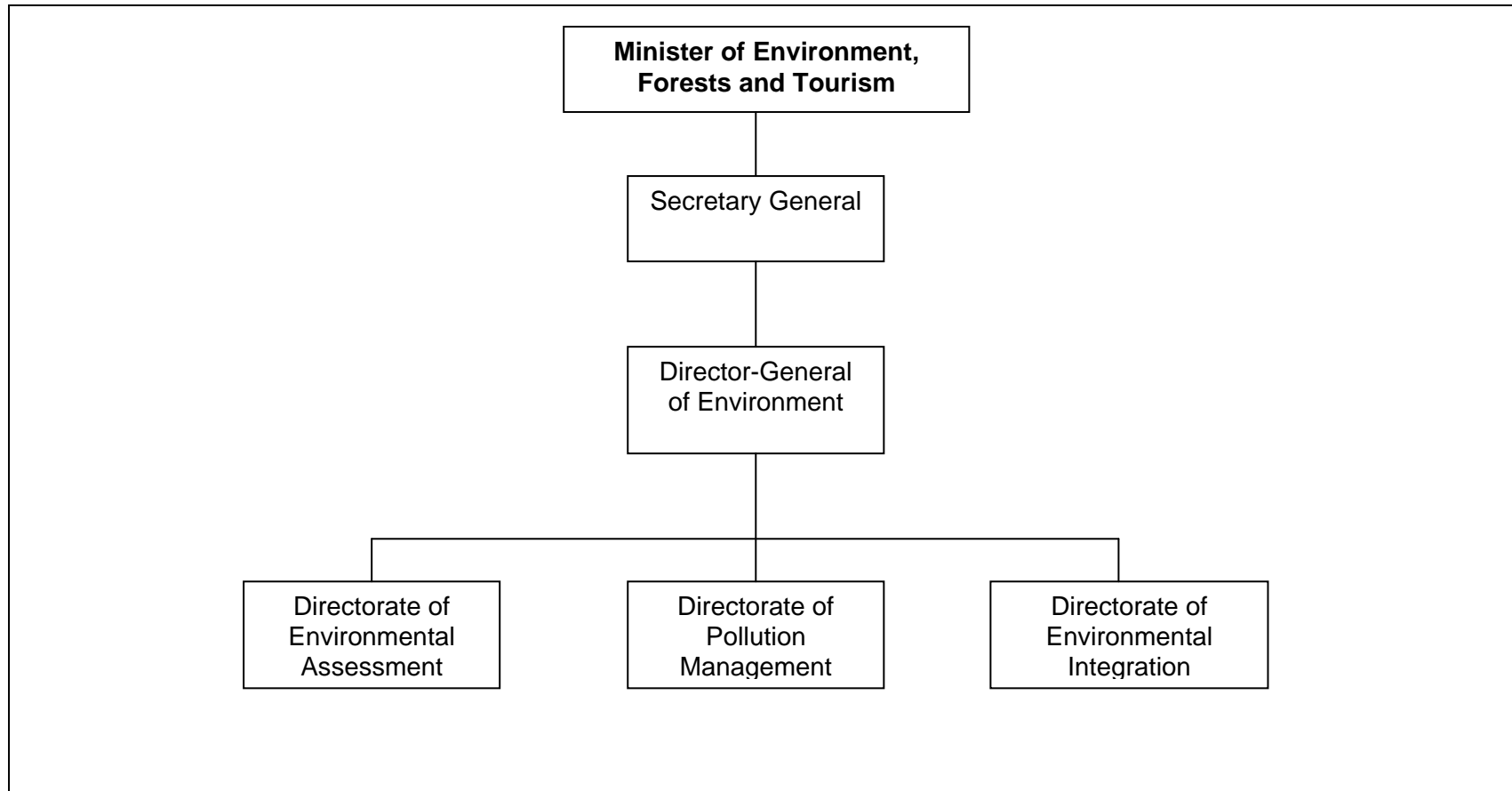
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<sup>6</sup> Powerpoint presentation by H Randriamiarana, Dir. of EIA, ONE.

<sup>7</sup> Op. Cit. Footnote 2.

Decree No 92-926 of 21<sup>st</sup> October 1992, replaced by –  
Decree No 95-377 of 23<sup>rd</sup> May 1995, repealed by –  
Decree No 99-954 of 15<sup>th</sup> December 1999, modified by –  
Decree No 2004-167 of 3<sup>rd</sup> February, 2004.

**FIGURE 7.1: ORGANISATIONAL STRUCTURE OF THE MINISTRY OF ENVIRONMENT, FORESTS AND TOURISM (AS IT RELATES TO ENVIRONMENTAL ASSESSMENT)**



The Decree of 1999 introduced new articles relating to EIA, the Programme of Environmental Engagement (PREE), permitting and approval processes, the establishment of the *Comité Technique d'Environnement* (CTE) and the lists of projects which require either an EIA or PREE, and the scale of review fees required by ONE. The latest Decree of 2004 specifies the roles and responsibilities of ONE and other organisations responsible for EIA.

MECIE is divided into 6 chapters and 3 annexes as follows:

- Chapter 1: General arrangements and definition of terms
- Chapter 2: Rules and procedures relating to:
- EIA process;
  - Evaluation and review procedures;
  - Public participation
- Chapter 3: Monitoring and control
- Chapter 4: Offences and penalties
- Chapter 5: Transition arrangements
- Chapter 6: General arrangements relating to particular modalities of application in certain sectors.
- Annex I: Description of projects which require an EIA
- Annex II: Description of projects which require a PREE
- Annex III: Fees

### **7.3.4 Related Orders, Technical Directives and Guidelines**

There are a number of legal instruments and tools which support the operation of MECIE. These are listed below:

- Order No 4355/97 of 13<sup>th</sup> May 1997 regarding the designation of sensitive zones. In terms of Article 2 of this Order, sensitive zones are defined as being one or more elements of the environment which are characterised by specific values or fragility, which may be vulnerable to human activities and susceptible to natural phenomena, such that the environment may be modified and/or degraded;
- Order No 6830/2001 of 28<sup>th</sup> June 2001 setting out the procedures and methods of public participation in EIA (see section 7.4.5 below);
- Order No 18 732 of 27<sup>th</sup> September 2004 setting out the definition and delimitation of sensitive forest areas;
- Order No 19 560 of 18<sup>th</sup> October 2004 suspending the granting of mining permits and forestry permits in areas reserved for conservation;

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- Inter-ministerial Order 6941/2000 of 11<sup>th</sup> July 2000 setting the limits for exhaust emissions from vehicles;
  - Inter-ministerial Order 12032/2000 of 6<sup>th</sup> November 2000 regarding the regulation of the mining sector and matters of environmental protection.<sup>8</sup>

Several more Orders are currently in draft relating to the implementation of EIA and PREE.

There are also a number of Environmental Technical Directives which have been adopted, relating to:

- Conducting an EIA;
- Environmental evaluation;
- Compliance monitoring;
- Environmental auditing.

Meanwhile a guide for local authorities in public participation in EIA, and a guide for environmental follow-up are currently in draft.

Madagascar also has a number of sector EIA guidelines for: tourism, roads, aquaculture, on- and off-shore petroleum developments, textiles, forestry, mines, wetlands and sensitive areas.

### 7.3.5 Permits and Licences

In terms of Article 27 of MECIE 2004, an **Environmental Permit** will be granted by ONE on the basis of the environmental review of the EIA, a public evaluation report and technical advice from the CTE. The Environmental Permit will be inserted into all applications, approvals and agreements for all construction works projects.

Projects which only require a PREE, receive an Environmental Agreement or a Certificate of Conformance from the Environmental Unit in the responsible sector ministry.

### 7.3.6 Offences and Penalties

The offences which can be committed under MECIE are set out in Article 34 of the Decree and are summarised in Table 7.1 below. The penalties will be determined by ONE together with the sector ministry and the affected community from the list shown in Table 7.1.

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<sup>8</sup> Op. Cit. Footnote 2.

**Table 7.1: Offences and Penalties**

Offence	Penalty
Non-compliance with the EMP	<ul style="list-style-type: none"> <li>▪ Injunction to restore the environment to its natural condition;</li> <li>▪ Injunction to proceed, within a predetermined time, to implement correction measures and compensation;</li> <li>▪ Suspension or withdrawal of the Environmental Permit. Once this has occurred, the responsible sector ministry can:               <ul style="list-style-type: none"> <li>▪ Stop all work;</li> <li>▪ Suspend the activities in terms of Art. 2 of MECIE;</li> <li>▪ Temporary or permanent closure of the establishment.</li> </ul> </li> </ul>
Carrying out any development or construction works for a project listed in Annex I without an Environmental Permit	
Carrying out any development or construction works for a project listed in Annex II without the approval of a PREE	
Failing to carry out corrective actions and/or paying the prescribed compensation	
Failure or partial failure to carry out the detailed measures prescribed in MECIE	

### 7.3.7 Fees

All developers are required to pay a fee for the authority review of the EIA and the monitoring of the EMP. The payment of the fee includes the costs associated with the environmental units in the sector ministries, the fees of experts used to assist with the review or monitoring of the project and the fees and costs incurred by the members of the CTE and by the public enquiry and/or public hearing.<sup>9</sup> The fee schedule is shown in Table 7.2.

**Table 7.2: Fees to be Paid for EIA Review and EMP Monitoring**

Value of Investment	Fee
Less than 10 million FMG	0.5% of capital cost of investment
10 – 25 million FMG	10 million FMG or 0.4% of the capital cost
25 – 125 million FMG	35 million FMG or 0.3% of the capital cost
125 – 250 million FMG	160 million FMG or 0.2% of the capital cost
More than 250 million FMG	410 million FMG or 0.1% of the capital cost

### 7.3.8 Environmental Standards

The proponent of a project must demonstrate how he will conform with the environmental standards in force at the time of his application. In Madagascar, Decree No 2003/464 of 15<sup>th</sup> April 2003 sets out the effluent quality standards that must be adhered to prior to discharge into surface waters. These are specified in Article 5 of the Decree and repeated in Table 7.3 below. The minimum standards for metals in sewage sludge are stipulated in Article 10 and shown in Table 7.4, while the standards for soil onto which sewage sludge is discharged are shown in Table 7.5. The methods of analysis which should be used are set out in the Annex to the Decree.

<sup>9</sup> Annex 3 of Decree 99-954 of 1999.

**Table 7.3: Discharge Standards for Liquid Effluents**

Determinands	Units	Standard
PHYSICAL		
pH		6.0-9.0
Conductivity	µS/cm	200
Suspended solids	mg/l	60
Temperature	°C	30
Colour	Pt/Co	20
Turbidity	NTU	25
CHEMICAL		
Hardness as CaCO <sub>3</sub>	mg/l	180
Ammoniacal Nitrogen	mg/l	15
Nitrate	mg/l	20
Nitrite	mg/l	0.2
Kjeldahl Nitrogen	mg/l - N	20
Phosphate as PO <sub>4</sub>	mg/l	10
Sulphate as SO <sub>4</sub>	mg/l	250
Sulphur as S	mg/l	1
Oil and grease	mg/l	10
Phenol	mg/l	1
Polycyclic aromatic hydrocarbon (PAH)	mg/l	1
Free chlorine	mg/l	1
Chloride	mg/l	250
BIOLOGICAL		
Chemical oxygen demand (COD)	mg/l	150
Biological oxygen demand	mg/l	50
UNDESIRABLE ELEMENTS		
Aluminium	mg/l	5
Arsenic	mg/l	0.5
Cadmium	mg/l	0.02
Hexavalent chromium	mg/l	0.2
Total chrome	mg/l	2
Iron	mg/l	10
Nickel	mg/l	2
Lead	mg/l	0.2
Tin	mg/l	10
Zinc	mg/l	0.5
Manganese	mg/l	5

Determinands	Units	Standard
Mercury	mg/l	0.005
Selenium	mg/l	0.02
Cyanide	mg/l	0.2
Aldehyde	mg/l	1
Aromatic solvents	mg/l	0.2
Nitrogen-based solvents	mg/l	0.1
Chloride-based solvents	mg/l	1
Organo-chloride pesticides	mg/l	0.05
Organo-phosphate pesticides	mg/l	0.1
Pyrethrinoids	mg/l	0.1
Phenylpyrrazoles	mg/l	0.05
Total pesticides	mg/l	1
Antibiotics	mg/l	0.1
Polychlorobiphenyls (PCBs)	mg/l	0.005
Radioactivity	Bq	20
<b>MICROBIOLOGICAL</b>		
Total coliforms	Number	500
<i>E. coli</i>	Number	100
Faecal streptococci	Number	100
Clostridium		100

**Table 7.4: Sewage Sludge Standards**

Element	Maximum concentration (mg/kg dry matter)	Maximum per kg/ha/10 years
Cadmium	40	1.5
Chromium	2,000	45
Copper	2,000	120
Mercury	20	1
Nickel	400	30
Selenium	200	1
Zinc	8,000	300
Cr+Cu+Ni+Zn	8,000	120

**Table 7.5: Soil Limits for Sewage Sludge Disposal**

Element	No sewage sludge to be disposed of on soils where metal concentrations exceed the following (mg/kg of dry material)
Cadmium	3
Chromium	200
Copper	140
Mercury	1.5
Nickel	75
Lead	300
Selenium	10
Zinc	300

In the event that there are no national standards available, e.g. for noise, air quality, the proponent must comply with internationally recognised standards developed by international organisations affiliated to the UN. In the case where there are several standards available for use, the proponent must provide justification for his choice in the EIA.<sup>10</sup>

### 7.3.9 Certification of EIA Consultants

There is no certification system for environmental assessment practitioners in Madagascar. The guidelines merely encourage the proponent to use recognised scientific experts in conducting the EIA,<sup>11</sup> and the names, professions and functions of each EIA team member must be provided in an Annex to the EIA report.

## 7.4 EIA Procedural Framework in Madagascar

An environmental impact assessment is defined in Article 2 of MECIE as *“a study which consists of scientific analysis and prediction of potential impacts of an activity on the environment, and the examination of the acceptability of their significance, as well as the mitigation measures proposed to ensure environmental integrity, within the limits of best available technology at an acceptable cost”*.

The aims of the EIA are identified as being:

<sup>10</sup> Para 1.2.4 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

<sup>11</sup> Para 1.4 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

- A tool to ensure the optimal integration of environmental considerations and the best utilisation of resources and land;
- To take environmental issues into account at all phases of the project life cycle, from conception through implementation, operations to closure;
- A tool to predict and determine the positive and negative ecological and social consequences of a project;
- To identify measures to mitigate or compensate for the negative impacts;
- To identify alternatives or variations to the project which may be less damaging to the environment and which satisfy the project objectives, as well as the interests of all parties concerned;
- To take into account the opinions, reactions and interests of all parties concerned, in particular those individuals and communities within the project area.<sup>12</sup>

### 7.4.1 Screening

At the outset, a project developer must determine whether his project requires an EIA or a *Programme d'Engagement Environnemental* (PREE) or a Compliance Certificate (Figure 7.2).

#### **Environmental Impact Assessment (EIA)**

The public or private investment projects which require an EIA are set out in Article 4 and Annex I of MECIE (shown in Appendix 7-1 of this chapter). An EIA is mandatory for:

- All developments, construction and works which could affect sensitive environments as defined in Order No 4355/97. A sensitive area may include: coral reefs, mangroves, islets, tropical forests, zones subject to erosion, arid and semi-arid areas susceptible to desertification, conservation areas, swamps, wetlands, reference sites for protected species, areas of archaeological or historical interest and zones around important water sources;
- The types of developments listed in Annex I (Appendix 7-1);
- Any other activity, which by its nature, size and scale could cause a negative impact on the environment and not listed in Annex I.

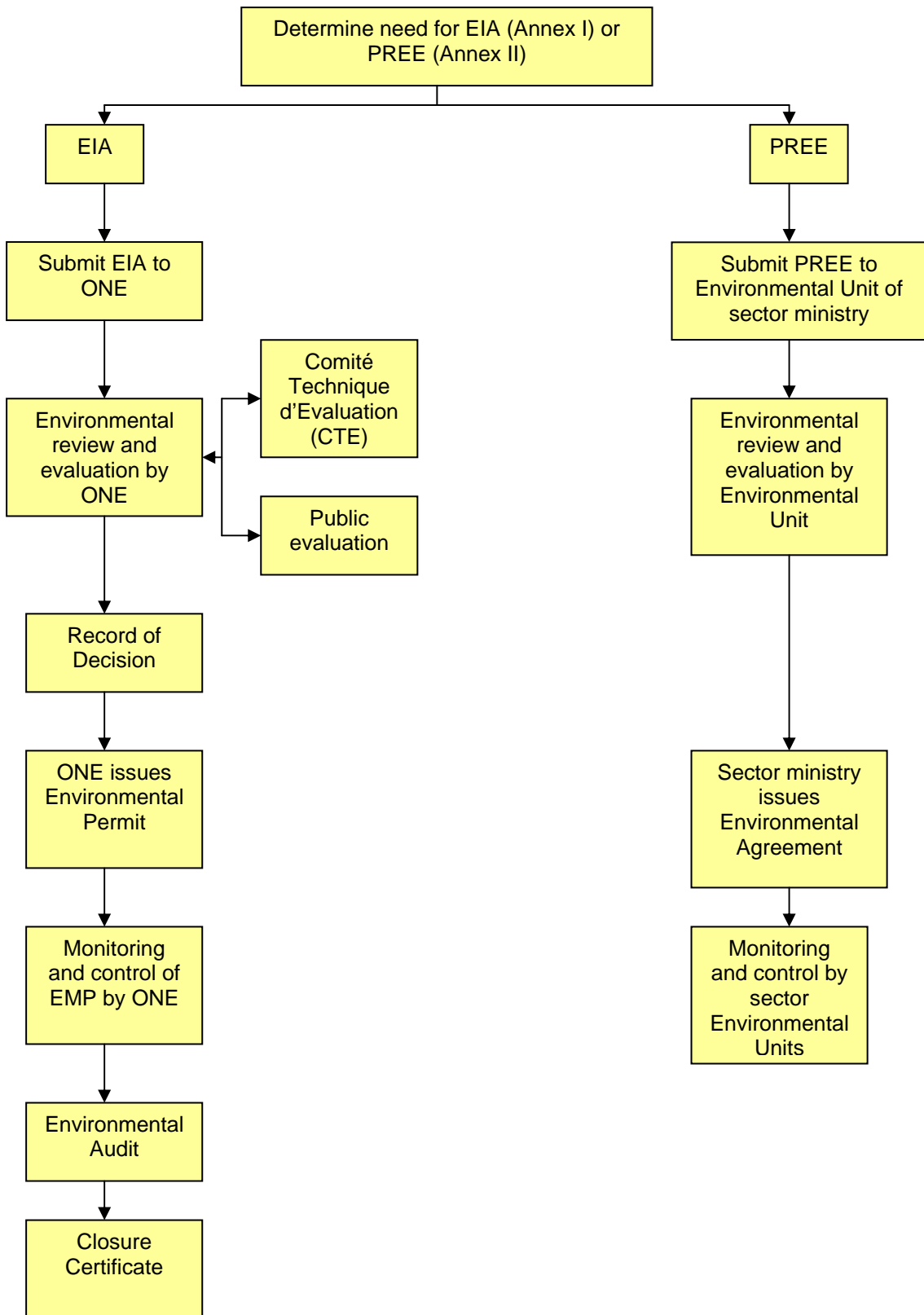
#### **Programme d'Engagement Environnemental (PREE)**

A developer of a private or public investment project, which is listed in Annex II of MECIE, must submit a brief project description to ONE, who will then screen the project and determine whether a PREE is acceptable.<sup>13</sup>

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<sup>12</sup> Para 1.1 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

<sup>13</sup> Article 5 and Annex 2 of MECIE 2004.



**FIGURE 7.2: EIA PROCESS IN MADAGASCAR**

### Compliance Certificate

Applies to those enterprises which were in existence on the date of Decree 2004-167 and which are listed in Article 4 of the Decree i.e. those projects which require an EIA.

## 7.4.2 Environmental Impact Assessment

The “*Directive Generale pour la Realisation d’une Etude d’Impact Environnemental à Madagascar*” sets out in detail the form and content of an EIA. The EIA must be undertaken according to the following steps:

**Context of the project:** This chapter should include details and experience of the proponent, the proponent’s environmental and sustainable development policies, if available, the name of the company undertaking the EIA, an overview of the project and its location and a detailed motivation and justification for the project, including the major opportunities and constraints.<sup>14</sup>

**Technical description of the project:** The aim of this section is to present a detailed description of each project phase and the activities associated with each phase. The description should include: the proposed use of natural resources, methods of exploitation and treatment, production rates, pollution and emissions expected, taking into account the environmental standards being applied. The chapter should include the identification of all impacts associated with each project activity and the proponent is referred to the sectoral guidelines listed in section 7.3.4 of this handbook and the line ministry responsible.<sup>15</sup>

**Description of the receiving environment:** The aim of this section is to describe the baseline receiving environment in the zone of influence of the project. The environment is considered to include the physical, biological, social, economic and cultural elements. This chapter of the EIA should include a detailed delimitation of the actual project site, the position of all ancillary and associated structures e.g. access roads, pipelines etc, as well as the surrounding areas which may be impacted by the project e.g. air pollution deposition zones, socio-economic structures etc. The chapter must also provide a detailed description of the most important environmental components. Data can be obtained either through literature surveys or where basic data is lacking, through site surveys carried out by a multi-disciplinary team of experts using proven scientific methods.

The baseline environmental description should include information on: geology, topography, soils, hydrology, terrestrial and aquatic ecosystems, vegetation, fauna, social structures and demographics, economic systems and activities, and the cultural environment. The study must

<sup>14</sup> Para 2.1 of the *Directive Generale pour la Realisation d’une Etude d’Impact Environnemental à Madagascar*.

<sup>15</sup> For a complete list, see Para 2.2 of the *Directive Generale pour la Realisation d’une Etude d’Impact Environnemental à Madagascar*.

also be placed into the context of spatial planning initiatives, policies and other schemes and developments.<sup>16</sup>

**Alternatives analysis:** The objective of this step is to demonstrate that the project as proposed is the best option of all possible alternatives, from a technical, economic and environmental perspective. To this end, the EIA should include a detailed assessment of all site, route and design alternatives and provide a justification for the preferred options on the basis of an objective assessment of each.<sup>17</sup>

**Analysis of impacts:** This chapter must include 3 sections:

- Identification of potential impacts on the receiving environment for each activity for each project stage;
- Evaluation of the impacts including an analysis of the intensity or magnitude, scale, duration, frequency and probability of each impact, confidence levels in each prediction, value of compensation for affected populations, health and safety risks and exposure pathways;
- Identification of mitigation measures to prevent, suppress or reduce negative impacts or to maximise the benefits of the project on the environment. The mitigation measures must be identified for each impact per each project phase and must include the required actions to achieve the desired results. If it is not possible to reduce the negative impacts sufficiently, then it will be necessary to identify suitable compensation measures e.g. resettlement packages. The proponent is required to identify the costs associated with the proposed mitigation measures.

The study must present the methodology used to determine the impacts, including clearly defined criteria for ascertaining significance and importance.<sup>18</sup>

**Risk assessment:** The EIA must include a risk assessment, especially for heavy industrial and infrastructure projects where there is a risk of accidents which could pose a danger to environmental quality and human health. In these instances, the EIA report must identify the risks and present a detailed emergency plan to deal with each risk.<sup>19</sup>

**Project synthesis:** This chapter must present a synthesis of the project after all mitigation and compensation measures have been applied, detailing the residual impacts.<sup>20</sup>

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<sup>16</sup> Detailed lists of factors to consider in the environmental description are included in Annex 2 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

<sup>17</sup> Para 2.4 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

<sup>18</sup> Para 2.5 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

<sup>19</sup> Para 2.6 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

<sup>20</sup> Para 2.7 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

**Environmental Management Plan (EMP):** The EMP or *Programme Gestion Environnemental du Projet (PGEP)* provides an environmental monitoring and follow-up programme which must be implemented during each phase of the project life-cycle. This section of the EIA forms the basis of the Record of Decision (*Cahier des Charges Environnementales*). The EMP must contain at least the following components:

- A list of all legislative requirements which have been taken into account in the project;
- A description of the envisaged performance and design criteria for all equipment and installations;
- A description of the measures and methods proposed to protect the environment;
- Evaluation of dangers and the proposed methods of prevention and protection to safeguard the environment;
- The interventions undertaken by the proponent to apply the mitigation measures to the negative impacts of the project;
- A programme for the implementation of all mitigation measures;
- The mechanisms and frequency of sending monitoring reports to the competent authorities (MoE, ONE and other sector ministries).

It is expected that the monitoring programme will be revised periodically based on the effectiveness of the mitigation measures after implementation of the project.

The follow-up programme aims to validate the impact predictions made in the EIA and to assess environmental performance of the project and the effectiveness of the mitigation measures.<sup>21</sup>

The EIA report should contain the following:

- Executive Summary
- Table of Contents
- Lists of tables, figures and diagrams
- Introduction
- Context and justification for the project
- Description of the receiving environment
- Description of the project
- Analysis of the project alternatives
- Risk assessment
- Project synthesis
- EMP
- Conclusions
- References

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<sup>21</sup> Para 2.8 of the *Directive Generale pour la Realisation d'une Etude d'Impact Environnemental à Madagascar*.

- Annexes containing: a list of the EIA study team including names, profession and position on the team; maps; notices of public meetings and details of the public consultation programme; methods and results of all surveys and sampling programmes; and any other information that will assist informed decision making on the project.

In addition, the EIA documents must include the title deeds or other proof of ownership or tenure of the site for the proposed project, as well as a non-technical summary in Malagasy and French. The main document must also be written in Malagasy or French.

The environmental dossier (all the documents described above) must be submitted to ONE, together with:

- A written request by the proponent addressed to ONE to carry out an environmental review;
- A short note about the project;
- Seven copies of the EIA report;
- Seven copies of the non-technical summary in French and Malagasy;
- Receipt of payment of the review fees;
- Certified statement of the capital costs of the project;
- One copy of the documentation on CD-ROM, in a form compatible with WORD 6.0.

### **7.4.3 Programme d'Engagement Environnemental (PREE)**

All investment projects listed in Annex II of the Decree MECIE, 2004 (see also Appendix 7-2) must submit a programme of environmental commitment (*Programme d'Engagement Environnemental*) (see Figure 7.2). According to Article 5 of Decree MECIE, 2004, the PREE must conform with the contents, format and substance to be defined in forthcoming regulations. The PREE will be evaluated by the Environmental Unit in the sector ministry concerned, who will then send its report and opinion to the MoE and ONE. Approval of the PREE is a mandatory requirement prior to construction.

### **7.4.4 Review of EIA Report**

Once the environmental dossier has been received by ONE, the evaluation and review process commences (see Figure 7.2). The tasks include:

- Analysis of the acceptability and completeness of the documents;
- Assembling the *ad hoc* Technical Evaluation Committee (CTE);
- Desktop review of the documents;

- Visit to the site for familiarisation and observation of the environment and cross-checking aspects contained in the EIA;
- Initiation of the public participation process (see section 7.4.5 below);
- Request to the proponent for additional information;
- Obtaining technical advice and opinion from the sector ministries responsible for the project;
- Issuing the Record of Decision (*Cahier des Charges Environnementales* (CCE));
- Granting the Environmental Permit.

### 7.4.5 Public Participation Process

The basis for public participation in environmental decision making is found in Article 4 of the *Charte de l'Environnement*, which states that “*the protection and respect for the environment is of general interest. It is the obligation of each person to safeguard the environment in which he lives. To this effect, all interested and affected parties (I&APs) have a right to be informed of decisions which could have an influence on the environment.*”

The involvement of the public in the EIA review process is carried out either by a review of the documents by interested and affected parties (I&APs), or through a public enquiry/survey or through a public hearing. The results of the public evaluation are an integral part of the EIA. The decision as to the method of public involvement is taken by ONE, based on the methods specified in Order No 6830/2001 and the proponent is notified at least 7 days before the public evaluation commences.<sup>22</sup> The public participation process is organised by CTE or ONE.

The **document review** process includes the collection of public opinion by the local authority in the area of the proposed project. The methodology is set out in Order No 6830/2001. The consultation process must extend for a period no less than **10 days** and no more than **30 days**.<sup>23</sup>

The **public enquiry/survey** comprises the collection of public opinion by an environmental interviewer, carried out in collaboration with the relevant local authorities. The methods of engagement are set out in Order No 6830/2001. The public enquiry must extend for a period no less than **15 days** and no more than **45 days**.<sup>24</sup> The public enquiry can occur simultaneously with the document review process described above.

The **public hearing** process is described in Articles 20 and 21 of the Decree MECIE, 2004 and Order No 6830/2001. The public hearing comprises the simultaneous consultation with interested

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<sup>22</sup> Article 15 of Decree MECIE, 2004

<sup>23</sup> Articles 16 and 17 of Decree MECIE, 2004.

<sup>24</sup> Articles 18 and 19 of Decree MECIE, 2004.

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parties and can occur in addition to the two forms of consultation described above. The public hearing process must extend for a period no less than **25 days** and no more than **60 days**.

#### **7.4.6 Appeals**

Anyone aggrieved with a decision made by ONE has recourse to request the Minister of Environment to have a second look at the dossier of documents. The Minister may appoint one or more experts to assist him in his review, which must be undertaken and a report submitted to ONE within **30 days**. On receipt of the Minister's report, ONE has **10 days** to reconsider their RoD and to announce whether they will issue the Environmental Permit or not. If not, the Minister could issue the permit.<sup>25</sup>

#### **7.4.7 Environmental Monitoring and Control**

Chapter III of Decree MECIE, 2004 sets out the requirements for environmental monitoring and control. The aim of environmental monitoring is to verify the effectiveness of the mitigation measures in preventing or minimising the negative impacts on the environment. This ensures that the proponent of the project will respect all the obligations of the EMP throughout the life of the project. Any evidence of non compliance can lead to the imposition of penalties by the authorities.

The proponent may be required to take additional measures or apply new standards in the event that the current measures are found to be ineffective. This decision will be made by the competent authority who granted the environmental permit.

Before project closure, the proponent is required to carry out an environmental audit according to the methodologies set out in the applicable technical directives. The audit must be submitted to ONE for evaluation and the granting of an Environmental Closure Certificate, which would then relieve the proponent from any further responsibility for the environment.

### **7.5 Other Relevant Environmental Legislation in Madagascar**

Environmental issues cut across a wide variety of sectors and, under the current situation, there are numerous pieces of legislation in Madagascar, which have a bearing on the environment and should be considered in EIA decision making. The sectors, titles of the legislative instruments, the responsible agency and the purpose of the legislation are summarised in Table 7.3.

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<sup>25</sup> Article 28 of Decree MECIE, 2004.

**Table 7.6: Other Potentially Applicable Sectoral Requirements**

Information Required	Responsible Agency	Title and Date of Document	Comments
Water Resources (use of)	Ministry of Water	Law No 98-029 of 20/01/99: the Water Code	
Effluent disposal	Ministry of Water	Articles 16-18 and 20-22 of Law No 98-029  Law No 99-021 of 19 <sup>th</sup> August 1999	Pertains to waste water and effluent disposal.  Relates to the management policy and control of industrial pollution
Planning and Zoning	Local authorities	1) Authorisation d'alignement  2) Building Permission	Request for a building alignment approval has to be made to the local authority. A fee will be levied and it has to be paid at the time of the request. Approval takes about 1 month.  Need to apply to the local authority and it takes about 3 months
Natural Resources	DINAs	Law No 96-025 of 30 <sup>th</sup> Sept 1996 as amended by 2000-027 of 13 <sup>th</sup> January 2000	Relates to the local management of renewable natural resources by all rural communities
Fisheries and Aquaculture	Ministry of Agriculture, Stockfarming and Fisheries	Ordinance No 93-022 of 4 <sup>th</sup> May 1993	Contains regulations on fishing and aquaculture practices
Forestry	MEEFT	Law No 97-017  Law No 97-1200  Order No 18177/04 of 27 <sup>th</sup> September 2004	Revision of forestry legislation  Adoption of Forestry Policy  Definitions and delimitation of sensitive forest areas
Conservation	MEEFT	Law No 2001/05 Management of Protected Areas  Order No 4355/97 of 13 <sup>th</sup> May 1997	Sets out the classes of protection, the basis for protection and the procedures which need to be followed to proclaim a protected area  Definitions and delimitation of sensitive environments
Tourism	MEEFT	Law No 95-017 of 25 <sup>th</sup> August 1995  Decree No 96-1293 of 30 <sup>th</sup> December 1996	Contains the Tourism Code  Relates to the creation and management of areas of tourist interest
Agricultural and Land	Ministry of Agriculture, Stockfarming and Fisheries	Law No 2003-029 of 27/08/03 and Decree No 2003-897 of same date.	Permits foreigners to purchase land in Madagascar. The alternative is to enter into a long-term lease.
Roads	Ministry of Roads	Law No 98-026 of 20 <sup>th</sup> January 1999	Overhauls the Roads Charter

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Mining	Ministry of Energy and Mines	Law No 99-022 of 19 <sup>th</sup> August 1999  Decree No 2000-170 of 18 <sup>th</sup> November 2000  Inter-ministerial Order No 12032/2000 of 6 <sup>th</sup> November 2000	Mining Code  Sets the conditions of application of the Mining Code  Regulation of the mining sector and matters relating to environmental protection
Energy	Ministry of Energy and Mines	Decree No 2003-942	Regulates the use of water for the production of hydroelectricity

## APPENDIX 7-1

# LIST OF PROJECTS WHICH MUST UNDERTAKE AN EIA

All developments, construction and works which could affect sensitive environments.

All plans, programmes and policies which could modify the natural environment and use natural resources and/or affect the quality of the human environment, whether urban or rural.

The use or transfer of technologies which have the potential to cause damage to the environment.

Storage of any liquid of more than 50,000 m<sup>3</sup>.

All methods of commercial transport by road, rail or plane of dangerous goods (corrosive, toxic, contagious or radioactive).

Any displacement of more than 500 people.

All developments, construction and works, which by their nature and size and the sensitivity of the receiving environment, could result in environmental damage. These include:

### **Infrastructure and development**

All projects relating to the construction and maintenance of roads;

All projects relating to the construction and maintenance of railways;

All railway rehabilitation projects of more than 20km in length;

All projects relating to the construction, maintenance and rehabilitation of international, regional or national airports and/or with a runway length of more than 1,500m;

All projects relating to the management, rehabilitation and maintenance (specifically dredging) of principal and secondary ports;

All projects relating to the new construction of marine and freshwater ports;

All projects involving the excavation or construction of embankments using more than 20,000m<sup>3</sup>;

All construction projects in development zones;

All nuclear energy projects;

All hydroelectric installations with a capacity of more than 150MW;

All thermal energy projects with a capacity of more than 50MW;

All powerline construction projects of 138kV or greater;

All hydroelectric dams with a dam surface of more than 500ha;

All projects for the establishment of navigable waterways, including dredging, of longer than 5km.

**Agriculture and stock farming**

All projects relating to the establishment or rehabilitation of irrigation agriculture or dry land agriculture of more than 1000ha;

Intensive stock farming projects;

Abstraction of surface or ground water at a rate of more than 30 m<sup>3</sup>/h;

Application of chemical products, which by their scale of application, could affect the environment and human health.

**Renewable natural resources**

Introduction of new species of animals, or plants or genetically modified organisms;

Forestry operations greater than 500ha;

Collection and or hunting and sale of species;

Creation of terrestrial or marine parks and reserves at a national or regional scale;

Introduction of native species of Madagascar into an area where they are not previously known;

All commercial sport hunting and fishing operations.

**Tourism and hotel industry**

Establishment of hotels with a capacity of more than 120 bedrooms;

Establishment of recreation and tourism developments with a combined surface area of more than 20ha;

All restaurants with a seating capacity of more than 250 persons.

**Industrial sector**

All industrial developments which require authorisation in terms of the regulations and requirements of Law No 99-021 pertaining to the management policy for the control of industrial pollution;

All industrial units which transform natural products e.g. tanneries, breweries etc;

Factories for the manufacture of animal feeds with a capacity of more than 150t/year.

**Management of diverse products and waste**

All pesticide containers with a capacity of more than 10 tonnes;

All domestic and industrial waste disposal sites, including those for hazardous materials;

All units for the treatment and disposal of hospital wastes exceeding 50kg/day;

All containers for storage of radioactive products or wastes;

Storage of dangerous/hazardous products;

Water treatment plants for domestic supplies.

**Mining sector**

All exploitation or extraction of minerals by mechanical means;

Mining of radioactive substances;

Physical and chemical processing plants at mine sites.

**Hydrocarbons and fossil fuels**

All projects relating to the exploration for petroleum or natural gas using seismic and/or drilling methods;

All projects relating to the extraction and/or transportation by pipeline of petroleum or natural gas;

All projects relating to the extraction and industrial use of coal and coke;

Petroleum and natural gas refineries with a capacity of more than 20,000 barrel-equivalents per day;

All offshore structures;

Extraction of bitumen at a rate of more than 500m<sup>3</sup>/day;

All storage of petroleum products and derivatives, or natural gas, with a combined capacity of more than 25,000 m<sup>3</sup> or 25 million litres.

## APPENDIX 9-2

# LIST OF PROJECTS WHICH MUST UNDERTAKE A PROGRAMME OF ENVIRONMENTAL ENGAGEMENT (PREE)

### **Infrastructure and development**

All projects relating to the maintenance of tarred roads longer than 20km;

All projects relating to the maintenance of untarred roads longer than 30km;

All hydroelectric installations with a capacity of between 50 and 150MW;

All thermal energy projects with a capacity of between 25 and 50MW;

Sports fields with accommodation for more than 5000 spectators or events more than 3 hours in length;

All hydroelectric dams with a dam surface of between 200 and 500ha;

### **Agriculture and stock farming**

All projects relating to the establishment or rehabilitation of irrigation agriculture or dry land agriculture of between 200 and 1000ha;

Semi-industrial and small-scale stock farming projects;

### **Renewable natural resources**

Forestry operations greater than 150ha;

Capture and sale of species for export;

Creation of terrestrial or marine parks and reserves at a community and private scale;

Re-introduction of native species of Madagascar into an area where they were previously known;

Permanent utilisation or diversion of water courses accounting for more than 50% of their mean annual flow;

All permits for the collection and sale of species for export;

Augmentation of fishing stocks in the marine zone (a study of existing fish stocks would be required).

### **Tourism and hotel industry**

Establishment of hotels with a capacity of between 50 and 120 bedrooms;

Establishment of recreation and tourism developments with a combined surface area of between 2 and 20ha;

All restaurants with a seating capacity of between 60 and 250 persons.

### **Industrial sector**

All industrial developments which require authorisation in terms of the regulations and requirements of Law No 99-021 pertaining to the management policy for the control of industrial pollution;

All small-scale units which transform or process natural products.

**Management of diverse products and waste**

Storage of pharmaceutical products of more than 3 tonnes;

**Mining sector**

All mineral prospecting projects;

All exploitation or extraction of minerals by artisans;

Mining of rare minerals;

All '*orpillage*' mobilising more than 20 people in a radius of more than 500m;

Stockpiles with a combined capacity of more than 4000m<sup>3</sup>;

Underground storage of more than 100m<sup>3</sup>;

Quarries for stone using mechanical methods.

## ACRONYMS

<b>CCE</b>	<i>Cahier des Charges Environnementales</i>
<b>CTE</b>	<i>Comité Technique d'Evaluation</i> (Technical Evaluation Committee)
<b>EIA</b>	Environmental Impact Assessment
<b>EIE</b>	<i>Etude d'Impact Environnemental</i>
<b>EIS</b>	Environmental Impact Statement or Study
<b>EMP</b>	Environmental Management Plan
<b>FMG</b>	Malagasy Franc
<b>I&amp;APs</b>	Interested and Affected Parties
<b>MECIE</b>	<i>Mise en Compatibilité des Investissements avec l'Environnement</i>
<b>MEEFT</b>	Ministry of Environment, Forests and Tourism
<b>MoE</b>	Minister in charge of Environment
<b>NEAP</b>	National Environmental Action Plan
<b>NGO</b>	Non-Government Organisation
<b>ONE</b>	<i>Office National de l'Environnement</i>
<b>PE</b>	<i>Programme Environnemental</i>
<b>PGEP</b>	<i>Plan du Gestion Environnemental du Projet</i>
<b>PNAE</b>	<i>Programme National d'Action Environnemental</i>
<b>PREE</b>	<i>Programme d'Engagement Environnemental</i> (Programme of Environmental Commitment)
<b>SEA</b>	Strategic Environmental Assessment
<b>TOR or TDR</b>	Terms of Reference or Termes des Référence
<b>UN</b>	United Nations Environment Programme
<b>WHO</b>	World Health Organisation

## USEFUL CONTACTS

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