

PNG: CIVIL AVIATION DEVELOPMENT AND INVESTMENT PROGRAM

ENVIRONMENTAL ASSESSMENT AND REVIEW FRAMEWORK

A. Development Activities requiring Environmental Assessment and Review

1. Government of Papua New Guinea (the Government) has requested the Asian Development Bank (ADB) to provide a multi-tranche financing facility (MFF) to facilitate investments to support the proposed Civil Aviation Development and Investment Program (Investment Program). Five major airports (Project 1) in the country have been identified for upgrading and rehabilitation mainly based on the relative importance of these airports as domestic hubs for tourism and economic development on a regional basis. This Environmental Assessment and Review Framework (EARF) will apply to all subprojects under the MFF so as to ensure that the environmental impacts are appropriately addressed and mitigated to acceptable levels.

2. This EARF identifies the broad scope of the MFF and outlines the policy, procedures and institutional requirements for preparing subsequent sub-projects under the MFF. The executing agency (EA) will be the Civil Aviation Authority (CAA). The implementation of the Program will be managed by a Project Implementation Unit (PIU) located in the CAA.

3. The MFF is expected to be released in stages (tranches). The first tranche (Project 1) will be focused on upgrading and rehabilitation of five (5) airports namely: Wewak; Hoskins; Gurney; Mt. Hagen and Jackson's domestic airport. The objective is to upgrade the airports so that they could operate with bigger aircrafts, specifically F-100.

4. Under the MFF procedures, implementation of safeguards measures is to be achieved by environmental assessment of every subproject to be undertaken following ADB Environment Policy (2002). ADB Environmental Assessment Guidelines (2003) will be followed for all subprojects. All subprojects identified under Project 1 have been classified as Category B and are required to undertake initial environmental examination (IEE).

B. Environmental Assessment Procedures

5. The environmental regulations of the Government are derived from the Environment Act 2000. The Environment (Prescribed Activities) Regulation 2002 categorizes projects that need environmental assessment as "Prescribed Activities" in two schedules according to the anticipated potential environmental impact. Projects that likely to have significant adverse environmental impact (Level 2 and Level 3) are required to obtain an Environmental Permit (EP) from the Department of Environment and Conservation (DEC) following environmental assessment. The upgrading and rehabilitation of existing airports is not listed as Level 2 and Level 3 of the "Prescribed Activities". However certain associated project activities commonly associated with upgrading and improvement works such as earthworks, surfacing, discharge of waste water, establishment of borrow pits, sourcing and extraction of aggregate materials from surface water courses are Level 2 activities that may require an EP depending on the duration and scale of those activities. Therefore, to ensure compliance with the government environmental assessment requirements, CAA will disclose the scale and scope of the subprojects to DEC so that DEC can decide whether any specific environmental requirements will be needed for the proposed airport upgrading and rehabilitation. Considering the government environmental requirements and ADB Environmental Assessment Guidelines (2003), an IEE will be prepared for each subproject classified as environmental category B.

C. Subprojects to be Assessed

6. The proposed airport redevelopment is designed to bring the facilities to a level of development to fully meet airport safety standards and provide the runway, taxiway and apron capability to accept unrestricted operations by Fokker 100 aircrafts.

7. The first batch of development investments under Project 1 will be the upgrading and rehabilitation of existing Wewak Airport in East Sepik Province; Hoskins Airport in West New Britain Province; Mt. Hagen Airport in Western Highlands Province; Gurney Airport in Milne Bay Province and Jackson's Domestic Airport in the National Capital District. (See Table 1A for Subprojects under Projects 1, Table 1B for subprojects under Project 2, 3 and 4) Five Initial Environmental Evaluations (IEEs) including the environmental management plan (EMP) have been carried out for each subproject in Project 1 following ADB's *Environment Policy 2002*, ADB *Environmental Assessment Guidelines 2003* and the Government's environmental assessment regulations and guidelines.

Table 1a. List of Upgrading and Rehabilitation Subprojects under the Investment Program

SUBPROJECT	LOCATION	PROPOSED DEVELOPMENT WORKS
PROJECT 1		
Wewak Airport	East Sepik Province	<ul style="list-style-type: none"> ▪ Extend runway length by 200m from existing 1,600m to 1,800m ▪ Retain Runway width of 30.0m similar to existing ▪ Construct Extension Strip width 150m (mark 90m to match exiting) ▪ Extension Surfacing : prime and 3 x coat seal (10mm/7mm/sand) similar to existing ▪ Realign Perigo Road ▪ Realign existing large Storm water drain ▪ Construct new bridge over Brandi Road at realigned storm water drain ▪ Extend Car park at rear of Terminal Building to cater for increase in passengers ▪ Lop infringing trees in Golf Course to clear Approach/Take-off path ▪ Supply, install and commission a New PAPI Landing Aid system (to replace the old existing T-VASIS system being phased out by CAA and replaced with PAPI)
Hoskins Airport	West New Britain Province	<ul style="list-style-type: none"> ▪ Widening of the existing runway to from 30 meters to 45 meters; ▪ Construction of a 90 meter end of runway safety zone (RESA) at southeast end and stop ways at both ends; ▪ Widening of the existing flight strip to 150 meters; ▪ Replacement of all open drains within the strip with piping systems with the strip graded to meet required longitudinal and transverse slope standards; ▪ Relocate a Precision Approach Path Indicator (PAPI) visual guidance system at the southeast end to the new touch down point; ▪ Widening of the taxiway shoulders to 5.0 meters ▪ Designing of the Apron to provide for two F-100 parking positions with the tails clear of regulated

SUBPROJECT	LOCATION	PROPOSED DEVELOPMENT WORKS
PROJECT 1		
		<ul style="list-style-type: none"> ▪ obstacle limitation surfaces; ▪ Reinstate pavement markings
Mt. Hagen Airport	Western Highlands Province	<ul style="list-style-type: none"> ▪ Lengthening of the Runway by 110 meters at the western end to provide the required total length of 2,300 meters, all within the CAA Airport Reserve and will not entail relocation of the existing 2.70 meter high fence; ▪ Construction of 3.0 meter wide full strength asphalt surfaced shoulders on each side of the Main Runway ; ▪ Surfacing of the strengthened aircraft pavements and new shoulders to Runway with dense graded asphalt and runway grooved; ▪ Widening of the Main Runway Strip from the existing 90 meters to 150 meters wide; ▪ Reconstruction of sealed Stopways 60 meter x 30 meter wide at each end of the strengthened Runway; ▪ Reconstruction of 90 meter x 90 meter RESA's beyond the Stopways each end of the Runway; ▪ Flank earthworks to match raised levels of aircraft pavements; ▪ Install new lighting systems to the Main Runway which shall only be utilized for daylight operations (inclement weather or dull conditions and not for nighttime operations); ▪ Strengthening of the pavements to the Secondary Runway to match raised level on the Main Runway – Prime and 3X coat seal surfacing; ▪ Reinstate all pavement markings; ▪ Adjustments to the PAPI Landing Aid System at each end of the Runway; ▪ Demolish the existing Terminal and construction of New Terminal Building at the same location; ▪ Construct temporary Terminal Building for Domestic and International Services to preclude disruption of aircraft operations during construction period; ▪ Construct new Access Roads into Carpark
Gurney Airport	Milne Bay Province	<ul style="list-style-type: none"> ▪ Runway lengthening for F100 aircraft operations or equivalent aircraft operations. Extend the Eastern end by 160m x 30m to give 1,850m runway. ▪ Construction of a new 60m stopway at the Eastern end. ▪ Construction of 90m x 90m RESA at both runway ends. ▪ Apply single coat 7mm chip reseal to existing pavements and reinstate fuel resistance membrane and line markings. ▪ Diversion of the existing Open Unlined Drains (OUD) at the Eastern end and, supply and install a new culvert under the RFFS access road. ▪ Supply and Install a new multi-cell culvert under the

SUBPROJECT	LOCATION	PROPOSED DEVELOPMENT WORKS
PROJECT 1		
		<ul style="list-style-type: none"> plantation access road. ▪ Relocate existing PAPI at the Eastern end and conduct flight test.
Jackson's Airport	National Capital District	<ul style="list-style-type: none"> ▪ Extend domestic apron by 162 m long x 80 m wide at the NW end ▪ Construct new Stub Taxiway connecting the new extended Apron to the existing Parallel Taxiway. Taxiway min 18.0m wide. ▪ Construct 5.0m wide sealed shoulders to both the new Apron and new Stub Taxiway. ▪ Construct new aircraft pavements comprising crushed rock basecourse surfaced with prime, single coat bituminous seal and dense graded asphalt ▪ Construct concrete encased duct bank 6 x 100mm x 60.0m long under new Stub Taxiway. ▪ Construct new Apron access road 10.0m wide x 90m long as an extension of the existing. ▪ Construct flank earthworks, topsoil and grassing beyond the shoulders to the new Extended Apron and Stub Taxiway. ▪ Construct 4 x concrete pads each 22m x 12m at 3 x future B-737-800 aircraft parking positions. (3 on NW side of exist Covered Walkway and 1 on the NE side) ▪ Construct Stormwater Drainage associated with the new Apron Extension and new Stub Taxiway including :- <ol style="list-style-type: none"> 1) New RC Box Culvert 2 No 1900mm wide x 1250mm high x 45m long under new Stub Taxiway 2) Construct open drain lining either end of the new Box Culvert 3) Realign the existing open unlined drain 4) Construct an open Vee Drain beyond the NW Shoulder to the extended Apron and Stub Taxiway. ▪ Supply and install Apron flood lighting to the extended Apron ▪ Paint new Pavement Markings to aircraft pavements

Table 1B. List of Upgrading and Rehabilitation Subprojects under the Future Investment Program

Future Tranches	Project 2	Project 3	Project 4
Future Subprojects	Nadzab Madang Stage 1 Kavieng Goroka Tokua Momote fence Nadzab fence	Mt. Hagen Stage 2 Wewak Stage 2 Hoskins Stage 2 Chimbu Klunga Vanimo	Buka Madang Stage 2 Gurney Stage 2 Girua Mendi Kieta Wapenamanda

Future Tranches	Project 2	Project 3	Project 4
			Kerema Daru

8. The environmental impacts will be generally insignificant as the works only involve upgrading and rehabilitation of the airports within the existing airport boundary. The potential environmental impacts associated with the subprojects particularly occur during the construction and operation phases, which will typically involve:

- (i) **Earthworks.** During the conduct of earthworks, heavy rains and the associated run-off and soil erosion problems can be expected in some areas, and may cause surface water quality problem in nearby water courses.
- (ii) **Pollution.** Problems of pollution related to the disposal of sewage, waste fuel, oils spillage and leakage, and solid wastes generated during construction (from worker camps) and operations may be happened. Temporary site contamination and dust generation associated with construction, and pollution associated with firefighting drills may cause environmental impacts.
- (iii) **Noise.** Construction activities may cause noise impacts from vehicle movements for a short duration. Noise from aircrafts is already existing and it will be intermittent and in short duration. Significant incremental increase of flight frequency is not expected.

9. Adherence to best engineering practices during rehabilitation/reconstruction, and implementation of the EMP, will avoid or adequately mitigate all of the rehabilitation/reconstruction-related impacts. Subproject environmental selection criteria will ensure that the Project will not harm any ecologically or culturally sensitive areas. This EARF was prepared to provide general procedure and guidance for the environmental assessment of subprojects under the future tranches.

D. Specific Procedures to be used for Subprojects under the MFF

10. The CAA will be responsible for ensuring that environmental assessments are prepared and EMPs are implemented for subprojects as outlined in this framework. The IEE reports should be submitted to ADB together with the Periodic Financing Request (PFR) for review and approval prior to finalization of contracts and commencement of work. CAA – Project Implementation Unit (PIU) will monitor the progress of the environmental work stream to ensure that all environmental assessments and clearances are submitted to ADB prior to the PFR for all subsequent subprojects.

11. Each subproject of subsequent tranches will undergo categorization and environmental assessment and focus on the most significant issues. The IEE or EIA will be prepared following ADB prescribed format (Appendix 1 and 2). Where a subproject requires an IEE, at least one public consultation during the IEE preparation will be conducted with local community, stakeholders such as the developers, small businesses, the local and national government, other concerned groups and potentially affected people. The IEE results will be communicated to the local community before commencement of construction. Any subprojects that are classified as environmental category A or will require full environmental impact assessment (EIA) will require two rounds of public consultation. The second consultation will be conducted after the draft EIA is prepared which include the EMP. A summary EIA (SEIA) will be made available to the ADB's Board of Directors and general public at least 120 days before the subproject approval by ADB. Similar disclosure procedure will also apply to Category "B Sensitive" subprojects (that is subprojects that will affect ecologically sensitive environment

such as national parks, conservation areas, forests, sensitive marine protected areas, etc). In either case the SEIA/SIEE will be posted on the ADB website at least 120 days before the PFR is submitted to ADB.

E. Responsibilities/Authorities of Various Agencies

12. The CAA will be the main agency/entity responsible in coordinating the implementation of the environmental assessment and review framework (EARF). This will include, but not be limited to; ensuring that the EARF procedures are strictly adhered to and that preparation of IEE/SIEE or EIA/SEIA will be carried out in a timely and adequate manner, environmental monitoring and institutional requirements will be fully met while meaningful public consultations will be carried out satisfactorily. CAA will submit the categorization checklist (Rapid Environmental Assessment or REA checklist), IEE/SIEEs and EIA/SEIAs, and monitoring reports to ADB for review in a timely manner.

1. Responsibilities of CAA

13. Prior to the submission of the PFR for subsequent subprojects the CAA will:

- (i) Prepare an environmental screening checklist or Rapid Environmental Assessment (REA) to classify the subprojects in each subsequent project including of any related issues.
- (ii) Prepare the environmental assessments (IEE or EIA), including an Environmental Management Plan (EMP) for each subproject including the SIEE/SEIA for the subsequent subproject and submit to ADB and public disclosure.
- (iii) Ensure that adequate public consultation has been undertaken with affected groups and local stakeholders review the environmental assessments and submit the IEE/EIAs, SIEE/SEIA documents as required, to ADB.
- (iv) Submit the necessary environmental assessments to ADB in sufficient time to permit the necessary disclosure by ADB.
- (v) Undertake the necessary actions to ensure environmental compliance with the Government's and ADB's requirements;

14. Prior to the commencement of civil works for subsequent subprojects the CAA will:

- (i) Submit any of the environmental assessments required for regulatory approval of the DEC and obtain approval, e.g., environmental clearance, environmental permit or permits from another statutory authorities as required by the Government.
- (ii) Ensure that all regulatory clearances for the subproject that are obtained from the relevant Government authorities are submitted promptly to ADB.
- (iii) Ensure that the required mitigation measures during construction, the IEE and the EMP are included in the bidding document of the subproject and that all bidding contractors have access to the environmental assessments and EMP.
- (iv) Ensure that the EMP and all required mitigation measures during construction, including conditions stipulated in the DEC's clearance or environmental permit, are included in all the contracts signed by the Contractor(s) with requirements to update the EMP in response to any unexpected impacts and that all selected contractors have agreed to implement the full suite of environmental mitigation measures prescribed in the EMP.
- (v) Receive environmental safeguard clearance on subproject(s).

15. During the implementation of civil works for subsequent subprojects the CAA will:
- (i) Ensure that an environmental management plan (EMP) including all proposed mitigation measures and monitoring programs and relevant provisions of the environmental assessments is updated as required, and is properly implemented by the contractors.
 - (ii) Monitor the implementation of EMP and present the monitoring reports to ADB.
 - (iii) In case unpredicted environmental impacts occur during project implementation, inform ADB, review the EMP with the contractor, and implement alternative environmental mitigation program.
 - (iv) In case a subproject changes in scope, inform ADB and reconfirm the environmental classification, determine whether a supplementary IEE or EIA study is required, and carry out the study including the requirement for information disclosure and public consultation;
 - (v) Submit the requisite reports on progress with social and environmental compliance and implementing the EMP as required by the DEC and ADB.
 - (vi) Ensure that ADB be given access to undertake environmental due diligence for all subprojects. However, the CAA will have the main responsibility for undertaking environmental due diligence and monitoring of all the subprojects. The due diligence report as well as monitoring reports on EMP implementation, as required, will be systematically prepared and be made available to the public, if requested.

2. Responsibilities of ADB

16. ADB will be responsible for regular review and timely approval of subproject IEE/SIEEs and EIA/SEIAs. Technical guidance will be provided by ADB to the CAA as needed. ADB will also be responsible for reviewing regular monitoring reports and officially disclosing the summary environmental assessments for selected subprojects (Category A and B sensitive) on the ADB website.

17. During the implementation of the MFF, ADB will:

- (i) Review environmental assessment reports as a basis for subproject approvals.
- (ii) Publicly disclose the SEIA of category A subprojects, and SIEE of category "B sensitive" subprojects for 120 days via ADB websites (as required) before a PFR is submitted to ADB.
- (iii) Monitor the EMP implementation, as required, and conduct due diligence as part of MFF reviews.
- (iv) Provide assistance to CAA, if required, in carrying out its responsibilities and for building capacity for safeguard compliance.
- (v) Ensure that the CAA will conduct the required consultations with project affected groups and local NGOs in PNG, and that the CAA as project sponsor disclose relevant environment information on the project's environmental issues in an appropriate form, manner, and language(s) accessible to those being consulted. Such information disclosure with affected people will be guided by the Public Communication Policy or PCP (2005).

F. Environmental Assessment and Review Procedures for Subprojects under Future Tranches

1. Environmental Classification

18. Environmental categorization will be applied to all subprojects using the REA checklist approach in compliance with the ADB's Environment Policy 2002 and ADB Environmental Assessment Guidelines 2003.

2. Environmental Criteria for Subproject Selection

19. In selecting subprojects, a set of selection criteria including environmental consideration will be used for the first level of screening. A candidate subproject should meet the following environmental related conditions:

- (i) It has the support of the local population and the district and provincial administrations;
- (ii) Located on Government land, or there is an agreement with the affected community that allows (a) use of land for airport improvement works initially, and (b) acquisition of land after going through the necessary procedures and payment of required compensation;
- (iii) Does not provide access to at-risk or endangered flora and fauna; and
- (iv) Does not have any major/significant adverse environmental and social impacts that cannot be mitigated properly;

20. The environmental assessment process to be applied will confirm this or recommend necessary work. All subprojects with category A and B will be subject to environmental assessment.

3. Preparation of Detailed Design

21. Detailed design work for each additional subproject will include and follow the recommendations of the environmental assessments. The CAA will include the requirements of the EMP in the bid documents and ensure the detailed designs include such requirements before contracts are finalized. Where modifications to designs are incorporated at a later stage, the requirements of the IEE/EIA as needed and EMP, as required, will also be included. An international environment specialist (IES) will be recruited by the Project to assist in strengthening environmental management of the Project including updating the EMP during detailed design. A national expert will be recruited as Environment Officer (EO) that will work full time under PIU of the CAA.

4. Preparation of Construction Contracts

22. Early in the implementation period, model construction contracts will be prepared incorporating general environmental safeguards and practices. Specific, individual contracts will be based on the model contracts, but will also be checked by the CAA to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions, for the particular additional subproject, are all incorporated within the contract. The CAA will also allocate sufficient resources to the IES and EO to supervise EMP implementation including monitoring of the environmental mitigation measures of all construction contracts under the MFF.

5. Monitoring During the Construction Period

23. Monitoring during construction will be the responsibility of the CAA carried out by EO in PIU. Monitoring will relate to compliance with construction contracts, the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of this monitoring submitted to the CAA on a regular basis (at least quarterly) and to ADB semi-annually.

6. Monitoring and Subproject Implementation

24. Environmental monitoring will consist of regular systematic checking that the above-mentioned environmental management measures have been implemented effectively during each stage of the project. Table 2 presents the summary monitoring plan for the Project. Table 3 presents the indicative estimated costs for EMP and monitoring plan implementation of the overall MFF. The costs for the mitigating measures will be part of the construction costs, and will be included in the Bill of Quantities (BOQ). The cost for the monitoring activities (e.g. lab activities, collection of samples, etc.) is a separate cost item (not part of the construction cost) and will be part of the total project cost. There will be no separate budget for implementing the EARF, where preparation of IEE of subprojects will be undertaken by the international environmental specialist together with the national environment officer (EO).

Table 2. Key tasks for Environmental Monitoring Plan

No.	Environmental Monitoring Tasks	Implementation Responsibility	Implementation Schedule
1	Design Phase		
1.1	Disclosure of subprojects to DEC and monitor permitting.	CAA-PIU, undertaken by environmental officer (EO)	Prior to construction
1.2	Audit project bidding documents to ensure IEE and EMP included in bids and environmental criteria are included in evaluation.	CAA-PIU (by IES and EO)	Prior to issue of bidding documents.
2	Construction Phase		
2.1	Orientation and briefing of contractor's management, site agents with regards to all IEE and EMP requirements.	CAA-PIU (by IES and EO)	First orientation/briefing 1 month prior to commencement of each contract and refresher orientation/briefing at least yearly during construction period.
2.2	Monitor the performance of environmental training by contractor and briefings and of the environmental awareness of Contractors staff, tool box talks and & refresher courses.	CAA-PIU (by IES and EO)	Ongoing, prior to and during implementation of works and operation.
2.3	Regular (monthly) monitoring and reporting (quarterly) of contractor's compliance with statutory environmental requirements	CAA-PIU (by IES and EO)	Continuous throughout construction period.
2.4	Regular (monthly) monitoring and reporting (quarterly) of contractor's compliance with contractual environmental mitigation measures including EMP.	CAA-PIU (by IES and EO)	Continuous throughout construction period.
2.5	Regular (monthly) monitoring and reporting (quarterly) of complaints and responses or environmental mitigation measures	CAA-PIU (by IES and EO)	Continuous throughout construction period.
2.6	Monitor adjustments to the EMP for unexpected impacts and the thorough implementation of detailed EMP.	CAA-PIU (by IES and EO)	During all phases of the subprojects
2.7	Commissioning phase monitoring of facilities versus environmental contractual performance criteria. Check EMP compliance.	CAA-PIU (by IES and EO)	At commissioning.
3	Operation and Maintenance Phase		
3.2	Post construction monitoring of air/noise/water quality at any sites where complaints about water quality from works were justified in construction phase.	CAA-PIU (by EO)	Semi-annual up to 3 years after completion of construction or until air, noise and water quality meets baseline conditions.

Table 3: Summary of Estimated Costs for EMP Implementation

Item	Sub Item	Estimated Total Costs [PGK]	Estimated Total Cost [USD]
Staffing, audit and monitoring	1 person international (IES) for 8 mo \$20,000/mo		160,000.00
	1 person national (EO) for 96 mo at \$5,000/mo		480,000.00

Item	Sub Item	Estimated Total Costs [PGK]	Estimated Total Cost [USD]
Monitoring (e.g. lab. activities)	As detailed under EMP (particularly air, noise and water quality)		197,000.00
Mitigation measures	As prescribed under EMP and IEE		640,000.00
Permitting	Based on S.I. 31 of 2002		50,000.00
TOTAL			1,527,000.00

G. Institutional Arrangements & Institutional Strengthening

25. The overall MFF program will be oversight by a steering committee. The executing agency of the MFF Program will be the CAA. The Project Implementation Unit (PIU) will be responsible in daily implementation of the Program. An International Environmental Specialist (IES) will be engaged intermittently as part of the CAA during the Program with the primary tasks to: (i) strengthen the environmental management of the Project during detailed design, bidding process, contract process, construction, and implementation, (ii) supervise and guide the environmental assessment process for all subprojects under the MFF, (iii) supervise EMP implementation of subprojects, and (iv) undertake the necessary institutional strengthening including on-the-job training for the EO of CAA-PIU by giving major tasks to the EO in all of these activities under IES supervision (more detailed terms of reference for the IES and the tasks of the EO is in Appendix 3). The IES will report directly to the CAA-PIU and the EO will report to CAA-PIU, they will be accountable and responsible for implementation of the EMP. The IES and the EO will coordinate the implementation of the EMP of the Investment Program. The CAA will allocate sufficient resources to the IES and the EO to undertake their tasks to supervise and monitor the EMP implementation and other tasks related to environmental management of the Investment Program (Table 3).

26. The IES and EO will also be responsible for coordinating and supervising all the responsibilities and activities under section D (above) as well as all environmental monitoring, quality control, and writing the quarterly progress reports on implementation of the EMP. CAA will further ensure the release of resources for environmental management and that monitoring budgets are made available for timely EMP implementation.

H. Public Disclosure, Consultation and Grievances

27. In disclosing the environmental document to the public, (i) CAA through the PIU is responsible for ensuring that all environmental assessment documentation, including the environmental due diligence and monitoring reports, are properly and systematically kept as part of the project-specific record; (ii) all environmental documents are subject to public disclosure, and therefore may be made available to public, on request; (iii) for category A and B-sensitive subprojects, the SEIA/SIEE will be publicly disclosed through ADB's websites 120 days before a PFR is submitted to ADB, while the SEIA/SIEE be reviewed by ADB prior to disclosure; and (iv) CAA-PIU will consult the public, particularly with project affected persons, as indicated in ADB Environmental Assessment Guidelines (2003) and the ADB's Public Communications Policy (PCP) (2005).

28. Disclosure of environmental assessment documents will follow ADB and government procedures, including the ADB's Public Communications Policy (PCP) (2005) provision whereby the need to disclose the relevant environment information in an appropriate form, manner, and language and at an accessible location to be understandable to the affected people and local

NGOs. A complaints contact person in each of the CAA's offices will be set up for each of the subproject locations (Airports) to address all concerns and grievances of the local communities and affected parties.

I. Monitoring and Evaluation

29. The Environmental Officer at the PIU will be responsible for monitoring of the EMP implementation by contractors, and will forward monthly progress reports to CAA. The reports will contain progress made in EMP implementation with particular attention to compliance with the principles and matrix set out in the EMP for each subproject. A section on compliance with the EMP will be included in semi-annual report that is prepared for ADB as a requirement for the loan. The CAA will submit semi-annual monitoring report to ADB. General good practice requires that an EMP monitoring report will be completed according to the following schedule:

- (i) a report at the end of project design. Prepared by the IES and EO of CAA-PIU,
- (ii) a report prepared every 1 month during construction, by the contractor,
- (iii) a report prepared every 3 months by the EO of CAA-PIU,
- (iv) a report prepared every 6 months by the IES and EO of CAA-PIU for the ADB and,
- (v) an annual report that is prepared by project support consultants under the POIU during operation for as long as the monitoring is specified in the EMP.

J. Staffing and Budget

30. There will be immediate cost in securing the services of the IES and training of PIU staff on principles of environmental management of projects. An IES and an EO will be recruited to support CAA-PIU in addressing environmental management of the Investment Program. Initially, IES will be responsible for the awareness training of CAA-PIU, on-the-job training of the EO, and at the later time both IES and EO will be responsible for the environmental management of the Investment Program. The EO will be a full time national expert (supported by the IES) responsible for the environmental management during MFF implementation. The IES will be engaged for 8 person-months during the MFF period and will be assigned on an intermittent basis to undertake training and capacity building for environmental management in CAA and to guide the EO of PIU in monitoring and reporting. The IES and EO will jointly be responsible for overall environmental management of the Investment Program under the MFF.

31. The budget needed for the environmental management of the Program MFF has been included in the project costs. Multiple field visits will be required to each subproject route, plus at least one public consultation for each subproject IEE in the subsequent subprojects at which project information needs to be distributed. A presentation for other government agencies and other stakeholders will also be included. Therefore adequate travel, accommodation and per diem budgets will be provided.

Appendix 1

THE INITIAL ENVIRONMENTAL EXAMINATION (IEE) REPORT FORMAT AND SCOPE

I. Introduction

Purpose of the Report

- Identification of project proponent
- Brief description of the nature, size, and location
- Extent of the IEE study and brief description of any special techniques or methods used (if any).

Extent of IEE study:

- Scope of study
- Magnitude
- Person or agency performing the study
- Acknowledgement (when necessary)

II. Description of the Project

- Type, environment category, and need for the project
- Project location (including maps), size or magnitude of operation, and
- Proposed schedule of implementation.
- Description of the project, including drawings showing project layout and components.

III. Description of the Environment

Clear picture of the existing environmental resources in the area affected by the project including the following:

Data sources (primary or secondary)

A. Physical resources:

- Atmosphere (e.g. air quality)
- Climate (when appropriate also Climate Risk Profile)
- Topography,
- Soils
- Surface water (river systems and hydrology, and water quality)
- Ground water
- Geology/seismology

B. Ecological resources

- Fisheries,
- Aquatic biology,
- Forest
- Flora and Fauna (biodiversity, wildlife, endangered species, protected species, etc), nature conservation and protected areas.

C. Human & Economic Development

- Population and communities (numbers, locations, composition, employment, etc)
- Social facilities (education, health, etc)
- Socio-economic conditions (community structure, family structure, social wellbeing, etc)
- Physical and cultural heritage
- Current use of land and resources (land use planning)
- Industries, Infrastructure facilities, transportation, power sources and transmission
- Institutions
- Economic development (agricultural, mineral development, etc)

D. Quality of Life Values and the Socio-cultural Environment

- Socioeconomic values
- Public health
- Cultural and aesthetic values
- Presence of indigenous peoples, and/or
- Archaeological or historical treasures, if any.)

<p>IV. Screening of Potential Environmental Impacts and Mitigation Measures Screen out “no significant impacts” from those with significant adverse impacts. Recommend mitigation measures to address environmental problems due to:</p> <ul style="list-style-type: none"> • Project location • Project design, • Construction and operations. <p>Cover enhancement measures, where applicable.</p>
<p>V. Institutional Requirements and Environmental Monitoring Plan</p> <ul style="list-style-type: none"> • Describe the institution of environmental management in the country and in the executing agency, and describe also related agencies and their responsibilities according to the prevailing law and regulations. • Describe the impacts to be mitigated, and activities to implement the mitigation measures, including how, when, and where they will be implemented. • The environmental monitoring plan will describe the impacts to be monitored, and when and where monitoring activities will be carried out, and who will carry them out. • Cost estimate (budget) for environmental mitigation and monitoring. • Reflect the EMMP into matrix
<p>VI. Public Consultation</p> <ul style="list-style-type: none"> • Describe the process of public consultation (involving public in the project design) • Summarize major comments how these comments were addressed • List of milestones in public consultation such as dates, attendance, topic discussed. Summarize activities in table format showing stakeholders, date of meeting, meeting location, no. of attendees, organization represented, and topic/issues discussed. • Describe compliance with relevant regulatory requirements for public participations • Environmental (IEE) disclosure in the country.
<p>VII. Findings and Recommendations</p> <ul style="list-style-type: none"> • Evaluate the screening process. • Recommend whether significant environmental impacts exist needing further detailed study or EIA. If none, no follow-up study is needed. • If a special study is needed, or an EIA is needed, then this section will include a brief TOR including approximate description of work tasks, professional skills required, time required, and estimated costs.
<p>VIII. Conclusions</p> <ul style="list-style-type: none"> • Discuss the result of the IEE and the justification, if any, of the need for additional study or EIA. • If an IEE, or an IEE supplemented by a special study, is sufficient for the project, then the IEE with the recommended EMP, and institutional and monitoring program becomes the completed EIA.

Appendix 2

THE EIA REPORT FORMAT AND SCOPE

I. Description of the Project

The project should be described in terms of its basic activities, location, layout, and schedule. This section of the EIA report should provide sufficient details on the following:

- (a) Type of project
- (b) Need for project
- (c) Location (use maps showing general location, specific location, project boundary and project site layout)
- (d) Size or magnitude of operation including any associated activities required by or for the project
- (e) Proposed schedule for approval and implementation
- (f) Description of the project including drawings showing project layout, components of project, etc.
This information should be of the same type and extent as is included in feasibility reports for proposed projects, in order to give a clear picture of the project and its operations.
- (g) Extent of the EIA study, including the scope of the study, magnitude of effort, and persons/expertise or agency performing the study
- (h) Brief description of techniques or methods used in the EIA study, and outline of the contents of the report
- (i) Implementation schedule

II. Description of the Environment

This section contains a description of the study area to provide a clear picture of the existing environmental resources and values within which the impacts must be considered. Detailed methodology to gather information, including data sources, should also be briefly described. As much as possible, the baseline information should be presented in maps, figures, and tables. The baseline environmental information area should include:

- (a) Study Methods/Procedure
- (b) Data sources (primary or secondary)

A. Physical resources:

- Atmosphere (e.g. air quality)
- Climate (when needed also Climate Risk Profile)
- Topography
- Soils
- Surface water: river systems and hydrology
- Water quality
- Ground water
- Geology/seismology

B. Ecological resources

- Fisheries
- Aquatic biology
- Forest
- Terrestrial biology: Flora and Fauna (biodiversity, wildlife, endangered species, protected species, etc)
- Coastal resources
- Nature conservation and protected areas

C. Quality of Life Values and the Socio-cultural Environment

- Population and communities (numbers, locations, composition, employment, etc)
- Social facilities (education, health, etc)
- Socioeconomic values and socio-economic conditions (community structure, family structure, social wellbeing)
- public health,
- Cultural and aesthetic values
- Presence of indigenous peoples, and/or archaeological or historical treasures

D. Human & Economic Development

- Industries

THE EIA REPORT FORMAT AND SCOPE

- Infrastructure facilities, transportation
- Power sources and transmission
- Current use of land and resources (land use planning)
- Institutions
- Economic development (agricultural development, mineral development, fisheries development, tourisms, etc)

III. Alternatives

Systematic comparison of with and without project; feasible alternatives for the proposed project site, technology; and operational alternatives. Alternatives should be compared in terms of their potential environmental impacts and mitigation measures in view of environmental protection.

“With”/“Without” the Project

Site

Design

Technology

Justification for chosen alternative

IV. Anticipated Environmental Impacts and Mitigation Measures

This section will evaluate the project’s expected impacts (in as quantified terms as possible) on each resource or value. Discussion on measures for minimizing and/or offsetting impacts, and opportunities for enhancing positive impacts. Direct and indirect (induced) effects will be considered, and the region of influence indicated. This analysis is the key presentation in the report and if not sufficiently completed it may be necessary to delay the project until the analysis can be completed.

Environmental impact on resource or value due to:

- (a) project location
- (b) possible accidents
- (c) design
- (d) construction
- (e) operation
- (f) decommissioning

Evaluation of Impacts:

- (a) Direct or indirect (induced) impact and region of influence
- (b) Reversible or permanent
- (c) Geographical distribution and time-scale of impacts (long-term or short-term)
- (d) Frequency of occurrence or description of circumstances when impacts are likely/unlikely to occur
- (e) Impact magnitude (severe, moderate, insignificant)

Addressing significant adverse environmental impacts

- (a) mitigating measures
- (b) offsetting/compensating measures
- (c) enhancement measures
- (d) Cost estimate

V. Economic Assessment

- (a) Costs and benefits of environmental impacts
- (b) Costs, benefits, and cost-effectiveness of mitigation measures;
- (c) Discussion of impacts that have not been expressed in monetary values.

THE EIA REPORT FORMAT AND SCOPE

VI. Environmental Management and Monitoring Plan This section should list the mitigating/offsetting/enhancement measures and discuss how, who, when and where they will be implemented

A. Environmental Management Plan

This section should set out clear and achievable targets, and quantitative indicators of the level of mitigation required (for each measure). These should be referred to designs, development activities, equipment descriptions, and operating procedures and implementation responsibilities

- Implementation of measures during project design
- Implementation of mitigation measures by contractors and how impact prevention will be incorporated in material procurement and construction practices.
- Social development program (resettlement plan, community training)
- Contingency response plan for natural or other disasters, and project contingencies
- Implementation costs
- A matrix summarizing: project activities, potential environmental impacts, proposed mitigation measures, institutional responsibilities, and cost estimates.

B. Environmental Monitoring Plan

- Selected parameters indicating the level of environmental impacts, and the manner, schedule, and place of monitoring activities
- Frequency of submission of monitoring report to ADB and other agencies.
- Discussion on proposed environmental compliance monitoring activities.
- Institutional capacity to carry out the EMP and monitoring activities
- Implementation costs
- A matrix summarizing: mitigation measures, parameters to be monitored, location, frequency, institutional responsibilities, and costs estimates.

VII. Public Involvement

- Process undertaken to involve the public in project design
- Recommended measures for continuing public participation
- Summary of major comments received from beneficiaries, local officials, community leaders, NGOs, and others, and how these comments were addressed.
- Milestones in public involvement (e.g., dates, attendance, topics of public meetings), and recipients of the report and other project-related documents)
- Compliance with relevant regulatory requirements for public participation
- Summary of related materials or activities, such as public disclosure date, etc.
- A matrix summarizing: stakeholders, date of meeting, meeting location, no. of attendees, organization represented, topic/issues discussed/comments received

VIII. Conclusions

- Gains which justify project implementation
- Explanation of how adverse effects could be minimized or offset, and compensated to make these impacts acceptable
- Explanation on use of any irreplaceable resources.
- Provisions for follow-up surveillance and monitoring.

APPENDICES

This contains detailed information/data and maps and other related information collected during the EIA study that support the EIA report.

Appendix 3
Terms of Reference for the International Environmental Specialist

A. Environment Specialist (International) – 8 person-months (intermittent, during 9 years MFF implementation)

1. The International Environmental Specialist (IES) shall have more than 10 years work experience and familiarity with all aspects of environmental management, particularly of airport projects. The IES shall be a graduate in environmental science or environmental engineering with at least 5 years experience in environmental assessment, and environmental management and monitoring of the implementation of infrastructure projects.

2. The IES will work (intermittently) with the project support consultant under the Project Implementation Unit (PIU) of the CAA together with the national Environmental Officer (EO) to improve all aspects of environmental management of the Project, and guide the setting up project's environmental management as well as environment adviser of the Project. The IES will initially focus on assisting the CAA to raise awareness in the PIU and Contractors on all aspects of the statutory and guideline requirements for environmental assessment and management of the government and ADB. The IES will work with the EO to ensure the requirements of the IEEs and EMPs are fully integrated into the bidding documents and are carried through in the contract requirements. The tasks of the IES will include, but not limited to, the following:

- (i) Ensure compliance with the ADB's environmental policy, environmental assessment guidelines, and environmental assessment review framework (EARF) of the Project; and ensure compliance of project implementation with the Government's environmental policy and procedures, including prepare and submit a notification of each proposed subprojects under the first and subsequent Projects to the Department of Environment and Conservation (DEC) in accordance with the prescribed format, and other requirements as directed by DEC.
- (ii) Update the environmental management plan (EMP) of each subproject based on detailed engineering design, and incorporate the environmental mitigation measures recommended in the EMP into the bidding documents, and subsequently in the civil work contracts, and assist in bid evaluation and contract negotiation stages;
- (iii) In coordination with the project engineer, set up detailed monitoring plan and supervise EMP implementation and undertake regular compliance monitoring to ensure the civil works implemented in accordance with the EMP; make recommendations for certification of payment to be made to the contractor for the Engineer's consideration;
- (iv) In accordance with the EARF, assess the potential environmental impacts of airport subprojects under the subsequent trances, and determine the environmental categorization in accordance with ADB safeguard policy rules that are in place at the time a financing tranche is provided, Prepare the necessary environmental assessment report of the subprojects for submission to and clearance by ADB. The report will be prepared following the ADB's environmental guidelines, taking into consideration direct and indirect impacts during pre-construction, construction, and operation, their induced and cumulative impacts, and costs of mitigation measures and monitoring plan. The Project will also be

implemented in compliance with the government environmental requirements and procedures as directed by DEC. Ensure that the civil works will only commence once the environmental assessment report of subprojects are approved by ADB and receive DEC permit for activities specify by the Environment (Prescribed Activities) Regulations (2002);

- (v) Prepare evaluation reports on the result of EMP implementation particularly on environmental impact mitigations and compliance monitoring, and submit the reports to the Engineer for incorporation in quarterly report to be submitted to the Government and ADB;
- (vi) Assist CAA in strengthening the environmental management of the Program by undertaking the necessary capacity building of the PIU Environment Officer in environmental assessment procedure and techniques, mitigation planning, environmental supervision and monitoring, and reporting. Involve the PIU Environment Officer through on-the-job training, affecting transfer of knowledge and skills, in environmental management and monitoring of the subprojects, and ensure staff capability in handling environmental management of the subsequent subprojects.
- (vii) Prepare environmental assessment procedures within PIU and the necessary guidelines for staff guidance during project preparation and implementation.

B. Environmental Officer (National Expert)

3. The Environmental Officer (EO) will be the key person in the PIU under the line management of the CAA. The work of the EO of the PIU EO will initially be guided by the IES to undertake the following tasks:

- (i) Ensure compliance with the ADB's environmental policy, environmental assessment guidelines, and environmental assessment review framework (EARF) of the Project; and ensure compliance of project implementation with the Government's environmental policy and procedures. Update the environmental management plan (EMP) of each subproject based on detailed engineering design and prepare and submit a notification of each proposed subprojects under the first and subsequent Projects to the Department of Environment and Conservation (DEC) in accordance with the prescribed format, and other requirements as directed by DEC.
- (ii) In accordance with the EARF, assess the potential environmental impacts of airport subprojects under the subsequent subprojects, and determine the environmental categorization in accordance with ADB safeguard policy rules that are in place at the time a financing subsequent subproject is provided. Prepare the necessary environmental assessment report of the subprojects (when necessary with support of consultants) for submission to and clearance by ADB in line with *ADB's Environmental Assessment Guidelines 2003*, taking into consideration direct and indirect impacts during pre-construction, construction, and operation, their induced and cumulative impacts, and costs of mitigation measures and monitoring plan. The Project will also be implemented in compliance with the government environmental requirements and procedures as directed by DEC. Ensure that the civil works will only commence after the environmental assessment report of subprojects are approved by ADB and have

received the DEC permit for activities specified by the *Environment (Prescribed Activities) Regulations (2002)*.

- (iii) Ensure that environmental clauses are included in contracts and the adoption of the EARF for all subprojects and incorporate the environmental mitigation measures recommended in the EMP into the bidding documents, and subsequently in the civil work contracts, and assist in bid evaluation and contract negotiation stages.
- (iv) In coordination with the CAA, set up a detailed monitoring plan and supervise the EMP implementation and undertake regular compliance monitoring to ensure the civil works implemented in accordance with the EMP. To review and verify the progress in EMP implementation and installation of mitigation measures as outlined in the EMP. Make recommendations for certification of payment to be made to the contractor for the Engineer's consideration.
- (v) To assess whether the objective of adoption of sound environmental management practices have been achieved and/or improved continually. To assess efficiency and effectiveness of environmental mitigation measures that have been implemented, their impacts (positive as well negative) and sustainability, drawing both on policies and practices and to suggest any corrective measures, if necessary.
- (vi) In coordination with the IES develop awareness and build capacity in environmental management in PIU and Contractors by providing environmental training at all levels to improve environmental performance on projects. Assist the PIU in strengthening the environmental management of the Project under the subsequent tranches.