

TFET- FUNDED

EMERGENCY INFRASTRUCTURE REHABILITATION PROJECT

PHASE II

Emergency Infrastructure Rehabilitation Project, Phase II

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A. Introduction

While East Timor inherited a relatively dense and, to a large extent, sealed road network, road maintenance has been severely neglected. The inherent instability of the hilly topography, the vulnerability of the coastal network to flooding and river realignment, and the sensitivity of road pavements to poor drainage, all combine to make a high maintenance network.

The road network remains fragile. The network would require a high level of maintenance. Recurrent maintenance of gravel roads is much more costly than that of paved roads, even taking due account of the different service levels. A reduced service level will not result in significant savings in routine maintenance costs. For example, the budget required to maintain a two-day access to Maliana on a gravel surface is the same as that needed to maintain a half-day access using the present paved surface.

The EIRP Phase I has implemented road repair works in addition to its port and power components. However, these have addressed immediate needs and have only partially been able to implement permanent engineering solutions that will reduce the maintenance burden in the long term. This program requires additional resources. The EIRP Phase I is also supporting longer-term sector development, establishment of routine maintenance mechanisms, field organization, local contracting industry, community engagement, and capacity building for sector management. Accordingly, the additional funding will focus on intensifying and extending the EIRP Phase II objective to restore the road network to a condition in which its economic life can be extended effectively.

B. Objectives

The EIRP Phase II will focus on stabilizing the road network and enabling it to be left in a condition, from which it can be maintained with a relatively modest budget. The objective of the EIRP Phase II is to support earthworks to reduce the annually recurring emergency requirement by reducing the backlog maintenance requirement. It will also continue programs initiated under the EIRP Phase I to establish a viable and efficient maintenance operation in East Timor, and support technical preparation of the East Timorese maintenance service to carry out routine maintenance and contract village groups.

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C. Scope

The EIRP Phase II scope includes

- (i) preventive civil works and periodic maintenance,
- (ii) support for the establishment of a routine maintenance regime,
- (iii) detailed engineering, and
- (iv) training and project management.

D. Major Components

1. Civil Works to Reduce Emergency Maintenance Requirement

Earthworks. The earthworks rehabilitation will support the reconstruction and minor realignment of short road sections that have become unstable and have potential for technical correction. The soils, topography, and climate combined render the road network vulnerable to landslides. Clearing and repairing these is a major component of the recurrent maintenance activities. Annual repairs cannot effectively and economically reinstate the extensive landslip sites. More permanent solutions are required through improved alignment and fully engineered slope stabilization works and bioengineering techniques. This component will initiate a strategy for preventive civil works for bench failures that are currently absorbing an unacceptable proportion of the recurrent budget.

Bioengineering. Bioengineering techniques will be used to enhance slope stability. Under these techniques, indigenous plants will be identified that will effectively reduce soil moisture, resist surface erosion, and bind surfaces with strong and deep root systems. Once appropriate plants are identified, small nurseries will be established, and optimum planting and care strategies identified, demonstrated, and implemented.

Periodic Maintenance. Periodic maintenance requirements cost about \$12 million per annum. This reinstates road surfaces damaged by traffic abrasion and wet season erosion. Most roads have lost the integrity of their wearing surfaces. Consequently, they deteriorate too rapidly for routine maintenance to be effective, and have become impassable in wet weather. While an ideal periodic maintenance program would resurface about one seventh of the network each year, periodic road resurfacing is required at intervals of 5 to 10 years. However, no such program has been implemented during the past four years, and as much as 60 percent of the network is overdue for resurfacing treatment. Sites needing work most urgently will be identified and this treatment strategy initiated. A small bridge replacement program will support the repair or replacement of substandard and vulnerable major drainage structures on the main roads.

2. Support to Establish a Routine Maintenance Regime

Steep slopes, erodible sedimentary materials, and intense rainfall characterize the road network environment. Under these conditions even minor slips and drain block-

ages result in road sections becoming impassable after heavy rainfall. Under the EIRP Phase I village groups are responsible for maintaining the road drainage system; eventually, funding for this will be transferred to the recurrent budget of the East Timor Transitional Administration. The EIRP Phase II provides technical support to establish the community-based maintenance program and related technical capacity in the field organization.

3. Project Management and Training

The EIRP Phase II will use the established project management and implementation arrangements agreed for the EIRP Phase I, including the PMU reporting to the head of the Department of Infrastructure. The EIRP Phase II will support the incremental time and personnel requirements of the PMU. The PMU will engage geotechnical and design engineering services and other short-term specialists, as required.

Significant skills upgrading is needed to enable the East Timorese to assume managerial and technical responsibility for implementing the routine and periodic maintenance regime, bio- and other engineering techniques, and financial and administrative accountability for the sector. Under the EIRP Phase I, immediate, and medium- and long-term training requirements are being identified under a comprehensive human resource development assessment, which will determine the specific skills required for the planned institutional arrangements for the sector. The EIRP Phase II will provide the technical training to establish technical capability of the road maintenance organization. However, this program is likely to require additional resources, and the PMU of EIRP Phase II will make all efforts to identify cofinancing for this purpose.

E. Cost Estimates and Financing Plan

The total cost for the EIRP Phase II is \$9 million. The estimated costs of the components are summarized in Table 1. Funding for EIRP Phase II will be provided on a grant basis from the TFET.

F. Implementation Arrangements

The Executing Agency. East Timor as administered by UNTAET will be the recipient of the grant and the Ministry of Water and Public Works (MWPW) will be the Executing Agency. The PMU will be the project implementing agency and will report to the minister of MWPW. The PMU will program, administer, and coordinate daily activities. It will be headed by an East Timorese project manager and comprise an internationally recruited chief technical adviser, engineers, and an accountant. The selection of these will be subject to ADB's approval. The chief technical adviser will support the project manager with EIRP Phase II administration and its contracts in accordance with ADB guidelines. The adviser will be accountable to ADB for the quality and timeliness of project

Table 1: Cost Estimates and Financing Plan
(\$ million)

Description	Total Cost
A. Civil Works	
1. Backlog and Earthworks	4.02
2. Slip Rehabilitation	1.35
3. Routine and Periodic Maintenance Program	1.35
Subtotal (A)	6.72
B. Consulting Services	
1. Project Management and Training	1.02
2. Design Services	0.33
Subtotal (B)	1.35
C. Contingencies	
1. Physical Contingency	0.77
2. Price Contingency	0.16
Subtotal (C)	0.93
Total	9.00

^a Physical (10 percent) and price (2 percent) contingencies are included.

Source: Staff estimates.

implementation. Engineers will program and coordinate daily project activities, including design, supervision, procurement of goods and services, and management of civil works contracts. The international consultants will train East Timorese counterparts in their areas of responsibility.

Consultant Services. International and domestic consulting services will be required for (i) project management and (ii) detailed engineering. These consultant services will be selected in accordance with ADB's *Guidelines on the Use of Consultants*. However, the term "member countries" under these guidelines for purposes of the EIRP Phase II will include ADB member countries, East Timor, and all donors and members of international organizations that have provided contribution funds to the TFET. Individual consulting services will be selected for project management. The PMU will be funded under the Project. Slope stabilization requires geotechnical assessment of the soil conditions and detailed engineering. These services will be selected from an international firm. Advance procurement action for detailed design was approved to ensure that works can be mobilized during the first half of 2002 in accordance with the project implementation schedule.

Procurement. All procurement for the EIRP Phase II will be carried out using international and the local competitive bidding and international shopping procedures in

accordance with ADB's *Guidelines on Procurement*. Contractors will be eligible to tender for one or more of the contract packages within their respective bid capacities. ADB approval prior to award will be required for all contracts. Advance procurement action is proposed for the design supervision consulting services to enable commencement of works in accordance with the implementation schedule.

Implementation Schedule. Programs under the EIRP Phase II will be implemented over 18 months from June 2002 and be completed by December 2003.

Disbursement. The EIRP Phase II will be disbursed under the (i) imprest account, (ii) direct payment, and (iii) reimbursement methodology as provided under the guidelines pertinent to the EIRP Phase I and in accordance with ADB's disbursement guidelines. The imprest account established for the EIRP Phase I in Dili, East Timor will be used for disbursement of the supplemental grant.

Reporting and Accounts. Reporting requirements, accounts, and financial statements under the additional funding will be established as determined under the EIRP Phase I. These include inception report, quarterly progress reports, audits, draft final report, and project completion report. The PMU will establish the necessary accounts in Dili, and maintain separate accounts for all expenditures under the EIRP Phase II, including its individual contracts and other components. These bank accounts will be under the control of the chief technical adviser. The PMU will furnish ADB with accounts and related financial statements reflecting the accounts for each project-related contract. These financial statements will be audited using generally accepted accounting principles by auditors acceptable to ADB. The audited financial statements together with the auditor's report will be forwarded to ADB within six months of the end of each related fiscal year. The PMU consultants will keep detailed records on the costing and expenditures of the project components and will assist with reporting.

G. Environmental and Social Measures

1. Environmental Impact and Social Dimensions

The EIRP Phase II is classified as environmental category B. Accordingly, an initial environmental examination was prepared in accordance with the ADB's *Environmental Guidelines for Selected Infrastructure Projects*. The IEE indicates that while construction-related environmental impact is unavoidable, this can be mitigated using appropriate engineering practices. The IEE concludes that the EIRP Phase II will result in a net benefit with costs of mitigation being outweighed by the envisaged benefits.

2. Poverty Reduction and Social Assessment

The EIRP Phase II is classified as a pro-poor growth intervention. An initial social assessment (ISA) and a poverty assessment were carried out. Significant positive im-

pacts are expected for the beneficiary communities. The civil works component is expected to enhance the reliability of road access for communities around the country, including poor and vulnerable communities. The establishment of a community-based road maintenance regime will provide a cost-effective means for ensuring that roads are maintained, and provide a mechanism for fostering sustainable incomes to the rural communities that have a strong need for income generating opportunities. Rural communities in East Timor have a strong structure of rural representation, and village representatives are capable of organizing collective activity, such as road maintenance. The initiative is supported by and appropriate to the local conditions and community structures.

H. Risks

The EIRP Phase II does not face any unusual risks. Funding has been committed from the TFET, albeit in three stages of \$3.0 million, \$5.0 million, and \$1.0 million. Procurement and disbursements will be sensitive to the staged issue of commitment authority. Experience in managing the staged funding allocation under the EIRP Phase I has been positive. Due to the limited number of skilled East Timorese supervisors and engineers, the EIRP Phase II is focused to provide maximum opportunities for training. However, the lack of an adequate pool of technically qualified East Timorese can delay complete transfer of the road agency to Timorese control. The PMU will support road agency operations and will seek sustainable solutions for staffing and training issues. Finally, road maintenance and road sector services can be justified by the broad economic benefits of the sector, the road network's role inducing economic growth and development, as well as social necessity. Road maintenance funding, while seen as expensive in East Timor's context, is recognized by all stakeholders as necessary to ensure the selected growth and social development pattern of East Timor. The EIRP Phase II will ensure adequate support to the budget preparation process and to information dissemination on the importance of road maintenance.