

REPUBLIC OF DJIBOUTI

REHABILITATION OF INTERNATIONAL ROAD CORRIDOR PROJECT

ENVIRONMENTAL MANAGEMENT PLAN

A. OVERVIEW

1. **Background.** The expanded use of the Port of Djibouti over the last year to meet the complete import and export requirements of Ethiopia has resulted in an increase of both Port activities and demands on the road system to move materials inland. The Port's facilities are being more fully used and heavy truck traffic for hauling petroleum products and dry goods has grown enormously. Oil tanker visits to the Port have grown from one per month to over ten. Road traffic now consists of approximately 150 tanker trucks and 300 dry goods trucks per day; this traffic is causing serious degradation of Route Nationale 1, which links the Port with the Ethiopian border at Galafi. The condition of two segments of this road, from Arta to Dikhil (90 km) and Dikhil to Galafi (100 km) mandates urgent rehabilitation efforts to sustain current use patterns, reduce further physical degradation, decrease the high incidence of road accidents and routine damage to vehicles, and lower dust levels, which have adverse impacts on local residents and create driving hazards.

2. **Proposed IDA Supported Project.** The proposed Rehabilitation of International Road Corridor Project (Project) will support urgent rehabilitation and repairs of the road between the turnoff for Arta and Galafi on the Ethiopian border, maintenance of the rehabilitated road and technical assistance to strengthen institutional capacity in the transport sector. The Project, with support from the International Development Association (IDA), will assist the Ministry of Equipment and Transport (MET) to undertake the following activities on an urgent basis,

(a) ***Phase I - Urgent Road Rehabilitation Component.*** The focus of the Project will be to support rehabilitation of the following activities during the first year of implementation:

(i) ***Sub-Component A - Section 1 - Route Nationale 1 from Dikhil to Galafi.*** This will include total rehabilitation and reconstruction of a segment of road approximately 100 km long, which has completely deteriorated. This segment has limited paved portions; the rest is only covered with gravel. The road bed is under extreme stress from traffic and is widely filled with potholes and ruts, shoulders are often broken down from use as passing areas and extensive damage exists at all crossings for ephemeral water courses. In addition, the drainage structures appear to be undersized and may require upgrading as well as cleaning to remove accumulated sediment. Extreme dust problems all along the road create significant driving

hazards, damage to local vegetation and are reported by local authorities to cause respiratory difficulties in settlements alongside the road. In addition, the frequency of accidents attributable to the current condition of the road puts the entire length at risk of groundwater contamination in the event of toxic spills resulting from an accident.

- (ii) *Sub-Component B - Section 2 - Route Nationale 1 from Turnoff for Arta to Dikhil.* This will include localized repair and rehabilitation of a road segment approximately 88 km long, running from Arta to Dikhil. This is a fully paved segment, but the pavement is rapidly deteriorating, there are sections with large potholes, shoulders are breaking down and there is extensive damage at crossings for ephemeral water courses. Dust problems at points along the road create a serious driving hazard and cause damage to local vegetation. The road has a very steep approach to the small town of Oueah, which also has problems with encroachment on the road by informal stalls. This issue will be addressed under a European Union (EU) project that is anticipated to construct an alternative route to bypass the settlement.
 - (iii) *Sub-Component C - Equipment Procurement.* This will include procurement of equipment that will be used to make the Road Department's plant pool operational.
- (b) ***Phase II - Road Maintenance and Technical Assistance.*** During the second, third and fourth years, the Project will include:
- (i) *Sub-Component A - Road Maintenance.* The sub-component will provide support for routine maintenance of the Arta-to-Dikhil and Dikhil-to-Galafi Section of Route Nationale 1 for a period of three years, after Project funded road improvements and repair works have been undertaken.
 - (ii) *Sub-Component B - Axle Load Control.* Support will be provided for the establishment of an axle load control station, procurement of related equipment, including weigh bridges, and training of personnel. Preparation of this component will occur during the Phase I implementation of the urgent rehabilitation. Preparation activities will include an examination of the feasibility of including other safety control checks on trucks in addition to axle load control.
 - (iii) *Sub-Component C - Technical Assistance.* This will support technical assistance for advisory and planning services and training of personnel from MET and cooperating organizations, including:
 - *Project Implementation.* Assistance to the Roads Department to implement the Project in a very short time frame;

- *Studies.* Technical assistance to undertake various studies and activities, including road safety and an HIV/AIDS outreach program;
- *Trade Related Services.* Technical assistance to prepare a strategy and facilitate development of trade related services in Djibouti;
- *Other Activities.* If practical and with the understanding of the Government and Delegation of the European Commission, the Project will also implement agreed policy and institutional recommendations from the EU financed transport study.

3. **Planned European Union Supported Regional Study and Proposed Project.**

The preparation and implementation of the IDA Project will be closely coordinated with development of the proposed EU regional study and its associated project. This regional study will evaluate both medium and long-term options for surface transport between Djibouti and Ethiopia and a range of alternative road alignments to improve the road connection between Ethiopia and Djibouti. It will also include detailed evaluation of measures for upgrading the road system between Dobi in Ethiopia and Arta in Djibouti. The regional study will support preparation of a feasibility study; including technical, economic and environmental evaluation, for rehabilitation and upgrading of this road. It will involve preparation of technical design and preparation of tender documents; technical assistance for tender administration and evaluation; evaluation of the potential contribution of transit traffic to the Road Fund; and administrative measures to improve road maintenance. The cooperating governments, EU and IDA are coordinating with each to make certain that the proposed road rehabilitation works will be compatible with this future intervention. The rehabilitated roadway resulting from the IDA Project will be fully incorporated into the EU-supported project, if the studies from that project recommend following the same alignment.

B ENVIRONMENTAL REVIEW

4. **Administrative and Legal Framework.** The Republic of Djibouti has established institutions with responsibilities for environmental management. It has joined a number of international conventions and is in the process of developing environmental legislation and procedures:

- (a) **Environmental Management.** Overall responsibility for environmental management rests with the National Committee on the Environment, a working group chaired by the Prime Minister and made up of Ministers whose portfolios impact or are impacted by environmental policy. This Committee is advised by a Technical Committee for the Environment, made up of relevant staff representation from the same Ministries. The Ministry of Habitat, Urban Affairs, Environment and Territorial Management (MOE), established in 1999, provides secretariat services to the Technical Committee, and is also responsible for preparation of the overall environmental policy of Djibouti, and for coordination of relevant

activities with departments represented on the Technical Committee. The Ministry of Ports (MPA) is responsible for the management of Port affairs and the International Autonomous Port of Djibouti (PAID), and consequently is responsible for environmental matters within the Port's jurisdiction. The Ministry of Agriculture, Fisheries and Marine Affairs is responsible for maritime navigation, safety at sea and oil pollution control outside of the area administered by PAID.

- (b) ***Strategies and Legislation.*** Major recent environmental studies prepared for Djibouti include the National Environmental Action Plan prepared with financial support from UNDP, a review of coastal and marine management issues in the Strategic Action Program for the Red Sea and Gulf of Aden and a Biodiversity Strategy, which is in draft. A national framework law for environment has been prepared and will be submitted to the Council of Ministers shortly. Procedures for environmental impact assessment are in preliminary draft. Djibouti currently does not have a formal requirement for environmental assessment of proposed projects; however, it was agreed for the purposes of the proposed Project that those of the World Bank/IDA will be used.
- (c) ***Participation in Conventions.*** Djibouti is a party to the Jeddah Convention for environmental protection of the Red Sea and Gulf of Aden and adheres to many of the major maritime conventions. It has joined the Convention on International Trade in Endangered Species (CITES), the Biodiversity Convention, the UN Convention to Combat Desertification, and the UN Framework Convention on Climate Change. It is in the processing of ratifying the Ramsar Convention.
- (d) ***Regional Cooperation.*** Djibouti is a member of the Regional Organization for the Conservation of the Red Sea and Gulf of Aden (PERSGA) and is taking an active role in implementation of the Strategic Action Program for the Red Sea and Gulf of Aden with support from the Global Environment Facility (GEF). At the sub-regional level, an agreement was signed by Djibouti, Somalia and Yemen in 1990 providing for establishment of the Marine Emergency Mutual Aid Center (MEMAC) in Djibouti. This center has been provided with some equipment that can be used for the management of oil spills in open marine waters.

5. **Environmental and Social Review Process.** The Project has been placed in environmental screening category "B" consistent with the provisions of Operational Policy 4.01 of the World Bank/IDA. The environmental category is justified, since the Project represents rehabilitation of an existing road only, with no changes in the alignment. The environmental impacts associated with the proposed road rehabilitation activities will be limited in scope and duration. The potential impacts of Project supported activities are well known and can be effectively addressed through engineering design, low cost mitigation measures and proper construction monitoring. Construction contracts will include specific environmental provisions and contractors will receive a

briefing concerning these requirements. This Environmental Management Plan (EMP) has been prepared in English and French.

6. **Field Based Review.** In order to support Project preparation, a field-based review of environmental and social issues related to the Safeguard Policies of the Bank was conducted in February 2000 by Stephen F. Lintner, Senior Technical Advisor, Environmentally and Socially Sustainable Development Network. This included meetings and site visits with representatives of the Government of Djibouti, local officials in the Project area and personnel from private sector oil companies operating in the Port of Djibouti (Attachment A). These issues were further discussed by the Task Team during April and May 2000 in the course of Project preparation.

7. **Meetings.** Meetings were held in Djibouti City with His Excellency Osman Idriss Djama, Minister of Equipment and Transport and His Excellency Saleban Omar Oudin, Minister of Habitat, Urban Affairs, Environment and Territorial Management to discuss the objectives of the proposed Project. Technical meetings were held with Messrs Awaleh, Ismael, Brishoual and Guillemot of the Ministry of Equipment and Transport, Mr. Ahmed Osman Omar, Director of Marine Affairs, Ministry of Agriculture, Fisheries and Marine Affairs, and Mr. Nasser Djama Abdi, PERSGA Coordinator.

8. **Site Visits.** A series of site visits was conducted to review environmental and social issues associated with the Project. A field visit was conducted to review conditions along the road from Arta, west of Djibouti City, to Galafi at the Djiboutian-Ethiopian border. Site visits were also made to the Port of Djibouti to review current environmental clean-up efforts in the Port, and issues related to oil and cargo transfer from ships and reloading of these materials onto trucks for shipment to Ethiopia. The site visit to the road included the participation of Mr. Aboubaker Doualeh Waiss, Technical Advisor, MOE and Mr. Dini Abdallah Omar, Deputy Director of the Department of Environment, MOE. Visits were conducted to PAID and MEMAC with the participation of Mr. Dini Abdullah Omar, Mr. Hassan Aden Hared, Chief of Pollution Division, Marine Affairs Directorate, MAFMA and Mr. Abdoukader A. Hassan, Port Safety Officer, PAID. During the site visits discussions were held with Mr. Ayanleh Idriss Hassan, Director of Operations of Shell Djibouti and Mr. Wagdi Omar Dorani, Safety, Health and Environment Manager for Mobil Djibouti. In Dikhil a meeting was held with Messrs. Osman R. Dobar and Hamad Mohammed Hamad of the Office of the District Commissioner. Additional field visits were conducted jointly by representatives of the Government and IDA during April and May 2000.

9. **Public Consultation.** Preparation of the Project has included a public consultation process as an element of the environmental and social review. This process has allowed the draft EMP to be discussed through a series of meetings with national government agencies, local governments and local nongovernmental organizations. Bank/IDA environmental procedures require that all projects in environmental screening categories "A" and "B" include public consultation meetings undertaken as a part of Project preparation. In order to fulfill this policy the Department of Public Works, in cooperation with the Ministry of Habitat, Urban Affairs and Environment, has undertaken a series of public consultation meetings concerning the environmental and social aspects of the proposed Project. These were held in Djibouti City on 29 April 2000 and in Dikhil on 30

April 2000. A brief written summary of the Project, including environmental and social aspects, was provided to the participants, as well as an explanation of the structure of the construction process. Minutes of these meetings, as well as a list of invitees and attendees, are included as Attachment B to this EMP. The Project Implementation Plan will also contain provisions for periodic consultations with officials and residents along the road corridor to solicit their views concerning the environmental and social aspects of the construction process used for road rehabilitation.

C. CURRENT CONDITIONS

10. **Project Setting.** Djibouti is a small country with the majority of its population and economic activities concentrated in the City of Djibouti and the adjacent PAID. It is semi-arid to arid with predominantly high temperatures and very low rainfall. Water is obtained from groundwater wells, springs and local river beds. Water courses are temporary or ephemeral in nature and are characterized by flooding during the limited storm events. The Port of Djibouti serves as the site for import and export of products for both Djibouti and Ethiopia. International access to the port from Ethiopia is limited to a single railway line and the Route Nationale 1. In the area traversed by the existing road, which will be rehabilitated under the Project, the population is mostly located in only three settlements of any size: Oueah (population 3,000), Dikhil (population 25,000) and Yoboki (population 3,000). In addition, there are approximately five small villages along the road with populations of less than 500 persons (for example, Gour Abbous). While the Project will not finance activities in the Port of Djibouti, environmental issues in the Port have been included in this analysis to provide a comprehensive overview of potential impacts associated with the Project.

11. **Port of Djibouti.** The Port of Djibouti is a major modern port with facilities for containers, petroleum products and bulk cargo. It has extensive warehouses, open storage areas and truck yards. Three international companies – Mobil, Shell and Total – operate facilities for the import, storage and distribution of refined petroleum products. The Port and the three international oil companies have designated personnel who work on environment, health and safety issues. The main environmental management concerns at the Port are:

- (a) **Historic Oil Leakage.** The Port has long been used for the import and storage of oil for Djibouti. This has resulted in development of a large subsurface lens of petroleum products under the main portion of the Port. At depths below one meter, oil floating on the groundwater table can be observed in wells, foundation trenches and other excavations. According to both government and private sector parties, this lens originated approximately 10 years ago when a series of nine underground pipelines that were used for oil transfer were cut off and abandoned, and is compounded by apparent leakage from older above ground storage tanks. It is reported that when the pipelines were abandoned they were cut off and sealed without removing the oil inside. In addition, recent tests have suggested that the current transfer pipeline, as well as in-use storage tanks, may also be leaking oil into the waters in and around the Port area.

This situation has also led to frequent discharge of oil products during low tide from the groundwater table into the Port area. Seasonal currents carry the oil and deposit it on recreational beaches. A major program is currently being implemented with private sector funding to remedy this problem; it includes containment of the discharges to the marine environment, pumping oil from the lens into containers for disposal, locating and properly decommissioning the abandoned pipelines, and inspection and rehabilitation/replacement of storage facilities. This work is being undertaken by an international environmental services contractor that has staff and specialized equipment onsite to take the required remedial actions.

- (b) **Operational Oil Spill Management.** The Port of Djibouti also experiences occasional operational oil spills associated with the transfer of petroleum products from tankers to onshore facilities. These are addressed by the combined efforts of staff from the Port of Djibouti and personnel and equipment from Mobil, Shell and Total. Authorities report that they have been able to successfully contain operational spills when they have occurred within the port area.
- (c) **Port and Traffic Safety.** The Port of Djibouti has management issues normally associated with Port operations, storage of petroleum products and dry goods, on-loading and off-loading of materials and movement of materials to and from the Port.

12. **Route Nationale 1 from Arta to Galafi.** The highly deteriorated condition of the Route Nationale 1 from the turnoff for Arta to Galafi presents a series of local environmental problems related to road use, traffic safety and truck accidents. Physical degradation has led to extremely high dust levels that create serious road safety problems and contribute to the many accidents experienced by truck traffic along the road. The high dust levels also constitute a health and nuisance problem for towns located along Route Nationale 1, especially Yoboki, which is located immediately adjacent to the road and in an area with highly dust prone soils. Roadside vegetation is damaged by dust and there are problems with drainage features locally blocked by the road. A special environmental problem associated with high truck volume, including transport of petroleum products, is the frequent rate of major accidents caused by poor visibility from dust, overloading of trucks and use of poorly designed tanker trailers. These accidents result in serious injuries, loss of life and, when petroleum products are involved, localized spillage of materials onto areas adjacent to the road, and potentially into underground water flows.

D. POTENTIAL IMPACTS

13. **Potential Environmental Impacts - Rehabilitation Phase.** The Project will result in significant environmental, health and safety improvements along the two road sections to be rehabilitated with IDA support. The impact on the Port of Djibouti will be neutral given that the current levels of traffic have already been established and the road

improvements are anticipated only to provide for more efficient movement of these shipments to and from the Port of Djibouti and Ethiopia.

14. **Port of Djibouti.** The Project will not result in an increase in the current amount of vessel traffic in the Port of Djibouti; however, it will allow for a reduction in the travel times for trucks carrying goods to and from the Port to and from points in Ethiopia. This will reduce truck congestion in the Port area and decrease the number of vehicles requiring repair. The ongoing efforts of the international petroleum companies to correct the historic soil and groundwater pollution problem in the Port of Djibouti will continue and should be completed over the next 24 months. Efforts will continue by PAID and the three international oil companies to control and combat operational oil spills within the Port. Efforts are planned by PERSGA, under the Strategic Action Program for the Red Sea and Gulf of Aden, to revitalize the MEMAC and make the equipment stored in the Port available for control of oil spills in the open marine environment.

15. **Route Nationale 1 - Road Sections 1 and 2.** The Project will result in environmental improvements along both road segments through upgrading of road conditions, sealing the road bed to reduce dust levels, rehabilitating crossing structures for ephemeral streams, and improving cross drainage facilities. Implementation of the Project will result in a major reduction in the number and severity of accidents associated with current road conditions.

- (a) **Road Section 1 - Route Nationale 1 from Dikhil to Galafi.** This will include total rehabilitation and reconstruction of a completely deteriorated segment of road approximately 100 km long, which will result in temporary construction impacts over a 12-18 month period. These impacts are associated with the repair and/or replacement of sections of road surface and reconstruction of streambed crossings. This will require expanded use of existing construction sites, removal and disposal of waste materials from the roadbed and disposal of containers of bitumen and other types of sealers. Pollution of land and soils will occur locally from the disposal, both controlled and uncontrolled, of tires, broken parts, waste fuel and used lubricants for heavy machinery and trucks engaged in the construction process. In some areas noise and dust levels will be temporarily aggravated by the construction process. In some places the need to provide temporary bypass roads for traffic to avoid areas under reconstruction will also result in local damage to vegetation. In addition, if improperly carried out, quarrying and earth-borrowing activities may leave these sites susceptible to excessive wind and water erosion. This may impose additional costs on the road itself, if resulting changes in storm water drainage cause unforeseen deterioration in the road surface or bed.
- (b) **Road Section 2 - Route Nationale 1 from Turnoff for Arta to Dikhil.** The localized repair and rehabilitation of Road Section 2 from Arta to Dikhil will result in temporary construction impacts over a 12-month period. These impacts are projected to be similar in nature; however, more restricted in scope to those described immediately above for Road Section

1. Their more limited nature is due to the focus of this Sub-Component on targeted rehabilitation and repair of this section of the Route Nationale 1.

16. **Other Issues.** The field review included examination of the following issues:

- (a) ***Parks and Protected Areas.*** The current status of parks and protected areas was reviewed, as well as the findings and recommendations of the draft Biodiversity Strategy. This review indicated that no present parks or protected areas are located within or adjacent to the proposed Project area. However, the Agna Region, just southwest of the road near Yoboki, because of its rich biodiversity, and the Galafi Plain, because of its importance for migrating birds, are being proposed by MOE for potential listing as protected areas under the Ramsar Convention, along with the Lac Abbe, a seasonal wetland on the southwestern border area.
- (b) ***Archaeological, Historical and Sacred Sites.*** Project preparation has included consultation with representatives of Institut Supérieur d'Etudes et des Recherches Scientifiques et Techniques (ISERST) which is responsible for management of cultural resources in Djibouti. They made a review and confirmed that the proposed road rehabilitation activities would not have a direct adverse impact on any known archaeological or historical sites. As part of this review process ISERST prepared a list of recorded sites in the greater Project area that will be used by the Project team to avoid disruption and/or damage to these sites. Current plans call for the excavation of construction materials from previously developed sites used when the Route Nationale 1 was originally built which should limit impacts in these areas; however, it is planned that a representative of ISERST would be on-site during important earth work and materials gathering activities. In addition, some mosques and shrines are located at a safe distance from the road. A number of graveyards exist along the road at various points adjacent to settlements. These are clearly visible and could be easily avoided during Project financed road rehabilitation activities.

17. **Potential Environmental Impacts - Operation Phase.** Potential environmental impacts associated with the operation phase of the Project include:

- (a) ***Port of Djibouti.*** There will remain a continued risk of oil spills from tankers traveling to and from the Port as well as operational risks associated with the unloading and storage of petroleum products. The loading, unloading and storage of petroleum products and dry goods at the Port will continue to present worker health and safety risks and a chance of fire or explosion within the Port area. These risks can be minimized through the continued work of the environment, health and safety officers of the PAID and international oil companies, in collaboration with the Environment Department. These environmental management activities are viewed as being beyond the scope of the proposed Project.

- (b) **Road Sections 1 and 2.** The rehabilitated road sections will require regular maintenance which if deferred will result in immediate deterioration and a return to current conditions. Measures will need to be taken to improve vehicle standards and to enforce reasonable cargo safety controls for loads leaving the Port. Efforts will also need to be taken to establish some form of traffic safety control. There is a risk of increase in the number and severity of vehicle collisions as a result of faster driving on the improved road surface. Informal development of roadside facilities for use by the truckers will continue at various points along the road to provide a range of services. Road crossings will be designed to minimize risk of damage and disruption from flash flooding during severe rainstorms and maintenance will be provided to keep cross drainage and culverts open and free of sediment, vegetation and trash.

E. ANALYSIS OF ALTERNATIVES

18. **Proposed Rehabilitation Project.** The proposed Project offers very limited opportunities for the analysis of alternatives given the focus on the emergency rehabilitation of the existing road. Options open to Ethiopia for the import of dry goods, food and fuel and export of its products are limited at present due to political issues in the region, which make use of other ports on a regular basis either impossible or very difficult. The "no action alternative" or "without project alternative" is not acceptable, as this would seriously restrict the ability of Ethiopia to import or export goods via the sea. Options within Djibouti are limited since it has only one site suitable for use as an international port. The planned European Union study and its associated project, described below, will support evaluation of alternative surface transport options from the Port of Djibouti to Ethiopia; however, these choices are limited by topographical and construction feasibility, environmental and social aspects and cost considerations. If an alternative route were to be selected as the result of the feasibility study, it would still require several years to design and construct. This would not reduce the benefit of rehabilitating the existing road, which would continue to be used heavily until the new road was opened and/or a decision made for additional investment in railroad services.

19. **European Union Supported Transport Study.** With the support of the EU, Djibouti and Ethiopia are in the process of starting a major study, which will provide a broad analysis of medium and long-term surface transport alternatives between these two countries. This study will provide the necessary framework for decisions on surface transportation investments that will go beyond the short-term scope of the road rehabilitation interventions to be supported under the proposed Project. The EU supported study will include an evaluation of the transport corridor between Djibouti and Ethiopia and support a comparative analysis of all existing surface routes, including the Dobi road, Denwele road and the railway, and also examine other possible future surface routes between Ethiopia and Djibouti. This study is anticipated to provide an analysis that decision makers need to determine their transport strategy and prioritize specific investment actions. The study is expected to result in a series of projects that will be considered for support by the EU and other parties interested in supporting regional infrastructure investments.

20. **Review of Storm Water Management.** Geo-technical specialists will examine in detail questions of storm water drainage and flash flooding as part of this EU-supported study (campagne de déflexion). These studies are expected to begin at the end of May 2000. The geo-technical specialists will interface with the design consultants for the proposed IDA Project, who will be in Djibouti at the same time, in order to determine the appropriate measures to be taken on each of the projects to address these questions.

F. SOCIAL ASPECTS

21. **Overview.** The Project preparation process has identified two social issues that should be addressed under the Project: (a) access to construction period employment by local residents in the Project area; and (b) potential for increased transmission of HIV/AIDS along the rehabilitated transport corridor. These issues have been included in the EMP to facilitate their integration into mitigation measures, monitoring actions and the supervision and reporting process for the Project.

22. **Access to Employment.** The field review indicated that within the Project area, the primary social issue from the viewpoint of both local government and residents is access to Project related employment. Implementation arrangements have guaranteed that local contractors and force account details will be responsible for the bulk of the actual civil works (overseen and managed by an international construction management consultant). These contractors will bring their own skilled labor with them to the job site. It is anticipated that most of the skilled labor force will come from Djibouti City. However, some local hires will inevitably occur for unskilled workers; the number of such workers needed will be left to the discretion of the successful bidding contractors. Consultations with local officials, tribal elders, and local nongovernmental organizations have concluded with the agreement that the arrangements of the logistics of such unskilled employment is best left to local customs and traditions. Local leaders and tribal elders present at the consultations have pledged their support and cooperation to assure the process goes smoothly.

23. **HIV/AIDS.** The Project, consistent with the approach adopted for similar IDA funded transportation projects in Africa, will include support for an HIV/AIDS education and outreach program. Activities will be coordinated at the national level with the PIU and the Ministry of Health, in cooperation with the World Health Organization, which is administering funds for a national level HIV/AIDS program in Djibouti. Activities during Phase I of the Project will identify the best manner in which the Bank can contribute to these HIV/AIDS efforts in connection with the Route Nationale 1, with the intention that identified activities will be undertaken during Phase II of the Project. These preparatory activities will include local level discussions with government representatives in Dikhil District, as well as community organizations that address employment and HIV/AIDS education measures. This program will be designed to address the local population as well as truck drivers and other service personnel from Ethiopia who are transiting or temporarily in residence in Djibouti. The effort will also be coordinated with the planned and on-going HIV/AIDS activities supported by other multi- and bi-lateral aid institutions.

G. MITIGATION MEASURES

24. **Mitigation Measures.** The EMP supports specific measures to mitigate potential construction and operation period impacts and to address road safety issues, adoption of archaeological "chance find" procedures and management of graveyards and burials if they are encountered during construction. Provisions are also being made for the planning and conduct of a HIV/AIDS outreach program. The EMP provides for instructions to be given to the design engineers and construction contractors for undertaking specific actions to support implementation of portions of the Plan. The EMP supports the following:

- (a) ***Reduction of Potential Construction Impacts.*** Specific measures to reduce potential construction impacts will be taken regarding the detailed design, construction tenders, construction process and contractor performance monitoring. Contracts will contain requirements for proper management of construction waste; control measures for waste fuel, oil and lubricants; reduction of noise and dust levels; and rehabilitation of areas used for bypass roads and sites used construction materials. Contractors will be required to provide and maintain equipment with proper noise abatement controls. Specific provisions should be included in construction contracts to mandate the use of formal health and safety measures to minimize accidents and avoid fatalities during the construction process.
- (b) ***Management of Operational Impacts.*** The Project will address operational impacts through support for a road maintenance program for three years to avoid deterioration of the rehabilitated road and associated dust and safety problems. Maintenance teams will be required to follow procedures similar to those for the construction contractors concerning proper disposal of construction waste, control measures for waste fuel, oil and lubricants and adoption of health and safety measures for personnel. It is not anticipated that the road rehabilitation will result in a significant increase in traffic volume, therefore air pollution from vehicle emissions will stay neutral or decrease due to use of improved vehicle standards. Suspended dust caused by vehicles will be radically reduced by the rehabilitation of the road, which will include resurfacing and sealing operations.
- (c) ***Storm Water and Sediment Management.*** Final designs for the road rehabilitation program will take into account storm water and sediment management requirements for oued crossings and culverts as agreed between design consultants working under the PHRD-funded project preparation, and geo-technical specialists working as part of the feasibility study for the EU-funded program. As part of the maintenance program, the implementing agency of Phase II of the proposed Project will make certain that routine maintenance is undertaken to keep oued crossings clear of debris and that culverts are regularly cleared of sediment and debris during the three year period of implementation.

- (d) **Road Safety Measures.** Important mitigation actions under Phase II of the Project include three complementary interventions to support improved road safety:
- (i) **Sub-Component B – Axle-Load Control:** This mitigation measure will support establishment of an axle load control station, procurement of related equipment, including weigh bridge stations, and training of personnel. This intervention should reduce the incidence of excessive loads on trucks carrying dry goods or petroleum tanks and help to lower the rate of accidents due to axle and tire failure.
 - (ii) **Sub-Component C - Technical Assistance.** The sub-component will support technical assistance for advisory and planning services and training for a road safety study and priority implementation measures. This will include evaluation of the incidence and causes of accidents, identification of measures that can be taken to reduce accidents and recommendations for priority actions to be implemented within the life of the Project. The preparation of this study will be coordinated with PAID since outbound trucks originate in the port.
- (e) **Use of Archaeological "Chance Find" Procedures.** Attachment C contains proposed procedures for archaeological "chance finds," should they be encountered during the course of construction activities. These procedures have been developed in consultation with the ISERST. The provisions of these "chance find" procedures will be included as an annex to the Tender documents for construction contractors and Terms of Reference for the supervising engineer. The Pre-Tender Conference will include provisions for a session on environmental and social issues during which the archaeological "chance find" procedures will be reviewed with potential construction contractors.
- (f) **Archaeological Field Support.** ISERST will provide a qualified archaeologist to conduct field investigations when important earth work and materials gathering activities are undertaken. The archaeologist would be attached to the Construction Manager's team and provided transport and office space at the road camp in Dikhil. A list of known sites in the region has been compiled and will be provided to the Construction Manager, supervising engineer, and individual contractors. These sites would also be discussed as an element of the environmental and social section of the Pre-Tender Conference.
- (g) **Graveyards and Burials.** If unrecorded graveyards and/or burials are found during the course of construction activities, the PIU will contact and work with local religious authorities within the Project area to allow for

possible identification of the remains and when appropriate properly undertake relocation and reburial.

- (h) **Local Employment.** The mechanism for the rapid rehabilitation of the road has been designed to maximize the use of local resources while still guaranteeing timely completion of the Project. Skilled labor provided by these local resources is unlikely to be hired locally in the Project area. However, there will be a need by the various contractors for unskilled labor, a need most likely to be filled locally, within the Project area. Consultations with local leaders in Dikhil concluded that the arrangements for such employment was best handled according to local tradition and custom. Contractors will be expected to use widely practiced measures to safeguard worker health and safety, to minimize accidents, and prevent fatalities.
- (i) **HIV/AIDS Outreach Program.** The mitigation plan includes support for an HIV/AIDS education and outreach program. These activities would be coordinated with the Ministry of Health, local government representatives in Dikhil and other settlements in the Project area, and international institutions and NGOs working on HIV/AIDS issues in Djibouti. This program will be designed to address the needs of three audiences: (i) the local population in the Project area; (ii) truck drivers and other service personnel from Ethiopia who are transiting or temporarily in residence in Djibouti; and (iii) personnel from construction and maintenance contractors.

25. **Measures for Design and Construction Contracts.** The EMP includes the following mitigation measures for detailed design, construction tenders and construction contracts:

- (a) **Detailed Design.** The detailed design process for rehabilitation of the road will include consideration for environmental, cultural heritage and sacred sites issues. In this context special consideration will be given to measures to address design of oued crossings and culverts to take into account flash flooding and efficient maintenance. In locations where the road will pass close to local communities, measures will be taken for consultation with local authorities and public representatives to support finalization of designs. In addition, as appropriate the staff of the Consultant will investigate localized design issues that would reduce impacts to the environment.
- (b) **Construction Tender.** All construction contracts will include specific provisions concerning environmental, health and safety measures. All successful contractors will be required to have their staff participate in a Project sponsored HIV/AIDS awareness program. The Pre-Tender Conference for potential construction contractors will include a briefing concerning their responsibilities to address environmental, health and

safety issues. These briefings will outline the specific provisions of the Construction Tender Documents and Contracts.

- (c) ***Pre-Tender Conference.*** All pre-qualified contractors will be called to a Pre-Tender Conference at which issues of special interest or concern will be outlined. With regard to environmental, health and safety issues the Contractors will be briefed on:
 - (i) ***Environment, Health and Safety.*** This includes provisions in the contracts regarding requirements to address environmental, health and safety issues as part of the road rehabilitation works. These include provisions for the proper management and disposal of waste materials, oil, lubricants and fuel and adoption and use of proper health and safety measures for construction workers. This will include information on the need for staff to participate in the HIV/AIDS awareness program.
 - (ii) ***Sensitive Areas.*** Areas within or immediately adjacent to the construction area which are sensitive from an environmental, cultural heritage or sacred sites perspective will be identified in the final engineering drawings. Standard conditions requiring special care in the vicinity of the defined sites so as not to disturb them will be issued by the PIU.
 - (iii) ***Procedures for New Borrow Areas and Quarry Sites.*** The location of new borrow areas and quarry sites selected by the contractor will be reviewed and formally approved by the PIU, MOE and the ISERST to prevent environmental values being damaged by quarrying or borrow excavation. Such inspection will not be unreasonably delayed.

H. MONITORING ACTIVITIES

26. **Monitoring Plan.** The Monitoring Plan for the EMP for the Project will be implemented by the PIU, with the active involvement of the MOE and support of the Ministry of Health, and include the measures outlined below. The main responsibility for monitoring activities will rest with the PIU, with the support of the supervising engineer, who will work together to integrate environmental, health and safety concerns into the overall planning, implementation and operation of the Project. The PIU will monitor application of measures for detailed design, construction tenders and construction contracts. The results of monitoring activities will be included as routine elements of reports prepared by the PIU, with the assistance of the supervising engineer, with copies to the MET and IDA. Key activities include:

- (a) ***Reduction of Potential Construction Impacts.*** The PIU, with the support of the supervising engineer as appropriate, will regularly monitor implementation of the mitigation measures adopted for the Project to address construction period impacts for road rehabilitation activities.

- (b) **Management of Operational Impacts.** The PIU, with the support of the supervising engineer as appropriate, will regularly monitor implementation of the mitigation measures adopted for the Project to address operational impacts during the period in which support will be provided under the Project for maintenance of the rehabilitated road. These procedures should be continued after the close of the IDA Project.
- (c) **Storm Water and Sediment Management.** The PIU, with the support of the supervising engineer, will review the provisions made in the designs to address these issues, monitor compliance with these designs by the construction contractor and check on the maintenance activities undertaken by the Roads Department and/or maintenance contractors.
- (d) **Road Safety Measures.** Implementation of the various interventions to support road safety will be the responsibility of the PIU and will be included in the routine reporting on Project progress during Phases I and II.
- (e) **Use of Archaeological "Chance Find" Procedures.** Application of the archaeological "chance find" procedures, if required during the course of road rehabilitation, will be monitored by the supervising engineer and the PIU and ISERST.
- (f) **Archaeological Field Support.** The on-site work of the archaeologist from ISERST will be monitored by the PIU, Construction Manager and the management of ISERST. A record would be maintained of the archaeologist's activities and information compiled on sites located and/or materials found during this fieldwork.
- (g) **Graveyards and Burials.** The implementation of any actions to address issues related to unrecorded graveyards and/or burials will be undertaken by the PIU in conjunction with local authorities.
- (h) **HIV/AIDS Outreach Program.** The implementation of the HIV/AIDS education and outreach program will be monitored by the PIU with the assistance of the Ministry of Health. The supervising engineer will monitor the proper implementation of HIV/AIDS procedures affecting construction and maintenance personnel.

I. INSTITUTIONAL STRENGTHENING

27. **Institutional Strengthening.** Consistent with IDA environmental procedures, a review was made of potential institutional strengthening activities that should be included under the Project to address environmental concerns. The key actions included in the Mitigation Measures section of the EMP are support for training in road safety activities in conjunction with investments to control truck loads and the use of standard clauses on environmental, health and safety issues for construction contracts. ISERST will gain experience in cultural resources management through the adoption of archaeological

"chance find" procedures and conduct of on-site investigation in conjunction with the physical works program. In addition, the HIV/AIDS outreach program will support significantly improved knowledge of this health and development challenge.

J. ESTIMATED COST AND IMPLEMENTATION SCHEDULE

28. **Estimated Cost and Implementation Schedule.** Costs have been developed for the implementation of this EMP and are included in the Project Appraisal Document. Most of the proposed EMP mitigation and monitoring activities will be addressed under provisions of the construction contracts, engineering supervision contract and the proposed technical assistance Sub-Component of Phase II. In addition, the Project will include an implementation schedule that integrates the activities of the EMP into the overall schedule.

K. REPORTING AND SUPERVISION

29. **Reporting.** As an element of Project reporting requirements, the PIU will prepare routine reports concerning progress in implementation of activities related to the EMP. These reports should note any contractor non-compliance with the EMP and provide guiding remarks on the actions to be taken. The significance of the non-compliance should also be noted. As necessary, supplemental reports with greater detail than the routine reports also will be prepared on these topics.

30. **Project Supervision.** The Supervision Plan for the proposed Project will include provisions for the participation of World Bank environmental staff in supervision missions, as appropriate, to review progress in implementation of the EMP. The performance of the PIU in the implementation of these activities under the Project will be a standard element of supervision reports, including the Early Implementation Assessment, Mid-Term Review and the Implementation Completion Report.

L. DISCLOSURE OF INFORMATION

31. **Disclosure of Information.** Consultations have been undertaken with a range of agencies and stakeholders in Djibouti and will be expanded during the implementation process. Consistent with the procedures of IDA, the Government of Djibouti has agreed to make the EMP, which is included as an Annex to the Project Appraisal Document, available to the public through to the Info-Shop at the World Bank and at selected locations in Djibouti, including the offices of Dikhil and Djibouti Districts, and the Ministry of Habitat, Urban Affairs, Environment and Territorial Management. The EMP has been prepared and distributed in both English and French.

REPUBLIC OF DJIBOUTI

REHABILITATION OF INTERNATIONAL ROAD CORRIDOR PROJECT

ENVIRONMENTAL MANAGEMENT PLAN

LIST OF PERSONS CONTACTED

Ministry of Equipment and Transport

His Excellency Osman Idriss Djama	Minister
Mahamoud Ahmed Awaleh	Head of Public Works
Mohamed Ali Ismael	Technical Advisor
M. Le Brishoual	Technical Advisor
B. Guillemot	Head of Mission to the Department of Public Works

Ministry of Habitat, Urban Affairs, Environment and Territorial Management

His Excellency Saleban Omar Oudin	Minister
Mr. Aboubaker Doualeh Waiss	Technical Advisor
Mr. Dini Abdallah Omar	Deputy Director, Department of Environment
Mr. Nasser Djama Abdi	PERSGA Coordinator/Red Sea and Gulf of Aden Program

Ministry of Agriculture, Fisheries and Marine Affairs

Mr. Ahmed Osman Omar	Director, Marine Affairs
Mr. Hassan Aden Hared	Chief of Pollution Division, Marine Affairs Directorate

Ministry of Ports

Mr. Abdoukader A. Hassan	Port Officer in Charge of Security, International Autonomous Port of Djibouti (PAID)
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Dikhil District

Mr. Osman R. Dobar

1st Deputy to the Commissioner and
Dikhil District Chief

Hamad Mohammed Hamad

2nd Deputy to the Commissioner and
Dikhil District Chief

Private Sector

Mr. Ayanleh Idriss Hassan

Director of Operations, Shell
Djibouti

Mr. Wagdi Omar Dorani

Safety, Health and Environment
Manager, Mobil Djibouti

REPUBLIC OF DJIBOUTI
REHABILITATION OF INTERNATIONAL ROAD CORRIDOR PROJECT
ENVIRONMENTAL MANAGEMENT PLAN
RECORD OF PUBLIC CONSULTATIONS

1. **Consultation Process.** Public consultations on the proposed Djibouti – Rehabilitation of the International Road Corridor were held on the 29th and 30th of April, in Djibouti City and in Dikhil, respectively. The agenda for the meetings included: an introduction; description of the proposed Project; review of economic, social and environmental aspects; information on the role of the World Bank and a question and comment session. Participants received a Project information sheet and copies of the Environmental Management Plan, in French, were circulated.

2. **Consultation Meetings.** The consultation meetings were held as follows:
 - **Djibouti City.** The consultation in Djibouti City was chaired by M. Mahmoud Awaleh, interim Director of Public Works, and was held at the Djibouti Chamber of Commerce. A list of participants invited and those who attended is attached as Sub Attachment 1. The proceedings, carried out in French, were reported in the national French language newspaper, and on national news programs.

 - **Dikhil and Yoboki.** The consultation in Dikhil occurred at the Office of Dikhil District, and was chaired by M. Moussa Djama Guedi, Commissar of the Republic for Dikhil District. Proceedings were conducted in French and Somali, with the aid of a local translator. A list of the participants invited and those who attended is provided as Sub-Attachment 2. In lieu of holding a separate consultation in Yoboki, the Commissar of the District made arrangements for representatives of concerned parties to come from Yoboki down to Dikhil to participate in the Public Consultation there.

 - **Ouê'a.** It was also decided that a Consultation at Ouê'a was not necessary, since only the most minor road repairs might occur in this area, the bulk of the repair work for the Arta spur to Dikhil section of the road being located in the Petit Bara, in Dikhil District.

3. **Minutes of Public Consultation in Djibouti City.** Mr. Awaleh greeted and thanked those in attendance for their time. Following introductions of all in attendance, he summarized the proposed Project, talking about components of the Project, the structure of the construction team, and the timeline for implementation. Mr. Dini Abdallah Omar, Deputy Director of the Department of Environment, then summarized

the currently identified environmental and social impacts of the Project during and after implementation. Next, Mr. Roger Gorham (MNSID) summarized the scope of World Bank involvement in the Project, focusing on the credit itself, and technical assistance during preparation and implementation. He also discussed briefly Project preparation funds made available through the PHRD program.

4. **Comments.** A discussion period followed, during which the following points were raised and discussed:

- There was some concern that the road would degrade even more before rehabilitation would begin. Mr. Awaleh explained that the Project preparation timetable was tightly constrained for just this reason. Mr. Allemand of the World Food Program indicated that his agency has proposed the financing of emergency continuous grading and basic maintenance of the road, starting in late May 2000, until the Bank-financed rehabilitation Project begins implementation, in order to keep the road open for food aid and other traffic over the next several months.
- There was also concern expressed that traffic accidents along the RN 1, particularly those involving hazardous materials spills, were not addressed quickly enough, and that the Project should envision the inclusion of some kind of brigade to handle such emergencies. Mr. Awaleh expressed the Government's belief that such a brigade should be the responsibility of the private sector – that is, the road users themselves. Mr. Gorham pointed out that there are some Technical Assistance provisions in the Project for both axle load controls and a road safety component (to be determined later), and that while such a brigade may be out of the scope of this Project, some of these concerns will be taken into account by these other components.
- Some concern was expressed about the need for a road connection to Ethiopia via Ali Sabieh and Dire Dawa, since such a connection would be a more direct link to the famine area. It was explained that such a large scale decision was not in the scope of the proposed IDA-financed Project, but that the question would be looked at in detail in the EU-financed study now beginning work.

5. **Minutes of Public Consultation in Dikhil.** Mr. Guedi greeted Mr. Awaleh and the World Bank representatives on behalf of the District, and thanked them for their attendance. He then introduced local invitees in attendance. Next, he gave a brief description of Dikhil District, which is organized into three administrative centers, two of which (Dikhil and Yoboki) are directly impacted by the proposed rehabilitation. He also briefly discussed the Government's decentralization initiative, which is creating regional councils in all the Districts.

6. **Summary of Proposed Project.** Mr. Awaleh summarized the proposed Project, including its components, the structure of the construction team, and the timeline for implementation. Mr. Gorham then summarized the scope of World Bank involvement in the Project, focusing on the credit itself, and technical assistance during preparation and implementation. He also discussed briefly Project preparation funds made available through the PHRD program. As Mr. Dini was unable to attend the Public Consultation in

Dikhil, Mr. Awaleh summarized the likely environmental and social impacts of the Project. These presentations were all translated periodically into Somali.

7. **Key Issues.** Mr. Guedi indicated his own satisfaction with the progress and nature of the proposed Project, indicating that the condition of the road has had significant negative consequences on various aspects of economic life in Dikhil District, including degradation of agricultural products because of dust and damage during transport and the loss of entrepreneurial activity near the roadside because of the impact of road dust.

8. **Comments.** A discussion period followed, during which the following points were raised and discussed:

- A local health department official in Yoboki identified asthma as one of the significant health problems in Yoboki (particularly among children), presumably because of the presence of road dust.
- Concern was expressed about the location of the police station at the entry of Dikhil; the location posed a potential hazard because trucks might lose control on the descent into the town and would not be able to avoid hitting it. Mr. Awaleh explained that such considerations would be taken into account in the pre-feasibility study for the long-term road options being financed by the EU. Consultants from Profabril, the Portuguese consultant responsible for carrying out the study, were present at the Public Consultation, and made note of these concerns.
- Concern was also expressed about potential loss of water resources to the region as a result of materials gathering and quarrying. It was felt that, at a minimum, there needed to be requirements to rehabilitate landscapes following materials gathering in order to avoid changing drainage patterns following rains, and related soil erosion.
- A question was asked about whether Dikhil-based contractors would be given preference in the works. Mr. Awaleh summarized the procedure that would be used to select contractors, and indicated that since speed in execution was an overriding concern, the works would necessarily need to be executed primarily through mechanized equipment, and that he did not believe that most Dikhil-based contractors would qualify for the main works contracts on that basis, but that they were welcome to submit proposals. He indicated, however, that winning contractors would no doubt need to hire local manpower for various tasks, mostly unskilled, and that one of the reasons for this Consultation was to alert the local community. He expressed his hope that the consultation would: (a) allow the local community to organize the structure of the local labor that would need to be hired; and (b) minimize potential conflicts which may have arisen regarding local labor questions.
- Finally, a tribal elder, speaking in Somali, thanked the Bank and the Department of Public Works for their efforts, and indicated that this Project was badly needed. He indicated that local elders would assist in any way possible.

Mr. Guedi thanked all in attendance, and the Consultation was adjourned.

REHABILITATION D'URGENCE DU CORRIDOR
ROUTIER DJIBOUTO-ETHIOPIEN

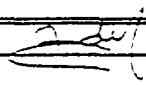
(Réunion du 29 Avril 2000)

LISTE DES PARTICIPANTS

N°	Nom du participant	Département ou ONG ou autre (B.P. et tel.)	Signature
1	OMAR ISHAEL ABDIRAHMAN	Ministère de la Promotion de la Femme	
2	ISMAEL ELMI HABANEH	Service du Génie Rural	
3	ROGER HILL	Commission Européenne	
4	COURTIS JP	Chambre de Commerce	
5	LE BERRE Christian	SCAC Ambassade de France	
6	Youssef Youssef ELMI	DIRECTION DU FONDS ROUTIER	
7	ABDI ABSIEH WARSAMA	Direction de Fonds d'entretien Routier	
8	Said ABU Ibrahim	CARITAS DIRECT	
9	MOHAMED YOUSSEF AHMED	ASSOCIATION AL BIR	
10	SOULEIFAH Ahmed Babili	association AL BIR	
11	OSMAN Houssein CHEIDOM	Ministère de l'Éducation	
12	MOHAMED SAID SAIF	ASSISTANT DU REPRÉSENTANT DU FOM	
13	OMAR HABIB	Assistant au Programme PNUD	
14	SARAH HOUSSEIN	Coordinatrice de programme ADETIP	
15	Lama Fikhemerhorn	Ambassade des États-Unis	
16	Sead-Luc Pliamand	Ingenieur Civil PAM	
17	DANIEL STOLK	Logistics Officer PAM	
18	YOUSSEF SEIF	ONG Brades Djedid	
19	TERJE WOLDEN	Banque mondiale	
20	Ross GORTAN	Banque mondiale	
21	DINI ABDALLAH AMAR	Ministère de l'Environnement	
22	Adin Ahmed Douale	Directeur du Trac	
23	Dr Mohamed Nabyoub	Président de l'ONG Brades Djedid	
24	HAMADOU AHMED AWALEY	Directeur des T.P	

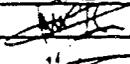
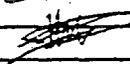
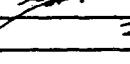
REHABILITATION D'URGENCE DU CORRIDOR
ROUTIER DJIBOUTO-ETHIOPIEN

LISTE DES PARTICIPANTS

N°	Nom du participant	Département ou ONG ou autre (B.P. et tel.)	Signature
25	ISMAN OMAR	LA NATION	
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REHABILITATION D'URGENCE DU CORRIDOR
ROUTIER DJIBOUTO-ETHIOPIEN

LISTE DES PARTICIPANTS

N°	Nom du participant	Département ou ONG ou autre (B.P. et tel.)	Signature
25	MOHAMED LOUMED ABASSI	chef de poste d'AS-Eyla	
26	Abdi Ismaïl Ismaïl	Inspecteur senior	
27	Abdullah Abou	chef de village	
28	Abdi Raouf Saleh	chef de territoire	
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REPUBLIC OF DJIBOUTI

REHABILITATION OF INTERNATIONAL ROAD CORRIDOR PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

ARCHAEOLOGICAL CHANCE FIND PROCEDURES

1. **Introduction.** Consistent with the Antiquities Code of Djibouti and the Cultural Heritage procedures of the International Development Association, as outlined in the Updates to the Environmental Assessment Sourcebook, a set of archaeological "chance find" procedures would be used for the Rehabilitation of International Road Corridor Project (Project). These procedures would provide a mechanism for the construction contractor(s) and the supervising engineer to address, in a cost-effective and timely manner, situations in which buried archaeological and/or historical sites or materials are encountered during the course of construction activities under the Project. These are sites which are unknown and unrecorded at the time of the Project and have not been identified by an archaeological survey or other mechanism.

2. **Definitions.** The term "find" is defined for the purposes of this document as follows:

"Any structure, object, remain(s) or deposit(s) that is of demonstrable or suspected to be of an archaeological or historical nature whether in situ or not."

This definition covers four classes of "chance finds:"

- (a) **Cultural Deposits.** Archaeological deposits or levels relating to construction, occupation/use, and disuse, demolition and abandonment.
- (b) **Structural Remains and Cultural Deposits.** This includes walls, foundations, floors, decorated architectural stonework, architectural elements (columns, pilasters, column bases), architectural masonry (other than blank geometric stone), architectural fittings (stone, wood, ceramic, metal), ceramic building materials, marble and polished stone floors, mosaics (ceramic, stone, glass, tesserae), stucco, molded plaster, painted plaster, earthfast and rockcut graves or tombs, and cisterns.
- (c) **Artifacts.** This includes ceramic objects (vessels, statuary, personal ornaments, coin dies), stone objects (worked flint, vessels, statuary, personal ornaments, inscribed stonework, coin dies), objects made of glass (vessels, statuary, personal ornaments, utensils, industrial residue) and metal objects (vessels, statuary, personal ornaments, utensils, coins, weapons, industrial residue).

- (d) ***Ecofacts.*** This includes human bone (articulated or otherwise), worked animal bone/ivory, wooden vessels, and worked wood.
3. **Procedures.** Under the Project, the following procedures will be used for reporting, evaluation and management of chance finds:
- (a) ***Role of the Construction Contractors and the Force Account Unit.*** Chance finds of archaeological and/or historical materials or sites must be immediately reported by any of the construction contractors, the force account unit and/or other parties involved in the Project to the Construction Superintendent or other designated representative of the Construction Manager on site.
- (b) ***Role of the Construction Manager.*** The Construction Superintendent or other designated representative of the Construction Manager will immediately order work to be stopped in the immediate area of the chance find for up to 72 hours to allow for the on-site representative of the Institut Supérieur d'Etudes et des Recherches Scientifiques et Techniques (ISERST) to visit the locale, make an assessment, and provide instructions. The Construction Superintendent or other designated representative of the Construction Manager will immediately contact the on site representative of the ISERST to come and make an assessment. The Construction Superintendent, or other designated representative of the Construction Manager, may direct crews to continue to undertake works in areas adjacent to the chance find area, consistent with Project design, upon consultation with and approval of the on-site representative of the ISERST. The Construction Manager shall be responsible for keeping the Project Coordinator apprised of the situation.
- (b) ***Role of the Supervising Engineer.*** The supervising engineer (SE) shall be responsible for ensuring proper implementation of these “chance find” procedure. If the SE suspects that these procedures are not being respected, he will be authorized to stop work in affected areas until the situation can be resolved.
- (c) ***Role of the Project Coordinator.*** The Project Coordinator shall provide trouble-shooting services within the Government, liaising with the Ministry of Transport, the Ministry of Culture, local officials, any other Ministries which may be affected by the chance find, and the Construction Manager in order to resolve any outstanding questions in the event of a chance find as quickly as possible.
- (d) ***Role of the ISERST.*** The ISERST shall designate an on-site representative to survey construction and materials gathering efforts related to the road rehabilitation. This on-site representative shall reside at Dikhil during the entire period of materials gathering, quarrying, and earth works. Once all materials gathering, quarrying, and earthworks procedures have been completed, the designated ISERST representative shall no longer reside on-site, but may, at his discretion, survey the progress of the works. The ISERST

representative shall be contacted immediately upon any chance find by the Construction Superintendent, or other designated representative of the Construction Manager. As quickly as possible, and no later than 24 hours after notification, the ISERST on-site representative will make an evaluation of the significance of the materials, and provide guidance on next steps, which may include recording, salvage, conservation and/or destruction after recording. The on-site representative or other officials from the ISERST will work with representatives of the Project Implementation Unit, the Construction Manager, the supervising engineer and local authorities, to find a practical series of measures that would promote the conservation of cultural heritage and facilitate the timely completion of the civil works under the Project.

4. **Graveyards and Burials.** In the case of the discovery of unrecorded graveyards and/or burials, the procedures outlined above in Paragraph 3 will be used; however, the Project Coordinator would immediately contact the Commissar of Dikhil or Djibouti District depending on the location of the find, to assist in working with local religious authorities within the Project area to allow for possible identification of the remains and, when appropriate, to properly undertake relocation and reburial.

5. **Provisions in Contract and Tender Documents.** These archaeological "chance find" procedures will be provided as an annex to the Tender documents for construction contractors and Terms of Reference for the supervising engineer. The Pre-Tender Conference will include provisions for a session on environmental and social issues during which the archaeological "chance find" procedures will be reviewed with potential construction contractors.

6. **Contact Persons.** The following individuals will serve as the contact persons for the implementation of these procedures:

- (a) ***Ministry of Equipment and Transport*** [to be replaced with Project Coordinator upon designation by the Government]

Eng. Mahmoud Ahmed Awaleh
Directeur des Travaux Publics
B.P. 11 Djibouti
Republic of Djibouti
Tel. 35 31 50 or 35 57 82
Fax. 35 64 21 or 35 36 99

- (b) ***Institut Supérieur d'Etudes et des Recherches Scientifiques et Techniques***

Dr. M. Gedda Mohamed Ahmed
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