Republic of Yemen

Ministry of Public Works and Highways
Rural Access Project Central Management Office (RAP CMO)

RURAL ACCESS PROGRAM

DRAFT
SECTORAL ENVIRONMENTAL ASSESSMENT

EXECUTIVE SUMMARY

TECHNIPLAN

in collaboration with
SHEBA Engineering Services

Rome, October 2004
EXECUTIVE SUMMARY

This Draft Sectoral Environmental Assessment (SEA) has been prepared for the Rural Access Program (RAP) under a contract signed between the Ministry of Public Works & Highways and Techniplan S.p.A., on 11th June 2003. It has been prepared in accordance with World Bank Operational Directive (OP) 4.01, Environmental Assessment.

Program Description. The overall purpose and long-term development objective of the RAP is an improved livelihood and reduced isolation for rural populations. To achieve this objective, the Program will improve planning and implementation of rural roads, thereby reducing a major obstacle to rural economic growth caused by poor access. The Program will be implemented in three phases:

- **Phase I** (August 2001 to April 2005) is setting up the institutional and technical foundation of rural road projects. The approach is being tested in 22 pilot clusters that consist of intermediary roads combined with adjacent tertiary or village-access roads. This phase also includes formulation of a National Highway Master Plan and Governorate Rural Accessibility Master Plans which provide the basis for selection of future rural road investments.

- **Phase II** (December 2005/2007) will tackle access problems mainly at intermediary road level, also covering related tertiary roads, while setting up a policy and organization framework for gradually moving to feeder networks.

- **Phase III** (2007/2011) will tackle the improvement of tertiary roads at District level, while continuing to support the development and management systems of intermediate networks.

The RAP will be implemented as a nation-wide program, covering all 20 Governorates of the country, and their 333 Districts. The Governorate Accessibility Master Plans developed in Phase I will provide the foundation for rational planning and prioritization for rural access investments, as well as decentralized institutional arrangements and financing for management and maintenance of the rural roads.

Environmental Screening Category. Phase I of the Program was placed in environmental category “B”, since all civil works were limited to improvements on existing alignments and roads with major impacts were screened out. For Phases II and III, such cases are not excluded, such that project roads may be categorized as “A” or “B”. For this reason, the remainder of the overall program has been placed in environmental category “A”, to allow the possibility of roads with potential major impacts to be included.

Justification for SEA. Since the location of all roads to be improved is not yet known, a Sectoral Environmental Assessment approach has been selected. This approach provides for a general assessment of program impact, establishment of standard methods of mitigation to be adapted to individual projects and a procedural framework for implementing the environmental and social management process for all roads within the program. The SEA also provides the basis for an Environmental and Social Management Framework Agreement between the Government of Yemen and the World Bank.

Policy and Institutional Framework. Environmental Impact Assessment (EIA) in Yemen is enabled by the Environment Protection Law No 26 of 1995 (EPL). The provisions of this framework law are implemented through Executive Regulations (By-Law 148-2000), issued by a decree of the Council of Ministers. In October 2002, the Environmental Protection Authority (EPA) issued the "Environment & Sustainable Investment Program Plan".
2003-08" (ESIP), which constitutes the framework for the Government’s environmental policy of the next years. While the Government general environmental policy provides a broad framework for environmental management, there is as yet no environmental policy for the road sector.

Baseline Conditions. The physiographic characteristics of Yemen are very diverse and consist of high, steep mountains, escarpments, deserts, coastal plains and hundreds of wadis running between the mountains and through the coastal plains. Socotra is the largest of the 112 Yemeni islands scattered in the Red Sea. The majority of the population concentrates in the wadis and highland plateaus, performing agricultural activities, irrigating from the spates flow in the wadis in the rainy seasons, and from base flow and groundwater. The country is classified into five physical regions (Mountain Massif, Eastern Plateau, Desert Regions, Coastal Plans and Yemen Islands) and 16 sub-regions. There are 36 important ecological sensitive areas, two of which have been declared Protected Areas (Autma and Socotra); four were under declaration as at October 2003; and 30 proposed for declaration. Population density varies markedly across the country, ranging from 1 person per sq. km in the desert areas (such as Al-Mahrah Governorate) to 388 persons per sq. km in Ibb Governorate. Tribal tensions can be a source of social conflict in the selection and implementation of rural roads. Yemen is rich in cultural assets, which are scattered in urban and rural areas; however, there is currently no comprehensive inventory of cultural assets. The agricultural terracing system is widespread in the mountainous zones and is well known as an efficient method of water conservation.

Environmental Impacts. Rural roads have a range of potential positive and negative impacts, depending on their location within the country. Roads located in the escarpments are characterized by hairpin bends whereas in flat areas they follow rather straight alignments. These geometric features affect the volumes of earthworks and consequent impacts on the environment. Water harvesting along and even on the road surface is routine practice and is a major consideration in rural road design, as is cross-drainage, discharge to adjacent lands, flood protection and wadi hydrology. Slope stabilization is a key issue in vertical alignment design to avoid landslides in the mountainous zones. Traditionally, rural roads designs in Yemen have featured a roadbed of 8 meter width, with a road surface 6 meters wide and shoulders of 1.0 meter on each side. In the case of mountain roads, this design requires rather deep cuts into the mountainside to achieve the design width of the roadbed, leading to the erosion of exposed slope surfaces and often to slides of slopes onto the road. In addition, such road widths can lead to land taking through populated or agricultural areas, which is difficult to justify, given the volume of traffic on these roads. Narrower road widths provide more economically justified investments and reduce the need for land taking or excessive excavations. Consultations revealed an overwhelming desire for improved access and willingness to collaborate with the Program. Positive socio-economic impacts noted include reduced transport costs and travel time, improved comfort and safety, increased mobility, stimulus to economic development, improved community cohesion and intercommunity cooperation and improved accessibility to social services and marketes. Increased road accidents and adverse impacts on water gathering patterns were identified during women’s consultations as particular areas of social concern. Over the life of the program, the RAP investments will cover about 1% of the entire network scattered among the 20 Governorates. Impacts are expected to be localized and it is therefore reasonable to assume a negligible risk of cumulative negative impacts.

Environmental Management Plan (EMP). The EMP consists of standard mitigation measures to be adapted to each individual road and institutional arrangements for ensuring consistent implementation of the environmental and social management processes. Standard mitigation measures have been developed to address potential environmental impacts as they may occur during the design/construction and the operational (post-construction/maintenance) phases. An EMP Table provides an overall summary of impacts,
mitigation measures and monitoring responsibilities during implementation. The main mitigation measures include:

- **Improved and environmentally-sound technical designs, tested during Phase I.**
  - including: (i) narrower road design widths, “pinch points” and other measures to avoid excessive mountain cuts or land taking; (ii) slope stabilization measures; (iii) flood protection in the wadis, incorporation of water harvesting measures, and reduction of cross-drainage effects and discharge to adjacent lands, with particular attention to agricultural terraces, graveyards and other sensitive areas.

- **Measures related to the conduct of design/construction and maintenance works activities.** The main ones include: (i) careful selection, management and rehabilitation of investigation sites, site compounds, borrow areas and diversion roads; (ii) controlled disposal of materials and surplus fill; (iii) avoidance of groundwater pollution through appropriate storage and use of petroleum products, paving materials and other hazardous items; (iv) limitation of effects on biological resources through identification and mitigation of impacts on critical vegetation, fauna and natural habitats affected by the roads; (v) separate men and women’s consultations to avoid tribal conflicts, address potential permanent and temporary land acquisition needs, and address gender considerations; and (vi) cultural resource assessments, management plans and chance find procedures, as appropriate.

- **Social Framework Agreements (SFA),** developed during Phase 1, as the mechanism for reaffirming public agreements to the environmental and social mitigation measures, as discussed in the public consultations. The SFA also provides a framework for addressing unforeseen environmental and social issues that may arise during implementation.

- **Policy Frameworks for Resettlement, Natural Habitats and Cultural Resources,** which will be triggered when appropriate issues are identified during screening or based on chance finds during implementation.

Implementation arrangements are based on a standard environmental and social management process developed during Phase 1. The process includes procedures and standard instruments for screening, categorization, environmental assessment, and project implementation. It also includes prior review and approval by RAP and the World Bank following the screening and the environmental assessment steps. Environmental contract clauses are incorporated as an explicit annex into RAP's standard contract documents. Overall responsibility for the implementation of the above process will be with the RAP CMO, through its Environmental and Social Unit (E&SU). The Unit is fully operational with two qualified staff. However, in view of the increasing workload, this should be expanded to include at least four staff. Institutional strengthening should be carried out through: (i) increase of staff; (ii) training and in-house seminars at RAP CMO; and (iii) training sessions for engineering consultants and contractors. From a sector-wide perspective, the RAP is introducing an operational approach to systematically address environmental and social issues on rural roads. As RAP expands its operations and becomes “mainstreamed” within the Ministry of Public Works and Highways, these processes will serve as a model for addressing such issues in the road sector in general.

**Public Disclosure.** Consistent with procedures of the World Bank, the Government of Yemen will make this Draft SEA available to the public through: (i) the World Bank InfoShop; (ii) the RAP CMO, Sana’a and on the RAP CMO Website; (iii) the Ministry of Water and Environment and the EPA, Sana’a; and (iv) the RAP CMO Regional Offices. Annex 3 provides a record of public sure of the Draft consultations carried out during the preparation of the SEA. Comments gathered during the discloSEA will be incorporated into the Final Sectoral Environmental Assessment.
ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The EMP consists of standard mitigation measures to be adapted to each individual road and institutional arrangements for ensuring consistent implementation of the environmental and social management processes. The EMP Table at the end of this chapter provides an overall summary of mitigation measures and responsibilities.

Standard mitigation measures have been developed to address potential environmental impacts as they may occur on individual road projects during the design/construction and the operational (post-construction/maintenance) phases.

IMPACT MITIGATION DURING DESIGN/CONSTRUCTION PHASE

Mitigation during this period includes:

- Improved and environmentally-sound technical designs, which were tested during Phase I and will be applied as appropriate to RAP-financed roads in Phases II and III; and
- Mitigation measures related to the conduct of design and construction activities.

Land Resources

Site survey investigations

Outside the right of way, the Contractor shall locate and select sites needed for the site compound, quarries and borrow sites, geotechnical investigations, road diversions, haulage roads, etc. These shall be identified so as to minimize environmental damage or disruption to current agricultural or other activities, and will be subject to approval by the Resident Engineer (RE) and the Beneficiary Committee.

Minimize permanent land taking – narrower road design width and pinch points

Traditionally, rural roads designs in Yemen have featured a roadbed of 8 meter width, with a road surface 6 meters wide and shoulders of 1.0 meter on each side. In the case of mountain roads, this design requires rather deep cuts into the mountainside to achieve the design width of the roadbed, leading to the erosion of exposed slope surfaces and often to slides of slopes onto the road. In addition, such road widths can lead to land taking through populated or agricultural areas, which is difficult to justify, given the volume of traffic on these roads. Narrower road widths provide more economically justified investments and reduce the need for land taking or excessive excavations.

Based on pilot operations in Phase I, the RAP roads shall include narrower road platforms, which reduce the need for land taking and cut if required to reach width. In addition, “pinch points” (limited narrowing of the road at selected locations) shall be introduced, so as to avoid or minimize land taking, resettlement or interference with utilities.
In cases where land taking is unavoidable by the above measures, the *Resettlement Policy Framework* will apply (see item 7.1.5.2, under Socio-Economic and Cultural Resources).

**Planning of site compound, road diversions and haul roads**

The Contractor shall plan and place the site compound and all road diversions and haulage routes in collaboration with the RE and Beneficiary Committee, with an aim to minimize affects on agricultural, residential or other lands or commercial or community purpose.

**Slope stabilization**

Slope stabilization or protection measures, such as retaining walls, protection barriers, terracing or mesh gabion works, shall be introduced as appropriate, particularly in mountainous areas characterized by steep, unstable slopes above and below the roads.

**Management of contractors’ site compound**

The Contractors’ site compound shall include adequate living and sanitation facilities for the workers, including an approved plan for solid and liquid waste disposal. The Contractor shall also have an approved management and safety plan for storage of equipment, petroleum products, paving materials, etc., so as to minimize risk of spillage or leakage, as well as safety and emergency response procedures. At the end or the contract period, the Contractor shall leave the site compound in a clean and rehabilitated condition to the satisfaction of the RE and the Beneficiary Committee.

**Controlled disposal of materials and surplus fill – minimize impact on agricultural land and terraces**

Disposal of excavated materials, removed debris and demolished structural materials shall be transported to dumping locations approved by the RE, and authorization for dumping shall be secured by from the landowners, the Beneficiary Committee and/or relevant government authority. The Contractor shall avoid dumping excavated materials onto adjacent farmlands or terraces. Where such impacts are unavoidable or occur inadvertently, agreement for compensatory measures will be reached with the land owners under the auspices of the SFA and Beneficiary Committee.

**Recovery of borrow pits and quarry areas.**

All borrow pits and quarry areas shall be rehabilitated to the satisfaction of the RE and in conjunction with the Beneficiary Committee. Measures include: (i) full reinstatement of the area to its original use; (ii) development of revised use, such as livestock watering areas; or (iii) protection for future borrow operations during maintenance or other road construction.

**Hydrology and Water Resources**

**Sourcing of construction water**

The Contractor shall obtain access authorization for use of water resources and address any local concerns for excessive draw-down on the water table or surface water supplies.
**Avoidance of surface or groundwater pollution**

The Contractor shall take appropriate measures to avoid pollution to ground or surface water supplies through measures such as:

(i) Provision of sedimentation/septic tanks, water-incepting ditches and drains to prevent contamination of water resources from contractor's compounds facilities and run off

(ii) Garbage separation at the source and use of organic material as compost

(iii) Storage of non-biodegradable materials

(iv) Temporary drains to dispose of eroded sediments, preventing intrusion in surface water bodies

(v) Limitation of works near wells, or covering them to prevent pollution

(vi) Waste water management, including use of wastewater to irrigate camp-site plantation

(vii) Not dumping of chemicals, coal tar, asphalt or anything which may pollute the aquifers

(viii) Refueling of plants or transfer of materials far water courses

(ix) Good practice to avoid spillage and pursue collection and recycling

(x) In case of accidental spill of fuel or chemicals, efforts to offset pollution

(xi) Anti-spillage devices installed in storehouses, workshops and vehicle parks

(xii) Fuel, oil and grease interceptors with impervious bed, to be located underneath the parking areas to drain the runoff into the oil interceptors and prevent contaminated discharges from entering into any water body without adequate treatment

(xiii) Collection of used lubricants for safe disposal or recycling

(xiv) Riparian buffers along the edges of ponds to prevent water contamination

(xv) Construct bridges and culverts in the dry season, when river flow is minimum or nil.

**Flood protection in the wadis**

Design of roads located in, or adjacent to wadis shall include appropriate hydrological analyses as an input to defining the alignment and design of the platform and drainage structures. Alignments shall be placed so as to minimize interference with flows and reduce impact on the road platform.

**Incorporate water harvesting practice into design**

All designs shall take into account current water harvesting practices as they relate to the road. During road construction, the contractor shall adopt measures to avoid damage to the drainage networks and protect existing water harvesting channels to ensure the normal feeding of irrigation systems. Temporary channels and pipes shall be used if the works are conducted during the rainy season, minimizing interference with both channeled and un-channeled or diffused runoff.

**Reduce cross drainage and scour effects**

The design shall provide: appropriate drainage design; use of culverts, Irish crossings, protection walls, riprap, side drainage ditches and outlets; tree planting.

Hydrological analyses shall be carried out to predict and design appropriate measures to mitigate such effects, such as, culverts, Irish crossings, protection walls, riprap, side drainage ditches and outlets, tree or vegetation plantings, terracing and soil conservation measures.
Reduce discharge to adjacent unstable slopes, graveyards and other structures

The design shall take account of needs to prevent or minimize discharge to adjacent areas, especially those prone to erosion, as well as graveyards and other structures.

Air Quality and Noise

Limit dust and potential pollutants from construction machinery, stored material and spoil heaps

The Contractor shall take all necessary measures to limit pollution from dust and any wind blown materials during the works. Measures include:

(i) Utilize water spraying during operation on sections within 500 m of settlements or crops.
(ii) Trucks leaving the site are properly covered to prevent discharge of dust, rocks, sand, etc.
(iii) Crushers and other equipment conform to relevant dust emission control.

Stored materials and heaps should preferably be located away from communities and farmlands; or materials should be covered and fugitive dust should be effectively controlled during delivery.

Limit smoke from burning of waste materials

As part of the rubbish removal system, the Contractor shall be prohibited from burning of waste material.

Noise control

The Contractor shall adopt the the best practicable means of minimizing noise during construction. For any particular job, the quietest available plant and machinery shall be used. Equipment such as compressors, percussion tools and vehicles shall be fitted with silencers. Pneumatic drills and other noisy equipment shall not be used during days of rest or after normal working hours without the consent of the RE and Beneficiary Committee.

Biological Resources

Environmental management plans for critical or non-critical habitats

If any proposed road passes through, or is adjacent to: (i) any "declared" or "proposed declared" protected area; or (ii) any natural habitat not "declared" or "proposed declared", but is locally known as a sensitive natural habitat, it will trigger the RAP Natural Habitat Policy Framework. In such case, scoping and screening will include an initial assessment to determine whether project impacts can be avoided or minimized through design measures or post-development restoration. These may include such measures as: (a) realignment to avoid the natural habitat; (b) mitigation measures to minimize ecological damage; (c) post...
development restoration works; or (d) avoidance through the no-project alternative. If the only feasible alternative would involve establishing and maintaining an ecologically similar protected area, the no-project alternative will be chosen, as this would fall outside the Program’s scope. Should options (a) or (b) be selected, the Natural Habitat Policy Framework outlines the procedures to be followed, which will be carried out in conjunction with the Ministry of Water and Environment (MWE).

Limit damage to biological resources by construction equipment

The Contractor shall take all necessary measures to identify and minimize potential impacts of construction equipment on flora or fauna resources, such as:

(i) Realignment, or establishment of “pinch points” to avoid destruction of productive, ancient or other trees or vegetation identified during screening; and

(ii) Avoidance or restoration of known or chance finds of small animal habitats, such as nests or dens destroyed by construction activities.

Prevent damage to biological resources by construction workers

As part of his employee management policy, the Contractor shall forbid animal poaching or wanton cutting of trees by construction workers. Measures in this regard include strict employment rules and sanctions regarding such practices. Utilization of gas for cooking is recommended as a disincentive for cutting of trees.

Socio-Economic and Cultural Resources

Consultations to reduce tribal tensions

Project screening will identify any potential tribal tensions along a proposed road. During initial consultations, it shall be made clear to tribal leaders that resolution of such issues, under the auspices of the Governor, is a prerequisite for project implementation. The Social Framework Agreement (SFA) will lay out these agreements for each rural road sub-project to ensure consensus among the tribes living along the roads on the organization and achievement of the road improvement, road alignments and distribution of project benefits.

Land acquisition and resettlement plans

The scoping and screening process will identify potential requirements for land acquisition or resettlement and the extent of “affected persons”. The screening will also determine whether such impacts can be avoided or minimized through design measures. These may include such measures as reducing the design standard at the contentious location (“pinch points”) or leaving the contentious section as is, in agreement with affected people. If these impacts cannot be avoided through such measures, the Resettlement Policy Framework will be triggered, and the project will follow the procedures outlined in that Resettlement Policy Framework. If the project is included in the Program, a stand-alone Resettlement Plan (Full, in the case of major impacts – more than 200 affected persons; or Abbreviated, in the case of minor impacts – less than 200 affected persons) will be prepared prior to commencement of project implementation. This Plan will be established in coordination with the Beneficiary Committee and referred to in the Social Framework Agreement (SFA).
Precautionary measures for utility services

Precautionary measures shall be taken to avoid interference with utilities such as telephone and power lines, and water and sewage pipelines. Services falling within the right of way shall be relocated in collaboration with the relevant agencies, the RE and the Beneficiary Committee.

Compliance with public health and safety requirements at construction sites

The Contractor shall take all necessary action to comply with the General Safety, Health and Environment Regulations. Mitigation measures shall be taken in respect of:

Reducing construction site risks to the workers and the public – safety rules for work operations shall be instituted by the Contractor, including, but not limited to; location of plant (crushers, asphalt plants, generators) away from sensitive locations (hospitals, schools, etc.), equipment operation procedures, safety barriers, warning signs, protective hard hats, shoes and clothing for the workers, first aid and medical kits and procedures, and safety training for the workers.

Reducing health risks from compound living conditions and interaction with the community – employee rules and information campaigns shall be instituted by the Contractor on health practices and communicable diseases; awareness raising meetings with the community; all regulations shall be clearly displayed in Arabic and English.

Road safety and traffic management measures

The Contractor will install and maintain warnings to guide detour users and avoid collision with construction vehicles between work sites and gravel pits. Detours will be carefully planned and drivers using unfamiliar detours assisted with manual regulation of traffic. Speed restrictions shall be introduced along detour roads. Road closures, where unavoidable, shall be planned in close collaboration with the RE and the Beneficiary Committee.

Graveyards and burials

Where graveyards or burial plots are located adjacent to the roads, the project will avoid disturbance through: (i) pinch points or adjustments to alignments; and/or (ii) drainage and other design measures to avoid excessive runoff or erosion onto the graveyard or burial. If unrecorded graveyards or burials are found during the course of construction, the following procedures will apply:

(i) As soon as graveyards or burials are discovered, the Contractor must report to the RE, who will inform RAP CMO and the Beneficiary Committee. Consultations with local religious authorities and communities will be carried out for possible identification of remains and agreed solutions (i.e., road deviations or re-alignments).

(ii) If deviations or realignments are impossible, the RAP CMO will agree with the Beneficiary Committee and local religious authorities a proper relocation and procedures for reburial of the remains.

Cultural resource assessments and management plans

The scoping and screening process will identify potential impacts on known cultural resources. If such impacts are identified, scoping and screening will include an initial
assessment to determine whether these impacts can be avoided or minimized through design measures. These may include such measures as: (a) realignment or road narrowing to avoid the physical cultural resource identified; or (b) avoidance through the no-project alternative. If, following consultations, the project remains a candidate to be included in the Program, the Cultural Resources Policy Framework will be triggered, and the project will follow the procedures outlined in the Cultural Resources Policy Framework. The assessment of the impacted physical cultural property and mitigation measures will form an integral part of the project EA (including EMP) and will be carried out in coordination with the General Organization for Antiquities, Museums and Manuscripts (GOAMM).

**Use of archeological “chance find” procedures**

The Contract Data will contain procedures for archaeological “chance finds” during the course of construction activities. The Government (Ministry of Culture) will make available (on demand) a qualified archaeologist to conduct field investigations when important search work and new materials sites are opened. The archaeologist would be paid by RAP CMO and be attached temporarily to the construction manager’s team and provided with logistical support when necessary. The following procedures should be executed whenever archaeological relic, antiquity or any other object of archaeological importance is discovered during road construction:

(i) Halt construction activities.
(ii) Delineate the discovered site area.
(iii) Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remains, a night guard should be present until the responsible authority takes over.
(iv) Notify the responsible foreman/archaeologist, who in turn will notify the GOAMM, the Environmental and Social Management Unit (ESMU) of RAP CMO and the local authorities (within less than 24 hours).
(v) GOAMM would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out.
(vi) GOAMM will evaluate the importance of the finding according to criteria relevant to cultural heritage, as aesthetic, historic, scientific or research, social and economic values.
(vii) Decision on how to handle the finding will be reached based on the above assessment and could include changes in the project layout (in case of finding an irremovable relic of archaeological importance), conservation, preservation, restoration or salvage.
(viii) Implementation of the GOAMM decision concerning the management of the finding.
(ix) Construction works should resume only when permission is given from GOAMM after the decision concerning the safeguard of the heritage is fully executed.

**Gender Considerations**

Gender-related concerns identified during the womens’ consultations will, as appropriate, be incorporated into road designs. Such design measures may include pathways and steps to facilitate daily activities, as well as safety measures, such as speed bumps or signs, near schools or populated areas. In addition, safety issues and responsibilities will be mentioned in the SFA, and safety information campaigns will be introduced.
Consultations regarding local employment

Mechanisms for maximizing local employment benefits will be discussed during initial consultations and specified in the SFA.

MANAGEMENT OF IMPACTS DURING OPERATIONS PHASE

Land Resources

Maintain and monitor slope stabilization measures

Protection and stabilization measures carried out on steep upslope and downslope areas shall be regularly maintained and monitored as part of maintenance operations. Additional measures may be instituted where necessary, in collaboration with the Beneficiary Committee.

Avoid damage to terraces and agricultural lands during maintenance

The Maintenance Contractor shall take care to avoid damage to terraces and agricultural lands during any cut and fill, haulage or other machine operations.

Management of maintenance site compounds, materials and equipment storage

To the extent that the Maintenance Contractor establishes such facilities, the site compound shall include adequate living and sanitation facilities for the workers, including an approved plan for solid and liquid waste disposal. The Maintenance Contractor shall also have an approved management and safety plan for storage of equipment, petroleum products, paving materials, etc., so as to minimize risk of spillage or leakage, as well as safety and emergency response procedures. At the end of the contract period, the Maintenance Contractor shall leave the site compound in a clean and rehabilitated condition to the satisfaction of the RE and the Beneficiary Committee.

Management of induced development

The effects of induced development, such as uncontrolled settlements at intersections, increased litter or increased cutting of trees, shall be addressed by the Beneficiary Committee and District authorities, who are responsible for controlling land use in the project area. Such issues shall be raised and agreed during the preparation of the SFA.

Hydrology and Water Resources

Maintain and monitor water harvesting measures

Water harvesting measures instituted during construction shall be maintained and monitored during maintenance operations. Additional measures may be instituted where necessary, in
collaboration with the local farmers and Beneficiary Committee.

**Maintain cross drains/culverts**

Regular cleaning of cross drains, culverts and other drainage structures shall be carried out as part of maintenance operations, in collaboration with the Beneficiary Committee.

**Maintain road protection and other structures**

Regular maintenance of retaining structures, such as walls, gabions, riprap, etc. will be carried out as part of maintenance operations, in collaboration with the Beneficiary Committee.

**Clearing of hazardous waste from accidents**

The community shall be made aware of the need for timely clean up of spillage of hazardous waste resulting from accidents.

**Air Quality and Noise**

**Air quality measures**

Expected increases in traffic levels are not anticipated to be so high as to bring about significant air pollution on individual roads. Smoother and less dusty roads and the use of smaller lighter vehicles will promote less dust and will likely result in lower emissions. Outside the purview of this project, measures to lower overall emissions in the country are strict enforcement of vehicle quality standards and the conversion to unleaded petrol.

**Noise reduction measures**

Noise impacts are not expected to be a serious issue, given the levels of traffic and dispersed nature of the rural road investments. In particularly sensitive areas, design measures to address noise may be introduced in collaboration with the Beneficiary Committee, involving for example signs near hospitals or schools, or concrete or vegetation barriers if practical.

**Biological Resources**

**Reduce induced impacts on flora and fauna**

Potential induced impacts, such as increased wood cutting or grazing, shall be addressed through community awareness and relevant programs implemented by government agencies, such as the Ministry of Agriculture, and NGOs. The risk of increased road kills of wildlife or domestic livestock shall be addressed through the maintenance of speed reduction measures at appropriate locations. Such measures shall be maintained, monitored and, if necessary adapted to actual experience.
Socio-Economic and Cultural

Accident reduction measures

To reduce road accidents and fatalities resulting from increased traffic and speed, speed humps and vertical and horizontal signs shall be maintained during the operational period. Pedestrian safety, in particular the threat posed to women and children by higher standard roads, shall be addressed through mitigation measures such as for pedestrian crossings and walkways to schools, water sources, etc., where practical. In collaboration with the Beneficiary Committee, safety awareness campaigns shall be carried out, and such campaigns will be specified in the SFA. Target groups include: drivers and students of primary and secondary schools. Implementation and monitoring responsibilities will belong to traffic police, schoolteachers, NGOs, assisted by the RAP CMO and Ministry of Transport and Highways.

Conformance with public health and safety regulations during maintenance

To the extent relevant, the Maintenance Contractor shall take all necessary action to comply with the General Safety, Health and Environment Regulations. Mitigation measures shall be taken in respect of:

- Reducing construction site risks to the workers and the public – safety rules for work operations shall be instituted by the Contractor, including, but not limited to; location of plant (crushers, asphalt plants, generators) away from sensitive locations (hospitals, schools, etc.), equipment operation procedures, safety barriers, warning signs, protective hard hats, shoes and clothing for the workers, first aid and medical kits and procedures, and safety training for the workers.

- Reducing health risks from compound living conditions and interaction with the community – employee rules and information campaigns shall be instituted by the Contractor on health practices and communicable diseases; awareness raising meetings with the community; all regulations shall be clearly displayed in Arabic and English.

Monitoring of socio-economic benefits

The RAP CMO, through the E&SU, will monitor selected socio-economic impacts of the rural road investments. This will be done through baseline and follow up surveys for each RAP road, which will focus on travel time and cost to markets and social and administrative services, as well as the price of various transport-sensitive basic commodities.

Cultural Resources Chance Find Procedures

The Contract Data for maintenance contracts will contain the same procedures for archaeological “chance finds” as those defined in the construction contracts. These are described in section 7.1.5.8 above, as well as the Cultural Resources Policy Framework.
IMPLEMENTATION ARRANGEMENTS

Environmental and Social Management Process

All roads financed under the RAP will undergo an Environmental and Social Management Process, in which candidate rural road projects are screened to identify potential environmental and social issues and determine whether Safeguard Policies should be triggered. This process is summarized below.

Overview of RAP Environmental and Social Management Process
(For Individual Projects Financed under the Program)

Responsibilities and Procedures

Overall responsibility for the implementation of the above process will be with the RAP CMO, through its Environmental and Social Unit (E&SU). The procedures of the E&SU are designed to incorporate, or “mainstream” environmental and social considerations into the
Yemen. Rural Access Program. 2004

overall process for rural road planning and implementation. These procedures are summarized below.

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<tr>
<th>Road Project Cycle</th>
<th>Phase</th>
<th>Activities</th>
<th>Responsibilities</th>
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|                    | PLANNING                       | ✓ Initial site visit & consultations.  
✓ Identification of issues and applicable safeguards policies  
✓ Categorization  
✓ Action plan                                                                 | CMO-E&S Unit                        |
|                    | Preparation of EA, SFA and consultations | ✓ Draft EA  
✓ Draft SFA  
✓ Women consultations                                                                 | Consultant / CMO-E&S Unit           |
|                    | DESIGN                         | ✓ Disclosure of draft EA & SFA to communities  
✓ Signing of final SFA                                                                 | CMO-E&S Unit/ Consultant Districts & communities |
|                    | Finalization and Incorporation | ✓ Final version of EA  
✓ Incorporation of EMP into contract documents                                                                 | Consultant / CMO-E&S Unit          |
|                    | EXECUTION                      | ✓ Implementation  
✓ Monitoring & reporting on environmental and social mitigation measures                                                                 | Contractors CMO-E&S Unit RE & local community |
|                    | OPERATIONS                     | ✓ Implementation  
✓ Monitoring & reporting on environmental and social mitigation measures                                                                 | Contractors CMO-E&S Unit RE & local community |

EA = Environmental Assessment, including Environmental Management Plan (EMP)  
SFA = Social Framework Agreement

**Contract provisions**

General contract clauses related to construction and maintenance operations are specified in the RAP Standard Bidding Documents and Works Contracts, *Volume II General Specifications and Regulations*. Under *General Regulations* is included *(I) General Safety, Health & Environment Regulations and (II) Other Regulations and Requirements*. Section *(I)* includes the following relevant subsections:

*(I) Safety, Health & Environment General Regulations*

1. Introduction  
2. Compliance with Regulations  
3. Failure to Comply with Regulations  
4. General Requirements  
5. Safety Requirements  
6. Environmental and Health Requirements  
7. Additional Requirements in Public Areas  
8. Contractor’s Site Checklist  
Annex 1 Sample Contractor’s Site Checklist  
Annex 2 Environment and Social Management Plan for Construction Period (EMP)

**Pre-tender conference**

To ensure full understanding of the above clauses by the contractors, all pre-qualified contractors will attend a Pre-Tender Conference, where they will be briefed on their
responsibilities to address environmental, social, health and safety issues. These briefings will outline the general requirements in the General Conditions of Contract and the General Health and Environmental Regulations, as well as road specific provisions in the tender documents and contracts, as laid out in the Contract Data.

Environmental Assessment Instruments

Scoping and screening

Scoping and screening will consist of identifying, for each potential project, the major issues, the appropriate environmental category, and establishing a plan for appropriate environmental assessment (EA) studies. It will also serve to heighten awareness of these issues among stakeholders and initiates the participatory planning process. Scoping will rely on baseline data drawn from documents, interviews, air photographs, satellite images and maps, supplemented by on-site inspection and initial stakeholder consultations. All Screening Reports will follow a standard layout, presented in Chapter 9.

Environmental categorization

Each potential project will be categorized to determine the appropriate extent and type of EA, based on the particular characteristics of the road. Because of the nature of road projects, roads will be categorized into one of two categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the &quot;without project&quot; situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.</td>
</tr>
<tr>
<td>B</td>
<td>A proposed project is classified as Category B if it’s potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.</td>
</tr>
</tbody>
</table>

Policy Frameworks for Resettlement, Natural Habitats and Cultural Resources

If, during initial screening or implementation, it is determined that a sub-project has issues related to (i) permanent land acquisition or resettlement; (ii) impact on natural habitats; or (iii) cultural resources, this will trigger the appropriate Policy Framework developed for this purpose are incorporated into Volume 2 of the SEA. These are:
Automatic Triggers for Categorization:

- **Resettlement.** Projects involving "major" resettlement impacts (i.e. more than 200 affected persons) shall automatically be placed under environmental screening Category A and will require a Full Resettlement Plan as defined in the Resettlement Policy Framework. Projects with less than 200 affected persons shall be placed under Category B and will require an Abbreviated Resettlement Plan, also as defined in the Resettlement Policy Framework.

- **Natural Habitats.** Projects whose proposed road alignment passes through, or is adjacent to, any of the "declared", "proposed declared" protected areas in Yemen, as shown in Table 4.30, shall automatically be placed in Environmental Category A and will require the recruitment of a qualified consultant to carry out a detailed impact assessment and Environmental Management Plan (EMP), as defined in the Natural Habitats Policy Framework, as part of the overall EA. Projects whose proposed alignment pass through or are adjacent to any "non-critical habitat" may be Category A or B, depending on its relative location and extent of anticipated impacts, but in either case, a qualified consultant will be recruited to carry out the detailed impact assessment and EMP.

- **Cultural Resources.** Projects whose proposed alignment runs through or is adjacent to any physical cultural resources shall trigger the application of the Cultural Resources Policy Framework, but may be placed in Environmental Category A or B, depending on the relative location and extent of anticipated impacts. In either case, a qualified specialist will be recruited to carry out the impact assessment and EMP, in collaboration with GOAMM.

**Environmental Assessments (EA)**

- **Category A projects EA.** For roads classified as Category A, the project will carry out a full Environmental Assessment and any additional Safeguard Plans triggered. The Environmental Assessment and any Safeguard Plans will be carried out by independent experts, in conjunction with the preparation of the design. This will enable the incorporation of adequate mitigation measures into the final design, as well as affording a review and approval of these measures and other Safeguards Policy Plans (such as Resettlement Plan, Cultural Resources Plan or Natural Habitats Plan) by the World Bank. Each Report will follow the standard format shown in Chapter 9.5. If triggered, the Resettlement Plan, Cultural Resources Plan, or Natural Habitats Action Plan will follow the standard procedures defined in their respective Policy Frameworks.

- **Category B projects EA.** For roads classified as Category B, the project will carry out an abbreviated Environmental Assessment, in conjunction with the design consultant. The general format of the Category B Environmental Assessment Report will follow the same as that of Category A projects, with appropriate levels of detail.
Social Framework Agreements (SFA)

During the preparation of the Environmental Assessment and Environmental Management Plan, the Government will assist the beneficiary communities to address jointly the environmental and social issues of the project and achieve optimal, or minimum-impact, design alternatives. The instrument of this policy approach is the SFA. The SFA will bear evidence of the approval, by the Beneficiary Committee, of all planned environmental and social mitigation and enhancement measures. It also provides a framework for addressing unforeseen environmental and social issues that may arise during final design and implementation. If applicable, the affected individual holders, as well as the legal representatives of the collective holders, of affected land rights and business activities will be signatories of the compensation transactions annexed to the SFA. The signing of the SFA is a pre-condition for the final approval and funding of each road project, and will be attached to each EMP. The SFA will follow a standard format provided in Chapter 9.4.1.

Environmental Management Plans (EMP)

Each road specific EA will also include an Environmental Management Plan, which summarizes the impacts, mitigation measures and responsibilities for environmental and social impacts associated with the road. It will be summarized in a table, which will be an adaptation of the EMP table presented in Section 7.4.

Consultations and Disclosure of Information

As part of the EA process, on-site consultations shall be undertaken with a range of agencies and stakeholders for each rural access road to be financed under the Program. The draft SFA for each road shall be made available in Arabic and English for public review before being finalized.

Women’s Consultations

Separate consultations shall be held to solicit women’s view on the proposed projects and incorporate their concerns into the Environmental Management Plan (EMP) and the Social Framework Agreement (SFA).

Environmental Monitoring

The RAP CMO through its Environmental and Social Unit (E&SU) shall be responsible for monitoring of the overall environmental and social management process. This will include:

Planning and Preparation:
- Review and approval of EA, ESMP and SFA for all projects.
- Review and approval of special Safeguard reports related to Resettlement Plans, Natural Habitat Plans or Cultural Resources Plans, in collaboration with MWE or GOAMM.

Execution:
- Review and evaluation of Resident Engineer’s Monthly Reports on Contractors’ compliance with general and specific environmental contract clauses.
Review and evaluation of special monitoring reports related to Resettlement Plans, Natural Habitat Plans or Cultural Resources Plans, in collaboration with the Ministry of Water and Environment or GOAMM.

Operations:
- Review and evaluation of Resident Engineer’s Reports on Maintenance Contractor’s compliance with general and specific environmental clauses.
- Liaison with community on safety campaigns and other mitigation during operations.
- Monitoring of socio-economic impact indicators.

The E&SU shall maintain a dossier for each project road. This dossier will include:
- Initial requests for support and all ensuing correspondence
- Screening Report and all attachments
- Draft and Final EA, EMP and SFA
- Records of all consultations at Governorate and local levels
- Copies of Special Reports, such as Resettlement Plans, Natural Habitats Plans or Cultural Resources Plans, when applicable
- Monthly RE reports of compliance with EMP. The EMP for each road will include a checklist of impacts and mitigation measures for that road. This will be based on the generic Environmental and Social Management Plan Table at the end of this Chapter and will be attached to the Resident Engineer’s Reports. A sample of such a report is presented in Chapter 9.

During construction, the Resident Engineer (RE) will be responsible for monitoring the Contractor’s compliance with all contract clauses addressing environmental and social impact mitigation, to be carried out under the purview of the General Safety, Health and Environmental Regulations. For this purpose, the RE will refer to the project-specific EMP and report on such compliance in his monthly reports.

RAP/CMO will produce Quarterly Reports describing the progress of the environmental and social screening, planning and implementation of all individual road EMPs.

Costs of Mitigation

The quantities, specifications and estimated costs of design measures to avoid or mitigate negative impacts will be assessed by the design consultant and incorporated into the works bidding documents. The contractor will execute all required works and will be reimbursed through pay items in the bill of quantities, which will be financed by the project.

Temporary acquisition for diversions, camps, borrow areas and other work sites will constitute a community contribution, under the auspices of the Beneficiary Committee and confirmed through Social Framework Agreement. Additional costs of rehabilitating all such areas to their original state will be incurred by the contractor and borne by the project, as a pay item in the bill of quantities.

As stated in the Resettlement Policy Framework, owners of affected houses and other structures will be compensated in-kind, which is defined as the cost of the works required to replace the asset in its existing condition. As with design measures noted above, The quantities, specifications and estimated costs will be assessed by the design consultant and incorporated into the works bidding documents. The contractor will execute all required works and will be reimbursed through pay items in the bill of quantities, which will be financed by the project.
In conformance with Yemeni traditional rural practice, owners of affected lands will not be compensated by the Project in cash for loss of land, but the affected owners will donate such land for public purposes and community benefit. However, this donation will occur within the context of a mutually signed community-based Agreement, which is appended to the SFA, and which specifies the terms under which the donation is made. These terms will be based on local traditional practice concerning the donation of private land for public purposes and specifies any special terms or conditions related to the particular case, which are to be settled internally by the community. Generally, these include one of two options: (i) the affected person freely donates the land to the community; or (ii) the community may allocate part of its lands to the affected person.

During operations, the costs of mitigation in the course of maintenance contracts will be incurred by the contractor and borne by the employer, who may be the Road Fund, Government or local government, and reimbursed as a pay item in the bill of quantities. The maintenance of water harvesting, footpaths and other social measures will be the responsibility of the community. In addition, the community will be expected to carry out basic cleaning of drains and culverts as part of their contribution to maintenance. The cost of safety and driver information campaigns will initially be borne by the project, however the communities will be responsible for continuous community education and safety campaigns. Selected safety audits will be carried out by the project, in conjunction with communities.

**Compliance Monitoring**

Following its exercise of prior review, the World Bank will monitor the implementation of road specific EAs, SFAs, Resettlement Plans and specific mitigation plans for Natural Habitats or Cultural Resources. The Bank will also carry out targeted and spot review of specific social cases and resettlement plans involving land donation and asset replacement, as part of regular supervision, or separate missions.

**Institutional Strengthening**

During Phases II and III, the role of the E&SU will shift from one of implementor of the Environmental and Social Management Process, including the preparation of EA, ESMP and SFA, to one of manager of the Process. In this revised role, ES&U will still be responsible for Screening of all projects, but then will focus on the planning and oversight of EA preparation, which will be carried out by a pool of competent consultants trained in the RAP E&SU. The E&SU will prepare terms of reference (TOR) for EA studies, review and approve EA studies, liaise with other agencies, maintain records, exercise quality control, carry out reporting and monitor implementation.

The present E&SU is fully operational. Its staff consists of two engineers, who have undergone on-the-job training during Phase I and are fully competent in all aspects of the ESM Process. In addition, RAP CMO is establishing 5 Regional Branches, who will also provide additional potential manpower for carrying out Screening and overseeing the preparation of the EAs, ESMPs and SFAs. However, in view of the increased workload, the RAP E&SU staff will need to be expanded to at least 4 members.

Institutional strengthening will be carried out through:

(i) Recruitment of additional staff and required equipment at RAP CMO;
(ii) Training of additional RAP CMO staff through in-house seminars and workshops
(iii) In-service training for existing staff through seminars and workshops
(iv) In-service training for existing staff at national, regional or international levels, to be identified and financed through the IDA Project.

SUMMARY TABLES OF ENVIRONMENTAL MANAGEMENT PLAN

The following tables summarize the potential impacts, standard mitigation measures to be adapted road-specific conditions, and responsibilities for implementation and monitoring. These tables will be adapted to each road circumstances and will provide the basis for a checklist to be utilized by the following Design Engineer (DE), Resident Engineer (RE), Contractor, Beneficiary Committee and the RAP CMO Environmental and Social Unit (E&SU). General contract provisions are expressed in the General Conditions of Contract (GCC), further elaborated in the General Safety, Health and Environmental Regulations (GSHER), while road-specific provisions are expressed in the Conditions of Particular Application (Contract Data) of each road’s bidding documents and contract.
## ENVIRONMENTAL MANAGEMENT PLAN SUMMARY

### A. DESIGN/CONSTRUCTION PHASE

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>A.1 Land Resources</strong></td>
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<tr>
<td>A.1.1 Site survey investigations</td>
<td>Prudent selection and limitation of construction sites; reinstatement of intrusive investigation sites.</td>
<td>General Regulations: II. Other Regulations and Requirements Clause 17.1.3.</td>
<td>DE, RE, Contractor (Design Consultant/Project)</td>
</tr>
<tr>
<td>A.1.2 Permanent land acquisition</td>
<td>Pinch points and appropriate design to reduce platform and minimize land taking; Application of Resettlement Policy Framework when unavoidable.</td>
<td>Issues identified during screening; design measures in Contract Data, contract drawings and SFA.</td>
<td>DE, RE (Contractor/Project, community land donation &amp; collaboration)</td>
</tr>
<tr>
<td>A.1.3 Temporary land acquisition</td>
<td>Siting of site compounds, diversions and haul roads; traffic management.</td>
<td>General Regulations: 1. Safety, Health &amp; Environmental Regulations Clause 7.3; II. Other Regulations and Requirements Clause 17.2.2.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.1.4 Slope stabilization</td>
<td>Stabilize upslopes in mountainous areas; design measures to minimize adverse downstream impacts.</td>
<td>Issues identified during screening; design measures in Contract Data, contract drawings.</td>
<td>DE, RE (Contractor/Project)</td>
</tr>
<tr>
<td>A.1.5 Contractor site compounds, materials and equipment storage</td>
<td>Provision of adequate living and sanitation facilities; adequate materials management and safety plan; handover of rehabilitated compound site.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clauses 6.1, 6.4; II. Other Regulations and Requirements Clauses 17.3, 17.4, 17.5.</td>
<td>RE, Contractor (Contractor/Project, community land donation &amp; collaboration)</td>
</tr>
<tr>
<td>A.1.6 Disposal of cut materials and surplus fill - agricultural land destruction</td>
<td>Controlled disposal of cut material and surplus fill.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 6.6.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.1.7 Borrow pits and quarry areas</td>
<td>Prudent selection of site; management during use and reinstatement.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 5.15.</td>
<td>DE, RE, Contractor (Contractor/Project, community land donation &amp; collaboration)</td>
</tr>
<tr>
<td>A.2.1 Sources of construction water</td>
<td>Appropriate sourcing of water and prior arrangements with communities.</td>
<td>Contractor's obligation defined in contract document and community obligations defined in SFA.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.2.2 Pollution from wastewater, diesel or asphalt spills from site compounds and machinery</td>
<td>Measures to prevent groundwater or surface water contamination.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 6.3.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
<td>Measures/Design Considerations</td>
<td>Responsible Parties</td>
</tr>
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<tr>
<td>A.2.3 Flood Protection in Wadis</td>
<td>Appropriate road alignment within wadis; design for protection and drainage discharge works that minimize adverse downstream impacts.</td>
<td>Issues identified during screening; design measures in Contract Data, contract drawings.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.2.4 Alteration of water harvesting patterns</td>
<td>Incorporate current water harvesting practices into design; use of irrigation pipes; improvement of channel performance by riprap work.</td>
<td>Issues identified during screening; design measures in Contract Data, contract drawings and in SFA.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.2.5 Wadi cross drainage and scour effects on new fill.</td>
<td>Appropriate drainage design; use of culverts, Irish crossings, protection walls, riprap, side drainage ditches and outlets; tree planting.</td>
<td>Issues identified during screening; design measures in Contract Data, contract drawings and SFA.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.2.6 Discharge to:</td>
<td>Appropriate positioning and design of drainage structures; protection walls or riprap.</td>
<td>Issues identified during screening; measures in Contract Data, contract drawings and SFA.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>- new fill</td>
<td>- unstable slopes</td>
<td>- channel in a stack</td>
<td>- Graveyards</td>
</tr>
<tr>
<td>A.3 Air Quality and Noise</td>
<td>Water spraying during operations; dust emission controls on crushers and other equipment; Preferably, locate heaps away from communities and farmlands; cover material-laden trucks; control of fugitive dust during material delivery.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 6.2.</td>
<td>RE, Contractor (No additional cost; Community collaboration)</td>
</tr>
<tr>
<td>A.3.1 Dust &amp; potential pollutants from construction machinery, stored material and spoil heaps</td>
<td>Prohibition of burning waste material.</td>
<td>General Regulations: Safety, Health &amp; Environmental Regulations Clause 6.2.</td>
<td>RE, Contractor (No additional cost)</td>
</tr>
<tr>
<td>A.3.2 Smoke from burning of waste materials</td>
<td>Noise control devices (such as silencers) on compressors, percussion tools; avoid equipment use after working hours.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 6.5.</td>
<td>RE, Contractor (No additional cost)</td>
</tr>
<tr>
<td>A.3.3 Noise Nuisance</td>
<td>A.4 Biological Resources</td>
<td>Assessment and mitigation plan under Natural Habitats Policy Framework.</td>
<td>Issues identified during screening; design measures in Contract Data, contract drawings and SFA.</td>
</tr>
<tr>
<td>A.4.1 Conversion or degradation of a critical or non-critical natural habitats</td>
<td>Avoidance through realignment or pinch points; restoration of nests, dens or other small animal habitats.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 16.2.2. Issues identified during screening; design measures in Contract Data, contract drawings and SFA.</td>
<td>DE, RE, Contractor (Contractor/Project)</td>
</tr>
<tr>
<td>A.4.2 Damage to biological resources by construction equipment</td>
<td>Contractor employment rules; information campaigns to RE and contractor personnel.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 4.11.</td>
<td>RE, Contractor (No additional cost)</td>
</tr>
<tr>
<td>A.4.3 Damage to biological resources by construction workers</td>
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</tbody>
</table>
### A.5 Socio-Economic and Cultural Resources

<table>
<thead>
<tr>
<th>A.5.1 Tribal Tensions</th>
<th>Consultation and negotiation during during project preparation.</th>
<th>Issues identified during screening; agreements and commitments expressed in SFA.</th>
<th>DE, RE, Contractor, Beneficiary Committee (No additional cost)</th>
<th>E&amp;SU</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.5.2 Land acquisition and resettlement</td>
<td>Abbreviated or Full Resettlement Plan, as specified during screening.</td>
<td>General Regulations: Safety, Health &amp; Environmental Regulations Clause 5.13. Issues identified during screening; design measures in Contract Data, contract drawings and SFA. Procedures specified in Resettlement Policy Framework.</td>
<td>DE, RE, Contractor, Beneficiary Committee (Contractor/Project; Community land donation &amp; collaboration)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>A.5.3 Destruction or relocation of utility services (electricity and phone lines, water pipes and wells, etc.).</td>
<td>Design avoidance measures through pinch points or alignment adjustment, OR relocation of utility; precautionary measures with construction machinery during operations.</td>
<td>General Regulations: Safety, Health &amp; Environmental Regulations Clause 16.2.4. Issues identified during screening; measures in Contract Data, contract drawings and SFA.</td>
<td>DE, RE, Contractor, Beneficiary Committee (Contractor/Project)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>A.5.4 Public health and safety at construction site</td>
<td>Safety rules for work operations, such as equipment operation procedures, protective hard hats, shoes and clothing for workers; first aid and medical kits and procedures; health and safety regulations clearly displayed in English and Arabic. Public health and safety measures, such as barriers and warning signs to borrow areas or other dangerous zones; information campaigns on health practices and communicable diseases.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clauses 4, 5 &amp; 6. Community precautions defined in SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Project)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>A.5.5 Road closure and detours</td>
<td>Traffic management; define closures and detours with Beneficiary Committee; install and maintain warnings guides to drivers.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 7.3; II. Other Regulations and Requirements Clause 17.2.2.</td>
<td>DE, RE, Contractor, Beneficiary Committee (Contractor/Project)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>A.5.6 Graveyards and burials</td>
<td>Avoid disturbance through pinch points or alignment adjustments; drainage and design measures to avoid flooding; barriers during construction.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 7.5. Issues identified during screening, design measures in Contract Data and SFA.</td>
<td>DE, RE, Contractor, Beneficiary Committee (Contractor/Project)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>A.5.7 Known archaeological and historic sites and resources</td>
<td>Assessment and mitigation plan under the Cultural Resources Policy Framework.</td>
<td>Issues identified during screening; procedures specified in Cultural Resources Policy Framework; agreements and commitments expressed in SFA.</td>
<td>E&amp;SU, DE, RE, Contractor, Beneficiary Committee, GOAMM (Design Engineer/Contractor/Project)</td>
<td>E&amp;SU, GOAMM</td>
</tr>
<tr>
<td><strong>A.5.8 Chance finds of Cultural Resources or other socio-economics resources</strong></td>
<td>Application of <em>Chance Find Procedures</em> to assess requirements and implement mitigation.</td>
<td>Chance Find Procedures specified in Annex 2 of <em>Cultural Resources Policy Framework</em>; agreements and commitments carried out within the SFA framework.</td>
<td>RE, Contractor, Beneficiary Committee, GOAMM (Contractor/Project)</td>
<td>E&amp;SU</td>
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<td><strong>A.5.9 Gender considerations</strong></td>
<td>Women's consultations and incorporate concerns into EMP.</td>
<td>Issues identified during screening, design measures in Contract Data and SFA.</td>
<td>Women Consultant, DE, Contractor, Beneficiary Committee (RAP CMU/Project)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td><strong>A.5.10 Employment</strong></td>
<td>Mechanisms to maximize local employment benefits explored during consultations.</td>
<td><strong>General Regulations</strong></td>
<td>DE, RE, Contractor, Beneficiary Committee (No additional cost)</td>
<td>E&amp;SU</td>
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### B. OPERATIONS PHASE

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<tr>
<td><strong>B.1 Land Resources</strong></td>
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<tr>
<td>B.1.1 Slope stabilization</td>
<td>Regular maintenance of stabilization measures; protection works</td>
<td>Maintenance measures defined in contract data.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>B.1.2 Agricultural land or terrace damage during maintenance</td>
<td>Controlled disposal of cut and fill during maintenance; controlled equipment operations.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clause 6.6.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>B.1.3 Maintenance contractor site compounds, materials and equipment storage</td>
<td>Provision of adequate living and sanitation facilities; adequate materials management and safety plan; limitation of construction site.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clauses 6.1, 6.4; II. Other Regulations and Requirements Clauses 17.3, 17.4, 17.5.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>B.1.4 Management of induced development</td>
<td>Land use planning and zoning for intersections and village extensions.</td>
<td>Not applicable.</td>
<td>Beneficiary Committee, Local Government (Local govt)</td>
<td>E&amp;SU, MoPW^H</td>
</tr>
<tr>
<td><strong>B.2 Hydrology and Water Resources</strong></td>
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<tr>
<td>B.2.1 Water harvesting</td>
<td>Regular maintenance of water harvesting structures.</td>
<td>Maintenance measures defined in contract data and SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt/Community)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>B.2.2 Blockage of cross Drains/culverts Uncontrolled discharge</td>
<td>Regular maintenance of drainage structures; avoid uncontrolled community discharges.</td>
<td>Maintenance measures carried by the beneficiaries defined in SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Community)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>B.2.3 Erosion of road platform from drainage discharge</td>
<td>Maintenance of retaining structures, such as walls, gabions, riprap; planting of shrubs and grasses.</td>
<td>Maintenance measures defined in Contract Data and SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt/Community)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td>B.2.4 Pollution from vehicle diesel and oil spills or accidents with hazardous cargo</td>
<td>Timely clean up following accidents.</td>
<td>Not applicable.</td>
<td>Beneficiary Committee (Community)</td>
<td>N.A.</td>
</tr>
<tr>
<td><strong>B.3 Air Quality and Noise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.3.1 Air pollution from increased traffic</td>
<td>Vehicle maintenance; enforcement of emission controls; lead free fuels.</td>
<td>Not applicable.</td>
<td>Ministry of Transport (National Govt)</td>
<td>N.A.</td>
</tr>
<tr>
<td><strong>B.3.2 Noise Nuisance</strong></td>
<td>Speed controls in populated areas; signs and warnings in sensitive areas; driver information/education campaigns.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Reg. Clause 6.5.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt/Community)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td><strong>B. 4 Biological Resources</strong></td>
<td>Maintenance of speed reduction measures, signs and warnings; planned development of growth areas; educational campaigns.</td>
<td>Local maintenance and actions defined in SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Community)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td><strong>B.5 Socio-Economic and Cultural Resources</strong></td>
<td>Maintenance of speed reduction measures, signs and warnings; Information campaigns to drivers and at villages.</td>
<td>Local maintenance and actions defined in SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Community)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td><strong>B.5.1 Increased road accidents</strong></td>
<td>Safety rules for work operations, such as equipment operation procedures, safety barriers, warning signs, protective hard hats, shoes and clothing for workers; first aid and medical kits and procedures; appointment of Safety Officer. Information campaigns on health practices and communicable diseases; health and safety regulations clearly displayed in English and Arabic.</td>
<td>General Regulations: I. Safety, Health &amp; Environmental Regulations Clauses 4, 5 &amp; 6. Community precautions defined in SFA.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/local govt; Community collaboration)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td><strong>B.3 Socio Economic Benefits</strong></td>
<td>Monitoring of benefits.</td>
<td>Consultants’ contracts to carry out data collection, analysis and reporting.</td>
<td>Consultants, E&amp;SU (RAP CMU/Project)</td>
<td>E&amp;SU</td>
</tr>
<tr>
<td><strong>B.4 Chance finds of Cultural Resources or other socio-economics resources</strong></td>
<td>Application of Chance Find Procedures to assess requirements and implement mitigation.</td>
<td>Chance Find Procedures specified in Annex 2 of Cultural Resources Policy Framework; agreements and commitments carried out within the SFA framework.</td>
<td>RE, Contractor, Beneficiary Committee (Contractor/Road Fund/local govt; Community)</td>
<td>E&amp;SU</td>
</tr>
</tbody>
</table>
RESETTLEMENT POLICY FRAMEWORK

Program Description

The Yemen Rural Access Program (RAP) pursues the long-term goal of improving the livelihood and reducing the isolation of the rural population. The means to achieve this goal is the year-round access to markets, social services and administrative centers, especially in the rural areas where the large majority of the poor live. The RAP contributes to this goal by ensuring that rural people have reliable access through local, regional and national road networks. The Program is funded through an Adaptable Program Lending (APL) instrument, and is executed over three phases:

- **Phase I** is setting up the institutional and technical foundation of rural road projects. The approach is being tested in sixteen pilot clusters that consist of intermediary roads combined with selected adjacent tertiary or village-access roads. Designs and bid documents are also being prepared for the projects to be funded in the subsequent phase. Also under Phase I, a National Highway Master Plan, as well as Governorate level Rural Accessibility Master Plans, are elaborated, which provide the basis for selection of rural road investments in ensuing phases.
- **Phase II** will tackle access problems mainly at intermediary road level, also covering related tertiary roads, while setting up a policy and organization framework for gradually moving to feeder networks.
- **Phase III** will tackle access problems associated with tertiary roads at District level, while continuing to support the improvement and management systems of intermediate networks.

Under Component 1 of the Phases II and III, approximately 2,500 km of intermediate and village access roads will be improved. While all Phase I project investments were screened so as to avoid any resettlement or land taking issues, it is possible that the screening process in Phases II and III will identify an unavoidable need for land taking on certain roads, which would trigger the application of the Involuntary Resettlement Safeguard Policy, Operational Policy (OP) 4.12.

Because the location of all project roads are not yet known over the twelve year life of the program, it is not possible to determine which roads will require Resettlement Plans, and thus it is necessary to establish this Resettlement Policy Framework (RPF), which provides procedural guidelines on how to address this issue should the case arise.

This RPF has been developed in conformance with OP 4.12 and includes the following:

- Principles and Objectives Governing Resettlement Preparation and Implementation
- Process for Preparing and Approving Resettlement Plans
- Categories of Displaced Persons
- Eligibility Criteria for Defining Categories of Displaced Persons
- Methods of Valuation of Assets
- Legal Framework

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Yemen. Rural Access Program. 2004

- Organizational Procedures for Delivery of Entitlements
- Implementation Processes
- Grievance Redress Mechanisms
- Funding Arrangements
- Consultation Mechanisms
- Monitoring Arrangements

Principles and Objectives Governing Resettlement Preparation and Implementation

The failure to take into account potential involuntary resettlement in the improvement of rural roads can increase the risk of hardship, poverty increase and environmental damage. In this context, the overall policy objectives to be pursued in implementing the RAP are:

(a) Resettlement must be avoided or minimized, exploring alternative project designs;
(b) Where it is unavoidable, resettlement must be handled as a sustainable development program, whereby the displaced persons are given the opportunity to join the planning and implementation process, while sharing the benefits of the main project; and
(c) Displaced persons must be assisted to improve their livelihood or, at least, restore it to pre-project levels.

For the purposes of this framework, “affected persons” are defined as:

(a) All persons who, as a result of works carried out or to be carried out under the Program, would incur: (i) relocation or loss of shelter, such as houses; (ii) loss of assets or access to assets, such as land; or (iii) loss of income sources or means of livelihood whether or not the affected persons must move to another location, such as shops or productive activities on the land; or
(b) The Involuntary restriction of access to legally designated parks or protected areas resulting in adverse impacts on the livelihoods of displaced persons.

This RPF applies to all components of the RAP that result in involuntary resettlement, regardless of the source of funding.

Process for Preparing and Approving Resettlement Plans

The Environmental Management Plan (EMP) for the RAP includes an Environmental and Social Management Process, in which candidate rural road projects are screened to identify potential environmental and social issues and determine whether Safeguard Policies should be triggered. This process is summarized below.
Overview of RAP Environmental and Social Management Process
(For Individual Projects Financed under the Program)

The scoping and screening process will be carried out by the RAP CMO staff, during which time
the applicability of the Resettlement Policy Framework is determined. This determination is
based on visual assessment of the existing alignment and any proposed deviation that would
entail “minor impacts,” or “major impacts,” which are defined as:

(a) Minor Impacts: Fewer than 200 affected persons, as defined in paragraph 6.
(b) Major Impacts: More than 200 affected persons, as defined in paragraph 6.

If such impacts in paragraph 9 are identified, scoping and screening will include an initial
assessment to determine whether such impacts can be avoided or minimized through design
measures. These may include such measures as reducing the design standard at the contentious
location (“pinch points”) or leaving the contentious section as is, in agreement with affected
people. If these impacts cannot be avoided through such measures, this Policy Framework will
be triggered.
If the project is included in the Program, a stand-alone Resettlement Plan will be prepared prior to commencement of project implementation. This Plan will be established in coordination with the Beneficiary Committee formed during the elaboration of the Environmental Assessment (EA) and Environmental Management Plan (EMP) and referred to in the Social Framework Agreement (SFA). Its processes will ensure that the affected persons are:

(a) Informed about their options and rights pertaining to resettlement;
(b) Consulted on, offered choices among, and provided with technically and economically feasible resettlement alternatives; and
(c) Provided prompt and effective compensation at full replacement cost for losses of assets attributable directly to the projects.

One of two (2) types of Resettlement Plans will be elaborated:

(a) An Abbreviated Resettlement Plan, where minor impacts are determined; or
(b) A Full Resettlement Plan, where major impacts are determined.

The Abbreviated Resettlement Plan will include the following minimum elements:

(a) Summary of the census of displaced persons or assets;
(b) Description of compensation and other resettlement assistance to be provided;
(c) Consultations with displaced people about acceptable alternatives;
(d) Institutional responsibility for implementation and procedures for grievance redress;
(e) Arrangements for monitoring and implementation; and
(f) Timetable and budget.

Preparation of the Full Resettlement Plan will include the following two stages:

(a) Socio-Economic Study to assess the impacts; and
(b) Preparation of Full Resettlement Plan Document

The Socio-Economic Study will be conducted by a qualified social scientist, in collaboration with the Project Committee, who will examine the nature of the impacts in the affected areas; the socio-economic and cultural setting, local organizations, and social risks, as well as the indicators that would ensure that the project affected people at minimum regain their former quality of life or are enabled to improve it. The Socio-Economic Study will cover the following:

(a) The results of the census including current occupants of the affected areas to establish the baseline for eligibility criteria and to prevent subsequent inflows of people and claims;
(b) Description of the affected households, including information about livelihoods and production and labour systems, standards of living and an analysis of their legal rights and informal entitlements and any issues of potential conflict;
(c) Statement of the magnitude of the expected loss (total or partial) of assets and the extent of physical or economic displacement;
(d) Information about especially poor or vulnerable groups for whom special provisions should be designed; and
(e) Provisions to update information about displacement, livelihoods and standards of living before, during and after displacement.
Supplements to the Socio-Economic Study may also be carried out on an as-needed basis, to be defined by RAP CMO, such as:

(a) A description of the land tenure system and inventory of common property and other resources from which people derive their livelihood and sustenance, non-title usufruct systems (including grazing or other uses of lands and assets), land allocation mechanisms, and any other issues raised by different tenure systems in the affected area, as well as customary or tribal law relating to loss of assets and compensation;

(b) Documented and updated findings of the legal framework including the scope and power of eminent domain and the nature of compensation associated with it, including valuation methodology and timing of payments;

(c) Relevant laws (including customary) governing land tenure and that relate to the resolution of conflicts and dispute arbitration;

(d) Legal steps to ensure the effective implementation of resettlement and compensation activities under the project including, as appropriate, a process for recognizing claims to rights of land including tribal, customary, and traditional usage.

The Full Resettlement Plan Document will include the following minimum elements:

(a) Project Description
(b) Potential Impacts
(c) Objectives of the Resettlement Plan
(d) Results of the Socio-Economic Studies
(e) Legal Framework
(f) Institutional Framework
(g) Eligibility
(h) Valuation of and Compensation for Losses
(i) Resettlement Measures
(j) Site Selection, Site Preparation and Relocation
(k) Housing Infrastructure and Social Services
(l) Environmental Protection and Management
(m) Community Participation
(n) Integration with Host Populations
(o) Grievance Procedures
(p) Organizational Responsibilities
(q) Implementation Schedule
(r) Costs and Budget
(s) Monitoring and Evaluation

The Terms of Reference for the Abbreviated and Full Resettlement Plans will be elaborated by the RAP CMO, based on the Screening Report. For projects funded by the World Bank, the TOR will be subject to prior review and no-objection by the World Bank Task Manager.

The draft Resettlement Plan (Abbreviated or Full) will be submitted to the Beneficiary Project Committee and the RAP CMO for review and comment. The final Resettlement Plan, which will take account of comments received, will be subject to approval by the Beneficiary Project Committee, the RAP CMO and the Governor’s Office.
For projects funded by the World Bank, the RAP CMO will transmit the draft report to the World Bank Task Manager for review and comment; in such cases, the final Resettlement Plan will also be subject to no-objection by the World Bank Task Manager.

**Estimated Displacement and Categories of Displaced Persons**

At this time it is not possible to estimate the probable extent of displacement or the number of displaced persons, since the location of all the rural roads to be improved is not yet known. However, in the project context, displaced persons may be categorized as:

(a) *Individual persons affected*: an individual is affected when he/she is subject to loss of goods, property and or access to natural resources resulting from the project. For example, an individual who is cultivating land or owns a commercial or housing structure which is removed as a result of the project.

(b) *Household affected*: a household is affected when one or several of its members are subject to loss of property, land or access to land or other income-generating activity as a result of the project.

(c) *Vulnerable households affected*: a vulnerable household may have needs affected by the project which are different from most other households. They may concern such segments of the population as self-supporting women and elderly people.

**Eligibility**

According to OP 4.12 displaced persons may be classified into one of the three following groups:

(a) Those who have formal legal rights to land and physical assets (including customary and traditional rights) recognized under the laws of the country;

(b) Those who do not have formal legal rights to land or physical assets at the time the census begins, but have a claim to such assets, provided that such claims are recognized under the laws of the country or become recognized through a process identified in the resettlement plan;

(c) Those who have no recognizable legal right or claim to the land they or building are occupying.

Persons covered under (a), (b) and (c) above are provided assistance under this Policy Framework if they occupy land or buildings prior to the cut-off date (which is the date the detailed census to identify affected persons begins). Persons who encroach on the area after the cut-off date are not entitled to consideration or any form of resettlement assistance under this Policy.

**Legal Framework**

The Yemeni Constitution (Articles 7.c and 20) protects citizens from the general expropriation of their assets. The Public Utility Ownership Law (1/1995) (PUOL), gives governmental bodies (including governors) the right to acquire private property for projects in the public interest. Yemeni law stresses that land expropriation is to take place only in the event that no suitable land alternatives exist that are already in the public domain. In such instances the legal provisions for expropriation and compensation will apply. The law describes (i) situations of
legal expropriation; (ii) procedures for expropriation; and (iii) the agency responsible for valuation of the compensation and its procedures.

Three main types of expropriation procedures are described in the PUOL: (i) Judicial Expropriation where the state declares the need for the law based on public interest; (ii) Amicable Expropriation is based on the consent of the owners and compensation is to be valued by a Committee; (iii) Temporary Appropriation is when governmental authorities require access to lands for construction of public works. In such cases the law requires that it be returned to the appropriate owner in the same condition that it was received, and the implementing government agency is required to compensate the owner for any damages. The Committee will estimate the value of the damages.

Formal regulations exist for land taken in urban areas, under Executive Regulations (260/1997) to the Urban Planning Law (No. 20/1995). In these cases, compensation for land taken for urban streets and services when the percentage of area taken for public interest exceeds 25% of the property affected. When such conditions apply, the procedures and documentation requirements are quite extensive and time consuming and, as a result, the Law is effectively applied in 10% of the cases.

No such formal regulations exist or are currently applied for land taken in rural areas. In the particular case of rural roads, public land-taking practice is rooted in long-standing traditional community-level agreements geared to avoid the expensive, time consuming litigations set up for the urban areas, which also trigger legal proceedings warranted by civil law and the judicial process. In this context, the current practice consists in negotiating land donation by affected landowners, and/or in-kind property replacement for buildings and structures, under the tutelage of local authorities, generally the Governor.

The Customary Law of the Yemeni tribes ('Urfl is recognized by the Government and the judicial authorities as the legal source that defines the land rights of individuals and collectivities. The customary ownership of rural estates can be formalized into a judicial land title deed upon request of the right holder, however this costly and lengthy process is rarely activated. Along the rural roads targeted by the RAP, land rights, both individual and collective, are prevalingly of the de facto possession type.

Assets developed by private individuals on Government land are not compensated in case of demolition for public interest. Religious trust land (waqf) is considered public property. However, the assets developed by, and the benefits accruing to, the private renters of waqf estates are liable to compensation, including houses, farms and shops. The facilities built on trust land for social or religious purposes – like community buildings, mosques and graveyards – must be relocated and reconstructed in the nearest convenient place.

In conclusion, while formal provisions for land expropriation exist in Yemen, they are geared primarily towards urban situations and are considered impractical and NOT generally applied in the rural areas. On the other hand, rural communities have traditionally been solving such issues through consultation and internal arrangements, which generally involves land donation and/or in-kind compensation for loss of buildings. This practice provides an operational framework for implementing a Resettlement Policy for RAP consistent with the World Bank OP 4.12 policy objective.
Methods for Valuing Assets

Affected assets are defined as one of two types:

(a) Land assets, either productive or unproductive; and
(b) Houses and other structures, involving infrastructure for shelter or productive/income-generating activities, such as shops.

Land assets: In conformance with Yemeni traditional rural practice, owners of affected lands will not be compensated by the Project in cash for loss of land, but the affected owners will donate such land for public purposes and community benefit. However, this donation will occur within the context of a mutually signed community-based Agreement, which is appended to the SFA, and which specifies the terms under which the donation is made. These terms will be based on local traditional practice concerning the donation of private land for public purposes and specifies any special terms or conditions related to the particular case, which are to be settled internally by the community. Generally, these terms can include one of the following two options:

(a) The affected person freely donates the land to the community; or
(b) The community may allocate part of its lands to the affected person.

Houses and other structures: Owners of affected houses or other structures will be compensated in-kind at replacement cost, which is defined as the cost of the works required to replace the asset in its existing condition. The basic parameters generally used to determine the replacement cost shall be the size, standard and condition of the existing the asset. This, in addition to arrangements for providing the land on which the replacement structure will be built, will be stated in a mutually signed community-based Agreement, signed by the asset owner(s) and appended to the SFA. The quantities, specifications and estimated costs for the new structure(s) shall be assessed by the design Consultant and will be incorporated into the works bidding documents.

Organizational Procedures and Funding for Delivery of Entitlements

Following project screening, RAP CMO will provide the Governor with a draft SFA and format for the creation of the Beneficiary Committee. Based on the census of affected persons, the Beneficiary Committee will determine the terms and procedures of land donation and/or in-kind replacement of structures. These terms and procedures will be specified in the Resettlement Plan (Abbreviated of Full) and appended to the SFA, which is negotiated and signed by the owner(s) and the Beneficiary Committee, and approved by the Governor. This will involve the following, depending on the type of donation or asset entitlement:

(a) Donation of land assets: Implementation of the terms of the donation, as noted in paragraph 34, will be carried out through the Beneficiary Committee.

(b) Replacement of houses or other structures: In-kind asset replacement will be funded as a project cost and will be included in the Bill of Quantities as a pay item in the Contract, under which the Contractor will rebuild the affected structural asset according to a specified standard at the agreed location.
Implementation Processes

The approved Agreement will be incorporated into the Resettlement Plan and appended to the SFA. If such agreement cannot be secured during the preparation of the Resettlement Plan, the project will not be financed under the Program.

With regard to replacement of houses and other structures, replacement standards for structures shall be defined by the design Consultant and approved by the RAP CMO. Prior to commencement of works, the Contractor will elaborate a schedule for the replacement of any houses or other structures, in conjunction with overall works schedule. This schedule, to be approved by the resident engineer (RE), who shall ensure that said structures are completed prior to the destruction of the pre-project assets, such that no loss of shelter and/or income-generating activities occurs as result of the project.

Grievance Redress Mechanisms

If affected persons are not satisfied with resettlement arrangements, or if they are dissatisfied with actual resettlement implementation, they will first seek redress through the Project Beneficiary Committee. If an agreement is not reached at the Project level, the matter will be referred to the Governor, who has the authority to arbitrate the matter.

Consultation Mechanisms

During the Screening stage, informal consultations will take place at the project site, as well as formal briefings of findings with the Governor and stakeholders. At this point, the Governor and stakeholders will be appraised of the need for a Resettlement Plan (Abbreviated or Full).

The preparation of the Resettlement Plan, including such activities as census of affected persons, socio-economic study (in the case of Full Resettlement Plan) and the terms of land donation and in-kind structure replacement, will be carried out in close collaboration with the Beneficiary Committee.

The draft Resettlement Plan will be transmitted to the Beneficiary Committee and the Governor for validation and approval.

Upon validation and approval of the draft Resettlement Plan, the RAP CMO will transmit the Final Resettlement Plan to the Task Team Leader for review and no objection.

Monitoring Arrangements

The RAP CMO will be responsible for overall monitoring of the implementation of this RPF. This will include:

(a) Monitoring of Resettlement Plan Preparation: monitoring of Consultant activities and reports and verifying the validity of all community-based agreements.

(b) Establishment of Project Monitoring Files: for each Resettlement Plan (Abbreviated or Full), RAP CMO will establish file appropriate for implementation monitoring. This will include at a minimum:

- The Resettlement Plan
- The SFA
• The mutually signed community-based Agreement, which includes a list of each affected person or household and the agreed terms of either land donation and/or structure replacement.
• The agreed timetable for delivery of any structure replacement.

(c) **Monitoring of Resettlement Plan Implementation:** Monitoring of Abbreviated or Full Resettlement Plans will involve:

• *Land donation.* This will involve reporting on any dispute arising from agreements reached in the Resettlement Plans.

• *Houses and other structures replacement,* this will involve:
  • Verifying the Contractors’ schedule for relocating affected assets.
  • Monitoring physical progress against the Contractors’ schedule.
  • Monitoring the actual costs against the Contractors’ payment items.
  • Monitoring the outcome of the relocation of affected structures.

Following its exercise of prior review, the World Bank will monitor the implementation of road specific EAs, SFAs and Resettlement Plans. The Bank will also carry out targeted and spot review of specific social cases and resettlement plans involving land donation and asset replacement, as part of regular supervision, or separate missions.