



THE KINGDOM OF LESOTHO

**MINISTRY OF PUBLIC WORKS AND
TRANSPORT (MoPWT)**

LESOTHO ROADS DIRECTORATE

**TRANSPORT INFRASTRUCTURE AND CONNECTIVITY PROJECT (TICP)
(PROJECT NUMBER: PE-PI 55229-LEN-BB)**

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)
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GLOSSARY OF TERMS

Developer/Proponent/Sponsor: the entity – person/ company/agency – proposing to develop/implement/install a new project/sub- project or expand an existing project under the TICP in this case Roads Directorate or MoPWT

Direct impacts: An effect on the environment brought about directly by the TICP

Disclosure: Information availability to all stakeholders at all stages of the development of projects.

Environment: physical, biological and social components and processes that define our surroundings.

Environmental and Social Impact Assessment (ESIA): A comprehensive analysis of the project and its effects (positive and negative) on the environment and a description of the mitigative actions that will be carried out in order to avoid or minimize these effects.

Environmental Monitoring: The process of examining a project on a regular basis to ensure that it is in compliance with an Environmental and Social Management Plan (ESMP), or the Kingdom of Lesotho Environmental and Social Impact Assessment (ESIA) certification of approval conditions and / or environmental prescriptions.

Impact: A positive or negative effect that a project has on an aspect of the environment.

Indirect impact: A positive or negative effect that a project indirectly has on an aspect of the environment.

Involuntary resettlement: The forceful loss of land resources that requires individuals, families and / or groups to move and resettle elsewhere.

Lead Agency: The agency with primary responsibility for the protection of the environment. For instance, the lead agency for environment matters in Kingdom of Lesotho is the Department of Environment.

Mitigation measures: The actions identified in an ESIA to negate or minimize the negative environmental impact that a project may have on the environment.

Project and sub-project: a set of planned activities designed to achieve specific objectives within a given area and time frame.

Project Brief: The initial submitted document to Department of Environment to initiate the process that will lead to the issuance of the ESIA certificate of approval.

Scoping: The initial stage in an environmental assessment that determines the likely major environmental parameters that will be affected and the aspects of the project that will bring upon these effects

Screening: An initial step when a project is being considered for environmental assessment.

Significant effect: An important impact on an aspect of the environment

Positive Impact: A change which improves the quality of the environment (for example by increasing species diversity; or improving the reproductive capacity of an ecosystem; or removing nuisances; or improving amenities)

Neutral Impact: A change which does not affect the quality of the environment

Negative Impact: A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance). The potential adverse impacts of the project fall under two broad categories of bio-physical (natural) and socio-economic environments

Stakeholder: Any person or group that has an interest in the project, and the environmental effects that the project may bring about

EXECUTIVE SUMMARY

Communities in rural Lesotho continue to endure hardships in accessing socio-economic services due to low coverage of all-weather and well-maintained roads and lack of access across rivers, often resulting in long deviations on foot.

The Government of Lesotho (GOL), with financing from the World Bank, is proposing to address these inadequacies through the Transport Infrastructure and Connectivity Project (TICP), which includes, the rehabilitation and ongoing maintenance of secondary roads, using new contracting methods, and the construction of footbridges in selected locations in rural areas in Lesotho.

By addressing secondary road rehabilitation and maintenance and footbridge access constraints, the TICP will contribute directly to the implementation of national development programmes, helping to reduce poverty by enabling communities to access a host of socio-economic services¹ creating better access to areas of tourism potential, and creating employment amongst rural communities, particularly in view of the predominantly labour-based methods of road and bridge construction, maintenance and rehabilitation that will be used.

In addition, the improved infrastructure will facilitate access by service providers such as rural water supply technicians, extension agents, disaster relief personnel, telecommunications staff, health and sanitation staff, local government personnel and others to access isolated rural communities all year round.

Project Justification

Most of Lesotho's unpaved road network remains in poor condition and the road sub-sector continues to experience constraints due to inadequate levels of maintenance and limitations in institutional capacity. The rugged mountainous areas covering three-quarters of Lesotho continues to challenge the expansion of road infrastructure as well as the maintenance of the existing network.

While considerable investments were made in improving the quality of roads, expanding the urban and rural road networks, and rehabilitating existing roads in the past 10 years, the need to provide safe, sustainable and year-round transport connections in rural communities and between rural and urban communities is an ongoing development priority.

The difficulties of penetrating rugged mountainous terrain and the associated construction and maintenance costs have resulted in the road network being concentrated in the Lowlands, Foothills and Senqu River Valley (SRV) regions at the expense of the Mountains region where numerous crossings, cuttings, and fillings are necessary, and

¹ Tanga, P. T. et al, "The Impact of Improved Road Infrastructure on the Livelihoods of Rural Residents in Lesotho: The Case of Phamong" in *Stud Tribes Tribals*, 12(2): 209-218 (2014), p.216.

where maintenance costs are more prohibitive. These topographic constraints and the limited number of safe and year-round river crossings have severely constrained coverage with transport infrastructure², particularly in the Mountains region, limiting development activities such as tourism and access of communities to socio-economic services.

Brief Program Description

Enabling rural communities to access basic socio-economic services ranks highly in Lesotho's transport sector policy. In 1996 the country launched a US\$129 million 5-year Road Rehabilitation and Maintenance Programme (RRMP) that was funded by the IDA, the EU and the Government of Lesotho (GOL). Issues of access also featured prominently under the Integrated Transport Project (ITP), which was launched in 2006 as a successor to the RRMP, with a combined budget of US\$38.2 million. A 2015 World Bank evaluation mission concluded that the implementation of the ITP was a success, the objective of improving access to services and market opportunities having been fully achieved through a better managed and affordable transport system³.

The Transport Infrastructure and Connectivity (TIC) Project is the proposed successor to the ITP. Funding for the project is under consideration by the IDA, the OPEC Fund for International Development (OFID), and GOL. Building on the achievements and lessons learnt from the ITP and other earlier initiatives, its overall objective is to improve access to social services and markets through the provision of safe and sustainable secondary road connections in targeted areas of Lesotho.

The infrastructure components of the TIC project consist of the rehabilitation and maintenance of selected secondary roads and the construction of footbridge infrastructure.

The TIC Project will consist of three components: -

1. **Component 1- Improving the road infrastructure access.** The first component will comprise the physical works for road rehabilitation and maintenance to improve road connections of population to agricultural markets and tourism sites and to ensure sustainability of road assets.
2. **Component 2:-Improving road safety.** This component will address road safety in a more integrated manner in order to achieve the Government's objective to meet the global decade of road safety aim of halving road deaths between 2010 and 2020.
3. **Component 3:-Implementation support and capacity building.** This component will include the necessary project implementation support, including implementation of citizen engagement mechanisms, HIV/AIDs and gender

² Mhlanga, M., Hasluck, P. and Potgieter, L. (October 2012), *Integrated Transport Study and Policies Development, Integrated Transport Project/Ministry of Public Works and Transport*, p.2

³ The World bank (April 2015), *Lesotho Integrated Transport Project: Implementation Status and Results Report*, p.1

targeted activities, and capacity building support to the RD and MoPWT to effectively roll out, administer and monitor OPRC contracts and mitigate road safety risks.

Component 1 will involve civil works (physical works for road rehabilitation and maintenance to improve road connections) and thus triggers World Bank's environmental assessment policy (OP.4.01). The potential adverse impacts will range from small scale and site specific to medium scale infrastructure investments associated with Environmental Assessment **Category B** projects of the World Bank. The TICP is thus determined to be a Category B project.

Justification for ESMF

As many specific project investments in the TICP have not been clearly identified at this stage, hence an ESMF provides a general impact identification framework to assist project implementers to screen the projects and institute measures to address adverse environmental and social impacts.

This ESMF thus applies to all sub projects to be financed under TICP. Specific information on country- wide project locations, land requirements, bio- physical features etc. when known at a later stage will trigger the preparation of Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plans.

Policy, Legal and Institutional Issues

A review of the relevant Government of Lesotho legal statutes was undertaken in order to ensure that the implementation of this ESMF is aligned to the GOL's legal, policy and institutional framework and sub projects comply with the relevant regulations during implementation. A comparison was also made between the GOL's legal framework and World Bank's safeguards policies. Legal statutes reviewed and considered relevant for this ESMF included among others:

Table 1. Legal Instruments

| Name of Legal Instrument |
|---|
| Historical Monuments, Relics, Fauna and Flora Act, 1967 |
| Constitution of Lesotho |
| Chieftainship Act, 1968 |
| The Public Health Order, 1970 |
| Local Government Act, 1997 |
| Water Resources Act, 1978 |
| Town and Country Planning Act, 1980 |
| Forest Regulations 1980 |
| Road Traffic Act 1981 |
| Lesotho Highlands Development Authority Order, 1986 |
| Forestry Act, 1998 |
| Environment Act 2008 |
| Water Act 2008 |

| Name of Legal Instrument |
|--|
| Labour Code 2006 |
| HIV/AIDS Prevention (Labour Code) 2006 |
| Sexual Offenses Act 2003 |
| Child Protection and Welfare Act 2011 |

Significance of ESMF

GOL has through the Ministry of Public Works and Transport prepared this ESMF as the instrument which all the TIC sub project investments related environmental and social impacts will be identified, assessed, evaluated and appropriate mitigation, management and monitoring measures, designed and incorporated within the proposed sub project investment itself.

There is one other safeguard instrument that will compliment this ESMF: Resettlement Policy Framework (RPF) already prepared and will provide standards and procedures for compensation for any land acquisition, assets, or restriction of access to resources that this project and associated investment may require, in accordance with World Bank OP 4.12 – Involuntary Resettlement.

Environmental and Social Requirements

In order to reduce, minimise and mitigate adverse impacts and undue harm of its development projects to the environment, all World Bank-financed projects are guided by environmental and social policies and procedures commonly referred to as safeguards instruments. A number of World Banks' safeguard policies⁴ have been triggered as a result of this project and they include:

1. OP 4.01 (Environmental Assessment),
2. OP 4.04 (Natural Habitats),
3. OP 4.12 (Involuntary Resettlement),
4. OP 4.11 (Physical Cultural Resources).

All safeguard policies of the World Bank require that, before a sub project is appraised, an Environmental and Social Impact Assessment (ESIA) containing an Environmental and Social Management Plan (ESMP), or just an Environmental Management Plan (EMP), and if the project requires it, a Resettlement Action Plan (RAP). Physical and Cultural Resources Plan be made available for public review at a place accessible to local people in a form, manner, and language they can understand.

⁴ The World Bank Safeguard Operational Policies (OPs) are OP4.01 – Environmental Assessment; OP4.04 – Natural Habitats; OP4.09 – Pest Management; OP4.10 Indigenous Peoples; OP4.11 – Physical Cultural Resources; OP4.12 – Involuntary Resettlement; OP4.36 – Forests; OP4.37 Safety of Dams; OP7.50 – Projects on International Waterways; and OP7.60 – Projects in Disputed Areas. See www.worldbank.org/safeguards for more information.

All necessary safeguard documents that will be locally disclosed at the MoPWT and RD's website and will also be forwarded to the Bank for disclosure at the Bank's external website.

Environmental and Social Impacts

The TICP will have beneficial impacts to the Government of Lesotho during the implementation of the 3 components.

The project is expected to benefit women and men, girls and boys, children and the elderly by improving access to markets, health services, and better access to additional social services (school, administration and police offices). Direct project beneficiaries are people from communities provided with access to the roads and footbridges rehabilitated under the project, within a 2-kilometer range. Indirect project beneficiaries are the tradable sectors of the economy and the private sector, whose growth will be supported by the job creation opportunities and market opportunities supported by enhanced connectivity.

The road and footbridge designs and the OPRC contracts will be prepared cognizant of the needs of women and girls, as well as elderly residing in the adjacent neighborhoods and using the road during the construction phase. A specific attention will be devoted to children's safety in the footbridges design to prevent cases of unintended injuries or fatalities while using the bridge.

Limiting road traffic fatalities will likely have a greater impact on men, who tend to bear the heavier burden of fatalities than women. Specific interventions targeting women beneficiaries and respective results indicators are designed and included in the project. Women-targeted interventions will address the main gender-related concerns in transport, such as women's unemployment, GBV and HIV prevention, especially among female population between the ages of 10-24.

Table 2 below summarizes the potential adverse impacts likely to be associated with the TICP sub projects especially the physical construction works associated with new roads, rehabilitations, operation and maintenance. Mitigation measures that should be considered during preparation of sub project ESIA/ESMPs are also indicated in the table.

Table 2: Summary of Adverse Impacts and Mitigation Measures

| Impacts | Description of mitigation measures |
|-----------------------------|--|
| Physical Environment | |
| Solid and Effluent Waste | <p><u>Solid nontoxic waste</u></p> <p>Adequate waste receptacles and facilities should be provided at project sites/camp sites</p> <p>Training and awareness on Safe Waste Disposal in construction camps for all workers</p> <p>Final disposal should be at licensed disposal sites</p> <p>Spent or waste oil from vehicles and equipment should be collected and temporarily stored in drums or containers at site</p> |

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| | <p>Waste oil should be disposed of by oil marketing companies or agents approved or recognized and have the capacity to undertake oil disposal</p> <p>Prepare Waste Disposal Plan for every construction site</p> <p>Install waste disposal receptacles and signs in strategic places within the construction camps</p> <p>Provide training and awareness on need to avoid littering</p> <p>Ensure the construction camps have toilets and connected to the sewer system</p> |
| Decreased Air Quality | <p>Proposed investments should require that construction contractors operate only well maintained engines, vehicles, trucks and equipment. A routine maintenance program for all equipment, vehicles, trucks and power generating engines should be in place.</p> <p>The project should ensure the use of good quality fuel and lubricants only</p> <p>If dust generation at the project/construction site becomes a problem, limited wetting of sites and or unloading and reloading points should be done to reduce dust raising</p> <p>Construction traffic speed control measures should be enforced on unpaved roads (speed limits through communities should be ≤ 50 km/hr on unpaved roads and near or at project site should be ≤ 30 km/hr).</p> <p>Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.</p> |
| Noise and vibration | <p>Proposed investments should require contractors to use equipment and vehicles that are in good working order, well maintained, and that have some noise suppression equipment (e.g. mufflers, noise baffles) intact and in working order.</p> <p>This will be achieved by making it a component of contractual agreements with the construction contractors. Contractors will be required to implement best driving practices when approaching and leaving the site (speed limit of ≤ 30 km/hr) to minimize noise generation created through activities such as unnecessary acceleration and breaking squeal.</p> <p>Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.</p> |
| Visual Impacts | <p>Landscaping of facilities after construction and restoration of disturbed areas e.g. borrow pits</p> |
| Impact on traffic and public safety | <p>Only road worthy vehicles and trucks should be used to avoid frequent breakdowns on the roads</p> <p>Only experienced drivers should be employed</p> <p>Contractors must provide training for drivers; Establish speed limits; Enforce safe driving and take disciplinary action against repeat offenders</p> |
| Water Abstraction | <p>Obtain water abstraction permits from the Water Authority for use in construction</p> |
| Decreased Water Quality | <p>No garbage/refuse, oily wastes, fuels/waste oils should be</p> |

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| | <p>discharged into drains or onto site grounds</p> <p>Fuel storage tanks/sites should be properly secured to contain any spillage</p> <p>Maintenance and cleaning of vehicles, trucks and equipment should take place offsite especially where project sites are close to water bodies.</p> <p>Toilet facilities should be provided for construction workers to avoid indiscriminate defecation in nearby bush or local water bodies</p> |
| Soil Erosion | <p>Minimize land clearing areas as much as possible to avoid unnecessary exposure of bare ground to the elements of the weather</p> <p>Re-vegetate cleared areas as early as possible using native plant species</p> <p>As much as possible, avoid construction work in the rainy season</p> |
| Impact on fauna and habitat | <p>Avoid unnecessary exposure and access to sensitive habitat areas</p> <p>For identified or suspected sensitive habitats (swamps/wetlands), regular inspection or monitoring should be carried out in the area prior to start and during work.</p> <p>If sensitive habitats are encountered, Project activities should cease and the Project should consult KWS to determine the appropriate course of action.</p> <p>Prohibition on hunting and consumption of bush meat by workforces</p> <p>Erect speed bumps in wildlife crossing points</p> <p>Erect warning signs in wildlife crossing points</p> <p>Avoid routing the roads in wildlife areas</p> <p>Provide training to drivers on speed in wildlife areas</p> <p>Proposed investments should require that contractors implement a hazardous materials management plan that includes specification for proper storage and handling of fuels, oil, wastes, and other potentially hazardous materials as well as a plan for containment and clean-up of accidental spills into the aquatic environment.</p> <p>During pre-installation and installation of project facilities, spotting of sensitive aquatic mammals should form part of the project activities. Should these species be observed in the vicinity of the work area, the project should execute measures to avoid destruction or disturbance.</p> <p>Ensure provision for water flow reserves and appropriate reservoir filling schedules</p> <p>Project staff must report sightings of any injured or dead aquatic life (fishes)/ mammals immediately, regardless of</p> |

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| | <p>whether the injury or death is caused by a Project activity. The report should include the date and location of the animal/strike, and the species identification or a description of the animal.</p> <p>The Project workforce and local communities should be educated to ensure that the importance of environmental protection and nature conservation are effectively communicated and that wider appreciation of environmental issues and construction best practice are fostered.</p> |
| Quarry Site Impacts | Identify borrow and quarry sites away from sensitive environments and develop quarry management and rehabilitation plans. |
| Hydrology Impacts/Changes | Maintain environmental flow reserves for the river, Do not retain water in reservoir during drought, ensure that water retention in dam is controlled to ensure that adequate reserve is left to flow downstream for users |
| Social Environment | |
| Physical displacement | <p>All affected persons to be given relocation assistance (cash or kind) by the Project to enable them move their properties to new locations, i.e. in accordance with the Resettlement Policy Framework (RPF)</p> <p>Resettlement Plans will be required. If a site is acquired, the State may relocate persons and their families as well as community facilities to be affected. The affected families should not be made to incur any cost during the relocation period. A resettlement plan should be prepared for this area with the RPF as a guide.</p> |
| Loss of employment and livelihoods | <p>Those whose livelihood is affected should be assisted to ensure they will not be worse off as a result of the project. This can include livelihood assistance, provision of new jobs immediately without any loss of income. The social assessments and socio-economic surveys, which will be undertaken for the preparation of individual investments/subprojects as well as the resettlement action plans, should assess these issues and provide measures in accordance with the Resettlement Policy Framework (RPF).</p> <p>Contractors should use local labor as much as possible and where available. As much as possible, all unskilled labor should be contracted or obtained from the local community.</p> |
| Loss of land and other assets | Due process should be followed to establish the true owner of any land, be it family or communal land. Once established, the project should acquire the site by paying appropriate compensation in accordance with the resettlement policy framework (RPF), which would be the replacement cost of the assets lost. |
| Loss of structures/properties | <p>For a project site to be used, irrespective of the land ownership, appropriate compensation should be paid for any structures/ properties which are permanent structures at the site as well as investment made for any development on the land.</p> <p>Depreciation should not be factored during valuation of these properties. The compensation process should satisfy the RPF developed for the project.</p> |

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| | <p>Appropriate compensation should be paid for any damaged or destroyed propriety that belongs to affected persons. No depreciation during valuation of these properties.</p> |
| Impacts on human health/ traffic safety | <p>Trucks carrying construction materials such as sand, quarry dust, laterite etc. will have the buckets covered with tarpaulin or appropriate polythene material from or to project site</p> <p>Only road worthy vehicles/trucks should be used</p> <p>Only experienced drivers/operators should be employed</p> <p>Except for areas secured by fencing, all active construction areas will be marked with high-visibility tape to reduce the risk accidents involving pedestrians and vehicles.</p> <p>All open trenches and excavated areas will be backfilled as soon as possible after construction has been completed. Access to open trenches and excavated areas will be secured to prevent pedestrians or vehicles from falling in.</p> <p>Adequate sanitary facilities will be available for workers and open range defecation will not be countenanced. Construction workers will be provided with and educated to wear suitable Personal Protective Equipment (PPE) including hard hats, overalls, high-visibility vests, safety boots, earplugs, gloves etc.</p> <p>Enforce use of PPEs at all times for all staff and labourers and ensure supervision of the same to minimise accidents</p> <p>Construction workers should be educated to adhere to basic rules with regard to protection of public health, including most importantly hygiene and disease (HIV/AIDS) prevention.</p> |
| Impacts on cultural heritage / archaeological interest / existing ecologically sensitive areas | <p>The pre-construction surveys should identify cultural heritage resources and existing ecologically sensitive areas that the project should avoid and by-pass these resources.</p> <p>The Project should implement a chance find procedure and reporting system to be used by contractors in the event that a cultural heritage feature or ecologically sensitive item/issue is encountered.</p> |
| Impacts on human health and public safety | <p>The Project will require all contractors to implement an Environmental, Health and Safety (EHS) plan which will outline procedures for avoiding health and safety incidents and for emergency medical treatment. This will be achieved by making it a component of contractual agreement.</p> <p>Contractors will be required to wear suitable Personal Protective Equipment (PPE) including hard hats, high-visibility vests, safety boots and gloves and life vests as appropriate in accordance with the EHS plan.</p> <p>Enforce use of PPEs at all times for all staff and labourers and ensure supervision of the same to minimise accidents</p> |

| | |
|---|---|
| | <p>All construction and other workers will be sufficiently trained in the safe methods pertaining to their area of work to avoid injuries.</p> <p>Erect road safety signs</p> <p>Erect speed bumps in accident prone zones</p> |
| HIV/AIDS Spread and other related public health diseases. | Design HIV/AIDS awareness, sensitisation and prevention program for each project that extends to the communities as a whole; |
| Labour and employment related impacts | <p>Ensure that the local communities are given priority in relation to employment and provided with training (skilled) to provide future labour in the project e.g. operation and maintenance. Ensure that workers are provided satisfactory working conditions and work environment including pay in accordance with the laws of the country</p> <p>Ensure that child labour is not tolerated in the project;</p> <p>The project to prepare redundancy plans and packages to be discussed with affected workers which will include re-training and re- tooling of affected workers and aim to avoid labor strife</p> |

Safeguards Procedures For TICP Sub Project Approval and Implementation

The TICP has been rated **Category B** under the World Bank Operational Policy on Environmental Assessment (OP4.01). This ESMF has been designed to include tools that will be used to screen each proposed sub project investment (screening checklist) prior to implementation and contains recommendation on the mitigation measures that need to be adhered to in order to reduce the adverse impacts.

Through the screening process a determination on the safeguards policy (ies) triggered by a particular TICP proposed sub project investment will be made, adverse impacts identified and the mitigation measures put in place outlined. If identified as a requirement of the sub project through the screening process, a Resettlement Action Plan (RAP) will be prepared alongside or as an integrated part of the ESMP or ESIA.

Procedure for Screening, Development, Review and Approval of ESIA/ESMPs

Using this ESMF, the development of sub project specific Environmental and Social Impact Assessment (ESIA) or ESMP will be required for each proposed sub project investment proposed under component 1 (sub component a and b) once the nature, scope and location among others of the sub project are known in order to ensure compliance with the World Bank safeguards policies.

All sub project investments will be screened using the screening form developed (*See Annex E*) and a determination will be made using the form whether an ESIA/ESMP report is required or otherwise by the World Bank. The screening for all sub project

investments will be undertaken by the Roads Directorate through its environmental and social development safeguards specialist (s).

Equally, the Government of Lesotho has a legal framework for safeguards compliance which require preparation of ESIA for projects screened and determined to be in the schedule.

Any person intending to initiate an activity listed in the Schedule is obliged to apply for an ESIA Licence, before commencing a development or construction. It is a legal requirement to proceed with the development activity only after receipt of an ESIA Licence. The first step in the application of an ESIA Licence is the submission of a project brief. Not all projects and activities that are on the Schedule⁹⁶ will require a full Environmental Impact Study (EIS). In practice, only a relatively small percentage is likely to do so. The Project Brief submitted by the developer will set the basis for classifying projects as either projects or activities not requiring a full EIS (in which case they will be authorised to proceed by issuance of an ESIA Licence), or as projects or activities requiring a full EIS. Lesotho's Environment Act sets out the penalties for non-compliance with any of the provisions of the Environment Act including jail terms and fine or both.

The **Environmental Specialist and Social Development Specialist (s)** of the Project Implementation Unit (PIT) for TICP located in the MoPWT (to be recruited) and the safeguards team in the Roads Directorate will prepare a **Project Brief** for all proposed sub projects road and bridges related to construction and rehabilitation. These will be submitted to DOE for determination whether a full EIS is required or otherwise. In the event that a full EIS will be required, RD's will prepare **Terms of Reference** and procure an Environmental Consultant to prepare the full EIS as required by the DOE.

The ESIA/ESMP prepared will be reviewed by the **Environmental and Social Development Specialist (s)** of the Project Implementation Unit (PIT) for TICP located in the MoPWT and the safeguards team in the Roads Directorate before submission to DOE and World Bank. Civil works for any identified sub project under TICP which requires ESIA/ESMP will not commence until the World Bank issues approval and DOE issues a license and these documents disclosed in the appropriate manner.

Where there are divergence in determining the triggering of a policy and what safeguards instrument is to be prepared, the World Bank Safeguards Policies will have precedence over the Government of Lesotho's safeguards policies, in particular if the Bank's safeguards policies are the more stringent.

Monitoring of the ESMP will be coordinated by the of the Roads Directorate and Project Implementation Unit (PIT) for TICP located in the MoPWT with clear roles and responsibilities for contractors (specifications to be included in the bidding documents) and supervising engineers.

The works contractor and supervising engineers for each identified roads/bridge project will be required to recruit full time **Environmental and Social Development Specialists** to monitor ESMP implementation. The bidding documents for works contract and supervising engineer will contain this requirement.

Supervising engineers will be contracted to undertake supervision of the works by the contractor including ESMP implementation.

Institutional Implementation Arrangements and Reporting Requirements

A Project Coordinator under the Planning Unit of the MoPWT will be responsible for, *inter alia*: (a) the coordination for the project as a whole working closely with the Planning Unit and the RD and ensure timely submission of combined progress reports and other documents to the Bank; (b) follow up on submissions in coordination with the RD and Planning Unit of the MoPWT, as well as other stakeholders; and (c) report on the project preparation and implementation progress to the Bank and to a project steering committee (PSC) chaired by the MoPWT.

A Project Steering Committee (PSC) will be set up with representation from the relevant departments of the MoPWT, the RD, the RFA, MoLG, and other agencies and stakeholders engaged in the project. The PSC will be chaired by the Principal Secretary of MoPWT and be responsible for providing overall strategic guidance for the proposed Project, coordination with other sector interventions, as well as, the review and validation of the following, *inter alia*: (a) Annual Work Plans; (b) the Project evaluation and supervision reports; and (c) the Project's financial management and accounting reports.

The TICP will be implemented by two agencies, the RD and the Planning Unit of the MoPWT. Both entities have had prior experience with implementation of Bank-financed projects. The RD will handle the implementation of all the civil works and related activities under component 1.

The responsibility for monitoring environmental and social aspects will lie with RD's **Safety and Environment Unit** and **Environmental Specialist and Social Development Specialist (s)** of the Project Implementation Unit (PIT) for TICP located in the MoPWT (to be recruited by the Project) who will jointly support the project in the environmental and social safeguard issues and coordinate with the MoPWT to ensure compliance with national regulations and the Bank's Safeguards Policies. Sample Terms of reference for the 2 positions are included in **annex J**.

The PIT's **Environmental and Social Development Specialist (s)** and RD's **Safety and Environment Unit** will prepare project (through consultants) specific ESIA/ESMPs and Resettlement Action Plans (RAPs) for identified investments during the feasibility study phase of the project following detailed screening. These reports will be submitted to the DOE and World Bank.

The Planning Unit on behalf of the MoPWT will be handling the implementation of all activities under components 2 and 3. The implementation capacity of the Planning Unit

will be strengthened through hiring of Project Coordinator, Financial Management Specialist, and Procurement Specialist, funded under the project.

ESMF Public Consultations

The draft ESMF was consulted upon with the objective of capturing and documenting the views of the public on the proposed project. **Annexes A and B** contain summary of the consultations held and list of participants.

ESMF Implementation Budget

The estimated total cost for ESMF implementation cannot be estimated because of variation from project to project. The table below however, highlights the key indicative aspects that would require a cost budget and tentative estimates for activities like awareness creation and capacity building.

Table 3: Indicative Areas For Budgeting for ESMF

| Activity | Description | Total (US\$) | | | |
|---|---|--------------|--------|--------|---------|
| | | Year 1 | Year 2 | Year 3 | Total |
| <i>Project and Community Training</i> | | | | | |
| Construction staff induction course (16 courses per year) | health and safety, HIV and AIDS, and site code of conduct | 80,000 | 80,000 | 80,000 | 240,000 |
| CLC induction courses (16 courses per year) | (health and safety, HIV and AIDS, site code of conduct, working conditions, the ESMP and contractor's environmental and social responsibilities, the inclusion of vulnerable groups, etc. | 20,000 | 20,000 | 20,000 | 60,000 |
| Community induction courses (16 courses per year) | (HIV and AIDS, site code of conduct, work and income earning opportunities, the ESMP and contractor's environmental and social responsibilities, channels of | 36,560 | 36,560 | 36,560 | 109,680 |

| Activity | Description | Total (US\$) | | | |
|--|--|--------------|---------|---------|------------------|
| | | Year 1 | Year 2 | Year 3 | Total |
| | communication | | | | |
| Income generating courses for community members | Gardening, egg production, piggeries, basketry, etc. | 50,000 | 50,000 | 50,000 | 150,000 |
| Awareness course for RD staff and members of the PSC | A presentation of the ESMF document, emphasizing its importance and the expected roles of each of the parties. | 10,000 | 10,000 | 10,000 | 30,000 |
| Professional staff | Environmental Officers and Social Specialist (PIT) | 120,000 | 150,000 | 180,000 | 450,000 |
| Safeguards Strengthening RD | Training of RD | 100,000 | 150,000 | 200,000 | 450,000 |
| GRAND TOTAL | | | | | 1,489,680 |

I INTRODUCTION

Most of Lesotho's unpaved road network remains in poor condition and the road sub-sector continues to experience constraints due to inadequate levels of maintenance and limitations in institutional capacity. The rugged mountainous areas covering three-quarters of Lesotho continues to challenge the expansion of road infrastructure as well as the maintenance of the existing network.

While considerable investments were made in improving the quality of roads, expanding the urban and rural road networks, and rehabilitating existing roads in the past 10 years, the need to provide safe, sustainable and year-round transport connections in rural communities and between rural and urban communities is an ongoing development priority.

The difficulties of penetrating rugged mountainous terrain and the associated construction and maintenance costs have resulted in the road network being concentrated in the Lowlands, Foothills and Senqu River Valley (SRV) regions at the expense of the Mountains region where numerous crossings, cuttings, and fillings are necessary, and where maintenance costs are more prohibitive. These topographic constraints and the limited number of safe and year-round river crossings have severely constrained coverage with transport infrastructure⁵, particularly in the Mountains region, limiting development activities such as tourism and access of communities to socio-economic services.

The intense thunderstorms which are typical of Lesotho's summer rainfall season contribute to the deterioration of secondary roads which in the absence of adequate maintenance quickly become impassable for vehicles other than 4x4s. For many of these roads, there is a need to rehabilitate the base course and the wearing surface, repair wash aways, create all weather river crossings and thereafter maintain the road to an appropriate standard. In some cases, the road width is too narrow and slight widening may be necessary.

1.1 Project Development Objectives

The proposed Project Development Objective is to improve access to agricultural markets and tourist sites and promote job creation in targeted areas of Lesotho, whilst supporting improvements in road safety and providing immediate and effective response in the event of an eligible crisis or emergency.

1.2 Project Beneficiaries

The project is expected to benefit women and men, girls and boys, children and the elderly by improving access to markets, health services, and better access to additional social services (school, administration and police offices). Direct project beneficiaries are people from communities provided with access to the roads and footbridges

⁵ Mhlana, M., Hasluck, P. and Potgieter, L. (October 2012), *Integrated Transport Study and Policies Development, Integrated Transport Project/Ministry of Public Works and Transport*, p.2

rehabilitated under the project, within a 2-kilometer range. Indirect project beneficiaries are the tradable sectors of the economy and the private sector, whose growth will be supported by the job creation opportunities and market opportunities supported by enhanced connectivity.

The road and footbridge designs and the OPRC contracts will be prepared cognizant of the needs of women and girls, as well as elderly residing in the adjacent neighborhoods and using the road during the construction phase. A specific attention will be devoted to children's safety in the footbridges design to prevent cases of unintended injuries or fatalities while using the bridge. Limiting road traffic fatalities will likely have a greater impact on men, who tend to bear the heavier burden of fatalities than women. Specific interventions targeting women beneficiaries and respective results indicators are designed and included in the project. Women-targeted interventions will address the main gender-related concerns in transport, such as women's unemployment, GBV and HIV prevention, especially among female population between the ages of 10-24.

The TICP proposes to utilize citizen engagement (CE) approaches to involve beneficiary communities in the early stages of project development. Through community engagement and mobilization, the project is expected to consult and collaborate with direct beneficiaries and promote transparency and accountability. In this regard, the project will support a series of interventions and mechanisms to foster interaction between citizens and government, and provide with ownership to beneficiaries in project's development and decision-making processes (see component 3 and appraisal summary for more details on CE interventions).

1.3 Purpose of the ESMF

This ESMF seeks to establish a process of environmental and social screening which will permit the institutions in charge of the implementation of the sub projects to identify, assess and mitigate the environmental and social impacts of sub project investments. The ESMF also determines the institutional measures to be taken during the program implementation, including those relating to capacity building.

1.4 Rationale for the ESMF

The World Bank employs the use of ESMF as a safeguards instrument when a proposed project lack specific information on locations, scope, designs among others. The ESMF hence an ESMF provides a general impact identification framework to assist project implementers to screen the projects and institute measures to address adverse environmental and social impacts and provides guidance on safeguards actions to adopt when project details become clearer. Specific details with respect to TICP sub project locations, magnitude, scope among others still remain unknown at this stage, hence this ESMF.

1.5 Program Description

Enabling rural communities to access basic socio-economic services ranks highly in Lesotho's transport sector policy. In 1996 the country launched a US\$129 million 5-year

Road Rehabilitation and Maintenance Programme (RRMP) that was funded by the IDA, the EU and the Government of Lesotho (GOL). Issues of access also featured prominently under the Integrated Transport Project (ITP), which was launched in 2006 as a successor to the RRMP, with a combined budget of US\$38.2 million. A 2015 World Bank evaluation mission concluded that the implementation of the ITP was a success, the objective of improving access to services and market opportunities having been fully achieved through a better managed and affordable transport system⁶.

The Transport Infrastructure and Connectivity (TIC) Project is the proposed successor to the ITP. Funding for the project is under consideration by the IDA, the OPEC Fund for International Development (OFID), and GOL. Building on the achievements and lessons learnt from the ITP and other earlier initiatives, its overall objective is to improve access to social services and markets through the provision of safe and sustainable secondary road connections in targeted areas of Lesotho.

The infrastructure components of the TIC project consist of the rehabilitation and maintenance of selected secondary roads and the construction of footbridge infrastructure.

1.6 Project Components

The TIC Project consist of three components namely:-

Component 1: Improving the road infrastructure access: -The first component will comprise the physical works for road rehabilitation and maintenance to improve road connections of population to agricultural markets and tourism sites and to ensure sustainability of road assets:

Component 1(a): The introduction of output and performance based contracts for improvement and maintenance of about 100km of secondary gravel roads in high agricultural production and tourism growth areas. The project envisions supporting the Road Directorate to implement OPRC approach for road maintenance for the first time in the country, taking into account international best practice, as well as regulatory and competitive concerns, and to set the stage for rolling out this approach across the country.

This is a new concept for Lesotho, which would make “Road maintenance” a more attractive business for private sector contractors and provide an opportunity for a more cost-efficient use of public spending in road sector by shifting some of the risks and responsibility for the quality of infrastructure provision to the private sector. This sub-component is intended to promote both short-term (during rehabilitation) and longer-term (during maintenance phase) local employment opportunities in road construction industry. The bidding documents and contracts will be designed to include specifications for the contractor to employ the local population in the road works, specifically

⁶ The World bank (April 2015), *Lesotho Integrated Transport Project: Implementation Status and Results Report*, p.1

encouraging women to apply, and provide sufficient training to allow those that are unskilled to have an equal chance; and

Component 1(b): The construction of footbridges to provide the needed all-weather connection over a river or challenging terrain access to education, health services and markets, to the settlements, currently cut off from the nearest road connections, women in particular. The component provisionally proposes to construct 19 footbridges. Specification of employing locally 100 percent of the unskilled labor force for the footbridges works, including at least 25 percent of the local female labor force, will be included in bidding documents and contracts.

This component also includes the carrying out of the following studies and services:

- Consulting services for an assessment study for introduction of Output and Performance-based contracting on a selected number of secondary road networks;
- Consulting services to prepare design and Environmental and Social Impact Assessment of the selected footbridges (including the preparation of Resettlement Action Plan if required); and
- Consulting Services for monitoring/supervision of the OPRC-contracts.

Component 2: Improving road safety: - This component will address road safety in a more integrated manner in order to achieve the Government's objective to meet the global decade of road safety aim of halving road deaths between 2010 and 2020. The following activities will be supported under this component:

Component 2(a): Support for capacity building and institutional strengthening of the Road Safety Department of MoPWT and operationalization of NRSC. The Road Safety Department is effectively the lead agency for road safety in Lesotho, and provides equipment and support to the traffic police and other government departments. Following the launch of the National Road Safety Council (NRSC)⁷, establishment of which was recommended under the ITP, this Department will become its secretariat. This sub-component will potentially support the following activities: (i) capacity building of the RSD and NRSC (this support is entirely contingent on the full operationalization of the latter and completion of road safety reforms initiated under ITP), (ii) provision of road safety equipment to the RSD and traffic police; and (iii) consulting services to carry out identification and design of accident blackspots; and

Component 2(b): Establishment of an integrated system for licensing drivers and vehicles, including enforcement records. Whilst principally offering improvement to the management and revenue collection procedures for these services, there will also be road safety benefits from improved driver licensing and vehicle inspection. This sub-component will include support with the implementation of the new Integrated Vehicle Registration and Drivers' Licensing System together with a Traffic Management Information System – entitled the Lesotho Integrated Transport Information System

⁷ The first meeting of the NRSC Board to formally launch the Council took place on June 30, 2016. but then rescheduled to June 2016.

(LITIS), under which vehicle inspections are expected to be contracted out to the private sector. Currently, this responsibility lies with the Ministry of Public Works and Transport through its Department of Traffic and Transport (DTT). Under the ITP, an assessment of vehicle inspection and driver licensing system recommended that the process be privatized (SweRoad, 2014), however, no progress has been made since towards it. The proposed project will address this issue, should the government decide to move forward with this recommendation.

Component 3: Implementation support and capacity building: - This component will include the necessary project implementation support, including implementation of citizen engagement mechanisms, HIV/AIDs and gender targeted activities, and capacity building support to the RD and MoPWT to effectively roll out, administer and monitor OPRC contracts and mitigate road safety risks:

- a) Consulting services to assist the MoPWT in preparation of the National Transport Master Plan (NTMP);
- b) Project implementation support to the MoPWT and Roads Directorate;

Support in implementation of citizen engagement mechanisms and HIV/AIDs and gender targeted activities. This will include the following, *inter alia*: (i) behavior change and awareness raising activities on HIV/AIDS prevention among beneficiary communities to address the limited knowledge and reduce discrimination and stigma towards HIV affected people; (ii) awareness raising and behavior change training activities among female and male beneficiaries on GBV prevention, care and reporting mechanisms; (iii) establishment of gender-balanced monitoring committees in each beneficiary community to facilitate a continuous dialogue and collaboration between communities, the Roads Directorate and the contractor at campsites; and (iv) development of *ad hoc* mechanisms to allow beneficiaries to report feedback and concerns associated with the implementation of Project activities and collaborate toward its improvement;

Implementation of evidence-based interventions targeting AGYW: (i) to reduce their vulnerability to HIV/AIDS increased due to higher traffic level as a result of better road connections; and (ii) increase their agency (tentatively proposed subject to availability of additional funds);

Independent technical audits of the civil works implemented under the project; and Capacity building and training to the staff of RD, RF, and MoPWT in OPRC contract management and road safety measures, etc.

1.7 Project Institutional and Implementation Arrangements

1.7.1 Project Implementation Team (PIT)

The **Environmental and Social Development Specialist** (s) of the Project Implementation Team (PIT) for TICP within MoPWT the will prepare a **Project Brief** for all proposed sub projects road and bridges related to construction and rehabilitation. These will be submitted to DOE for determination whether a full EIS is required or otherwise. In the event that a full EIS will be required, the **Environmental and Social**

Development Specialist will prepare **Terms of Reference** and procure an Environmental Consultant to prepare the full EIS as required by the DOE.

The ESIA/ESMP prepared will be reviewed by the **Environmental and Social Development Specialist (s)** of the Project Implementation Team (PIT) for TPIC within MoPWT before submission to DOE and World Bank. Civil works for any identified sub project under TPIC which requires ESIA/ESMP will not commence until the World Bank issues approval and DOE issues a license and these documents disclosed in the appropriate manner.

Where there are divergence in determining the triggering of a policy and what safeguards instrument is to be prepared, the World Bank Safeguards Policies will have precedence over the Government of Lesotho's safeguards policies, in particular if the Bank's safeguards policies are the more stringent.

Monitoring of the ESMP will be coordinated by the **Environmental and Social Development Specialist (s)** with clear roles and responsibilities for contractors (specifications to be included in the bidding documents) and supervising engineers.

The works contractor and supervising engineers for each identified roads/bridge project will be required to recruit full time **Environmental and Social Development Specialists** to monitor ESMP implementation. The bidding documents for works contract and supervising engineer will contain this requirement.

1.7.2 Lesotho Roads Directorate (RD)

The Lesotho Roads Directorate (RD) is the implementing agency for the rehabilitation and maintenance of the secondary roads which will utilize the Output and Performance based Road Contracts (OPRC) method, as well as the construction of the footbridges. Both the targeted road corridors and footbridges were identified by the Roads Directorate, an entity which currently has a permanent environmental manager who oversees the environmental assessments, implementation and monitoring of environmental management plans for all road projects implemented by the directorate. The conceptual designs currently underway will confirm the exact locations while the detail designs including the specific road works required for the various sections will be carried out by the Contracting Entity (CE) during the implementation phase of the project. The Contracting Entity is expected to carry out the site-specific ESIAs/ESMPs based on the procedures and methodologies described in the ESMF. The ESIAs/ESMPs will be approved by the Lesotho Department of Environmental Affairs and the Bank prior to commencement of the physical works on site. The potential environmental and social impacts and proposed mitigation measures as described in the ESIAs/ESMPs, will be included in the bidding documents of the OPRC and will form the basis for monitoring by the Roads Directorate and the Monitoring Consultant to be engaged under the project. The ESMF will also provide guidance to the Contracting Entity in the likely event that more interventions are identified during the 10-year implementation period. The bidding documents will also include the need to update the safeguard instruments in line with the detailed design and preparation of Method Statements in line with the ESMPs.

The Roads Directorate (RD) is, as part of project preparation, required to engage a social

specialist on a permanent basis, in addition to an environmental specialist, to ensure implementation of social safeguards. The OPRC contractor must, as part of core project staff, engage a resettlement specialist with experience in preparing ARAP/RAPs. In addition, the OPRC contractor will engage a number of community liaison officers who will provide for concrete involvement and ongoing consultation with communities to ensure all impacts are well understood and construction activities take community wellbeing into consideration. An independent supervision/monitoring consultant will oversee the day-to-day implementation of social safeguards, including ARAP/RAPs, if required.

The RD's social specialist will mainstream social and gender aspects, and serve as the interface between the Roads Directorate, local government gender officers, the OPRC contractor's local community liaison officers, resettlement specialist and campsite managers.

Continuous safeguards training will be provided to the Roads Directorate during the implementation phase of the project on the application of World Bank Safeguard Policies in mitigating risks and impacts, and in monitoring implementation of ESMPs.

1.8 Capacity Building and Training

Safeguards capacity building through training and sensitization is proposed in this ESMF to specifically target the Roads Directorate Environmental Unit (EU) which will support the TICP/PIT environmental and social safeguards experts in implementing the safeguards requirements of the project. During the ESMF development, it was noted that the EU within the RD is understaffed and in need of capacity enhancement.

Similarly, the ESMF proposes training for the works contractors and supervising engineers who will be procured to undertake construction/rehabilitation of roads and bridges. The proposed training modules will cover among others:

- a) World Bank safeguards policies and Lesotho's environmental regulations, specifically covering including the ESMF/ESMP, RPF/RAP, OHS guidelines
- b) Non-social safeguards Issues such as gender, community empowerment, etc.
- c) Subproject screening checklist (environment and social);
- d) Environmental and social performance monitoring and reporting
- e) Development of Terms of Reference for safeguards instruments such as ESIAs/ESMPs, and RAPs;
- f) Grievance redress mechanisms and alternative dispute resolution
- g) Environmental and social clauses in contractors' contract and bidding documents.

2 METHODOLOGY AND CONSULTATION

To meet the requirements of the ESMF scope, a combination of interrelated data collection methodologies that assessed the potential environmental and socio-economic impacts which could result from the implementation of TICP activities was adopted.

2.1 Detailed & In-depth Literature Review

Relevant policy and technical documents as well as Bureau of Statistics generated data were retrieved for desk reviews. These resources provided the background macro-economic and national policy framework; international safeguard policies and best practices; critical environmental and socio-economic indicators that could be used to assess project impacts; material that could enrich the design of guidelines, development of tools and the overall analytical framework, and contextualisation of the roles and contributions of various actors. Among the documents that were reviewed in order to familiarize and further understand the project included:

- World Bank TICP Aide Memoire
- World Bank Safeguards Policies
- Project Appraisal Document
- Various Legal statutes of Government of Lesotho

2.2 Stakeholder Consultations

Stakeholder consultations were conducted with a number of officials of the MoPWT and related institutions at the national, district and local levels in areas that were likely to be targeted as sub project sites for the TICP.

This led to clarifications on national policies, strategies and programmes; shed light on the status of transport sector activities, key actors in the sector, the nature of intervention programmes/projects, responses of communities and perceived environmental and socio-economic impacts; identified environmental and socio-economic challenges that would need mitigation and monitoring indicators that could be relevant to TIC projects; assisted the assessment of transport sector institutional capacities and effectiveness; and provided learning experiences that had been gathered from previous interventions of deleterious environmental and socio-economic impacts of transport infrastructure projects.

Focus Group Discussions (FGDs) were held with 6 communities in potential areas where the TIC infrastructure could be implemented. These group discussions included possible environmental and socio-economic impacts of TIC Project activities, providing communities with opportunities to express their views about the perceived positive and negative impacts of sub project activities and salient issues that could affect the achievement of project objectives.

The issues raised and concerns expressed including possible mechanisms of addressing these issues and concerns are appended as **Annex B** of this document. The stakeholder

consultation was significant to the preparation of this ESMF and formed the basis for the determination of potential project impacts and design of viable mitigation measures.



Figure 1. Focus Group Discussion in Mosamo Village, Leribe District, undertaken for the footbridge crossing of the Molotakoti River

2.3 Field Visit

A two-day field visit on 25th and 26th April 2017 was undertaken with the Environmental Manager of the Roads Department to various potential sites for construction of and rehabilitation of roads and bridges in Lesotho.

3 BASELINE DATA

The TICP is a nationwide project that will be implemented in the whole of Lesotho and this chapter give an overview of the environmental and social baseline situation of Lesotho.

3.1 Location and Size

The Kingdom of Lesotho is a small, mountainous country landlocked within South Africa. Its land area measures 30,355 km². It is classified among the Least Developed Countries with a per capita income of \$1879 (PPP). It ranks 158 out of 187 countries on the UN Human Development ranking, falling into the category of low human development.

3.2 Physical Environment

Lesotho comprises a tiny landlocked country that occupies 30,355km² which is inhabited by an almost homogeneous ethnic group, Basotho. Based on elevation and agro-climatic zones, the country is divided into 4 ecological zones (Map 2 below) that are now generally accepted as livelihood zones: the Lowlands region (17%), the Foothills region (15%), the Mountains region (59%), and the Senqu River Valley (SRV) region (9%) (Table 6).

The Lowlands region comprises a narrow strip of land 20-50 kilometres wide along the western border with the RSA at an elevation of 1,400 to 1,800 metres above sea level. The Foothills region, on the other hand, is also a strip of land that lies between the Lowlands and the Mountains regions at an altitude of 1,800 to 2,200 metres above sea level.

3.2.1 Climate

Lesotho has a temperate climate although it experiences very harsh winter conditions that limit economic activities mainly to the Lowlands, Foothills and SRV regions. The average annual rainfall of 780mm is unevenly distributed, ranging from 450mm in the SRV (a rain shadow area) and south-western Lowlands to 1,000mm in the eastern Mountains and northern Lowlands regions. Most of the rain falls between October and April, generally resulting in dry winters and wet summers in most of the country.

3.3 Topography and Drainage

3.3.1 Physiography

The largest physiographic region, the Mountains region, occupies most of the central and eastern part of Lesotho at an altitude of 2,200 to 3,480 metres above sea level, while the smallest, the SRV region is a strip of land along the Senqu (Orange) River that stretches from the Mohale's Hoek and Quthing Districts in the south to the Mokhotlong District in the northeast at an elevation of 1,400 to 1,800 metres above sea level.

Land use patterns that have emerged over Lesotho have largely been shaped by the geomorphology of the country which itself is a manifestation of the interaction between volcanic activity and soil erosion (table 6 below). The resultant terrain in the Mountains region comprises dissected basalt plateaux that appear as mountain ranges and plateau, which are intersected by deep river valleys, gorges and canyons with spectacular physical formations. It is in this region that the Drakensberg Range is found, forming the northern and eastern border between Lesotho and the RSA, with its unique Afro-alpine and Afro-Montane ecological endemism.

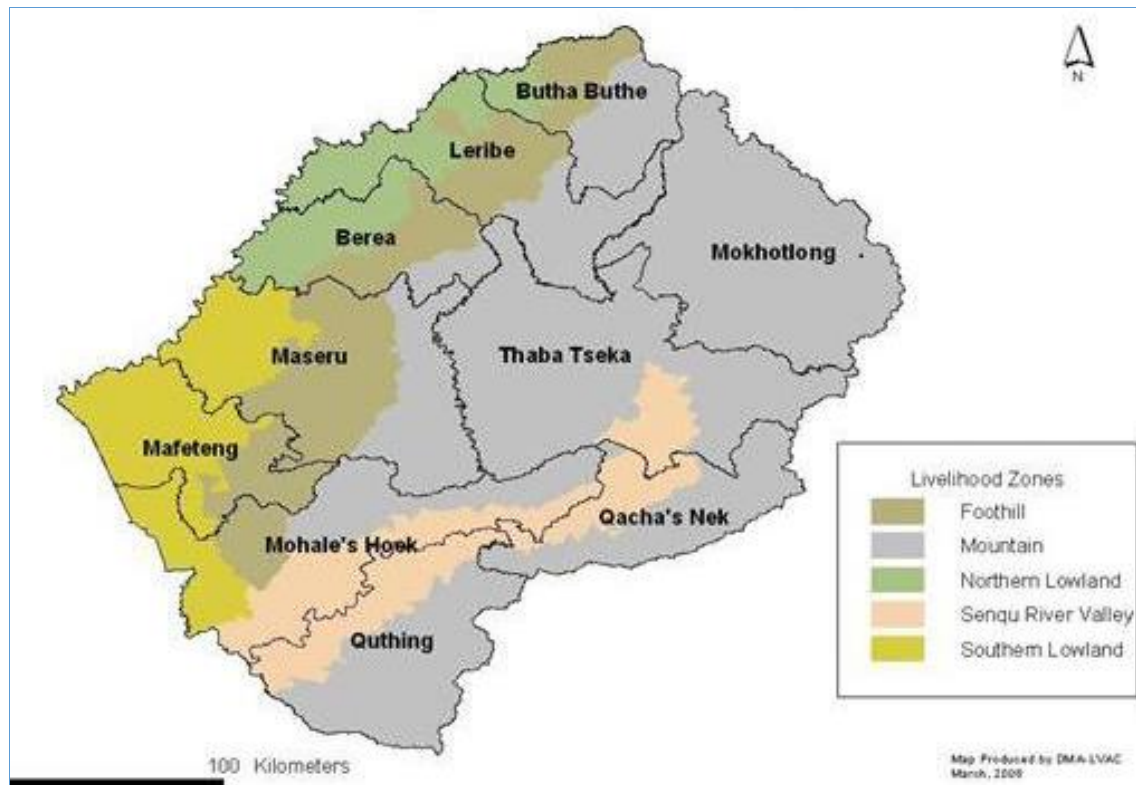


Figure 2: Physiographic regions of Lesotho

Table 4. Characteristics of Lesotho's physiographic regions

| Parameter | Mountains | Lowlands | Foothills | SRV |
|------------|--|--|---|---|
| Area | 18,047(59%) | 5,200 (17%) | 4,588 (15%) | 2,753 (9%) |
| Altitude | 2,200-3,480 | 1,400-1,800 | 1,800-2,200 | 1,400-1,800 |
| Topography | Very steep bare rock outcrops and deep river valleys and canyons | Flat to gentle rolling and hilly in some places | Steeply rolling and hilly | Steeply sloping |
| Soils | Fragile, thin horizon of rich black loam of volcanic parent origin | Sandy textured, red to brown in the north, clayey in the south | Rich, alluvial along valleys, thin and thick rock on slopes | Calcareous clayey soils with poor penetration by rainfall |

| | | | | |
|-------------------|---|--|---|---|
| Climate | Cold, moist | Moist in the north, moderately dry in the south | Moist, sheltered | Dry. Rain shadow in the Senqu valley |
| Risks | Long period of frost, snow, hail, highly erodible soils. | Parching sun, strong winter winds, hail, periodic droughts, and highly erodible soils. | Floods, highly erodible soils. | Periodic droughts, erodible soils. |
| Land Cover | | Dominated by agricultural fields and villages with grazing on | Dominated by agriculture | |
| Vegetation | Denuded grassland, endemic Alpine species, indigenous shrubs in some river valleys, stunted peach trees near homesteads | Poplar in some river channels, indigenous shrub patches in sheltered valleys, plantations on some hills, fruit trees near homesteads | Poplar and willow trees along streams and gullies, a lot of fruit trees near homesteads | Denuded dry shrubs, brush, few trees in valleys |
| Main Crops | Maize, wheat, peas, potato | Maize, wheat, beans, vegetables | Maize, wheat, peas, fodder crops, potatoes | Maize, sorghum, beans |

Source: Ministry of Natural Resources (2000), National Report on Climate Change,

The Lowlands and Foothills regions, on the other hand, are characterised by rolling to flat terrain that is interspaced with hilly topography, while the Senqu River Valley (SRV) is characterised by steep slopes and flood plains along sections of the Senqu River. The common characteristics across most of the ecological regions in the country are highly erodible soils, erosion features resulting from torrential runoff during the rainy season, making Lesotho one of the most environmentally vulnerable countries in the world.

3.4 Biological Environment-Ecosystems

3.4.1 Vegetation

The predominant terrain of Lesotho is rugged, comprising numerous high peaks and plateaus, between which are deeply incised valleys in which most of the rivers drain southwards into the Senqu River system. Most of the country comprises open grassland, a large portion of which has is overgrazed and encroached by shrubs, mainly *Chrysocoma ciliata* that has replaced the natural grassland, particularly on the drier northern slopes.

Eleven vegetation types distinguished by Mucina & Rutherford (2006) are represented in Lesotho. Nine of these are grassland / shrubland types), and two are wetlands (Lesotho

Mires and Drakensberg Wetlands). Most of the higher lying portions of the country are covered by Lesotho Highland Basalt Grassland while Drakensberg Afroalpine Heathland is present in the higher-lying mountains along the eastern border with South African to the west and south-east of the country, where Lesotho Mires and Drakensberg Wetlands are also present.

In the lower lying areas in the west of the country the vegetation units include Western Lesotho Basalt Shrubland (evaluated as Least Threatened) which occurs on lower altitude basalt in the Maseru and Mafeteng Districts and include the Matelelele and Malealea area including the lower slopes of the Makhaleng River, which supports extensive *Leucosidea* woodland along the valleys and river. The lower Senqu Valley is dominated by Senqu Montane Shrubland (also evaluated as Least Threatened) which extends also into the Eastern Cape and which occurs mainly at altitudes between 1600 and 1900 m (Mucina Rutherford 2006). This zone is dominated by evergreen shrubs, namely *Rhus erosa*, *Olea europea* and *Diospyros austro-africana*, and in sheltered inaccessible areas becomes a thicket with *Kiggelaria africana*, *Leucosidea sericea* and *Rhamnus prinoides*.

Grassland vegetation was separated and mapped into different grassland communities in an earlier national rangeland inventory study in the early 1980's (Ministry of Agric 1988) which included: *Hyparrhenia*; *Eragrostis/Aristida*; *Themeda*; *Festuca*; and *Merxmuellera*, as well as three shrub and woody plant dominated types: *Chrysocoma / Artemisia*; *Leucosidea* and *Rhus* classes. *Festuca caprina* is often dominant at higher altitudes and *Themeda triandra* more prominent at medium to low altitudes. Disturbed areas are typically characterised by low shrubland dominated by *Chrysocoma ciliata* and *Pentzia cooperi*.

Indigenous forest and woodland vegetation types are limited mainly to the more sheltered river valleys or overhangs under cliffs and ridges. *Leucosidea* woodland (locally known as cheche) is prevalent in certain river valleys generally at lower altitudes below 2400 m such as the Makhaleng, Ribaneng and Qomoqomong River valleys, as well as in the Tsehlanyane Reserve (May 2000). This is a short often multi-branched woody tree that generally is less than 3-5 m in height. Other indigenous shrubs and small trees occurring in the lower foothills and lowlands zones include *Rhus pyroides* (kolitsane); Wild olive (*Olea verrucosa/mohloare*) and *Cheilanthes corrugatus* (lelora) and Camdeboo stinkwood (*Celtis kraussiana*) and *Buddleja salvifolia* (a pioneer of forest) (May 2000). *Calpurnia robinoides* is a lowlands tree, that was assessed as Vulnerable on the Lesotho redlist (Talukdar 2002) and is recorded from Koro Koro and the Mpetsana River bank (Maseru District), and a couple of lowland localities in Berea District where it occurs as isolated trees.

At increased altitudes in the mountains zone (up to 2300-2400), forest patches may still include species such as *Leucosidea* woodland and *Buddleja* sp. as well as other shrub and small trees species such as *Rhamnus prinoides*, *Euclea coriacea*, *Diospyros austro-africana* subsp *rubriflora* depending on altitude (May 2000). At higher altitudes, species typical of forest patches may grow but tend to occur as scattered small shrubs (eg *Rhus divaricata*; *Kiggelaria africana*).

The Senqu River Zone lies within a ‘rainshadow’ where lower rainfall and water scarcity tends to determine the location of forest and woodland patches (May 2000). The bottom Senqu and Quthing River valleys are reported to have many of the same indigenous trees as found in the lowlands and foothills (eg *Kiggelaria africana*; *Celitis africana*, *Rhus pyroides* and *Buddleia salvifolia*. However, most noticeable in the Senqu valley on the sunny, north facing slopes in particular are the *Aloe ferox*, often growing with olive trees (*Olea europaea*), *Diospyros* spp. and occasional ‘cabbage’ trees (*Cussonia paniculata*).

In the late 17th / early 18th centuries, forest and woodland areas along rivers such as the Mohokare (Caledon) with larger sized trees were more plentiful than today but many were removed for construction of buildings such as churches and schools at mission stations. This included large indigenous willow trees, *Salix mucronata*, which although an inferior timber species, were increasingly targeted for construction after other preferred species became scarce. Today, willow trees typically occur as a riparian fringing tree along most rivers and streams in Lesotho below ~2500 m. These may comprise the indigenous *S. mucronata*, and the exotic willows, *S. fragilis* and *S. babylonica*. In some areas, the indigenous bamboo *Thamnocalamus tessellatus* (leqala) occurs typically along rivers and streams but also on drier slopes (May 2000), and is known from the streams of the Tsehlanyane River, after which the river is named. *Protea* trees of *Protea caffra* are typically scarce in Lesotho but sometimes occur as open groves in the lowlands such as at Linakeng (Butha Buthe District) (May 2000).

3.4.2 Wetlands

Wetlands in Lesotho comprise different types classified as bogs, fens, mires and tarns which largely depend on the hydrogeomorphic setting in the landscape. The tarns (open rock pool wetlands) in Sehlabathebe and elsewhere along the escarpment contain a Vulnerable endemic plant – *Aponogeton ranunculus*. Mostly, however, wetlands are not particularly rich in biodiversity but play an important hydrological role in water supply and attenuation of stream flow, and as an important source of forage for livestock (MDTP 2007).

The high altitude valley head fen wetlands in the alpine belt of the highlands generally have peat beds and have received significant interest in Lesotho in recent years. This is due to the high levels of degradation mainly due to overgrazing and livestock trampling, but also in several places caused by poor location and design of roads which has caused concentrated run off and gulley formation at culverts. Such degradation is generally manifested as severe gulley erosion, which causes desiccation of the wetland and facilitates shrub encroachment, ice rat burrows, and reduction in ecological functionality. These wetlands have been the focus of significant funding investment to find ways to retard their ongoing decline but with limited success as yet. The *Letseng-la-Letsie* wetlands near Ongeluksnek are an important wetland system for Lesotho as it is the only Ramsar site in the country and the focus of protection efforts.

The only other area of formal protection of high altitude wetlands is the Bokong Nature Reserve where a large wetland system is crossed by the main tarred road to Katse Dam

and which has been the subject of significant rehabilitation efforts to minimise the damage caused by the road.

3.5.7 Faunal Diversity

Faunal diversity and abundance in Lesotho is generally low due to the harsh climatic conditions across the year in most of the country. The high-lying subalpine and alpine areas of Lesotho at altitudes >2600 m do however have a number of endemic and conservation priority species. These are mostly birds, amphibians and reptiles.

Birds: Of 340 species of birds listed for Lesotho (NES 2000), 13 are Red Data listed. The Lesotho Highlands is an endemic bird area which is important for four endemic grassland birds: Drakensberg Rock-jumper; Yellow-breasted Pipit; Mountain Pipit and Drakensberg Siskin all of which generally occur at >2600 m. The latter two species require relatively intact grassland habitats. Other priority threatened species include Southern Bald Ibis; Bearded Vulture and Cape Vulture. The Bearded Vulture is the flagship species of the country whose population is estimated at only 100 pairs (Kruger).

Reptiles and Frogs: Lesotho has a low diversity of reptiles and frogs but there is a high level of endemism in those that do occur. Five frogs, seven lizards and one snake species is considered endemic to the Maloti Drakensberg Transfrontier Conservation area of which three frogs occur in fast-flowing streams at high altitudes in Lesotho, namely Maluti River Frog (*Amietia vertebralis*), Phofung River Frog (*Amietia hymenopus*) and Natal Cascade Frog (*Hadromophryne natalensis*) but reasonably widespread and a good indicator of water quality.

Four reptile species are strictly endemic to this ecoregion, namely the poorly known Cream-spotted Mountain Snake (*Montaspis gilvomaculata*), Lang's Crag Lizard (*Pseudocordylus langi*), Cottrell's Mountain Lizard (*Tropidosaura cottrelli*) and Essex's Mountain Lizard (*T. essexi*), and well as numerous near-endemics such as Drakensberg Crag Lizard (*Pseudocordylus melanotus subviridis*), Drakensberg Flat Gecko (*Afroedura nivaria*) and Spiny Crag Lizard (*P. spinosus*). All of these are most likely to occur in rocky high altitude habitats.

Mammals: Few mammals in Lesotho are unique and most large mammals are absent from large parts of the country due to hunting, with individuals of Grey Rhebok the most commonly seen antelope in remote areas. Only the ice rat that typically occurs at high altitudes is endemic to the MDTCA but is commonly seen. Ice rats often burrow in the drier edges of wetlands and may be seen burrowing along the edges of hand-built roadsides possibly contributing to destabilisation of embankments. The white-tailed mouse *Myodomys albicaudatus* is listed as Vulnerable and is known from a number of localities in Lesotho where it has been recorded in shrubland or grassland on black loamy soils with adequate vegetation cover (Coetzee & Monadjem 2008).

Fish: The Maloti Minnow (*Pseudobarbus quathlambae*) is the only endemic vertebrate in Lesotho. It is now believed to occur only in upper reaches of a few rivers: the Sani, Moremoholo, upper Senqu and Tsoelikane Rivers (in Sehlabathebe National Park) in the eastern highlands along the escarpment. It was relatively recently distributed in the

Jorodane, Bokoaneng and Bokong and Senqunyane and Matsoku Rivers but no longer occurs in the latter and numbers are much diminished in the others due to the construction of Mohale Dam and introduction of trout (Anchor 2014). A few individuals were recorded in the Senqunyane River upstream of the Mohale Dam in 2014 (where one footbridge is proposed: Tsoelike Thabo Bosiu).

3.4.3 Priority Protected Areas

Protected areas of Lesotho make up an estimated 3% of the country and include the flagship Sehlabathebe National Park on the eastern border with South Africa in Quthing District that was declared a national park in 1996. It was incorporated into the Drakensberg Ukhahlamba World Heritage Site in 2012. Other notable reserves include the Tsehlanyane Nature Reserve and Bokong Nature Reserve.

The three reserves together make up 14,300 ha or approximately 0.6% of the Highlands area. Lesotho's only Ramsar site (i.e. wetland of international importance) is *Letseng la letsie* which is located near Ongeluksnek near the Eastern Cape border. It was declared a Ramsar site for its rich birdlife, and is a large water body created by a small dam on the Mohlakeng River.

The main strategy for biodiversity protection in Lesotho is through sustainable management of livestock grazing and the declaration of Managed Resource Areas (previously named, but still often called Range Management Areas). The concept of gazettement MRAs was pushed under the Maloti Drakensberg Transfrontier Project with the aim of gazettement and protecting more land under MRAs. However, these rely on successful enforcement of grazing controls and these initiatives have met with mixed success. However, a national integrated catchment management process is now underway to try and improve coordination between relevant ministries to implement ICM.

Table 5. Protected areas of Lesotho

| Name | Size | IUCN Class |
|---------------------------------------|-------------|------------|
| Sehlabathebe National Park | 6952 ha | II |
| Tsehlanyane Nature Reserve | 5300 ha | II |
| Bokong Nature Reserve | 1972 ha | II |
| Letseng-la-Letsie (Ramsar site) | 434 ha | VI |
| Range Management Areas (RMAs) (total) | ~185,684 ha | VI |

3.5 Socio-Economic Background

3.5.1 Population

The 2006 population census put the population of Lesotho at 1,862,880, down from 1,959,700 in 1996. This slight drop in the population size was confirmed by the 2011 Lesotho Demographic Survey which came up with an estimated population of 1,894,194 people⁸, the drop being mainly attributed to the impact of the HIV and AIDS pandemic in

⁸ Bureau of Statistics (2013) *Lesotho Demographic Survey, Volume 1*, p.19.

a country where an estimated HIV prevalence of 23% was recorded in 2009⁹. According to the United Nations Programme on HIV/AIDS¹⁰, life expectancy at birth in Lesotho decreased from 59 years in 1990 to 49 years in 2012. However, following high coverage with antiretroviral medicines, there are indications that the population could once again be on the increase.

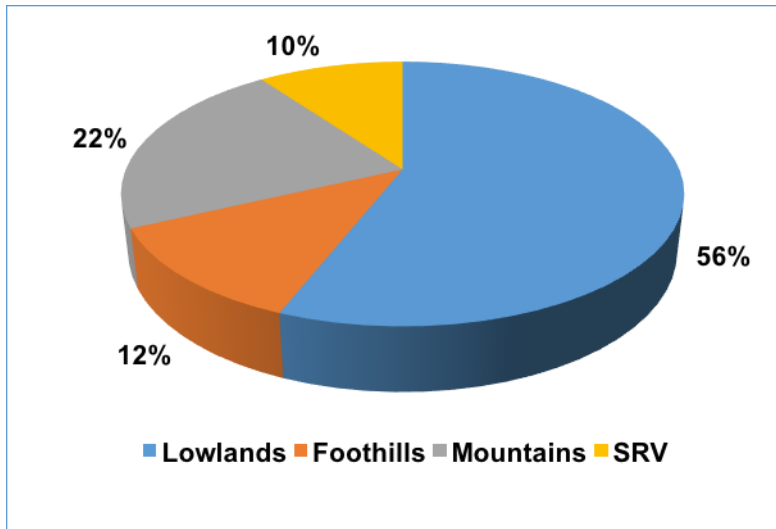


Figure 3: Distribution of the population by ecological region

The distribution of the population of Lesotho, like that of most of the country's socio-economic services, closely follows the morphology of ecological regions, with the Lowlands supporting 56%, the Foothills 12%, the Mountains 22% and the Senqu River Valley region 10%. The Lowlands have experienced net gains in population since the 1980s as a result of rural-urban migrations, particularly from the Foothills and Mountains regions, as people look for better socio-economic opportunities. The settlements tend to be larger and denser in the Lowlands and Foothills regions than in the Mountains region where these are sparsely distributed.

Whereas in the Lowlands these settlements are scattered along the hills and on plateau, in the Mountains region they are largely confined to sheltered river valleys because of harsh climatic conditions. On the other hand, most of the commercial centres, industrial establishments, administrative offices, tertiary educational institutions, the referral hospital, transport hubs, etc. are found in the Lowlands region in which the capital city, Maseru, is located. However, Lesotho's population remains largely rural, with 76% of the population being classified as such in 2011.

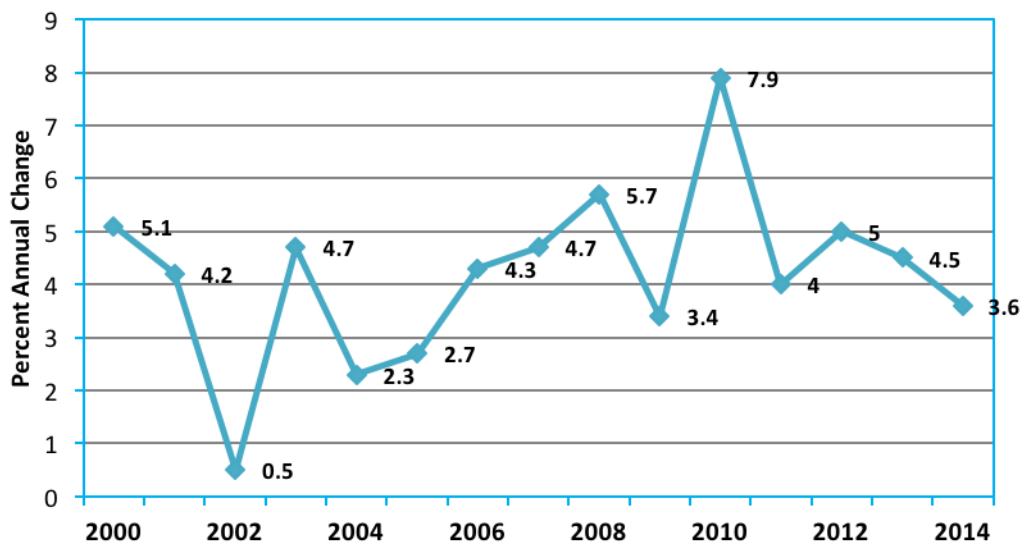
3.5.2 Economic Growth & Setting

Despite recessionary conditions that have prevailed in many global economies and the instability that has characterized the domestic political landscape, the Lesotho economy

⁹ Ministry of Health and Social Welfare and ICF Macro (November 2010) 2009 Demographic and Health Survey, p.202.

¹⁰ United Nations Development Programme on HIV/AIDS (2013), Global Report: UNAIDS Report on the Global AIDS Epidemic 2013, A.7

has registered positive annual growth rates in the 15 years beginning 2000 (Figure 4-4). The real Gross Domestic Product (GDP) (at constant 2004 prices) grew at an annual average 4.2% over the period. However, although there has been significant progress in the country's macro-economic performance over these years, Lesotho still faces an uphill battle against poverty and unemployment. The country falls under the Low Human Development (LHD) category on the United Nations Development Programme's (UNDP's) Human Development Index (HDI), with a 2013 ranking of 162 out of 187 countries¹¹. In this same year, 57% of the households were found to be living below the national poverty line, while 43% of the population lived below the international poverty line of US\$1.25 of expenditure per day¹².



Source: Bureau of Statistics, *National Accounts 2014*

Figure 4: Percent annual changes in GDP, 2000-2014

3.5.3 Agriculture and Food Security

The physiographic features of Lesotho are a given natural resource that is known to provide diverse microhabitats and ecosystems that support a rich and unique biodiversity, particularly in the mountainous region >2800 m altitude (See Section 1.5). However, the country is inhabited by an almost culturally homogeneous ethnic group, Basotho, 76% of whom are directly dependent on the land for survival either as subsistence crop farmers or as pastoralists. With only 9% of the land, mainly in the Lowlands, Foothills, Senqu River Valley (SRV) and river valleys of the Mountains region, classified as arable, many households have been compelled to either cultivate marginal lands on steep mountain slopes and flood plains or enter the livestock industry where entry and exit are free under the communal land tenure system. Lesotho is thus known to have pursued unsustainable land management practices that have resulted in pressures on the environment in the form

¹¹ United Nations Development Programme (2014) *Human Development Report 2014*, Table 2.

¹² UNDP (2014) *Human Development Report 2014*, Table 6

of overgrazing on a landscape that is highly erodible and therefore susceptible to heavy runoff and accelerated degradation¹³.

Because of land degradation and climate change, it is emerging that even where crops are grown under ideal physiographic conditions, they increasingly fail to reach their potential yield, resulting in food deficits and growing vulnerability amongst many farming households, particularly in the Mountains and the drier SRV regions. The concentration of livestock that has escalated over the years has been blamed for the environmental degradation, which includes physical damage to rangelands, wetlands and river sources and their biodiversity and for posing long-term threats to the livelihoods of communities that are dependent on the livestock economy.

3.5.4 *Traditional Grazing Systems and Status of Resources*

Livestock occupies a special position in the livelihoods of communities in rural Lesotho. It delivers commercial benefits in the form of draught and export fibre and a wide range of secondary benefits such as provision of protein, slaughter for traditional ceremonies, payment of bride wealth and sales income for emergencies. Livestock ownership therefore represents a culturally accepted and economically viable strategy of diversifying livelihood sources and hedging against possible livelihood shocks that are associated with crop agriculture.

However, this poverty-driven strategy manifests itself in large herds that are the main cause of environmental degradation. Traditionally, Lesotho practices a rotational grazing system whereby in winter livestock are grazed around settlements at lower altitude (Grazing Zone C) where the weather is less severe. However, in summer, a system of permits is used to allocate range resources at higher altitudes (Grazing Zones A and B). In previous years (Grazing Regulations 1980¹⁴), the Agricultural Officers were supposed to assess the stocking rates of grazing areas in their jurisdiction for the purpose of advising the chiefs on rotational grazing.

These provisions were broadened by the 1998 National Range Management Policy to cover the sustainable management of range resources, conservation and protection of biodiversity and maintenance of ecosystems, rangeland monitoring and research, maintenance and protection of wetlands and to encompass the social dimensions of range resources management. The main strategy for biodiversity protection is through sustainable management of livestock grazing and the declaration of Managed Resource Areas (previously named, but still often called Range Management Areas). The concept of gazettement MRAs was pushed under the Maloti Drakensberg Transfrontier Project with the aim of gazettement and protecting more land under MRAs. However, these rely on successful enforcement of grazing controls and these initiatives have met with mixed success. However, a national integrated catchment management process is now

¹³ Mhlanga, M. (2010), *Defining Scope for Alternative Land Use, Socio-economic and Legislative Instruments for Restoration and Design of Tools*, p.26

¹⁴ *Range Management and Grazing Control Regulations 1980, Legal Notice No. 39 of 1980, Section 9.*

underway to try and improve coordination between relevant ministries to implement ICM.

Despite the above policy and legal framework, livestock populations continue to have a major negative impact on the environment in Lesotho. Control has generally been ineffective due to institutional capacity constraints, cultural rigidities, the remoteness of cattle posts and the proximity of cattle posts to wetland sponges that exacerbates overgrazing and trampling of these vital water source areas. Increasingly, livestock grazing in the high altitude summer grazing areas is extended further into winter months, inhibiting the capacity of the grassland to recover sufficiently prior to the next grazing season.

The 2013/2014 livestock numbers stood at 540,133 cattle, 1,346,596 sheep, 824,698 goats, 55,397 horses and 103,859 donkeys and mules¹⁵. The biophysical impacts of livestock numbers and current grazing systems are clearly visible to the naked eye (Photographs 4-1 to 4-3). Some of the obvious causes include a myriad of human and animal footpaths, overstocking, trampling by livestock and unsustainable harvesting (medicinal plants and energy resources). The impacts of these activities include reduced vegetation cover, soil and gully erosion wetland desiccation and shrub encroachment, reduced biodiversity (including the disappearance of palatable and nutritious grass species), river sedimentation and reduced riverine biodiversity, changes in wetland morphology and biodiversity, reduced wetlands water storage and lower water tables, a cycle of degradation which increases pressures on rural communities.

In the past few years, it has been demonstrated that with prudent environmental management and the application of effective conservation practices such as those applied in the Lesotho Highlands Development Authority's (LHDA's) Bokong, Tsehlanyane and 'Muela nature reserves, environmental recovery is possible. The move towards integrated catchment management is intended as a move toward better catchment practices but to date has seen little practical benefit on the ground.

3.5.5 Scenic and Cultural Resources

Lesotho's physiographic features offer some of the most scenic environments, with spectacular outcrops in the central range, the northern Drakensberg range and the main Drakensberg range in the east. Found amongst these unique features are the fascinating cave monuments that provided shelter Basotho tribes during tribal wars of the 17th and 18th centuries, as well as several sites of San rock paintings that are scattered in hills and mountains all over the country. Some of the caves are currently used as sites for initiation ceremonies.

¹⁵ Bureau of Statistics (2015), *Lesotho Livestock Statistics Report 2013/2014, Statistical Report No. 8, 2015*.

4 DESCRIPTION OF THE ADMINISTRATIVE, POLICY AND REGULATORY FRAMEWORK

This chapter outlines and highlights the relevant institutional and legal as well as policy framework in Lesotho which has a direct bearing on the Transport Infrastructure Connectivity Project (TICP).

4.1 The Legal, Regulatory and Policy Framework

4.1.1 Constitution of Lesotho

Section 36 of Lesotho's Constitution related to conservation and management. It states that; *“Lesotho shall adopt policies designed to protect the natural and cultural environment of Lesotho for the benefit of both present and future generations and shall endeavor to assure all citizens a sound and safe environment adequate for their health and well-being.*

4.1.2 Environment Management Act 2008

The 2008 Environment Act is aimed at providing for the protection and management of the environment and the conservation and sustainable use of the resources of Lesotho. Another objective of the Act is to introduce the phenomenon of an EIA and audits and the monitoring of projects. This Act makes an EIA a requirement for authorization of certain listed projects which are likely to have a significant impact on the environment. The Act further makes provision for procedures to be followed prior to and in the undertaking of an EIA. The Act vests power in the relevant Minister to issue EIA regulations regarding the projects which must be subjected to an EIA while the Director of the Department of Environmental Affairs (DoE) has the power to formulate guidelines concerning the conduct of an ESIA.

Section 4 of the Environment Act provides for right to a clean and healthy environment. This section further permits any person whose right to a clean and healthy environment is threatened, to bring an action to court of the competent jurisdiction against the person whose activity or omission is causing or is likely to violate the aforementioned right. The complainant may seek any of the following remedies.

The Environment Act, 2008 is based on the principle of sustainable management of natural resources, with provisions for corrective action to protect, maintain and enhance the environment using instruments such as environmental and social impacts assessments (ESIAs), audits and monitoring of impacts of development activities. The Act makes provision for environmental quality criteria, standards and guidelines for air, water, effluent, noise vibrations, radiation, solid waste, etc.; and ensures sensitivity to local concerns and needs by providing environmental planning procedures and guidelines for the use of local resources at the local level as well as for community participation.

As in the case of many other environmental authorities, and the World Bank, Lesotho uses a classification system to determine the need for an EIA as a basis for decision making. The legislation requires that for all projects listed in Part A of the first schedule, an Environmental License is applicable and the developer must prepare a document referred to as a ‘**Project Brief**’. The document must be submitted to DoE and the relevant Line Ministry for assessment according to the Act and other relevant regulation, and in order to determine whether an environmental assessment is necessary.

Not all projects and activities that are on the schedule will require a full environmental impact study (EIS). In practice, only a relatively small percentage are likely to do so.

The Project Brief submitted by the developer will set the basis for classifying projects as either projects or activities not requiring a full EIS (in which case they will be authorized to proceed by issuance of an ESIA Licence), or as projects or activities requiring a full EIS. Project that are regarded as Category A always require a full EIS. In cases when the project does not fall within the list in Part A of the schedule, a Project Brief is not required by the DEA and the project can go ahead.

The Part A schedule contains an extensive list of activities among which are (new) main roads and other roads in wooded or mountainous areas. Road rehabilitation and footbridges are not referenced. However, Item 18 lists projects that could potentially affect, among other things, protected natural environments, wilderness areas, nature reserves or national parks, national monuments, national heritage sites, archaeological or paleontological sites, conservation areas, or lake areas. Item 19 lists projects or activities that could affect a range of areas or features which have been specifically demarcated by central or local authority, including streams and river channels and their banks, floodplains and wetlands, indigenous forests, high potential agricultural land, caves, burial sites, immovable property and landscapes, biotic assemblages and communities, habitats of Red Data species, aquifers and aquifer recharge areas, areas with a high natural water table, damaged land, unstable soil, natural resource areas, geologically and geotechnical unstable areas, areas of outstanding natural beauty, scenic drives and panoramic views, areas of special scientific interest, areas of religious or spiritual significance, areas or sites of special social, cultural or historical interest, bird migration areas.

TICP sub projects include road and bridges construction and rehabilitation which are listed as projects in schedule A and hence will require preparation of Project Brief and ESIA.

4.2 Environmental and Social Impact Assessment Steps/Process in Lesotho to be followed in TIC sub projects

There are several steps which an applicant or developer must follow in undertaking an ESIA process in Lesotho. The steps are discussed as they appear in the Guidelines, but with reference to the Act and the Regulations.

4.2.1 Screening

The developer must first make a determination whether the proposed activity or project requires an EIA license. Section 19 of 2008 Environment Act provides that an ESIA or project brief shall be undertaken for the activities listed in Part A of the First Schedule.

The Act further provides that the relevant Minister may prescribe the category of projects which may require a project brief only and those that may require a full ESIA. Therefore, the developer must first consider Part A of the First Schedule to determine if the proposed activity is listed as an activity requiring the license. In the event that the activity is listed in the First Schedule, the scoping process will then follow.

4.2.2 Scoping and preparation of terms of reference

The developer in person or through the consultant is advised to consult with the DoE and the relevant Line Ministries which are likely to be affected by the proposed project or activity for the information and comments. The discussions with the relevant authorities are informal and the discussion includes, amongst others, identifying relevant policy, legal or administrative issues.

When the proposed project or activity is listed in Part A of the First Schedule in 2008 Environment Act, the developer must prepare a project brief. The project brief must be submitted to the DoE and the identified Line Ministries.

A developer must seek the assistance of a professional ESIA consultant who has been approved by the DoE. The requirements for one to qualify as the consultant are set by the DoE in the Guiding principles on minimum requirements for ESIA lead consultants and consultants for undertaking environmental impacts studies in Lesotho.

4.2.3 EIA report and the ESMP

The developer must undertake an ESIA and prepare the EIS, otherwise known as ESIA report in other jurisdictions and it must include ESMP. The ESMP describes how the proposed activity will be implemented and the controls over the implementation, how the mitigation measures will be carried out, and matters of rehabilitation of the environment at the decommissioning or termination of the activity. The developer shall submit the EIS to the Director and the relevant Line Ministries. The information contained in the EIS must be in line with the information reflected in the ToR. The EIS and the ESMP must be submitted and subjected to review.

4.2.4 Review of the EIA report

The developer must submit copies which shall contain all relevant annexes, maps or photos. The Director shall then issue a notice of acknowledgment of the receipt of the EIS. The Regulations provides that a Line Ministry must comment on the EIS and transmit them to the Director. The Director should ensure that the developer invites all I&APs including the affected community to comment on the project brief or an EIS if it has been required. The documents must be placed at the places determined by the Minister. When the Director has received comments from the general public, he must invite the comments from persons who are specifically affected by the project within the prescribed period. The Director then considers the EIS and the comments received, and

make a determination whether a public hearing should be held.

Similar as in the case of the project brief, the Director may hold a public hearing if he deems it necessary or if the developer decides to hold public meeting. The developer must inform the DoE of the hearing and how the I&APs have been invited and invite the DoE to such public hearing.

The developer must appoint a facilitator who will conduct the public hearing and compile the reports which have to be submitted to the Director. The Director considers the outcome of the hearing and implement or review the opinion the public. The developer bears the cost of the public hearing. The Director must consider an EIS report and all the comments made therein and decide with the relevant Line Ministry whether the report provides adequate information to make a decision. In the event that the Director is of the view that the report does not contain sufficient information, he may request more information. In the event that the Director is satisfied with the EIS submitted, he will then make a decision.

4.2.5 Decision-making

When the Director has reviewed the reports and all comments made, the Director may approve the project or activity in consultation with the relevant Line Ministry or may direct that the developer make some changes to the project. The Director may also reject the project if he is of the view that it may have significant impact on the environment. If the Director is satisfied that the proposed project or activity will not result into significant impact on the environment, he may approve the project or activity and thereafter issue an ESIA license.

The decision of the Director must be communicated to the developer. The Director shall issue a record of decision which shall include a copy of the ESIA license. The license may contain certain terms and conditions which will promote sound environmental management practices and will include a period of validity.

The legislation does not impose on either DoE or the developer a duty to inform the I&APs and the public that made comments of the decision. Once the EIS is approved or rejected, an opportunity for appeal is given to any person who may be affected by such a decision.

4.2.6 Appeal

Any person who has been adversely affected by the decision of the Director may request in writing within 30 days of being informed of the decision that the Director reconsiders his decision and such request shall set forth the reasons for such request. The said appeal is directed to the Director despite the fact that the Director is the *functus officio*.

The Director must within 30 days of receipt of the request, issue a record of decision affirming, modifying or reversing its earlier decision. The option of appeal is open to both the developer and the I&APs. This step is a prerequisite before an aggrieved party may proceed to ***Environmental Tribunal or to High Court***.

4.2.7 Implementation and follow up

When the environmental license has been issued, there must be implementation and follow up. The mitigation measures identified in the ESMP must be implemented and there must be a follow up. The follow up process is constituted of monitoring and auditing. The Director has a duty to monitor the operations of the project or activity in order to determine its immediate and long-term impacts on the environment. The Director may request the developer to take remedial measures in such a manner that the Director may determine. The Director is entrusted with the responsibility of carrying out periodic environmental audits of projects that may cause adverse impacts on the environment.

The Regulations mandates the developer to also undertake monitoring on a continuous basis. Where the developer has undertaken the monitoring, he has to submit the report to the Director. The Director must institute remedial action in the event of non-compliance to the conditions of the license.

As regards auditing, the developer shall undertake environmental audits in the manner and within the periods and such intervals prescribed in the ESMP. The Director may request that the holder of the ESIA license, developer for whom an ESIA has been made for or any person who holds rights in the land on which the activity is being run, to keep and submit all reports to the Director. The report must indicate the extent to which the project or activity complies with the terms and conditions attached to the environmental license.

The developer or any person who has a legal right in the land used for the project shall ensure that he takes reasonable measures to mitigate adverse impacts that were not anticipated in the EIS. The developer must also take all measures to ensure the implementation of the ESMP by conducting self-audits and preparing environmental audit reports. The developer must prepare an environmental audit report which shall be submitted to the Director.

Having studied the environmental audit report, the Director may direct that the developer put in place mitigation measures he deems necessary. The Director may also undertake environmental auditing himself by confirming that the EMP is being adhered to and by verifying the adequacy of EMP to mitigate the adverse environmental impacts. The legislation is silent on whether the environmental audit report is open for review by I&APs or not. Further, the legislation does not provide auditing by the enterprise of an independent environmental auditor.

4.2.8 Mitigation

The Director may, after studying the audit report request the developer to take certain measures to ensure compliance with the environmental license or the ESMP. Upon failure to implement such measures, the environmental inspector may issue an environmental restoration order and may institute criminal and civil proceedings. Lesotho ESIA legislation is silent on what may be done in relation to the activities that commenced without environmental license save to declare such conduct as illegal. However, it can safely be inferred that such activities may be discontinued, be subjected

to environmental audit or environmental monitoring in terms of section 4(3) of the 2008 Environment Act. The Lesotho ESIA procedures as provided for in the legislation is summarized in the figure below.



Figure 5: ESIA Process in Lesotho

4.3 Other Relevant Legal Statutes

Table 6. Other Relevant Statutes

| Name of Legal Instrument | Objective of the Legal Instrument | Relevance to TPIC |
|---|--|---|
| Historical Monuments, Relics, Fauna and Flora Act, 1967 | A law relating to the preservation and protection of historical monuments/relics, flora and fauna in Lesotho. | <p>Relevance to the project with respect to activities of TICP in areas with archaeological significance (Cultural Heritage).</p> <p>TICP will ensure that proposed project ensure that preservation and protection of historical monuments/relics, flora and fauna is assured through ESIA study reports and Chance Find Procedure Plans</p> |
| Chieftainship Act, 1968 | A law providing for duties (to promote the welfare and interests and maintain public safety and order in the area of jurisdiction) of the office of chief, and associated administrative issues, including land and rangelands allocation. | TICP activities will have to adhere to this Act including contractors and workers and ensure that public safety is assured during implementation. |
| The Public Health Order, 1970 | A law that makes provision for the surveillance, prevention, and control of communicable diseases; establishment of sanitary conditions; and maintenance of food and water safety. | Construction activities under TICP could lead to public health impacts and compliance to this Act will be required by contractors. |
| Local Government Act, 1997 | A framework law setting out the statuses, powers, and duties of local councils in Lesotho | TICP sub projects will be implemented in line with the Local Government statutes and with Local Councils in areas of jurisdiction. |
| Water Resources Act, 1978 | A law that provides for the control, protection and conservation of water resources, specifying water uses, water administration and pollution control. | Construction activities will be expected to abide by this Act and obtain necessary permits related to water use. |
| Town and Country | This law provides for the orderly development of urban and rural land by | TICP sub projects will be implemented in line with |

| Name of Legal Instrument | Objective of the Legal Instrument | Relevance to TPIC |
|---|---|---|
| Planning Act, 1980 | promoting efficiency and economy, and improving amenities. | the Town and Country Planning Act by seeking approval of the construction plans. |
| Forest Regulations 1980 | Regulations that control deforestation, grazing, squatting and constructing buildings on forest lands. | TICP will adhere to this regulation by avoiding construction activities in forest land |
| Road Traffic Act 1981 | An act specifying, amongst others, procedures for the licensing of drivers and vehicles, rules for the utilization of roads, the use of non-motorable transport on public roads and the control of motor vehicle noise | Contractors and supervising engineers will abide by this Act with respect to workers and equipment. |
| Lesotho Highlands Development Authority Order, 1986 | A law creating the Lesotho Highlands Development Authority (LHDA) and defining functions and a wide range of powers, including environmental management, of this authority over the same region. | TICP sub projects that will fall into the LHDA regions will be implemented in accordance with the orders of the LHDA. |
| Forestry Act, 1998 | A law that repeals the Forest Act 1978 and provides for the sustained management of forests and forest reserves and the regulation and control of the utilisation of forestry products. | TICP will adhere to this regulation by avoiding construction activities in forest land |
| Environment Act 2008 | A comprehensive legislation to address a host of issues such as the institutional framework, environmental planning; environmental impact assessments, audits and monitoring; environmental quality standards; pollution control; environmental management (conservation and protection) and environmental restoration. | TICP activities will have to adhere to this Act in implementation of sub projects. |
| Water Act 2008 | A law that provides for the management, protection, conservation, development and sustainable utilization of water resources in Lesotho | Construction activities will be expected to abide by this Act and obtain necessary permits related to water use especially in camps and for construction. |
| Labour Code 2006 | The code provides for the safety, health and welfare of men and women at work or of those who may be affected by work | Contractors will abide by the labour code and implement the occupational |

| Name of Legal Instrument | Objective of the Legal Instrument | Relevance to TPIC |
|--|---|--|
| | activities. | health and safety requirements for workers |
| HIV/AIDS Prevention (Labour Code) 2006 | The amendment of the Labour Code in 2006 includes HIV/AIDS Prevention | Contractors will be required to alongside with their employees or their organizations, design and implement education programs aimed at HIV/AIDS prevention in workplace |
| Sexual Offenses Act 2003 | Provides for actions related to committing of sexual offenses | The TICP will ensure that contractors and staff abide to this Act and ensure that workers are aware, educated and sensitised on the consequences of committing sexual offenses |
| Child Protection and Welfare Act 2011 | Provides for protection of the rights and welfare of children. | TICP sub projects will adhere to this Act specifically with respect to employment by ensuring that contractors do not engage in any form of child labor. |

4.4 Relevant Institutions-Environmental and Social

4.4.1 Department of Environmental Affairs

The Department of Environment (DOE) of Ministry of Environment, Tourism and Culture (MOETC) is the custodian of environmental policy in Lesotho, with the mandate to implement the Environment Act 2008. It is also the focal point for the implementation of international environmental conventions and treaties. DOE is a young institution whose institutional framework is still at a formative stage, and which is currently heavily incapacitated to fulfil its legal mandate by human and other resource constraints. According to the Environment Act 2008, the Department has the following mandate:

- To propose and implement policies on environmental protection and management;
- To initiate legislative proposals, standards and guidelines on the environment;
- To ensure the integration of environmental concerns in national planning by coordinating, monitoring, directing and supervising environmental activities in all sectors;
- To identify projects, activities, policies and programmes for which environmental impact assessments must be conducted;

- To review and approve environmental impact assessments and environmental impact statements submitted in accordance with the Environment Act 2008;
- To undertake research, compile and disseminate information, promote public awareness, investigate reported cases, declare environmental emergencies and render advice and technical support to line ministries on the environment and natural resource management; and
- To promote and implement co-operation agreements with other countries and with international bodies that are concerned with the protection of the environment.

Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs) for Category A and B project require approvals by the Department of Environment in the Ministry of Environment, Tourism and Culture; assessments of the projects' socio-economic worth is determined by appraisals of the Public Sector Investment Committee (PSIC) in the Ministry of Development Planning (MDP) and the budget implications need analyses and approvals by the Budget Office in the Ministry of Finance (MOF).

4.4.2 Roads Directorate

Established by the Roads Directorate Act No 16 of 2010, the Roads Directorate is primarily responsible for the construction, upgrading, rehabilitation and maintenance of primary, secondary, tertiary and other roads and footbridges throughout Lesotho. On its website, the Roads Directorate states its vision as "To make all parts of Lesotho accessible through safe and sustainable road infrastructure" and its mission as the "Provision of an efficient, user-focused, well managed road infrastructure network that is safe, suitable, reliable, accessible and in harmony with the environment (www.rd.org.ls).

In its mission statement, the RD emphasizes that it will ensure the mitigation of negative environmental and social impacts from road construction, and rehabilitate affected areas in accordance with environmental guidelines. To this end, when the RD formulated its structure, a Safety and Environment Unit (SEU) was created as one of the 6 sections of the Network Planning Division, the latter being one of the 5 divisions of the RD, with a mandate that includes the preparation of project briefs, appraisal of new projects, negotiations with potential financiers, requesting for proposals for consultancy services, evaluation of proposals, carrying out topographic surveys of roads and bridges, design of roads and bridge structures for construction, upgrading and rehabilitation of roads and bridges and tender documentation.

The Division is also responsible for the supervision of environmental management and monitoring, road safety, road transport statistical data collection and processing and social and resettlement/compensation activities amongst project affected communities.

4.4.3 The Ministry of Development Planning

The Ministry of Development Planning (MDP) has authority to sanction the development programme of Lesotho. The latter is a consolidation of development programmes of individual line ministries and, due to the inherent limitation of resources, MDP's main duties are to rank development proposals in accordance with a set of socio-economic criteria, to recommend funding for priority proposals either to the Ministry of Finance

(MOF) or to potential donors, to coordinate donor assistance and to monitor the implementation of the development programme. To effectively achieve its objectives, MDP is decentralised to line ministries in the form of planning units. The key involvement of the MDP in the TIC is the project approval cycle, a process that is spearheaded by the Department of Project Cycle Management (DPCM) in the MDP.

DPCM works closely with line ministries to ensure that any development proposal in the country is closely scrutinized for consistency with the country's development objectives, and those proposals found to have the greatest contribution to these objectives are given higher funding priority. This process involves assessing both positive and negative impacts and, where possible, quantifying these to enable the ranking process. Part of the information used in these socio-economic assessments is generated by the EIA process, which has recently been broadened to incorporate the human environment. The TIC Project will therefore have to subject to the DPCM, through the PU of the MoPWT, all its development proposals for appraisal and approval.

4.4.4 The Ministry of Local Government and Chieftainship

Cooperation with the Ministry of Local Government and Chieftainship (MOLGC) is critical for the successful planning and implementation of TIC Project activities. This ministry runs a Department of Engineering and Infrastructure (DEI) that is manned by 2 civil engineers, 1 mechanical engineer, 20 civil engineering technicians and 20 mechanical technicians (2 per district each). Although facing capacity limitations, DEI has built paved roads in urban areas, rural roads, small bridges and footbridges. The institution is supposed to follow RD standards of road and footbridge construction although this is not always the case, particularly where there is intense pressure from elected councillors to construct roads at short notice.

The Decentralization Policy of 2014 advocates for the decentralization of service delivery to lower tiers in order to improve citizen participation in the local development process. Although transport infrastructure provision remains largely a central government and district council competency, local councils are responsible for minor roads and bridle paths. However, these councils initiate and rank development initiatives in their own areas, including roads and footbridges. The prioritized activities are then submitted to central government institutions as needs that require further assessment before they are included in the national development programme. It will therefore be critical for TIC Project staff to coordinate their activities with traditional and local government authorities in order to enhance sustainability.

Currently, there is greater decentralization in the area of environmental protection and sanitation, with local councils expected to play increasing roles in the maintenance of rural water systems and control of local natural resources such as land, sand and stone. They are also expected to actively participate in the protection of the environment through tree planting, donga rehabilitation and by controlling overgrazing and pollution of water resources. In implementing TIC Project activities, particularly ESMF activities, local councils will be the first-point-of-call at the local level. These councils work closely with traditional authorities, with chiefs being included in the local councils as ex-officio members, a relationship that is not always cordial. After they have been mobilized for

participation by their parent ministry (Ministry of Local Government and Chieftenship), these councils and chiefs will assist the TIC Project with citizen participation through forums such as public gatherings (pitsos). They will also assist with land allocation for camp sites as well as with conflict resolutions.

5 DESCRIPTION OF WORLD BANK ENVIRONMENTAL & SOCIAL SAFEGUARDS POLICIES AND TRIGGERS

Table 7 below shows the Banks safeguards policies in general and **Table 8** highlights the specific safeguards that are triggered as a result of the proposed TICP sub project investments.

Table 7: Summary of World Bank's Safeguards Policies objectives including when they are triggered

| Policy | Objective | Trigger for the Policy |
|-------------------------------------|---|--|
| OP/BP 4.01 Environmental Assessment | The objective of this policy is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts on its area of influence. OP 4.01 covers impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and transboundary and global environment concerns. | Depending on the project, and nature of impacts a range of instruments can be used: EIA, environmental audit, hazard or risk assessment and environmental management plan (EMP). When a project is likely to have sectoral or regional impacts, sectoral or regional EA is required. The Borrower is responsible for carrying out the ESIA. |
| OP/BP 4.04 Natural Habitats | <p>This policy recognizes that the conservation of natural habitats is essential to safeguard their unique biodiversity and to maintain environmental services and products for human society and for long-term sustainable development. The Bank therefore supports the protection, management, and restoration of natural habitats in its project financing, as well as policy dialogue and economic and sector work. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. Natural habitats are land and water areas where most of the original native plant and animal species are still present. Natural habitats comprise many types of terrestrial, freshwater, coastal, and marine ecosystems. They include areas lightly modified by human activities, but retaining their ecological functions and most native species.</p> <p>This bank policy prohibits financing for developments that would significantly convert or degrade critical natural habitats, and preference is on siting projects on already converted land.</p> | This policy is triggered by any project (including any sub-project under a sector investment or financial intermediary) with the potential to cause significant conversion (loss) or degradation of natural habitats, whether directly (through construction) or indirectly (through human activities induced by the project). |
| OP/BP 4.36 Forests | The objective of this policy is to assist borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development and protect the vital local and global environmental services and values of forests. Where forest restoration and plantation development are necessary to meet these objectives, the Bank assists borrowers with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality. The Bank assists borrowers with the | This policy is triggered whenever any Bank-financed investment project (i) has the potential to have impacts on the health and quality of forests or the rights and welfare of people and their level of dependence upon or interaction with forests; or (ii) aims to bring about changes in the management, protection or utilization of natural forests or |

| Policy | Objective | Trigger for the Policy |
|--|---|---|
| | establishment of environmentally appropriate, socially beneficial and economically viable forest plantations to help meet growing demands for forest goods and services. | plantations. |
| OP 4.09 Pest Management | <p>The objective of this policy is to (i) promote the use of biological or environmental control and reduce reliance on synthetic chemical pesticides; and (ii) strengthen the capacity of the country's regulatory framework and institutions to promote and support safe, effective and environmentally sound pest management. More specifically, the policy aims to (a) Ascertain that pest management activities in Bank-financed operations are based on integrated approaches and seek to reduce reliance on synthetic chemical pesticides (Integrated Pest Management (IPM) in agricultural projects and Integrated Vector Management (IVM) in public health projects. (b) Ensure that health and environmental hazards associated with pest management, especially the use of pesticides are minimized and can be properly managed by the user. (c) As necessary, support policy reform and institutional capacity development to (i) enhance implementation of IPM-based pest management and (ii) regulate and monitor the distribution and use of pesticides.</p> <p>Pesticides in WHO Classes IA and IB may not be procured for Bank supported projects.</p> | The policy is triggered if : (i) procurement of pesticides or pesticide application equipment is envisaged (either directly through the project, or indirectly through on-lending, co-financing, or government counterpart funding); (ii) the project may affect pest management in a way that harm could be done, even though the project is not envisaged to procure pesticides. This includes projects that may (i) lead to substantially increased pesticide use and subsequent increase in health and environmental risk; (ii) maintain or expand present pest management practices that are unsustainable, not based on an IPM approach, and/or pose significant health or environmental risks. |
| OP/BP 4.11 Physical Cultural Resources | The objective of this policy is to assist countries to avoid or mitigate adverse impacts of development projects on physical cultural resources. For purposes of this policy, "physical cultural resources" are defined as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above ground, underground, or underwater. The cultural interest may be at the local, provincial or national level, or within the international community. | This policy applies to all projects requiring a Category A or B Environmental Assessment under OP 4.01, project located in, or in the vicinity of, recognized cultural heritage sites, and projects designed to support the management or conservation of physical cultural resources. |
| OP/BP 4.10 Indigenous Peoples | <p>The objective of this policy is to (i) ensure that the development process fosters full respect for the dignity, human rights, and cultural uniqueness of indigenous peoples; (ii) ensure that adverse effects during the development process are avoided, or if not feasible, ensure that these are minimized, mitigated or compensated; and (iii) ensure that indigenous peoples receive culturally appropriate and gender and inter-generationally inclusive social and economic benefits.</p> <p>The policy requires free, prior and informed consultation with indigenous peoples.</p> | The policy is triggered when the project affects the indigenous peoples (with characteristics described in OP 4.10 para 4) in the project area. |
| OP/BP 4.12 Involuntary Resettlement | The objective of this policy is to (i) avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; (ii) assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; (iii) encourage community participation in planning and implementing resettlement; and (iv) provide assistance to affected | This policy covers not only physical relocation, but any loss of land or other assets resulting in: (i) relocation or loss of shelter; (ii) loss of assets or access to assets; (iii) loss of income sources or means of livelihood, whether or not the affected people must move to |

| Policy | Objective | Trigger for the Policy |
|---|--|---|
| | people regardless of the legality of land tenure. | another location. This policy also applies to the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons. |
| OP/BP 4.37 Safety of Dams | The objectives of this policy are as follows: For new dams, to ensure that experienced and competent professionals design and supervise construction; the borrower adopts and implements dam safety measures for the dam and associated works. For existing dams, to ensure that any dam that can influence the performance of the project is identified, a dam safety assessment is carried out, and necessary additional dam safety measures and remedial work are implemented. | This policy is triggered when the Bank finances: (i) a project involving construction of a large dam (15 m or higher) or a high hazard dam; and (ii) a project which is dependent on an existing dam. For small dams, generic dam safety measures designed by qualified engineers are usually adequate. Dams with $\geq 15\text{m}$ in height review by an independent dam safety panel is required. |
| OP 7.50 Projects in International Waters | The objective of this policy is to ensure that Bank-financed projects affecting international waterways would not affect: (i) relations between the Bank and its borrowers and between states (whether members of the Bank or not); and (ii) the efficient utilization and protection of international waterways. The policy applies to the following types of projects: (a) Hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial and similar projects that involve the use or potential pollution of international waterways; and (b) Detailed design and engineering studies of projects under (a) above, include those carried out by the Bank as executing agency or in any other capacity. | This policy is triggered if (a) any river, canal, lake or similar body of water that forms a boundary between, or any river or body of surface water that flows through two or more states, whether Bank members or not; (b) any tributary or other body of surface water that is a component of any waterway described under (a); and (c) any bay, gulf strait, or channel bounded by two or more states, or if within one state recognized as a necessary channel of communication between the open sea and other states, and any river flowing into such waters. |
| OP 7.60 Projects in Disputed Areas | The objective of this policy is to ensure that projects in disputed areas are dealt with at the earliest possible stage: (a) so as not to affect relations between the Bank and its member countries; (b) so as not to affect relations between the borrower and neighboring countries; and (c) so as not to prejudice the position of either the Bank or the countries concerned. | This policy is triggered if the proposed project will be in a "disputed area". Questions to be answered include: Is the borrower involved in any disputes over an area with any of its neighbors. Is the project situated in a disputed area? Could any component financed or likely to be financed as part of the project be situated in a disputed area? |
| The WB Group Environment, Health and Safety Guidelines. | The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors. The guidelines include; - <u>Environment</u> <ul style="list-style-type: none"> • Air Emissions and Ambient Air Quality • Energy Conservation • Wastewater and Ambient Water Quality • Water Conservation • Hazardous Materials Management | These guidelines will be followed during the preparation of mitigation measures. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, a full and detailed justification for any |

| Policy | Objective | Trigger for the Policy |
|--------|--|--|
| | <ul style="list-style-type: none"> Waste Management Noise Contaminated Land <u>Occupational Health and Safety Guidelines</u> <u>Community Health and Safety</u> <u>Construction and Decommissioning</u> | proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment. |

5.1 World Bank's Safeguards Likely to be Triggered by TICP

The TICP is a countrywide program and expected to have project investments in the entire country for as long as the selected sites are feasible in terms of water development. However, the likely or potential locations of many of the proposed investments are unknown at this point in time). The safeguards instruments prepared for any sub project investment will address the requirements of any applicable policies.

Table 8: Safeguard policies likely to be triggered under TICP

| Safeguard Policies Triggered by TICP | Yes | Reasons For Triggers | No |
|---|-----|---|----|
| Environmental Assessment (OP/BP 4.01) | X | The Project activities—rehabilitation and maintenance of secondary roads and the construction of footbridges—will generate construction related environmental and social risks that are site-specific (within the existing alignment), reversible, and can be mitigated by known measures. Overall, the project will generate long term social and environmental impacts. The project is, therefore, classified as an Environmental Risk Category B. | |
| Natural Habitats (OP/BP 4.04) | X | <p>The ESMF provides guidance on screening and mitigation measures to ensure that road rehabilitation and maintenance does not alter or cause destruction of any critical or sensitive natural habitats especially wetlands.</p> <p>The preliminary baseline assessment carried out during the preparation of the project, confirmed that the existing wetlands in Lesotho occupy a relatively small footprint and are not classified as critical or sensitive ecosystems.</p> <p>The Lesotho Roads Directorate confirmed that engineering methods such as the use of gabions, etc. are normally applied by contractors to mitigate against destruction of wetlands during construction of roads and ensure</p> | |

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|--|---|---|---|
| | | the effective functioning of the hydrological system. The environmental risk for OP 4.04 is therefore minimal and should there be a chance of encountering a wetland during the construction of roads and footbridges, the risk is manageable through the application of known mitigation measures included in the ESMF. | |
| Pest Management (OP 4.09) | | The project will not involve procurement of pesticides or fertilizers and does not have the potential to lead to increased use of pesticides or fertilizers. Therefore, OP 4.09 is not triggered. | X |
| Physical Cultural Resources (OP/BP 4.11) | X | <p>Investments may involve excavation activities which can lead to impacts on physical and cultural resources. The project will screen for PCRs and chance finds, and will include in the ESIA's appropriate plans and measures will be put in place during the preparation and implementation of ESIA's so as to protect PCRs.</p> <p>The EAs that will be prepared for such projects will include a physical cultural resources management plan that includes (a) measures to avoid or mitigate adverse impacts on physical cultural resources; (b) provisions for managing chance finds; (c) any necessary measures for strengthening institutional capacity for the management of PCR; and (d) a monitoring system to track progress of these activities.</p> | |
| Involuntary Resettlement (OP/BP 4.12) | X | <p>Component 1 will improve infrastructure access through i) improvement and maintenance of secondary gravel roads and ii) construction of footbridges. A RAP has been prepared to provide procedures for assessing impact, as the project location has yet to be confirmed.</p> <p>The civil works associated with rehabilitation and maintenance is on roads. The work may induce limited land acquisition in the form of strips of land along the right of way, which will include rock outcrops, trees and farmland. No physical displacement of households is expected. A RAP or if required, will be prepared during implementation by the OPRC co-financing agency responsible for design/build, once the locations of sites are known and the detailed design is completed.</p> <p>Footbridges will likely be constructed</p> | |

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|--|--|---|---|
| | | existing river crossing points where already allocated to public, non-pr use. The footbridges as constructed standard design and have a limited f wherefore the associated works is un require RAP/ARAPs. | |
| Indigenous Peoples (OP/BP 4.10) | | OP 4.10 is not triggered, as there are no indigenous people within the project area of influence. | X |
| Forests (OP/BP 4.36) | | The project will not support civil works located within forested areas or plantations as defined under OP 4.36. Therefore, the policy is not triggered. | X |
| Safety of Dams (OP/BP 4.37) | | Project will not involve construction of dams | X |
| Projects in Disputed Areas (OP/BP 7.60)* | | The project will not finance any activities located in any known areas under territorial dispute as defined in OP 7.60. Therefore, the policy is not triggered. | X |
| Projects on International Waterways (OP/BP 7.50) | | The project is not expected to affect international waterways. | X |

5.1.1 Environmental Assessment (OP4.01)

This policy requires Environmental Assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally and socially sound and sustainable, and thus to improve decision-making. The EA is a process whose breadth, depth, and type of analysis will depend on the nature, scale, and potential environmental impact of the proposed investments under the TICP. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and transboundary and global environmental aspects.

The adverse environmental and social impacts under TICP will come from the proposed investments and associated activities. However, since the exact location of these investments will not be identified before bank appraisal of the project, the Banks' EA policy calls for the GOL to prepare an Environmental and Social Management Framework (ESMF), and Resettlement Policy Framework (RPF) in accordance with its' procedures.

OP4.01 is triggered because the TICP will finance civil works projects including the rehabilitation and refurbishment of existing infrastructure, as well as the construction of new water related infrastructure. This ESMF (also, the separately prepared RPF) establishes a mechanism to determine and assess future potential environmental and social impacts during implementation of TICP activities, and sets out mitigation, monitoring and institutional measures to be taken during operations of these activities, to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

In regard to disclosure of the ESMF report, World Bank requires that the report be disclosed as a separate document as a condition for Bank appraisal. This report will be disclosed to the general public to meet this requirement as well as external website of the World Bank and the date of disclosure will precede the date for appraisal of the program. The World Bank system assigns a project to one of three project categories, as defined below:

The extent and type of environmental and social assessment required by the World Bank is a function of the project's environmental impact and hence, its environmental screening category. The World Bank undertakes environmental and social screening of each proposed subproject to determine the appropriate extent and type of environmental and social assessment. The World Bank classifies projects into one of three categories (A, B and C), depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

Table 9. World Bank EA Screening Categories (No Category A Projects Apply)

| | |
|-------------------------|---|
| Category “A” | An EIA is always required for projects that are in this category. Impacts are expected to be ‘adverse, sensitive, irreversible and diverse with attributes such as pollutant discharges large enough to cause degradation of air, water, or soil; large-scale physical disturbance of the site or surroundings; extraction, consumption or conversion of substantial amounts of forests and other natural resources; measurable modification of hydrological cycles; use of hazardous materials in more than incidental quantities; and involuntary displacement of people and other significant social disturbances. |
| Category B | When the subproject’s 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 subprojects. Impacts are site – specific; few, if any, of the impacts are irreversible; and in most cases, mitigation measures can be designed more readily than for Category A subprojects. The scope of environmental assessment for a Category B subproject may vary from sub-project to sub-project, but it is narrower than that of a Category A sub-project. It examines the subproject’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. |
| Category C | If the subproject is likely to have minimal or no adverse environmental impacts. Beyond screening, no further environmental assessment action is required for a Category C sub-project. |

The TICP is rated as Category B. All projects in this TICP will be subjected to mandatory screening to determine whether they require further environmental analysis or otherwise.

5.1.2 Involuntary Resettlement (OP 4.12)

The objective of this policy to avoid where feasible, or minimize, exploring all viable alternative project designs, to avoid resettlement. This policy is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts.

This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by (a) the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets, or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another

location; or (b) the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to project appraisal of proposed projects. The main objective of this policy is to (i) avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; and (ii) assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; and (iv) provide assistance to affected people regardless of the legality of land tenure.

The policy requires the displaced persons and their communities, and any host communities receiving them, are provided timely and relevant information, consulted on resettlement options, and offered opportunities to participate in planning, implementing, and monitoring resettlement; and appropriate and accessible grievance mechanisms are established for these groups. In new resettlement sites or host communities, infrastructure and public services are provided as necessary to improve, restore, or maintain accessibility and levels of service for the displaced persons and host communities.

A Resettlement Policy Framework (RPF) has been prepared that establishes standards and procedures for the preparation of Resettlement Action Plans (RAPs), as required. The RAPs would be prepared by consultants recruited by the TICP/PIT.

5.2 Alignment of WB and GoL Policies relevant to this ESMF

Both the World Bank safeguards policies and GOL laws are generally aligned in principle and objective with no notable difference:

Table 10. Comparison between World Bank and GoL ESIA Procedures

| ESIA/ESMP Requirements | World Bank | Government of Lesotho |
|--------------------------------|--|--|
| Screening | Require Screening and basis of screening is impact based | Require Screening and basis of screening is based on Project Type or Activity as outlined in section 27(1) of Environmental Act 2008. |
| Scoping and Terms of Reference | Require Terms of Reference | Require Terms of Reference (statutory requirement) |
| Use of Experts | Require use of qualified ESIA experts | Require use of qualified ESIA experts (statutory requirement) |
| Stakeholder Consultation | Require stakeholder consultation | Require stakeholder consultation (statutory requirement) |
| Disclosure | Require disclosure | Require disclosure (statutory requirement) |
| Grievance Redress | Provide for Grievance Redress Mechanism | Provide for Grievance Redress Mechanism (statutory requirement) |
| Annual Audit | Provide for periodic (bi annual) supervision and audit | Provide for annual supervision and audit (statutory requirement) |

5.3 Requirements for Public Disclosure

Prior to appraisal of the TICP, this ESMF will be disclosed in country through posting on RD's and MOPWT's website www.rd.org.ls www.gov.ls/mopwt as well as in the Bank's external website. If there are any changes, a final version will be disclosed in the same manner and places described later.

6 DETERMINATION OF POTENTIAL ENVIRONMENT AND SOCIAL IMPACTS

This chapter analyses the typical and likely potential positive (beneficial) and negative (adverse) environmental and social consequences of the proposed road and bridges construction, rehabilitation, operation and maintenance under the Transport Integrated Connectivity Project (TICP).

6.1 Positive Impacts

6.1.1 *Local employment, skills development and other economic benefits*

The use of labour based methods of construction is specifically designed to transfer as much of the benefit of construction to local people as possible. The following economic benefits of labour based road construction will be realized as a result of TICP namely: -

- Creates employment for people in local communities
- Provides job opportunities to women and youth. This improves social security protection to vulnerable groups
- Increases job opportunities and cash income which may reduce the risk of civil unrest
- Creates and supports local entrepreneurs, especially small, medium and micro enterprises
- Promotes local economic development and livelihoods especially in rural and low-income urban areas where economic activities are limited
- Provides skills transfer to workers (essential for routine road maintenance by labour)
- Instils a higher sense of ownership of infrastructure in local communities
- Requires fewer skilled operators
- Optimizes the use of local resources
- Provides projects that are less dependent on foreign exchange
- Supports construction of technically sound and economically efficient infrastructure
- Provides infrastructure in areas where it is not feasible to use conventional machinery such as in remote and inaccessible mountainous areas

The project is expected to benefit women and men, girls and boys, children and the elderly by improving access to markets, health services, and better access to additional social services (school, administration and police offices).

Direct project beneficiaries are people from communities provided with access to the roads and footbridges rehabilitated under the project, within a 2-kilometer range. Indirect project beneficiaries are the tradable sectors of the economy and the private sector, whose

growth will be supported by the job creation opportunities and market opportunities supported by enhanced connectivity.

The road and footbridge designs and the OPRC contracts will be prepared cognizant of the needs of women and girls, as well as elderly residing in the adjacent neighborhoods and using the road during the construction phase.

A specific attention will be devoted to children's safety in the footbridges design to prevent cases of unintended injuries or fatalities while using the bridge. Limiting road traffic fatalities will likely have a greater impact on men, who tend to bear the heavier burden of fatalities than women. Specific interventions targeting women beneficiaries and respective results indicators are designed and included in the project. Women-targeted interventions will address the main gender-related concerns in transport, such as women's unemployment, GBV and HIV prevention, especially among female population between the ages of 10-24.

6.2 Adverse Environmental Impacts

The Impact assessment conducted below pertains specifically to potential impacts – positive / negative or direct / indirect – which may arise at any phase of the development of the proposed bridges and connecting roads. Two phases have been identified in which significant impacts may arise: -

1. Construction phase
2. Operational phase

A description of the macro and micro impacts which can be expected to arise as a result of construction and operation phase activities associated with the road construction project is presented below. Mitigation measures are presented in the assessment tables below. The Planning and Development phase, as well as the closure phase, have been discarded since no impacts will arise during these phases due to the nature of the project.

Macro Impacts Associated with the Construction Phase

The principal activities which will occur during the construction involve: -

1. Establishment of the construction camp
2. Clearing of vegetation along the alignment
3. Topsoil stripping/filling for cut/fill along the alignment
4. Construction of storm water drainage features
5. Establishment of bridge foundations
6. Placement of the bridge platform
7. Placement and compaction of pavement layers

6.2.1 Biophysical Impacts

Experience of road building in Lesotho and other mountainous countries has shown that road infrastructure can have significant negative direct environmental impact, as a result of habitat loss, the concentration of drainage and erosion, wetland loss, impacts on water quality and aquatic fauna, the loss of threatened terrestrial species of plants and animals,

and the introduction of alien species. Indirect impacts may result from the use of the road, the improved access providing greater accessibility for the removal of protected or threatened plants for sale and for illegal hunting and trapping. For the secondary road packages proposed for the TIC project, these biophysical risks are likely to be minor, in most places, for three main reasons:

- All of the roads already exist and the work that is proposed to rehabilitate and maintain them to the standard required by the Roads Department is not expected to result in significant deviations from the existing road reserves. While the roads are narrow, traffic volumes are extremely low, and the RD does not propose to widen the existing right of way for the purposes of rehabilitation - all of the work can be done from within the existing road formation, with the exception of some areas where slight widening is expected in cases where the road formation is too narrow¹⁶. Hence, the primary impacts associated with road building in these mountain environments have already been experienced and there should be little additional environmental loss caused by their rehabilitation and maintenance. In a number of cases, it is likely that the existing impacts of the road can be reduced, since it will be a function of the project to identify and repair areas where there is evidence of significant erosion or other environmental impacts caused by the roads.
- The construction methodology for rehabilitation and maintenance is to be labour based (with limited exceptions). This low-impact approach involves little heavy machinery, does not require personnel camps and generally minimises the footprint of the teams that work in the project area. The Lesotho RD's secondary road designs are tailored to suit labour based methods and most of the work needed to build, rehabilitate and maintain the road can therefore be done by hand, and with hand operated equipment.

6.2.2 *Impact of Habitat Loss*

The rehabilitation and upgrading are likely to involve very small areas of habitat impact, generally limited to slight widening to improve drainage structures along the road edge and, in places, to widen the road to the RD requirement for secondary roads. Road traffic volumes are very low and bypasses are not considered to be necessary – hence all activity related to the rehabilitation of the road can take place within the existing road right of way.

The magnitude of further habitat loss is likely to be insignificant and where this occurs will be associated with the areas of disturbance along the existing road verges. Where the roads are located in the Maloti Drakensberg Conservation Area, there should be particular attention to limiting increase in road width to the minimum extent possible and avoiding any activity outside of the required working area.

¹⁶ Personal Communication, Mr S Thamae, Manager SEU, Lesotho Roads Department

On rare occasions, the road may be rerouted over short distances, which would involve the loss of further habitat but the RD consider the likelihood of any major changes in route to be small¹⁷.

6.2.3 Impact on Terrestrial Fauna

Lesotho's terrestrial fauna has been heavily impacted by hunting and habitat loss. The threatened species that exist are rarely observed but could, on occasion, be encountered by the road construction teams. Other species that could be harmed by rehabilitation of the roads could also be encountered during construction. Given the small teams of workers who are locally resident and who return daily to their homes, the risks of illegal hunting and trapping is low, unlike the circumstances that may arise with large personnel camps.

| | |
|----------------------------------|--|
| Mitigation for inclusion in ESMP | <ul style="list-style-type: none"> ■ All personnel are to be subject to induction training regarding the protection of natural fauna. Training of the ESA is to include recognition of threatened faunal species. ■ In the event that any threatened species are found that could be harmed by construction, the ECAs must determine the best method of preventing harm to the species. ■ A process of ongoing 'toolbox' talks during construction should be implemented in order to reinforce messages about faunal conservation significance. ■ Monitoring of hunting and trapping by contract personnel must be undertaken by the ECAs. |
|----------------------------------|--|

6.2.4 Impact on Surface Hydrology and Soil Erosion

Concentration of surface drainage is one of the most significant impacts caused by roads in the lowlands, foothills and mountain regions of Lesotho. Water collected in the drains on the upslope side of the road is routed into culverts, which are discharged into the nearest drainage line. This increases the volume of flow, which may result in significant gully formation, eroding out the drains above the road, particularly if they are not stone pitched, and impacting on the drainage lines into which the water is discharged.

Overall it is expected that the road rehabilitation and maintenance could result in positive hydrological impacts, if existing erosion gulleys caused by alterations in the drainage patterns along the roads are repaired; if culverts, fords and bridges are repaired where these have been damaged; and if existing and potential erosion and sedimentation is reduced by upgrading drainage structures and culverts in areas where they are inadequate or in need of repair. Achieving this goal will require highly skilled professional engineers familiar with high altitude road drainage problems. There is a risk, particularly in OPRC contracts in which environmental specifications are expected to be performance based, that drainage control measures will be under-budgeted, and the necessary improvements will not be achieved. The concept design and the Contractor's bids need to

¹⁷ Personal Communication, Mr S Thamae, Manager SEU, Lesotho Roads Department.

be carefully checked by the RD and specialist engineer to ensure that budgeting is appropriate to meet the required specifications.

| | |
|----------------------------------|--|
| Mitigation for inclusion in ESMP | <ul style="list-style-type: none"> ■ All areas of erosion caused by the existing roads are to be identified during the concept design and rehabilitation requirements specified in the ESMP and contract documents for the OPRC contractor. ■ In order to ensure appropriate budgeting for these tasks it must be clear in the documentation in which sections of road these problems occur and the result that is expected. |
|----------------------------------|--|

6.2.5 *Impact on Aquatic Ecosystems*

Rehabilitation of bridges, causeways and drifts may result in some local disruption, particularly if new structures are built to replace or upgrade old ones. If this is the case, particularly if bridge crossing sites are moved, specific mitigation measures will be required in order to manage impacts, which would need to be prepared based on detailed knowledge of the proposed crossing.

There are also places along the roads where the alignment is very close to the river channel, within 30 m and sometimes on the river bank. These sections of route may be impacting on the river hydrology and special measures would need to be considered to manage existing impact and prevent any further drainage-related impacts caused by rehabilitation.

The aquatic biota of the river systems are generally sensitive, and although they would be tolerant of short periods of increased sediment due to construction, high sediment concentrations and hydrocarbon pollution would be a significant risk. This is not expected, particularly under the low impact conditions of labour based construction, but management and monitoring would need to ensure that the risks are minimised. Where road construction is in sections of the route close to rivers, any widening must minimise the deposition of rocks or spoil material down the side slopes and into the river course where it would cause sedimentation and increased turbidity.

| | |
|----------------------------------|---|
| Mitigation for inclusion in ESMP | <ul style="list-style-type: none"> ■ The ESMP is to include standard measures to minimise the impact of road construction in drainage lines, including management of fuel, and prohibition of vehicle and equipment washing in drainage lines. An aquatic ecologist is to review all river crossing sites and the sections of road in very close proximity to river channels. ■ Any necessary special management and monitoring measures for specific sections of route are to be included in the ESMP, based on the review by an engineering specialist. |
|----------------------------------|---|

6.2.6 *Impact on Wetlands*

Roads impact on wetlands through the interruption of subsurface water flows that feed the wetland systems, causing increased run off and flow velocity at culverts, frequently

leading to erosion gulleys down steep slopes and into and through wetlands. Examples of this are seen along the major tarred road in the Highlands as well as the smaller dirt tracks (secondary roads). The location of roads and number and design of culverts is a critical factor determining the ecological sustainability of road development in Lesotho.

While this is acknowledged, the secondary roads that comprise the TIC project already exist, and any direct impacts on wetlands as a result of their routing has already taken place. The importance of any further negative road impacts on this system cannot be overstated. Specific attention will need to be paid to the impact of rehabilitation proposals. There may be an opportunity to remedy impacts caused by the existing road infrastructure, by ensuring that road drainage does not interfere or canalise water flow across the road, which may at present be causing a loss of wetland function.

In the long term, the rehabilitation of the road is expected to promote tourism opportunities in the area, which has great natural beauty and potential for low impact tourism use. However, increased access and tourism also brings risks, particularly to the threatened bird species in the area (the Wattled Crane and Blue Crane), both of which are listed as globally vulnerable on the IUCN red-list, and there is potential for further damage to the wetland system due to poorly planned tourism development. There are also significant ongoing issues associated with the management of overstocking in the wetland.

6.2.7 Impact of Hunting and Harvesting of Medicinal Plants by Construction Teams

These are common problems which can be prevalent particularly in large contracts where construction teams are accommodated in camps away from home. Such issues are much less likely in cases where construction is undertaken by local people who live in the area. Snakes are invariably persecuted, when found, and in the absence of training, construction teams are likely to kill them when encountered.

| | |
|----------------------------------|---|
| Mitigation for inclusion in ESMP | Management requirements are to include induction training to alert workers to the issue and to ensure that there is a general awareness of the prohibition on hunting and harvesting of plants by construction teams, and the actions to take in the event that snakes are encountered. Monitoring will be required to ensure compliance with this requirement. |
|----------------------------------|---|

6.2.8 Impact of Road Kills of Wild Animals due to Construction and Operation

These impacts are generally due to excessive speed. In the present case, there will be few construction vehicles travelling on the roads, which will minimise the risks, but drivers should be trained to ensure that speed limits are complied with and that there is an awareness of the importance of avoiding impacts on wild animals.

| | |
|----------------------------------|--|
| Mitigation for inclusion in ESMP | Design the road sections to avoid whenever possible wildlife migration routes or crossing areas/habitats |
| | Management requirements are to include induction training of drivers. |

| | |
|--|--|
| | The ECAs are to monitor vehicle speeds to ensure compliance with speed limits. |
| | Erect warning signs on areas wildlife crossing areas |
| | Erect speed humps in wildlife crossing areas |

6.2.9 Impact of Land Degradation

This is a general category of impact which covers a range of issues that relate to road construction - spillages of fuel and other materials, rock falls due to road cuttings, compaction of soils, degradation of areas where concrete mixing takes place, poor sanitation arrangements for construction teams and other general impacts that may affect the biophysical environment.

These issues are manageable through appropriate controls set out in the ESMP, although the effectiveness of the measures are strongly dependant on appropriate induction and continuing education of project personnel, and the monitoring of compliance with ESMP requirements during the course of the work.

Overall, road construction should ensure that a minimum footprint is affected, and degraded areas are used for storing rocks, other materials and equipment.

| | |
|----------------------------------|--|
| Mitigation for inclusion in ESMP | Management requirements are to include induction of all personnel, the inclusion of specific control measures in the ESMPs and monitoring of compliance by the ECAs. |
|----------------------------------|--|

6.2.10 Impacts on Bio-trade and Road Kills (Operational Phase)

A direct threat to floral biodiversity includes collection and harvesting of a wide range of flora for food and medicine. Most species are widely distributed but some species such as *Pelargonium spp*; *Eucomis autumnalis* and *Boophane disticha* (assessed as Vulnerable (Talukdar 2002) are probably decreasing in abundance from a combination of harvesting and grazing pressures. Harvesting of spiral aloe (*Aloe polyphylla*) is an overriding concern due to its vulnerable status (Talukdar 2002) and shrinking wild populations.

Experience in Lesotho has shown that transport infrastructure developments have the potential to induce commercial developments along the roads, where bio-trade in endangered and endemic species thrives. This, in turn, encourages further harvesting. Biotrade in fauna follows similar patterns, being encouraged by road development. Harvesting of raptors including vultures for use or sale for their medicinal value and spiritual beliefs is of particular concern.

The higher speeds and increased traffic volumes that follow the rehabilitation of transport infrastructure also create increased risks of road kills affecting natural fauna. Minimisation of risks of increased bio-trade requires integrated work with other ministries.

6.2.11 Borrow Pits and Quarry Sites

Borrow pits and quarry are sites where stone, sand, gravel, till, clay, or other granular soils are extracted for construction and or rehabilitation of roads and bridges under the TICP. The term ‘pit’ is used when granular material is extracted. The term ‘quarry’ is used where consolidated rock is removed. Environmental impacts of pit and quarry development can include the loss, reduction or disturbance to wildlife and habitat, erosion, dust, soil/groundwater contamination, damage to historic resources, waste disposal, noise, and aesthetics.

6.2.12 Visual Intrusion

Unightly earthworks and borrow pits during construction may be a source of visual related impacts especially through scarring of landscapes. During operations, visual intrusion of equipment on site may be seen as a negative impact at the local level.

6.2.13 Decreased Air Quality

Airborne dust will be caused by excavation, vehicle movement hence engine combustion and materials handling, particularly downwind from the construction sites during the construction phase of the identified investments. Uncovered stock piles and asphalt mixing plant operations are another source of dust. Air pollution will be further caused by emissions from vehicles and construction machinery. There will be decreased air quality due to dust, suspended particles, hydrocarbon vapours, oxides of nitrogen and sulphur (NO_x and SO_x) and Volatile Organic Compounds (VOC) among other emissions.

6.2.14 Noise and Vibration Impacts

Construction activities could result in significant noise impacts so as to impact on general well-being, health and functioning. Large scale infrastructure developments involve the use of heavy equipment (graders, drilling equipment, trucks, blasting equipment, tractors, and excavators) for among others rock blasting, excavation, asphalt mixing plant operations and vehicular movement that emit incessant noise usually harmful to the environment. Introduction of new sources of noise is an issue in areas where ambient noise levels have been low.

6.2.15 Solid and Effluent Waste

Solid waste issue is a potential adverse impact that will be as a result of abandonment of litter/construction materials on site, use of plastic container/bags by road users and the construction crew and use of polythene sheet for curing by the contractor. Construction camps may be a further source of both solid and liquid wastes.

6.3 Social Impacts

6.3.1 Loss of Cultivated Lands, Crops and Grazing Land

The road packages are likely to be routed through or adjacent to many cultivated areas. It is estimated that three quarters of the 450 km of roads are in areas where land is being actively cultivated. There is therefore the potential for permanent land loss and for damage to crops as a result of road rehabilitation, both during the construction phase and in the longer term, if erosion from the road causes downstream erosion gulleying. The

extent of damages during the construction phase will depend on the widening of the road formation during rehabilitation, the extent and location of any road realignment and the management of contract staff to avoid unnecessary damages. Due to the fact that the roads already exist, and that the labour based rehabilitation methods generally involve little physical impact outside of the existing road formation, these impacts are likely to be limited and will be of low significance if carefully managed.

6.3.2 *Resettlement and Loss of Community Infrastructure*

Impacts on community infrastructure, including the loss of housing, latrines, playgrounds, kraals, sheds, water points and other assets do not appear to be likely in rural areas, from a review of the satellite imagery. There may be some cases where the roads pass through villages and where safety considerations dictate that structures within the road reserve must be removed. If there are any cases where housing or other community infrastructure cause a safety risk, either for motorists or for the community themselves, compensation for these losses will need be negotiated.

6.3.3 *Damage to Heritage Sites*

This impact is expected to be of low significance. Since the roads already exist, the probability of impacting on sacred sites, graveyards or historical monuments is small and would only occur if these cultural assets are immediately adjacent to the road and in the path of any necessary widening. There are no known heritage sites within the immediate zone of potential impact of the road rehabilitation and it should not be necessary to conduct specialist heritage studies. Once the conceptual design is completed, heritage issues can be checked in consultation with communities, prior to the establishment of the Contractor on site.

6.3.4 *Nuisance Impacts*

When operating within villages, nuisance impacts (noise and dust) can be significant for the period in which the construction teams are working in the area. Transport of base course and wearing course will also affect villagers over a longer period as materials from quarry sites are brought into the working areas. Labour based methodologies are far less intrusive than traditional methods of road rehabilitation due to the very limited use of vehicles and mechanical equipment and nuisance will therefore be correspondingly less significant. The fact that most of the people who will be working on the contracts come from the affected villages also limits the potential for disagreements and dissatisfaction in this regard.

6.3.5 *Road Traffic and Safety Impacts*

Vehicle traffic on the road packages is minimal and it is unlikely that any significant conflict will result from road construction activities and restrictions on road user access during road rehabilitation. Construction traffic volumes on the roads will also be very low, although road and pedestrian safety issues will still require active management, since local communities (and particularly children) are curious about civil construction work and are likely to come and watch it. Stock (cattle, goats, sheep and chickens) are also frequently found on the roads and are at risk if speed limits are not complied with. Truck drivers and other vehicle operators will need to undertake induction training in

order to ensure they are fully versed in road and pedestrian safety requirements, and the securing of equipment not in use to prevent harm to local people.

Experience of safety management on Lesotho road construction contracts has shown that compliance with safety requirements has not always met the required standards, and particular attention will need to be paid to this issue.

| | |
|----------------------------------|---|
| Mitigation for inclusion in ESMP | <ul style="list-style-type: none"> ■ Include safety management requirements in the ESMP, aligned with other Standard Conditions in the Contract. ■ Include provision for induction training of drivers and equipment operators and ensure ongoing monitoring by the ECAs and CLOs of contractor performance. ■ Make provision for ongoing community interaction in this regard through community forums. |
|----------------------------------|---|

6.3.6 Impacts on Social Pathologies

Infrastructure construction projects introduce a range of well-known social pathologies into local communities, particularly more isolated communities such as those that occur in the mountainous areas of Lesotho. In some cases, the resulting impacts have been severe. With reference to the Lesotho Highlands Water Project, Hitchcock (2015) refers to the enormous increase in the prevalence of HIV/Aids in the highland populations, from an estimated 0,9% in the 1980's to 22% at present, which is roughly equivalent to the infection rates in large urban centres such as Maseru. This is principally as a result of the unintended consequences of large construction teams, predominantly or exclusively male, housed in construction camps at the dam, tunnel and road construction sites. The disruptive effect of these teams on local village life has been highly significant, and while HIV/Aids has been the most insidious effect, many other socio-economic problems have resulted as well, including increasing incidence of other STDs, prostitution, drunkenness, gender violence, sexual harassment, rape, family breakup, marginalization of vulnerable people and loss of social identity and village cohesion among them.

The methodologies proposed for the rehabilitation of the secondary roads are an effective means of minimising these risks. The RDs approach follows international guidelines such as the ILO by committing to the employment of local people, and since most of the work on the contracts is done by hand, this allows for a rotating labour force, who predominantly represent the areas within which the work is being done. No labour camps are required because people can return to their home villages at night to sleep, reporting for work the next day. The RD is also committed to ensuring that gender representation on the projects is equitable, which further minimises the risks of a male dominated workforce, and that child labour is prohibited.

Overall, it is expected that social pathologies caused by the construction teams on the labour based road contracts will be limited as long as there is compliance with the rolling re-employment requirements of the labour based policy and other conditions set out for gender equity in employment and the behaviour of the work force. Any negative effects can be minimised by careful monitoring of compliance with the labour requirements in the OPCR contract and ongoing communication with communities during construction. Since

OPRC contracting is a new procedure for the RD, it will be particularly important to have sufficient capacity to monitor and enforce contractual compliance.

6.3.7 Health and Safety of Construction Workers

Occupation health and safety of the workers during the construction phase (and in certain cases operation phase) is likely to be a concern due to the accidents that normally occur in construction sites that could cause loss of life, limbs among others.

6.3.8 Increased Crime and In-migration

The increase in the number of people in a specific project area or site especially during construction has the potential to lead to a number of negative socio-economic impacts, including increased insecurity and community conflicts, increased incidences of diseases; increased risk of accidents and occupational hazards; and immigration of construction workers and labour force management challenges.

6.3.9 Employment Issues

The construction activities of sub project investments may require recruitment of “foreign” skilled and unskilled labour that could trigger conflict, resentment and tension by the local communities over perceived inequities in distribution of job opportunities by the local communities.

6.4 Issues Related to Resettlement and Physical Cultural Resources

6.4.1 Involuntary Resettlement

A Resettlement Policy Framework (RPF) has been prepared for the TICP this is because the project has triggered Involuntary Resettlement Policy 4.12. The TICP component 1 will entail construction of and rehabilitation of roads and bridges and is likely to lead to physical and or economic displacements. Resettlement Action Plans (RAPs) will be needed for investment that may result in displacement impacts based on screening.

6.4.2 Physical Cultural Resources Management

A plan for the management of physical cultural resources shall form part of the ESIA for each investment since the TICP triggers the OP 4.11, it is important that the ESIA also include identify the process for addressing impacts on cultural property. Measures will need to be integrated into the ESMP to address the following areas:

- Avoidance or mitigation of identified adverse impacts;
- Provisions for chance finds;
- Preparation, as appropriate, of a physical cultural resources management plan consistent with the overall policy framework and national legislation, taking into account institutional capabilities;
- Measures for strengthening institutional capacity; and
- Monitoring systems to track progress of these activities.

6.5 Environmental and Social Mitigation Measures

This ESMF contains potential mitigation measures and monitoring indicators through which the adverse impacts for specific sub project investments may be managed. The

ESMP is for guidance only and contains the minimum elements that are required in an ESMP. However, each sub project investment will have to prepare an ESMP.

6.5.1 Recommended Mitigation Measures

The mitigation measures or guidelines have been designed in order to avoid, minimize and reduce negative environmental and social impacts at the project level. The mitigation measures are presented in the following tables in a descriptive format.

a) Solid Waste Effluent

| Environmental Description |
|--|
| Solid Waste Generation: Negative Impact |
| Impact Descriptions |
| Construction activities such as clearing and grubbing, topsoil removal, trenching and storage as well as the movement of construction vehicles generate wastes (solid). Construction camps will also generate different sources of wastes. |
| Mitigation |
| <ul style="list-style-type: none"> • Adequate waste receptacles and facilities should be provided at project sites/camp sites • Training and awareness on Safe Waste Disposal in construction camps for all workers • Final disposal should be at dumpsites approved sites • Spent or waste oil from vehicles and equipment should be collected and temporarily stored in drums or containers at site • Waste oil should be disposed of by oil marketing companies or agents approved or recognized and have the capacity to undertake oil disposal • Prepare Waste Disposal Plan for every construction site • Install waste disposal receptacles and signs in strategic places within the construction camps • Provide training and awareness on need to avoid littering • Ensure the construction camps have toilets and connected to the sewer system |

b) Air Quality

| Environmental Description |
|---|
| Dust generation and Air quality: Negative Impact |
| Impact Descriptions |
| Construction activities such as clearing and grubbing, topsoil removal, trenching and storage as well as the movement of construction vehicles generate dust. The dust will influence the air quality in the immediate vicinity of the construction activity. Similarly, heavy machinery utilized on site will generate diesel fumes which may have a detrimental impact on the health of people living in close proximity to the proposed alignment. In addition to this, blasting may be required during the construction of the bridges which will generation dust although the period for this will be short. |
| Mitigation |
| <ul style="list-style-type: none"> • Dust suppression to be conducted • Construction activities to occur only along alignment or within construction camp |

- Natural vegetation to be left as erosion protection
- Construction workers to follow prescribed precautions when working in dusty conditions
- Construction vehicles to be regularly maintained and fitted with suitable exhaust systems to reduce emissions
- Blasting (if necessary) to be conducted by a suitably qualified person.

c) Construction Camp

Environmental Description

Construction Camp and Site offices: Negative impact

Impact Descriptions

The construction camp and site offices could have an impact on the environment if the placement or design is poorly situated. Domestic waste as well as construction waste generated at the construction camp could also impact on the fauna and flora in the area as well as the human health of construction workers and the community if it is not removed to a landfill site.

The management of construction camps throughout the project construction phase has to be managed effectively. Construction camps will have a significant impact on surrounding communities for the duration of the construction activity.

Mitigation

- The placement of the construction camps must be negotiated with the local land owners and community leaders
- The construction camps must be placed on a disturbed piece of land
- Indigenous vegetation must not be disturbed if at all possible
- The contractor must supply the workers with firewood or preferably gas cooking appliances, to ensure that wood is not harvested from the surrounding vegetation

d) Disturbance of Hydrological Patterns

Environmental Description

Soil, surface and groundwater pollution: Negative impacts

Impact Descriptions

Daily natural water resources play a very significant part in the biophysical and human environment. Construction of the bridges specifically the placement of the pillars may require the diversion of the river around the drilling sites. This will impact on flow within the rivers.

Mitigation

- The road surface should be maintained regularly to minimise accidents which result in spillage of hazardous materials
- Water user licences (if applicable) will be obtained from Department of Water Affairs and Forestry for water required during the maintenance use
- A suitable hazmat response programme to be initiated during the maintenance phase, to reduce the probability of the accidental hazardous material spills from entering the natural environment

e) Flora and Fauna

Environmental Description

Removal of vegetation during road construction: Negative impact

Impact Descriptions

Road construction activities will have resulted in loss of vegetation along new routes, particularly natural vegetation associated with the approaches and departures to the proposed bridges. Although the plant and animal communities within the road and bridge alignments are not considered sensitive, the loss of biodiversity in general is contrary to national and international objectives.

Mitigation

- Movement of machinery must be restricted to demarcated areas only
- Indigenous vegetation must not be disturbed outside of the surveyed alignment and bridge sites
- No harvesting of natural resources will be permitted
- Fines to be imposed for infractions relating to habitat conservation and disturbance of natural vegetation

f) Erosion along Alignment/River Crossings**Environmental Description**

Erosion: Negative impact

Impact Descriptions

Construction activities such as clearing and grubbing, topsoil removal, trenching and storage of materials could cause erosion during rainstorms or flooding. Erosion of the soil or run-off from construction materials could cause siltation of the water bodies in the surrounding area. As indicated, the soils occurring within the study area are highly erodable.

Mitigation

- The location of topsoil and other construction material stockpiles must be carefully considered to minimise siltation / pollution of rivers
- Stockpile areas must be clearly demarcated and stabilised to ensure minimum erosion during rainstorms
- Construction activities to disturb as small an area as possible – natural vegetation to be left as erosion protection as far as possible
- Exposed areas which will not be utilised after the construction phase must be rehabilitated

g) Noise Generation**Environmental Description**

Noise generation: Negative impact

Impact Descriptions

Noise is generated by construction activities such as clearing and grubbing, layer works, trenching and cement / asphalt batching. Construction vehicles generate noise. Blasting (if required) will generate noise.

Mitigation

- Construction workers to adhere to health and safety standards as prescribed in the ESMP
- Working hours will be restricted to reduce impacts on the neighbouring residences at night
- Blasting will be conducted on a fixed schedule, only during working hours
- Local communities to be informed of blasting times
- Blasting to be conducted only by a certified contractor, using minimal material to obtain maximum results
- All machinery and plant to conform to national noise reduction standards
- All plant to be well maintained and fitted with effective mufflers

h) Damage to Existing Infrastructure

Environmental Description

Disruption of Utilities: Negative impact

Impact Descriptions

Several water supply pipelines occur adjacent to the existing roads in as well as adjacent to the watercourses. Breakages occurring during construction will lead to supply disruptions within these communities. Similarly, residences occurring in close proximity to the proposed alignment may be damaged by blasting activities,

Mitigation

- Construction camps should be placed in locations which limit access of imported workers to the local communities
- Safety mesh barriers to be erected to enclose reservoir, and access prohibited
- All expose water pipelines adjacent to roads will be clearly marked
- All machinery and plant to conform to national noise reduction standards
- All plant to be well maintained and fitted with effective mufflers

i) Cultural and Archeological Impacts

Environmental Description

Damage to sites of cultural or archaeological interest: negative impact

Impact Descriptions

While no graves or other sites of cultural/heritage significance will be directly impacted by the proposed alignments, several communal graveyards occur in close proximity to existing alignments. Movement of vehicles adjacent to roads or vandalism by imported labourers may result in damage to headstones or graves.

Mitigation

- Construction camps should be placed in locations which limit access of imported workers to the local communities
- Fences/safety barriers to be erected between construction activities and graves/graveyards
- A minimum 15 m buffer to be placed between safety barrier and graves / outer graves in graveyard

j) Crime and Theft

Environmental Description

Damage to sites of cultural or archaeological interest: negative impact

Impact Descriptions

The use of imported labour may lead to increased theft from local communities during the construction phase. Stock theft in particular may become problematic. The impact has a Medium significance.

Mitigation

- The contractor to educate / warn labourers as to the ramifications of theft
- The contractor and MOPWT to establish cordial relationships with local communities and local Chiefs / Headmen to facilitate criminal investigations of stock / theft

k) Public Health

Environmental Description

Health implications: Negative social impact

Impact Descriptions

- Easier access into once relatively remote areas has the probability of increasing the influx of more people into the area. Rural communities, whose lifestyles consist to a large extent on a traditional lifestyle, will be more susceptible to outside influences. Diseases such as HIV/AIDS are a reality and can significantly impact on rural communities.
- Similarly, the influx of skilled and unskilled work force during the construction phase will impact negatively on local community dynamics and function if not managed effectively. Aspects such as the placement of the construction camps to limit contact with the local community will be further explored in the mitigation phase of the project.

Mitigation

- Construction camps should be placed in locations which limit access of imported workers to the local communities
- NGOs/clinics should be consulted and provisions made for health and health care training and education for laborers
- Labour should be drawn as far as possible from local surrounding communities to reduce number of migrant/imported laborers on site

Macro Impacts Associated with the Operational Phase

Principle activities involved during the operational phase can include: -

1. Maintenance of road surfaces and shoulders along the alignment
2. Repair/rehabilitation of storm water management structures/erosion control structures
3. Routine inspection of the road surface/associated structures

l) Air Quality

Environmental Description

Dust generation and Air quality: Negative Impact

Impact Descriptions

Potential road users could generate dust if the road surface or shoulders are not maintained. With the construction of improved road infrastructure, it can be expected that the vehicle

emissions level will decrease, due to more efficient vehicle operation and reduced stop-start traffic.

Mitigation

The road surface and shoulders to be maintained regularly to eliminate potholes and reduce dust entrainment

m) Noise Generation

Environmental Description

Noise generation: Negative Impact

Impact Descriptions

Noise will typically be an impact associated with the road as long as it is in operation. It is not envisaged that the daily traffic flow will increase to such an extent that the noise levels will become problematic. Improvement in the quality of the road surface will most likely result in a decrease of noise although tire noise generated by higher travelling speeds may result in nuisance noise.

Mitigation

- Regular maintenance of the road to ensure road safety and to reduce noise as a result of potholes and vehicles reducing speed to avoid them
- Noise in significantly sensitive cultural and social areas can be mitigated by berms and planting of vegetation screens where and if required such as between the road and schools/community meeting places
- Speed limits to be enforced along roads to minimise tire noise, particularly where the road passes close to residences/community structures

n) Water and Hydrology

Environmental Description

Soil, surface and groundwater pollution: Negative Impact

Impact Descriptions

Daily natural water resources play a very significant part in the biophysical and human environment. The most significant impact will be a change in the surface water velocity (run-off), flow quantities and water quality due to construction of impervious surfaces. Note that the bridge structure design, which utilise pillars, is not expected to have a significant impact on hydrological patterns within the existing Rivers. Pollution of the water sources could impact on the health of the neighbouring community, construction and facility workers.

Mitigation

- The road surface should be maintained regularly to minimise accidents which result in spillage of hazardous materials
- Suitable erosion control mechanisms to be instituted in the design and layout of the bridges and road to reduce silt loads in surface water runoff.
- A suitable hazmat response programme to be initiated during the maintenance phase, to reduce the probability of the accidental hazardous material spills from entering the natural environment

o) Road Safety-Accidents

Environmental Description

Road Hazards: Negative Impact

Impact Descriptions

Good roads are likely to lead to increase in road accidents.

Upgrading of the route alignment and surface will invariably increase the design speed of the road, and vehicle travel speeds can be expected to increase dramatically.

Conversely, increased vehicle speeds will impact negatively on current pedestrian road users.

Mitigation

- The road must be maintained regularly and traffic calming measures implemented in areas of high risk with increased community members in the surrounding area of the road
- Areas where the road passes through important social or cultural gathering points should be clearly marked with road signage, and sufficient road crossings and traffic calming measures should be introduced.

6.6 World Bank Group EHS Guidelines

The Environmental Health and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The EHS Guidelines contain the performance levels and measures that are normally acceptable to the WB Group, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology.

All sub projects under requiring ESIA/ESMP will as a mandatory requirement make reference to the applicable guideline(s) and construction contractors and supervising engineers will be required to adhere to these guidelines which will be included in their contractual agreements with TPIC. www.ifc.org/ehsguidelines.

Table 11: Monitoring indicators and responsibilities

| Impact issue | Proposed Action/Measures | Implementation tool/criteria | Monitoring indicators (Inputs) | Monitoring Indicators (Outcomes) | Verification | Project stage | Responsibility |
|------------------------------------|--|---|---|---|--|---------------|----------------------------|
| Solid waste disposal | Provide adequate waste reception facilities at construction camp sites | Waste management plan/Construction site management plan | Number of waste bins at site bins | Percentage of workers who follow the solid waste disposal plan including use of receptacles | Weekly checks by project engineer | Construction | Contactor |
| | Dispose of waste at approved waste collection sites | | Availability of waste disposal plan Final disposal records | Number of workers familiar and aware of the waste disposal plan at the construction sites | | Operation | Project engineer |
| Waste oil/fuel disposal | Provide drums/containers for temporary storage on site of waste oil from equipment and vehicles. | Waste management plan/Construction site management plan | Waste oil drums/containers on site | Number of workers familiar and aware of the waste disposal plan | Monthly checks by project engineer | Construction | Contactor |
| | Dispose of waste oil through an approved agent | | Availability of waste disposal plan (waste oil) | Percentage of workers who follow the waste disposal plan including use of receptacles | | Operation | Project engineer |
| Air Quality degradation /pollution | Purchase sound equipment/machinery for project | Part of contract agreement | Number of sound machinery and equipment purchased | Percentage of workers following the good practices for equipment and machinery | Independent check by project engineers | Construction | Contactor/Project engineer |
| | Operate well maintained vehicles, trucks and | Routine maintenance plan for machinery | Availability of | | Verification of | | |

| | | | | | | | |
|-----------------|---|---|---|---|--|---------------------|-----------------------------------|
| | <p>other equipment</p> <p>Use good quality fuel and lubricants</p> <p>Suppress dust generation at project sites</p> <p>Switch off engines when not in use</p> | <p>Purchase of fuel at recognized stations</p> <p>Schedule of works is to limit</p> <p>Water surfaces several times a day to reduce dust at the site.</p> | <p>equipment and machinery maintenance plan</p> <p>Frequency of watering of surfaces to reduce dust related impacts</p> | <p>maintenance</p> | <p>maintenance record by project engineers</p> <p>Self-check by contractor</p> | | |
| Noise pollution | <p>Schedule of works is to be limited to daylight hours</p> <p>Compliance with the noise emission levels/standard of DOE</p> <p>Provision of PPE for workers for noise pollution</p> <p>Train workers on the use of PPEs for noise mitigation and reprimand those not complying</p> | <p>Part of contract agreement for the contractors</p> | <p>Recorded grievances</p> <p>Number of PPE procured for noise mitigation</p> | <p>Number of workers correctly and frequently using PPEs</p> <p>Number of workers aware of the emissions standards of DOE and complying with the same</p> | <p>Self-check by contractor</p> | <p>Construction</p> | <p>Contactor/Project engineer</p> |
| Visual Impacts | <p>Landscaping of facilities after construction, and restoration of disturbed areas</p> | <p>Construction site maintenance and restoration plan.</p> | <p>Implementation of the plan</p> | <p>Quality of restored landscapes</p> <p>Number of disturbed sites successfully restored</p> | <p>Self-check by contractor</p> | <p>Construction</p> | <p>Contactor/Project engineer</p> |
| Traffic impacts | <p>Use only road worthy vehicles and trucks</p> <p>Use experienced drivers</p> <p>Contractors must</p> | <p>Purchase sound vehicles and trucks /machinery for project</p> <p>Driver qualification recorded</p> | <p>Traffic incidence records</p> <p>Grievances Recorded</p> | <p>Number of drivers aware and familiar with the traffic safety plan</p> | <p>Project engineers to verify</p> | <p>Construction</p> | <p>Contactor/Project engineer</p> |

| | | | | | | | |
|-----------------|--|--|--|--|--|--------------------------------------|--|
| | <p>provide driver training</p> <p>Establish speed limits,</p> <p>Enforce safe driving and take disciplinary action against repeat offenders.</p> | Traffic Safety Plan | | <p>Percentage of drivers who have not committed a traffic offence for the last 6 months</p> <p>Number of compliance (traffic) inspection and checks conducted by traffic department found to be satisfactory</p> | | | |
| Water pollution | <p>No garbage/refuse, oily wastes, fuels/waste oils should be discharged into drains or water bodies</p> <p>Fuel storage tanks/sites should be properly secured</p> <p>Maintenance and cleaning of vehicles, trucks and equipment should take place offsite.</p> <p>Provide toilet facilities for construction workers</p> <p>Construction activities, including camps to include measures to control runoff</p> | <p>Waste management plan</p> <p>Spill prevention and control plan</p> <p>Water Quality Plan to measure the quality of water including physical, chemical and biological.</p> <p>Implement an Integrated Pest Management Plan when using fertilizers and pesticides</p> | <p>Visibility of oil on water bodies</p> <p>Procurement and installation of water monitoring and measuring gauges</p> <p>On site erosion observed</p> <p>Proposed actions implemented</p> <p>Quality of water following periodic measurements</p> <p>No of pollution incidences recorded</p> | <p>Increased water quality upstream and downstream shown by periodic measurements</p> <p>Water samples collected showing compliance to water pollution standards</p> | <p>Daily self-checks by contractors</p> <p>Periodic reports on performance by contractor to project engineers</p> <p>Spot checks/audits by project engineers</p> | <p>Construction</p> <p>Operation</p> | <p>Contractors /Project engineers</p> <p>Project engineers</p> |

| | | | | | | | |
|---------------------------|---|---|--|--|---|---|--|
| | | | Number of complaints on pollution of water | | | | |
| Impact on fauna and flora | <p>Avoid unnecessary exposure or access to sensitive habitat.</p> <p>Avoid protected areas, critical habitats or areas with significant biodiversity (wetlands)</p> <p>Regular inspection or monitoring should be carried out in sensitive areas e.g. swamps/ wetlands the area prior to start of work.</p> <p>Ensure proper storage and handling of potentially hazardous materials (including oil).</p> | <p>If a sensitive habitat is discovered in the work area or vicinity, Project activities should cease.</p> <p>The contractor should notify project engineers who will consult Wildlife Authority to determine the appropriate course of action.</p> <p>Hazardous material management plan/accident management plan.</p> <p>Awareness raising among contractor personnel</p> | Wildlife incidents recorded and reported to Wildlife Authority | <p>Number or percentage of terrestrial flora and fauna unaffected by the sub projects</p> <p>Number of workers aware and sensitized on the need to conserve the flora and fauna</p> <p>Impact on terrestrial flora and fauna</p> | <p>Regular self-checks by contractor</p> <p>Spot checks and audit by contractor to the client</p> | <p>Construction</p> <p>Operation</p> <p>Maintenance</p> | Contractors /Project engineers/ Wildlife Authority/DOE |

Table 12: Project monitoring indicators and Responsibilities-Social Impacts

| Impact issue | Proposed Action/ Measures | Implementation tool/criteria | Monitoring indicators (Input) | Monitoring indicators (Output) | Verification | Project stage | Responsibility |
|---|---|--|--|--|--|--|-------------------------------|
| Impacts on Human Health/ Safety | Cover buckets of trucks carrying construction materials such as sand, quarry dust, etc. Use road worthy vehicles/trucks and experienced drivers/operators Active construction areas to be marked with high-visibility tape Backfill and or secure open trenches and excavated areas. Provide adequate sanitary facilities Provide PPEs for construction workers. Educate construction workers on site rules/regulation and hygiene and disease (HIV/AIDS) prevention. | ESMP Vehicle maintenance programme/plan in place Construction site management plan ESMP ESMP ESMP ESMP | Health and safety incident register Grievance records | Reduced accidents and hazards in construction sites Reduced incidence of diseases spread e.g. HIV/AIDS, and other STDs Increased understanding of workers on measures to reduce STDs/HIV/AIDS etc. | Health and safety plan under implementation Daily self-checks and verification by contractor Spot checks by project engineers Periodic reports by contractor to project engineers | Construction | Contractors |
| Impacts on cultural heritage/ archaeological interest /existing aquatic infrastructure and services | Identify cultural heritage resources and existing ecologically sensitive areas. | Pre-construction surveys / Chance finds procedure Plan for accidental Cultural Finds | Cultural/ archaeological resources/ existing infrastructure encounter incidence register | Number of workers familiar with the chance find procedures | Chance finds procedure under implementation Daily self-checks and verification by contractor Periodic reports by contractor to project engineers | Preconstruction and construction and repairs/ recovery | Contractors/Museums Authority |
| Impacts on Human Health | Use suitable Personal Protective Equipment (PPE). | ESMP | Health and safety incident register | Reduction in or increase in accidents due to | ESMP under implementation | Pre-construction and | Contractors |

| | | | | | | | |
|-------------------------------------|--|--------------------------------|--|--|---|--|----------------|
| and Safety | Provide Training on use of PPE | | Grievance records | use of or lack of use of PPEs | Spot checks and observations by project engineers Periodic reports on performance by contractor to project engineers | construction, and repairs/ recovery | |
| Labour related impacts (Employment) | Ensure that the local communities are given priority in relation to employment and provided with training (skilled) to provide future labour in the project e.g. operation and maintenance | Human Resource Management Plan | Number of local residents employed in sub projects | Number of local residents employed in sub projects | Employment Records | Pre-construction and construction, and repairs/ recovery | Contractors/EA |

7 PROJECT REVIEW, COORDINATION & IMPLEMENTATION ARRANGEMENTS

7.1 Sub Project Safeguard Preparation, Review and Approval, Monitoring and Evaluation

A completed appraisal package comprises all of the results of the ESIA procedures in order to permit a full environmental review. If the World Bank determines that the appraisal package is not complete because the environmental procedures have not been completed, or because after further review it is discovered that the information provided earlier for the screening procedures was incorrect or misleading and that further information is required, the appraisal package will be deemed incomplete and the Task Manager will promptly notify the applicant of the deficiencies.

7.1.1 Screening and Investment Project Preparation

Screening of TICP sub project investments will commence right at the project inception phase as soon as the specific sub project details are known including nature and scope, proposed location and area among other parameters. Screening is expected to happen concurrently with the project specific feasibility studies so that any potential impacts identified through screening are immediately incorporated into the feasibility study hence ensuring that environmental sound design of the sub projects occurs right at the project design phase.

The screening process could result in any of the following determination; -

1. Project Report or ESMP
2. Full ESIA/EIS

7.1.2 Screening Checklist

The Environmental and Social Development Specialist (s) within the Project Implementation Team (PIT) jointly with the Environmental Unit of the RD will undertake the screening of all sub projects under component 1 of the TICP. A screening form/checklist has been developed (**see annex E**) and will be employed for this purpose.

The Bank also requires that sub project investments are screened in order to make a determination as to whether a full scale ESIA, a standalone ESMP or no further environmental studies are needed for investments.

7.1.3 Project Brief

In order to comply with the Environmental Act 2008, the Environmental Unit of the RD will prepare a **Project Brief** for all identified sub projects for submission to DOE in order to determine if further environmental analysis (EIS) will be necessary.

However, bearing in mind that the World Bank will never recommend a less stringent environmental study than DOE, even if the DOE could do so according to its own policies, but (b) recognizing that the Bank may require a more stringent study than DOE

does and if so, that more stringent requirement will apply to the sub project concerned. This implies that even if the screening is done to meet the World Bank's requirements and a decision is made that an ESMP alone is sufficient by the Bank, the Bank will not stand in the way if TICP prepares a Project Brief or ESIA if determined by DOE. On the other hand, if DOE determines that no ESIA is required following screening and submission of project report, and the Bank feels that project requires an ESIA, then TICP will need to prepare the same to satisfy and get approval for the sub project from the Bank.

7.1.4 Terms of Reference and ESIA/ESMP Development

The Environmental and Social Development Specialist (s) within the Project Implementation Team (PIT) will prepare Terms of Reference (ToR) for preparation of ESIA/ESMPs for sub projects screened and determined to require further environmental analysis. These will be submitted to World Bank and DOE for approval prior to procurement of a consultant to undertake ESIA/ESMPs. Standard Terms of Reference template for ESIA/ESMP for roads construction and rehabilitation has been included in this ESMF (see annex I).

7.1.5 Review and Approval

ESIA/ESMPs prepared will be reviewed by the Environmental and Social Development Specialist (s) within the Project Implementation Team (PIT) will review the submitted reports before submission to the World Bank and DOE for approval prior to commencement of construction works.

No World Bank funds will be utilized until for TICP sub projects has (i) presented the WB with a certified copy of the positive conclusion of the relevant national authority or - as the case may be - the World Bank determines that no further environmental review is required, and (ii) the World Bank has reviewed and cleared the environmental documentation and issued its formal no objection.

7.1.6 Grievance Redress Mechanism

Any person who has been adversely affected by the decision of the Director may request in writing within 30 days of being informed of the decision that the Director reconsiders his decision and such request shall set forth the reasons for such request. The said appeal is directed to the Director despite the fact that the Director is the *functus officio*.

The Director must within 30 days of receipt of the request, issue a record of decision affirming, modifying or reversing its earlier decision. The option of appeal is open to both the developer and the I&APs. This step is a prerequisite before an aggrieved party may proceed to **Environmental Tribunal or to High Court**.

WB's Grievance Redress Services (GRS): Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanism or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaints to the WB's independent Inspection Panel which

determines whether harms occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the WB's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit www.worldbank.org/grs. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

7.1.7 Consultation and Disclosure Requirements

The World Bank requires consultation and disclosure of draft ESIA/ESMPs prepared under the TICP. All the instruments prepared will be consulted upon in a meaningful manner. For meaningful consultations, TICP will:

- Identify and engage stakeholders during the ESIA/ESMP development
- Make the draft ESIA report including a detailed summary of the ESIA's conclusions available at a public place accessible to groups affected by the subproject and local NGOs.

7.2 Monitoring and Evaluation Responsibilities

7.2.1 Project Implementation Team

The goal of monitoring is to determine whether interventions have resulted in dealing with negative impacts, whether further interventions are needed or monitoring is to be extended in some areas. Monitoring indicators will be very much dependent on specific project contexts.

The Environmental and Social Development Specialist (s) recruited under the TICP-PIT will be responsible for overall monitoring and reporting on compliance with the ESMF. The TICP/PIT will ensure that sub projects investments are screened, their safeguard instruments prepared, cleared and disclosed prior to sub project approval.

Further, TICP/PIT Environmental and Social Development Specialist will ensure that the RD Environmental Unit implement or cause their contractors to implement the specific sub project ESMP, and submit reports on ESMP implementation as required. The Environmental and Social Development Specialist (s) recruited under the TICP-PIT will report results of this monitoring to the Bank.

7.2.2 Lesotho Roads Directorate

The Lesotho Roads Directorate (RD) is the implementing agency for the rehabilitation and maintenance of the secondary roads which will utilize the Output and Performance based Road Contracts (OPRC) method, as well as the construction of the footbridges. Both the targeted road corridors and footbridges were identified by the Roads Directorate, an entity which currently has a permanent environmental manager who oversees the environmental assessments, implementation and monitoring of environmental management plans for all road projects implemented by the directorate.

The conceptual designs currently underway will confirm the exact locations while the detail

designs including the specific road works required for the various sections will be carried out by the Contracting Entity (CE) during the implementation phase of the project.

The Contracting Entity is expected to carry out the site-specific ESIAs/ESMPs based on the procedures and methodologies described in the ESMF. The ESIAs/ESMPs will be approved by the Lesotho Department of Environmental Affairs and the Bank prior to commencement of the physical works on site.

The potential environmental and social impacts and proposed mitigation measures as described in the ESIAs/ESMPs, will be included in the bidding documents of the OPRC and will form the basis for monitoring by the Roads Directorate and the Monitoring Consultant to be engaged under the project. The ESMF will also provide guidance to the Contracting Entity in the likely event that more interventions are identified during the 10-year implementation period. The bidding documents will also include the need to update the safeguard instruments in line with the detailed design and preparation of Method Statements in line with the ESMPs.

The Roads Directorate (RD) is, as part of project preparation, required to engage a social specialist on a permanent basis, in addition to an environmental specialist, to ensure implementation of social safeguards. The OPRC contractor must, as part of core project staff, engage a resettlement specialist with experience in preparing ARAP/RAPs. In addition, the OPRC contractor will engage a number of community liaison officers who will provide for concrete involvement and ongoing consultation with communities to ensure all impacts are well understood and construction activities take community wellbeing into consideration. An independent supervision/monitoring consultant will oversee the day-to-day implementation of social safeguards, including ARAP/RAPs, if required.

The RD's social specialist will mainstream social and gender aspects, and serve as the interface between the Roads Directorate, local government gender officers, the OPRC contractor's local community liaison officers, resettlement specialist and campsite managers.

Continuous safeguards training will be provided to the Roads Directorate during the implementation phase of the project on the application of World Bank Safeguard Policies in mitigating risks and impacts, and in monitoring implementation of ESMPs.

The RD will work jointly on a day to day basis with the safeguards specialists in the PIT to implement the safeguards aspects of the project.

7.2.3 Works Contractor

All contractors will be required to recruit a full time environmental and social safeguards specialist to implement the mitigation measures outlined in the ESMP. This requirement to recruit the experts will be included in the contractor bidding documents.

7.2.4 Supervision of Works Contract

The TICP will engage a supervising consultant/engineer to oversee the activities of the works contractor and monitor the ESMP implementation.

7.2.5 Bank's Monitoring Support

The Bank will provide the second line of monitoring compliance and commitments made in the ESMP through supervision albeit in a less frequent manner and detail as compared to the first line of monitoring that will be undertaken by the specific implementing agencies. The Bank will further undertake monitoring during its scheduled project supervision missions.

8 CAPACITY BUILDING, TRAINING AND TECHNICAL ASSISTANCE

8.1 Institutional Capacity for ESMF Implementation

8.1.1 Project Implementation Team (TICP)

The coordination of the TIC Project which will be done by the Planning Unit (PU) of MoPWT. Currently, this PU is understaffed, with only 3 of the 7 professional positions filled. It has already been stated in this report that for the PU to effectively coordinate the planning and implementation of TIC Project activities, it will need to be strengthened with a Project Steering Committee (PSC) of which the PU will be a Secretariat, and a Project Implementation Team (PIT).

In the face of capacity constraints at the PU to manage the affairs of the TIC Project on a day-to-day basis, it will be necessary to hire a Project Implementation Team (PIT) that will comprise:

- Project Coordinator,
- Finance Manager
- Environmental Specialist
- Social Development Specialist
- Procurement Manager.

The PIT will liaise with all the institutions that have been identified for the implementation of various components of the project, including the implementation of the requirements of the ESMF.

The Project Implementation Team will consolidate and present all proposals for TIC Project activities for approval by the Project Steering Committee. They will prepare and present to the monthly Project Progress Reports (PPRs) that will detail physical progress, constraints encountered, the financial status of the project and its various components and plans for the following month. The Project Progress Reports will include inputs from the SEU in the form of progress reports and activity proposals. On the other hand, the Project Implementation Team will be expected to appoint a local firm, in close consultation with the PSC and PU, to audit the finances of the project and compile annual audited statements.

For the purposes of environmental and social management, responsibility will lie with the Project Implementation Team (PIT) to be fully staffed to include an Environmental Specialist and a Social Development Specialist who will coordinate and manage environmental and social safeguards aspects of the TICP.

8.1.2 Roads Directorate

Established by the Roads Directorate Act No 16 of 2010, the Roads Directorate is primarily responsible for the construction, upgrading, rehabilitation and maintenance of primary, secondary, tertiary and other roads and footbridges throughout Lesotho. On its website, the Roads Directorate states its vision as "To make all parts of Lesotho accessible through safe and sustainable road infrastructure" and its mission as the "Provision of an efficient, user-focused, well managed road infrastructure network that is safe, suitable, reliable, accessible and in harmony with the environment (www.rd.org.ls).

In its mission statement, the RD emphasizes that it will ensure the mitigation of negative environmental and social impacts from road construction, and rehabilitate affected areas in accordance with environmental guidelines. To this end, when the RD formulated its structure, a Safety and Environment Unit (SEU) was created as one of the 6 sections of the Network Planning Division, the latter being one of the 5 divisions of the RD, with a mandate that includes the preparation of project briefs, appraisal of new projects, negotiations with potential financiers, requesting for proposals for consultancy services, evaluation of proposals, carrying out topographic surveys of roads and bridges, design of roads and bridge structures for construction, upgrading and rehabilitation of roads and bridges and tender documentation. The Division is also responsible for the supervision of environmental management and monitoring, road safety, road transport statistical data collection and processing and social and resettlement/compensation activities amongst project affected communities.

A **Safety and Environment Unit** exists as a section of the Network Planning Division of the RD and has the mandate to ensure that all road and bridge works are constructed in compliance with the provisions of Lesotho's Environment Act No. 10 of 2008. Guided by Environmental and Resettlement Policy Guidelines and Manuals, the section is also mandated to ensure that fair, effective and consistent resettlement practices and compensation of project-affected people are practiced on all ongoing RD projects. Its role also includes directing and reviewing environmental assessment reports produced by consultants. To ensure prudent environmental management practices and compliance on the ground, all RD contracts specify that there should be two compliance officers, an environmentalist and a safety officer, on project sites for the full duration of the construction of the projects.

The SEU is a small section with an original intended compliment of 4 professionals although only two positions have ever been occupied. The environmental management activities of the section are supposed to cover the following RD activities:

- New projects;
- Maintenance projects; and
- Planning and feasibility studies.

The Unit is currently staffed by the Manager, who has an environmental background and experience, and a Road Safety Engineer. It is evident that the programmes of the RD have expanded rapidly since the institution's establishment, making it difficult for these

two officers to effectively liaise with site environmental compliance officers and ensure compliance of every project with environmental and social management plans (ESMPs).

The two officers are thinly spread across demands of various technical divisions of the RD. As a result, most of the effort is devoted to new projects and feasibility studies at the expense of supervision, monitoring and maintenance activities. In general, there is still a limited appreciation of environmental activities within the RD, particularly by maintenance staff, although this has improved in recent months with the establishment of the Managers' Group that aims at improving coordination amongst various departments of the RD.

8.1.3 Department of Environmental Affairs

The Department of Environment (DOE) of Ministry of Environment, Tourism and Culture (MOETC) is the custodian of environmental policy in Lesotho, with the mandate to implement the Environment Act 2008. It is also the focal point for the implementation of international environmental conventions and treaties. DOE is a young institution whose institutional framework is still at a formative stage, and which is currently heavily incapacitated to fulfil its legal mandate by human and other resource constraints.

8.2 Capacity Enhancement

This ESMF proposes capacity enhancement through training in order to ensure effective implementation of the TICP safeguards requirements. The following training is therefore proposed:

- Project staff induction course (health and safety, HIV and AIDS, and site code of conduct, working conditions, the ESMP and contractor's environmental and social responsibilities, gender issues, the inclusion of vulnerable groups, etc.);
- Stakeholder engagement and consultations
- Training on use and application of ESMF tools (screening checklist etc.)
- Grievance Redress and dispute resolution
- Community Liaison Committee (CLC) awareness course (health and safety, HIV and AIDS, the ESMP and contractor's environmental and social responsibilities, community participation, gender issues, the inclusion of vulnerable groups, conflict resolution, lines of communication, etc.)
- Community awareness course (HIV and AIDS risks and management, income earning opportunities, the ESMP and contractor's environmental and social responsibilities, channels of communication);
- Income generating courses for redundant employees (e.g.: egg and broiler production, piggery management, vegetable production, business management, etc.);
- Toolbox talks for contract employees at appropriate intervals (for roads contracts)
- Management of Environmental, Social and Health Impacts of Construction.

8.2.1 Contractors Safeguards Capacity Building

Contractors and supervision consultants as part of best practice, and in order to comply with international standards for Occupational, Health and Safety (OHS), will be provided with awareness raising and environmental and OHS training on site. These should focus not only on the construction phase but also operational phase of the Project. A proposed

format for 1-day training is provided in the following **Table 13** below.

Table 13: Awareness raising and training for civil work contractors and supervision consultants

| Topic | Input |
|--|--------------|
| Awareness raising <ul style="list-style-type: none"> Environmental awareness and the importance of effective mitigation Practice mitigation measures and environmentally sound construction techniques Compliance with local legislation on OHS, EIA and ESMP requirements | 0.5 day |
| Technical training <ul style="list-style-type: none"> Implementation of the ESMP (contract clauses) Monitoring of ESMPs (and RAPs) Preparation of budgets | 0.5 day |
| Total | 1 day |

The training and capacity building exercises will take into consideration during their development, the integration and fulfilment of the requirements of World Bank social and environmental policies and guidelines, as well as those on Environmental Protection (including relevant policies, regulations and guidelines). Where institutional capacity in terms of availability of human resource is inadequate, the project will engrain support for this through hiring of qualified staff to provide necessary expertise.

Training directly linked to the implementation of the ESMF should be undertaken first and subsequently followed with regular interval training on aspects influencing success of ESMF. The training program/agenda below provides a sample training outline and course content. The training programmes have been clustered into appropriate groups to facilitate for various target groups. Target groups for training, awareness and sensitization will be as follows.

8.3 ESMF Implementation Budget

The estimated total cost for ESMF implementation cannot be estimated because of variation from project to project. The table below however, highlights the key indicative aspects that would require a cost budget and tentative estimates for activities like awareness creation and capacity building.

Table 14: Indicative Areas For Budgeting for ESMF

| Activity | Description | Total (US\$) | | | |
|---|---|--------------|--------|--------|---------|
| | | Year 1 | Year 2 | Year 3 | Total |
| <i>Project and Community Training</i> | | | | | |
| Construction staff induction course (16 courses per year) | health and safety, HIV and AIDS, and site code of conduct | 80,000 | 80,000 | 80,000 | 240,000 |
| CLC induction courses (16 courses per year) | (health and safety, HIV and AIDS, site code of conduct, working conditions, | 20,000 | 20,000 | 20,000 | 60,000 |

| Activity | Description | Total (US\$) | | | |
|--|--|--------------|---------|---------|------------------|
| | | Year 1 | Year 2 | Year 3 | Total |
| | the ESMP and contractor's environmental and social responsibilities, the inclusion of vulnerable groups, etc. | | | | |
| Community induction courses (16 courses per year) | (HIV and AIDS, site code of conduct, work and income earning opportunities, the ESMP and contractor's environmental and social responsibilities, channels of communication | 36,560 | 36,560 | 36,560 | 109,680 |
| Income generating courses for community members | Gardening, egg production, piggeries, basketry, etc. | 50,000 | 50,000 | 50,000 | 150,000 |
| Awareness course for RD staff and members of the PSC | A presentation of the ESMF document, emphasizing its importance and the expected roles of each of the parties. | 10,000 | 10,000 | 10,000 | 30,000 |
| Professional staff | Environmental Officers and Social Specialist (PIT) | 120,000 | 150,000 | 180,000 | 450,000 |
| Safeguards Strengthening RD | Training of RD | 100,000 | 150,000 | 200,000 | 450,000 |
| GRAND TOTAL | | | | | 1,489,680 |

9 PUBLIC CONSULTATION AND DISCLOSURE

9.1.1 *ESMF Disclosure*

The World Bank disclosure policies require that ESMF are disclosed and ESIA/ESMP reports for sub projects are made available to project affected groups, local NGOs, and the public at large. Public disclosure of ESIA/ESMP documents is also a requirement of the Government of Lesotho's environmental procedures.

9.1.2 *Public Consultation*

The implementation of each specific sub project investment under the TICP will require that public consultation and stakeholder engagement is carried out as a means of gathering information on public concerns, issues, perception, fears and suggestions on proposed investment.

Public consultation will be conducted in line with the requirements of Environmental Act 2008 which calls for utilisation of all forms of consultation and stakeholder engagement and the Bank's requirements for public consultation. The consultations will be conducted through among others means; -

- Key Informant Interviews
- Direct Interviews with Project Affected Persons
- Workshops and Meetings
- Public Hearings (Barazas)
- Advertisements' in the print and electronic media
- Focus Group Discussions
- Internet and telephone interviews

9.1.3 *Grievance Redress Mechanism*

Grievance mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented. They may take the form of specific complaints for damages/injury, concerns about routine project activities, or perceived incidents or impacts. Identifying and responding to grievances supports the development of positive relationships between projects and affected groups/communities, and other stakeholders.

The World Bank standards outline requirements for grievance mechanisms for some projects. Grievance mechanisms should receive and facilitate resolution of the affected institutional or communities' concerns and grievances.

The World Bank states the concerns should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, at no cost and without retribution.

Mechanisms should be appropriate to the scale of impacts and risks presented by a project.

Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project. Projects may have a range of potential adverse impacts to people and the environment in general, identifying grievances and ensuring timely resolution is therefore very necessary.

9.2 World Bank Grievance Redress

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

9.2.1 Establishment of Grievance Redress Committee

Each sub project investment will have a Grievance Redress Committee (GRC) established for the purpose of handling grievances related to environmental and social concerns. The GRCs will be ad hoc institutions established primarily for the sub project investment and will have no legal mandate and should at a minimum comprise of:

1. Project Affected Persons representative
2. Environmental and Social Specialists from TPIC
3. Representatives from RD
4. Contractor
5. Supervision Engineer
6. Women and Youth Representatives
7. Representation of active NGOs or CBOs in project area

Table 15: Grievance Redress Process

| Process | Description | Time frame | Other information |
|-----------------------------|---|------------|-------------------------------|
| Identification of grievance | Face to face; phone; letter, e-mail; recorded during public/community interaction; others | 1 Day | Email address; hotline number |

| | | | |
|--|---|---------------------------|--|
| Grievance assessed and logged | Significance assessed and grievance recorded or logged (i.e. in a log book) | 4-7 Days | Significance criteria: Level 1 –one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF provisions |
| Grievance is acknowledged | Acknowledgement of grievance through appropriate medium | 7-14 Days | |
| Development of response | Grievance assigned to appropriate party for resolution Response development with input from management/ relevant stakeholders | 4-7 Days 7-14 Days | |
| Response signed off | Redress action approved at appropriate levels | 4-7 Days | Project staff to sign off |
| Implementation and communication of response | Redress action implemented and update of progress on resolution communicated to complainant | 10-14 Days | |
| Complaints Response | Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary | 4-7 Days | |
| Close grievance | Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law. | 4-7 Days | Final sign off on by TICP/PIT Coordinator |

9.2.2 *Environmental Tribunal/High Court*

The Director must within 30 days of receipt of the request, issue a record of decision affirming, modifying or reversing its earlier decision. The option of appeal is open to both the developer and the I&APs. This step is a prerequisite before an aggrieved party may proceed to **Environmental Tribunal or to High Court**.

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II ANNEX

Annex A. List of Stakeholders Consulted

| Name | Institution | Position | E-mail | Telephone |
|----------------------|------------------------------------|--|--|----------------------------------|
| Damane, Stanley | Department of Environment | Director | stanleydamane@hotmail.com stanleydamane@gmail.com | +266 22 311767 |
| Leballo, Thabiso | Department of Environment | Environmental officer, Data | leballo tj@yahoo.co.uk | +266 22 311767 +266 58 015662 |
| Nthama, Nthapeliseng | Department of Environment | Environmental officer, EIA | nnthama@gmail.com | +266 22 321449 |
| Moji, Lemphane | Rural Footbridges, RD | Chief Technical Officer | Lemphanemoji@gmail.com | +266 58 514925 |
| Seeta, Tsemane | Rural Footbridges, RD | Principal Technical Officer | | +266 59 511962 |
| Kahlolo, Motlatsi | Rural Footbridges, RD | Chief Technical Officer | | +266 58 012747 |
| Mafusi Mphahama | Central Region, RD | Manager | mafusimp@yahoo.com mphahamamc@rd.org.ls | +266 22 321467 +266 58 089010 |
| Sam Kikine | Road Network Planning, RD | Manager | kikinesk@rd.org.ls molelesk@yahoo.com | +266 58 902638 |
| Ntsiuoa Jaase | Ministry of Development Planning | Director, Department of Project Cycle Management | ntsuoajaase@yahoo.co.uk | +266 50 832562 +266 22 321014 |
| Lerato Sello | MoPWT | Chief Planning Officer, PU | | +266 62 001845 |
| Tlalaneramaema | Department of Environment | Senior Environmental Officer | tlalaneramaema@gmail.com | +266 63 175389 |
| Seboka Thamae | Safety and Environment Section, RD | Manager | thamaes@rd.org.ls | +266 63 851309 +266 58 851309 |
| Tikoe Matsoso | Roads Network maintenance, RD | Director | matsosotk@rd.org.ls | +266 22 324473 |
| Mohapi Sekalaka | Finance Department, RD | Director | sekalakam@rd.org.ls | +266 62 230880 |
| Mothusi Morojele | Finance Department, | Finance Manager | morojelem@rd.org.ls | +266 62 840785 |

| Name | Institution | Position | E-mail | Telephone |
|----------------------|---------------------------------|-----------------------------------|-------------------------|----------------------------------|
| | RD | | | |
| Sebolelo Moleko | Central Region, RD | Maintenance Engineer | moleko@rd.org.ls | +266 58 849594 +266 62 849594 |
| Maseephephe Matete | Manamaneng Chieftainship | Chieftainess | - | +266 59 368601 |
| David Mohapi | Department of Environment | Environment Officer, Biodiversity | Davidmohapi21@gmail.com | +266 22 311767 |
| Dr. Kinini Mathews | Department of Road Safety | Director | kininimathews@gmail.com | +266 56 216129 |
| Mooka Namoli | Ministry of Local Government | Principal Engineer | | +266 62 929299 |
| Mike Letlola | Ministry of Local Government | Chief Engineer | msletlola@hotmail.com | +266 58 869023 |
| Makallo Kolisang | Makaling | Village Chief | - | +266 57 067407 |
| Mankuebe Pete | Ha Tiisang (Bosco area) | Village Chief | - | +266 57 200058 |
| Lephethesang Molapo | Ha Mosamo | Village Chief | - | +266 56 655973 |
| Mamopolokeng Maliane | Ha Mosamo | Local Councillor | - | +266 57 347307 |
| Sekhunyanane Letsie | Ha Letsie (Tsoeneng area) | Village Chief | - | +266 66 130066 +266 58 468592 |
| Mamoabi Khalake | Leralleng | Village Chief | - | +266 50 726601 |
| Liau Nkuka | Leralleng | Local Councillor | - | +266 58 827556 |
| Tseko Thejane | Maphianeng (Hlotse area) | Local Councillor | - | +266 50 798005 |
| Moleleki Mokheche | Lipelaneng (Hlotse area) | Local Councillor | - | +266 50 092205 |
| Samo Khasane | Ha Khasane | Village Chief | - | +266 57 306925 |
| Ramakhesane Mokone | Ha Ratomo (Khasane area) | Local Councillor | - | +266 57 150556 |
| Leloko Nkhahle | Mahlabachane (Mokomahatsi area) | Local Councillor | - | +266 59 738140 |
| Mmuso Lesapane | Mokomahatsi | Village Chief | - | +266 63 131827 +266 59 091250 |
| Kefeletsoe Phori | Mokomahatsi | Local Councillor | - | +266 59 446073 |
| Steward Jonathan | Maqasane Ha Mofeli | Village Chief | - | +266 50 261455 |
| Morena Lebina | Ha Lebina | Village Chief | - | +266 59 956381 |

| Name | Institution | Position | E-mail | Telephone |
|------------------|--------------------------|------------------|---------------|------------------|
| Tello Kebane | Pobeng (Ha Seetsa area) | Local Councillor | - | +266 58 062839 |
| Seetsa Seetsa | Fobane Ha Seetsa | Village Chief | - | +266 59 865709 |
| Samuel Mosala | Ha Tsilo | Local Councillor | - | +266 58 551567 |
| MaTsilo Makhetha | Ha Makhetha (Tsilo area) | Village Chief | - | +266 59 490693 |
| Teboho Fikase | Maholong (Tsilo area) | Local Councillor | - | +266 59 626830 |
| Phakoe Tsilo | Moromotso | Village Chief | - | +266 57 362755 |

Annex B. Stakeholders Issues and Concerns

Annex C. Format of Project Brief

According to the Environmental Act, if the proposed project or activity is listed in the Schedule, an EIA Licence is applicable, and the developer must prepare a document called a Project Brief. The document must be submitted to DoE so that the project or activity can be assessed according to the Act and other relevant regulations. If the developer wishes to appoint an environmental consultant to carry out the work, it will be necessary to forward the name(s) and qualifications of the consulting team for approval. In terms of s. 28(1) of the Act, the Project Brief must as a minimum, state the following:

1. The purpose, nature, location and scope of the project.
2. The activities or operations proposed to be undertaken and a preliminary design (including site, technology, construction and operation procedures and handling of waste).
3. Location map of the project site (1:50.000) and detailed map of site (1:4000).
4. The key planning, policy, legal and administrative requirements – for example, in addition to the EIA Licence, what other permits will be required?
5. The area(s) of air, land, water and ecosystems that may be affected by the activity.
6. The conditions and the sensitivity of the land, air, water and ecosystems that may be affected.
7. Anything of cultural or historic value that may be affected.
8. Anticipated impacts of the project/activity on the natural and human environment.
9. The possible products or by-products anticipated and their environmental consequences.
10. The number of people the project is likely to employ, in both the construction and operations phases.
11. Alternatives to the project – it is important that a wide range of the most feasible and practicable project alternatives are identified at this very early stage in the licensing process.
12. Interested and affected parties/individuals identified and/or consulted.
13. Environmental issues identified – this should include any other issues associated with the project/activity that have not been included in the above points. These may be issues identified by communities, individuals or organisations during the consultation process, and will have various levels of significance. These issues should be addressed briefly in the PB.

14. Key elements of an environmental management and mitigation plan.

A draft notice for publication in national and local newspapers describing the project and disclosing where and when the Project Brief is available for public review. Further, the following should be borne in mind: Policy, legal and administrative requirements. These are very important because they determine the planning framework within which the proposal must be developed. It is important at this stage to pay attention and justify the proposal in accordance with the National Development Plan (NDP), District Development Plans (DDP) and the Integrated National Land Use Plan (INLUP), as well as any applicable international conventions e.g. the Convention on Biodiversity

Interested and affected parties (I&APs). The first stage is to identify the interested and affected parties. However, for certain proposals there is no clearly definable group of I&APs. In these instances, the most effective approach is to notify the public through advertisements in the press or other media. In Lesotho this will have to be handled on a case by case basis, taking into account issues of language, education, and accessibility.⁹⁸ Identification of significant issues. The issues may either be definable impacts (e.g. air pollution), the cause of an impact (e.g. blasting at a quarry) or a generally expressed concern (e.g. relocation or social disruption of rural communities) which need to be translated into specific impacts to be investigated. In some cases, issues identified by I&APs may prove to be inaccurate or insignificant. Bearing in mind that the purpose of the PB or the EIS is to focus on relevant issues, it is important to eliminate insignificant issues from the investigation at the outset. Once a broad range of issues have been identified, it will be necessary to evaluate them and highlight significant issues for investigation and assessment. There are various methods, techniques (e. g. rating or ranking) or criteria (e.g. comparing with Water Quality Standards) that could be used to assist the developer or his consultant to determine whether issues are significant and thus require examination. Arguments and documentation that a particular issue is or is not significant is sometimes difficult, and it may not always be possible to reach consensus on whether 'perceived' issues/impacts are significant during consultation with I&APs. It is thus important that the consultant or study team provide a brief explanation in the Environmental Impact Statement as to why certain issues have been determined as being significant/insignificant and were thus eliminated/included from/in the study.

Alternatives. These must be considered from the very outset, as they can change the nature, design, allocation or direction of a project at an early stage. It is in evaluating alternatives that fundamental issues of sustainability can be addressed and communities can articulate their values and visions. This process provides a basis for choice among options available to the decision-makers. In all assessments of alternatives, the decision-makers must be provided with information that enables them to choose the most acceptable alternative by making trade-offs between biophysical, social, economic, historical, cultural and political factors. The no-action (no-go) alternative must also be examined.

Public Participation and Access to Information The developer must ensure that all I&APs, including affected communities are invited to comment on the PB and the Environmental Impact Study, if the latter has been required by DOE. The PB should

include a detailed description of the public participation process undertaken during the Project Brief stage, as well as proposals for further consultation during the EIA.

In particular, the method of notifying rural and disadvantaged communities of proposals and opportunities to participate needs special consideration. Relevant authorities as well as local councils and NGOs should be consulted on how to identify I&APs. The onus is on the developer to ensure that all interested and affected parties have been informed about the proposal and their input sought. Notification does not necessarily mean that the proponent needs the permission of the interested and affected parties, but failure to involve neighbours and other I&APs at an early stage can cause serious delays and problems later. [EA Sec. 30(1)(d)] If DOE deems it necessary, a public hearing inviting all I&APs must be held within the vicinity of the proposed project. The developer may decide in any case to hold a public meeting to enable I&APs to express their issues and concerns on the proposed project. In the latter instance, the developer must inform NES about the holding of such hearing, the venue, date and time, who has been invited and how the I&APs were invited/informed. The developer must ensure that he/she invites NES and relevant EU's to such a hearing. Invitations must be sent or published by the developer 30 days prior to the date of the hearing. The developer must appoint an appropriate facilitator for the public hearing and the facilitator (or his/her secretary) must compile all relevant questions and requests presented at the meeting and submit written conclusions of the meeting to NES not later than 14 working days after the holding of the meeting. NES will then consider the outcome of the hearing and will reflect all relevant issues and concerns in its decision-making and records of decision. Note that the developer is expected to bear all costs related to the above mentioned public participation process including advertising in newspapers, printing of posters, broadcasting, issuing invitations to public hearings and costs related to facility rentals etc. In summary, therefore, the public participation proposal contained in the Project Brief and/or the terms of reference for the EIA should contain the following information:

- Name of 3 popular local newspapers in which the PB or EIS will be advertised;
- Date(s) of advertising;
- Draft advert text;
- Date of public hearing, if required by NES or voluntarily proposed by the developer; • Place of public hearing;
- Name of facilitator for the public hearing;
- List of invited authorities (EUs), communities, I&APs and other stakeholders;
- Date for when invitation will be sent out;
- Date for broadcasting, or any other means of invitation, if required by NES; and • Location of posters, if required by DOE.

Access to information [EA Sec. 29.3] & [EA Sec. 95.1] The developer shall be aware that the PB and EIS are documents which NES has an obligation to make open to any person who seeks information on the proposed project. However, a fee might have to be paid to receive such copy of a PB or an EIS or other documents. NES will keep a record of each PB or EIS received and shall keep certain information confidential where circumstances require this. The developer must specifically outline in the PB or EIS which information

should be kept confidential. The grounds for such confidentiality must be clearly stated, keeping in mind that the Environmental Impact Study must be open for public inspection.

Annex D. Minimum Content of EIA/ESIA Report

According to the Environmental Act, The Environmental Impact Statement shall, as a minimum, include the following:

- a) Detailed description of the project and its activities;
- b) Potentially affected environment, including information needed for assessment of effects;
- c) Description of technology, methods and processes including main alternatives and reasons for declining to use those alternatives;
- d) Reasons for selecting the proposed site and rejecting alternatives;
- e) Environmental impacts including direct, indirect, cumulative, short- and long-term effects;
- f) Identification and description of mitigation measures, options for minimising or eliminating processes/activities with a detrimental environmental effect;
- g) Effects on the environment which are beyond the limits of national jurisdiction and a description of which mitigation measures will be undertaken;
- h) Brief description of how the information in this EIS report has been generated i.e. methodology, survey techniques, modelling parameters etc;
- i) Identification of gaps in knowledge and uncertainties encountered when completing the EIS;
- j) Social, economic and cultural effects of the development/project;
- k) Irreversible and irretrievable loss of resources involved in the development/project; and
- l) Any other matters that DOE find relevant.

The EIS must provide an Environmental Management and Mitigation Plan (EMMP) which describes how the project will be implemented and the controls over the implementation, how mitigation measures will be implemented and how environmental restoration after construction will be carried out. The EMMP must also include details on how final rehabilitation of the environment on termination or decommissioning of the project will be undertaken. The information in the EIS must be up-to-date and reflect all relevant aspects outlined above.

Annex E. Screening Checklist

Format 1.0: SCREENING CHECKLIST (Filled and prepared by TICP/PIT environmental and social experts)

| | | |
|---|--------------------------|--------------------------|
| TICP Project: Select relevant project | | |
| Project Investment name | [type here] | |
| Location | [type here] | |
| Estimated cost (USD) | [type here] | |
| TYPE OF PROJECT OR ACTIVITY | | |
| Sub Project Type | | |
| <input type="checkbox"/> Construction of roads <input type="checkbox"/> Construction of bridges | | |
| Please give more details: [type here] | | |
| <p>For all sub- projects, an Environmental and Social Management Plan (ESMP/ESIA) will be required due to the fact that they are in the Schedule A list of Government of Lesotho in regard to projects requiring ESIA</p> <p>In addition, the following studies may be required:</p> | | |
| Will this project affect vulnerable and marginalized groups? If yes, a Vulnerable and Marginalized Groups' Plan will be required | <input type="checkbox"/> | <input type="checkbox"/> |
| Will the project require land for its development, and therefore displace individuals, families or businesses from land that is currently occupied, or restrict people's access to crops, pasture, fisheries or forests, even, whether on a permanent or temporary basis? If yes, a Resettlement Action Plan will be required | <input type="checkbox"/> | <input type="checkbox"/> |
| Will the investment project involve the construction of roads or bridges? | <input type="checkbox"/> | <input type="checkbox"/> |
| Will the Project: | Yes | No |
| Adversely affect natural habitats nearby, including forests, rivers or wetlands? | <input type="checkbox"/> | <input type="checkbox"/> |
| Require large volumes of construction materials (e.g. gravel, stone, water, timber, firewood)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Use water during or after construction, which will reduce the local availability of groundwater and surface water? | <input type="checkbox"/> | <input type="checkbox"/> |
| Affect the quantity or quality of surface waters (e.g. rivers, streams, wetlands), or groundwater (e.g. wells, reservoirs)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Be located within or nearby environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species? | <input type="checkbox"/> | <input type="checkbox"/> |
| Lead to soil degradation, soil erosion in the area? | <input type="checkbox"/> | <input type="checkbox"/> |
| Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater | <input type="checkbox"/> | <input type="checkbox"/> |
| Create pools of water that provide breeding grounds for disease vectors (for example malaria or bilharzia)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Involve significant excavations, demolition, and movement of earth, flooding, or other environmental changes? | <input type="checkbox"/> | <input type="checkbox"/> |
| Affect historically-important or culturally-important site nearby? | <input type="checkbox"/> | <input type="checkbox"/> |
| Require land for its development, and therefore displace individuals, families or businesses from land that is currently occupied, or restrict people's access to crops, pasture, fisheries, forests or cultural resources, whether on a permanent or temporary basis? | <input type="checkbox"/> | <input type="checkbox"/> |
| Result in human health or safety risks during construction or later? | <input type="checkbox"/> | <input type="checkbox"/> |
| Involve inward migration of people from outside the area for employment or other purposes? | <input type="checkbox"/> | <input type="checkbox"/> |
| Will the Project: | Yes | No |
| Result in conflict or disputes among communities? | <input type="checkbox"/> | <input type="checkbox"/> |
| Affect indigenous people, or be located in an area occupied by indigenous people? | <input type="checkbox"/> | <input type="checkbox"/> |
| Be located in or near an area where there is an important historical, archaeological or cultural | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|---|--------------------------|--------------------------|
| heritage site? | | |
| Result in a significant change/loss in livelihood of individuals? | <input type="checkbox"/> | <input type="checkbox"/> |
| Adversely affect the livelihoods and /or the rights of women? | <input type="checkbox"/> | <input type="checkbox"/> |

If you have answered Yes to any of the above, please describe the measures that the project will take to avoid or mitigate environmental and social impacts

[type here]

What measures will the project take to ensure that it is technically and financially sustainable?

[type here]

If the answer to any of questions “Yes”, please use the indicated Annexes or sections(s) of the ESMF for guidance on how to avoid or minimize typical impacts and risks.

When considering the location of an investment, rate the sensitivity of the proposed site in the following table 10 according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to adequately avoid, mitigate or manage potential effects.

CONCLUSION

Which course of action do you recommend?

☐ **FULL ESIA** ☐ **ESMP** ☐ **RAP/RPF is the reference document with reference to resettlement issues**

☐ **OTHER ENVIRONMENTAL/SOCIAL PLANS**

☐ There are no environmental or social risks

[Type here]

If a RAP is required, will the project Displace or restrict access for less than 200 individuals, or if over 200, are losses for all individuals less than 10% of their assets?

If Yes, Prepare an abbreviated RAP ☐

If No, Prepare a full RAP ☐

Full details of resettlement requirements are provided in the accompanying Resettlement Policy Framework.

Completed by: [type here]

Name: [type here]

Position: [type here]

Date: [type here]

Format 2.0: SCREENING CHECKLIST REVIEW FORM (Prepared by Environment and Social Specialists TICP/PIT).

| | Yes | No |
|--|--------------------------|--------------------------|
| Based on the location and the type of investment, please explain whether the Proponent's responses are satisfactory. | <input type="checkbox"/> | <input type="checkbox"/> |
| Their description of the compliance of the investment with relevant planning Documents | <input type="checkbox"/> | <input type="checkbox"/> |
| If 'No', please explain: [type here] | | |
| Their responses to the questions on environmental and social impacts | <input type="checkbox"/> | <input type="checkbox"/> |
| If 'No', please explain: [type here] | | |
| Their proposed mitigation measures | <input type="checkbox"/> | <input type="checkbox"/> |
| If 'No', please explain: [type here] | | |

| | |
|--|---|
| Their proposed measures to ensure sustainability | <input type="checkbox"/> <input type="checkbox"/> |
|--|---|

If 'No', please explain: [type here]

REVIEWER'S CONCLUSION

Which course of action do you recommend?

- ☐ **FULL ESIA** ☐ **ESMP**; ☐ **RAP-RPF is the reference document with reference to resettlement issues**
☐ There are no environmental or social risks

[Type here]

If a RAP is required, will the investment displace or restrict access for less than 200 Individuals, or if over 200, are losses for all individuals less than 10% of their assets?

- If Yes,** Prepare an abbreviated RAP ☐
If No, Prepare a full RAP ☐

Full details of resettlement requirements are provided in the accompanying Resettlement Policy Framework. If this differs from the Proponent's recommended course of action, please explain:

[Type here]

☐ Preparation of a project Report, based on field appraisal by DOE District Officer, is required to investigate further, specifically to investigate:

[Type here]

☐ **Reject**

Review form completed by: [type here]
Name: [type here]
Position / Community: [type here]

Completion of this screening form will facilitate the identification of potential environmental and social impacts, determination of their significance, assignment of the appropriate environmental category, proposal of appropriate environmental mitigation measures, or recommend the execution of an Environmental and Social Impact Assessment (ESIA), if necessary.

Annex F. Sample Chance Find Procedures

Summary of Impact Management

As with any project of this scale and nature, there are certain impacts that cannot be entirely eliminated, i.e. Residual impacts after implementing mitigation measures. With respect to impact mitigation, the Project subscribes to the philosophy of impact avoidance (by reasonable changes to Project planning and/or design) and impact reduction (to reduce impacts to acceptable levels as reasonably possible).

Objectives and Target

The objectives for the **construction phase** of the Project are as follows:

1. To mitigate impact through specified management actions;
2. To provide a Chance Finds Program to be followed in case unexpected archaeological resources are encountered;
3. To establish the roles and responsibilities of Project staff and contractors in relation to chance finds; and
4. To reduce the risk of major Project delay.

Management Actions

The most effective way to manage potential impacts to cultural heritage sites is by well-planned avoidance through Project redesign. Where avoidance is not possible, impacts will be managed through:

- Post-assessment archaeological test excavations (Pre-Construction Phase);
- A stakeholder engagement program (Pre-Construction/Construction Phases);
- Implementation of a Chance Finds Program (Construction Phase);
- Provision of Cultural Heritage Training to Project Staff (All Project Phases);
- Marking of Vulnerable Cultural Heritage Sites (Pre-Construction Phase); and
- Reduced Vehicle Speed Limit Near Sites Prone to Vibration or Accidental Impact (All Project Phases).

Stakeholder Engagement Program (Pre-Construction/Construction)

A stakeholder engagement program will be implemented that will seek the input of local communities regarding the sensitivities of cairns, graves and other sites. This program will:

- Identify which cultural heritage sites are currently utilised or viewed as significant by local communities in order to implement measures for avoidance of these sites during the construction and operation phases of the mine; and
- Where avoidance is deemed to be unfeasible, establish compensation measures including, but not limited to, site relocation or archaeological excavations to mitigate impacts to significant cultural heritage sites.

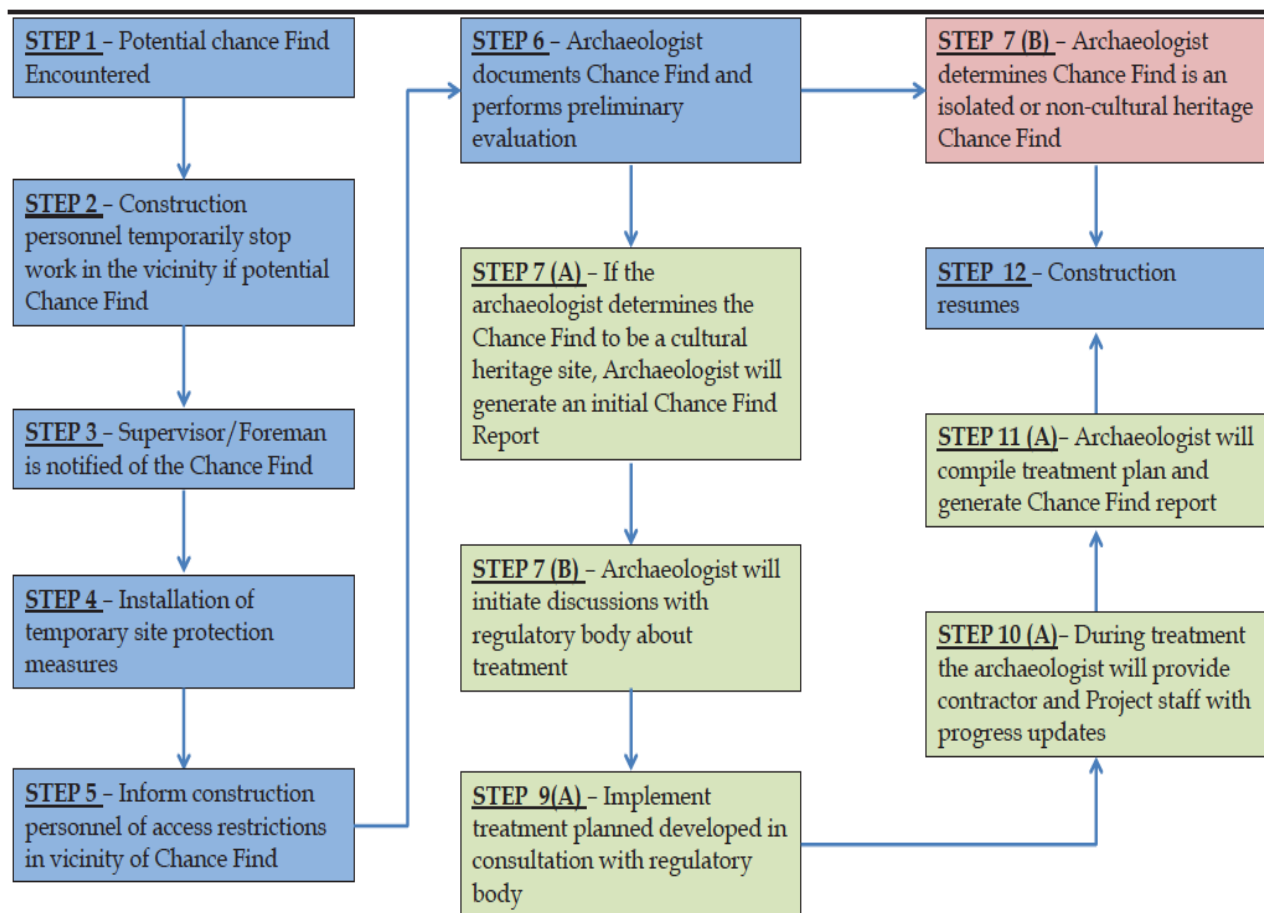
This focused stakeholder engagement program will be implemented during the pre-construction phase of the Project. The program will continue throughout the construction and operation phases to address stakeholder concerns as they arise.

Implementation of a Chance Finds Program (Construction)

The Chance Finds Program is intended to manage impacts to known, probable and unknown cultural heritage sites during the Project construction phase. It also defines the protocols and procedures for assessing any unanticipated cultural heritage sites or materials encountered during the Project construction phase. These protocols include:

- Localized stop work authority and procedures for protecting cultural heritage materials encountered during construction;
- Procedures for the documentation and assessment of Chance Finds to determine if additional investigations are required;
- Protocols for consultation with Project management, cultural heritage specialists, and national regulatory bodies to design and implement additional investigations; and
- Roles and responsibilities of all stakeholders.

The Chance Finds protocol will be implemented through a combination of Project staff training and the use of an archaeological monitor(s). A generalized Chance Finds Program is outlined below which describes the approach.



A Chance Finds Program includes the following provisions: -

- A qualified cultural heritage specialist (1) should remain on-call and will provide oversight of the Chance Finds Program. The on-call cultural heritage specialist should be used on an as-needed-basis and will monitor the Chance Finds Program from his/her desktop. The on-call specialist should only conduct field monitoring in the case of unusual or highly sensitive and importance chance finds.
- An archaeologist will also remain on-call on an as-needed-basis and will only conduct field monitoring if the Project either encroaches on areas of known archaeological sensitivity, or encounters chance finds of low to moderate importance.
- The archaeologist must be present during all ground disturbing works conducted within specific areas of concern.
- Ground works in other areas will be monitored by at least one member of the Project staff that has received cultural heritage training.
- A chance find can be reported by any member of the Project.

Accordingly, it is necessary to provide cultural heritage training to all Project staff and sub-contractors. A separate section detailing cultural heritage training is provided in the next section.

- If a chance find is encountered the first course of action is to stop work in the vicinity of the find.

Then the following steps will be undertaken:

- Inform site supervisor/foreman.
- Install temporary site protection measures (warning tape and stakes, avoidance signs).
- Inform all personnel of the Chance Find if access to any part of the work area is restricted.
- Establish a localized no-go area needed to protect the Chance Find.
- Archaeologist will perform a preliminary evaluation to determine whether the Chance Find is cultural heritage and if so, whether it is an isolated or part of a larger site or feature.
- Artefacts will be left in place when possible; if materials are collected they will be placed in bags and labeled by Archaeologist and transported to the Archeological Headquarters; no Project personnel are permitted to take or keep artefacts as personal possessions.
- Document filed through photography, notes, GPS coordinates, and maps (collect spatial data) as appropriate.
- If the Chance Find proves to be an isolated find or not cultural heritage, the Archaeologist will authorize the removal of site protection measures and activity in the vicinity of the site can resume.
- If the Archaeologist confirms the Chance Find is a cultural heritage site they will inform the Archeological Headquarters and initiate discussions with the latter about treatment.
- Prepare and retain archaeological monitoring records including all initial reports whether they are later confirmed or not. The record will include coordinates of all observations to be retained within the project's GIS system (viz. ArcGIS).
- Develop and implement treatment plans for confirmed finds using the services of qualified cultural heritage experts.
- If a Chance Find is a verified cultural heritage site, prepare a Final Chance Finds report once treatment has been completed.
- While investigation is ongoing, co-ordinate with on-site personnel keeping them informed as to status and schedule of investigations, and informing them when the construction may resume.
- If mitigation is required, then expedient rescue excavations will be undertaken by the local specialist, except in the case that the chance find is of international importance, such as early hominid remains. If early hominid remains are encountered special care will be taken and archaeologists with the appropriate expertise in addressing the find will be appointed.

Provision of Cultural Heritage Training (All Project Phases)

A Training Programme for Project management and for the construction contractor's management and field staff. The objective of the Cultural Heritage Training programme is to manage potential impacts to known and unknown cultural heritage sites by facilitating the identification and reporting of potential Chance Finds encountered during construction works.

The program will consist of lecture(s) and classroom training; Chance Finds tool kits, talks/training for field staff; and the development of reference materials such as fliers, signage, and educational posters to be posted in the construction camp(s) and facilities. Initial high level training should be designed and delivered by an experienced international cultural heritage specialist.

The Cultural Heritage Specialist will then be responsible for providing training for all future staff that join the Project. Training includes:

- Defining Chance Finds;
- Identifying Chance Finds in the field;
- Local sensitivity to damage to cultural heritage resources;
- Sensitivity of cultural heritage sites to looting and legal penalties for looting or the destruction of cultural heritage sites;
- Chance Finds reporting procedures; and
- The consultation process with local and national stakeholders and regulatory agencies.

The presence of construction personnel with training in the identification and reporting of Chance Finds will limit the need for direct archaeological involvement to the most sensitive situations such as monitoring in the vicinity of known or suspected cultural heritage sites.

Implementation of a Chance Finds Programme (Construction)

Provision of Cultural Heritage Training (All Project Phases)

After receiving training from the archaeological specialists, the Contractors Environmental Health and Safety Specialist shall be responsible for training all new staff and contractors in identifying chance finds in the field and chance finds reporting procedures along with informing them about local sensitivities around damage to cultural heritage sites.

Marking of Vulnerable Cultural Heritage Sites (Pre-Construction)

Under the direction of the Environmental Health and Safety Specialist, a qualified contractor staff member with map reading skills will be sent out to the site locations to mark the site boundaries. When the site boundary marking effort is finished, the GPS coordinates for each marker spot will be compared against the mapped site boundaries to ensure that the appropriate area is covered.

VERIFICATION AND MONITORING

Two kinds of monitoring will be implemented throughout the lifespan of the Project, namely – 2) Monitoring Community Complaints.

Community Complaints

Stakeholder meetings will be held quarterly with the local community to discuss any potential complaints related to the management of cultural resources. The engagement will be conducted by the Project's Community Liaison Officer and the results should be sent back to the on-call international specialist for review. If there are substantial complaints, then corrective actions will be developed in consultation with appropriate specialists

Reporting and Documentation

Government/Authority/Lender and Internal Reporting

Quarterly reports during the Project lifespan (during the construction, operation and decommissioning phases) will be prepared on the vibration monitoring and community outreach program and will be limited in scope to the Project Area. During construction, reports concerning chance finds will be completed on a weekly basis, reporting construction activities performed and whether chance finds occurred or not. Any chance finds made and the measures to assess and manage the find will be reported.

The reports will summarize the data collected through the monitoring programme, identifying any occasions when the action levels were triggered and the corresponding management action that was taken. The reports will also summarise any complaints received from the local communities, setting out the complaint, the efforts made to substantiate the basis of the complaint, and any actions taken to address the complaint and correct Project performance.

Community Reporting

A summary report suitable for a non-technical audience will be developed and disclosed on a quarterly basis along with the quarterly community complaint monitoring engagements. This report will focus upon graphical representation of information, and in particular outcomes of any community complaints and those actions taken to manage any significant impacts.

CULTURAL HERITAGE MANAGEMENT PLAN SUMMARY

Pre-Construction Phase

| Impact | Objective | Mitigation Measures | Monitoring Plan | Responsibility |
|---|---|--|---|----------------------------|
| Impacts from Ground Disturbing Project Activities | To identify areas within the proposed processing plant where sub-surface resources are likely to be found | Post-Assessment Archaeological Test Excavations Provision of Cultural Heritage Training | Quarterly Basis – Community Complaint Report concerning issues related to post assessment archaeological test excavations | Archaeological Specialists |

| | | | | |
|---|--|--|--|--|
| | | Stakeholder Engagement Program | | |
| Disturbance by Non-Local and/or Local Staff | To ensure that non-local staff have sufficient knowledge to respect the cultural resources of the local population | Provision of Cultural Heritage Training Marking of Vulnerable Cultural Heritage Sites Stakeholder Engagement Program | Quarterly Basis – Community Complaint Report concerning issues related to non-local interactions with cultural sites | Environmental and Social Manager In consultation with Archaeological Specialists |

Construction Phase

| Impact | Objective | Mitigation Measures | Monitoring Plan | Responsibility |
|---|---|---|--|--|
| Impacts from Ground Disturbing Project Activities | To limit Project delay from chance finds (and to limit impact to chance finds themselves) | Provision of Cultural Heritage Training Stakeholder Engagement Program | Weekly Basis – Chance Finds Program Quarterly Basis – Community Complaint Report concerning issues related to impacts from ground disturbance | Archaeological Specialists |
| Disturbance by Non-Local and/or Local Staff | To ensure that non-local staff respect the cultural resources of the local population | Provision of Cultural Heritage Training Stakeholder Engagement Program | Quarterly Basis – Community Complaint Report concerning issues related to non-local interactions with cultural sites | Environmental and Social Manager In consultation with Archaeological Specialists |

Operation Phase

| Impact | Objective | Mitigation Measures | Monitoring Plan | Responsibility |
|---|---|---|--|----------------------------|
| Impacts from Ground Disturbing Project Activities | To limit Project delay from chance finds (and to limit impact to chance finds themselves) | Provision of Cultural Heritage Training Stakeholder Engagement Program | Weekly Basis – Chance Finds Program Quarterly Basis – Community Complaint Report concerning issues related to impacts from ground disturbance | Archaeological Specialists |

Decommissioning Phase

| Impact | Objective | Mitigation Measures | Monitoring Plan | Responsibility |
|--------|-----------|---------------------|-----------------|----------------|
|--------|-----------|---------------------|-----------------|----------------|

| | | | | |
|---|---|---|--|--|
| Disturbance by Non-Local and/or Local Staff | To ensure that non-local staff respect the cultural resources of the local population | Provision of Cultural Heritage Training Stakeholder Engagement Program | Quarterly Basis – Community Complaint Report concerning issues related to non-local interactions with cultural sites | Environmental and Social Manager In consultation with Archaeological Specialists |
|---|---|---|--|--|

Annex G. Sample Terms Of Reference (ToR) For An Environmental & Social Impact Assessment For Roads Projects

1. Objectives of the ToR

This section should state the scope of the ESIA in relation to the screening category, and identify the geothermal project the ESIA will apply to. It should prescribe the process and its timing of project preparation, design, and implementation stages in order to adequately address Bank safeguards issues. Further, it should identify constraints (adequacy of existing baseline data and need for additional data) and provide an exact development schedule.

2. Background Information

The ToR should provide pertinent background for preparing the ESIA. This would include a brief description of:

- Statement of the project objectives,
- Implementing agency/sponsor and their requirements for conducting an ESIA,
- Project components, especially those that will finance subprojects;
- Anticipated types of subprojects/components, and what types will not be financed by the project;
- Area of influence to be assessed (description plus good map)
- Summary of environmental/social setting
- Applicable Bank safeguards policies, and consequent Project preparation requirements, as specified in the approved ISDS.

The ToR should also include a brief history of the project, including alternatives considered, its current status and timetable, and the identities of any associated projects. Also include a description of other project preparation activities underway (e.g., legal analysis, institutional analysis, economic analysis, social assessment, baseline study) since the consultant preparing the ESIA will need to coordinate with other teams to ensure an effective and efficient information exchange.

3. EA Requirements/Regulations

This paragraph should identify any regulations and guidelines which will govern the conduct of the assessment or specify the content of its report. They may include any or all of the following:

- National laws and/or regulations on environmental assessments;
- Regional, provincial or communal environmental assessment regulations;
- Environmental assessment regulations of any other financing organizations involved in the project.
- Relevant international environmental agreements/conventions to which the country is party
- World Bank Operational Policies 4.01 "Environmental Assessment," 4.04 "Natural Habitats", 4.11 "Cultural Property", 4.12 "Involuntary Resettlement", 4.10 "Indigenous People" and other pertinent operational policies and Guidelines.

4. Study Area and Likely Major Impacts

Specify the area involved and the boundaries of the study area for the assessment. Where appropriate specify the right-of-way (ROW)-width and alignment for road. Identify adjacent or remote areas which should be considered with respect to impacts of particular aspects of the project.

5. Scope of Work

In some cases, the tasks to be carried out by a consultant will be known with sufficient certainty to be specified completely in the terms of reference. In other cases, information deficiencies need to be alleviated or specialized field studies or modelling activities performed to assess impacts, and the consultant will be asked to define particular tasks in more detail for contracting agency review and approval.

Task 1. Description of the Proposed Project. Provide a brief description of the relevant parts of the project, using maps (at appropriate scale) and including the following information: location of all project related development sites and ROW's, including offsite investments; general layout; flow diagrams/drawings of facilities/operation design basis, size, capacity, flow-through of unit operations, including pollution control technology; pre-construction activities; construction activities; schedule; staffing and support; facilities and services; commissioning, operation and maintenance activities; required offsite investments; and life expectancy for major components. [Note: there may be particular types of information appropriate in the description of the project category you are concerned with. Please specify them here.]

Include the need for any resettlement plan or indigenous people development plan.

Provide maps at appropriate scales to illustrate the general setting of project-related development sites and ROW's, as well as surrounding areas likely to be impacted. These maps should include topographic contours, as available, as well as locations of major surface waters, roads, railways, town centers, parks and reserves, and political boundaries. Also provide, as available, maps to illustrate land use, including industrial, residential, commercial and institutional development, agriculture, etc.

Task 2. Description of the Environment (baseline condition). Assemble, evaluate and present baseline data on the relevant physical, biological, and socio-economic characteristics of the development area and area of influence. Include information on any changes anticipated before the project commences. [Annotate or modify the lists below to show the critical information for this project category, or that which is irrelevant to it. You should particularly avoid compiling irrelevant data.]

- a.) Physical environment: geology (e.g., stratigraphy and seismic history of development areas, integrity of geological layers protecting portable groundwater supplies); topography (e.g., drainage patterns around construction areas); soils (e.g., agricultural value); climate and meteorology; ambient air quality; existing sources of air

emissions; surface and ground- water hydrology (e.g., soil erosion and sedimentation potential, flood hazard potential); water resources).

- b.) Biological environment: flora (e.g., types and diversity); fauna (e.g., resident and migratory); rare or endangered species within or in areas adjacent to project related development sites or ROW's; sensitive habitats, including parks or preserves, significant natural sites, etc.; species of commercial importance; and species with potential to become nuisances, vectors or dangerous.
- c.) Socio-cultural environment (include both present and projected where appropriate): population; land use (e.g., year-round and seasonal); planned development activities; community structure; employment; distribution of income, goods and services; recreation; public health; cultural properties (e.g., archeological and historically significant sites); indigenous peoples and traditional tribal land; and customs, aspirations and attitudes.

Task 3. Legislative and Regulatory Considerations. Describe the pertinent regulations and standards governing environmental quality, health and safety, protection of sensitive areas, protection of endangered species, siting, land use control, etc., at international, national, regional and local levels (The TOR should specify those that are known and require the consultant to investigate for others.) If transboundary impacts are likely, relevant international conventions should be described.

Task 4. Determination of the Potential Impacts of the Proposed Project. Predict and assess all significant impacts that the project is likely to generate, in quantitative terms as far as possible. Assess the impacts from changes brought about by the project on baseline environmental conditions as described under Task 2.

In this analysis, distinguish between significant positive and negative impacts, direct, indirect, and cumulative impacts, and immediate and long-term impacts. Identify impacts that may occur due to accidental events. Identify impacts which are unavoidable or irreversible. Wherever possible, describe impacts quantitatively, in terms of environmental costs and benefits. Assign economic values when feasible. Impact analyses for sub projects should be divided between construction impacts and operational impacts.

Characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with predictions of impact. If possible, give the TOR for studies to obtain the missing information. [Identify the types of special studies likely to be needed for this project category.] For information not be obtainable until after execution, provide TOR for studies to monitor operations over a given time period and to modify designs and/or operational parameters based upon updated impact analysis.

Task 5. Analysis of Alternatives to the Proposed Project. Describe alternatives that were examined in the course of developing the proposed project and identify other alternatives which would achieve the same objectives. The concept of alternatives

extends to siting, design, technology selection, construction techniques and phasing, and operating and maintenance procedures. Compare alternatives in terms of potential environmental impacts; capital and operating costs; suitability under local conditions; and institutional, training, and monitoring requirements. When describing the impacts, indicate which are irreversible or unavoidable and which can be mitigated. To the extent possible, quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigating measures.

Include the alternative of not constructing the project to demonstrate environmental conditions without it. Alternatives should include the following: the “no action” alternative (as mentioned above); alternative means of meeting the energy requirements; the alternative of upgrading existing facilities; alternative routes and sites; alternative design; and alternative methods of construction, including costs and reliability.

Task 6. Development of an Environmental Management Plan (EMP). Recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels. Include measures to address emergency response requirements for accidental events.

Estimate the impacts and costs of those measures, and of the institutional and training requirements to implement them. Consider compensation to affected parties for impacts which cannot be mitigated. Prepare a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures. Provide environmental protection clauses for application by contractors and consultants.

The ToR should state that the concerned and affected parties should agree mitigating measures before they are submitted as recommendations in the EMP

Task 7. Identification of Institutional Needs to Implement Environmental Assessment Recommendations. Review the authority and capability of institutions at local, provincial/regional, and national levels and recommend steps to strengthen or expand them so that the management and monitoring plans in the environmental assessment can be implemented. The recommendations may extend to new laws and regulations, new agencies or agency functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting, and financial support.

Task 8. Development of a Monitoring Plan. Prepare a detailed plan to monitor the implementation of mitigating measures and the impacts of the project during construction and operation. Include in the plan an estimate of capital and operating costs and a description of other inputs (such as training and institutional strengthening) needed to implement the plan.

Depending upon local conditions and predicted impacts upon communities/individuals, there may be a need for a Resettlement Action Plan.

Task 9. Assist in Inter-Agency Coordination and Public/NGO Participation. Assist in coordinating the environmental assessment with other government agencies, in obtaining the views of local NGO's and affected groups, and in keeping records of meetings and other activities, communications, and comments and their disposition. (The Terms of Reference [TOR] should specify the types of activities; e.g., interagency scoping session environmental briefings for project staff and interagency committees, support to environmental advisory panels, public forum.). Review the authority and capability of institutions at local, provincial/regional, and national levels and recommend steps to strengthen or expand them so that the management or monitoring plans in the environmental assessment are likely to be implemented. The recommendations may extend to new laws and regulations, new agencies or agency functions, intersectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting, and financial support.

Relevant material will be provided to affected groups in a timely manner prior to consultation and in a form and language that is understandable and accessible to the groups being consulted. The consultant should maintain a record of the public consultation and the record should indicate: means other than consultations (e.g., surveys) used to seek the views of affected stakeholders; the date and location of the consultation meetings, a list of the attendees and their affiliation and contact address: and summary minutes.

6. Report.

The environmental assessment report should be concise and limited to significant environmental issues. The main text should focus on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used in interpreting those data. Detailed or interpreted data are not appropriate in the main text and should be presented in appendices or a separate volume. Unpublished documents used in the assessment may not be readily available and should also be assembled in an appendix. Organize the environmental assessment report according to the outline below. *(This is the format suggested in OP4.01; the ToR may specify a different one to satisfy national agency requirements as long as the topics required in the Bank's OP are covered)*

- Executive Summary
- Policy, Legal and Administrative Framework
- Description of the Proposed Project
- Baseline Data (Description of the Environment)
- Significant Environmental Impacts
- Analysis of Alternatives
- Environmental Management Plan
- Environmental Management and Training
- Environmental Monitoring Plan
- Inter-Agency Coordination and Public/NGO Participation

- Appendices: List of Environmental Assessment Preparers References Record of Interagency/Forum/Consultation Meetings (This is the format suggested in OD 4.01; the TOR may specify a different one to satisfy national agency requirements as long as the topics required in the Bank's directive are covered.)

7. Consulting Team

Environmental assessment requires interdisciplinary analysis. The general skills required of an environmental assessment team are: environmental specialist, ecologist, hydrology/hydrogeology, road safety specialist, civil engineer (roads and highways) social specialist. *(Identify in this paragraph which specializations ought to be included on the team for the particular project category.)*

8. Services, Facilities and Materials to be provided by the Client

The ToR should specify what services, facilities and materials will be provided to the Consultant by the World Bank and the Borrower, for example:

- The Project ISDS and draft PAD;
- Relevant background documentation and studies;
- Example ESMFs that demonstrate best practice, especially from the region or country;
- Making all necessary arrangements for facilitating the work of the Consultant and to provide access to government authorities, other Project stakeholders, and Project sites.

10. Schedule and Deliverables

Specify dates for the consultancy deliverables (e.g. detailed work plan within 2 weeks, interim report within 7 weeks, and final draft report within 10 weeks of contract signature), and the overall duration of the consultancy (e.g. 15 weeks from contract signature).

11. Technical Proposal Contents

The ToR should require a technical proposal that at least:

- Demonstrates that the Consultant understands the overall scope and nature of the ESIA preparation work, and what will be required to respond satisfactorily to each component of the ToR;
- Demonstrates that the Consultant and his proposed team have relevant and appropriate experience to carry out all components of the ToR. Detailed curriculum vitae for each team member must be included;
- Describes the overall methodology for carrying out each component of the ToR, including desk and field studies, and data collection and analysis methods; and
- Provides an initial plan of work, outputs, and staff assignments with levels of effort by task.

12. Budget and Payments

The ToR should indicate if there is a budget ceiling for the consultancy. The ToR should specify the payment schedule (e.g. 10% on contract signature, 10% on delivery of

detailed work plan, 40% on delivery of interim report, 30% on delivery of final draft ESIA, and 10% on delivery of final ESIA).

1. Other Information

Include here lists of data sources, project background reports and studies, relevant publications, and other items to which the consultant's attention should be directed.

Annex H: Terms of Reference for Environmental and Social Development Specialist

1. Environmental Officer (1x36 months)

In order to effectively implement this project, a position for an Environmental Officer have been created in the PIT for TICP to carry out the following duties:

- a) Document, manage and periodically report to the Safety and Environment Manager all matters relating to the protection and management of the environment and conservation and sustainable utilization of natural resources in and around TIC Project infrastructure development sites;
- b) Promote environmental awareness through environmental education awareness campaigns on the protection and management of the environment and conservation of natural resources in and around TIC Project infrastructure development sites;
- c) Enforce and verify compliance, through site compliance officers, with national environmental standards in accordance with guidelines, notices, orders and directives issued under Lesotho's environmental laws by conducting regular monitoring and undertaking sampling, testing and analyses;
- d) Analyse all environmental elements of TIC Project tenders and proposals with a view of determining if there could be possible changes to the environment resulting from their implementation and their short and long-term impacts, and, considering all environmental factors, propose alternatives that have a minimal impact on the same and that should be included in contracts as "Special Conditions";
- e) Keep records of all inspections and compliance monitoring exercises, and any information and environmental data that accumulates as a result of monitoring activities of Environmental compliance agents;
- f) Compile mitigation proposals on any specified sub-activity of the TIC Project including full descriptions of the mitigation measures that will be implemented in order to prevent, reduce or otherwise manage the environmental impacts of the project and how these measures could be implemented;
- g) Hold public hearings for persons or members of communities that are most likely to be affected by the proposed project or activity thereof and educate the same persons about the possible impacts and how these could be mitigated;
- h) Recommend for approval TIC Project activities that are proposed if, upon consultation or investigation, there is incontrovertible evidence that the same shall not result in significant damage to the environment;
- i) Carry out periodic environmental audits of TIC Project activities and identify those activities that are likely to have adverse impacts on the environment and in so doing, enter any land or premises for the purposes of assessing environmental impacts of activities that are carried out therein;
- j) Monitor output and impact indicators of the TIC Project as they are specified in the log frame and raise red flags where such indicators require mitigation,
- a) Determine how far TIC Project activities on the ground conform with the environmental impact statement and take all reasonable measures to mitigate

- undesirable effects that were not contemplated in the environmental impact statement; and
- b) Provide such assistance as may be required for the periodic compilation of environmental impact assessment reports of the TIC Project.

Qualifications

- A degree in environmental management or related field with a minimum 2 years of practical experience in the monitoring and evaluation of transport sector projects. Experience in the assessment of environmental impacts of construction projects will be an added advantage;
- A level 6 national diploma in environmental management or related field with a minimum 5 years of practical experience in an inspection capacity. Experience in the assessment of environmental impacts of construction projects will be an added advantage;
- Willingness to work under harsh conditions and to travel extensively in rural areas over rugged terrain;
- Experience in organizing public campaigns in rural settings and dedication to working with communities;
- Good oral and written communication skills and ability to work as a member of a multidisciplinary team; and
- Fluency in Sesotho and experience in working for donor funded projects will be an added advantage.

Socio-economist (1x36 months)

A position of Socio-economist has been created in the PIT for TICP to carry out the following duties:

- a) Document, manage and periodically report to the Safety and Environment Manager all matters relating to the protection and management of livelihoods of rural households in and around TIC Project infrastructure development sites;
- b) Document and report on the social dimensions of the TIC Project at the local level by determining major stakeholders, vulnerable groups, gender patterns, people with disabilities, the elderly, the marginalized, etc.;
- c) Determine and document social groups that are likely to be directly or indirectly affected by the TIC Project and how they are likely to be affected;
- a) Determine and document local and national institutions that are likely to be directly or indirectly affected by the TIC Project and how they are likely to be affected;
- b) Determine and document potential users of the new transport infrastructure and how these are likely to be affected by the same;
- c) Mobilize communities for the election of Community Liaison Committees and train the same on their expected roles under ESMF and on the management of potential negative social impacts of the TIC Project;
- d) Plan and supervise an Environmental and Socio-economic Baseline Study involving socio-economic surveys, including traffic counts, to determine baseline environmental and socio-economic conditions around/along TIC Project sites;
- e) Plan and supervise Interim and Terminal Impacts Evaluation Studies involving socio-economic surveys, including traffic counts, to determine in-construction and

post-construction environmental and socio-economic impacts of TIC Project activities around/along Project sites;

- f) Liaise with Labour Desks, contractors and Community Liaison Committees to ensure that working and safety conditions are within acceptable standards and that women and other marginalized groups are provided with protection and equal opportunities to participate in project activities;
- g) Forge collaborations with local NGOs and CBOs in order to design a social agenda that will minimise negative social impacts of the TIC Project and realise positive social outcomes;
- h) Monitor outcome and impacts indicators of the TIC Project as they are specified in the log frame and raise red flags where the values of such indicators require mitigation;
- i) Liaise with local institutions, particularly health facilities, schools, etc. to ensure that negative public health impacts of the TIC Project are held under check, and to disseminate health education;
- j) Liaise with local institutions, particularly NGOs, CBOs, etc. to identify alternative income generating activities and train and support some community members for these activities;
- k) Assess potential social risks of TIC Project tenders and proposals and how these are likely to impact on the achievement of the project's outcomes, and draft "Special Conditions" to mitigate these risks;
- l) Assist consultants during the interim and terminal evaluations of the TIC Project and participate in reviewing reports thereof;
- m) Take all reasonable measures to mitigate undesirable social impacts such as theft, human and contraband trafficking, prostitution, etc. that were not contemplated in the environmental impact statement; and
- n) Provide such assistance as may be required for the periodic compilation of environmental and socio-economic impact assessment reports of the TIC Project.

Qualifications

- A university degree in social development, social science or related field with a minimum 2 years of practical experience in the assessment of socio-economic impacts of construction projects. Experience in the transport sector will be an added advantage;
- Experience in conducting socio-economic surveys and in the monitoring of development projects;
- Willingness to travel extensively in rural areas over rugged terrain;
- Experience in organizing public campaigns in rural settings and dedication to working with communities;
- Good oral and written communication skills and ability to work as a member of a multidisciplinary team; and
- Fluency in Sesotho and experience in working for donor funded projects will be an added advantage.

Duty Station

Maseru, with extensive travelling to project sites

Annex I: ESMP Compliance Monitoring and Evaluation

Name of Project Site.....

Name of Monitor.....

Date of Monitoring.....

C = Compliant NC = Non-compliant PC = Partially compliant N/A = Not applicable

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|-----------|--|---|----|----|-----|----------|-----------------|
| 1. | CAMP ESTABLISHMENT: | | | | | | |
| 1.1 | Camp and construction sites fenced | | | | | | |
| 1.2 | Camp and construction sites security | | | | | | |
| 1.3 | Camp and construction sites kept neat | | | | | | |
| 1.4 | No breaches on camp and construction site fence | | | | | | |
| 2. | CLEARING AND STRIPPING | | | | | | |
| 2.1 | Machinery not susceptible to environmental damage | | | | | | |
| 2.2 | Topsoil cleared of debris | | | | | | |
| 2.3 | Top soil not compacted | | | | | | |
| 2.4 | Top soil stockpiles not higher than 2.5m | | | | | | |
| 2.5 | Top soil stockpiles not contaminated with oils | | | | | | |
| 2.6 | Topsoil stockpiles protected from erosion | | | | | | |
| 2.7 | Archaeological artefacts unearthed and correct procedures followed | | | | | | |
| 3. | CONSTRUCTION CAMP | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|-----------|---|---|----|----|-----|----------|-----------------|
| 3.1 | Location of camp poses minimum impact on environmental and social conditions | | | | | | |
| 3.2 | No construction camp located on sensitive ecosystem | | | | | | |
| 3.3 | Camp buildings are either containers or prefabricates | | | | | | |
| 3.4 | Camp buildings appropriately constructed | | | | | | |
| 3.5 | Standard fire fighting equipment available on site and in working order | | | | | | |
| 3.6 | No gas/metal cutting or welding takes place in working areas | | | | | | |
| 3.7 | All construction related structures, equipment, materials and facilities are removed at the completion of the project | | | | | | |
| 3.8 | The construction site is cleared and cleaned and rehabilitated to the satisfaction of the ESA | | | | | | |
| 4. | VEHICLE PARKING AND SERVICE AREAS | | | | | | |
| 4.1 | A dedicated parking area for vehicles and plant in the camp site | | | | | | |
| 4.2 | No oil or fuel leaks from vehicles or plant | | | | | | |
| 4.3 | Prevention of infiltration of petroleum products | | | | | | |
| 4.4 | Oils from the service area drained into a sump for treatment | | | | | | |
| 4.5 | Drainage from the wash bay directed into a | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|------------|--|---|----|----|-----|----------|-----------------|
| | skimming tank and then into a sedimentation pond | | | | | | |
| 4.6 | Contaminated soil removed and deposited into a designated dump site | | | | | | |
| 4.7 | Workshop staff trained on prevention of soil contamination | | | | | | |
| 4.8 | Vehicles and plant shall only be serviced in a designated area | | | | | | |
| 5. | FUEL STORAGE AREAS | | | | | | |
| 5.1 | Provision of bung walls around fuel storage with a sump | | | | | | |
| 5.2 | No underground fuel storage | | | | | | |
| 5.3 | All drainage from fuel storage to be treated to remove oils and fuels | | | | | | |
| 6. | DUST CONTROL | | | | | | |
| 6.1 | Appropriate measures taken to minimise dust | | | | | | |
| 6.2 | Dust control by water spraying | | | | | | |
| 6.3 | ACCES ROADS AND TRAFFIC ACCOMMODATION | | | | | | |
| 6.4 | Use of existing access roads | | | | | | |
| 6.5 | Only ESA approved access roads used | | | | | | |
| 6.6 | Temporary roads decommissioned and appropriately rehabilitated | | | | | | |
| 6.7 | Temporary and permanent drainage works to protect areas that are susceptible to soil erosion | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|-----------|--|---|----|----|-----|----------|-----------------|
| 6.8 | Temporary works to accommodate traffic should be completed before road closures | | | | | | |
| 6.9 | Where half width road is used to accommodate traffic, flagging and proper signage must be used to direct traffic | | | | | | |
| 7. | SANITATION | | | | | | |
| 7.1 | VIP or equivalent latrines provided at camp or work site | | | | | | |
| 7.2 | Latrines efficient, sanitary and non-offensive | | | | | | |
| 7.3 | A minimum of one toilet per 10 persons | | | | | | |
| 7.4 | Temporary storage of construction waste to be kept in designated areas | | | | | | |
| 7.5 | Off-site disposal of construction waste to be in approved area | | | | | | |
| 7.6 | Spoil material to be used in the rehabilitation of areas or taken to an identified borrow pit | | | | | | |
| 7.7 | All refuse generated should be removed to an approved disposal site | | | | | | |
| 7.8 | Contractor to conduct regular clean ups of litter and store it in refuse bins | | | | | | |
| 8. | HYDROLOGY AND RIVER COURCES | | | | | | |
| 8.1 | Construction materials or pollutants such as cement are not allowed to fall or flow into the river bed | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|------------|--|---|----|----|-----|----------|-----------------|
| 8.2 | Washing of clothes or vehicles not allowed in the rivers | | | | | | |
| 8.3 | A laundry facility is provided in the camp and the effluent from this facility flows into a French drain | | | | | | |
| 8.4 | No activity generates run-off of sediments into any water course | | | | | | |
| 8.5 | Any activity that adversely affects aquatic fauna and flora shall be forbidden | | | | | | |
| 8.6 | The flow of the river is not blocked during construction | | | | | | |
| 8.7 | No activity creates unnecessary disturbance of the river embankment as an extremely sensitive zone | | | | | | |
| 9. | FLORA AND FAUNA | | | | | | |
| 9.1 | Natural vegetation is kept in as undisturbed a state as possible | | | | | | |
| 9.2 | All incidents of harm to any animal or natural vegetation is reported to the ESA | | | | | | |
| 10. | BORROW PITS | | | | | | |
| 10.1 | Existing borrow pits to be used as far as possible | | | | | | |
| 10.2 | No area of a borrow pit should pond to avoid the drowning of children | | | | | | |
| 10.3 | The borrow pits have no steep slopes | | | | | | |
| 10.4 | All borrow pits are appropriately | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|------|--|---|----|----|-----|----------|-----------------|
| | rehabilitated after use | | | | | | |
| 10.5 | New borrow pits will require due diligence of EIA by the ESA | | | | | | |
| 10.6 | TRAFFIC AND PLANT ON SITE | | | | | | |
| 10.7 | Adequate and appropriate traffic warning signage to be placed on the route of construction vehicles | | | | | | |
| 10.8 | The contractors ensures that there is no creation of a nuisance from spillage of material or dust creation | | | | | | |
| 10.9 | Delivery of materials is scheduled for off-peak traffic hours | | | | | | |
| 11. | PERSONNEL | | | | | | |
| 11.1 | Normal working hours are observed | | | | | | |
| 11.2 | Warning signs for possible occupational health and hazard are posted | | | | | | |
| 11.3 | Overtime hours recorded and remunerated | | | | | | |
| 11.3 | Cooking facilities for construction staff are provided for in the camp | | | | | | |
| 11.4 | Harvesting of trees and wood are not allowed | | | | | | |
| 11.5 | Fires are only allowed in designated area | | | | | | |
| 11.6 | Construction staff has access to and is trained to use appropriate fire fighting equipment | | | | | | |
| 11.7 | The contractor or his staff has not harmed or | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|-------|---|---|----|----|-----|----------|-----------------|
| | cleared trees , timber and shrubs without approval | | | | | | |
| 11.8 | The contractor takes all measures to prevent hunting, capturing or killing animals or birds in the vicinity of project sites | | | | | | |
| 11.9 | No trespassing on adjoining properties and no interference with livestock, game or crops | | | | | | |
| 11.10 | The contractor ensures that arrangements are made on site for the maintenance of health and prevention of communicable diseases | | | | | | |
| 11.11 | There are adequately equipped first aid kits on site | | | | | | |
| 11.12 | The contractor shall ensure that suitable safety regulations, precautions and awareness are established on site | | | | | | |
| 11.13 | Safety helmets and protective clothing are worn where deemed necessary | | | | | | |
| 11.14 | The contractor shall provide for a constant supply of safe potable water for human consumption to the site | | | | | | |
| 11.15 | The contractor is responsible for the behaviour and discipline of all personnel on site | | | | | | |
| 12. | PERSONNEL EDUCATION | | | | | | |
| 12.1 | The contractor ensures that construction | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|--------|---|---|----|----|-----|----------|-----------------|
| | workers receives ESMF training (induction) before commencement of the works | | | | | | |
| 12.2 | The contractor ensures that construction workers have a clear understanding of HIV and AIDS and associated preventive measures | | | | | | |
| 12.3 | The contractor ensures that construction workers have access to: | | | | | | |
| 12.4.1 | HIV testing services | | | | | | |
| 12.4.2 | Free preventative commodities | | | | | | |
| 12.4.3 | Antiretroviral treatment | | | | | | |
| 13. | HEALTH AND SAFETY | | | | | | |
| 13.1 | A health and safety coordinator is on site | | | | | | |
| 13.2 | EHS needs of the contractor and staff have been identified | | | | | | |
| 13.3 | An environmental, health and safety system (EHS) is developed | | | | | | |
| 13.4 | All staff have undergone EHS staff induction training | | | | | | |
| 13.5 | All employees have received refresher EHS training | | | | | | |
| 13.6 | All Employees engaged in activities that potentially cause significant environmental and social impacts are competent in terms of EHS training and experience | | | | | | |
| 14. | CULTURAL HERITAGE SITES | | | | | | |

| Ref. | ESMP Commitment | C | NC | PC | N/A | Evidence | Action Required |
|------|---|---|----|----|-----|----------|-----------------|
| 14.1 | All archaeological chance finds are reported to the ESA | | | | | | |
| 14.2 | Construction activities came to a standstill after a chance find | | | | | | |
| 14.3 | The planned infrastructure has been realigned to avoid sites of cultural significance | | | | | | |
| 14.4 | Removal of an archaeological chance find is normally avoided | | | | | | |
| 14.5 | An archaeological chance find procedure is in place | | | | | | |
| 14.6 | Where necessary, and in collaboration with affected communities, develop a relocation plan for all graves and other objects | | | | | | |