ESIA for Zones 2 and 3 of the Lesotho Lowlands Water Development Project

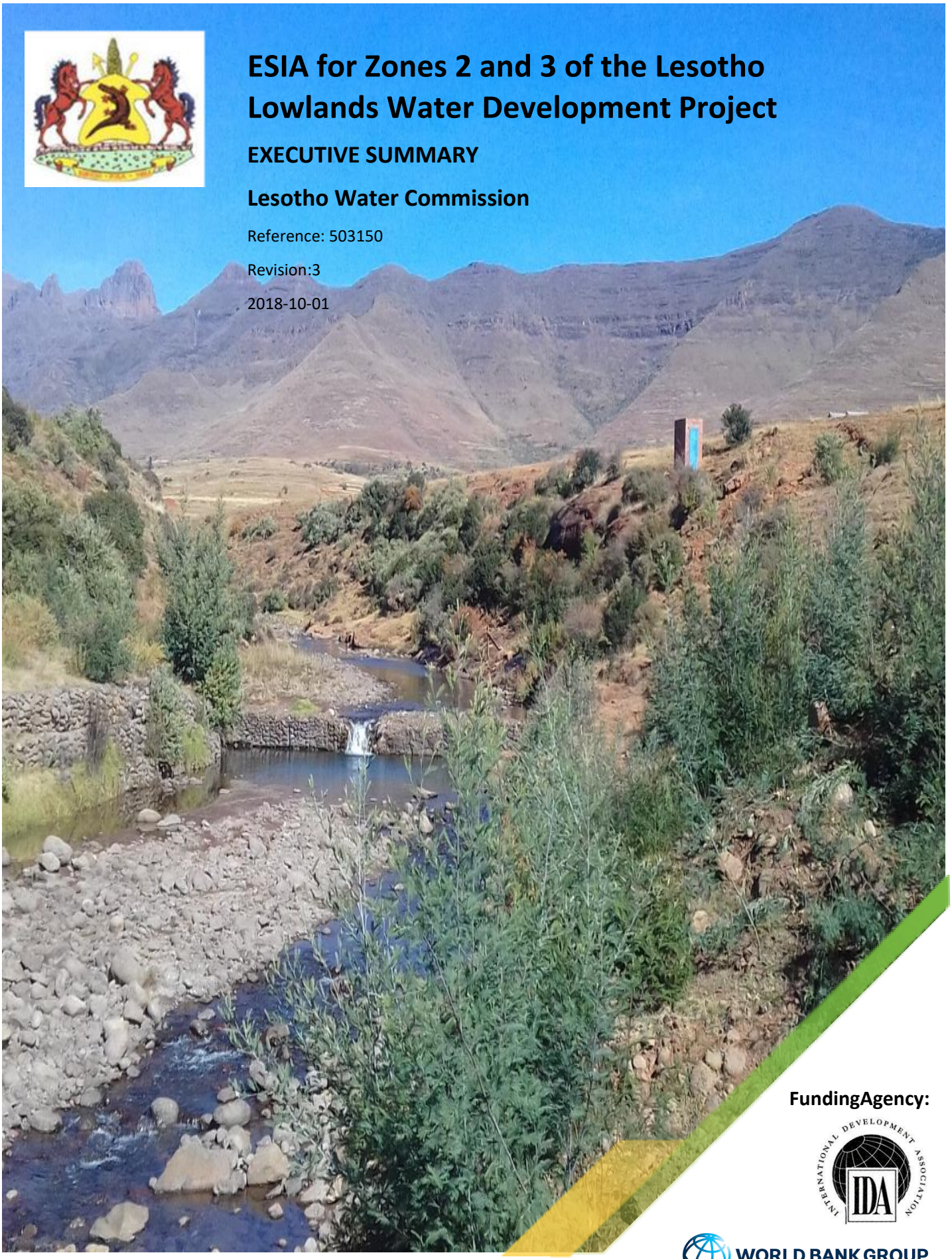
EXECUTIVE SUMMARY

Lesotho Water Commission

Reference: 503150

Revision:3

2018-10-01



FundingAgency:

INTERNATIONAL DEVELOPMENT ASSOCIATION
IDA

WORLD BANK GROUP

What is proposed

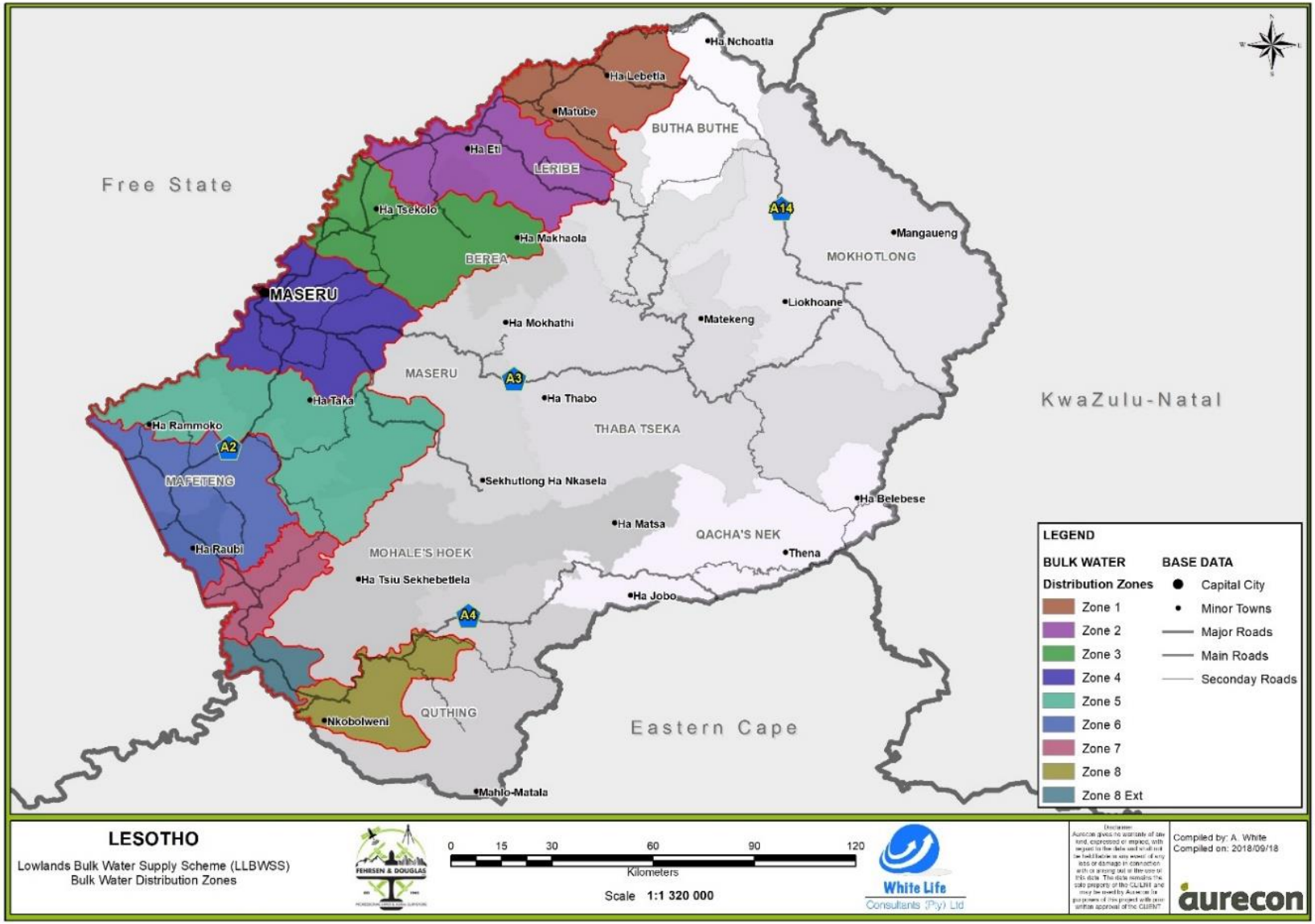
The water supply situation is worsening rapidly in many areas of the Lowlands in Lesotho. The Lesotho Water Sector Improvement Project Phase II (LWSIPP) is one of the key programmes Government of Lesotho (GoL) has embarked on to improve potable water supply and for which GoL needs to secure financial assistance from the International Development Association (IDA) (member of World Bank) to construct the project.

Forming part of the LWSIPP is the Lesotho Lowlands Bulk Water Supply Scheme (LLBWSS) which was specifically established by Cabinet Memorandum in 2002 with the mandate to oversee the implementation of the project in accordance with the provisions of the Lesotho Water and Sanitation Policy of 2007 (LWSP) – Statement 2.

The mandate of the LLBWSS is to:

- Establish the need for water demand for different purposes (domestic, agricultural, institutional, tourism, etc.);
- Identify and develop potential sources of water;
- Design large and small infrastructure serving initially the lowlands (reservoirs, dams, weirs, conveyance systems), inclusive of implementation; and
- Source funding for projects from the Government of Lesotho (GoL) and International Agencies and Governments.

With this in mind, the Water Commission has appointed Aurecon Lesotho (Pty) Ltd in association with White Life Consultants (Pty) Ltd and Fehrsen & Douglas (hereafter referred to as the Consultant) as an independent consulting firm to provide advisory services to carry out an Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP) for the proposed Zone 2 and 3 of the LLBWSS. The image below illustrates the study area.

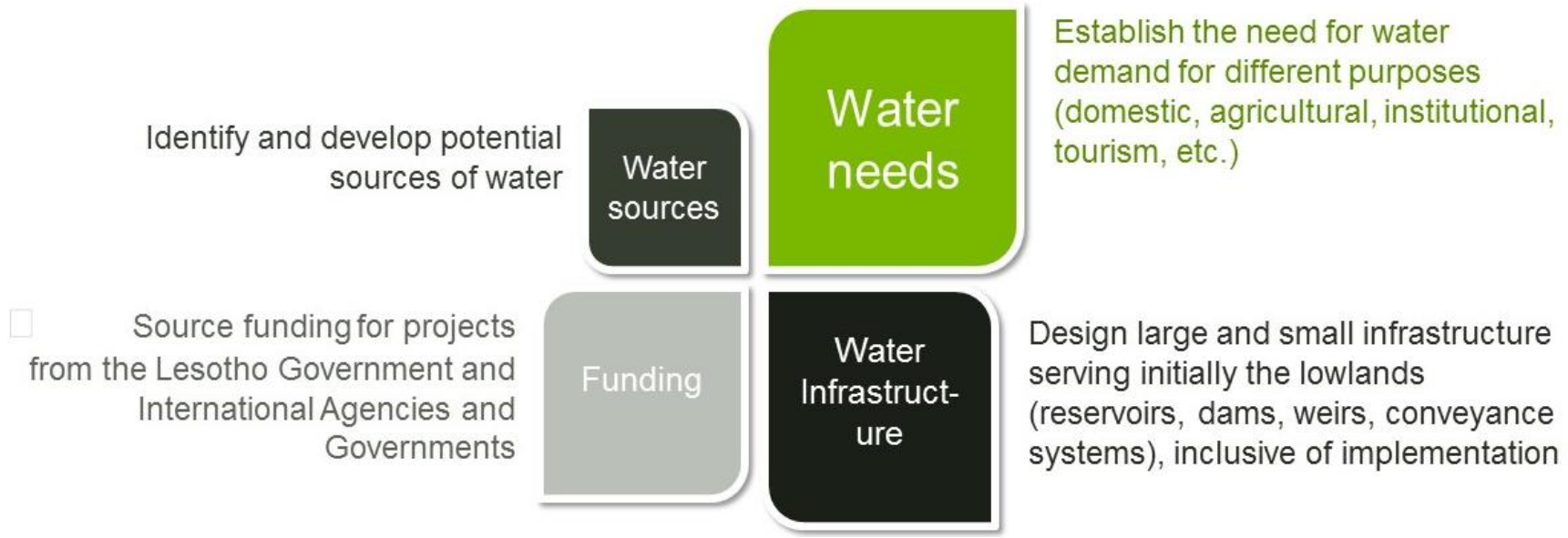

Ha Nchoatla
Ha Lebetla
Matube
BUTHA BUTHE
Ha Eti
LERIBE
Free State
Ha Tsekolo
Ha Makhaola
BEREA
A14
Mangaueng
MOKHOTLONG
MASERU
Liokhoane
Ha Mokhathi
Matekeng
MASERU
A3
Ha Taka
Ha Thabo
KwaZulu-Natal
Ha Rammoko
THABA TSEKA
A2
MAFETENG
Sekhutlong Ha Nkasela
Ha Belebese
Ha Matsa
QACHA'S NEK
Ha Raubi
MOHALE'S HOEK
Thena
Ha Tsiu Sekhebetlela
Ha Jobo
A4
QUTHING
Nkobolweni
Eastern Cape
Mahlo-Matala
LEGEND
BULK WATER
Distribution Zones
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Zone 7
Zone 8
Zone 8 Ext
BASE DATA
Capital City
Minor Towns
Major Roads
Main Roads
Seconday Roads
LESOTHO
Lowlands Bulk Water Supply Scheme (LLBWSS)
Bulk Water Distribution Zones
FEHRSEN & DOUGLAS
0 15 30 60 90 120
Kilometers
Scale 1:1 320 000
White Life
Consultants (Pty) Ltd
Compiled by: A. White
Compiled on: 2018/09/18
aurecon

Project Description

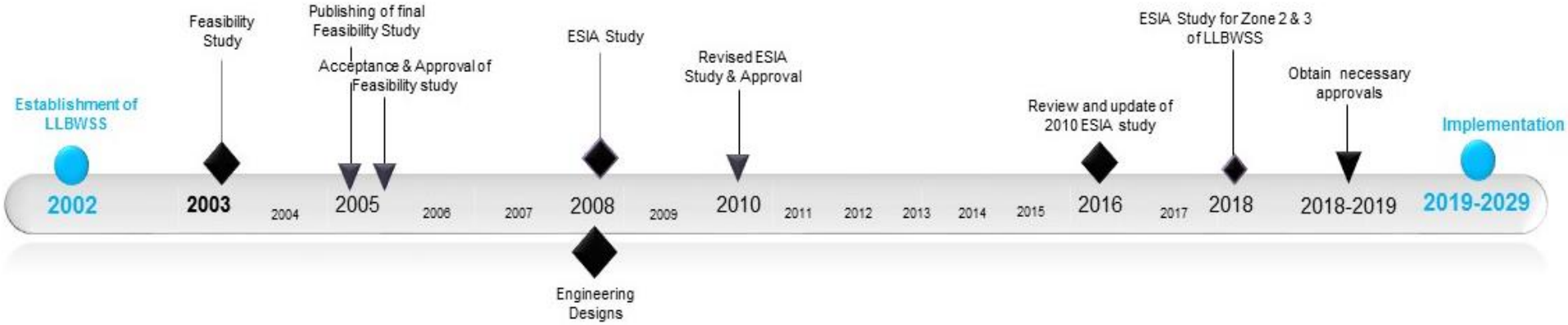
SCHEME DESCRIPTION FOR ZONE 2 AND 3

The LLWBSS was started with the primary purpose of improving water supply to the Lowlands settlements with populations in excess of 2500 for domestic, institutional and industrial purposes. The aim of the project is to support the introduction of a technically, economically, socially, environmentally and financially viable bulk-treated water supply system. With this in mind, the mandate of the LLBWSS is depicted below.

LLBWSS has the following mandate:



Proposed Timeline



Project timeline indicating the past, present and future project activities

2002 LLBWSS was established by Cabinet Memorandum in 2002 with the mandate to oversee the implementation of the project in accordance with the provisions of the Lesotho Water and Sanitation Policy of 2007

2003 A Feasibility Study was commissioned to assess the water needs for domestic, industrial and agricultural uses in the Lowlands, to ensure that approximately 75% of the Lowlands population has access to potable water supply and sanitation facilities

2005 The final Feasibility Study was published by Parkman Ltd (UK). Its findings and recommendations were approved and accepted by the GoL in May

2008 Under EDF funding, Lowlands Water Joint Venture was engaged to produce conceptual designs, tender documents and financial analysis for the LLBWSS

As per the Lesotho environmental legislation an ESIA Study for the Northern, Central and Southern Region was also undertaken

2010 The ESIA Study was updated to fit in with the Project Engineering Designs and was approved by the Department of Environment

2016 SMEC was contracted to review and update the 2010 ESIA and ESMP reports and prepare Resettlement Policy Framework and a Generic Environmental Management Plan in accordance with the World Bank's Standard Policies

2018 The Consultant has been appointed by the Water Commission to carry out an ESIA study and associated ESMP for the LLBWSS specifically for Zone 2 and 3 (June 2018)

2018/9 It is anticipated that all the necessary environmental approvals and finances from the funder will be obtained between 2018 and 2019 to commence with construction

2019/29 The Project will be implemented in two Phases. Construction for Phase 1 is tentative assumed to commence from January 2019 and complete by December 2020. Phase 2 is planned for execution from 2029

PROJECT NEED & JUSTIFICATION

Historically, the supply of water to urban areas in the Lowlands has come from river extraction and pumping from underground sources. With the increase in the urban population and commercial activities in the Lowlands and higher demand for water access and supply has subsequently exerted even greater pressure on water resources and water supply facilities. In addition to urban population influx in Lesotho due to rural migration driven by the industrialization of Maseru and urban towns through the establishment of garment industries, several towns in neighbouring South Africa also draw water from the same sources along the Mohokare/Caledon River. This has created an additional strain on scarce water resources and has also been a major constraint to continued economic growth in the country (World Bank, 2016).

The proposed LLBWSS project therefore aims to address the water-related challenges by improving water supply to the Lowlands settlements (or demand zone) with populations more than 2500 for domestic, institutional and industrial purposes. The project also introduces a bulk-treated water supply system that is technically, economically, socially, environmentally and financially viable for the Lowlands region.

LOCATION AND EXTENT OF THE PROJECT

The preliminary designs of five treated bulk water supply schemes serving eight designated water demand zones falling into three regions, namely: Northern, Central and Southern Regions (Figure xx).

This project specifically focuses on Zones 2 and 3. These zones are in the North-Western parts of Lesotho, approximately 83 km and 73 km north of Maseru respectively. Villages, groups of villages and towns with populations of 2500 were selected as settlements to be served from the bulk water supply scheme. The 2500 population figure was used as a guide in the selection of the settlements for the supply area. Both zone 2 and 3 will serve a total of 18 communities.

Project Legislative Requirements

The LLBWSS is a donor funded project, thus the environmental and social assessments were carried out in accordance with the Lesotho legislative requirements as well as World Bank safeguards operational policies. Where relevant reference was made to the International Finance Corporation (IFC) Performance Standards.

PROJECT CATEGORISATION

LESOTHO:

The project-related activities listed in First Schedule of the Environmental Act are listed below

Item 3	•Water transportation activities & pipelines
Item 4	•Reservoirs, water transfers and pipelines
Item 6	•Exctaction og aggregates, sand and gravel
Item 10	•Electrical transimission line infrastructure
Item 11	•Waste handling, storage & transport
Item 17	•Activities that could affect streams and river channels

WORLD BANK:

The World Bank requires projects to be classified in terms of environmental and social risks as outlined below.

CATEGORY 1/A High Risk	May have significant broad and diverse adverse environmental and/or social impacts that are irreversible in the absence of adequate mitigation measures
CATEGORY 2/B Medium Risk	**Likely to have less severe adverse environmental and/or social impacts that are few, generally site-specific, largely reversible and readily addressed through mitigation measures**
CATEGORY 3/C Low Risk	Likely to have minimal adverse environmental or social impacts

ASSESSMENT TOOL

The proposed development is considered a Category 2 or B project. Anticipated environmental and social impacts can be managed and mitigated to acceptable levels. The project also triggers activities listed under the First Schedule of the Lesotho Environmental Act. Therefore, based on the scope of the project and the requirements of the Lesotho legislation and World Bank standards, it was concluded that the **Environmental and Social Impact Assessment (ESIA) Process** is required.

LESOTHO LEGISLATION

The Constitution of Lesotho,1993

The constitution is the supreme law of the country that provides an overarching environmental legislative framework for environmental issues.

Environmental Act No. 10 of 2008

The Environmental Act is the principal underlying framework for environmental legislation or matters concerning the environment in Lesotho.

Water Act No. 15 of 2008

The Water Act provides for the ownership of all water resources to be vested in the Basotho nation and held in trust by the King.

Land Act No. 17 of 1979

The provisions of the Act vests ownership of all land in Lesotho on behalf of the Basotho nation. It is also the principal legislation governing land ownership, occupation and the acquisition of property for public and development purposes.

Local Government Act No. 6 of 1997

The Local Government Act is the main legislation regulating local government policies and establishing local authorities. According to this Act, the organisation structure of the local authorities consists of the Community, Urban/Municipal and District Councils respectively.

Historic Monuments, Relics, Fauna and Flora Act No. 41 of 1967

&

National Heritage Resources Act No. 2 of 2012

These Acts provide for the protection of man-made cultural sites and artefacts, as well as flora and fauna.

Roads Act No. 24 of 1969

The Act provides for locating, constructing, opening, maintaining, protecting, deviating, working and closing of roads. Section 25 specifically addresses compensation for any direct damage resulting from road construction or maintenance.

Road Traffic Act No. 8 of 1981

This Act regulates and controls the use of public road and road traffic. The Act also stipulates that traffic signs may not be displayed on public roads without authorisation from the Minister.

Other

Some environmental and social aspects particularly relevant to the project do not have a legislative framework under which they are governed.

Air Quality: Lesotho has no specific air quality Act. Health or nuisance issues related to fumes are contained in orders and other acts such as the Local Administration Act No. 13 of 1969.

Public Health: There is no all-embracing public health Act in Lesotho. Many regulations and orders contain sections pertaining to public for specific sectors.

WORLD BANK ENVIRONMENTAL AND SOCIAL SAFEGUARDS

OP 4.01 **Environmental Assessment**	**OP 4.04** **Natural Habitats**
The Environmental and Social Impact Assessment (ESIA) Is one of the methods or tools used by Water Commission to address the requirements stipulated in ESS1. The ESIA is undertaken to identify and assess the potential environmental and social impacts associate with the project and propose mitigation measures to ensure the development is environmentally sound, socially inclusive and sustainable.	The conservation of natural habitats like other measures that protect and enhance the environment, is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions in its economic and sector work, project financing and policy dialogie. The Bank supports and expects borrowers to apply a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development.
OP 4.09 **Pest Management**	**Op 4.10** **Indigenous Peoples**
Procurement of any pesticides and/or herbicides to be used on site during the implementation of the project, an assessment of the nature and degree of associated risks, considering the proposed use and the intended user will need to be undertaken. Pollution prevention and mitigation measures have been addressed in the ESMP. It is recommended that prior to construction an additional site specific EMP must be compiled as an additional tool to assist the contractor in managing impacts emanating from project-related activities.	The indigenous people will be consulted, and their views will be taken into account to ensure that the construction does not impact on their intangible cultural heritage. Councillors will be made aware of the importance and advantages of cultural heritage resources in their communities like rock art and heritage sites as this has potential of improving their lives. There is possibility of community development through domestic tourism due to the existence of infrastructure in these areas in terms of roads and electricity as water will help to improve their livelihoods.
OP 4.11 **Physical Cultural Resources**	**OP 4.12** **Involuntary Resettlement**
The construction can have an impact on tangible heritage resources i.e. when excavations are made there is a possibility of finding fossil remnants and dinosaurs especially in places like Tsikoane and Leribe. If that is the case it is recommended that MTEC be contacted for protection and conservation of these resources. There will be multi-cultural diversities due to	While every effort has been made during the design phase of the project to avoid having to relocate people, physical and economic displacement may be necessary. All the economic displacement or resettlement activities will be in accordance with the RAP.

construction which will impact both positively and negatively on the communities' living heritage.	

BP 7.50	Projects on International Waterways
The source of water for this project (Hlotse River) is the tributary of the Mohokare River (also known as Caledon River) which rises from the Drakensberg Mountains on the Lesotho Border and joins the Orange River in the Free State. The water abstraction from Hlotse River will reduce the volume of water entering Mohokare River and will ultimately affect the Orange River downstream. The Water Commission is responsible for informing the member states (South Africa, Namibia and Botswana) of the proposed water abstraction activity for the LLBWSS project.	

	World Bank Group Environmental, Health and Safety Guidelines (EHSGs)
	SECTION 10 of this report details the safety measures to be implemented throughout the project life cycle to ensure health and safety of the workers and surrounding communities. It is acknowledged that during construction, some of project activities may take place outside of the project boundaries. The Contractor is therefore responsible for implementing all practical precautionary measures to minimise health and safety hazards on the public and/or affected communities. Health and safety monitoring plan to be executed by the Contractor also forms part of the ESMP.

World Bank Group Industry Sector Guidelines for Water and Sanitation

Environmental issues associated with water and sanitation projects may occur during the construction and operational phases, depending on project-specific characteristics and components. The impacts refer specifically to the following:

- Drinking Water (Water abstraction, water treatment, solid waste, wastewater, hazardous chemicals, water distribution and water discharges into rivers and streams).

Sanitation (fecal sludge and septage collection, sewerage, greywater, domestic wastewater discharges, industrial wastewater discharges, leaks and overflows, wastewater and sludge treatment and discharge, liquid effluents, solid waste, air emissions & odors ad hazardous chemicals).

REGIONAL AND INTERNATIONAL CONVENTIONS, TREATIES AND PROTOCOLS

Lesotho is a signatory to several internationally acceptable policies, conventions, treaties and protocols to augment the national legislation. The following have relevance to the project:

Southern African Development Community (SADC) Protocol on Shared Watercourses

The overall objective of this Protocol is to foster closer cooperation for judicious, sustainable and coordinated management, protection and utilisation of shared watercourses and advance the SADC agende of regional integration and poverty alleviation.

Related Bank Procedure (BP) - BP 7.50 on International Waterways

Similar to the SADC protocol, this Policy / Procedure requires the Borrower to formally notify the other riparians (or affected States) of the proposed project and its project / program details.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)

The Convention places obligations on member States to minimise and control the generation and movement of hazardous wastes between states.

United Nations Framework Convention on Climate Change (UNFCCC) (1992)

The objectie of the UNFCCC is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anhtropogenic interference with the climate syste.

Convention on Biological Diversity (1992)

The objectives of this Convention are to conserve biological diversity, the sustainable use of its components and ensure reasonable sharing of the benefits arising out of the utilisation of genetic resources.

Analysis of Project Alternatives

The LLBWSS is a donor funded project, thus the environmental and social assessments were carried out in accordance with the Lesotho legislative requirements as well as World

Water Supply	Different water supply options were considered – due to environmental, social and technical problems associated with Abstraction of water from perennial rivers – Hlotse River was the preferred water supply option for the scheme.
Intake Sites	The suitability of each site was measured or evaluated against the following specifications: ▪ Suitability of the site for abstraction; ▪ Proximity of a good water treatment works (WTW) site; ▪ The water quality of the river; ▪ The availability of a rock foundation; and ▪ Access to the site for construction and maintenance. The preferred site for the Hlotse Intake was selected on the basis that: ▪ It was well located on the outside of the river bend; ▪ It had good rock foundation; ▪ There was scour channel erosion in the river bed which is a good indication of its suitability; and ▪ It was close to a good water treatment plant site.
Pump Station	Two possible pump station technology alternatives were considered, wet well and dry well. Although the wet well pump station was found to be less desirable from a monitoring and maintenance perspective, its significantly lower cost outweighed the primary constraint, thus was selected as the best option. It was recommended that high-quality submersible pumps would have to be used with effective monitoring systems to give warning of any potential damage. The proposed submersible pumps in the intake were designed to deliver raw water directly to the inlet of the water treatment plant.

Pipeline Route	No alternatives were identified or proposed for the pipeline route, however the following technical, social and environmental factors were taken into account in the final decision of the pipeline route: ▪ **Existing road servitudes –** where practical and economically feasible the pipeline follows the route of existing roads, outside the boundary of the road reserve. This reduces the need for land appropriation and improves access to the pipeline during construction and for maintenance purposes; ▪ **Topography –** due to sharp relief in the study area and the fact that the proposed scheme relies on flow by gravity, the topographical aspects were taken into consideration in the selection of the pipeline alignment; ▪ **Proximity to Water Treatment Works site –** Ideally a treatment works must be located close to the raw water source where the water is pumped. Thus, this also influence the alignment of the pipeline. ▪ **Ground conditions –** excavation costs and requirements for bedding material and degree of compaction is dependent on the ground conditions and / or geotechnical properties of the soils. This factor was therefore one of the key determining facts for the selected pipeline route.
Reservoir Location	The site selection for reservoirs was determined on the basis of the following criteria: ▪ Topography / slope; ▪ Future plans for the site; ▪ Geotechnical suitability; ▪ Available area for all infrastructure; ▪ Social sensitivity of the site; ▪ Environmental sensitivity of the site; ▪ Political sensitivity of the site; and ▪ Accessibility to the site.
Without Project Alternative	The "Without Project" alternative will have no impacts on the biophysical environment, as it will remain unchanged if the proposed development does not go ahead. However, from a socio-economic perspective, this option would have a significant negative impact as the need to meet the water demands of Lowland settlements will not be achieved. Constrained water supply would not propagate health improvement.

Description of the Project Infrastructure

Water Intake

- Direct surface water abstraction will take place from the Hlotse River, augmented by the Lesotho Highland Water Project (LHWP) transfer in the short to medium-term, for potable water supply. the pumps in the Hlotse intake station will be designed to meet the demand for Zones 2 and 3 at the peak duties for 2030 initially and ultimately for 2045.

Water Treatment Works

- the proposed Water Treatment Works (WTW) will be constructed near Ha Makotoane in 2 Phases. The treatment works will a design capacity of 40ML / day during Phase 1 and an additional 20ML / day to be added in Phase 2.

Water Storage

- Storage reservoirs have been designed as an integral component of the scheme to provide security of supply and facilitate efficient operation of the water supply system. A total of 25 service reservoirs will be constructed. Three types were proposed and designed:
  - Pressed steel plate panels;
  - Circular reinforced concrete tanks
  - Rectangular reinforced concrete tanks.

Pumping Stations

- The pumping stations were standardised into five types. A total of 14 pumping stations will be constructed to the service reservoirs in Zones 2 and 3.

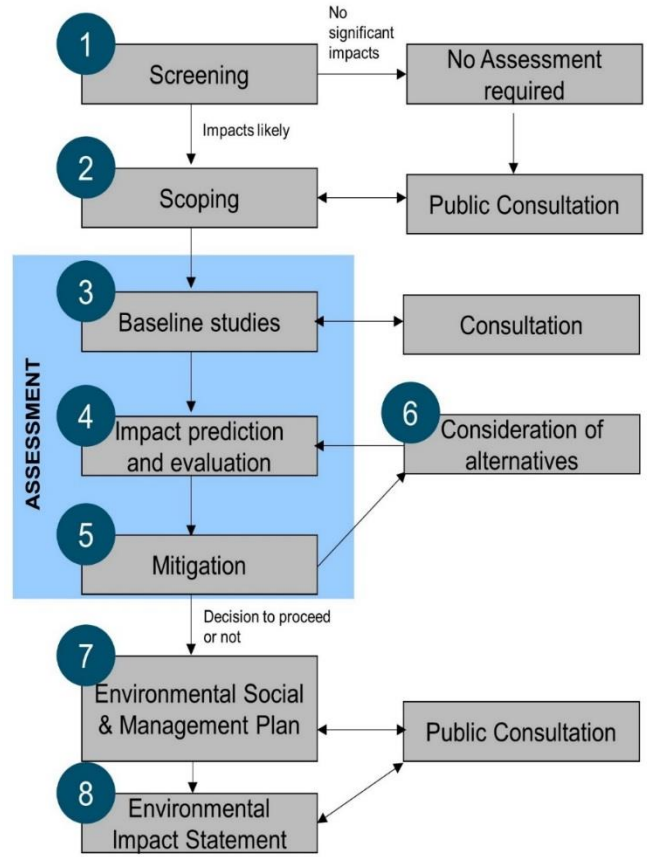
Pipeline

- The proposed pipeline is 144.2 km long, with a diameter ranging from 100 to 900 mm. Most pipes used in the designs are ductile iron. The pipeline will convey the water to storage tanks throughout the Zones.

Power Supply

- Power supply and distribution to the bulk water infrastructure throughout the scheme (i.e. for raw water intake, water treatment works, pumping stations and service reservoirs) will be provided by the Lesotho Electricity Company (LEC) and does not form part of the scope of this study.

ESIA Methodological Approach



WORLD BANK EIA PROCESS

1 **Screening:** The environmental screening for the project was undertaken as part of the feasibility study which was conducted by Parkman Ltd (UK). The study was approved in 2008.

2 **Scoping:** After consulting the DoE, the Scoping Phase (which involves compilation of the Project Brief) was deemed unnecessary for the project. Basic consultations were conducted to introduce the project to the adjacent villages.

3-5 **Assessment:** The environmental and social experts conducted field work, to assess the potential impacts of the proposed development on the physical and social environment.

7 **Environmental, Social Management Plan (ESMP):** Aims to provide a framework within which the environmental and social risks and liabilities identified during the ESIA process are managed for the duration of the project lifecycle. This Plan is included in Chapter 11 of this Report.

8 **Environmental and Social Impact Assessment (ESIA) Report:** This ESIA Report is also known as the EIS. It documents the findings of the ESIA Study. The report has also been made available to the public for comments as per the World Bank requirements and Lesotho Legislation.

ACTIVITIES UNDERTAKEN TO DATE TO COMPLY WITH LESOTHO ENVIRONMENT ACT (2008)

Biophysical & Social Impacts

The following impacts have been identified:

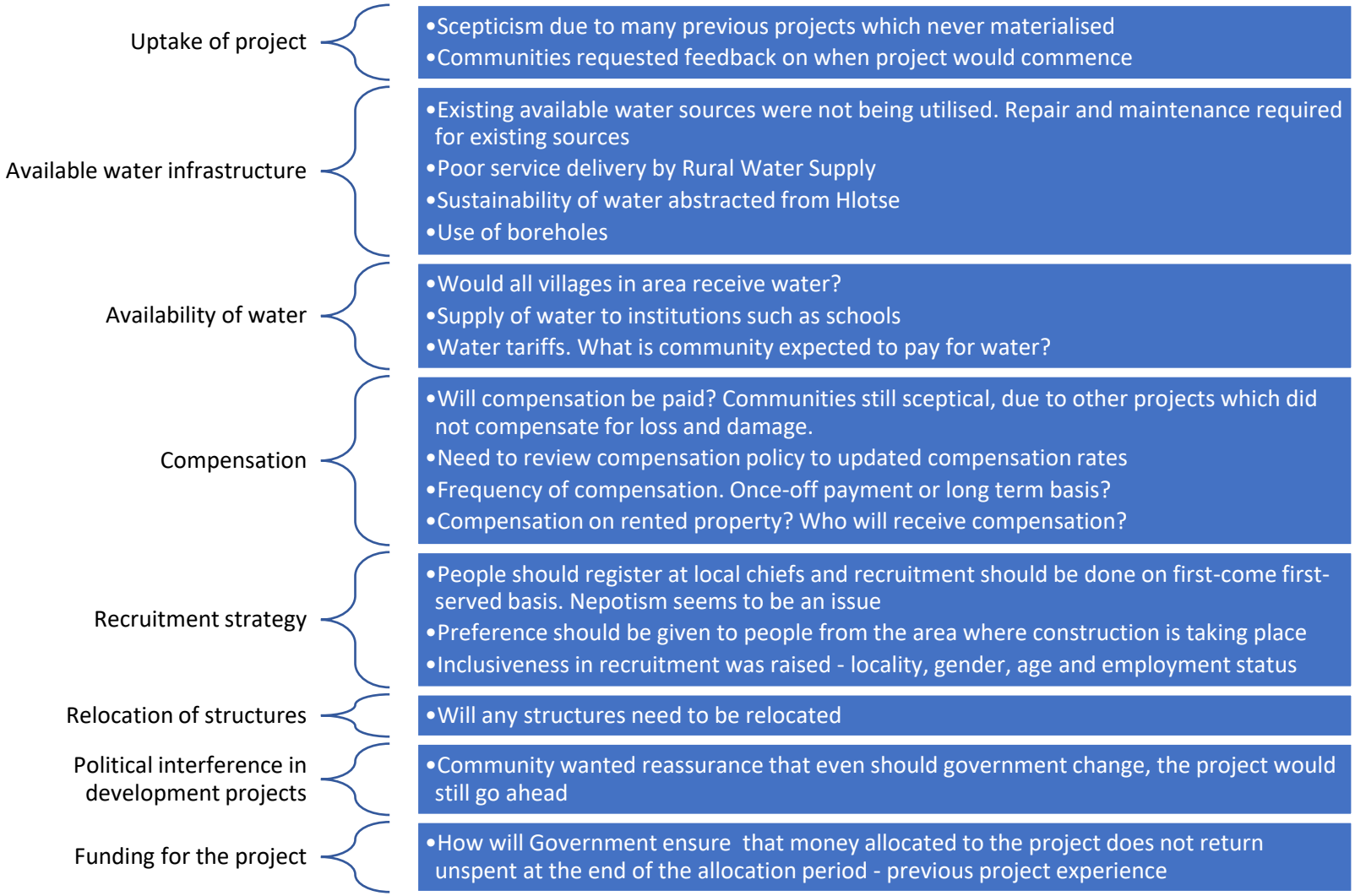
Terrestrial Ecology	• Spread of injurious weeds / Loss of Plant species / Destruction of vegetation / Increase in medicinal plant use / Poaching and killing of animals / Accidental fires / Visual impact on environment / Faunal injuries
AviFauna	• Disturbance to avifaunal species / Displacement of Avifaunal species / Mortality of Avifaunal species
Surface Water	• Decreased water flow / Increased sedimentation / Increased sandbanks and vegetated islands / Bank degradation and increased erosion / Disturbance to riparian vegetation / Damage to watercourse / Contamination of water / Sludge discharged into river
Pedology	• Deterioration of soil potential / Deterioration of soil quality / Possible soil erosion or soil loss / Potential soil contamination
Heritage	• Disturbance of heritage resources
Traffic & Roads	• Increased traffic / Road safety / Damage to existing road infrastructure
Noise	• Noise generation / Air pollution from dust emissions / Air pollution from vehicle exhaust hazardous emissions
Ecological Water Requirements	• Impact on ecological category / Impact on instream biota / Impact on riparian vegetation
Palaeontology	• Impact on palaeontological heritage (pre-construction, construction, post-construction and operational)
Social	• Improved access to potable water / Public health / Employment opportunities / Economic growth / Skills development / Loss of assets / Impacts on livelihoods / Increase in HIV and other communicable diseases due to project activities / Pressure on infrastructure due to presence of construction workers / Social ills due to presence of construction workers / Nuisance impacts of construction activities / Grave relocation / Health and safety of construction workers / Socio-political issues / Abstraction of water from the Hlotse River

Stakeholder Engagement

Public Participation took place in the villages listed below. Consultation statistics are also indicated.

Public Participation Attendance by Area by Gender						
	Area		**Males**	**Females**	**Total**	
	Ha Peete		27	46	73	
	Matukeng		33	52	85	
	Peka		73	41	114	
	Ha Letsie		22	78	100	
	Ha Makhata		30	38	68	
	Nkoeng		33	37	70	
	Makibinyane		70	108	178	
	Mahobong (Koporasi)		78	78	156	
	Lesiamo		61	73	134	
	Setene		27	35	62	
	Likhakeng		41	93	134	
	Ramapepe		38	96	134	
	Khanyane		159	127	286	
	Mpharane		39	34	73	
	Hlotse		17	56	73	
	Tsikoane		37	35	72	
	Hleoeng		49	24	73	
	Tabola		26	29	55	
	Kolonyama		20	18	38	
	Mohlokaqala		26	48	74	
	Ha Nchee		16	27	43	
	Pitseng (london)		85	98	183	
	Maputsoe (Mathata)		20	27	47	
	Maputsoe (St Monica)		18	23	41	
	Mamathe		61	54	115	
	Baking		47	51	98	
	Mokomahatsi		23	34	57	
	Mphele		28	19	47	
	Tsekelo		12	28	40	
	Kolojane		84	59	143	
	Corn Exchange		16	23	39	
		Total:	1316	1589	2905	

Issues raised by the community can be summarised as follows:



Environmental & Social Management Plan (ESMP)

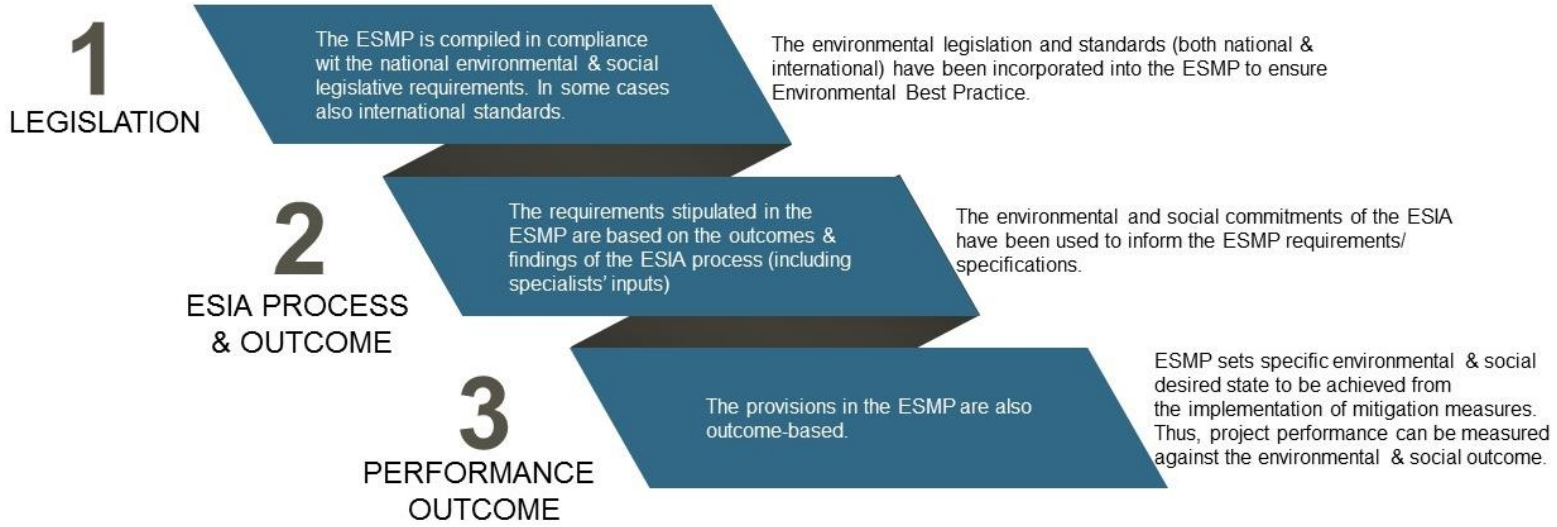
WHAT IS AN ESMP?

The Environmental and Social Management Plan (ESMP) is an operational document that provides a framework within which the environmental and social risks are managed. It also used as guide or tool for auditing the compliance of project against the environmental and social commitments. Any ESMP should always strive to be applicable to the specific project. As and when the scope evolves with subsequent phases of the project, the specifications or requirements contained in this ESMP may need to be reviewed and amended to ensure its applicability to the project.

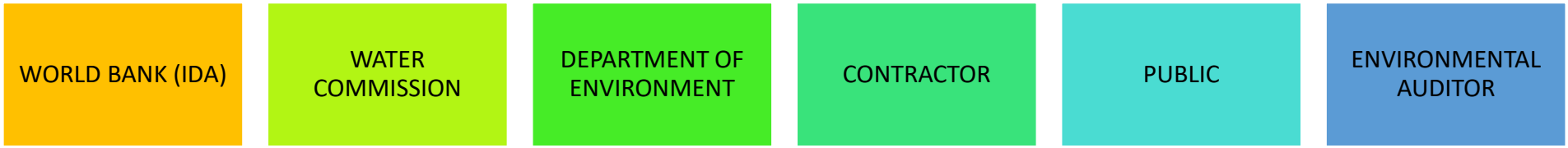
This document should form part of the contract and supplementary to tender documentation, as all contractors and sub-contractors shall comply with the commitments and requirements stipulated in the ESMP. It is recognised that practical implementation of many of the measures may rest with contractors and subcontractors. CoW will therefore appoint independent consultants to implement a robust review/audit programme to measure and ensure that the ESMP requirements are executed on their behalf as eth project applicant.

WHAT IS AN ESMP BASED ON?

The ESMP is informed by several documents and legislation which are then translated into management actions or measures. There three key inputs and/or source of information used into an ESMP are shown below:



WHO IS THE ESMP FOR?



- The ESMP documents the project commitments and reflects how it will comply with the Lender's environmental and social guideline requirements (World Bank ESS). Therefore, the **World Bank's** decision to finance the project will be based on the information documented in the ESMP & ESIA Reports.
- The **Water Commission** will be responsible to ensure the project complies with the commitments set in the ESMP during construction and operation.
- The **Department of Environment** is the competent authority for the proposed project. The Department will be responsible for approving the ESIA and ESMP for the project to commence with construction. Once approved, they will be accountable for ensuring that the developer complies with the conditions of the EIA licence and requirements stipulated in this ESMP and other relevant environmental legislations.
- The **Contractor** will use the ESMP as a roadmap or guide for managing the construction activities that may have potential environmental and social impacts.
- The ESMP will be made available to the **Public** along with the ESIA report for the public or stakeholders to comment. The ESMP will also form part of negotiations in the consultation phases and the validation of the mitigation and compensation strategy proposed for the project impacts.
- The **Environmental Auditor** will use the ESMP along with the EIA licence to auditor project performance on behalf of Water Commission.

Conclusion

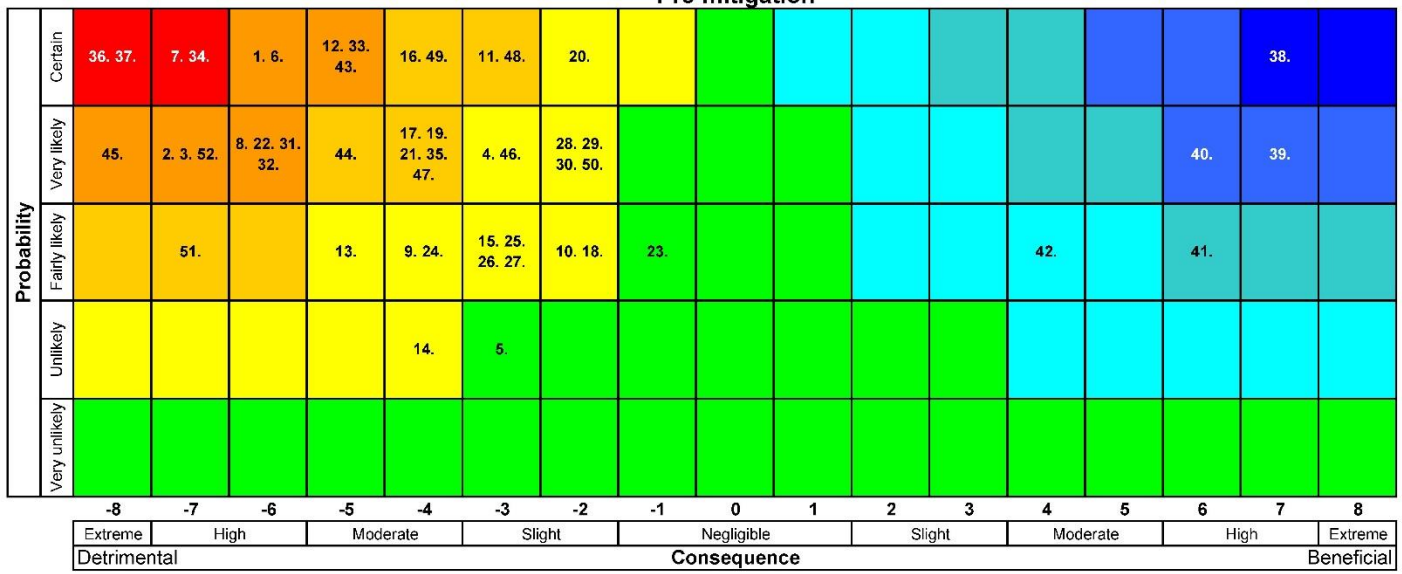
As this will be a donor funded project, all environmental and social assessments were carried out in accordance with the Lesotho legislative requirements as well as the International Best Practice, including World Bank safeguards operational policies and procedures.

It is the opinion of the EAP that all major impacts have been identified and have been assigned appropriate management measures. Most HIGH negative impacts with proposed mitigation, will be reduced to a MEDIUM or LOW significance, and can be managed accordingly. Impacts identified are listed (with indicative numbering system) below.

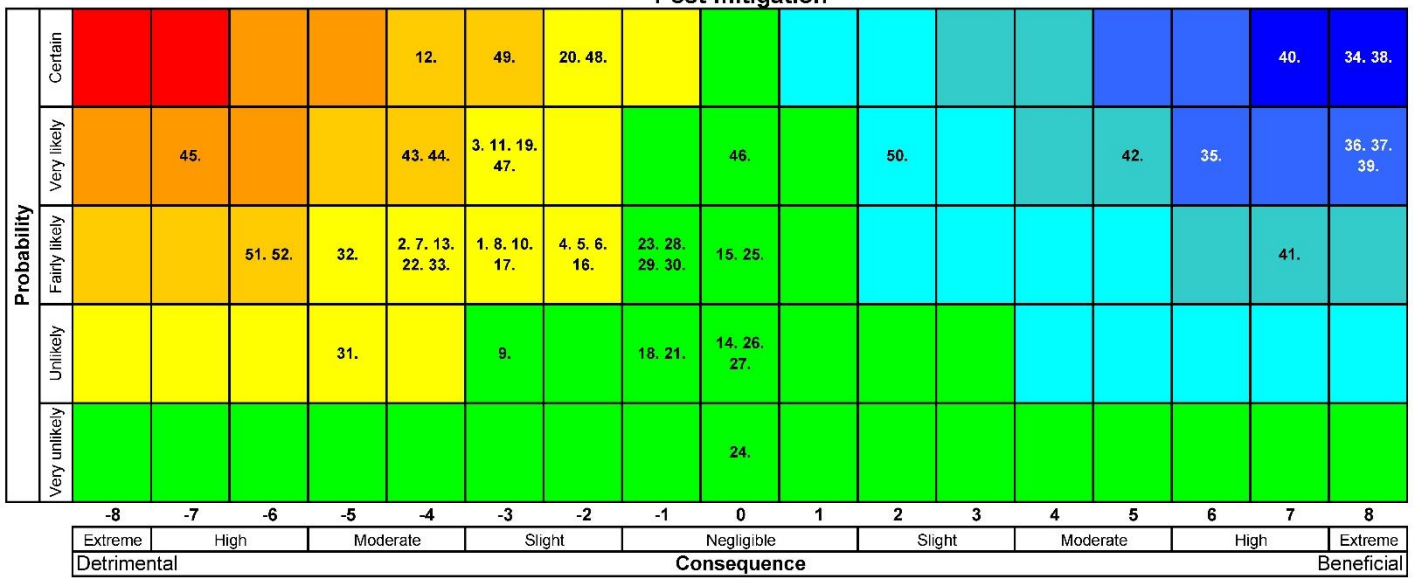
Code	Impact
1	Spread of injurious weeds
2	Loss of plant species
3	Destruction of vegetation
4	Increase in medicinal plant use
5	Poaching and killing of animals
6	Accidental fires
7	Visual Impact on environment
8	Faunal Injuries
9	Disturbance to avifaunal species
10	Displacement of avifaunal species
11	Mortality of avifaunal species
12	Mortality of avifaunal species
13	Decreased water flow
14	Increased sedimentation
15	Increased sandbanks and vegetated islands
16	Bank degradation and increased erosion
17	Damage to watercourse
18	Contamination of water
19	Sludge discharged into the river
20	Deterioration of soil potential
21	Deterioration of soil quality
22	Possible soil erosion / soil loss
23	Potential soil contamination
24	Disturbance of heritage resources
25	Increased traffic
26	Road safety
27	Damage to existing road infrastructure

Code	Impact
28	Noise generation
29	Air pollution from dust emissions
30	Air pollution from vehicle exhaust hazardous emissions
31	Impact on ecological category
32	Impact on instream biota
33	Impact on riparian vegetation
34	Impact on paleontological heritage (pre-construction)
35	Impact on paleontological heritage (construction)
36	Impact on paleontological heritage (post construction)
38	Improved access to potable water
39	Public health
40	Employment opportunities
41	Economic growth
42	Skills development
43	Loss of assets
44	Impacts on livelihoods
45	Increase in HIV and other communicable diseases due to project activities
46	Pressure on infrastructure due to the presence of construction workers
47	Social ills due to presence of construction workers
48	Nuisance impacts of construction activities
49	Grave relocation
50	Health and safety of construction workers
51	Socio-political issues
52	Abstraction of water from the Hlotse River

Pre-mitigation



Post-mitigation



ADDENDUM TO ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) (DECEMBER, 2018) FOR ZONES 2 AND 3 OF THE LOWLANDS WATER DEVELOPMENT PROJECT PHASE II

Subsequent to the prepration of this ESIA report, the GoL prepared an Addendum (Addendum to Environmental and Social Impact Assessment (ESIA) for Zones 2 and 3 of the Lowlands Water Development Project Phase II, March 2019) to address gaps identified by the World Bank review following the approval of the Final Lesotho Lowlands Bulk Water Supply Scheme ESIA by the Department of Environment (DoE).

Overall, the World Bank's review of the ESIA has indicated that LWDP II complies with Lesotho legislation and World Bank Safeguard Policies but that additional work is required to address some identified gaps and deficiencies. Several gaps have been addressed since completion and DoE approval of the LWDP II ESIA (2018). The identified gaps and deficiencies can be addressed in the short to medium term and incorporated in conditions and covenants attached to the Financing Agreement.

An Environmental and Social Action Plan (ESAP) included in the Addendum has been prepared which sets out specific requirements and timeframes for addressing each risk and gap.

The key issues for the project which needed to be addressed include the following:

a) ESIA needs to be publicly consulted (including with downstream users) and results of the consultations to be reflected in the final version of the ESIA that will be disclosed prior to appraisal.

b) ESIA needs to reflect:

i. Latest/updated baseline data on water quality (ESIA has outdated 2007 baseline data.

ii. results of the quick inventory on the downstream uses/users of the Hlotse River below the intake (O.P 7.50)

iii. due diligence on the implementation of the ESMP for the Katse dam

iv. reference to dam safety assessment and preparation of plans, including remedial measures, for Katse dam in the ESIA

v. implementation arrangements: need to spell out in more detail the environment, social and health & safety staffing of the PIU, the contractor and the Construction Supervision Consultant

The Addendum in responding to the above issues provides addtional information on the following key issues:

- **Public consultations on the ESIA.** Progress on In-country disclosure of safeguard instruments developed for the project, inter alia, the ESIA and RAP, was presented and a summary of issues discussed as part of the consultations and how they would be addressed included;
- **Environmental Flow requirements and Water Quality.** An action plan on the implementation of the pre-construction, construction and post-construction Environmental Flow Requirement and Water Quality programme and the updated baseline water quality data for the Hlotse River.was provided. Provisions have been included under the project to carry out an Instream Flow Assessment based on updated data, a decision support system to monitor the implementation of the EFRs and ensure an appropriate adaptive management framework capable of modifying operations to ensure sustainability of the downstream environment. The Environmental Flow Requirement assessment will be carried out prior to construction of the water intake and water treatment works;

- **Due diligence on Katse Dam.** Information was provided on Lesotho Highlands Water Project (LHWP) Environment and Social Due Diligence, particularly in regard to management of the Katse and Mohale dam, including:
    - the Lesotho Highlands Development Authority (LHDA)'s Environment and Social Institutional Arrangement and Capacities; and
    - Structural integrity of the associated Lesotho Highlands Water Project (LHWP) Infrastructure;
- **Downstream Users.** Assessment and survey results of the impacts of water abstraction for the proposed LLWDP II on the water use downstream of the proposed intake point carried out as part of the ESIA;
- **Notification of International Waterways riparians.** Status of the process of notification of Riparian States of Botwsana, Namibia and South Africa in accordance with (OP7.50);
- **Institutional arrangements.** The proposed institutional arrangement for planning, implementing, monitoring and reporting on safeguards instruments for the project were elaborated. In particular, the Addendum provides information on proposed Environment and Social (E&S), Health and Safety staffing arrangements for the PIU, Construction & Supervision Consultant(s) and Contractor(s).