# PART 1

### Zambezi River Authority

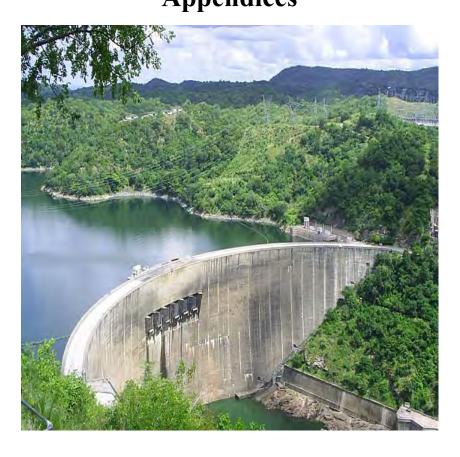






## Kariba Dam Rehabilitation Project (KDRP)

# Environmental and Social Impact Assessment (ESIA) Appendices



Revised – October 12, 2020 Zambezi River Authority Kariba

## List of Annexes which are integral part of the ESIA and ESMP of Kariba Dam Rehabilitation Project

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# 14 Appendix A – Administrative and Legal Framework of Zambia and Zimbabwe

#### 14.1 Introduction

This Appendix presents a review of the Zambian and Zimbabwean institutions, and policy and legal framework that may be applicable to the Kariba Dam Rehabilitation Project (KDRP). Specifically, it presents:

- The range of government organizations that may be involved in the regulation of KDRP;
- Zambian and Zimbabwean environmental and social laws and regulations which may be applicable to KDRP; and
- Relevant international treaties, conventions and protocols to which Zambia and/ or Zimbabwe is/are a signatory/ies.

#### 14.1.1 Zambezi River Authority (ZRA)

The Zambezi River Authority (ZRA) is mandated by the governments of Zambia and Zimbabwe to operate and maintain the infrastructure on the Zambezi River.

The ZRA is a statutory body jointly owned by the governments of Zambia and Zimbabwe. The ZRA was established on 1 October 1987 as a result of parallel legislation tabled before the parliaments of the Republics of Zambia and Zimbabwe, which followed the reconstitution of its predecessor, the Central African Power Corporation (CAPCO). Generating assets on the Zambezi River were subsequently handed over to the two national power utilities, the then Zambia Electricity Supply Corporation, now ZESCO Limited (ZESCO) and the then Zimbabwe Electricity Supply Authority now represented by Zimbabwe Power Company (ZPC). The ZRA has responsibility of the operation and maintenance of infrastructure on the Zambezi River (which is common to both Zambia and Zimbabwe), investigation and development of new dam sites on the Zambezi River and collecting, processing, analysing and disseminating hydrological and environmental information pertaining to the Zambezi River and Lake Kariba.

The ZRA is governed by a Council of Ministers consisting of four members from Zambia and Zimbabwe. The common Ministries in the council are those responsible for Energy and Finance. In terms of the Zambezi River Authority Acts, the Council of Ministers gives direction, through the ZRA Board of Directors, to the ZRA to ensure the most efficient use of the Zambezi River and any other infrastructure developed on it.

The ZRA has the following four main strategic functions, which are outlined in the schedule to the Zambezi River Authority Acts Nos. 17 and 19 of 1987 of Zambia and Zimbabwe, respectively:

- 1. In consultation with the national electricity undertakings investigate the desirability of constructing new dams on the Zambezi River and make recommendations thereon to the Council;
- 2. Subject to the approval of the Council, construct, operate, monitor and maintain any other dams on the Zambezi River:
- 3. Make such recommendations to the Council as will ensure the effective and efficient use of waters and other resources of the Zambezi River; and
- 4. Submit development plans and programmes to the Council for approval.

#### 14.2 Zambian Institutional Framework

#### 14.2.1 Ministry of Lands, Natural Resources and Environmental Protection

The Ministry of Lands, Natural Resources and Environmental Protection is charged with the critical responsibility of land administration, natural resource management and environmental protection on behalf of the people of Zambia. The following Departments fall under this Ministry:

- Human Resource and Administration;
- Lands and Deeds;
- Lands Department;
- Survey Department;
- Forestry Department; and
- Environment and Natural Resources Management Department (ENRMD).

#### 14.2.1.1 Environment and Natural Resources Management Department

The Environment and Natural Resources Management Department (ENRMD) was established by presidential declaration which merged the then Ministry of Tourism (MOT) and the Ministry of Environment and Natural Resources (MENR) in 2002. It became operational in February 2003 but was not established by an Act of Parliament.

The ENRMD is responsible for the overall policy formulation on environment, natural resources and pollution control in the Ministry which is the focal point for all environmental and natural resource management issues in the country. The department also co-ordinates, monitors and evaluates the operations of the executive agencies that have been created to implement policies on behalf of the government.

The Department of Environment and Natural Resources Management focuses on the achievement of the following six objectives as they relate to issues of the environment and natural resources as outlined in the Strategic Plan (2002 – 2006), which is currently under review):

- To facilitate and promote research and development in environment, wildlife, forestry and cultural heritage in order to increase knowledge and its utilisation;
- To facilitate and monitor the implementation of international agreements and treaties in environment and natural resources in order to promote Zambia's interests and meet international obligations;
- To promote investment in environment and natural resources in order to contribute to employment creation, poverty alleviation and supply of raw materials;
- To facilitate the quality provision of education and training in environment and natural resources in order to contribute to their effective management, sustainable development and utilisation:
- To undertake and facilitate rehabilitation of degraded habitats in order to restore the productivity of Zambian flora and fauna; and
- To promote the effective management of forest, wildlife and heritage resources in order to ensure their sustainable utilisation and contribute to the alleviation of rural poverty.

#### 14.2.1.2 The Zambia Environmental Management Agency

The Zambia Environmental Management Agency (ZEMA) falls under the ENRMD. Accordingly, the ENRMD co-ordinates, monitors and evaluates the operations of ZEMA and is mandated to ensure that the proposed Project is undertaken in a way that it complements the six objectives related to issues of the environment and natural resources as outlined in the Strategic Plan (2002 - 2006).

The Zambia Environmental Management Agency (ZEMA), previously known the Environmental Council of Zambia (ECZ) is the umbrella environmental institution in Zambia and the main lead agency on matters pertaining to environmental impact assessments (EIA). It is empowered by the Environmental Management Act (No. 12 of 2011) to identify projects, plans and policies for which an EIA is necessary.

The general functions of the ZEMA are to ensure the sustainable management of natural resources, the protection of the environment, and the control of pollution, as provided under Section 9(1) of the Environmental Management Act. However, more specifically, the ZEMA serves inter alia to:

- Co-ordinate the implementation of activities of all government ministries, appropriate authorities and conservancy authorities in matters relating to the environment;
- Develop standards and guidelines relating to the protection of air, water, land and other natural resources;
- Provide for environmental monitoring and auditing as well as establishing and managing of the environmental fund;
- Develop and enforce measures aimed at preventing and controlling pollution;
- Advise the government on the formulation of policies on all aspects of the environment and make recommendations for the sustainable management of the environment;
- Advise on all matters relating to environmental conservation, protection and pollution control, including necessary policies, research, investigations and training;
- Initiate, conduct and promote research, surveys, studies, training and investigations in the interests of environmental management;
- Identify projects, plans and policies that need environmental impact assessments;
- Monitor trends with respect to natural resources, their use and impact on the environment and make necessary recommendations to the appropriate authority;
- Undertake general education programmes for the purpose of creating public awareness of the environment:
- Provide for public consultation in environmental decision making and access to environmental information;
- Request information on proposed projects and advise stakeholders on projects, programmes, plans and policies for which environmental assessment is necessary; and

• Facilitate the implementation of international environmental agreements and conventions to which Zambia is a party.

The services provided by the ZEMA specifically in relation to EIA studies include:

- Assisting the developer to determine the scope of EIA studies;
- Reviewing project briefs, terms of reference, and environmental impact statements (EIS) and decision-making;
- Disclosure of the EIS to the public through the media;
- Holding public hearing meetings to discuss the EIS with stakeholders;
- Conducting verification surveys of the affected environment;
- Monitoring the project once implemented;
- Conducting compliance audits of the project between 12 and 36 months after implementation; and
- General administration of all the Regulations under the Environmental Management Act.

ZEMA has a number of units which control various aspects of environmental pollution planning and environmental management. These have been organised under two departments: the Pollution Control Inspectorate, which is responsible for all pollution and regulation issues pertaining to waste, emissions and toxic substances. This inspectorate also has a dedicated unit responsible for EIAs; and the Planning and Information Management Department, which comprises units in charge of planning, monitoring, education, communication, information, documentation and data management.

#### 14.2.2 Ministry of Mines, Energy and Water Development

The Ministry of Energy and Water Development (MEWD) has been merged with the Ministry of Mines to form a new Ministry of Mines, Energy and Water Development. The Ministry comprises six Departments. The functions of the Department of Energy (DoE) are:

- To develop, articulate and implement a Policy on Energy;
- To formulate programmes for the development of the energy sector;
- To ensure that there are efficient and reliable supplies of energy for socio-economic development;
- To integrate the energy sector into Zambia's national and regional development strategies; and
- To regulate the energy sector through appropriate legislation including the development of new laws and by-laws.

The functions of the Department of Water Affairs (DWA) include the following:

- To oversee and control activities of water resource development and management in order to prevent the indiscriminate consumption of water resources;
- The provision of sufficient and reliable data on water resources availability and demand in the country, to allow for effective planning;
- Utilisation and management of water resources; and
- The development and management of water conservation.

The DWA is comprised of a Groundwater Resources Section, a Surface Water Resources Section and a Water Resources Management Section. The Surface Water Resources Section and the Water Resources Management Section will have an interest in how the Project will affect surface water flows in the Zambezi River and the effects on current water resource use in the area. These governmental institutions will govern to what extent the current water use system can be altered.

In addition to these two departments, the MMEWD supervises the following statutory/parastatal bodies: the Energy Regulation Board (ERB); ZESCO Ltd; the Water Resources Management Authority; and the Office for Promoting Private Power Investment (OPPPI).

#### 14.2.2.1 The Energy Regulation Board

The Energy Regulation Board (ERB) has the mandate of regulating the energy sector in line with the provisions of the Energy Regulation Act of 2003. The ERB has the responsibility of ensuring that power generating utilities earn a reasonable rate of return on their investments that is necessary to provide a quality service at affordable prices to the consumer.

In order to carry out this role, the ERB, among other functions, ensures that all energy utilities in the sector are licensed, monitors levels and structures of competition, and investigates and remedies consumer complaints.

#### 14.2.2.2 ZESCO Limited

ZESCO Limited is a parastatal, with the main function of producing power in Zambia, and is the operator of the Kariba North Bank power station. ZESCO produces approximately 80 % of the electricity consumed in the country and has historically been the main player in the generation, transmission and distribution of electricity in Zambia. In addition, ZESCO represents Zambia in the Southern African Power Pool. Due to the ever-increasing demand for electricity both in Zambia and in the region, ZESCO is currently being forced to source more electricity from independent power producers (IPPs) such as Lunsemfwa Hydro Power Company (LHPC).

MEWD, Energy Regulation Board (ERB) and ZESCO Limited are all key stakeholders in KDRP, as it directly concerns the rehabilitation of power generation assets.

#### 14.2.2.3 Water Resources Management Authority

Due to the increase in population, the demand for water for power generation, direct consumption and other uses of water has increased in Zambia. As such, the Water Resources Management Authority was developed in response to these often conflicting demands for water. The Water Resources Management Authority is essentially an executive wing of government which provides necessary information for the control of abstractions from water bodies in Zambia. Any person who wishes to store or divert water from public streams and waterways for primary, secondary, or tertiary use must obtain permission from the Water Resources Management Authority.

The proposed Project has the potential to impact on water quality of the Zambezi River downstream of the excavation works associated with rehabilitation of the plunge pool. Accordingly, the Zambian Water Resources Management Authority were a key stakeholder in the ESIA process.

#### 14.2.3 The Zambia Wildlife Authority

The Zambia Wildlife Authority (ZAWA) is a corporate body established by the Zambia Wildlife Act of 1998. The primary objectives of ZAWA are:

- To improve the quality of life amongst communities in wildlife estates and the maintenance of sustainable biodiversity in national parks and game management areas;
- To reverse the decline in wildlife resources;

- To improve wildlife resource management to a level which will secure a sustainable flow of benefits from such wildlife resources; and
- To considerably improve the wildlife resource base investment in co-operation with the private sector and local communities.

The proposed Project is situated in an area that may be inhabited by faunal species and flora species of concern. Furthermore, the areas downstream of the dam up to the Mozambique border consist of National Parks and extensive transfrontier conservation areas. Accordingly, the Zambian Wildlife Authority is regarded as a key stakeholder and was consulted during the ESIA process.

#### 14.2.4 The National Heritage Conservation Commission

The National Heritage Conservation Commission (NHCC), formally known as the Commission for the Preservation of Natural and Historical Monuments and relics (National Monuments Commission), is the national institution mandated to manage and conserve Zambia's cultural and natural heritage resources, including significant: historic/architectural/buildings; historic sites; anthropological sites; archaeological sites; geomorphological sites; geophysical sites; paleontological sites; and ecological and other sites.

#### 14.2.4.1 The National Museum Board

The National Museum Board of Zambia (NMB) is a corporate body which has the principal role of preserving the nation's history and movable heritage. The Board is mandated to collect, document, present to the public and to preserve for posterity Zambia's movable heritage.

Although it is not anticipated that there are any cultural heritage sites located in the Project Area, there may be sub-surface archaeological resources that could fall within the footprints of proposed ground disturbing activities. Accordingly, the National Museum Board was considered a stakeholder in the ESIA process.

#### 14.2.5 Ministry of Tourism and Arts

The Ministry of Tourism and Arts was created in 2011. This brought together the portfolio functions of tourism from former Ministry of Foreign Affairs and Tourism and the portfolio functions of Culture from the Ministry of Chiefs and Traditional Affairs. This was done in order to streamline and rationalise the functions and operations of the tourism and cultural sector.

The Kariba Dam is a key tourism area and international visitors are attracted to the water body and the surrounding rural/natural environment for a variety of activities, including - safaris, boating, fishing, sunset cruises, canoeing, water sports, bird watching, cultural village tours and visiting look-out points. Accordingly, the Ministry of Tourism and Arts is regarded as a key stakeholder and was consulted during the ESIA process.

#### 14.2.6 Other Line Ministries

Environmental and social issues cut across a wide variety of sectors and there are a number of government institutions and agencies which are involved in environmental and social management. Some of the ministries, sectorial agencies and authorities that may also need to be consulted as part of the Project are: Ministry of Agriculture and Livestock; Ministry of Health; Ministry of Education, Science and Vocational Training; and Ministry of Local Government and Housing.

#### 14.3 Zambian Environmental and Social Laws and Regulations

Table 14.1 presents a summary of the Zambian national legislation that is considered applicable to KDRP.

#### 14.3.1 National Policy on Environment (November 2007)

The Government of the Republic of Zambia has developed a National Policy on Environment to avoid conflict of interest, harmonise sectorial strategies, and rationalise legislation that concerns the use and management of environment. The purpose of this policy is to attain an integrated approach to development through a national cross-cutting consensus. This Policy was developed through a research and consultative process and will be fully integrated in principles of decentralisation, community participation and privatisation that underpin sustainable development.

Section 7.1.4.2 of the Policy states that EIAs are (where deemed necessary) required to ensure that public and private sector development options are environmentally-sound and sustainable and that any environmental consequences are recognised early and taken into account in project design and implementation.

In this respect, and to fulfil the requirements of the Policy, the ZRA contracted ERM to carry out a detailed ESIA for the proposed Project. The ESIA was carried out in conformance to both the Zambian and Zimbabwean environmental legislation and other international requirements.

#### 14.3.2 The Zambian Environmental Management Act

The Zambian Environmental Management Act (EMA) (Act 12 of 2011) is the principal law on integrated environmental management in Zambia. The Zambian EMA was enacted in April 2011 to repeal and replace the Environmental Protection and Pollution Control Act (EPCCA) (CAP 204) and its Amendments.

Section 4 mentions that every person living in Zambia has the right to a clean, safe and healthy environment and should a person is threatened or is likely to be threatened as a result of an act or omission of any other person, bring an action against the person whose act or omission is likely to cause harm to human health or the environment. Moreover, Section 5 states that every person has a duty to safeguard and enhance the environment. Part IV (Division 1) contains provisions for pollution control including protection of the atmosphere (Section 31), environmental emergency preparedness (Section 41) and regulations around pollution control (Section 43).

Division 2, Sections 45 to 48 of the Act make considerations for water resources. More specifically, Section 46 states that a person shall not discharge or apply any poisonous, toxic, eco-toxic, obnoxious or obstructing matter, radiation or other pollutant, or permit any person to dump or discharge such matter or pollutant into the aquatic environment in contravention of water pollution control standards.

Section 52 of Division 3 (Part IV) of the Act states that ambient air quality standards and guidelines shall be established under this Division and published. Section 68 of Division 6 (Part IV) of the Act states that person shall not emit noise in excess of the noise emission standards established. Section 77 (2) of Division 8 of the Act states that no person shall place any invasive alien species into any element or segment of the environment. Moreover, Section 78 states that an occupier of any land shall take such measures as are prescribed and are reasonably necessary for the eradication or prevention of the spread of invasive alien species.

#### 14.3.3 Environmental Impact Assessment Regulations

The Environmental Impact Assessment (EIA) Regulations, which provide the framework for conducting and reviewing environmental impact assessments for any project, fall under the EPPCA (Statutory Instruments No. 28 of 1997). The Regulations enacted under the EPPCA are still in force until the Minister enacts new Regulations under the Zambian EMA (Act, No 12 of 2011). The EIA process to be undertaken for this Project is illustrated in Figure 14.1 below.

#### 14.3.4 The Environmental Management (Licensing) Regulations, S.I. No. 112 of 2013

The Environmental Management (Licensing) Regulations were published under the Zambian EMA and provide for licensing requirements pertaining to specific subject areas, including:

- Air and water pollution;
- Waste management;
- Hazardous waste;
- Pesticides and toxic substances; and
- Ozone depleting substances.

The Environmental Management (Licensing) Regulations have provided for the repeal of the following legislation:

- The Waste Management (Licensing of Transporters of Wastes and Waste Disposal Sites) Regulations, S.I. No. 71 of 1993;
- The Water Pollution Control (Effluent and Waste Water) Regulations, S.I. No. 72 of 1993;
- The Pesticides and Toxic Substances Regulations, S.I. No. 20 of 1994;
- The Air Pollution Control (Licensing and Emission Standards) Regulations, S.I. No. 141 of 1996;
- The Environmental protection and Control (Ozone Depleting Substances) Regulations, S.I. No. 27 of 2001; and
- The Hazardous Waste Management Regulations, S.I. No. 125 of 2001.

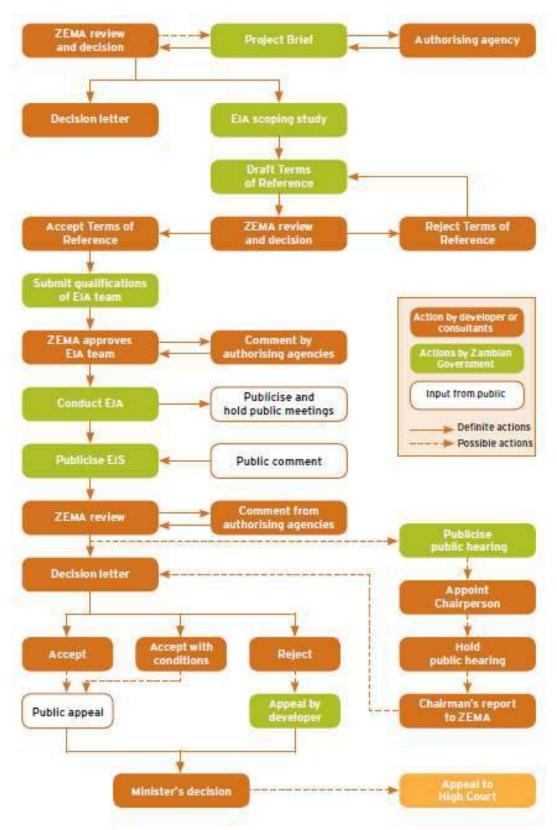


Figure 14.1 Zambian ESIA Process

Source: SADC Environmental Legislation Handbook 2012

The Regulations were published under the Zambian EMA and provide for licensing and management requirements for:

- Air Pollution Monitoring Permits under the Air Pollution Control (Licensing and Emission Standards) Regulations, 1996;
- Water Effluent Discharge Permits under the Water Pollution Control (Effluent and Wastewater) Regulations, 1993;
- Waste Management Licenses under the Waste Management (Transporters of Waste/Operation of Waste Disposal Sites) Regulations, 1993 Hazardous Waste Management Regulations, 2001; and
- Pesticides and Toxic Substances Licences under the Pesticides and Toxic Substances Regulations, 1994.

The applicability of these specific permits/licenses will need to be considered as Part of final Project Design.

Table 14.1 Summary of Relevant Zambian Environmental and Social Legislation

Component	Ap	plicable Legislative Instrument	Description of Legislative Instrument
			Natural Resources and Heritage
Water Resources	•	Water Resources Management Act, No 21 of 2011	Part V (Water Quantity and Quality Management), Section 46 mentions that discharge into a water resource shall be done in accordance with the Environmental Management Act, 2011.
			According to Section 71 (activities where water permits may be required), a person who intends to carry out activities identified in this Section shall apply for a permit and pay such charges, for the use of the water, as may be prescribed. It is the understanding of this process that a water permit will not be necessary for this Project.
			In accordance to Section 149 (Part XIV), all significant spills to a water course must be reported to the police, appropriate authorities (including conservation authorities), catchment council and local authority.
			Such management measures have been considered in this ESIA and associated ESMP, particularly to the
Wildlife and Natural Resources	•	Zambia Wildlife Act, No. 12 of 1998	Part VI (Game Animals and protected Animals) includes provisions for game and protected animals. More specifically Section 31 of Part VI states that any person who hunts any game or protected animal, except under or in accordance with the conditions of a valid license issued under Part VII of this Act, shall be guilty of an offence. This is further reiterated in Section 67 of the Act. Notwithstanding anything of the contrary of the Act, Section 78 of Part IX states that a person may kill any wild animal in defence of himself or in defence of any other person if it is necessary – provided that nothing in the Act shall exonerate any person, who at the time of killing any wild animal in self-defence or in defence of any other person, was committing an offence under the Act. Should such a kill take place, the person who killed the animal shall, within a period of forty eight hours, make a report of the facts to the nearest proper officer. In accordance with Section 80 of the Act, any person who kills any game animal or protected species through accident or error shall within a period of fourteen days make a report of the act to nearest proper officer.  As the Kariba Dam Rehabilitation Project will be in relatively close proximity to Protected Areas, management/mitigation commitments for the protection of terrestrial fauna will need to be considered in the
Fisheries and Wetlands	•	National Policy on Wetlands Conservation, September 2001	This Policy was formulated in response to the fragmented sectoral policies and Acts. It aims to provide a holistic programme of action to promote the conservation and wise use of wetland ecosystems. It acknowledges the importance of wetland ecosystems in Zambia in providing major fisheries and as important habitats for various wildlife species.  The management of surface water quality, aquatic environments (including aquatic vegetation) and terrestrial
			ecology (including fauna utilising wetland habits) is provided in the ESMP. This ESIA has considered the

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Component	Applicable Legislative Instrument	Description of Legislative Instrument
Noise & Vibration	Part IV of EMA,No.12 of 2011	Section 68 of Division 6 (Part IV) of the Act states that person shall not emit noise in excess of the noise emission standards established.
Explosives	Explosives Act (No 10 of 1974) Regulations are in draft stage.	Section 3 of the Act states that the Act shall apply (amongst others) to the, storage, use, possession and transportation of explosives.
		Part I of the Act provides general measures for the storage, handling and use of explosives. Part III includes provisions for the transportation of explosives by waterway, road, rail or air; and Part IV includes provisions for the transportation of explosives around the work site. Part V includes provisions for the storage of explosives at the work site and Part VIII includes requirements for the use of explosives.
		Blasting management measures are provided for in the ESMP. The development of these measures and detailed design around blasting management for the Kariba Dam Rehabilitation Project has and will take these
		Energy
Energy	Energy Regulation Act, Cap 436, 1995	Provides for the control in the pricing of energy products in the country as well as the quality.
	• The Petroleum Act, (No. 8 of 1995)	The areas of the Petroleum Act of relevance to this project are regulations for the conveyance and storage of
	The Electricity Act, 1995	Regulate the transmission, distribution and supply of electricity.
	Socioec	onomic, Archeology and Cultural Heritage

Component	Applicable Legislative Instrument	Description of Legislative Instrument
Health	Factories Act (Chapter 441 of the Laws of Zambia) (as amended by Statutory Instrument (S.I.) No. 165 of 1989, No. 75 of 1990, and Act No. 13 of 1994).	The Factories Act is intended to make further and improved provision for the regulation of the conditions of employment and regards the safety, health and welfare of persons employed therein.  Part V (Health: General Provisions) of the Act includes provisions around cleanliness, overcrowding, ventilation, lighting and sanitary requirements for employees and Part VI (Safety: General Provisions) includes provisions for the use of machinery, training, facilities, precautions for the use of explosives, emergency drill training requirements for employees.  Moreover, Part IX includes provisions for the welfare of employees, including provisions for drinking water, washing facilities, accommodation and change rooms, first aid and resting facilities. Section 71 of Part X includes requirements for provision of Personal Protective Equipment (PPE) and additional health and safety and welfare measures.  The ESIA and associated ESMP has considered and made provision for worker health and safety. Moreover, the
Archaeological, Historical and Cultural	National Heritage and Conservation Act, 1989	ESIA has considered the provisi  Part V of this Act (Conservation of Heritage) states that (Section 35) any person who wishes to destroy, demolish, alter or remove from its original site any monument, relic or ancient heritage shall apply for permission to the Commission. Moreover, Section 37 states that any person who desires to excavate any ancient heritage or collect relics shall apply to the Commission for permission.  In accordance with Section 42, any person who discovers a potential ancient heritage or relic shall report the find to the commissions and suspend operations in the immediate vicinity to the discovery.  The ESMP presents the Cultural and Heritage Management Plan including a Chance Find Procedure, which has
		Roads and Land Use Planning
Roads	Roads and Road Traffic Act (Cap 464)	Part III and IV of this Act include provisions for the registration and licensing of motor vehicles and trailers. Such provisions include ownership details, vehicle/trailer specifications, etc. Moreover, Part V includes the requirements for the licensing of drivers of motor vehicles and Part VII includes the provisions for third part insurance.  The Act stipulates that no person shall drive a motor vehicle on a road unless he is the holder of a valid licence issued to him in respect of motor vehicles of the class concerned. The Act provides the minimum age limits associated with driving of vehicles on roads. Part VI includes the provisions for motor vehicle insurance against third party. Part XI includes the provisions for road safety and driving offences (speed limits, reckless driving, driving under the influence, driving behaviors, vehicle emissions, littering etc.).

Component	A	oplicable Legislative Instrument	Description of Legislative Instrument
			The ESIA and ESMP presents Road Safety Management and Traffic and Transport Management measures. The provisions of this Act have been included in these measures.
Land use planning issues	•	Town and Country Planning Act, Cap 283, 1962, as amended.	Provides for the appointment of planning authorities whose main responsibilities are the preparation, approval and revocation of development plans. It also provides for the control of development and subdivision of land.
	•	Lands Conversion of Titles Act	Provides for alienation, transfer, disposition and charge of land.
	•	Lands and Deeds Registry Act, Cap 174	An Act to provide for the registration of documents; to provide for the issue of Provisional Certificates of Title and Certificates of Title; to provide for the transfer and transmission of
	•	Lands Act, Cap 173, 1995	The Act guarantees peoples' right to land while enhancing development. The Act recognizes the holding of land under customary tenure and the Chief's role has been legally recognised, such that land cannot be converted or alienate
	•	Land Acquisition Act No. 2 of 1970	The Act sets out regulations for compulsory acquisition of land and property and compensation for such acquisition.
	•	Agricultural Lands Act No. 57 of 1960	Provides for the establishment of the Agricultural Lands Board and provides for tenant farming schemes.
	•	The Local Government Act, No 13 of 2010	Provides for the establishment of Councils or Districts, the functions of local authorities and the local government system. Some of these functions relate to pollution control and the protection of the environment in general.
			Mining Regulations
Quarries and Borrow Pits	•	Mines and Minerals Development Act, 2008	Regulates the law relating to mines and minerals. The Act provides for the granting of or, renewal and termination of mining rights. It also provides for the control of mining activities with regard to environmental protection.
		Investn	nents, Energy Regulation, and Development
Tourism	•	Tourism and Hospitality Act, No 23 of 2007	Provides for the promotion of tourism activities both locally and internationally.
Investment and Taxes	•	Public – Private Partnership Act, No 14 of 2009	Provides for the encouragement of private sectors partnering with the government in the development and execution of certain nationally important projects
	•	Zambia Development Agency Act No 11 of 2006	An Act to foster economic growth and development by promoting trade and investment in Zambia through an efficient, effective and coordinated private sector led economic development Strategy.

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Component	Applicable Legislative Instrument	Description of Legislative Instrument
	The Zambia Revenue Authority Act (No. 28 of 1993 and all amendments);	The Acts provides for the taxation system in Zambia for various goods and services.
	Investment Act of 1998	Provides a legal framework for investment in Zambia. The Act relates to the environment by encouraging investment that is not detriment to the environment.
	Standards Act, Cap 416	Provides for the adherence to prescribed standards in all works.
Employment and Compensation	Citizens Economic Empowerment Act No 9 of 2006	Provides for the encouragement and support of citizens of Zambia to get involved in business activities for wealth creation and support of livelihoods.  More specifically, Part II of the Act provides measures for economic empowerment including (amongst others) the prohibition of discrimination, skills development, education and training, preferential procurement, regional development, codes of good practice and mechanisms for measuring progress.  The ESIA and ESMP provide measures to ensure that the Kariba Dam Rehabilitation Project provides opportunities to Zambian citizens.
	The Employment Act Cap 268	Provide for the employment of persons on contracts of service and for the form of and enforcement of contracts of service, appointment of officers of the Labour Department and for the conferring of powers on such officers and upon medical officers and protection of wages of employees as well as control of employment agencies.
	Compensation Act (No 10 of 1999)	Provides for the establishment and administration of a Fund for the compensation of Workers disabled by accidents to, or diseases contracted by, such Workers in the course of their employment, and for the payment of compensation to dependants of Workers who die as a result of such accidents or diseases.

#### 14.4 Zambian Development Policies

The national development policies for Zambia that are of applicability to this Project are briefly outlined below.

#### 14.4.1 Zambia Vision 2030

Vision 2030 expresses Zambia's aspirations in respect of economic growth, good governance and developing its people. One key basic principle of Vision 2030 is sustainable development. The vision is supported by key goals to ensure that by the year 2030:

- Zambia's rural and urban population has universal access to clean, reliable and affordable energy by the use of alternative, renewable energy sources such as hydropower.
- There is an upgrade of existing and construction of new infrastructure by developing and implementing private- public partnerships with both local and international industries.
- Zambia's biodiversity is protected in numerous national parks and local forest reserves.
   There is maintenance of a productive environment and well conserved natural resources to facilitate sustainable socio-economic development.
- There is effective utilisation of fresh water resources for a variety of purposes whilst maintaining the quality of the source.

#### 14.4.2 Sixth National Development Plan: 2011 – 2015

The Sixth National Development Plan (SNDP) aims to materialise the aspirations of the Vision 2030. The objectives of the SNDP are: infrastructure development; economic growth and diversification; rural investment; and poverty reduction and the enhancement of human development.

The SNDP contains sector plans that aim to assist in achieving these objectives. The sector plans most relevant to the Project and their objectives are summarised below.

#### 14.4.2.1 Energy Sector Plan

- To increase electricity generation capacity by at least 1,000MW and build appropriate transmission lines.
- To increase electrification levels in rural areas of Zambia to 15 %, particularly in the Central Province.
- To expand the use of renewable and alternative energy in the country's energy mix.
- To reduce greenhouse gas emissions from the energy sector and strengthen adaptation and resilience to climate change related stresses.

#### 14.4.2.2 Water Sector Plan

- To achieve sustainable water resource development for social and economic development.
- To develop innovative approaches and appropriate technologies for the effective management of the nation's water resources.

#### 14.4.3 Southern Province Regional Development Plan: 2011 - 2015

The Southern Province Regional Development Plan (as set out within the SNDP) provides for a variety of sector specific strategies and programmes to be achieved in the SNDP period. The objectives of some of these strategies and programmes applicable to the Project include:

- Infrastructure development for the movement of goods and services;
- Connecting rural areas to electricity power supply; and
- Expanding and improving infrastructure for electricity generation, transmission and distribution.

#### 14.4.4 Energy White Paper (February 2010)

A national energy study was implemented by Chubu Electric Power Co., Inc. from November 2008 to February 2010, in order to formulate a countrywide power system development master plan. The study was undertaken cooperatively with the Zambian Ministry of Energy and Water Development.

The objectives of the study were to inform the Power System Development Master Plan until 2030, coordinating generation, transmission, and an interconnection plan for the stabilization of the power supply for Zambia and the southern African community. In addition to this, the study was intended to transfer technical skills.

#### 14.5 International Treaties, Conventions and Protocols

Zambia is signatory to a number of international conventions and agreements relating to industry, environmental management and energy. In certain cases these have influenced policy, guidelines and regulations. These conventions must be complied with during the planning, construction and operations phases of the proposed development.

Table 14.2 lists the relevant international conventions and protocols to which Zambia or Zimbabwe is a signatory.

**Table 14.2 Ratification of International Conventions** 

Name of Convention	Date of enactment
Protocol on Shared Watercourses	and status
	07/08/2000
in the Southern African Development	
Community (SADC) The overall objective of this Protocol is to foster closer cooperation for judicious,	
sustainable and co-ordinated management, protection and utilisation of shared	
watercourses and advance the SADC agenda of regional integration and poverty	
alleviation.	
WATER AND ADDRESS OF THE ADDRESS OF	Zambia: 15/11/1994
The Basel Convention on Trans-boundary Movement of Hazardous Waste	(Accession)
The Basel Convention governs the generation, collection, storage, transportation, pre-	
treatment, treatment, disposal, export, import and trans-boundary movement of	Zimbabwe:
hazardous waste.	01/03/2012
	(Accession)
Bamako Convention on the ban on the Import into Africa and the Control of	Zambia: 03/08/2005
Transboundary Movement and Management of Hazardous Wastes within Africa	(signed)
The Bamako Convention uses a format and language similar to that of the Basel	
Convention, but is much stronger in prohibiting all imports of hazardous waste.	Zimbabwe:
Additionally, it does not make exceptions on certain hazardous wastes (like those for	10/07/1992 (ratified)
radioactive materials) made by the Basel Convention.	
The Convention Concerning the Protection of the World's Cultural and Natural	Zambia: 04/06/1984
Heritage	(ratified)
The Convention provides for the identification, protection, conservation, presentation	
and transmission to future generations of the cultural and natural heritage which are of	Zimbabwe:
outstanding universal value from the point of view of history,	ı
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Zambia: 24/11/1980 (ratified)
CITES is an international agreement between governments to ensure that international	Zimbabwe:
trade in specimens of wild animals and plants does not threaten their survival.	19/05/1981 (ratified)

Name of Convention	Date of enactment and status
International Union for the Conservation of Nature and Natural Resources (IUCN) Encourages the preservation of wildlife, natural environments, and living resources and promotes research in the preservation of threatened species, ecology, sustainable development, and environmental law, education, and training.	Zambia: member
African Convention on the Conservation of Nature and Natural Resources Recognises the need to contribute to the conservation of nature and natural resources at	Zambia: signatory Zimbabwe: signatory
United Nation Convention to Combat Desertification (UNCCD)  Recognises the need to control any form of desertification that may arise as a result of anthropogenic activities. The statutes of the UNCCD, encourages the control of desertification as a result of man's activities.	Zambia: 19/09/1996 (ratified) Zimbabwe: 1997 (ratified)
United Nations Framework Convention on Climate Change (UNFCCC) UNFCCC is an international agreement for the control of climate change.	Zambia: 28 May 1993 (ratified) Zimbabwe: 3/10/1992 (ratified)
The Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC)	Zambia: 07/07/2006 (ratified)
An international treaty that sets binding obligations on industrialized countries to reduce emissions of greenhouse gases. The UNFCCC is an environmental treaty with the goal of preventing dangerous anthropogenic (i.e., human-induced) interference of the climate system.	Zimbabwe: 30/06/2009 (ratified)
Convention concerning the Abolition of Forced Labour, 1957 (ILO) Cancels certain forms of forced labour still allowed under the Forced Labour Convention of 1930, such as punishment for strikes and as a punishment for holding	Zambia: 22/02/1965 (ratified) Zimbabwe:
Convention concerning Discrimination in Respect of Employment and Occupation or Discrimination (Employment and Occupation) Convention (ILO)  The convention requires states to enable legislation which prohibits all discrimination and exclusion on any basis including of race or colour, sex, religion, political opinion,	Zambia: 23/10/1979 (ratified) Zimbabwe:
national or social origin in employment and repeal legislation that is not based on equal opportunities.  African Charter on Human and Peoples' Rights Is an international human rights instrument that is intended to promote and protect	23/06/1999 (ratified)  Zambia: 10/01/1984 (ratified)
human rights and basic freedoms in the African continent.  Convention Concerning the Protection of Workers against Occupational Hazards	Zimbabwe:  Zambia: 19/08/ 1980 (ratified)
in Working Environments due to Air Pollution and Noise Vibrations Recognises the need to protect workers against hazards in working environments.	Zimbabwe: not a member
Agreement on Co-operative Enforcement Operations directed at Illegal Trade in Wild Fauna and Flora  The objective of this Agreement is to reduce and ultimately eliminate illegal	Zambia: 9/11/1995 (ratified)
trade in wild fauna and flora and to establish a permanent Task Force for this purpose.	Zimbabwe: not a member
Agreement on the Action Plan for the Environmentally Sound Management of the Common Zambezi River System  Is an agreement aiming to develop regional co-operation on environmentally sound	Zambia: 28/05/1987 (ratified)
water resources management of the common Zambezi river system and to strengthen regional co-operation for sustainable development.	Zimbabwe: 28/05/1987 (ratified)
Constitution of the International Labour Organisation A constitution detailing conditions and standards for acceptable labour practices.	Zambia: (ratified)
Convention on Biological Diversity  The Convention has three main objectives; the conservation of biological diversity, the sustainable use of the components of biological diversity and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.	Zambia: (ratified) Zimbabwe: (ratified)

Name of Convention	Date of enactment and status
Convention on Wetlands of International Importance especially as Waterfowl	Zambia: (ratified)
Habitat (Ramsar)	
An international treaty for the conservation and sustainable utilization of wetlands. The	Zimbabwe: (ratified)
treaty recognizes the fundamental ecological functions of wetlands and their economic,	
cultural, scientific, and recreational value.	
International Plant Protection Convection	Zambia: (ratified)
Is an international agreement on plant health which aims to protect cultivated and wild	
plants by preventing the introduction and spread of pests.	Zimbabwe: not a
	member
Statutes of the International Centre for the Study of the Preservation and	Zambia: not a
restoration of Cultural Property	member
Intergovernmental organisation dedicated to the conservation of cultural heritage. It has	
a worldwide mandate to promote the conservation of all types of cultural heritage, both	Zimbabwe: ratified
movable and immovable.	
Statutes of the International Union for Conservation of Nature and Natural	Zambia: not a
Resources (as amended)	member
Intergovernmental organisation with the objective to influence, encourage and assist	
societies throughout the world to conserve the integrity and diversity of nature and to	Zimbabwe: ratified
ensure that any use of natural resources is equitable and ecologically sustainable.	

#### 14.6 Zimbabwean Institutional Framework

#### 14.6.1 Ministry of Environment, Water and Climate

The ministry with overall responsibility for environmental management in Zimbabwe is the Ministry of Environment, Water and Climate, formerly known as the Ministry of Environment and Natural Resource Management, and the Ministry of Mines, Environment and Tourism. As per the Zimbabwean Environmental Management Act (Chapter 20:27) the general functions of the Minister of Environment, Water and Climate are to:

- Regulate the management of the environment and promote, coordinate and monitor the protection of the environment and the control of pollution.
- Regulate the activities of all government agencies and other agencies in terms of their impact on the environment.
- Present to Parliament a report on the state of the environment every five years.
- Monitor the environment, trends in the utilisation of natural resources, and the impact of such utilisation on the environment.
- Coordinate the promotion of public awareness and education on environmental management.
- Ensure that persons and institutions responsible for causing environmental harm meet the cost of remedying that harm.
- Formulate policies for environmental management and facilitate their implementation.
- Recommend to the government which international and regional conventions and treaties
  on the environment Zimbabwe should become a party to, and secure their incorporation
  into domestic law.

Environmental management is regulated by three related agencies in the Ministry of Environment, Water and Climate, namely the National Environmental Council (NEC), the Environmental Management Agency (EMA) and the Environmental Management Board (EMB).

14.6.1.1 National Environmental Council (NEC)

The functions of the NEC are to:

- Give advice on policy formulation and provide directions on the implementation of the Zimbabwean EMA.
- Give advice on national goals and objectives for the protection of the environment.
- Promote cooperation among public departments, local authorities, the private sector, non-governmental organisations and other organisations that deal with environmental issues.
- Review and recommend to the Minister guidelines for environmental management plans and environmental action plans.
- Review national environmental policies, plans and strategies.

#### 14.6.1.2 Environmental Management Agency

The Environmental Management Act of 2002 (Chapter 20:27) provides for the establishment of the Zimbabwean Environmental Management Agency (EMA), formerly known as the Department for Natural Resources. The Agency is responsible for:

- Formulating quality standards on air, water, soil, noise, vibration, radiation and waste management.
- Assisting and participating in any matters pertaining to the management of the environment, such as:
- Developing guidelines for National Plans, environmental management plans and local environmental action plans;
- Regulating and monitoring the collection, disposal, treatment and recycling of waste;
- Monitoring and regulating the discharge or emission of pollutants or hazardous substances into the environment;
- Keeping records in the form of registers of all licences and permits issued under the law;
- Monitoring and regulating the control of invasive alien species;
- Regulating, monitoring, reviewing and approving EIAs;
- Regulating and monitoring the management and utilisation of ecologically fragile ecosystems;
- Making bylaws within the jurisdiction of local authorities;
- Advising government on conventions and treaties that should be incorporated into national law;
- Coordinating the production of a five-year environmental report;
- Developing and implementing incentives for the protection of the environment;
- Carrying out periodic environmental audits of any projects, including projects whose implementation started before a fixed date, to ensure that their implementation complies with the requirements of the Act;
- Regulating and monitoring access by any person to biological and genetic resources; and
- Making recommendations to the Minister on the formulation of any regulations.

The Zimbabwean Environmental Management Agency (EMA) falls under the Ministry of Environment, Water and Climate. The Ministry of Environment, Water and Climate regulates the activities of the EMA and regulates management and protection of the environment and control of pollution. Accordingly, the Ministry of Environment, Water and Climate and the EMA are mandated to ensure that the proposed Project is undertaken in a way that complements Chapter 20:27 of the Zimbabwean Environmental Management Act.

#### 14.6.1.3 Environment Management Board

The Zimbabwean EMA is controlled and managed by the Environment Management Board (EMB), which is composed of experts from the areas of environmental planning and management, environmental economics, ecology, pollution, waste management, soil science, hazardous substances, water and sanitation. In addition, there is a legal representative and a secretary to the Ministry responsible for the environment.

#### 14.6.2 Department of Water

The Department of Water within the Ministry is responsible for the oversight of the water sector. The functions of the Ministry include:

- Formulate and implement sustainable policies on the development, utilization and management of water resources in cooperation with user communities and institutions.
- Design, construct and maintain medium to large size dams and water supplies to satisfy present and future domestic, industrial and mining water requirements.
- Provide clear/treated water for urban areas in consultation with the Ministry of Local Government, Public Works and Urban Development.
- Design, construct and maintain dams, weirs and boreholes to meet present and future irrigation requirements.
- Take responsibility for the overall/national planning, management, regulation and standardisation of irrigation development and adoption of appropriate technology.
- Design, construct, maintain and manage irrigation schemes and projects.
- Develop sustainable underground water resources in consultation with the Ministry of Rural Housing and Social Amenities.
- Manage the water resources of the country (water in rivers, dams and ground water).
- Set tariffs for raw water, treated water and irrigation water in consultation with other line ministries, consumers and stakeholders.
- Manage and administer the Water Fund through the Zimbabwe National Water Authority.
- Administer the District Development Fund.
- Administer the Rural Capital Development Fund.
- Participate in the development and implementation of SADC and other regional and international organisations' water resources management frameworks.

#### 14.6.3 The Zimbabwe National Water Authority (ZINWA)

ZINWA is a parastatal, which acts as an operator and a regulator. ZINWA is responsible for the following functions at the national level:

- Water planning and implementation;
- Management of public dams;
- Supply of bulk water to the agriculture, industrial and mining sectors;
- Supply of bulk water to urban centres; and
- Coordination and supervision of the seven catchment councils.

ZINWA is responsible for water supply to urban centres, while the municipalities supply water to smaller urban settlements. Rural water supply and sanitation is coordinated by the National Action Committee for Water and Sanitation, which is an inter-ministerial committee chaired by the Minister of Local Government. Separating rural and urban domestic water supply into different ministries was identified by SADC (2003a) as leading to the rural water supply perspectives being isolated from the national water program.

The seven Catchment Councils (Gwayi, Manyame, Save, Runde, Mazowe, Sanyati and Mzingwane) established under the Zimbabwe National Water Authority Act are responsible for all aspects of water management within their responsive catchment areas. The Catchment Managers are employees of ZINWA, and not employed by the Catchment Council, which hinders the devolution of authority. Sub-Catchment Councils are under Catchment Councils and Water User Boards are the lowest tier.

KDRP has the potential to impact on water quality of the Zambezi River downstream of the excavation works associated with rehabilitation of the plunge pool. Accordingly, the

Zimbabwean Department of Water and the Zimbabwean National Water Authority (ZINWA) were considered as key stakeholders in the ESIA process.

#### 14.6.4 Ministry of Energy and Power Development

The Ministry is the administering authority in regards to energy and power development in Zimbabwe. The Ministry comprises the following departments: Petroleum; Power Development; Policy and Planning; Energy Conservation and Renewable Energy; Finance Human Resources and Administration; Legal Services; and Internal Audit.

#### 14.6.4.1 The Power Development Department

The Power Development Department is one of the technical departments of the Ministry. Its main role is to facilitate the improvement of availability of electricity to the populace, as well as the attainment of self-sufficiency in electricity generation. The achievement of the strategic goals is centred on the effective administration of the utilities under the Department's purview namely ZESA Holdings (Pvt) Ltd and its subsidiaries: Zimbabwe Power Company (ZPC), Zimbabwe Electricity Transmission and Distribution Company (ZETDC), ZESA Enterprises (ZENT); the Rural Electrification Agency (REA); Zimbabwe Electricity Regulatory Commission (ZERC) and Zambezi River Authority (ZRA) which is a bilateral body owned by Zimbabwe and Zambia.

#### 14.6.5 The Zimbabwe Energy Regulatory Authority (ZERA)

ZERA was created in September 2011 following the promulgation of the Energy Regulatory Act (Chapter 13:23). Its primary mandate is to regulate the Energy Sector in Zimbabwe. The functions of ZERA include:

- Regulatory and Licensing:
  - To regulate the procurement, production, transportation, transmission, distribution, importation and exportation of energy derived from any energy source.
  - o To exercise licensing and regulatory functions in respect of the energy industry.
  - To ensure that prices charged by licensees are fair to consumers in the light of the need for prices to be sufficient to allow licensees to finance their activities and obtain reasonable earnings for their efficient operation.
  - O To establish or approve operating codes for safety, security, reliability, quality standards and any other sector related codes and standards for the energy industry or any sector thereof.
  - o To maintain and promote effective competition within the energy industry.
- Research and development:
  - o To promote and encourage the expansion of the energy industry and the advancement of technology relating thereto.
  - O To promote, identify and encourage the employment and development of sources of renewable energy.
  - To undertake such other thing which it considers is necessary or convenient for the better carrying out of or giving effect to the functions of the Authority.
  - o To increase access and security of supply:
  - To promote the procurement, production, transportation, transmission and distribution of energy in accordance with public demand and recognised international standards.
  - O To ensure the maximisation of access to energy by all consumers that is affordable and environmentally sustainable.
  - To create, promote and preserve an efficient energy industry market for the provision of sufficient energy for domestic and industrial use.

- o To promote coordination and integration in the importation, exportation and pooling of energy from any energy source in the SADC and COMESA region.
- Energy efficiency and environmental protection:
  - To advise and educate consumers and licensees regarding the efficient use of energy.
  - To assess, promote studies of and advise the Minister and licensees on the environmental impact of energy projects before licensing.
- Key stakeholder advisory role:
  - o To advise the Minister on all matters relating to the energy industry.
  - To establish appropriate consumer rights and obligations regarding the provision of energy services.
  - o To arbitrate and mediate disputes among and between licensees and consumers.
  - o To represent Zimbabwe internationally in matters relating to the energy industry.

KDRP directly concerns the maintenance of power generation facilities, and therefore the Ministry of Energy and Power Development and associated Power Development Department and Zimbabwe Energy Regulatory Authority were considered as key stakeholders in the ESIA process.

#### 14.6.6 National Museums and Monuments of Zimbabwe (NMMZ)

NMMZ is Zimbabwe's premier heritage organization established under the National Museums and Monuments of Rhodesia Act, 1972 which is now called the National Museums and Monuments Act (Chapter 25:11). NMMZ is a Parastatal, funded through grant by Central Government and falling under the Ministry of Home Affairs. The Act established a Board of Trustees to provide for the establishment and administration of museums' and to provide for the preservation of ancient, historical and natural monuments, relics and other objects of historical or scientific value or interest.

Although it is not anticipated that there are any cultural heritage sites located in the Project Area, there may be sub-surface archaeological resources that could fall within the footprints of proposed ground disturbing activities. Accordingly, the National Museum and Monuments of Zimbabwe (NMMZ) was considered a key stakeholder in the ESIA process.

#### 14.6.7 Other Line Ministries:

A number of other Ministries may have interests in KDRP, and were considered as key stakeholders in the ESIA process:

- Ministry of Lands and Rural Resettlement
- Ministry of Industry and Commerce;
- Ministry of Health and Child Care;
- Ministry of Local Government, Public Works and National Housing;
- Ministry of Lands and Rural Settlement;
- Ministry of Agriculture, Mechanisation & Irrigation Development; and
- Ministry of Public Service, Labour and Social Welfare.

#### 14.7 Zimbabwean Environmental and Social Laws and Regulations

Table 14.3 presents a summary of the Zimbabwean national legislation that is considered applicable to KDRP.

## 14.7.1 Constitution of Zimbabwe Amendment Act (No. 20 of 2013), Section 73 (Environmental Rights)

According to Section 73 of the Constitution of Zimbabwe, every person has a right to an environment that is not harmful to their health or well-being and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures. To this end, the State must take reasonable legislative and other measures, within the limits of the resources available to it, to achieve the progressive realisation of the rights set out in this section.

- 1. Every person has the right
- a) To an environment that is not harmful to their health or well-being; and
- b) To have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that
  - i. Prevent pollution and ecological degradation;
  - ii. Promote conservation; and
  - iii. Secure ecologically sustainable development and use of natural resources while promoting economic and social development.
- 2. The State must take reasonable legislative and other measures, within the limits of the resources available to it, to achieve the progressive realisation of the rights set out in this section.

#### 14.7.2 The Environmental Management Act (the Act) (Chapter 20:27), No. 13 of 2002

The Zimbabwean Environmental Management Act (the Act) (Chapter 20:27), No. 13 of 2002, was enacted in 2002 and amended on 17 May 2011, under the General Laws Amendment Act, 2011 (No 5 of 2011) Government Gazette number Vol LXXXIX, No 23. It aims to 'provide for the sustainable management of natural resources and protection of the environment; [and] the prevention of pollution and environmental degradation'.

The Act also provides for the establishment of EMA and an Environmental Fund. The Act repeals the following former Acts:

- Natural Resources Act (Chapter 20:13);
- Atmospheric Pollution Prevention Act (Chapter 20:03);
- Hazardous Substances and Articles Act (Chapter 15:05); and
- Noxious Weeds Act (Chapter 19:07).

The Act is a general legislative framework and does not cover every environmental aspect. It is a framework law which will be complemented by other laws and policies that are not in conflict with it. However, where there are conflicts, this Act will take precedence. The law will be supported by the setting up of the proposed institutions and the promulgation of Regulations by the Minister. Nevertheless, the Act provides the general environmental principles that should be followed in environmental management.

The provisions of the Zimbabwean EMA that relate to EIAs in particular are set out in Section 97 of the Act and summarised below:

- A person who proposes to embark on any of the projects listed in the First Schedule is expected to submit an EIA report to the Director General.
- The developer can only embark on the project if s/he has obtained a certificate from the Director-General.
- The developer is expected to submit a prospectus to the Director General with information on the assessment and the project.
- It is an offence for any person to knowingly implement a project without a certificate showing that an EIA has been carried out and approved.

Some of the sectors in which EIAs should be carried out include: dams and man-made lakes; drainage and irrigation; housing developments; industry; mining and quarrying; petroleum production, storage and distribution; power generation and transmission; tourist resorts and recreational developments; waste treatment and disposal; water supply; conversion of forest land into other use; and conversion of natural woodland to other use within the catchment area of reservoirs used for water supply, irrigation or hydropower generation or in areas adjacent to parks and wildlife estates.

#### 14.7.2.1 General Management Requirements

This Act aims to provide for the sustainable management of natural resources and protection of the environment; [and] the prevention of pollution and environmental degradation. Section 4 the Act affords all citizens of Zimbabwe the right to live in a clean environment that is not harmful to their health; access to environmental information; the right to protect the environment for the benefit of present and future generations; and the right to participate in the implementation of legislation and policies that prevent pollution and environmental degradation and promote the sustainable management and use of natural resources, as well as justifiable economic and social development.

The Act also includes provisions for aspects including (amongst others) water, air, waste, hazardous wastes, noise, toxic substances, wetlands and control of invasive plant species. These provisions will be discussed in the relevant sections below.

#### 14.7.2.2 Provisions for Water

Section 57 of the Act mentions that any person, who discharges or applies any poison or toxic, noxious or obstructing matter, radioactive waste or other pollutants or permits any person to dump or discharge such matter into the aquatic environment in contravention of water pollution control standards shall be guilty of an offence.

#### 14.7.2.3 Provisions for Terrestrial Ecology

Part XIII of the Act includes provisions for the control of alien plant species. Essentially, every person has the responsibility to clear or cause to be cleared any invasive alien species growing or occurring on the land in respect of which he is responsible.

#### 14.7.2.4 Provisions for Air Quality

Section 63 of the Act mentions that ambient air quality standards need to be established.

#### 14.7.2.5 Provisions for Noise

Sections 79 to 81 (in Part IX of the Act) provide requirements around noise management. More specifically, the Act mentions the need for standards to be established for the emissions of noise and vibration pollution. Section 80 mentions that any person who emits noise in excess of the noise emission standards prescribed in terms of section seventy-nine shall be guilty of an offence.

No reference to noise standards could be sourced and it appears as if these do not yet exist.

#### 14.7.2.6 Provisions for Waste and Hazardous Wastes

Section 69 of Part IX of the Act mentions that no person shall discharge or dispose of any wastes, whether generated within or outside Zimbabwe, in such a manner as to cause

pollution to the environment or ill health to any person. Moreover, Section 69 includes provisions for the transport and disposal of waste.

Section 73 of the Act prohibits the discharge of hazardous substances, chemicals and materials or oil into the environment.

## 14.7.3 Environmental Management (Environmental Impact Assessments and Ecosystems Protection) Regulations, SI No. 7 of 2007

The Environmental Management (Environmental Impact Assessments and Ecosystems Protection) Regulations (EIA Regulations) deal with the regulation of the EIA process and the protection of ecosystems. Part 11 of the Act stipulates that no industrial project shall be implemented without an EIA having been done. These Regulations provide the methodology for undertaking the EIA. The developer has to submit a prospectus to the EMA (see section 16.4.1), which will issue a licence if satisfied by the contents of the prospectus. The prospectus has to contain details of the environmental impacts of the project and the measures to be taken to contain or mitigate such impacts. In preparing an EIA, a developer is obliged to consult widely with all stakeholders. The EMA will not issue a licence if it is not satisfied that the developer consulted with all stakeholders in the preparation of the prospectus. It should also be noted that projects that began before the Act was promulgated are subject to periodic environmental audits by the EMA.

Section 10 (4 to 7) of the EIA Regulations state the following:

- Before any EIA report is furnished to the Director-General, the developer shall carry out wide consultations with stakeholders;
- During review of the prospectus and EIA report, the Director-General shall verify whether full stakeholder participation was undertaken when the EIA report was prepared;
- Expenses associated with the stakeholder consultation process should be borne by the developer;
- The Director-General may advertise in the print and electronic media when a prospectus or EIA report is being reviewed.

The Regulations neither provide specifically for the manner in which the consultation of stakeholders should be carried out nor do they stipulate the stakeholders. There is also no measure to ensure that the concerns of the stakeholders are incorporated in the prospectus.

#### 14.7.4 Environmental Impact Assessment Guidelines (1997)

In 1997, the then Ministry of Mines, Environment and Tourism published the Environmental Impact Assessment Policy. The goal of the policy is to encourage environmentally responsible investment and development in Zimbabwe. The policy views the EIA process as key to achieving this goal.

To support the 1997 Environmental Impact Assessment Policy, the Ministry of published EIA Guidelines to facilitate the implementation of the EIA process. These guidelines are presented as 10 Volumes.

Volume 1 provides guidance on the EIA Policy and General Guidelines under the following topics: administering the EIA Policy; preparing Terms of Reference (ToR's); preparing EIA Reports; consulting the Public; environmental management; and evaluating the adequacy of EIA Reports. In terms of consulting the public, Section 5 provides guidelines for the stakeholder consultation programme.

Volumes 2 to 10 provide guidance on sector-specific EIAs and cover the following sectors: Mining and quarrying; Forestry; Agriculture; Transport; Energy; Water; Urban infrastructure; and Tourism. For each of these sectors, the guidelines provide examples of major activities that are likely to be undertaken for projects in that sector, the type of environmental impacts, possible measures for managing such impacts, sample Terms of Reference, and sources of information for use in an EIA study. In addition, the guidelines are supported by various appendices which provide guidance on preparing ToR's, EIA methods, sources of information, etc. The guidelines are used by Government authorities, developers and EIA practitioners as they provide valuable assistance with carrying out EIAs, guidance on the review of EIAs and the implementation of the EIA recommendations. In addition, the guidelines contribute to improving the quality of sector-specific EIAs.

Table 14.3 Summary of Relevant Zimbabwean Environmental and Social Legislation

Component	Ap	plicable Legislative Instrument	Description of Legislative Instrument
			Environmental
Water Resources	•	Water Act, 2003 (Chapter 20:24)	Section 67 of the Act states that water resource management needs to be consistent with environmental approaches and due consideration should be given to the protection, conservation and sustenance of the environment; and the right of access by members of the public to places of leisure or natural beauty related to water or water bodies.
			According to Section 69, a person who intends to discharge or dispose into a water course shall apply for a permit and pay such charges, for the use of the water, as may be prescribed. It is the understanding of this process that a water permit will not be necessary for this Project.
			Part IX includes provisions on the safety of dams. Namely Section 109 and 110 include requirements around procedures for emergency for any sudden or unprecedented flood or alarming or unusual circumstance or occurrence, whether anticipated or existing, which may adversely affect the dam.
			Such management measures have been considered in ESIA and associated ESMP, particularly for surface water
	•	Zimbabwe National Water Authority Act, 1998 (Chapter 20:25)	Establishes the Zimbabwe National Water Authority and to provide for its functions. Provides for the appointment and functions of a board of the Authority and for the raising of charges for the provision of water and other services by the Authority. In addition, the Act provides for the funds of the Authority and the imposition and collection of a water levy. The Act also repealed the Regional Water Authority Act.
Wildlife and Natural	•	Forest Act, 1948 (Chapter 19:05)	Provides for demarcating and conserving forests and nature reserves.
Resources			More specifically, Part VI (conservation of timber resources) governs the removal of indigenous trees. Prior to the removal of indigenous trees, notice of intention must be provided to the appropriate Commission.
			Management/mitigation commitments for the protection of terrestrial flora are included in this ESIA and associated ESMP.
	•	Parks and Wildlife Conservation Act, 1975 (Chapter 20:14)	Provides for the conservation and control of wildlife, fish and plants; and designates specially protected animals and indigenous plants.
			More specifically, Part IX (specially protected animals) (Section 45) and Part XII includes provisions around the hunting, removal of animals and animal products.
			Part X and Part XI of the Act include provisions for protected plants specified in the Seventh Schedule (insertion by Act 19 of 2001 with effect from the 1st June, 2002) and provisions for the control of picking of indigenous plants.

Kariba Dam Rehabilitation Project (KDRP)

Component	Applicable Legislative Instrument	Description of Legislative Instrument
		The management of terrestrial ecology and revegetation and rehabilitation for the Kariba Dam Rehabilitation Project has considered the provisions of this Act.
	SI 61 of 2009 Environmental Management (Access to Genetic Resources and Indigenous Genetic Resource Best Knowledge)	The SI requires stakeholders (including communities) to be consulted where access to genetic resources is given to external parties, promoting community participation in the management of genetic resources. Consultation, which is a key aspect of good governance of natural resources, is strengthened by the requirement of Prior Informed Consent.
	GN 380 of 2013 (Protection of Wetlands) per Section 113 of the Environmental Management Act	This Section of the Act includes provisions for the protection of wetlands in Zimbabwe. Such controls include the preservation of beds, banks; controlling stormwater; restrictions of removing clays and deposits from wetlands; reducing pollution of any kind to wetlands and restoration of wetlands.  The management of surface water quality, aquatic environments (including aquatic vegetation) and terrestrial ecology
	Communal Land and Forest Produce Act, 1988 (Chapter 19:04)	Controls the use of wood resources within communal lands. Such resources are only for the domestic use of the residents.
Air	Air Pollution Control Regulations SI 72, 2009.	Provides for prevention, control and abatement of air pollution to ensure clean and healthy ambient air.  The provisions of these regulations have been considered in the Air Quality and Dust Management Plan (refer to
	Draft Air Quality and Emission Standards (draft number EN 005 - D977/2)	These have not been enacted; however, Section 4 of these draft standards provides ambient air quality in Zimbabwe. Moreover, Section 7 provides limit values for vehicle emissions.
Waste	Effluent and Solid Waste Disposal Regulations SI 6, 2007.	This regulation concerns the disposal of effluent and solid wastes. Persons are prohibited from disposing waste into public water courses without initially acquiring permission. Moreover, a generator of waste (other than domestic households) is now required to produce a Waste Management Plan. The plan should deal with sound environment management of wastes.
		Although waste related impacts have not been included in the ESIA, the ESMP presents a Waste Management Plan. Moreover, the ESMP presents a Rehabilitation and Revegetation Plan. These plans have considered the provisions of

Kariba Dam Rehabilitation Project (KDRP)

Component	Applicable Legislative Instrument	Description of Legislative Instrument
	Hazardous Waste Management Regulations SI 10, 2007	Provides for the licensing for generation, storage, use, recycling, treatment, transportation or disposal of hazardous waste. Generators of hazardous waste are also required to prepare waste management plans and targets. Regulates waste collection and management by local authorities. In addition, regulates the importation and exportation of hazardous waste and waste oils.  According to this regulation, generators of hazardous waste are required to prepare waste management plans.  The ESMP includes a Waste Management Plan, which includes commitments around the management of hazardous waste.
	Environmental Management (Plastic Packaging and Plastic Bottles) SI 98 of 2010	The Plastic Bottles and Plastic Packaging Regulations encourage a reduction in the use of certain types of plastics. According to Article 3(1), it is prohibited to produce, import or distribute plastic packaging with a thickness of less than 30 microns.
		The Waste Management Plan (refer to ESMP in Part III) encourages minimization of waste generation and
Explosives	Explosives Act (Chapter 10:08)	Part IV of this Act includes provisions for the storage of explosives. No person shall keep explosives in or on any premises unless the premises are licensed. Moreover, Part V of the Act governs the use of explosives. Part VI provides restrictions and provisions for the transport of explosives.
		The ESMP includes provisions for blasting management. The development of these provisions has taken this Act into consideration. Moreover, detailed design around blasting management for the Kariba Dam Rehabilitation Project has
		Energy
Energy	Electricity Act (Ch 13:19)	Provides for the establishment of the Zimbabwe Electricity Regulatory Commission and provides for its functions and management. Also provides for the licensing and regulation of the generation, transmission, distribution and supply of electricity.
	Energy Regulatory Act (Chapter 13:23)	other sections not provided for by the energy laws, the Electricity Act (13:19) and Petroleum Act (13:22). The Energy Regulatory Act repealed some sections especially those related to the formation of the regulatory institutions in the Electricity Act (Chapter 13:19) and Petroleum Act (Chapter 13:22). The mandate of ZERA is to regulate the Energy Secto
		Socioeconomic, Archeology and Cultural Heritage

Component	Ap	plicable Legislative Instrument	Description of Legislative Instrument
Health	•	Public Health Act (Ch 15:09)	Provides for the establishment of the Zimbabwean public health system.
	•	Regulation 12 of 2007 Environmental Management Act (Hazardous Substances, Pesticides and other Toxic Substances)	The Regulations prescribe conditions that employers have to observe in the handling of hazardous substances at the workplace, conditions for transporting hazardous substances, and procedures to be followed when there is an accidental spillage of hazardous substances.
			The Agency is empowered to issue spot fines to any person who violates the law. In addition, any person whose substances affect the environment is liable to pay for the cost of restoring the environment (i.e. the polluter pays principle). The offender is also liable to pay compensation for any damage that the offence caused to any person.
	•	Environmental Management (Hazardous Waste Management) Regulation 10 of 2007	The Environmental Management Act (Chapter 20:27) Section 140 read with Statutory Instrument 10 of 2007 (see above), regulates the handling of hazardous waste. Under the regulations, the collection, storage, treatment and transportation is strictly prohibited unless under a license issued by the Environmental Management Agency. The regulations also stipulate that no person shall generate, store, sell, transport, use, recycle, treat, discharge or dispose of hazardous waste to the environment without seeking a permit or license from the Agency.
Immigration	•	Immigration Act (Chapter 4:02)	Part III of this Act includes provisions for the entry of persons to Zimbabwe (viz. compliance with the directions of immigration officers, travel document requirements, entry refusals, etc.). Part V of the Act includes the provisions for departure of Zimbabwe.  These provisions have been included in the Worker Health and Safety Plan included in the ESMP (refr to Part III of
Protected Places and Areas	•	Protected Place and Areas (Chapter 11:12)	the ESIA).  This Act includes the provisions for the control of entry of persons into certain places, for the protection of the premises. The control of access to work areas associated with the Kariba Dam Rehabilitation Project will be undertaken in accordance with the provisions/requirements in this Act.
Archaeological, Historical and Cultural	•	National Museums and Monuments Act (Chapter 25:11)	Makes provision for the preservation of ancient, historical and natural monuments, relics and other objects of historical or scientific value or interest. Section 21 of the Act requires that the appropriate board be notified of any ancient monument or relic. Moreover, Section 24 states that no person may excavate and ancient monument or national monument without obtaining written permission by the appropriate Board.
			The Cultural and Heritage Management Plan (refer to the ESMP in Part III of this ESIA) includes a Chance Find Procedure, which has considered the provisions of this Act
Land use planning issues	•	Communal Land Act (Chapter 20:04)	Provides for the classification of land in Zimbabwe as Communal Land and for the alteration of such classification; to alter and regulate the occupation and use of Communal Land; and to provide for matters incidental to or connected with the foregoing.
	•	Rural District Councils Act, 1989 (Chapter 29:13)	Provides for the establishment of Rural District Councils responsible for initiating and regulating development in rural areas.

Component	A	oplicable Legislative Instrument	Description of Legislative Instrument
	•	Regional Town and Country Planning Act [Chapter 29:12]	Regulates regional planning and provides for the functions of Regional Planning Councils. The Act confers the land- use planning function on urban local authorities and regulates the development of master and local plans; subdivisions, consolidation, acquisition and disposal of land.
	•	Traditional Leaders Act (Chapter 29:17)	An Act to provide for the appointment of village heads, headmen and chiefs; to provide for the establishment of a Council of Chiefs and village, ward and provincial assemblies and to define their functions; to provide for the issue of village registration certificates and settlement permits. The Act also provides for the repeal of the Chiefs and Headmen Act (Chapter 29:01) and amends: the Criminal Procedure and Evidence Act (Chapter 9:07); the Communal Land Act (Chapter 20:04); and the Rural District Councils Act (Chapter 29:13).
	•	Rural Land Act (Chapter 20:18)	An Act to provide for the acquisition of State land and the disposal of State land; to provide for the control of the subdivision and lease of land for farming or other purposes; to provide for limiting of the number of pieces of land that may be owned by any person and the sizes of such land, and for prohibiting or restricting the rights of non-residents to own, lease or occupy land in Zimbabwe, and to provide for other matters incidental to and connected with the foregoing.
	•	Rural Land Occupiers (Chapter 20:26) (Protection from Eviction) Act 2002	Provides for the protection of certain occupiers of rural land from eviction, and regulates matters connected therewith or incidental thereto.
Roads and traffic	•	Roads Act (Chapter 13:18)	Provides for the regulation of the standards applicable in the planning, design, construction, maintenance and rehabilitation of roads with due regard to safety and environmental considerations. Provides for road authorities and their functions and for the regulation of the erection of structures or the carrying out of works near certain roads, the entry upon roads from certain land and the acquisition of land and materials for road works.
	•	Road Motor Transportation Act, 1997	The proposed Kariba Dam Rehabilitation Project will require the transport of materials and machinery into the Project Area. Part III (Section 7 to 16) of the Road Motor Transportation Act details the requirements for goods vehicles on all roads and that these vehicles/drivers need to hold an operator's license. The operator's license application needs to be assigned for a specific route. Part IV of the Act provides the requirements for the operation of foreign vehicles on Zimbabwean roads. Requirements include the provision of a foreign license. Part V includes the provisions for the inspection of vehicles and the issuance of a certificate of fitness for vehicles.
			The ESMP (refer to Part III of this ESIA) includes a Road Safety Management Plan and Traffic and Transport Management Plan. The provisions of this Act have been included in these.

Component	Ap	plicable Legislative Instrument	Description of Legislative Instrument
	•	Road Traffic Act (Chapter 13:11)	Part II of this Act includes the provisions for the licensing of drivers of motor vehicles and the requirements for licenses (age limits, medical examinations, etc.). The Act stipulates that no person shall drive a motor vehicle on a road unless he is the holder of a valid licence issued to him in respect of motor vehicles of the class concerned, and complies with the conditions, if any, subject to which the licence was issued. Section 7 of the Act provides the minimum and maximum age limits associated with driving of vehicles on roads.  Part III makes provision for the issuing of international driving permits. Section 17 states that any person who is an ordinarily resident in Zimbabwe; and the holder of a driver's licence or foreign drivers licence and who wish to drive a
			motor vehicle outside Zimbabwe, he must apply for an international driving permit.
			Part IV through to V (and VA) includes the provisions for motor vehicle insurance against third party. Part VI includes the provisions of traffic signs and police directions and the requirements around conformance.
			The ESMP (refer to Part III of this ESIA) includes Road Safety Management Plan and Traffic and Transport Management Plan. The provisions of this Act have been included in these.
	<u> </u>		Mining Regulations
Quarries and Borrow Pits	•	Environmental Management Act 2011(Section 23)	Quarries and borrow pits are regulated in terms of the first schedule of the Environmental Management Act. The Project will ensure that materials are sourced from licensed sites.
	•	Statutory Instrument 3 of 2011	Regulates borrow pits and sites used for the extraction of sand and rock and associated transportation.
		In	vestments, Energy Regulation, and Development
Tourism	•	Tourism Act (Chapter 14:20)	An Act to establish a Zimbabwe Tourism Authority and to provide for its functions; the appointment and functions of a board of the Authority; to establish a Zimbabwe Tourism Fund; the appointment of a Chief Executive of the Authority, licensing officers and other officers; the designation, registration and grading of tourist facilities and for the licensing of persons who provide services connected with tourism; the imposition and collection of levies in respect of designated tourist facilities; and matters connected with or incidental to the foregoing.
Employment and Compensation	•	Labour Act (Chapter 28:01) as amended by Labour Act [Chapter 28:01] amended 2006 and the Labour Amendment Act, 2005 (Act 7/2005)	An Act to declare and define the fundamental rights of employees. Part II (Sections 4 to 7) provides the fundamental rights of employees, including entitlement to be a member of a trade union, protection against discrimination, the right to fair labour standards and the right to a democratic workplace.
			Part III of the Act provides provisions safeguarding employees to unfair labour practices and Part IV provides the general conditions of employment (viz. dismissal, retrenchment, wages, sick leave, death, maternity leave etc.).
			The ESIA and associated ESMP for the Kariba Dam Rehabilitation Project makes provision for the rights of employees.

Component	Ap	pplicable Legislative Instrument	Description of Legislative Instrument
Public Participation	•	General Laws Amendment No. 5 of 2011	Paragraph h stipulates that results from the public participation process needs to be disclosed.
		(Section 12, paragraph H)	

#### 14.8 Zimbabwean Development Policies

The national development policies for Zimbabwe that are potentially applicable to the Project are briefly outlined below.

#### 14.8.1 Zimbabwe Agenda for Sustainable Socio-economic Transformation

In pursuit of a new trajectory of accelerated economic growth and wealth creation, Government has formulated a new plan known as the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset): October 2013-December 2018.

Zim Asset was crafted to achieve sustainable development and social equity anchored on indigenisation, empowerment and employment creation which will be largely propelled by the judicious exploitation of the country's abundant human and natural resources.

This Results Based Agenda is built around four strategic clusters that will enable Zimbabwe to achieve economic growth and reposition the country as one of the strongest economies in the region and Africa. The four strategic clusters identified are: Food Security and Nutrition; Social Services and Poverty Eradication; Infrastructure and Utilities; and Value Addition and Beneficiation.

#### 14.8.2 Zimbabwean Industrial Development Policy (2012-2016)

The policy's vision is to transform Zimbabwe from a producer of primary goods into a producer of processed value-added goods for both the domestic and export market. The policy mission statement is to create a vibrant, self-sustaining and competitive economy through promotion of viable industrial and commercial sectors as well as domestic and international trade.

The objectives of the policy include:

- The overall objective is to restore the manufacturing sector's contribution to the GDP of Zimbabwe from the current 15% to 30% and its contribution to exports from 26% to 50% by 2015;
- An average real GDP growth of 15% is targeted under this Policy Framework of 2011-2015:
- To create additional employment in the manufacturing sector on an incremental basis as compared to the previous planning period of 2004 to 2010;
- To increase capacity utilisation from the current levels of around 43% to 100% by the end of the planning period;
- To re-equip and replace obsolete machinery and new technologies for import substitution and enhanced value addition:
- To increase the manufactured exports to the SADC and COMESA regions and the rest of the world; and
- To promote utilisation of available local raw materials in the production of goods.

#### 14.8.3 Zimbabwe's National Energy Policy

The National Energy Policy (NEP) seeks to promote the optimal supply and utilisation of energy, for socio-economic development in a safe, sustainable and environmentally friendly manner.

The NEP is intended to fulfil Government's objective of ensuring that the energy sector's potential to drive economic growth and reduce poverty is fully harnessed. The policy therefore provides a guide to decision-makers, policy-makers and development managers in

Government, the private sector, Non-Governmental Organisations and civil society, on Government's intended actions in the energy sector.

The policy recognises that regional cooperation is essential for the development of large-scale hydropower resources and that small-scale hydropower projects may not make a significant impact on national requirements but they help to develop skills and to speed up access for remote communities that are not likely to be connected to the national grid in the foreseeable future.

The policy also makes specific reference to the Zimbabwe Energy Regulatory Authority (ZERA) and states that the Authority is expected to create an enabling environment and establish fair play in the energy sector through licensing regulations, product and service standards and investment promotion.

meetings.

Appendix B - Consultation Materials and evidence of

**15** 

## **ANNEX C**

ESIA - ESMP - Kariba Dam Rehabilitation Project

Annex B

## **Consultation Materials**

These material is from the consultation meetings performed in 2014-2015

### Annex B:1

# Background Information Documents (BIDs) English



#### BACKGROUND INFORMATION DOCUMENT

## **Environmental and Social Impact Assessment (ESIA)** for the Proposed Rehabilitation of Kariba Dam **Support Infrastructure**

#### PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to provide Interested and Affected Parties (IAPs) with information about the Environmental and Social Impact Assessment (ESIA) process for the proposed rehabilitation of support infrastructure to the Kariba Dam on the Zambezi River. The BID will also inform IAPs how to participate in the ESIA process and encourage them to attend project meetings and respond to project documents. The study area of the ESIA is indicated in the Figure 1.1 below with a yellow line.

#### PROJECT BACKGROUND

The Kariba Dam is located on the Zambezi River, on the border between Zambia and Zimbabwe. It is situated 130 km south-south-east of Lusaka (Zambia) and 280 km north-west of Harare (Zimbabwe). The Kariba Dam is managed and operated by the Zambezi River Authority (ZRA), a statutory body established in 1987 and jointly and equally owned by the Governments of Zambia and Zimbabwe. ZRA is also responsible for overseeing any further development of the Zambezi River.

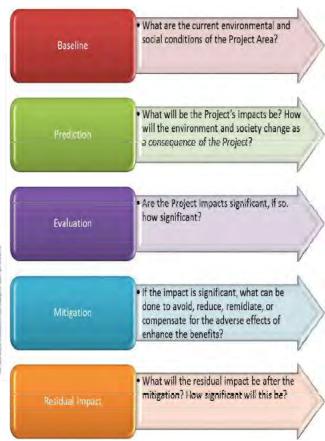
The ZRA is proposing the rehabilitation of some of the support infrastructure of the Kariba Dam, namely the plunge pool and spillway. The ZRA will require an ESIA to be undertaken in accordance with the environmental regulations of Zambia and Zimbabwe before they will be granted permission to continue with the works bearing in mind the findings of the ESIA. ZRA appointed Environmental Resources Management (ERM) as the environmental consultant to conduct the ESIA.

Figure 1.1 Project Location

#### WHAT IS AN ESIA?

An ESIA is a study to identify and assess the possible environmental and social impacts associated with a proposed development - in this case the rehabilitation of Kariba Dam infrastructure. In order to commence with the Project, an ESIA must be done. This ESIA must be done in accordance with the relevant in -country legislation as well as international good practice guidelines such as the IFC's Performance Standards.

An ESIA process typically aims to answer five key questions regarding the proposed development. These questions are illustrated in Figure 1.2 below.



### **PLUNGE POOL**

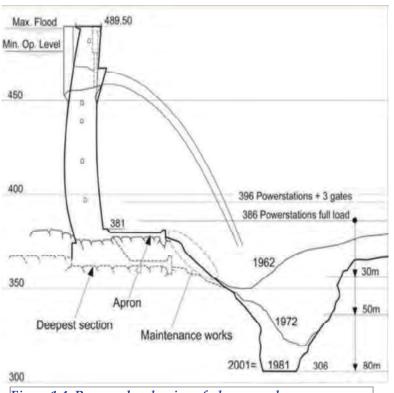
#### The Plunge Pool Rehabilitation

Over the years, due to sustained heavy spillage episodes, the river bedrock in the plunge pool (situated immediately downstream of the dam wall) was scoured down to 80m below the normal water level. Therefore there is a major concern over the natural development of the plunge pool in future, especially in case of exceptional floods and of intense spillages as is illustrated in the photograph in *Figure 1.3 and 1.4*.

In order to manage future uncontrolled deepening of the plunge pool and to avoid the toe of the dam wall from weakening, it has been concluded that the plunge pool should be made bigger to include areas on both river banks as well as in a downstream direction. It is foreseen that this excavation and reshaping of the plunge pool will facilitate the draining of spillage flows downstream, and avoid the concentration of turbulence in a restricted and confined area as is currently the case. The position of the plunge pool is illustrated in *Figure 1.5*.



Figure 1.3 : Kariba Dam - all six sluice gates of spillway open



Plunge Root

Plunge Root

Figure 1.5 Proposed reshaping of plunge pool

Spillway – 6 sluice gat



### **PLUNGE POOL**

The plunge pool will be enlarged through the excavation of the riverbed. The excavation will be performed with the drill and blast method. The excavated rock will be transported from the pool to a dump site 2.5 km downstream, on the Zambian side of the river; see *Figure 1.6*. Construction activities will begin with the drying of the river in the area of the plunge pool.

A number of associated activities will form part of the refurbishment, namely:

- access road rehabilitation and construction;
- construction of a cofferdam downstream of the plunge pool and upstream of the powerhouses';
- pumping the water out of the plunge pool and releasing it further downstream in the Zambezi river;
- continuous pumping of water out of the plunge pool area for the entire duration of the works; and
- additional drilling and concreting inside the plunge pool area.

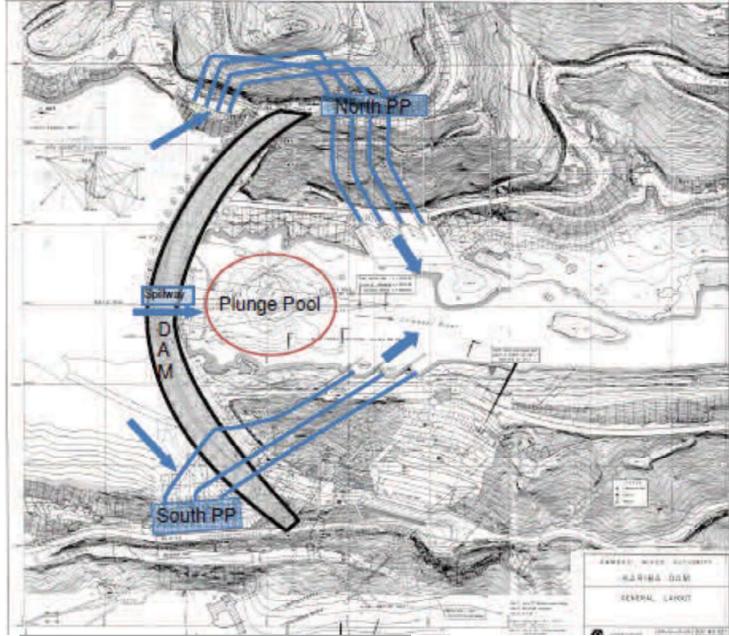


Figure 1.6: Layout of the Kariba dam



### **PLUNGE POOL**

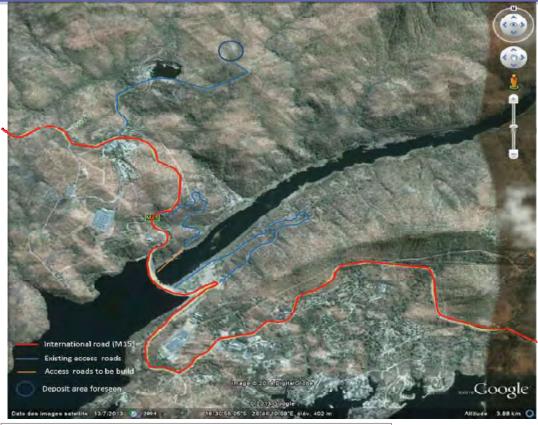


Figure 1.7: Access roads on site

It is important to note that due to the location of the works area, namely at the toe of the dam wall, construction can only be done during the dry season / non-spillage period. This limits the construction timeframe significantly. This means that construction will be done in 7 month phases (May-November) after which all materials and equipment will be removed from the works area to allow for the 5 months spillage period. This cycle of site establishment and removal will continue for 5 years. The sequencing of the construction activities is illustrated in *Figure 1.8* below.

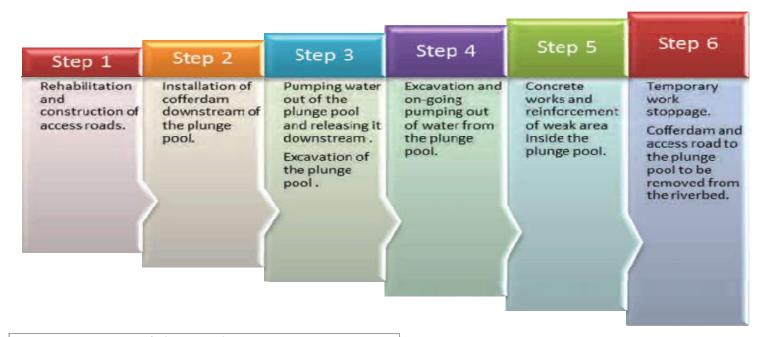


Figure 1.8 Sequencing of plunge pool construction activities



#### **SPILLWAY**

#### **Spillway Rehabilitation Works**

The spillway is located in the arch dam wall and has six sluices equipped with downstream gates as shown in *Figure 1.9* below. Given the age (50 years) of the spillway's hydro-mechanical equipment and upstream grooves ZRA is proposing the replacement of the existing stopbeams with an emergency gate which will be operated in rehabilitated grooves.

The new gate will be operated by a new gantry (crane-like mechanism) and will slide into the rehabilitated upstream grooves. The construction of the emergency gate and associated infrastructure will be undertaken immediately after the rehabilitation of the plunge pool.

The rehabilitation activities will include:

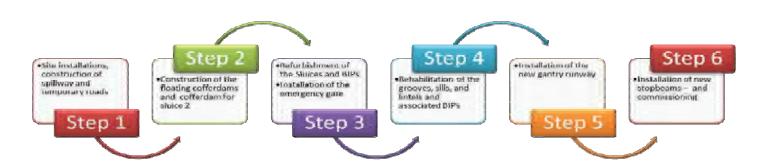
- the installation of an emergency gate to be able to close a sluice, its associated gantry; and rehabilitation of the grooves, sills and lintels with new built-in parts adapted to the emergency gate;
- construction of cofferdams to dewater the sluices during the rehabilitation process; and
- Installation of new stopbeams for scheduled maintenance.

The sequencing of the construction activities is illustrated in *Figure 1.10* below.





Figure 1.9: The spillway's six sluice gates in the arch dam

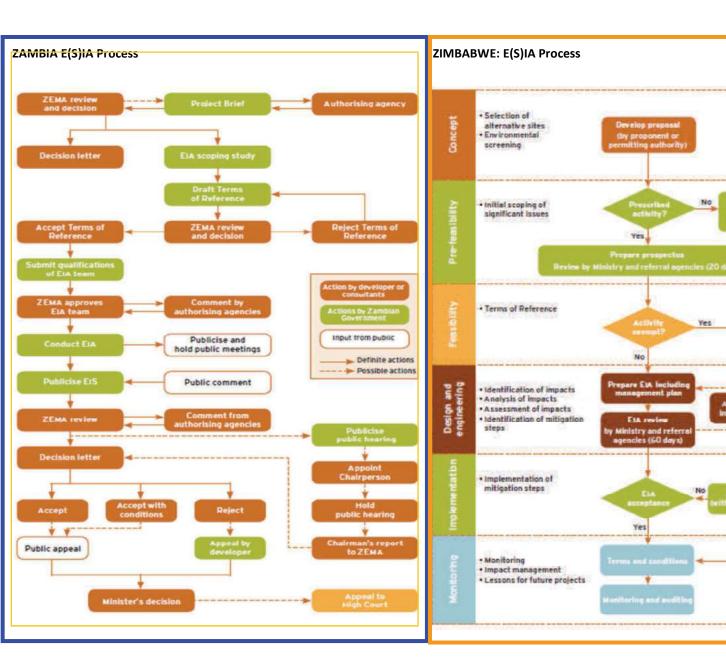


### THE ESIA PROCESS

The ESIA will be conducted in parallel in Zambia and Zimbabwe.

In Zambia, key legislation is the Environmental Management Act of 2011 which provides for integrated environmental management. In addition, the Environmental Impact Assessment Regulations (and Statutory Instrument 28 of the 1997 EIA Regulations) require developers to provide an environmental Project Brief to the Environmental Council of Zambia. If the Council finds that the project will have a significant impact on the environment, it may require the developer to submit an environmental impact statement. For this Project it has been decided by the ZRA that a full ESIA be undertaken to ensure that international standards are met.

In Zimbabwe, the key legislation is the Environmental Management Act (Chapter 20:27) which was enacted in March 2003. The act provides that the project developer (ZRA) should engage an independent consultant to undertake the ESIA. In addition, Statutory Instrument 7 of 2007 provides for the implementation of the findings of an EISA. Statutory Instrument No. 7 of 2007 the Environmental Management (Environmental Impact Assessments and Ecosystems Protection Regulations).



### STAKEHOLDER ENGAGEMENT DURING AN ESIA

An essential component of an ESIA is stakeholder engagement. The key objectives of the stakeholder engagement process of an ESIA are:

- to share information about the Project;
- to allow informants to raise concerns/ questions about the Project;
- to gather stakeholder responses on the ESIA findings and proposed management and design measures;
- to provide responses to concerns and questions, where possible, or to explore further as part of ESIA;
- to report back on the findings of the ESIA and proposed management measures; and
- to meet legislative requirements regarding stakeholder engagement.

### Be a Part of the Process

You are invited to participate in the ESIA process. The Stakeholder Engagement Process aims to inform a wide range of stakeholders about the Project and the environmental and social assessment process to be followed.

The engagement process allows for the public to exchange Project information and to express their views and concerns on the proposed development. The process assists in identifying potential issues and concerns that need to be addressed during the impact assessment. It also captures stakeholder comments and suggestions for inclusion in the ESIA report.

Therefore, please ensure that you are registered on the Project stakeholder database. The registration of your details will ensure that you receive on-going Project communication such as meeting invitations, Project updates and the opportunity to review the draft ESIA report.

#### Key contact persons during the ESIA process are:

Mr. Felix Chisha in Zambia

Mobile: +260-974-074 384; +260-963 258 535 Email: felixchisha@airtelzm.blackberry.com

Mr. Oliver Manjengwa in Zimbabwe

mobile +263772958671)

Email: olivermanjengwa@gmail.com

Ms. Janet Mkhabela in South Africa Telephone: +27 21 681 5400 Email : <u>janet.mkhabela@erm.com</u>

**Project Website:** 

http://www.erm.com/KaribaDamESIA



### Registration and Comment Sheet- Kariba Dam Rehabilitation

September 2014

Should you have any queries, comments or suggestions regarding the Project, please note them below.

Return this comment sheet to:

Felix Chisha in Zambia Mobile: +260-974-074 384; +260-963 258 535 Email: felixchisha@airtelzm.blackberry.com

Oliver Manjengwa in Zimbabwe mobile +263772958671) Email: olivermanjengwa@gmail.com Janet Mkhabela in South Africa Telephone: +27 21 681 5400 Email: janet.mkhabela@erm.com

Please formally register me as stakeholder and provide further information and notifications during ESIA process			Yes	No
I would like to receive my notifications by:	Email	Post	F	ax

Comments:	

Title and Name:		Please fill-in
Organisation:		tact details below for the
Telephone:	Fax:	database.
Cellphone:	Email:	
Doctal Address		
Postal Address:		

your cone project

Name	Signature	Date

Thank you for your participation!

### Thank you for your participation



#### Annex B:2

# Background Information Documents (BIDs) Shona



## CHIZIVIZO CHEKUGADZIRWA KWEDHAMU NEKUTSIGIRWA KWEKUVAKWA KWEDHAMU REKARI-BA NEKUCHENGEDZWA KWEZVIWANIKWA **NEMAGARIRO EVANHU (ESIA)**

#### Chinangwa Chegwaro Iri

Kuzivisa vanhu vemunharaunda kuchengetedza zviwanikwa uye kuvandundza Dhamu reKariba tisinga paradzi zviwanikwa zviri munharaunda merwizi rweZambezi. Iri gwaro rino kurudzira kuti vanhu vawuye kumisangano vachipawo, pfungwa dzavo mune zvingabatsira kuti kuvandudzwa kweDhamu reKariba kuenderere mberi zvakanaka.

Zviri kutarirwa neESIA zvakatarwa nemutsetse weyero pamufananidzo uripazasi Figure 1.1.

#### Zvirimubsa Iri

Dhamu reKariba riri murwizi rwaZambezi, pamuganhu weZambia neZimbabwe 280km kuChamhembe/Madokero eHarare. Dhamu reKariba riri pasi peZambezi River Authority (ZRA) yakatangwa 1987 ZRA inotongwa neHurumende dze Zambia ne Zimbabwe. ZRA ndiyo ino wona nekuvandudzwa kwerwizi rwaZambezi.

ZRA iri kutarisira kugadzira uye kuvandudza Dhamu reKariba. ZRA inofanira kuva negwaro reESIA zvichiwirirana nemitemo yeZambia neZimbabwe. ZRA ndiyo yakadoma Environmental Resources Management (ERM) kuti iyite ESIA.

## Chi chinondzi ESIA?

Kuwongorora nekuona zvikodzero zvinogona kukanganisa zviwanikwa nemagariro pakuvandudzwa kweDhamu reKariba. Basa risati rayitwa panoyitwa ESIA zvichiendrana nemitemo yenyika uye yepasi rose 'IFC'

ESIA inopindura mivhudzo mishanu inoenderana nekuvandudzwa kweDhamu. Tarisai Figure 1.2 pazasi.

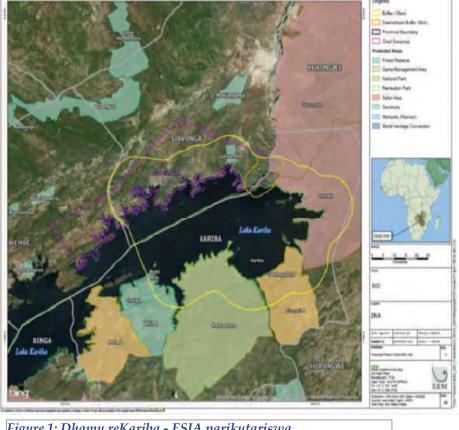
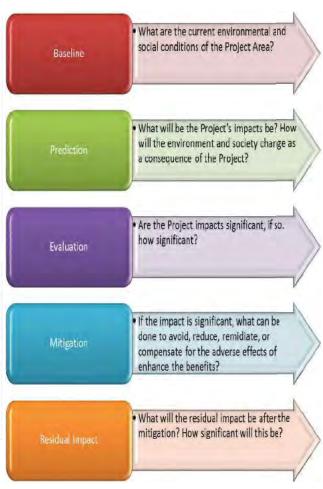


Figure 1: Dhamu reKariba - ESIA parikutariswa





### BASA IRI KUGADZIRWA

### DZIVA REKUNORASIRWA

#### Kugadzirwa Dziva Rekunorasirwa

Nekufamba kwenguva, rekunorasirwa mvura ye Dhamu iri (80 m below the normal water level) kunofanira kugara kuchigadziriswa. Tarisai Figure 1.3 pazasi. Kana tichida kudzivirira kutsemuka kweDhamu tinofanira kugara takawongorora dziva rino rasira mvura 'plunge pool'.Kune dziva rinorasirwa mvura 'plunge pool' kunoratidzwa pa Figure 1.4 pazasi.



Figure 1.3 : Kariba Dam - Kugadzirwa dziva rekunorasirwa

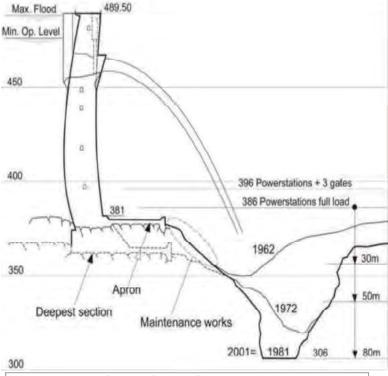


Figure 1.4: Kugadzirwa dziva rekunorasirwa

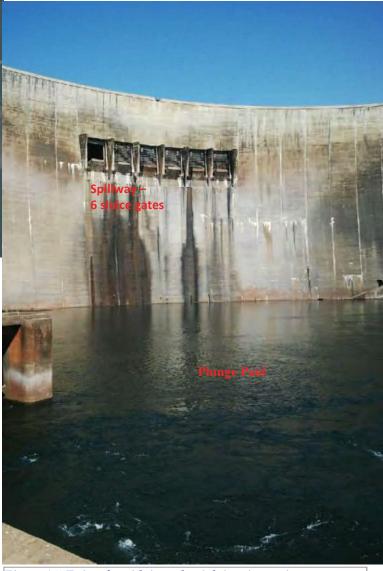


Figure 1.5 Zvino fungidzirwa kuti dzivarinorasirwa mvura rinenge rakaita

### BASA IRI KUGADZIRWA

### DZIVA REKUNORASIRWA

Dziva iri richa kudzwa nekuchera mumahombe kombe erwizi. Pachadirirwa nokudhuwutsa. Matombo achabviswa apa acha rasirwa 2.5km zasi dziva, divi reZambia. Kuvakwa kwedziva iri kuchatanga muchirimo.

#### Zvichaitwa ndezvizvi:

- kugadzirwa kwe nzira
- kuvakwa kwe 'cofferdhamu' kuzasi kwedziva rino rasirwa mvura
- kupomba mvura kubva mudziva rinorasirwa mvura ichienda munaZambezi
- kuramba mvura ichipombwa kubva mudziva rinorasirwa mvura panguva yekugadzirwa
- kudhirira nekuisa kongiri mudziva rinorasirwa mvura

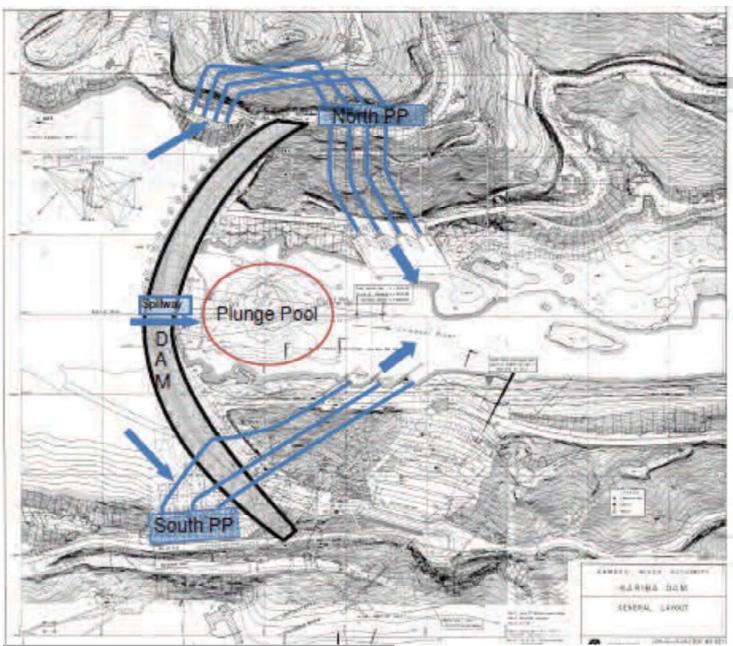


Figure 1.6: Layout of the Kariba dam



### BASA IRI KUGADZIRWA

### DZIVA REKUNORASIRWA



Figure 1.7: Access roads on site

Zvino kosha kuziva kuti basa iri rino itwa muchirimo chete. Izvi zvinoreva kuti zvinogona kuitwa muzvikamu zvemwedzi minomwe (May-November). Zvai sevedzeswa zvinofanirwa kubviswa kuti mvura irasike kana yazara. Zvichaitwa pamakore mashanu.

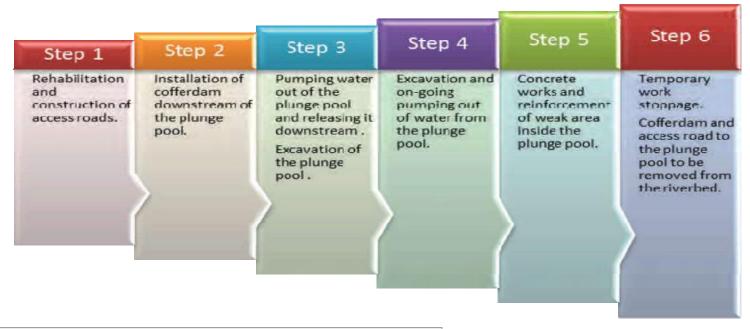


Figure 1.8: Zvichaitwa pakuvakwa kwedziva rinorasirwa mvura



### **KUGADZIRWA**

## **KUNORASA MVURA**

#### **Spillway Rehabilitation Works**

Dhamu rave nemakore makumi mashanu (50 years). ZRA irikutarisira kuisa mishini mitsva panorasirwa mvura.

Gede idzva richange richivhurwa nekireni (crane).

#### Mukugadzirwa kuchatevedzerwa izvi:

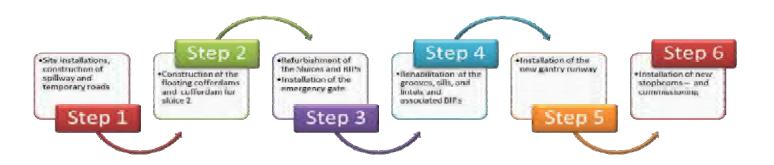
- kuvakirwa kwegede rekudzivirira tsaona rinofanira kugona kuvhara zvakanaka
- kuvakwa kwema 'cofferdam' kuita kuti abvise mvura muma 'sluice' nguva yekuvaka

Zvidanho zvekuvaka zviripa Figure 1.9 and 1.10 pazasi.

Kugadzirwa kwemagede anorasa mvura kana dziva repano rasiwa mvura rapera kugadzirwa.



Figure 1.9: Mufananidzo we pano rasira mvura uri pazasi



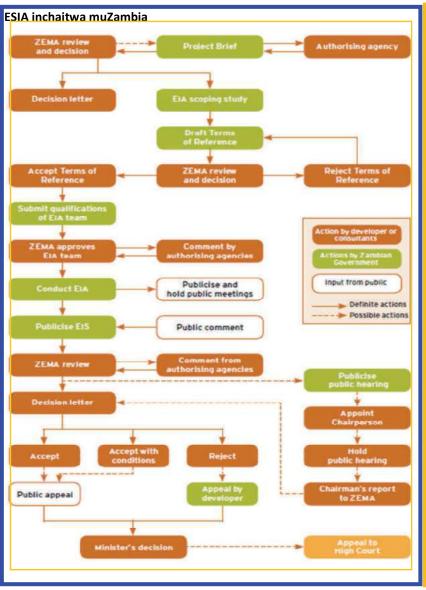


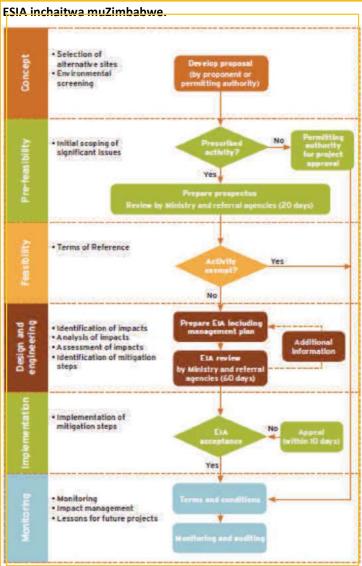
## **ESIA INCHAITWA**

ESIA inchaitwa muZambia neZimbabwe.

MuZambia mutemo ndiwo Environmental Management Act ya 2011 inopa simba ku Environmental Management. Pamusoro pazvo Environmental Impact Assessment Regulations (uye Statutory Instrument 28 ya 1997 EIA Regulations) inoti muvhaki anopa Environmental Council yeZambia muchidimbu chezvaanoda kuita. Kana Council ikaona zvisingaiti inotaurira muvaki kuti aite Environmental Impact Assesment. Izvi, ndozvaita kuti ZRA ipe basa iri kuESIA sezvino bvumirwa nepasi rose.

MuZimbabwe mutemo weEMA (Chapter 20.27) wakadzikwa gore ra 2003March mutemo unoti ano vhaka (ZRA) ano sungirwa kutora ESIA kuita basa iri. Izvi zvirimugwaro (Statutory Instrument 7 ya 2007). Zvawanikwa ne ESIA zvino sungirwa kutevedzerwa Statutory Instrument 7 ya 2007 ye EMA ino taura nezveEIA uye EPR (Environmental Impact Assessments and Ecosystems Protection Regulations).







### KUZIVISA VANHU VENHARAUNDA PAKUITA ESIA

Vanhu venharaunda vano kosha kuti vapewo maonero avo.

- Zvinokosha kuvanhu venharaunda ndezvizvi:
- kupana ruzivo mune zvichaitwa;
- kuti vanhu vataure zvavano funga mubasa iri;
- kupuwa mhinduro mune zvino vanetsa;
- kutaurira vanhu zvinenge zvataurwa nevakuru veESIA;
- kutevedzera zvinodiwa nemutemo kuitirwa vanhu vemunharaunda.

### Iva nezve kurongwa kwegwaro iri

Munokumbirwa kuita misangano ne ESIA. Vanhu vemunharaunda vanofanira kuziviswa zvichada kuitwa uye kuchengetedzwa kwezviwanikwa nemagariro evanhu.

Saka vanhu vemunharaunda vanokurudzirwa kunyoresa mu 'Project database'. Izvi zvnoita kuti vagodaidzwa kumisangano, mvachitaurirwa zviri kuitwa kana kurongwa neESIA.

#### Key contact persons during the ESIA process are:

Mr. Felix Chisha in Zambia

Mobile: +260-974-074 384; +260-963 258 535 Email: felixchisha@airtelzm.blackberry.com

Mr. Oliver Manjengwa in Zimbabwe

mobile +263772958671

Email: olivermanjengwa@gmail.com

Ms. Janet Mkhabela in South Africa Telephone: +27 21 681 5400 Email : <u>janet.mkhabela@erm.com</u>

**Project Website:** 

http://www.erm.com/KaribaDamESIA



### Registration and Comment Sheet- Kariba Dam Rehabilitation

September 2014

Kana zvamusinga dzwisisi nenyaya iyi tinyorereyi kana kuchaya runhare panhamba dziri pazasi.

Please formally register me as stakeholder and provide further information and notifications

Return this comment sheet to:

Felix Chisha in Zambia Mobile: +260-974-074 384; +260-963 258 535

 $\pmb{ Email: \underline{felixchisha@airtelzm.blackberry.com}}\\$ 

Oliver Manjengwa in Zimbabwe mobile +263772958671)

Email: olivermanjengwa@gmail.com



Janet Mkhabela in South Africa Telephone: +27 21 681 5400 Email : janet.mkhabela@erm.com

No

Yes

during ESIA process			163	INO	
I would like to receive my notifications by:	Email	Post		Fax	]
Comments:					٦
Comments.					1
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Title and Name:					Please fill-in your
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Cellphone:	Email:				
Part Address					
Postal Address:					
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Name	Signature	D	ate		+

Thank you for your participation!

Thank you for your participation



#### Annex B:3

Background Information Documents (BIDs) Tonga



## **BACKGROUND INFORMATION DOCUMENT for the pro**posed rehabilitation of the dam support infrastructure KARIBA DAM REHABILITATION ESIA (Makani amba kumilimo ya ESIA eti kabelekwe ku Damu Ya kaRiba)

#### Nchito Ya Ka Bbuku Aka

Chipati cha eyi Background Information Document (BID) chakupa makani na mulumbe kuli babo ibayanda aa babo baya kugumwa muchikuwa tubaita kuti "Interested and Affected Parties" (IAPs) kutegwa oyu mulimo witwa kuti Environmental and Social Impact Assessment mubu wafwi na mukufwimpya witwa kuti "ESIA", kutegwa tutalike kubamba na kusumpula kuyaga buyage bwa damu ya Kariba buli a mulonga wa Zambezi. Eyi BID iyakuzyibya inkamu yaba IAPs kutegwa ijane kujatikizya muli yeyi ESIA aku bayekesya akusumpula akujanika mu miswangano akuwhila mibuzyo ijatikizya eyi milimo. Busena bwa milimo bwa ESIA babutondeya muchipekupeku chiitwa Figure 1.1 chili ansi mukeengo ka yellow.

#### Nkoizya Nchito Eyi

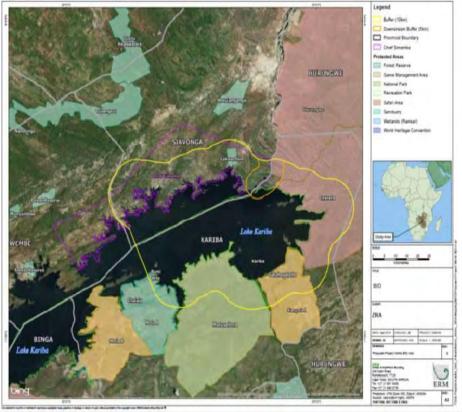
Damu ya Kariba ili a mulonga wa Zambezi akati ya chisi cha Zambia a chisi cha Zimbabwe. Damu ya Kariba ibede ma kilometre mwanda omwe a makumi otatwe (130 km) kulanga kumusanza wa kujwe ya dolopo ya Lusaka (Zambia) alimwi ma kilomita 280 kumbo lya nyika ya dolopo ya Harare (Zimbabwe). Damu ya Kariba ibelesegwa a ba Zambezi River Authority (ZRA), a kampani ka talika mu mwaka wa 1987alimwi akujatilizyanya alimwi akwelana kwamfulumende ya Zambia a ya Zimbabwe. A kampani ka ZRA kikajisi nguzu ya kulangilila a kwendelezya alimwi kule- Oyu mulimo inga taulaligi kubula kumanizya oyu ta lusumpuko a ku mulonga wa Zambezi.

Ba ZRA bajisi muzezo wakuti ba botezye masena ambi ali mu a damu ya Kariba mbochizulwa ayo yaitwa ngo baita muchikuwa kuti ategwa kuti plunge pool a spillway. Ba ZRA bayandika kupanga ESIA eyo iti 'IFC's Performance Standards'. Milimo ya ESIA ipangwe kwendelezyanya amilawo ibambwa azintu zilengwa a Leza ya mu chisi yalibamba kuvwila mibuyo ili yosano (5) ijatikizya ku cha Zambia a cha Zimbabwe kabata na zuminizigwa akwelana kuchilila iti ikazwe milimo iyo iyandika kubelekwa. Eyi mibuzyo ya tonmuli oyu ESIA. Ba ZRA bakasala kampani itegwa Environmental Resources Man- dezegwa ansi awa mu Figure 1.2 agement (ERM) kuti ibeleke mulimo wa ESIA.

#### Sena ESIA Chinzi?

Eyi ESIA nkuyandaula kwiiya a kuzyiba mbotunga twajana bubi a bubotu bujatikizya kushokwe, kubulonga, akukala kwa bantu a hinyama a menda ku chiindi notunakubelekelana kubamba damu ya Kari-

ESIA. Oyu ESIA ulelede kuchitwa kuchilila milawo ya muchisi chesu akuchilila milawo ya chisi choonse



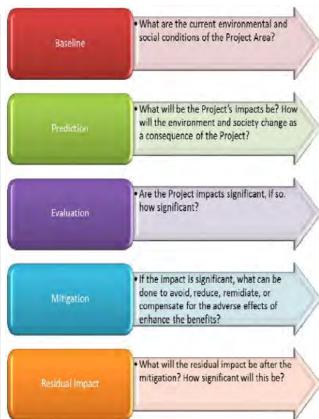


Figure 1: Busena Kutikachitikile Milimo Ya ESIA



### MILIMO:

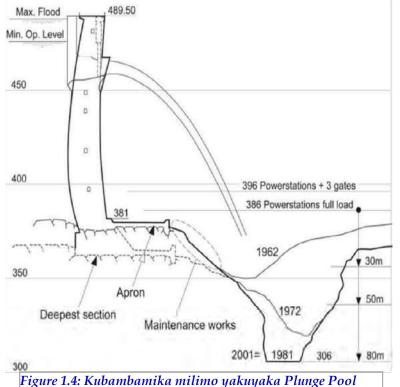
#### **PLUNGE POOL**

#### **Kubamba Plunge Pool**

Damu ya Kariba iyandika kubamba na kubambwa kubusena bwitwa plunge pool aku spillway. Eyi milimo yatondezegwa ansi awa. Mukaambo kakuti meenda manji ayo aala kutika kumyaka minji yainda, nyika yansi ya mulonga awo atikila meenda witwa kuti plunge pool (obu busena buchilila kuze ya lubumbu) yaaligwa kusika kukubala 80m kwinda asimpila meenda. Nchechicho echo chipa kuyeya kupati alusumpuko lwa eyi plunge pool ku mazuba aboola kumbela. Muchiindi chakuzula kwa milonga (mainza) echo chinga chapa kuti chitole chiindi chipati cha kujalula meenda mbuli mbo mubona muchipekupeku cha *Figure 1.3* ansi awa. Mu kuyandaula kuli kwabilila a kusya kuli eyi plunge pool, muya mazuba inga chapa kuti lubumbu lutetete, cha jana kuti kube kukomezya eyi plunge pool kusika mu masena ali koonse kobile kumbali ya mulonga kuchilila kuunka mulonga. Cha janwa kuti kusha akupanga kabotu eyi plunge pool ina kupa kuti meenda anakweenda kuchilila mulonga alimwi chinakupa kuti meenda kayachuma abusena antomwe obu mbo chibede achiindi chino. Obu busena bwa plunge pool twa itondezya mu*Figure 1.4 and 1.5* ansi.



Figure 1.3 : Mboiboneka Damu ya Kariba na malyango yoonse kaibeleka



Spillway - Resulted gates

Plunge Pool

Figure 1.5 Kubambulula ku Plunge Pool kwakasalwa



## MILIMO:

### **PLUNGE POOL**

• Eyi plunge pool iya kukomezyegwa kwiinda mukusya ansi a mulonga. Tuya kubelesha tupata a minshini aku komezya eyi plunge pool. Eyi nyika ina kushigwa ansi a mulonga kuzwa ku busena obu buna kusowegwa a busena buli ama kilomita 2.5 kuzwa ku busena bu chilila ku chibela cha mulonga wa ku Zambia. Milimo yaku yaka iya kutalika munshi akumanizya ku pompolola meenda yoonse itegwa ya plunge pool.

Kuli milimo imbi ija tikisya ku kubotesya ili mbuli;

- Kuyaka kubotesha mugwagwa kusika a busena obu bu belekelwa;
- Kuyaka buyake bwa cofferdam kumbele ya plunge pool alimwi kuba amaanda a kupangila magesi;
- Ku pompolola meenda onse akwasowa kumbela kwa mulonga wa Zambezi;
- Ku pompolola kwa meenda aya kuzwa kuli ayi plunge pool kuya ku kutolelela paka milimo ikamane
- Kuya kubakusya akubika konkili mukati mu busena bwa plunge pool.

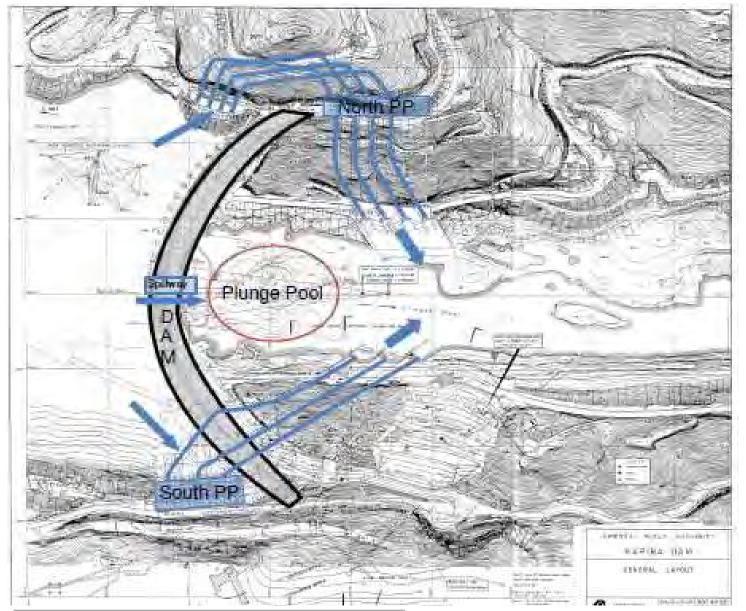


Figure 1.6: Layout of the Kariba dam



### MILIMO:

#### **PLUNGE POOL**

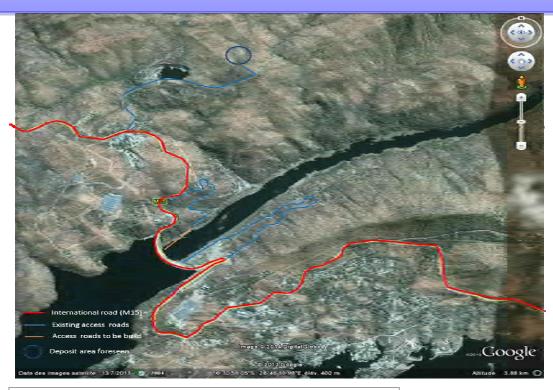


Figure 1.7: Access roads on site

Chibotu kuzyiba kuti obu busena kuna kubelekelwa eyi milimo ili buyo munsi ya lubumbu ya damu, milimo eyi yabuyake inga ichitwabo chiindi cha chilimo/echo chiindi taaku kujalula meenda. Echi chipandulula kuti chiindi cha kubeleka eyi milimo inga yabelesyagwa biyo mu myenzi eli 7 (May – November) munsi yahezyi kunakuba kugusya zyibelesyo zyoonse a busena obu bubelekelwa kutegwa ku chale chiindi cha myenzi ili yosanwe (5) nkaambo che chiindi meenda najaludwa. Eyi inchito ya kuleta akugusha zyibelesyo iya kutolelela mu myaka ili yosanwe (5).



Figure 1.8: Kubambamika milimo yakuyaka Plunge Pool



### **MILIMO YAKUYAKA SPILLWAY:**

#### Milimo yakuyaka Spillway

Eyi spillway ili ku lubumbu ya damu ilijisi mwiinda meenda muli six (6) moonya muli milyango eyo ilangide kuunka meenda mbuli kutondezyegwa mu *Figure 1.9* ansi awa. Akulanga myaka yainda ili makumi yosanwe (50yrs) kulanga minshini ya mu spillway mbo yabeleka, ba ZRA bayanda kuti bachinche ezyo zitwa kuti stopbeams akubika mulyango mupati uyakuba mu musena oyu mupya.

Izvi zvichatora makore masere, gore rogaroga pachishandwa muna February na May. Oyu mulwango mupya una kubelesyegwa achi munsini chitikanjilile kumbele ya damu. Buyake bwa mulyangu oyu azyimbi zintu zyiyakuchitika munsi lya kubamba nakubotezya plunge pool.

Inchito ya kubamba ezi zyintu zili mbuli bobu:

- Kupanga uyu mulyango wakuvwavwanya amilimo yoonse ijatikizya kuli nguwe;
- Kupanga ma cofferdam ayo yatikagwashilishe kupompolola meenda mu chiindi cha milimo neyi chibeleka;
- Kubika ma stopbeams manyowana ayo yati kagwashilishe ku milimo yaku botezya

Eyi milimo yabuyake mbo yiti kachililane yatondezyegwa mu Figure 1.10 ansi awa.

Kubamba kwa milyango ya spillway iya kuchitigwa munsi ya kumanizya kubeleka milimo ya plunge pool kutegwa meenda kazwida ku mulyango kumbali na kulubazu lumbi kutegwa atanyonyoli eyi plunge pool iya kupangwa.

Tuyeyela ku manizya eyi milimo kusika ku myaka ili 8. (amwaka kuzwa mu February akusika mu May).



Figure 1.9: The spillway's six sluice gates in the arch dam

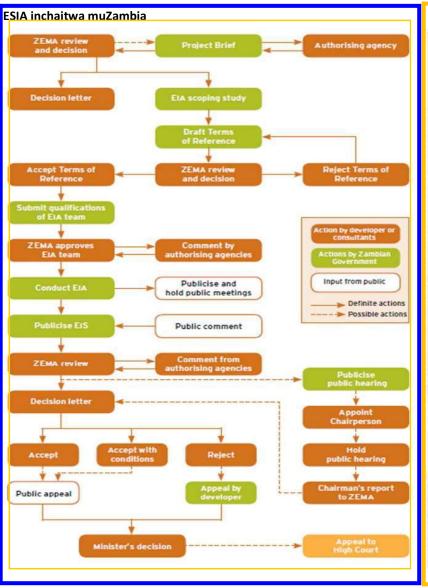


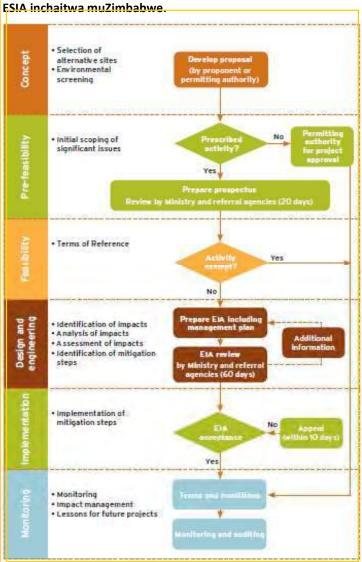
### MILAYO IYA MILIMO ESIA

Eyi ESIA yiya kuchitwa achiindi chomwe mu chisi cha Zambia a chisi cha Zimbabwe.

Mu chisi cha Zambia, milawo ipati itwa kuti Environmental Management Act ya mu mwaka wa 2011 iyo ijatikizya na ilangilila zintu zyoonse zya lengwa aleza. Kunyungizya, eyi, Environmental Impact Assessment Regulations (a Statutory Instrument 28 ya mu mwaka wa 1997 EIA Regulations) uyanda bene ba milimo (ZRA) kupa ba Zambia Environmental Management Agency (ZEMA) eyi Environmental Project Brief. Kuti ba ZEMA bajanika kuti eyi milimo inga yanyonyola busena na nyika, inga bambila mwine wa milimo kuleta Environmental Impact Statement (EIS). Chechecho, amilimo eyi ba ZRA bazuminizyanya kuti eyi ESIA mbo izwide akuti tuchilile milawo a cisi choonze mbo chizulwa.

Mu Chisi cha Zimbabwe, milawo ipati itwa kuti Environmental Management Act (Chapter 20:27) ayo yabikwa mu mwenzi wa March mu mwaka wa 2003. Oyu mulawo uyanda bene ba milimo (ZRA) beleede kujizya mubele syi wa kuzwa kumbi kuboola ku belekamilimo ya ESIA. Aku nyungizya, mulawo witwa kuti Statutory Instrument 7 ya mu mwaka wa 2007 yamba kuti zyoonse zizwa na zya janika muli oyu ESIA zya chilila. Statutory Instrument No. 7 ya mu mwaka wa 2007 wa the Environmental Management (Environmental Impact Assessments and Ecosystems Protection Regulations).







### KWITA BANTU KUTI BAJANWE KUKABUNGA KA ESIA

Mulimo upati muli yeyi ESIA ngwakwita bantu abo bajatikizya a milimo eyi. Eyi milimo ibelesyegwa kuyanda kuti;

- kuzyiba bantu amilimo iti ikabelesegwe;
- kupa bantu chiindi chku twambila miyeyo amibuzyo zyaba anchito eyi;
- kutelela bantu mbo bayeya izyizwa muli oyu ESIA antoomwe akwendelesyanya buti oyu ESIA;
- kuvwila mibuzyo, nzomuyanda olo kubweza mibuyo akubika muli oyu ESIA;
- kujana lwiiyo mu zintu zyazwa muli oyu ESIA;
- kuchilila milawo eyo iguma bantu bagumidwe ku milimo eyi.

## Amujanwe Muli Eyi Nchito Ya ESIA

Mwayitwa kutegwa mu janike mu milimo ya ESIA. Eyi inchito yakwita bantu kuti ba janike yiyandika ku zyibisya bantu banji pa inchito iti ikabelekwe azyimbi zi chililana na ziti kachilile.

Uku kwitwa kwa bantu kupa bantu mboona chiindi ya kwamba amilimo iti ikabelekwe. Eyi nzila ilagwasilisya kuzyiba miyeyo ya bantu kutegwa baboole ku vwila achiindi chakupanga eyi impact assessment. Ilagwasilisya kulemba zyoonse zyamba bantu antoomwe amiyeyo yabo mbo tunga twabika mu ESIA. Nchechicho, twakomba amubone kuti mwalembya mbuli muntu ujatilizigwa amulimo oyu. Na mwalembya tunakumitumina makani anakuchitika amilimo eyi mbuli ku miswangano, akumupa chiindi cha kuyinduluka muli uyu ESIA wa matalikilo.

#### Na mwamana mupe ba:

Mr. Felix Chisha in Zambia

Mobile: +260-974-074 384; +260-963 258 535 Email: felixchisha@airtelzm.blackberry.com

Mr. Oliver Manjengwa in Zimbabwe

mobile +263772958671

Email: olivermanjengwa@gmail.com

Ms. Janet Mkhabela in South Africa Telephone: +27 21 681 5400 Email : <u>janet.mkhabela@erm.com</u>

**Project Website:** 

http://www.erm.com/KaribaDamESIA



## Ipepa lyakulembya kumilimo ya ESIA yakubamba Damu ya Kariba

September 2014

Na mulijisi mibuzyo, olo zya kwamba zyimbi zyijatikisya ku mulimo oyu, amulembe zyoonse ansi awa. Na mwamana mupe ba:



Felix Chisha in Zambia Mobile: +260-974-074 384; +260-963 258 535 Oliver Manjengwa in Zimbabwe mobile +263772958671)

Janet Mkhabela in South Africa Telephone: +27 21 681 5400 Email: janet.mkhabela@erm.com

Email: felixchisha@airtelzm.blackberry.com

Email: olivermanjengwa@gmail.com

Please formally register me as stakeholder and provide further information and notifications during ESIA process			Yes	No	
I would like to receive my notifications by: Email Post				Fax	
Comments:					

		_
Title and Name:		- Please fill-in your cor
Organisation:		tact details
Telephone:	Fax:	below for the project database.
Cellphone:	Email:	
Destal Address		
Postal Address:		

Name	Signature	Date

Thank you for your participa-Thank you for your participation tion!



Annex B:4

Site Notice (English)

## NOTIFICATION OF AN ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE KARIBA DAM INFRASTURE REHABILITATION PROJECT

The Kariba Dam is located on the Zambezi River, on the border between Zambia and Zimbabwe. It is situated 130 km south-south-east of Lusaka (Zambia) and 280 km north-west of Harare (Zimbabwe). The Kariba Dam is managed and operated by the Zambezi River Authority (ZRA), a statutory body established in 1987 and jointly and equally owned by the Governments of Zambia and Zimbabwe. ZRA is also responsible for overseeing the further development of the Zambezi River. The ZRA is proposing the rehabilitation of some of the support infrastructure of the Kariba Dam, namely the plunge pool and spillway.

Project construction activities will take place over a period of 7-8 years and activities include:

- access road rehabilitation and construction;
- re-shaping and enlargement of the plunge pool;
- construction of cofferdam downstream of the plunge pool;
- pumping water out of the plunge pool and releasing it downstream in the Zambezi river;
- replacement of the existing stopbeams in the spillway with an emergency gate;
- construction of cofferdams to dewater the sluices of the spillway during the rehabilitation process; and
- installation of new stopbeams in the spillway for scheduled maintenance.

#### PUBLIC PARTICIPATION PROCESS

The ZRA require an ESIA to be undertaken in accordance with the environmental regulations of Zambia (Environmental Management Act, 12 of 2011) and Zimbabwe (Environmental Management Act, 13 of 2002) before permission may be granted to continue with the works subject to the findings of the ESIA.

ZRA appointed Environmental Resources Management (ERM) Southern Africa as the environmental consultant to conduct the ESIA and associated public participation process.

This advertisement serves as notification of the commencement of the public participation process for the ESIA. Herewith you are invited to register as a stakeholder and to participate in the ESIA and public participation processes. As a stakeholder you will be kept informed of the ESIA process, you will have the opportunity to comment on the ESIA and raise your issues/concerns about the Project.

To register as a stakeholder, you can contact: Ms Janet Mkhabela, by email: <u>Janet.Mkhabela@erm.com</u> or by telephone on + (27) 21 681 5400; Oliver Manjengwa in Zimbabwe mobile + (263) 772 958 671 Email: <u>olivermanjengwa@gmail.com</u> or Felix Chisha in Zambia Mobile: + (260) 974 074 384; + (260) 963 258 535 Email: <u>felixchisha@airtelzm.blackberry.com</u>

For additional information on the Project, you can visit the Project website: <a href="http://www.erm.com/KaribaDamESIA">http://www.erm.com/KaribaDamESIA</a>





Annex B:5

Site Notice (Shona)

## CHIZIVISO CHE ENVIRONMENTAL NE SOCIAL IMPACT ASSESSMENT WE KUGADZIRWA KWE DHAMU REKARIBA

Dhamu reKariba riri murwizi rwaZambezi, pamuganhu weZambia neZimbabwe 280km kuChamhembe/Madokero eHarare. Dhamu reKariba riri pasi peZambezi River Authority (ZRA) yakatangwa 1987 ZRA inotongwa neHurumende dze Zambia ne Zimbabwe. ZRA ndiyo ino wona nekuvandudzwa kwerwizi rwaZambezi.

ZRA iri kutarisira kugadzira uye kuvandudza Dhamu reKariba. ZRA inofanira kuva negwaro reESIA zvichiwirirana nemitemo yeZambia neZimbabwe. ZRA ndiyo yakadoma Environmental Resources Management (ERM) kuti iyite ESIA.

Dhamu reKariba roda kugadzirwa dziva kunorasirwa mvura 'spillway and plunge pool'

Basa iri richaitwa pamakore manomwe-masere (7-8). Zvichaitwa ndezvizvi:

- kugadzirwa kwe nzira;
- kugadzira nekukudza dziva rinorasirwa mvura;
- kuvakwa kwe 'cofferdhamu' kuzasi kwedziva rino rasirwa mvura;
- kupomba mvura kubva mudziva rinorasirwa mvura ichienda munaZambezi;
- kuvakirwa kwegede rekudzivirira tsaona rinofanira kugona kuvhara zvakanaka
- kuvakwa kwema 'cofferdam' kuita kuti abvise mvura muma 'sluice' nguva yekuvaka;
- kuiswa kwema 'stop beam' matsva panorasirwa mvura.

#### CHIZIVISO CHE VANHU VEMUNHARAUNDA

MuZimbabwe mutemo weEMA (Chapter 20.27) wakadzikwa gore ra 2003 March mutemo unoti ano vhaka (ZRA) ano sungirwa kutora ESIA kuita basa iri. Izvi zvirimugwaro (Statutory Instrument 7 ya 2007).

Ndozvaita kuti ZRA ipe basa iri kuEnvironmental Resources Management (ERM) Southern Africa kuti iite ESIA sezvino bvumirwa nepasi rose.

Chiziviso ichi chinowudza veruzhinji nezvekutanga kwekutaurirana ne vanhu vemunharaunda.

Munokumbirwa kuita misangano ne ESIA. Vanhu vemunharaunda vanofanira kuziviswa zvichada kuitwa uye kuchengetedzwa kwezviwanikwa nemagariro evanhu.

Kana zvamusinga dzwisisi nenyaya iyi tinyorereyi kana kuchaya runhare panhamba dziri pazasi.

Ms Janet Mkhabela, by email: <u>Janet.Mkhabela@erm.com</u> or by telephone on + (27) 21 681 5400; Oliver Manjengwa in Zimbabwe mobile + (263) 772 958 671 Email: <u>olivermanjengwa@gmail.com</u> or Felix Chisha in Zambia Mobile: + (260) 974 074 384; + (260) 963 258 535 Email: <u>felixchisha@airtelzm.blackberry.com</u>

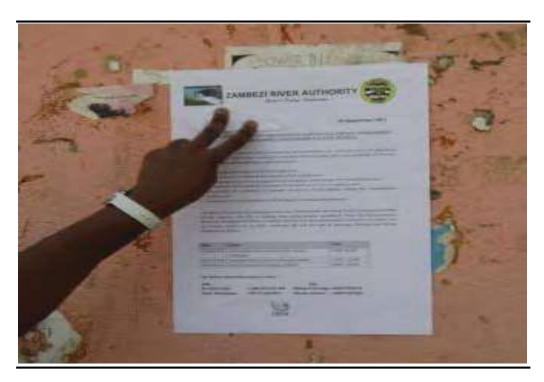
For additional information on the Project, you can visit the Project website: http://www.erm.com/KaribaDamESIA



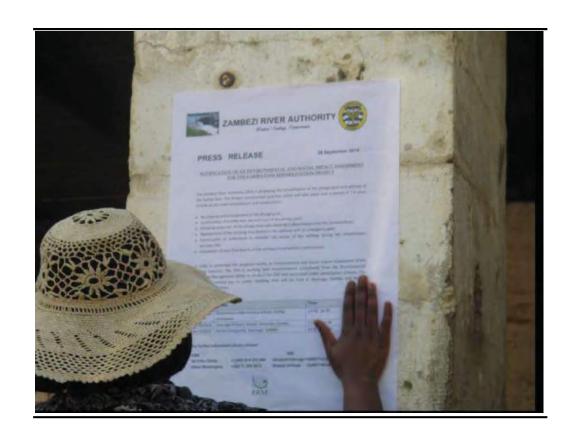


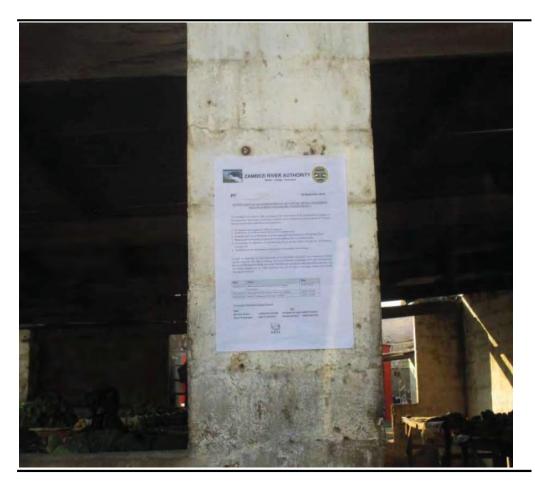
Annex B: 6

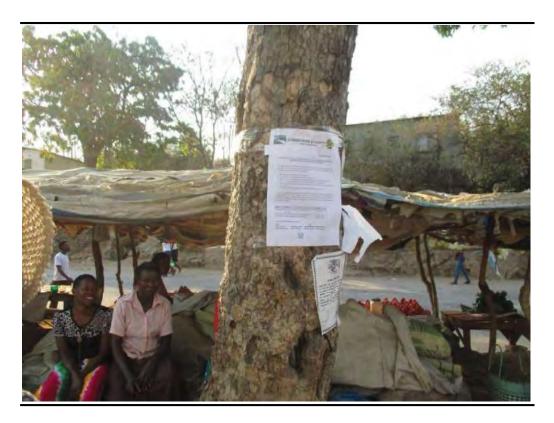
## **Proof Site Notices**

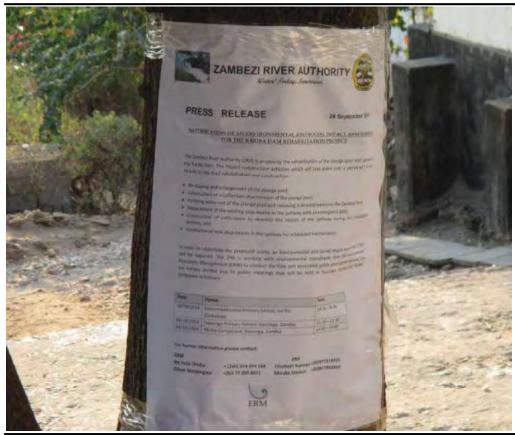












## Proof of Advertisement (The Herald)

## Merc S65 AMG: Fast, luxurious sedan



side, an electronically hosted wondshield. a spillt view front entertainment system and an Erleaser Erat Seat Package that ode that power reat seats with finding tables as well as heated and couled cuphoider. As expected, the Ses and connec with a comprehensive array of safety features including dual front arithes, front and reat ode airbags, side curtain airbags, active lane keeping, utility vision assurt and adaptive crasse control. The Mercodes Penn Séy Assu comprehe signing equally expensive super-reducts such at the Bentley Frying Sparsa dat the less pow-erful Asson Martin Rapide S.



TRADE FINANCE COMPANY'S JOSEPH R. MUTENDEREKI, CASE NO. BC6186/11. Imperial deep freeze. Capri single door self-iperator, 4 post brown L'mille. Philips television. SVA television, 5 pos glass topped coffice table. 4 pc ow MST ratio and 2 speakers, 11 pos duling sume 2 x chest of drawers, dressing table. Emison ratio and 2 speakers and steel room months.

ARAWIRA MASHINGAIDZE à 7 OTHERS YS BLUE MARK TYRES PYT LATD, CASE NO. RC9713/13, Eiper 17/20 EVA generator, tools hex, 3 x small computer desks, reception desks. 2 drawer wooden cahiner, 4 x soucces, 2 x hanness, 6 x six wheel syamens medical aid box, 32 x boxes of tubos, 8 x grander, cabiner, 3 x boxishelves, 3 x black office chairs, a surject chair, 3 x surject chair, 6 door, recoden cabiner, 3 x TV stands, 5 seater bench dismanded desk, farcher cover, 5 x which estands, 2 x CPUs and texplosal, computer stand, yie cover, 5 x which estands, 2 x CPUs and texplosal, computer stand, yie cover, 5 x which estands, 2 x CPUs and texplosal, computer stand, yie cover, 5 x which estands, 2 x CPUs and texplosal, computer stand, yie cover, 5 x decorative lights, 3 x chairs, 7 x runs, 31 x pipes and lot rubber mass.

CONSTRUCTION INDUSTRY PENSION FUND VS MUDAMBANUKI AND ASSOCIATES, CASE NO. HC224/12 Capt d/door refrigerator. Dely these been 30 por VI rands Osor plantastelerizon. Zpor marcol leather livensis, 8 por beigo leather Livensis, 2 por marcol extension and digate type decides table.

CRE VS FOOL PROOF ENTERPRISES AND PAULINE MUYAMBO, CASE NO. HC/1120/13, EIC d/door infrigerator, Imperial d/door mfrigerator, Defy microwave, wooden display unit, 4 pce L/suite, coffice shile. Tedelex relevision and wooden stool.

STANDARD TELEPHONES AND CARLES (SUCCESSORS) PVI LTD VS ANT DISTRIBUTION P/L, CARE NO MC3160/12, Samesing plasma shermann, wooden cobined, 2 seeks, 6 drawn cabinet, Hp leptop, 2 pot computer set, Hp officepet 4500 printer, 2 x Hp computer shengy servers, Chesician measured, Hp printers, Whit pool single door netrigerator, wooden under the computer, 2 x while clears and 2 x but stools

OLOMON MUGWISE VS DR WONDER BANDE, CASE NO. EC20721/14 6 per cream leather L'entre, 3 per cream and brown softer.

GOLD DEIVEN INVESTMENTS P/L VS FRANSCESCA TENDAVI NYABADEA, CASE NO. RC5428/11. Capri desp freeze, Capri dedoor refrigateurs. Ap printer all mone printer. LG internation. Decreas television.

own Lieure, 2 seates brown Lieure, issueurg plasma teleri nobbs cuttee suses. Kerropod mixer familiang radio & 6 gigs a rx. TV stand with 3 glasses. Capri deep these and coffee table

\$300 Cash/RTGS Prior to sale 0712746270, 0772373647, 04-660473



SALE-IN-EXECUTION

Duly instructed by the Sheriff of the High Court of Zimhahwe we shall sell by Public Auction the following vehicles at No. 709 Midlands Close, Waterfalls on Saturday, 11" October 2014 at 10 am.

TAKAWIRA MASHINGAIDZE AND 7 OTHERS VS BLUE MARK TYRES
PVT LTD, CASE NO. BC9713/13 - Manda Rustler-Reg No. B181AAV

Prior to sale 0712746270, 0772373647, 04-660475

## MUNICIPALITY OF KARIBA



LEASE OF A PUBLIC SLIPWAY AND HARBOUR

## NOTIFICATION OF AN ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE KARIBA DAM INFRASTRUCTURE REHABILITATION PROJECT







Proof Advertisement (The Daily Mail)

## **Prayer time**



VISITING Prophet Uebert Angel lays hands on scribes on arrival at Kenneth Kaunda International Airport on

## Local authorities' debt projected at K1bn

OVERNMENT

**FUNDRAISING** 

**DINNER DANCE** 

**ROMA GIRLS** 

SECONDARY SCHOOL

Dinner Dance on Friday, 3rd

Charges: K300.00 per ticket

Venue: Intercontinental Hotel

mobile: 0966-847038

Time: 19:30 - 22:00 hours.

Will hold a Fundraising

October, 2014.

debt is money owed to council workers.

"In other works, councils were unable to remit to Local Authorities Superannuation Fund (LASF) and other statutory contributions including Zambia Revenue Authority (ZRA) and National Pensions Scheme Authority (NAPSA)," he said.

Mr Msichili said this in Livingstone on Tuesday at the 58th Local Government Association of Zambia (LGAZ)

Fund (CDF), Mr Msichili suggested that the fund be scrapped and directed to capital

projects.

He said there is urgent need to revisit the 2006 CDF management guidelines.

Mr Msichili is also concerned

Association of Zambia (LGAZ) projects.
He said the greatest concern relates to LASF because it is not only unable to pay retirees but also the financial cost risks teep increasing, which may lead to insolvency.

C o m m e n t i n g on the Constituency Development and the Constituency Development and the Constituency of the Constituency Development and the Const

## Malawi to assist curb illegal timber trade

KABANDA CHULU

are underway to establish a one-stop border at Mwami to improve trade between Zambia and Malawi.

Mr Bandawe said in an

Mr Bandawe said in an interview in Lusaka that Malawi will not allow illegally harvested tree species to be transported through that country.

"We are cooperating with Zambia, actually there was

one consignment of trucks that had entered Malawi and were intercepted and impounded before reaching Lilongwe and authorities in Zambia were informed about this incident. "But officials from both countries need to work together to stop this illegal trade or else we shall lose these natural tree species that take a lot of time to mature," Mr Bands said. He said Malawi is collaborating with Zambia in many areas.

M A L A W I A N H i g h Commissioner to Zambia David Bandawe says his country is ready to help Zambia to curb illegal trade in forestry products such as 'mukula' tree species. And Mr Banda said plans are underway to establish a

**'Stop** 

## Standard Standard Chartered

## Customer **Notice**

Tariff revision

We wish to advise all our esteemed customers that our service tariffs will be revised effective 1st November, 2014.

For more information, contact your Relationship Manager, call 5247(Toll-free on all mobile networks) or visit your

Here for good

## with Zambia in many areas. Mr Banda, who is also Malawi's permanent representative to the Common Market for Eastern and Southern Africa (COMESA), said the one-stop border at Mwami will be established under a regional framework.

## dogs street vending'

SYLVESTER CHISHIMBA

LUSAKA City Council (LCC) has partnered with Lusaka Animal Welfare Society (LAWS) to prosecute individuals involved in the sale of dogs and other pets at undesignated places

the sale of dogs and other pets at undesignated places. LCC director of public health Greenford Sikazwe said the increasing numbers of vendors illegally selling dogs and other pets on the streets is worrying. Mr Sikazwe said the partnership between LCC and LAWS is also aimed at controlling the dog population and to enforce the protection and welfare of animals in Lusaka.

protection and welfare of animals in Lusaka.

Mr Sikazwe said the partnership will jointly enforce existing laws such as the Prevention to Animal Cruelty Act Chapter 245 and the Control of Dogs Act Chapter 247 of the Laws of Zambia.

Mr Sikazwe said any abuse, neglect, animal cruelty as well as selling of dogs and puppies in undesignated places such as Manda Hill, Kabulonga traffic lights, Makenij unction and others will result in the prosecution of individuals involved.

Aut LAWS chapters Pritty Melwani said the sale of puppies will result in the production of the properties of th

## UNIP women lock out president

## STEVEN MVULA

A GROUP of UNIP youths and women on Monday stormed the party offices in Lusaka and locked out their president Tilyenji Kaunda and his deputy Njekwa Anamela. The members accused Mr Kaunda and Mr Anamela of allegedly failing to organise the party and to win elections. But Mr Kaunda vowed not to resign until the UNIP national congress asks him to step aside.

step aside.

The women and youths led by UNIP national women's secretary Beatrice Kayuni said in a walk-in interview on Monday that Mr Kaunda is a "lukwarm" leader who has failed to win a single by-election

election.

Ms Kayuni, who is also
Lusaka Province women's
chairperson said: "We

want an interim committee in place. Decisions of the party are only made by the president and his vice without the involvement of the central committee."

committee."

Ms Kayuni alleged that Mr
Kaunda has lost touch with
the grass roots and the central
committee has not held any
congress for the last 13 years.

But Mr Kaunda said UNIP

congress for the last 13 years.
But Mr Kaunda said UNIP
started a political audit in
April and will soon convene
a national congress to hold
elections as soon as funds are
available.
"Comrade, we are in tune
with the people. Our members
need to be patient just like
our President Michael Sata
patiently waited for his time
to rule this country," he said.
On calls for him to said.
"People at the congress will
decide. We are a democratic
party and anything apart from



KAUNDA

discipline is chaos."

UNIP was formed in 1959 and it ruled Zambia for 27 years under Kenneth Kaunda from independence in 1964 to 1991.



## Vacancy – Radiographer / Sonographer

The Advertiser is looking for a Radiographer / Sonographer; candidates who would like to apply for the position in Swaziland, Manzini Clinic Private Hospital.

She/he needs to fulfill the following criteria.

Key Skills & Requirements

- Degree / Diploma in Radiography
- 5 years diagnostic radiography experience
- 3-5 years diagnostic ultrasound experience
- Private hospital experience

Interested applicants should e-mail their CV's to, welcome@clinicgrp.co.sz

## NOTIFICATION OF AN ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE KARIBA DAM INFRASTURE REHABILITATION PROJECT

The Kariba Dam is located on the Zambezi River, on the border between Zambia and Zimbajbwe. It is situated 130 km south-south-east of Lusska (Zambia) and 280 km north-west of Harare (Zimbajbwe). The Kariba Dam is managed and operated by the Zambezi River Authority (ZKA), a statutory body established in 1987 and jointly and equally owned by the Covernments of Zambia and Zimbabwe. ZRA is also responsible for overseeing the further development of the Zambezi River. The ZRA is proposing the rehabilitation of some of the support infrastructure of the Kariba Dam, namely the

- access road rehabilitation and construction; re-shaping and enlargement of the plunge pool; construction of cofferdam downstream of the plunge pool; pumping water out of the plunge pool and releasing it downstream in the reflacement of the plunge pool and releasing it downstream in the reflacement of the plunge pool and releasing it downstream in the Zambezi river; replacement of the existing stopbeams in the spillway with an emergency gate: construction of cofferdams to dewater the sluices of the spillway during the rehabilitation process; and installation of new stopbeams in the spillway for scheduled maintenance.

## PUBLIC PARTICIPATION PROCESS

The ZRA require an ESIA to be undertaken in accordance with the environmental regulations of Zambia (Environmental Management Act, 12 of 2011) and Zimbabwe (Environmental Management Act, 13 of 2002) before permission may be granted to continue with the works subject to the findings of the ESIA.

ZRA appointed Environmental Resources Management (ERM) Southern Africa as the environmental consultant to conduct the ESIA and associated public participation

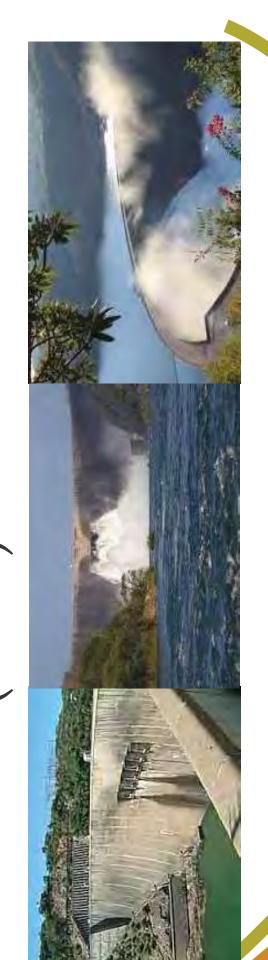
This advertisement serves as notification of the commencement of the public participation process for the ESIA. Herewith you are invited to register as a stakeholder and to participate in the ESIA and public participation processes. As a stakeholder you will be kept informed of the ESIA process, you will have the opportunity to comment on the ESIA and raise your issues/ concerns about the Project.

Ms Janet Mkhabela, by email <u>Janet Mkhabela@erm.com</u> or by telephone on + (27) 21 681 5400 Oliver Manjengwa in Zimbabwe mobile + (263) 772 988 671 Email: olivermanjengwa@gmail.com or Felix Chisha in Zambia Mobile: + (260) 974 074 384; + (260) 983 288 535 Email: felixchishafa@attrelzm.blackberry.com



## Project Presentation

## Environmental & Social Impact Kariba Dam Rehabilitation: Assessment (ESIA)





## Introduction

## Who is the ZRA?





- It is a statutory body jointly and equally owned by the Governments of Zambia and Zimbabwe.
- It is responsible for overseeing the development of the Zambezi River.

The Environmental Resources Management (ERM) is the consulting firm appointed to undertake the project ESIA

- International environmental consultancy with 3,600 staff in 130 offices in 40 countries around the world
- Working with Oliver Manjengwa (Zimbabwe); Felix Chisha (Zambia)



# Purpose of this Presentation

- To provide stakeholders with information about the proposed project, the project environment and the ESIA process;
- To gather information from the project area that can be used to inform project planning;
- To assist in the identification of concerns and issues regarding the proposed project and the ESIA process;

83

- To capture stakeholder comments and suggestions on alternatives;
- To confirm issues identified in the public domain and ensure that where relevant these are investigated further through technical studies;
- To report back on the findings of the ESIA and proposed management measures;
- To meet legislative requirements regarding stakeholder engagement.



# The Proposed Project and Rationale

## Dam Safety concerns = motivation

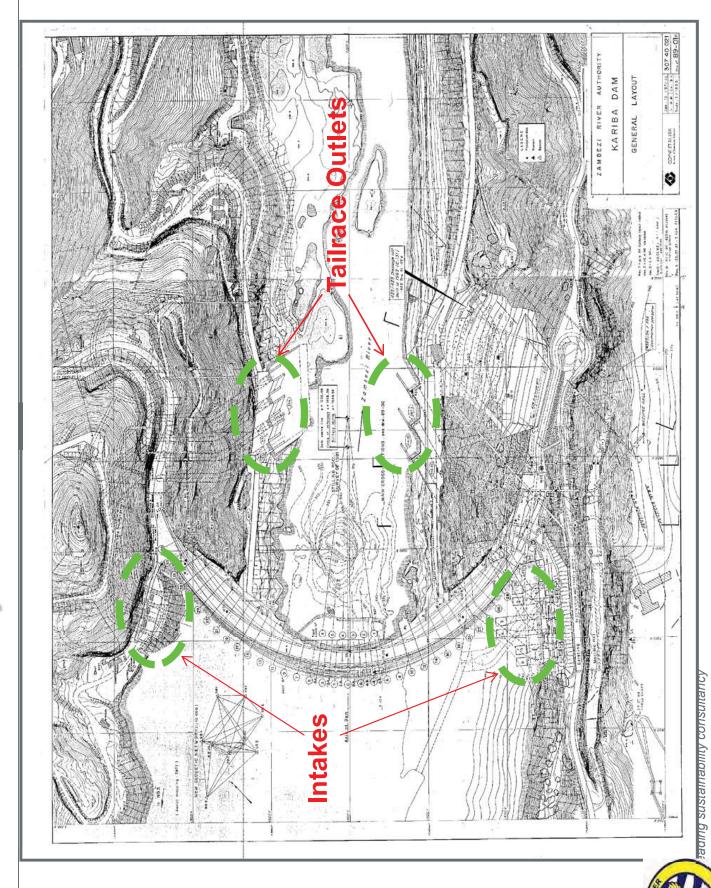
# Kariba Dam was constructed between 1956 and 1959

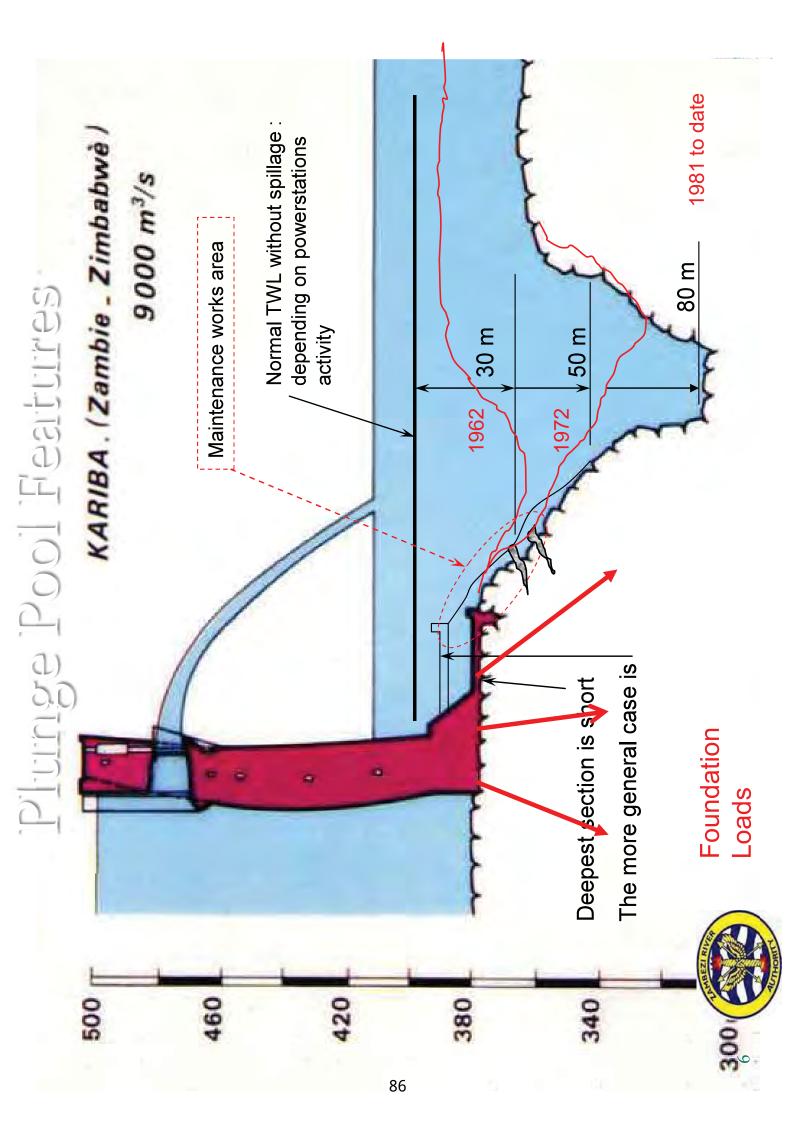
- It supplies water to two underground hydropower plants located on the north (left) bank in Zambia and on the south (right) bank in Zimbabwe.
- Jointly, the power stations have the capacity of 1,830 MW, once the new turbines have been installed in SB an addition 300MW will be produced =2,130MW
- The dam and associated infrastructure are over 50 years old as such needs an upgrade of some essential hydro-electrical equipment.
- The ZRA is proposing the reshaping and enlargement of the plunge pool and rehabilitation of the spillway gates



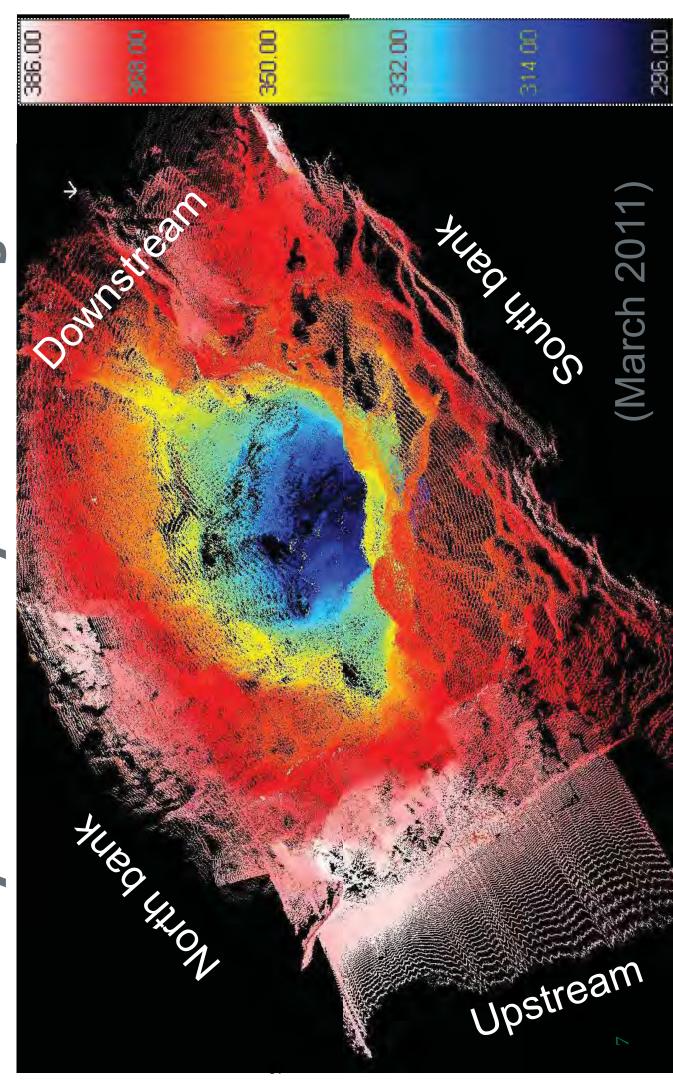






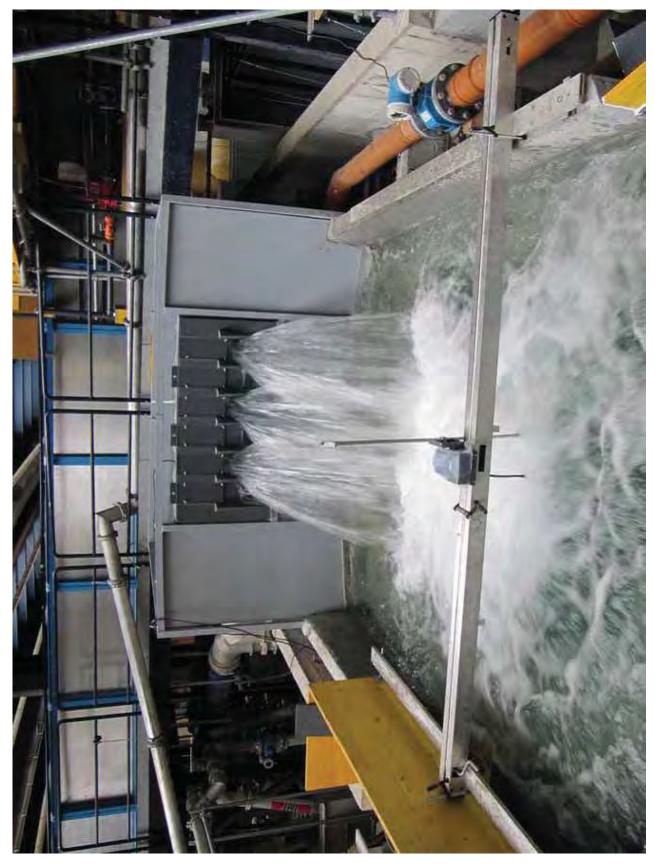


## Bathymetric Survey of the Plunge Pool Results from Multi-beam





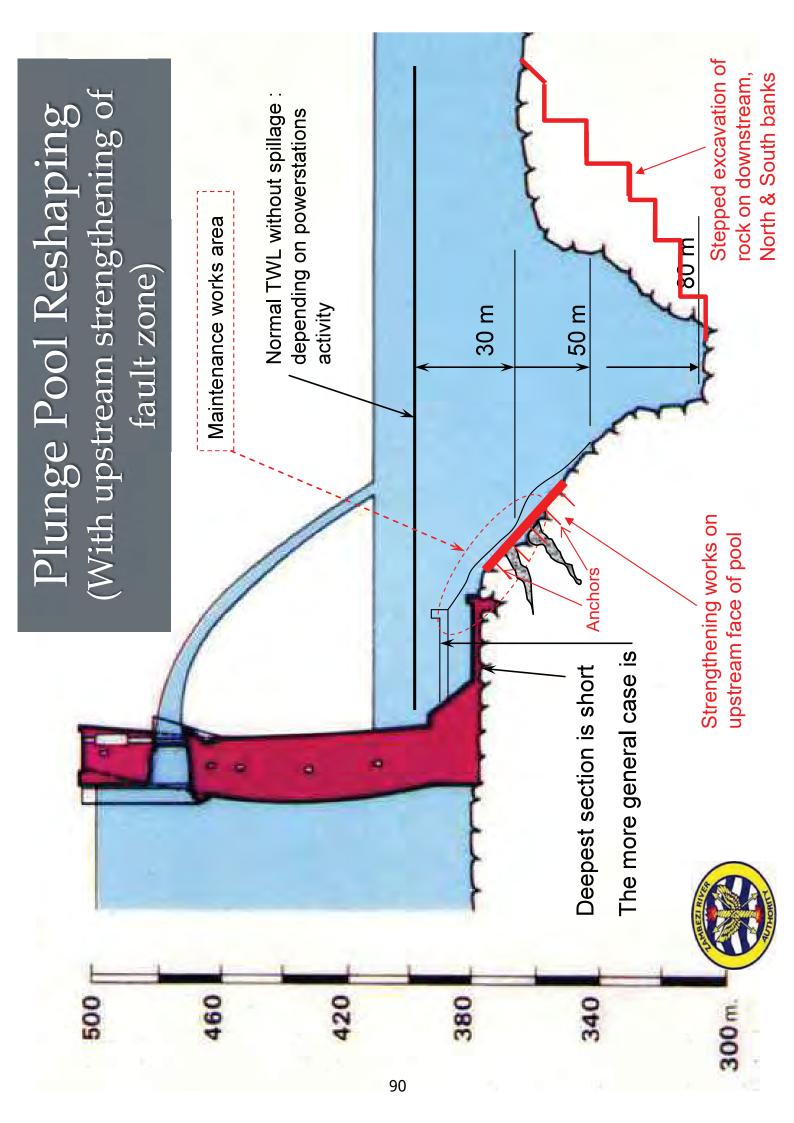
# Physical model: Testing in progress

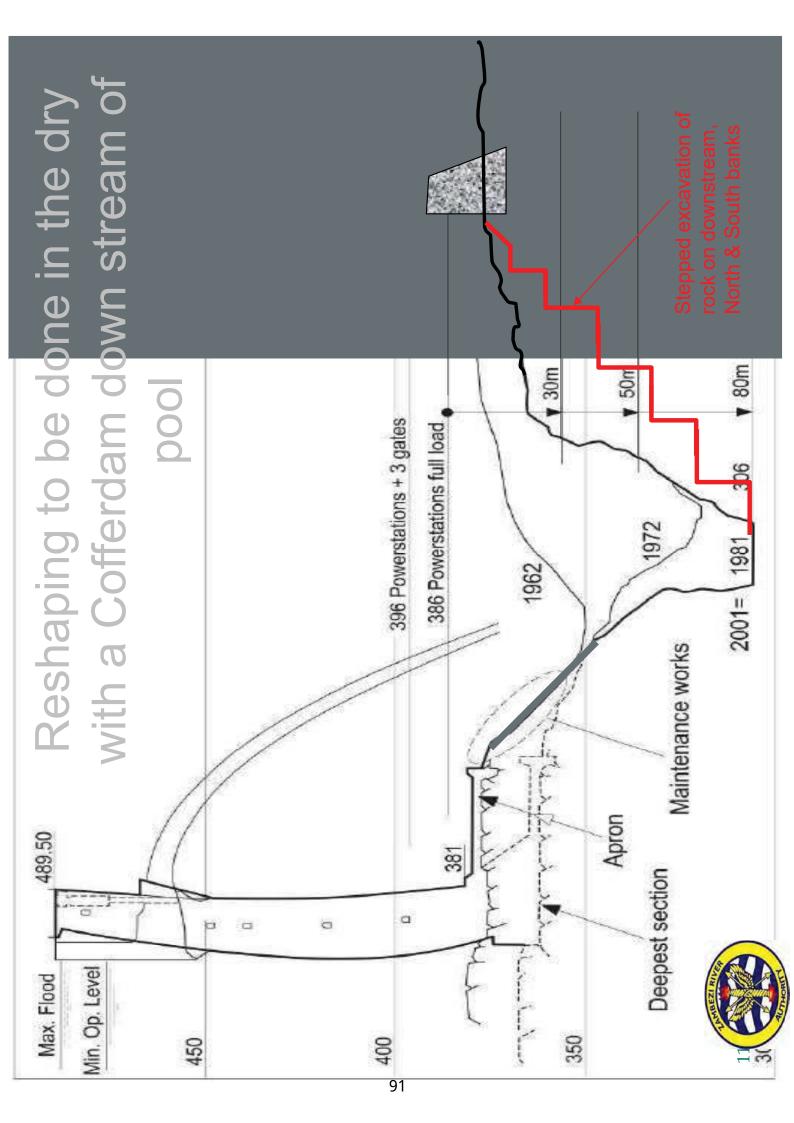


The world's leading sustainability consultancy









## Plunge Pool Works

Enlargement = excavation of 300,000 m<sup>3</sup> of bedrock

Construction of Secondary Roads

Assemble and installation of cofferdam downstream - Plunge Pool

Construction timeframe 5 years - non-spillage (7 months = May-November)





## PP Reshaping

## Method of works:

planned sequence of works to damage to the Controlled open air Blasting: cautiously surrounding infrastructure

Monitoring: seismograph, dam and bank movements, ground water levels

Associated infrastructure:

secondary roads, cofferdam, & waste rock dump site.





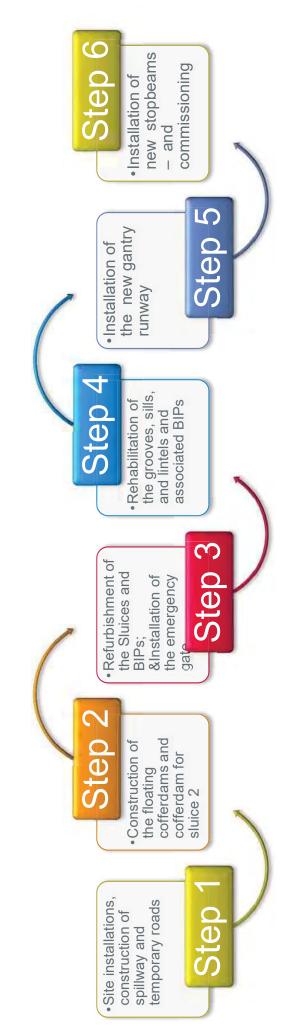
# Essential Steps to arrive at Solution

Design, fabrication and supply of cofferdam for upstream sluice closure replacement of secondary concrete and Built-in-Parts in stopbeam slots (in the dry) ⇒ requires cofferdam design, fabrication and supply of emergency gate

design, fabrication and supply of new gantry

modification of crest civil works to support new

## Spillway video







# Emergency Gate and Gantry

## Safety Concerns

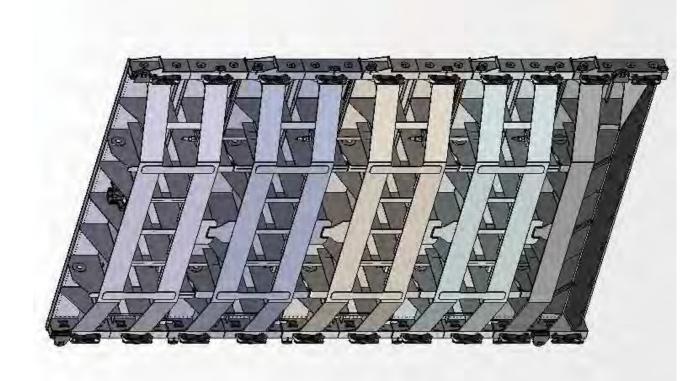
## (emergency sluice closure)

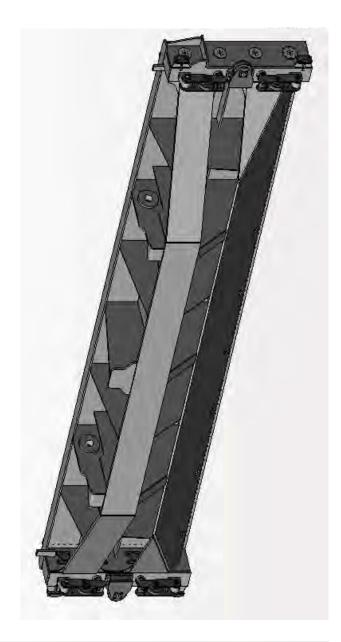
## Emergency Gate, Gantry Spillway refurbishment Remedial Measures release of water Design, fabrication and and Associated Works Prescribed installation of Loss of power generation due to emptying of Uncontrolled reservoir. Effect Inability to close gate failure (ie no emergency General aging Concern of the dam concrete: Safety **2**b



## **Emergency Gate**

- Total weight: 160 T
- 5 elements of approximately 32 T each
- Assembled with 16 bars and bolts
- 4 days to assemble it





## RISK OF INACTION

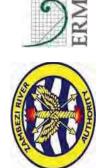
# (Consequences of Dam Failure)

Loss of power generation at Cahora Bassa and possible loss of dam.

Worst case scenario will be failure of Kariba and Cahora Failure of Cahora Bassa would compound the problem. Bassa when run off is at its peak with the river at peak. Loss of wildlife and wildlife habitat in Lower Zambezi

in Mozambique, Zambia and Zimbabwe (Mana Pools is a UNESCO world heritage site)

Loss of socio-economic activities on the lake (fisheries, tourism etc)







## OPEN DISCUSSION

## Issues and Concerns Log

Additional Motoe	Auditorial Modes																						
	Response/Action Description																						
local standard	Response/Action Description																						
[0](A)	Response/Action Description	Noted.	will be released back into the river.	That's not true. But the plunge pool poses a night risk to the integrity of the dam wall.	The latest reservoir is divided into 6 sub- basins. That dam walls is located within sub- asin 6. This then forms part of the catchment area for the works. The ESLA catchment area comprises of the first Skin radium dam wall; and up to 20 km downstream (specifically or aquatic ecology).	The cofferdam will be there to keep the water from the tail race outlets out of the plunge pool area. As such it is not expected to have any adverse effects.	The date for the Public Meeting is the 30th of September 2014 at Mahombekombe Primary School.	The ZPA is currently focused on the design and planning for construction. Once this has been completed, the focus will change to benefits. We will be able to present these to you on the next round of consultations.	The date for the Public Meeting is the 30th of September 2014 at Mahombekombe Primary School.	No, the plunge pool at the toe of the dam wall is being reshaped into 10 successive steps, and enlarged.	Overall construction will take up to 13 years; with the plunge pool construction being 3 to 5 years and sluice gates taking 7 to 8 years.	The in-migrant workforce will be allowed to go nome and return the following year to begin works again.	We don't know, we assume that the amployment contracts of all will have certain stipulations regarding payments for none activities months.	No information has been provided in terms of Dublic coasts that will be used for transportation of fropied pooks and services at present. But since this is the only access road route to knins by road on the Zimbabween side, then the threefore likely to be used. Cement and aggregate will be procured in Chilanga. Zambia.	Noted. For the ESIA purposes we will send information to you via the government officials, sms notifications, project website and email.	.RA has an in-house emergency response lan.	econd quarter of 2015.	The ZRA is currently focused on the design and planning for construction. Once this has been completed, the focus will change to benefits. Wer will be able to present these to you on the next round of consultations.	Voted.	The engineers believe that dry blasting will not after the integrity of the dam wall. Obvously the dam wall and other infrastructure dose by will be monitored during construction activities to ensure that nothing is compromised.	Voted.	Yes, For the ESB Approse we will send information to you've the government officials are softiciations project website and email. You can also contact the incounty after the recounty somutians anythine if you have enquiries. The pearn will also return in February 2015 to provide you with further information on the impact assessment findings.	Voted.
leeuo Docorintion	Tonding on one		_	s it true the dam will collapse as reported in the media? The hid		What effects will the cofferdam have downstream? The fron	When will the Public Meeting be held? The Sel	Will the project create employment opportunities? The and the project create employment opportunities? The bent bent bent bent bent bent bent ben	¿Pis	i a new bridge being constructed?  Is b  Is b  and		sə		In the road between Makeul. A stall be bused to No Interpreted the presence of the read in Pull already under pressure from too much traffic on Interpreted the pressure from too much traffic on Interpreted in Interpr	Ф	in case of the Z		rlow many people will be employed during and construction?  Been properties of the p	The ZRA needs to build a vocational training centre  Not where people can receive training in order to qualify for the project's recruitment needs.		ZRA is not sharing information with the local people; we Not hear that there are problems with the dam wall through the media not them.		The Provincial office is already aware of the project and Noi will want to be furnished with information as the project
Discussion Areas			ks	Jam Wall Safety		Plunge Pool Works	ublic Meeting V	inployment W	ublic Meeting V	other Is			onstruction Timeframe W		ā		Construction Timeframe M			Ham Wall Safety H	Inadequate Stakeholder Z Engagement by ZRA h Communication tt		Other
EDM Domosontativos	ERIM Representatives	0	n.		Janet, Felix, Oliver, Elizabeth	Oliver, Janet, Felix, Sue, Mwaka P	Oliver	Oliver	0.		10	0	anet, Oliver	Janet, Oliver	Janet, Oliver		Janet, Oliver			lanet, Oliver		Janet, Oliver	Oliver
Country		Zambia		Zimbabwe	Zimbatwe	Zimbabwe	Zimbabwe	Zimbabwe	e,e	ambia	Imbabwe		imbabwe	Zmbabwe	Zimbabwe		Zimbabwe			Zimbabwe		Гтбарме	Zimbabwe
Organication/ Community	Organisation Community			e ii		National Parks and Wikilife Zii Authority	Simba Mandigaisa Zir	Simba Mandigaisa Zii	9	Siavonga Town Za		nbe	Mahombekombe Zii	Mahombekombe Zil	Mahombekombe Zii		Mahombekombe Zii			Mahombekombe Zii	N	N	Provincial Level: National Zin Parks and Wildlife Authority
Tuno of Staboholdore	Siappioration			26-Sep-14 Government		26-Sep-14 Government	27-Sep-14 Community Member	27-Sep-14 Community Member	ŧ		Community Member	Community Member	Community Member	30-Sep-14 Community Member	Community Member		30-Sep-14 Community Member		30-Sep-14 Community Member	Community Member h	Ī	Community Member N	Government
OteO	Date	24-Sep-14	26-Sep-14	26-Sep-14	26-Sep-14	26-Sep-14	27-Sep-14	27-Sep-14	29-Sep-14	30-Sep-14	30-Sep-14	30-Sep-14 (	30-Sep-14	30-Sep-14	30-Sep-14 (	30-Sep-14	30-Sep-14	30-Sep-14	30-Sep-14	30-Sep-14 (	30-Sep-14	30-Sep-14(	01-Oct-1410
Consultation Tono	Consultation 19 pe	Authorities Meeting	Authorities Meeting	Authorities Meeting	Authorities Meeting - District Administrator - Zimbabwe	Stakeholder	Enquiry by Stakeholder	Enquiry by Stakeholder	Enquiry by Stakeholder	Public Meeting	Public Meeting	Public Meeting	Public Meeting	Publicating	Public Meeting	Public Meeting	Public Meeting	Public Meeting	Public Meeting	Public Meeting	Public Meeting	Public Meeting	Authorities Meeting

		This question refers to the video of repair by the sluice gates in Venezuela that was shown at authorities and Public Meetings.															_
Noted.	Overall construction will take up to 13 years; with the plunge pool construction being 3 to 5 years. Ayears and staice gates taking 7 to 8 years.	Vo: their problems were related to the sluice gates only.	Current assumptions do not predict any major mortomental impress, but the will be verified by the specialists on the team during the ESIA process and reported back to you.	Vo; ERM and its associated in-country attentions are undertaking the ESIA process now	res there are some cracks on the wall but they and order deep andy to cause the darin to Colleges. Think of it house, with time cracks Colleges. Think of it house, with time cracks colleges. Think of it house, with time cracks	The engineers thought the existing underwater which the ball of the the pressure energy of the sip; and that the plunge pool was going to develop naturally away from the dam wail.	The project planning has not extended to enrefits yet. Benefits will be communicated to our later on in the project planning process.	season and contact the properties of the propert	None at present, but this issue will be covered on the ESIA under the social impact assessment.	Engineers have been looked at multiple Engineers have been looked at multiple best option. We will engage the engineers and find out what the disregarded options were and present them to you.	The engineers have settled on these after nutriple verification studies.	ERA has an in-house emergency response lan.	Not that we know of. There is a reservoir rule with the following the memory of which with so followed in emms of how much water can be held in the lake at any ghent time. As such, they know when to spill or not to spill based on the water levels at the dam.	We will have to get back to you with the preparent great or behind this cachesion. We can assume a present that rebalidating the plunge poof first will assist in eliminate the threat to the dam well and allow ZRA to spill if need be during construction on the stuice gates takes place.	The ZRA has in-house monitoring system. We will ask the ZRA to provide you with more will ask the ZRA to provide you with more	Yes our role is to advise. But we are not notified every the control and the second notified and the second notified and the second notified planning and designs is done by angineers. We will bring along an engineer on curum to explain the rationale behind the construction plan.	
Thank you for the presentation. The provincial office is Ni now aware and will inform others at the provincial covernment of it.	onstruction take for plunge pool and	Did Venezuela have a similar problem of the plunge No pool?	Will there be any major impacts on the environment and Co fish? py	Is the EIA already done?	Is littue the dam has cracks?  Rot  Rot  Rot  Rot  Rot  Rot  Rot  Ro	Did the engineers, in 1956, not think of the potential in effects of the plunge pool?	What are the social benefits associated with the project 17 for people in the Lower Zambe 2?	Why doesn't the ZRA open up the stuke gates to Tricelease the pressure of the wall?	The local health facilities will not have capacity to handle any emergencies linked to the project workforce, or Have any considerations regarding this been made?	How many options have been considered for the proposed reshaping and enlargement of the plunge all poor?	F E	cautions Z	Will there be a calamity if we don't spill soon? No	What is the motivation for starting with the rehabilitation We will have to get back to you with the of the plunge pool before the spilway gates? It sounds englereing reason behind this decision. We nece reasonable but start the works on the gates prior to pan assume at present that rehabilitating the the plunge pool. The plunge pool is the plunge pool fist will assist in eliminate the threat to the dam well and allow ZPA busyll head to be during construction on the station gates takes place.	vities of the	As consultants on the project, is it not your five separability to advise the ZPA to begin the first construction with the sultre gates instead of the blunge in poor?	
Other	Construction Timeframe	Other	Environmental Impacts	ESIA Process	Cracks on the Dam Wall	1950s Engineering Concerns	Project Benefits for Downstream Users	Dam Wall Saffety	Health and Safety	Plunge Pool Alternatives	Dam Wall Safety	Emergency Response	Dam Wall Safety	Rationale about Construction	Monitoring of Plunge Pool	Rationale about Construction	
Oliver	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Feik	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	
Zimbabwe	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	
Provincial Administrator	Siavonga District	Slavonga District	Siavonga District	Siavonga District	Siavonga District	Siavonga District	Siavonga District	Slavonga District.	Siavonga District	Slavonga District	Siavonga District	Siavonga District	Siavonga District	Slavonga District	Siavonga District	Slavonga District	i
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There should be, the Venezuela example unfortunately was never undertaken. But this is all about wear and tear linked to age. We will bring you more examples on our return.						Current high level estimates are for \$ 300	million but this number is not tinal. The ESIA is being indeptation to identify	project related risks aside from the loss of	lives, livelihoods, biodiversity and others	obvious ones.	At present, the project is not anticipated to impact on power generation.	The construction activities will only take place during the non-spling minorities. Assurements will be installed in the plunge Realincements will be installed in the plunge pool at the off olded nostruction period; these reinforcements will allow for oppling to lake place in the wet season without damaging the plunge pool works.	Yes, according to the site layout maps.	Noted.	ZRA has an in-house emergency response plan.	Noted.	The engineers are still investigating this issue; that is what they are currently suggesting that the pool should not be drained completely during construction to try and maintain some balance in the area.	Noted. We will get in touch with the engineering team and get back to you.
Are there any other dams that have undergone such in rehabilitations?						What is the cost of this exercise?	Chairm att this bateinces are aleit tall			T		anticipated impacts of spiling during the of the plunge pool?	Will there be access roads constructed/ or rehabilitated Yes, according to the site layout maps on the Zimbahwaan site?	apportunities are distributed ountries.	sure the safety of the anned events? ?	Care should be taken when blasting in the plunge pool area as the southern slope is moving towards the river.	What are the likely impacts of draining the water out of the plunge pool?	The plunge pool has been 50 years in the making; one would assume that there are natural forces at jady in the area. If the ZRA removes the water in this area it is the plane assume that the nature surroundings. We would like to see some calculations or research that has been done towards this.
Similar examples						Cost of Project	Dieke	KISKS		c c	Plunge Pool Works	Plunge Pool Works	Access roads	Employment	Emergency Response	Southern Slope Movement	Plunge Pool Works	Plunge Pool Works
Janet, Felix						Janet, Felix	vila tane	Jailet, FellX		i i	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix	Janet, Felix
Zambia						Zambia	Zamhia	Zambia		1	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia
Kariba District Authorities						Kariba District Authorities	Kariha District Authorities	Namba District Autronnes			Kariba District Authorities	Karba District Authorities	Kariba District Authorities	Kariba District Authorities	Kariba District Authorities	Kariba District Authorities	Kariba District Authorities	Kariba District Authorities
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					=				n <del>U</del>		Φ			=				
It is likely, we will investigate and bring you other examples on our return. See links on additional notes.	Second quarter of 2015.  Noted; we will make recommendations in the ESIA related to employment of local people.	Noted; We will review the existing ERP and arhise where needed	Yes Zambia will benefit from the project however, these have not been outlined yet as the ZRA focus has been on the design and planning for construction. We will be able to present these to you on the next round of consultations.	The ZRA is currently focused on the design and planning for construction. Once this has been completed, the focus will change be benefits. We will be able to present these to you on the next round of consultations.	Again, we don't have any numbers yet. We will be able to present these to you on the next round of consultations.	Noted. We cannot comment on this but we will pass on your concern.	oted. We cannot comment on this but we wi ass on your concern.	Noted. We cannot comment on this but we will pass on your concern.	We don't know that information at present. We will be able to present these to you on the next round of consultations.	Not that we know of at present. We will have the findings of the aquatic ecologist during the Draft ESIA which will clarify the matter.	Noted, one of the recommendations we will make in the ESA is that that ESA to have a closed camp where by all workers from outside will stay at camp full time with limited to no interactions with the local population.	Noted, but experience from other project in Africa and elsewhere has shown that this method of recruitment is often plagued by blases and nepotism.	Noted.	Noted. We cannot comment on this but we will pass on your concern.	Noted. We cannot comment on this but we will pass on your concern.	Everyone will be able to apply for project related employment.	here has not been any mention of rioritisation of locals for employment	/e enquire with the ZRA regarding this.
such as these?	When is construction expected to begin?  The contractors brought on by the ZRA do not employ N local people. They often bring their own people.	-	tbia benefit from the project?	efit?		ZRA uses a raffle method to recruit its semi- and Nurskilled workforce. This method is unfair.		Chinese contractors treat its workforce poorly, the ZRA N should not hire them for these works.			ŧ	For recruitment purposes, the ZRA should consider N working with the local leaders.		ZRA does not have an office in Siavonga only in Lusaka. For employment purposes, people have to cross the border and pay K2.00 to apply or enquire about employment opportunities.	need to be fair.	women		Will there be specific benefits for those previously displaced by the construction of the dam during construction?
Similar examples	Construction Timeframe Employment	Emergency Response				Current ZRA Employment Z Method		Contractors and Working Conditions				Employment Procedures	ocedures	Access to ZRA	Employment Procedures		nent	Benefits C
Janet, Felix	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)						Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)	Janet, Felix, Maureen (ZRA)
Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia
Kariba District Authorities	Siavonga Town Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Siavonga Town	Micho Compound	Micho Compound	Micho Compound	Micho Compound
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The construction activities will only take place during the on-splining months on the plange sharincements will be installed in the plange sharincements will be installed in the plange pool at the end of each orestur	Voted.	es.	Voted. We cannot comment on this but we will pass on your concern.	We will engage the ZRA on this issue and revert back to you.	We assume so, as this is a general requirement to have workers insured. We will confirm this and revert back to you.	The ZRA is currently focused on the design and planning for construction. Once this has been completed, the focus will change to benefits. We will be able to present these to you on the next round of consultations.	Noted.	There are no impacts expected as this is an existing quarry site that will be filled up by rock.	The rock type found in the area is fragile and has led to the 80m plunge pool, as such granite type of rock will be used.	Noted	Noted.	Noted.	Noted.	We will meet to wait for the adjustic ecologist's report on that. But inflainficiations are that the water weeks are constrainty friety and falling downstream of the power part hecause of peaking activities. During the peak times the water from a for the power part in the same of peaking activities. During the peak times the swater from the surface water from the water from the water from the water pumped out of the pool will not introduce any damantic changes.	The dry season report will be completed by end drownerser, but for internal use only then. Some inflat findings will be presented in the score finding will be presented in the school season the specialist will return for the wet season research early next year and finalise the report threeafter.	Noted.	Noted.	Noted.
	RA should	Ĺ	ZRA uses a raffle method to recruit its semi- and No unskilled workforce. This method is unfair.	ose employe d	Will there be insurance in place for those working on the World there be insurance in place for those working on the World there be insurance in place for those working on the World the Will the World the W	How will the people in the lower Zambezi benefit? The and the control of the cont	ZRA promised to provide the population with water and Not this promise has not been fulfilled.	of dumping the rock	Why is the rock excavated not used to construct the Th plunge pool's successive steps?	The enginees need to consider the following flast; the Norwand pumping out of vasel from the plange pool will oreste instability in the surrounding area. This will be that the plange pool has seeped flingly the cracks on the riverbed rock has seeped flingly the cracks on the riverbed rock and has created some form of cushion. The moment has value is reduced in the area, there will be vacant spaces letterind and the bedrock is likely to collapse on tiself.	e -	_		water flows downstream of the burst peop of charge the IW, water flows downstream of the dam? Keeping in mind   reg. that water will be purroped constantly into the river from   the thunge pool.   or   or   or   or   or   or   or   o	When will the aquatic ecology report be completed?  In the aquatic ecology report be completed?  In the aquatic ecology report be completed?			Ensure that all national and regional level stakeholders No are informed of the project.
	Contractors and Working Conditions				Employment Procedures	Benefits	/ater	Rock Discard		Plunge Pool Works				Water Flows Downstream	ESIA Process	_	Gates	Other
		Janet, Felix, Maureen (ZRA)		Janet, Felix, Maureen (ZRA)		Janet, Felix, Maureen (ZRA)	Maureen (ZRA)			Jane, Felix				Janet, Felix	Janet, Felix	,	Felix	Oliver
Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	f Water Zambia	f Water Zambia	Water Zambia	f Water Zambia	r Water Zambia	f Water Zambia	Water Zambia	Water Zambia	f Water Zambia	-	onal Zimbabwe
Midro Compound	Micho Compound	Micho Compound	Micho Compound	Micho Compound	Micho Compound	Micho Compound	Micho Compound	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	National Department of Water Zambia	Zimbabwe African National Union - Patriotic Front
04-Oct-14 Community Member		04-Oct-14 Community Member		04-Oct-14 Community Member	04-Oct-14 Community Member	04-Oct-14 Community Member	04-Oct-14 Community Member	ct-14	d-14	07-Od-14 Government	07-Oct-14 Government	07-Oct-14 Government	07-Oct-14 Government	07-0d-14 Government	07-Oct-14 Government	07-Oct-14 Government	07-Oct-14 Government	08-Oct-14 Political
		Public Meeting 04-Oct						Authorities Meeting 07-Oct-14	Authorities Meeting 07-Oct-14	Authorities Meeting 07-0d		Authorities Meeting 07-00d		Authorities Meeting 07-Oo	Authorities Meeting 07-Od			Authorities Meeting 08-Oct

## Attendance Registers

Meeting: National Parks & wildlife - Zindad me Date: 26/09/2014

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address	-
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Somet rakhabela ERAN	ERAN						
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Maris Hawa	788					# S	y == ==

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Title, First name & Surname	Ms GRACE - C.E.	110			

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Telephone / Cellphone Numbers	5712615388			
Position in Organisation	Ecologist			
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Title, First name & Surname	SUSSAN	111		

Meeting: Manuscipality Corrector of 12 min) - Date:

#### ATTENDANCE REGISTER

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Meeting: DA's Date:

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address
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MUCAKA SIMBULE 20A	20A	PR & coms	0977861818 + 260211	120211	F.O. BGX 30233	P.O. Box 3023 Simbule @ zardo.og.
Elizabeth Koronga	2 9	PR r Coms	251818-1190	223498	11	Kerronga Zarraho 6
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Meeting: たいなんらう Date: スローローンロー

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Meeting: #18hanes
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Position in Organisation		Vice	*		
Organisation Name	Habour	Habour	Habour	+Lebour	Sales
Title, First name & Surname	Jenniter	Em chica.	Patricia Mulanga	Evelyn	Ester

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address
Mirricha	Bussiness Ladd		HSF1029760	45	Lusaka	
Brighert Nachilongo Bussingss Ladis	Bussings		09 62559058	88	Husaka	
Susan	Bussiness Lady		0965536285	S	Lusaka	
Astridah	Bussiness				Katue	
Justin Sikanyika	Bussiness		09151545900	0	Sigronga	

Meeting: Fighteness
Date: 30/09/2011

Frank Choonebal Min Choonebal Min Brendah Sibundangal Hal Sibundangal Hal	Ba Mini-bus Conductor Habour Frader	096965265 09771831837 09771831837	Hasaka Siaronga Siaronga Siaronga	
Bencerd Fisherman	Pryden		KKOLZ	3

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Telephone / Cellphone Numbers	09.43.834.77	09790715S	09667748858	
Position in Organisation			Broggaras	
Organisation Name	mader	Fisherman	Sales	
Title, First name & Surname	Wisdom * Siampanda	Willerd Mulupa	antes Simbay	

Meeting: Fishing Capry Date:

Email Address	7				,
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Position in Organisation	fishermon	fisherman	Lisherman	Lisherman	Lighermon
Organisation Name	Total	Jahanna	J. January	A STATE OF THE STA	Arian Marian
Title, First name & Surname	Nauganga	Hashusings 121	Thomas Change	Gilbert Hamtalei	Return

Meeting:

Fishing camps

Position in Cellphone / Fax Postal Address Email Address Organisation	helper Og fullisty	Pupil Og72745859 Stavonga.	Ogtalogies.	097—08 Siavonga
Organisation Name Or	hetert Costu chons company		Fisherman -	Lisbermon
Title, First name & Surname	Richard	France Hansubuso	Mususa	Lot

2014 20/09/ Meeting: Trobon Date:

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Shop	Seller	0979386410		Stanonda	
Drug slore	DAW-enter			Siavoroga	

Fax Postal Address Email Address					
Position in Cellphone / F. Cellphone Nur		こしかがかナモロ	The Hotel	15 77.2 JESUSA	1077622111
Organisation Name Organi	Trade				
Title, First name & Surname	- Gertan	K. Kondowa	124	R. Machenage	M. Charmony

Email Address					
Postal Address					
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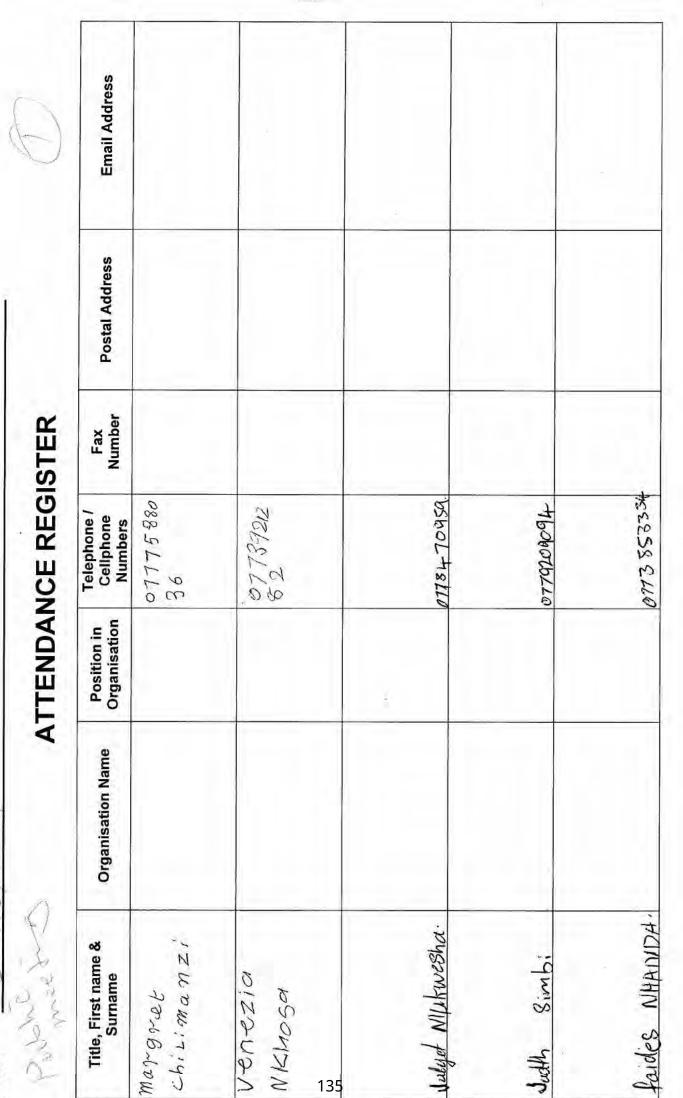
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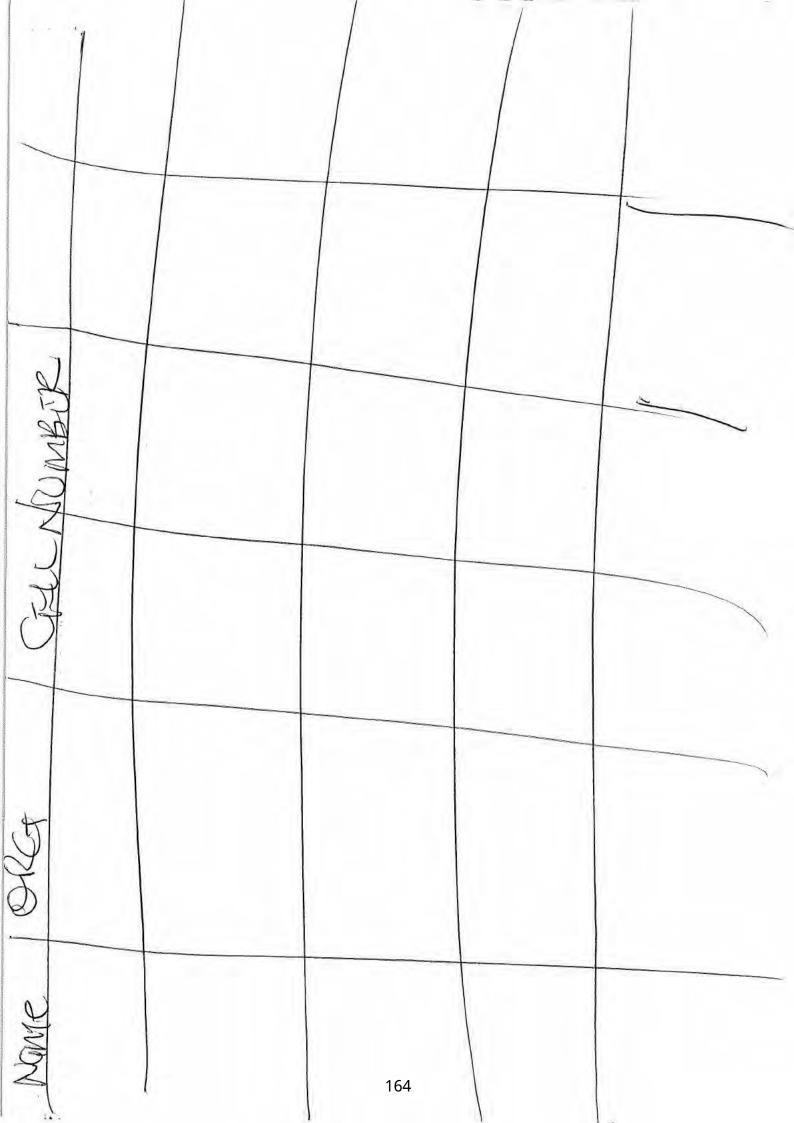
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BUNDY	9		5061569			
JWELL ABASULULA			01598899960		B.0x 144	
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CHINS ASHINGA			09543682			7
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