

The Kariba Dam Rehabilitation Project

OVERCOMING BARRIERS FOR
WOMEN PARTICIPATING IN LARGE
INFRASTRUCTURE PROJECTS:

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1.0 BACKGROUND

The Zambezi River Authority (ZRA) is a corporation jointly and equally owned by the Governments of Zambia and Zimbabwe, mandated to contribute to the economic, industrial, and social development of the contracting states by sustainably obtaining the greatest possible benefits from the natural advantages offered by the waters of the Zambezi River common between Zambia and Zimbabwe (provision of water for generation of electricity and other uses).

ZRA owns and operates the Kariba Dam which is a key water storage infrastructure that was built in the 1950s to provide energy and support the economic and social development of Zambia and Zimbabwe, and the Southern African region at large. The Dam is the main source of hydro-electric power for Zambia and Zimbabwe and supplies water to two underground hydropower stations with a total capacity of 2130MW.

2.0 THE PROJECT

To ensure the long-term safety and reliability of the Kariba Dam for power generation, ZRA embarked on a Project to rehabilitate the Kariba Dam in 2017. The Kariba Dam Rehabilitation Project (KDRP) is a high-risk construction project scheduled for completion in 2025. The project components include:

- (i) the reshaping of the plunge pool to limit the preferential erosion of the natural rock floor of the plunge pool that, if unchecked, could potentially compromise the integrity of the foundation of the dam wall,
- (ii) the refurbishment of the spillway upstream control facility and associated infrastructure to improve the dam's capability to draw down or retain the reservoir as per operating rules and in accordance with international dam safety standards and,
- (iii) institutional support through the provision of technical services and overall guidance aimed at smooth project execution.

3.0 KEY ISSUES – THE BARRIERS

Working in a male dominated industry can be a challenging scenario for women, particularly in the construction industry. The construction sector in Zambia and Zimbabwe is male dominated. Women participation in the construction sector in Zambia was reported as one woman for every five men while in Zimbabwe, women represented 9% of the labor force in this sector. According to the Ministry of Gender Report of 2020, as of 2018, there were 27,488 men as compared to only 1,211 women working in the construction sector in Zambia. The situation is not very different at KDRP. The project currently has a staffing complement of 467 comprising 398 men and

69 women.

There are several factors that explain this disturbing gender gap, ranging from unconscious gender bias to lack of adequate training (low participation in Science, Technology, Engineering, and Mathematics), to overall perceptions of women as regards working in the construction sector.

“Harassment is not physical, but the harassment to women may be morally and psychologically. For example, not acknowledging or accepting your accomplishment as a woman.” KDRP female employee.

The GBV Perception Survey conducted at KDRP in 2020 highlighted that female employees face the following barriers: social norms limiting their participation in employment (unsupportive attitude from spouse), harassment from male coworkers, gender discrimination, being micromanaged and underrated by male colleagues.

4.0 INTERVENTIONS

The situation has been steadily improving due to the project's deliberate effort to increase the number of women on site. Key interventions include implementing a quota system that promotes employment opportunities for women, meaningful involvement of women in project planning and implementation, established a robust grievance reporting system, worker codes of conduct and social audit to ensure compliance with social requirements.

Further, as part of compliance monitoring, the World Bank recommended revisions to the original Environmental and Social Impact Assessment and Environmental and Social Management Plan developed in 2014 to strengthen gender aspects on the project, including an increased focus on prevention and management of Gender-Based Violence/Sexual Exploitation and Abuse (GBV/SEA) risks. In addition, the project conducted a GBV retro-implementation exercise with the support of the World Bank, and this resulted in key actions which include mapping of GBV service providers, conducting a gender perception survey, development of a gender and GBV training manual (which is currently in use and has been extended to the entire institution) and strengthening of Grievance Redress Mechanism (GRM) to include GBV/SEA sensitivity.

5.0 NOTABLE ACHIEVEMENTS

The project has recorded notable success during its implementation phase and has continued to make strides to engage more women professionals in leadership positions.

These efforts have led to enhanced women's participation in the ongoing rehabilitation works and has helped to build confidence among the women engaged.

There are transparent and trusted grievance reporting channels. KDRP is a safe space where women speak out on discrimination, injustice and other work-related complaints that affect their work. In addition, KDRP has improved reporting on labour

statistics and increased number of women on the project from 10 female employees in 2017 to 69 to date.

Through these interventions, the project is contributing to breaking social norms and beliefs that women cannot thrive in a male dominated industry and this has also led to greater acceptance among men that women can make a positive contribution in this complex sector.

MEET THE KDRP WOMEN THRIVING IN THE MALE DOMINATED INDUSTRY

In commemorating this year's International Women's Day under the theme "Accelerate Equality", KDRP has profiled some selected professional women who are making a positive contribution to successful implementation of the project.

Authority, Project Implementation Unit

RELENT N. NCUBE

Manager-Planning and Scheduling



Relent is an Electronic Engineer providing overall schedule assessments including coordinating the planning; tracking implementation; development; monitoring; and scheduling of KDRP activities to ensure value for money through timely and cost-effective project implementation. Her role includes ensuring that the KDRP program of works is optimized in terms of the allocation or utilization of key resources to attain the shortest possible time for completion considering the project constraints without compromise to the product quality, safety of the human resource, plant, and equipment. She is also responsible for the development, monitoring and analysis of the project risk registers to provide effective and efficient performance monitoring of the project.

MWELWA NSAKA SATA-HARUPERI

Environmental, Health and Safety Officer



Mwelwa is an Environmental, Health and Safety (EHS) specialist supporting the safeguards component of KDRP which includes monitoring and evaluation of the Project Environmental and Social Management Plans and ensuring compliance to contractual, legal, and other regulatory requirements of the Project. Her role involves supervising and monitoring EHS outputs from the Consultant and Contractor and providing relevant guidance to the respective EHS Teams to ensure compliance to the Project Key Performance Indicators.

"I know that many other women have been in my place and have forged ahead. The sky is the limit, and the world is your oyster. No matter what field or industry you work in, there will always be barriers, including those related our gender. However, these barriers should not define who we are, or our profession. The barriers should be used as a platform to bridge and supersede the norm. Together we can achieve anything, but only if we have the will power to overcome our professional hinderances" Mwelwa.



KULAMBISHA NGOMA
Projects Assistant



Kulambisha is a professional in Information, Documents, and Administration. She supports KDRP with critical management of information/documents as well as general coordination of daily management activities with senior management by facilitating communication with the appropriate project stakeholders and ensuring that all contractual, legal, and other project requirements are met.



CONSTANCE NOBULA LIAMBAI-BWALYA
Stakeholder Relations Officer



Constance is a Social Development professional supporting the social safeguards component of KDRP which includes; providing technical support to and monitoring project contractor's compliance with the KDRP Social Management Plans, relevant contracting states' legal obligations, contractual provisions in accordance with project requirements and international good practice, facilitating the resolution of project related grievances (Grievance Redress Mechanism), managing stakeholder relations and engagements, implementing the Gender-Based Violence (GBV) and community development initiatives.

“Working at KDRP offers me an opportunity to support ZRA's efforts towards accelerating equality by mobilizing collective action of all KDRP parties to create an inclusive work culture (free of bias and discrimination) so both men and women reach their potential and fully participate in the completion of the rehabilitation works” **Constance.**

Gruner Stucky, Technical Services and Supervision Consultant.

CHEELO M. SIYUNYIE
Assistant Resident Quantity Surveyor



Cheelo oversees preparation of Interim Payment Application (IPA) technical supporting documents; regular inspection of plunge pool reshaping works; complete construction processes; safeguarding the quality of work; adherence to proposed plans; recording, and maintaining site dairies and site measurements. She is a site trained Gender-Based Violence (GBV) Activist.

NCHIMUNYA KANTENGWE
Document Controller



As Document Controller, Nchimunya manages the Gruner Stucky documents (meeting minutes; drawings; specifications; approvals; and site instructions) and controls the retrieval of documents on the project storage platform (SharePoint). She performs administrative tasks in coordination with Gruner Stucky senior management.



Razel-Bec-Main Contractor, Plunge Pool Reshaping Project

MESERET AYELE GEBREMEDHI
Technical/Materials Engineer



Meseret prepares Work Method Statements for the various plunge pool reshaping work activities; monitors aggregates production and quality as well as installation of anchors and rock bolts. She also participates in the development of concrete mix designs for fault treatment works. She compiles technical (mix design, drilling, and grout work) reports and advises the production team on technical matters.

"I like my profession and I have developed confidence with my work as a female engineer"
Meseret.

MUTINTA MAGAANTA
Safety Team Leader



Mutinta joined Razel Bec in 2017 and has held the safety team leader position ever since. Her main responsibilities are conducting last minute safety risk analysis, safety toolbox talks and supervising flaggers. She also ensures a safe working environment by advising management on health and safety requirements and ensuring the hierarchy of control (risks) for various work assignments.

"I feel that men and women have the same capabilities so women shouldn't limit themselves. KDRP is a supportive environment for women. I get a lot of assistance from my supervisor and management on how to resolve challenging issues"
Mutinta.

LIZZY MWANDILA
Civil Works Foreperson



Lizzy is a certified Building and Construction professional employed in 2017 by the Plunge Pool Contractor, Razel-Bec as a Bricklayer. She was promoted to Team Leader in 2019, Senior Team Leader in 2021, Assistant Foreperson in 2022 and now serves as Civil Works Foreperson since February 2023. She leads a team of tradesmen (carpenters, steel fixers and bricklayers). Her main duties involve fixing reinforcement, form work, casting of concrete and ensuring quality of concrete works. She has supervised the civil works component of the following infrastructure: cofferdam, site drainage system, filling station and worker's canteen.

"I am happy to be in this industry, despite the many challenges. I encourage fellow women not to pay attention to negative comments but to soldier on"
Lizzy.

DIONISIA MARIA ALBERTO
Laboratory Manager



Deonisia manages the Laboratory team working in the concrete batching plant. She coordinates implementation of concrete works, and controls the quality of all construction raw materials such as aggregates, cement, water, and other admixtures in accordance to the project specification requirements. Deonisia is also responsible for defining and formulating various concrete mix designs and conducts internal trial and final test controls in line with the various concrete work requirements.

TAPIWA MANGISI
Site Nurse



Tapiwa is primarily responsible for delivering on-site healthcare to people who require immediate attention to stabilize their vital signs and reduce pain and discomfort. Her additional tasks include being prepared to respond to and equipped to cope with all medical emergencies on the site, triaging patients brought in by the site first aiders depending on the severity of injury or sickness, quickly stabilizing, and assist in the transfer of stable patients to Siavonga District Hospital or other hospitals depending on the condition of the patient.

EUNICE MATOKUTA
Trainee Driller



Eunice obtained a Diploma in Early Childhood Teaching in 2016, however, she was not employed since then. In November 2022, she was among the 130 Siavonga residents that applied for a Drilling Skills Training program under Razel Bec. The program is part of the KDRP Training and Skills Development Management Plan where the Contractor is expected to undertake a skills transfer program for residents. A total of 14 (13 male and 1 female) candidates passed the initial Psychometric assessment and were enrolled in an onsite 3-month training program in drilling. The trainees will undergo a final assessment at the end of the training. Successful candidates will be awarded a level I Technical Education Vocational and Entrepreneurship Authority (Artisan) certificate in drilling and blasting operations.

The trainees commenced practical assessments (drilling rig operations) and Eunice has continued to perform extremely well. She is participating in drilling blast holes, drainage holes (ground dewatering) and holes for anchor bars as part of the fault treatment zone and slope stabilization of the plunge pool.

"I will never go back to teaching. I enjoy what I do here, and I am receiving great support from my teammates and trainer. I thank Razel Bec for this opportunity to contribute to the rehabilitation of the plunge pool and for giving a new career prospect"
Eunice.



CECILIA KASHOLE
Executive Assistant



Cecilia's key duties include managing document control related tasks such as compiling daily project reports and archiving all contractual documents (Drawings, Work Methods Statement, Technical documents, Blasting Plans and Monthly Reports). She monitors and replenishes office supplies stocks and performs Secretarial and other administrative duties.



**General Electric/Freyssinet International
(Consortium)-Main Contractor, Spillway
Refurbishment Project**

NACHILIMA M. MEMORY
Human Resources Manager



Nachilima is responsible for ensuring the Spillway project conforms to the contracting states labour and working conditions. Therefore, she oversees hiring and onboarding, employee benefits, payroll, and training. She ensures a safe working environment for women by preventing and deconstructing discrimination or harassment.

ALICE MUNTHALI
Senior Site Engineer



Alice is a Civil and Environmental Engineer. As Senior Engineer, Alice leads on a series of responsibilities to provide technical supervision, administrative support and guidance to Junior Engineers whilst performing roles in Management. Her role is considered a subject matter expert. She then prepares work method statements, bills of quantities, weekly schedules for people and equipment. Alice is currently leading a team in replacement of Built-In-Parts (BIPs) and flood monitoring in Kariba Dam Sluices as part of the KDRP.

"I have learnt that anyone, regardless of their background; circumstance; and gender, can do whatever they put their minds to, women are only limited as far as their minds can possibly imagine. Challenges should not limit one from pursuing what they desire but should allow you to discover your limitless potential to solve the different kinds of challenges that may come your way. I believe challenges give rise to great experiences that shape us into a well of knowledge that can solve any problem that may arise" **Alice.**

TARISAI MADENGA
Quality Engineer



Tarisai is a Civil and Water Engineer supporting the project in the capacity of a Quality Engineer. Her roles involve collecting data through document reviews, site inspections and tests; analysing data and providing advice to ensure compliance to the project requirements as well as the governing standards; regulations and controlling all the documents related to quality.

AGNESS NSABASHI
Health, Safety and Environment Officer



Agness ensures that Health, Safety and Environment (HSE) systems are implemented, and respective plans are transmitted to all employees and implemented in accordance with legal framework. She is responsible for the HSE risk management processes and compliance obligations. Agness performs periodic HSE audits to evaluate gaps between established HSE standards and the actual prevailing status and taking appropriate actions to close them.



ELINA CHUMA KANGUMU
Site Nurse



Chuma is responsible for providing first-aid, responding to emergencies, evaluating employee's health and providing initial diagnosis on medical conditions, maintaining employee health records as well as appraising the safety and health hazards in the work environment, inspecting the work areas and equipment used by personnel for safety compliance, educating employees on preventative measures against occupational hazards, promoting healthy living and working conditions, providing counseling and attending to daily consultations of workers and employees on site.

JANE NAMBEYE
Administrative Assistant



Jane carries out all administrative duties such as filing (electronic and hard copy); draft letters; binding; scanning; schedule meetings; maintaining office equipment; arranging travel bookings; organising pick-ups and accommodation reservations bookings.

ELIDA KAPESA
Jib Crane/Hoist Operator



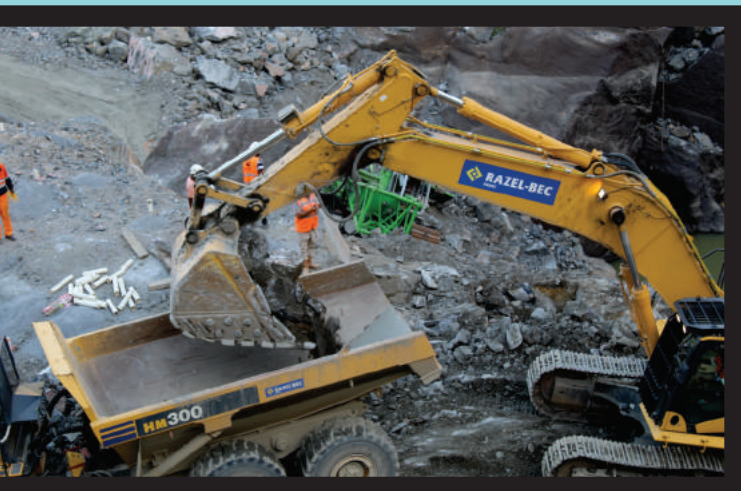
Elida is an Excavator Operator trained by the Zambian National Council for Construction in November 2012. In line with the KDRP skills transfer program, Freyssinet trained Elina on how to operate Jib Cranes and Hoists in 2022. She was assessed in May 2022 and was certified as a TEVETA level I (Artisan) Crane/Hoist Operator. Her key duties involve moving workers in the hoisting/ lifting equipment and maintaining rigging procedures to ensure safety during heavy lifts.

HydroKarst – Subcontractor

CAROLINE HUCHET
Site Manager



Caroline is a qualified Civil Engineer. She oversees the installation, dewatering, and removal of a cofferdam on the upstream side of the dam. She coordinates and supervises the diving and rope access procedures, hydromechanical teams and the main hoisting system (portal frame) teams at the spillway project. She monitors site quality procedures and schedules by adhering to good EHS practises, technical specifications, drawings, and instructions. She also facilitates procurement of equipment and other goods and services.



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