



ANNUAL REPORT 2020

and Financial Statements for the year ended
31st December 2020

33RD EDITION

2020 Annual Report and Financial Statements
Published by the Public Relations and Communications Unit
E-mail: pr@zambezi.org

Zambezi River Authority

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2020 Annual Report and Financial Statements

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The principles we thrive on!

“The Authority recognizes the importance of adopting and practicing good corporate governance in its business operations. To this end, the Authority subscribes to and actively champions, the principles of sound corporate governance and always strives to ensure that the principles of fairness, transparency and accountability inform all its business decisions...”

The Board Charter



The Board Co-Chairperson, Mr. Trevor K. Kaunda (m) with the Authority Chief Executive, Eng. Munyaradzi C. Munodawafa (r) unveiling the 2020-2024 Corporate Strategy document during the launch in October 2020.

Corporate Governance

Message from the Chairperson, Dr. Gloria S. Magombo Secretary, Ministry of Energy, Zimbabwe



On behalf of the Board of Directors, it is my sincere honour and privilege to share the Zambezi River Authority's 2020 Annual Report and Financial Statements. These summarize how the Authority rolled out its activities as planned in keeping with the 2020-2024 Corporate Strategy which was launched within the course of the year under review.

While the year was generally a turbulent one due to the outbreak of the COVID-19 global pandemic, the Authority rose above the challenges and delivered on its mandate.

The financial performance during the year under review echoes the deliberate governance efforts which were aimed at addressing the Authority's mandate of contributing to the economic, industrial, and social development of the Republics of Zambia and Zimbabwe through the efficient and prudent utilization of the Zambezi River along the shared border between the two countries.

Budget Performance Review

During the year, the Authority's operating income was US\$23.70 million compared with the budget of US\$19.09 million, giving rise to a favourable variance of 24%. This was as a result of the quantum of water availed to the two Utilities, ZESCO Limited and Kariba Hydro Power Company (KHPC). The combined water utilisation was 36.92 Billion Cubic Metres (BCM) against an allocation of 27.00 BCM.

Furthermore, the operating expenditure was US\$11.72 million against a budget of US\$19.71 million resulting in a favourable variance of 40%. This represented a budget performance of 60% attributed to, among other factors, the outbreak of the COVID-19 pandemic.

However, the Authority experienced an adverse liquidity situation due to non-settlement of water sales invoices by the two Utilities and the foreign exchange control regulations that restricted access to Authority funds held in commercial banks in Zimbabwe.



KDRP Plunge Pool reshaping Cofferdam Piers under construction

As a result of the non-settlement of water utilisation invoices, the total receivables from the two Utilities amounted to US\$47.48 million while the ring-fenced funds held in Zimbabwe was US\$16.20 million, bringing the total amount of funds the Authority could not access to US\$63.68 million. The Authority's liquidity ratio continued to show a very good outlook of 2.09 times of current assets which could cover the existing liabilities. However, when the inaccessible funds mentioned above were removed, the Acid Test Ratio was 0.03 or about 3% of current liabilities that could be covered by liquid assets. This underscored the precarious liquidity situation the Authority was facing. In that regard, the Authority continued to engage the two Utilities with a view to ensuring that the Utilities settled their outstanding obligations.

Subsequently, the Authority made positive strides regarding the collection of trade receivables. Payment plans were agreed with the two power generation Utilities for expunging the debt, resulting in the Authority being able to clear off some of its long outstanding creditors. In this regard, the Authority also agreed payment plans with its remaining key creditors in order to settle the Authority's outstanding obligations.

In that regard, the full range of obligations the Authority was yet to discharge stood at US\$ 34.6 million: with the main components being payments to the Government of the Republic of Zambia in respect of the Kariba Dam Rehabilitation Project (KDRP) Loans and retrenchment packages for employees in Zambia which accounted for 48% and 25%, respectively.

Maintenance of Kariba Dam

While the ongoing major rehabilitation works unfolded, maintenance of the dam continued to be given priority as prescribed in the Standing Operating Procedures (SOP) manual.

The technical team implemented the annual clean-up and repair programme with the help of contract staff. Despite the unavoidable delays caused by the halting of works which lasted for several months due to the COVID-19 pandemic, much of the tasks were executed in good time.

Implementation of the Kariba Dam Rehabilitation Project (KDRP)

The Kariba Dam Rehabilitation Works continued throughout the year. The Authority made tremendous

progress under the two components of the KDRP, namely the Plunge Pool Reshaping works and Spillway Gates Refurbishment respectively as follows:

i) Plunge Pool Reshaping Works

Stucky Limited, the Contractor tasked with being the Supervisor's Representative, continued to mobilise expert staff required for the supervision and management of the project. At the close of the year 2020, the following works were completed by the Contractor (Razel-Bec):

- a) Construction of the temporary access road above water level (up to 390 m.a.s.l).
- b) Construction of the permanent access road over the ZESCO Limited tailrace platform.
- c) Construction of Pier 1 and the north-bank wing wall.
- d) Construction of Piers 2 to 5.
- e) Construction of Sills 2 to 5 and installation of Embedded Parts.

While the Plunge Pool Reshaping works were scheduled to be completed by December 2021, the unforeseen cofferdam geological foundation challenges that were encountered had significant impact on the previously planned project timelines. As such, the estimated completion date was postponed from May 2021 to May 2024.

ii) Spillway Gates Refurbishment

I am glad to mention that the selected Contractor recorded some milestones on this aspect of the dam rehabilitation works, which were accomplished with very minimal impact with respect to the COVID-19 pandemic. The project, which commenced on 23rd September 2019, is scheduled to be completed on 23rd December 2023 by the Consortium of GE Hydro France & Freyssinet International as the Contractor.

Some of the key milestones attained during the year under review are as follows:

- a) Manufacturing with successful Final Acceptance Test of Stop beams elements completed in China (remote inspection organized by the Contractor).
- c) Commencement of the concrete trial test process with the new source of aggregates located in Zimbabwe.
- d) Commencement of the assembly and erection of the Portal Frame by year end.
- e) The lifting and sliding of the pre-cast concrete beams on Sluice no. 5 and 6.
- f) Completion of the cutting of the concrete beams from Sluice 5 and 6 and the disposing of the parts at authorized dumpsites in Zambia and in Zimbabwe.

Hydrological Outlook and Reservoir Operations at Kariba

The Kariba Catchment was poised to receive normal to above normal rainfall during the 2019/2020 rainfall season. The rainfall performance in the Zambezi River Basin as monitored by the Southern African Development Community Climate Services Centre (SADC CSC) indicated that the Kariba Upper Catchment upstream of Victoria Falls recorded normal to above normal rainfall while the larger part of the Kariba Lower Catchment received generally below normal rainfall.

Lake Levels at Kariba

The Lake level at Kariba receded by 1.38m from 477.99m recorded on 1st October 2019 at the commencement of the 2019/2020 rainfall season to its lowest 2019/20 level of 476.61m on 12th January 2020 before gaining 4.69m to peak at 481.30m on 30th June 2020, the latter being 5.80m above the Minimum Operating Level (MOL). After that, the Lake continued receding, registering 479.85m on 30th September 2020, giving a net annual gain of 1.86m during the 2019/20 hydrological season. The Lake closed the year 2020 at 478.38m on 31st December with 13.01 Billion Cubic Metres (BCM) of usable storage, representing 20.08% of usable capacity.

Water Allocation and Utilisation for Power Generation at Kariba Dam

The positive outlook in rainfall over the Zambezi Catchment that resulted in increased Lake Kariba inflows during the first half of 2020 made it possible for the Authority to raise the 2020 combined water allocation for energy generation at Kariba Dam from the initial 22 BCM allocated at the beginning of the year to 27 BCM in July 2020. The two Utilities utilized a combined total of 36.93 BCM of water during the period January to December 2020, with ZESCO and KHPC utilizing 57.16% and 16.4% respectively above their annual allocation at their respective North Bank and South Bank power stations.

Implementation of the 2400MW Batoka Gorge Hydro-Electric Scheme (BGHES)

The Authority made tremendous progress in the planned development of the BGHES. The four major activities undertaken during the year 2020, are as follows:

- a) Preparatory studies
- b) Pre-development activities by the Developer
- c) Land acquisition for the project
- d) Mobilisation of project finances

Enhancement of the Authority's Corporate Image: Media Coverage

The Authority continued to strengthen media relations by developing and implementing plans that enabled it to work closely with key local, regional, and international media houses in a deliberate and planned effort to enhance coverage of the Authority's activities.

The year opened with a 17% coverage and closed off at 30%. The stories generated were largely positive with a few isolated negative ones.

The coverage was primarily initiated in-house through the timely preparation and issuance of press releases on water levels; KDRP and BGHES among others.

Implementation of Projects Under the Zambezi Valley Development Fund (ZVDF)

As the Authority endeavors to improve the well-being of the communities that were displaced during the construction of the Kariba Dam, various planned projects continued to be implemented under the auspices of the Zambezi Valley Development Fund (ZVDF). This Annual Report highlights some projects that were executed in 2020 in the two Contracting States as follows:

ZVDF Projects implemented in Zambia

- a) Sinafala Secondary School in Gwembe District
- b) Nkandazovu Secondary School in Kalomo District

ZVDF Projects implemented in Zimbabwe

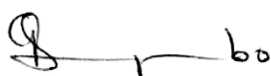
- a) Ntivule Primary School in Binga District.
- b) Chisipite Primary School in Hurungwe District.
- c) Gatche Gatche Irrigation Scheme in Kariba District.

Changes in Corporate Governance

I wish to extend special welcome, on behalf of the Board of Directors, to the new Chairperson of the Authority's Council of Ministers, Hon. Zhemu Soda, MP, the Zimbabwean Minister of Energy and Power Development. During the same year, we bade farewell to Hon. Fortune Chasi, MP, the former Zimbabwean Minister of Energy and Power Development.

Acknowledgments

With support from cooperating partners, stakeholders, Management and staff, the Authority remains committed to enhancing the economic and social lives of the peoples of the two Republics.



Dr. Gloria S. Magombo
Board Chairperson
Secretary - Ministry of Energy & Power Development
ZIMBABWE

About Zambezi River Authority

MISSION

To encapsulate safety, professionalism, and respect in harnessing the water resource for socio-economic development, exhibiting integrity through honesty.

VISION

To be the model organisation in dam and water resources management in the Zambezi river basin.

VALUES

Safety - Protection anchored on care, wellness, health and peace of mind.

Honesty - Trust premised on accountability and transparency.

Integrity - Fairness encompassing justice as well as responsibility.

Professionalism - Innovation for adaptability rooted in diligence, commitment, communication and self-improvement.

Respect - Love for teamwork and family with empathy.

To assist employees to internalise these core values, an acronym for the values [Safety (S), Honesty (H), Integrity (I), Professionalism (P) and Respect (Re)], **SHIPRe**, was devised.

ZAMBEZI RIVER AUTHORITY PROFILE

The Zambezi River Authority was established as a body corporate on 1st October 1987 by parallel legislation in the Parliaments of Zambia and Zimbabwe following the reconstitution of the Central African Power Corporation (CAPCO).

The Authority is jointly and equally owned by the Governments of Zambia and Zimbabwe.

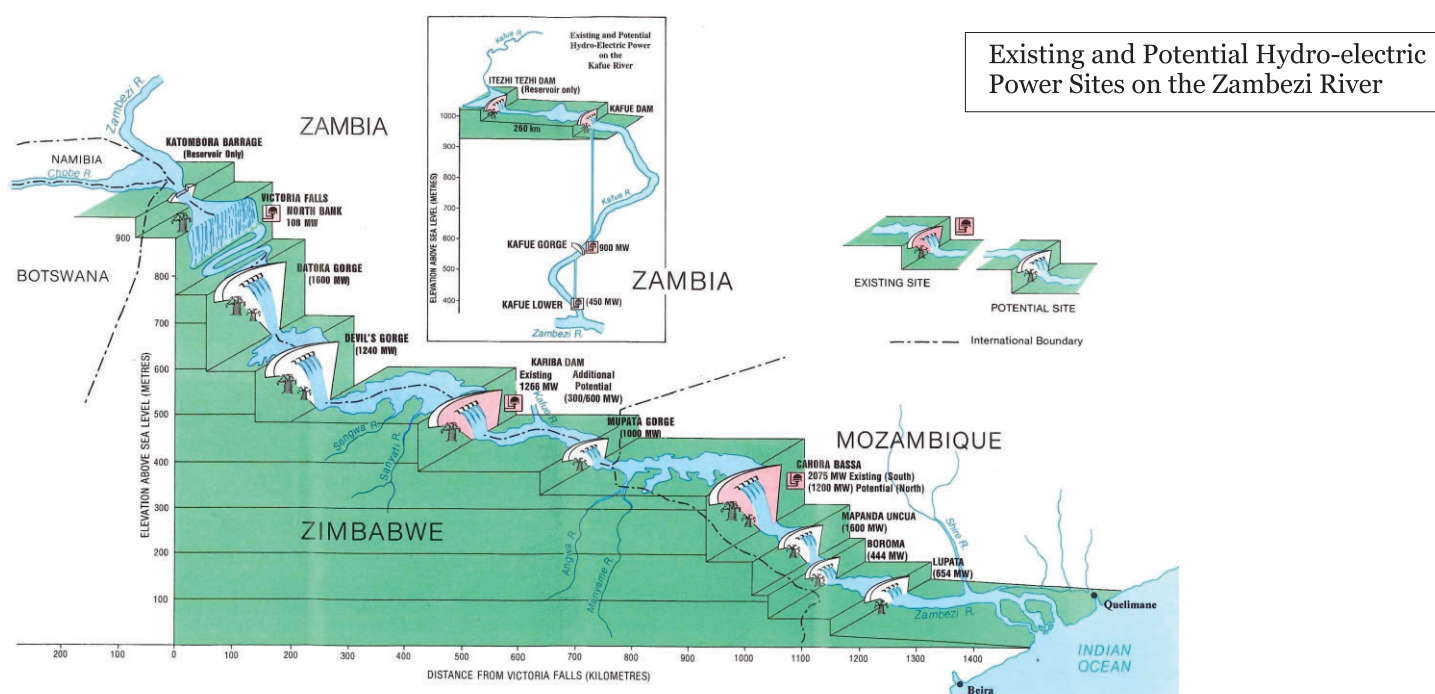
The Authority's primary function is to operate, maintain, monitor, and regulate the water level in the Kariba Dam reservoir. It is also mandated to construct, operate, monitor, and maintain any other dams on the Zambezi River and to collect, accumulate and process hydrological and environmental data of the Zambezi River for better performance of its functions and for any other purpose beneficial to the Contracting States.

KEY STRATEGIC FUNCTIONS

The following are the key strategic functions of the Authority.

- The operation, monitoring and maintenance of the Kariba Complex.
- 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 of Ministers (COM).
- To construct, operate, monitor and maintain any other dams on the Zambezi River.
- To collect, accumulate and process hydrological and environmental data of the Zambezi River for the better performance of its functions and for any other purpose beneficial to the Contracting States.
- Regulate the water level in the Kariba reservoir and any other reservoirs owned by the Authority.
- Submit development plans and programmes to the COM for approval.

The Authority is the only dam management organisation serving two states within the Zambezi River basin. The Authority generates its revenue from the sale of water from the Kariba Dam which is used for power generation by ZESCO Limited in Zambia and KHPCC in Zimbabwe.



EXISTING AND POTENTIAL HYDRO-ELECTRIC POWER SITES ON THE ZAMBEZI RIVER

The image shows the existing Hydro-Electric Power Scheme (the Kariba Complex) as well as the envisaged ones such as the Batoka Gorge Hydro-Electric Scheme (BGHES), the Devil's Gorge and Mupata Gorge Hydro-Electric Schemes.

COUNCIL OF MINISTERS

The Zambezi River Authority is governed by a Council of Ministers (COM) consisting of four Ministers, two of whom represent the Government of the Republic of Zambia while the other two represent the Government of the Republic of Zimbabwe.

The Ministers designated as members of COM are those who hold the portfolios of Energy and Finance in the Contracting States.

According to the ZRA Acts, the Chairpersonship of the COM is held alternately by the Ministers responsible for Energy in the Governments of Zambia and Zimbabwe. For the year under review, Zimbabwe held the Chairpersonship of COM.

BOARD OF DIRECTORS

The Authority's Board of Directors comprises two Permanent Secretaries with the Energy portfolios and two Permanent Secretaries with the Finance portfolios in the two Contracting States. In addition, the Board also comprises one independent member from each Contracting State. The Board is chaired alternately by the Energy Permanent Secretaries.

2020 TO 2024 STRATEGIC OBJECTIVES

- To increase water storage volume on the Zambezi River Basin catchment under the Authority's jurisdiction from the current 181 billion cubic metres to 182.65 billion cubic metres by 2024.
- To improve Corporate Governance and compliance from 86% to 98% by 2024.
- To increase access to sustainable social- amenities in the Riparian Communities by US\$1.2million by 2024.
- To reduce the negative variance between actual and forecasted volume of water allocated for power generation from 10% to 3% by 2024.
- To reduce resistance to organisational change by 50% annually from baseline to be established by December 2020.
- To increase partnership satisfaction index by 10% annually from baseline to be established by December 2020.
- To improve client satisfaction index from 60% to 98% by 2024.
- To improve organisational performance by 10% annually from baseline to be established by December 2020.
- Improve the Acid test ratio from 3% to 75% by 2024.
- Increase Non-Traditional Revenue Growth from 1.5% to 2.5% of Operating Revenue by 2024.

THE COUNCIL OF MINISTERS



Hon. Zhemu Soda
COM Chairperson
Minister of Energy and
Power Development
(Zimbabwe)
Appointed: 14/08/2020



Hon. Mathew Nkhuwa
COM Co-Chairperson
Minister of Energy
(Zambia)



Hon. Dr. Bwalya
Ng'andu
Minister of Finance
(Zambia)



Hon. Pro. Mthuli Neube
Minister of Finance and
Economic Development
(Zimbabwe)



Hon. Fortune Chasi
COM Chairperson
Minister of Energy and
Power Development
(Zimbabwe)
Retired: 14/08/2020

THE BOARD OF DIRECTORS



Dr. Gloria S. Magombo
Board Chairperson
Secretary, Ministry of
Energy & Power
Development (Zimbabwe)



Mr. Trevor K. Kaunda
Board Co-Chairperson
Permanent Secretary,
Ministry of Energy
(Zambia)



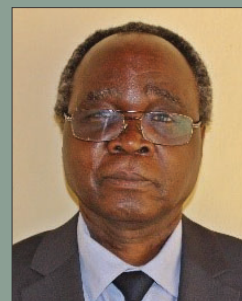
Mr. George T.
Guvamatanga
Secretary
Ministry of Finance
(Zimbabwe)



Mr. Mukuli Chikuba
Permanent Secretary
Ministry of Finance
(Zambia)



Mr. Israel Rwodzi
Independent Board
Member (Zimbabwe)



Mr. Pascal Mubanga
Independent Board
Member (Zambia)

EXECUTIVE MANAGEMENT



Eng. Munyaradzi C.
Munodawafa
Chief Executive



Mr. Peter Kapinga
**Board Secretary/
Corporate Services
Director**



Mr. Edward M. Kabwe
**Director
Finance**



Eng. David Z.
Mazvidza
**Director
Projects and Dam
Management
Services**



Eng. Christopher
Chisense
**Director
Water Resources and
Environmental
Management**

SUMMARY OF BOARD CHARTER

The Authority recognizes the importance of adopting and practicing good Corporate Governance in its business operations. To this end, the Authority subscribes to and actively champions, the principles of sound corporate governance and always strives to ensure that the principles of fairness, transparency and accountability inform all its business decisions.

The Authority's Board of Directors ("the Board"), in terms of the Zambezi River Authority Acts Chapter 467 and 20:23 ("the ZRA Acts") of Zambia and Zimbabwe, respectively, is responsible for the policy, control and management of the Authority. The Board, in the discharge of its aforesaid statutory functions, recognizes that there is a contribution that good Governance and attendant procedures could make to the Authority particularly in enhancing the Authority's performance and efficient utilization of resources; further cementing of stakeholder relations and increasing its prospects of access to local, regional and international capital as well as hedging against reputational and investment risks. It is this recognition that motivated the Board to adopt the Board Charter as one of the Authority's several strategic interventions aimed at placing the Authority as one of the leading good Corporate Governance champions in the Water and Energy sector within the region and beyond.

The Board Charter is moulded around fostering the following principles in the discharge of business operations by the Authority: Transparency; Accountability; Honesty; Integrity and Fairness. Inherent in these principles and elaborated more within the provisions of the Board Charter are good ethical conduct, avoidance of conflict of interest, corporate social responsibility as well as compliance to regulatory and statutory provisions.

REMUNERATION AND COMPENSATION POLICY FOR BOARD MEMBERS

The Remuneration and Compensation Policy is provided in the Board Charter as follows: -

- a) Each member of the Board shall be paid out of the funds of the Authority such remuneration and allowances, if any, as the Council of Ministers may determine.
- b) Currently, Board Members are paid a quarterly fee determined and approved by the Council of Ministers and a variable fee per each meeting. The Chairperson and the Co-Chairperson are paid amounts which are higher than the rest of the Members to compensate for the increased responsibilities that they perform.
- c) In addition, a fixed sum subsistence allowance is paid to Board Members when they attend meetings held outside their hometowns.

REMUNERATION AND COMPENSATION FOR THE YEAR 2020

The total remuneration and compensation availed to Board members during the year 2020 was US\$139,000.00.

BOARD COMMITTEES

The Board recognises that in this global and complex business environment, demand on the Board's time continues to increase thereby necessitating the need to delegate issues to specialist Board Committees.

In this regard, the Board Charter in Articles 26; 27 and 28 provides for the establishment of three (3) Board Committees as follows:

a) Finance, Human Resource and Remuneration

The Committee has been charged with the prime responsibility of reviewing accounting systems and financial reporting to safeguard the Authority's assets; monitoring the competence with which the Budget activities are carried out and recommending to the Board measures that would ensure the Authority's continued viability.

The Committee has also been mandated to review and recommend to the Board, comprehensive policies and strategies relating to the remuneration and terms and conditions of employment of employees, succession planning, training and development and separations.

The Committee has further been charged with the prime responsibility of reviewing and recommending Executive Management employees' and Director's remuneration policies by ensuring that such policies remain relevant in attracting, retaining and motivating both Executive Management employees and Directors.

The Committee had the following members:

S/N	Name	Position	Country
1	Mr. George T. Guvamatanga	Secretary, Ministry of Finance & Economic Development	Zimbabwe
2	Mr. Mukuli Chikuba	Permanent Secretary, Ministry of Finance	Zambia

b) Audit, Risk Management and Corporate Governance

The Committee reviews accounting systems and financial reporting to safeguard the Authority's assets, monitors the competence with which external audits are carried out and ensures that the Auditor's recommendations are given due consideration.

In order to improve performance, the Board must understand how to better manage risk. The Committee is therefore charged with the duty and responsibility of ensuring that the Authority has appropriate risk management systems and that the Board understands the key risk factors, their likely impact on Authority operations as well as how well the risk mitigation factors are working.

Further, the duty and responsibility of the Committee in relation to Corporate Governance is to ensure sound structures and systems in the Authority, consider and deliberate on matters relating to the Board and individual Board Members, including appointments, induction, training and development and Board Procedures.

The Committee had the following members:

S/N	Name	Position	Country
1	Eng. Israel Rwodzi	Independent Board Member	Zimbabwe
2	Mr. Pascal Mubanga	Independent Board Member	Zambia
3	Ms Tariro Mhuka	Independent Committee Member	Zimbabwe
4	Mr. David Kalaba	Independent Committee Member	Zambia

c) Technical and Projects

The Committee is mandated to discharge the prime responsibility of reviewing technical issues arising from the two (2) engineering departments of the Authority being the Projects and Dam Management Services Department and Water Resources and Environmental Management Department, including reports issued by the Authority's consultants. The Committee also makes necessary recommendations to the Board on all technical issues.

The Committee had the following members:

S/N	Name	Position	Country
1	Eng. Israel Rwodzi	Independent Board Member	Zimbabwe
2	Mr. Pascal Mubanga	Independent Board Member	Zambia
3	Eng. Robson Chikuri	Acting Managing Director, Zimbabwe Power Company	Zimbabwe
4	Eng. Victor Mundende	Managing Director, ZESCO Limited	Zambia

Operations Reports



Water Resources & Environmental Management

Projects & Dam Management Services

Corporate Social Responsibility & Visibility

Corporate Services



1.

Water Resources & Environmental Management (WREM)

1.0 HYDROLOGY AND ENVIRONMENT

One of the functions of the Zambezi River Authority is to collect, process and accumulate hydrological data for the Zambezi River and its tributaries for purposes of sound and sustainable management of the Kariba Reservoir for hydropower generation and development. This function is well aligned with the Authority's 2020–2024 Corporate Strategy.

The Authority operates 15 Hydrometric Stations meant for both monitoring of river flows and operation of the Kariba Reservoir as shown in Figure 2 .

1.1 Rainfall Performance – 2019/20 Season

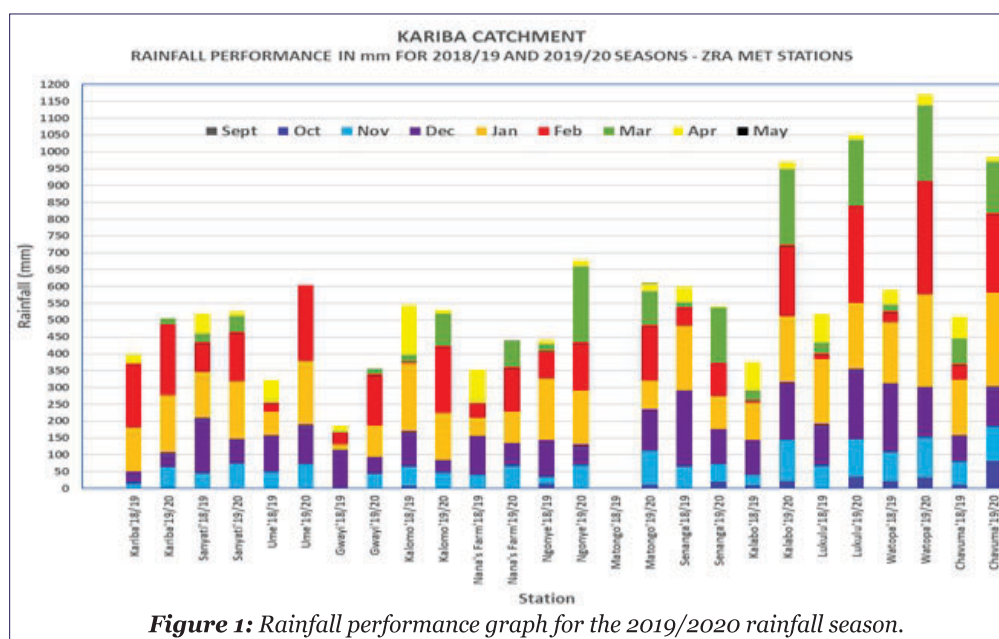
According to the Official Statement released by the Twenty-third Southern Africa Regional Climate Outlook Forum (SARCOF-23) in August 2019, the Kariba Catchment was poised to receive normal to above normal rainfall during the 2019/20 rainfall season.

Rainfall performance on the Zambezi Basin as monitored by the National Weather Service of the USA¹ as well as the SADC Climate Services Centre (SADC CSC)² indicated that the Kariba Upper Catchment upstream of Victoria Falls recorded normal to above normal rainfall (120 – 150% of 30-year average), while the larger part of the Kariba Lower Catchment received generally below normal rainfall (50 – 120%). Figures 1 and 2 show rainfall performance graph and map for the Kariba Catchment (ZRA Stations) and Southern Africa, respectively, for the 2019/20 rainfall season as of May 2020.

1.2 2020/21 Regional Climate Seasonal Forecast

The Twenty-Fourth Annual Southern Africa Regional Climate Outlook Forum (SARCOF-24) was held virtually from 27th to 28th August 2020 to present a consensus outlook for the 2020/2021 rainfall season over the SADC region.

The SARCOF-24 Official Statement indicated that the bulk of the SADC region was likely to receive normal to above-normal rainfall for most of the period October to December (OND) 2020, with north-



¹ https://www.cpc.ncep.noaa.gov/products/international/africa/africa_arc_18oday_ptts.shtml

² http://csc.sadc.int/en/climate/nalysis-charts?option=com_products&view=directories&directory_id=25

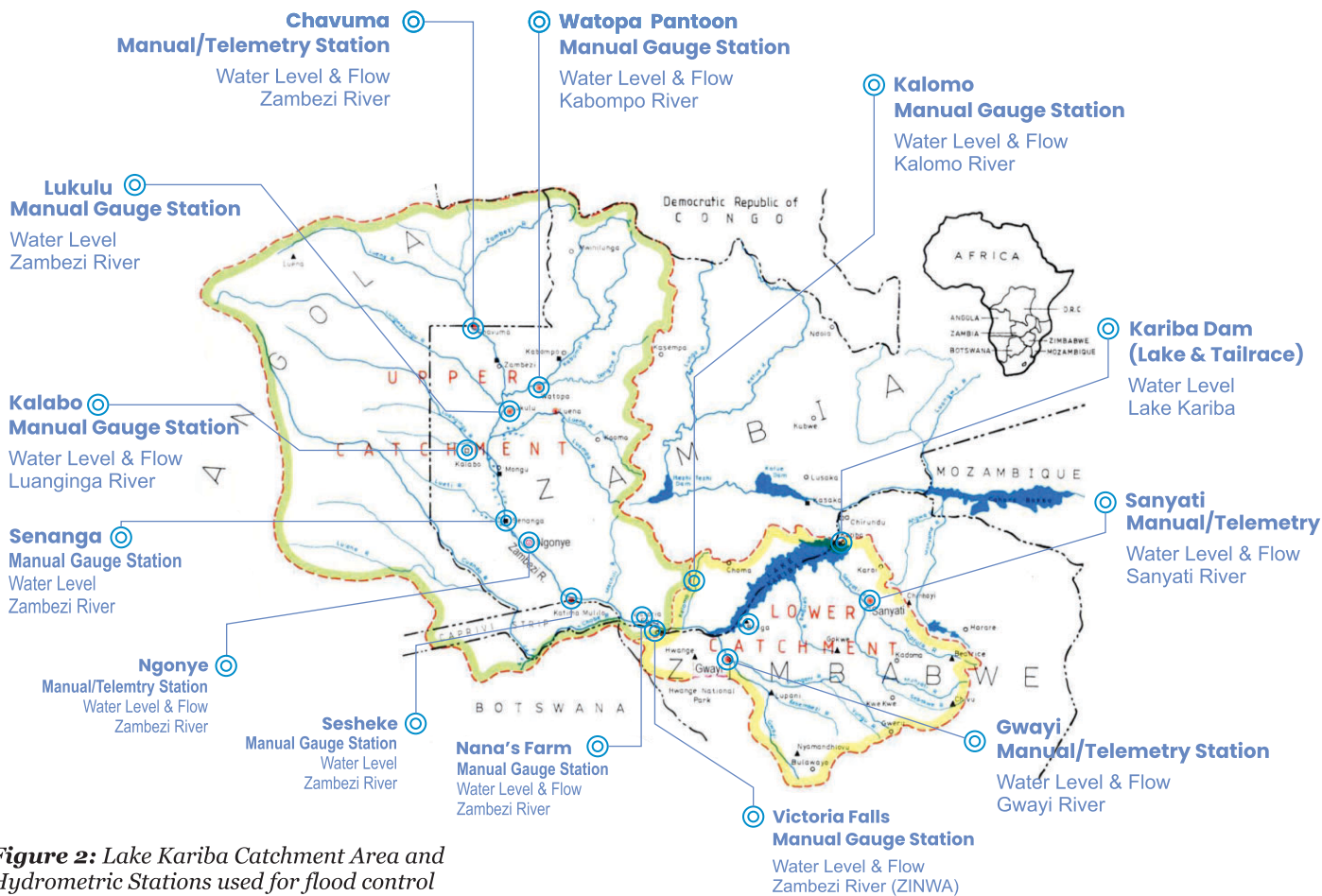


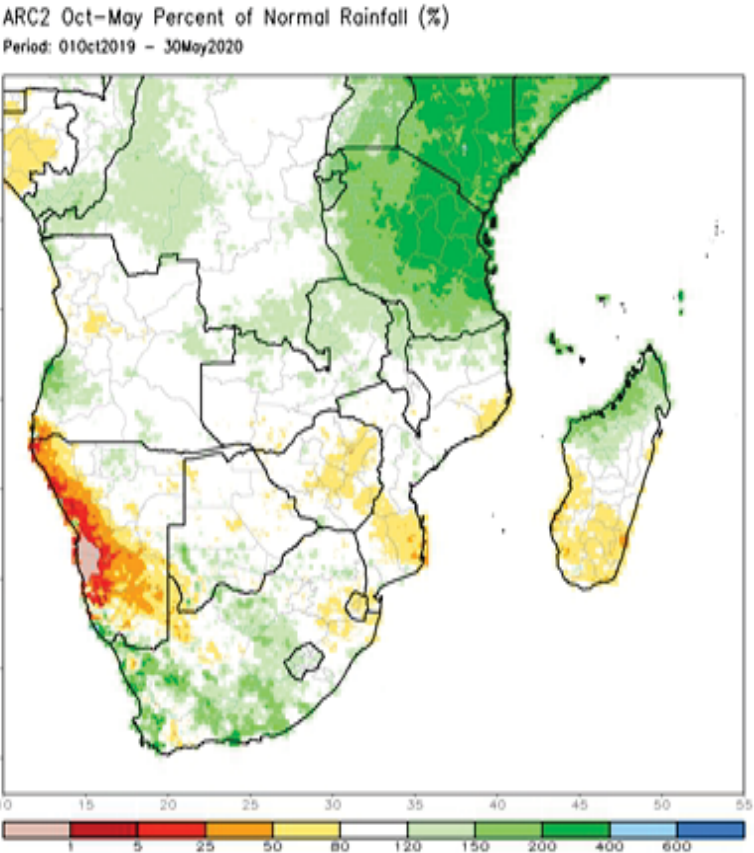
Figure 2: Lake Kariba Catchment Area and Hydrometric Stations used for flood control

western Angola, the bulk of the Democratic Republic of Congo, most of eastern Madagascar, northern Malawi, northern Mozambique, Seychelles, United Republic of Tanzania and north-eastern Zambia expected to receive normal to below-normal rainfall.

The January to March (JFM) 2021 period was expected to have normal to above normal rainfall for the entire region. The downscaled forecasts for Zambia and Zimbabwe indicated similar conditions with minor variations.

Figure 3: Cumulative Precipitation October 2019 - May 2020 as percentage of normal (1983-2012).

Source: https://www.cpc.ncep.noaa.gov/products/international/africa_arc/africa_arc_Oct-May_sa_pnorm.gif



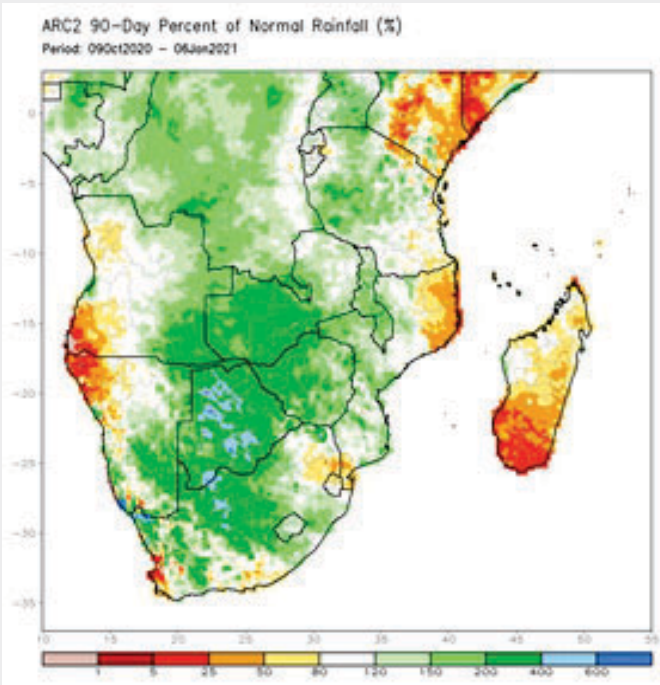


Figure 4: Cumulative Precipitation 9 October 2020 - 6 January 2021 as percentage of normal (1983-2012).

Source: https://www.cpc.ncep.noaa.gov/products/international/africa_arc/africa_arc_90day_sa_pnorm.gif

1.2.1 Rainfall Performance – 2020/21 Season

The first three months, October–December 2020, tilted towards above normal rainfall in the whole Kariba Catchment as depicted in Figure 4 .

From the rainfall map (Figure 4), it is evident that much of the Kariba Catchment in the last quarter of 2020 received between 120% - 400% of normal rainfall.

1.3 River Flows

The good rainfall experienced in the Kariba Upper Catchment and the rather poor rainfall on the Lower Catchment in the 2019/20 season resulted in above average flows at all stations on the mainstream of the Zambezi River being rather below average flows for all the tributaries in the Lower Catchment. There was high runoff recorded in the first three months of the 2020/21 hydrological season due to intense rainfall which resulted in river flows rising above the long-term mean.

The flow at Chavuma at the end of the 2019/20 hydrological season (September 30, 2020) was 114 m³/s, which was 70% and 173% higher than the long-term average (67 m³/s) and that of the previous season (42 m³/s, 2018/19), respectively. The annual mean flow for the Zambezi River at Chavuma for the 2019/20 hydrological year was 1,182 m³/s, which was 98% and 363% higher than the long-term mean for the station and that of the previous year, respectively.

In terms of volumes, a total of 37.39 bn/m³ was recorded at the Chavuma Station in the 2019/20 hydrological year, compared to 18.92 bn m³ long term average and 8.06 bn m³ recorded over the same period the previous year (2018/19).

The flows at the Victoria Falls station on the Zambezi River rose significantly from 171 m³/s recorded at the beginning of the 2019/20 hydrological season on 1st October 2019 and recorded two peaks of 4,289 m³/s and 4,568 m³/s on 31st March and 3rd May 2020, respectively. The season closed at 395 m³/s on 30th September 2020 while the 2020 calendar year closed at 579 m³/s on 31st December .

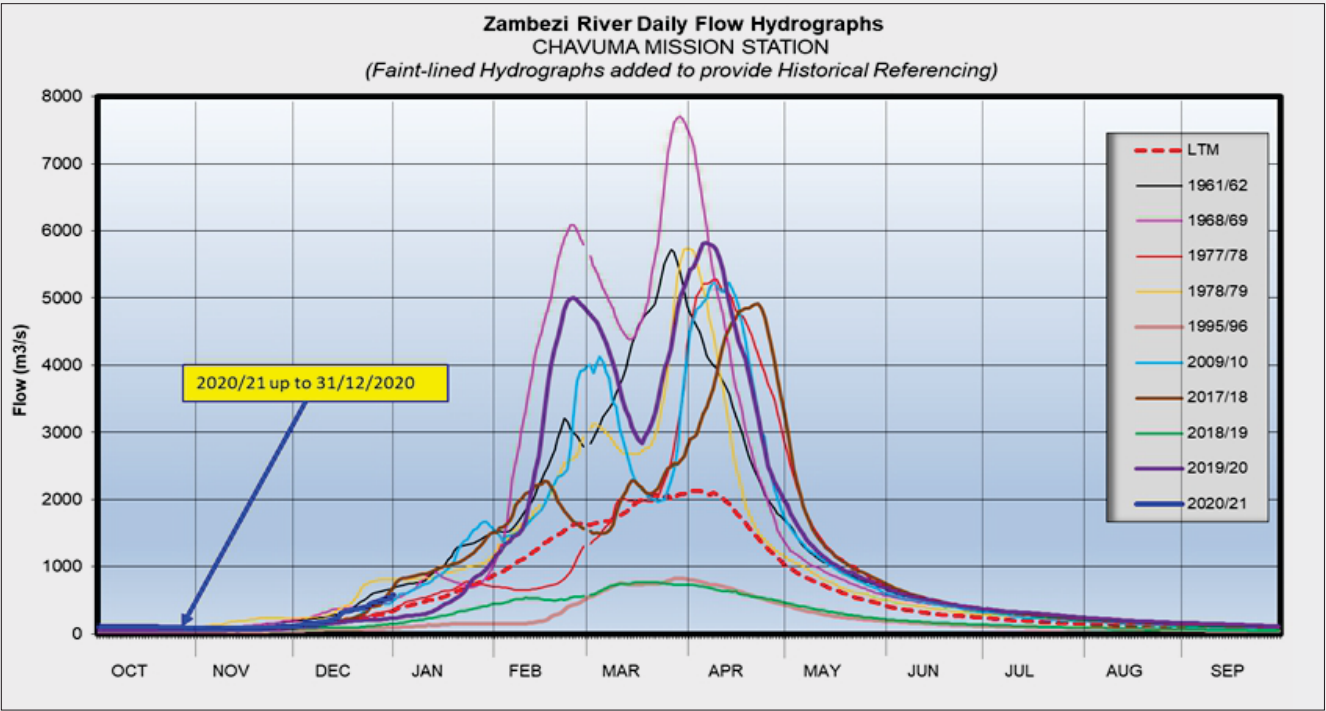


Figure 5: Chavuma Mission Station 2020/2021 Daily Flow as at 31st December, 2020.

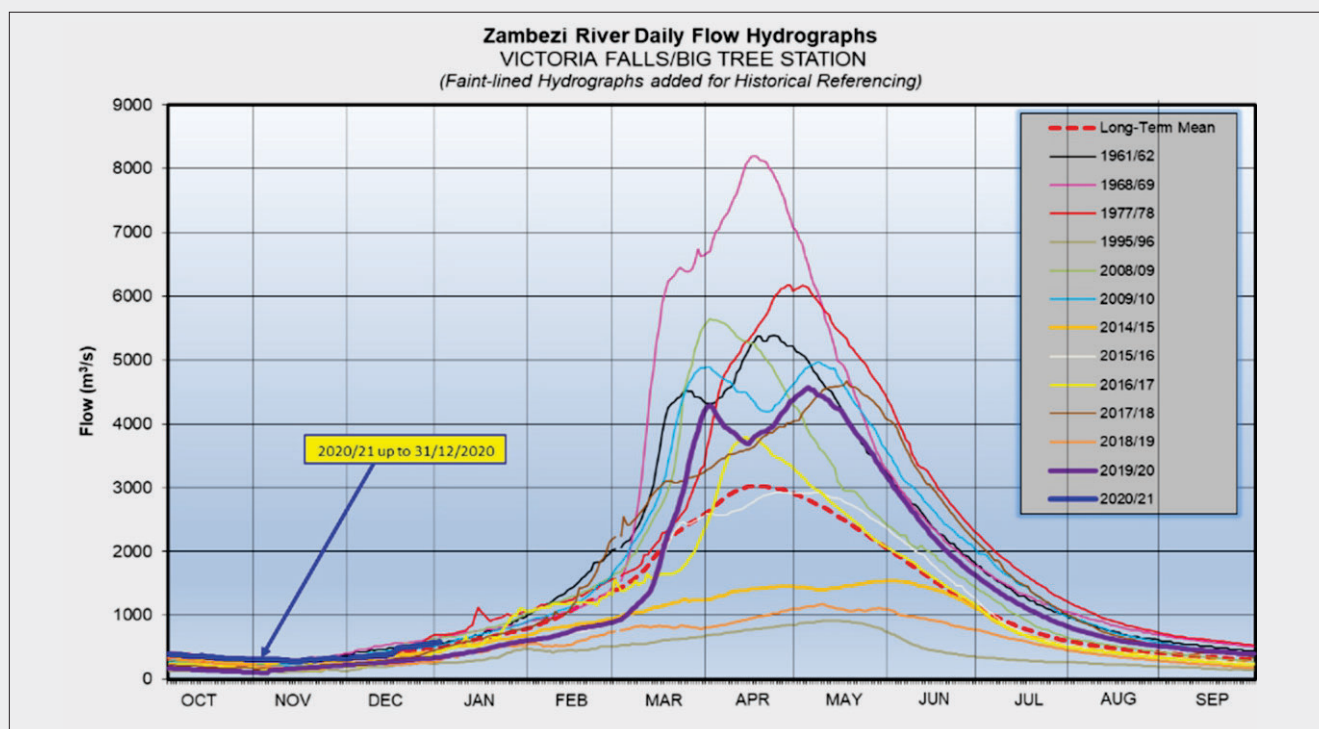


Figure 6: Victoria Falls/Big Tree Station 2020/2021 Daily Flow as at 31st December, 2020.

1.4 Lake Levels

The Lake level at Kariba dropped by 1.38m from 477.99m recorded on 1st October 2019 to its lowest 2019/20 level of 476.61m on 12th January 2020 before gaining 4.69m to peak at 481.30m on 30th June 2020, the latter being 5.80m above the Minimum Operating Level (MOL). After that, the Lake continued receding, registering 479.85m on 30th September 2020, giving a net annual gain of 1.86m during the 2019/20 hydrological season.

The Lake closed the year at 478.38m on 31st December 2020 with 13.01 BCM of usable storage, representing 20.08% of full usable capacity. In 2019, Lake Kariba closed at 476.69m with 8.23% of usable storage.

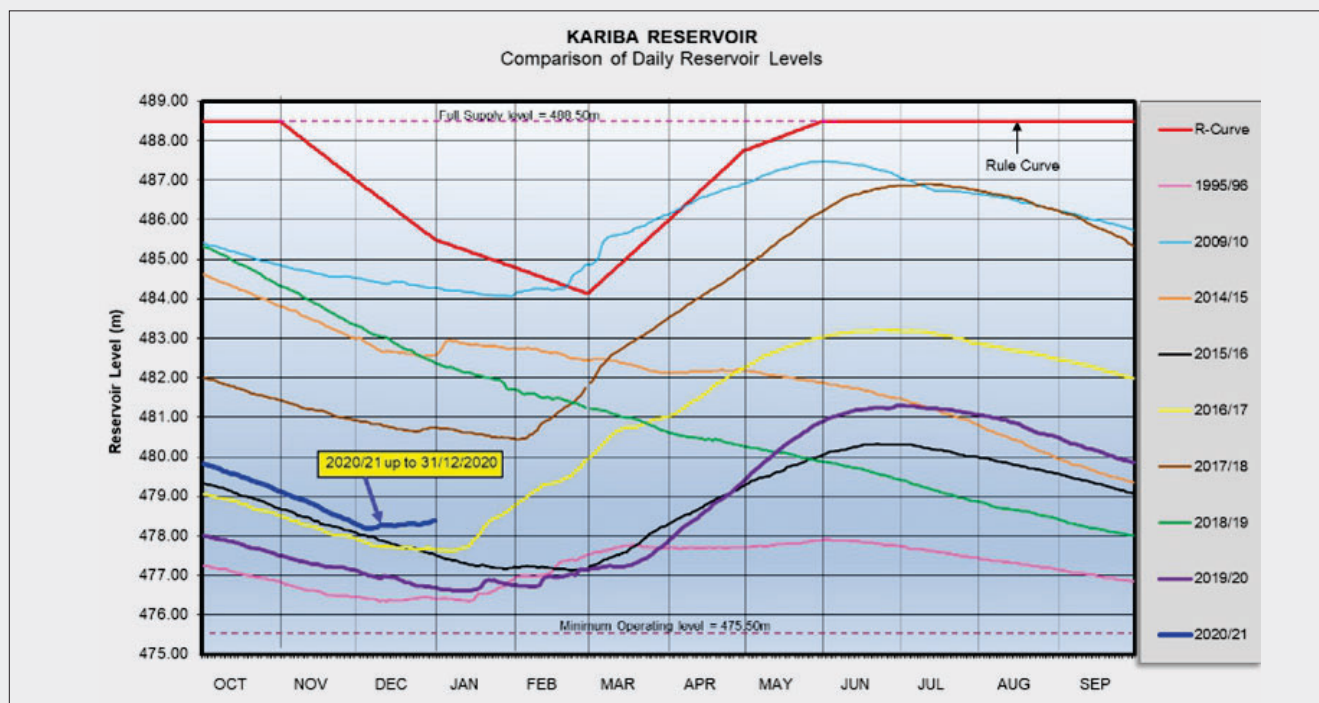


Figure 7: Lake Level hydrographs for various past rainy seasons in comparison with the 2020/21, 2019/20 and 2018/19 seasons..

1.4.1 Operating of Spillways

The spillway gates at Kariba remained closed during the period under review as the levels remained below the Flood Control Rule Curve. Consequently, no spilling operations were undertaken.

1.4.2 Water Balance

The total inflow into Lake Kariba during the year 2020 was 53.54 BCM, which was an increase of about 84% from the total inflow during the 2019 period.

During 2020, the Lower Zambezi Catchment accounted for 16% inflow to the Lake while the rest came from the Upper Zambezi Catchment. On the other hand, the total outflow from the Lake was 45.85 BCM, composed of 36.93 BCM turbine discharge and 8.92 BCM lost through evaporation. The net effect on the Reservoir was a storage increase of 7.69 BCM.

Table 4 and Figure 8 gives the annual water balance of Lake Kariba for 2020 compared to the two preceding years. Figure 9 presents a schematic representation of the monthly water balance dynamics for 2020. Historical water balance data is also presented graphically in Figure 10.

Flows	Description	2020	2019	2018
INFLOWS	From the Upper catchment	44.87	15.90	50.54
	From the Lower Catchment	8.67	2.94	11.25
	Total	53.54	18.84	61.79
OUTFLOWS	Turbine Discharge	36.93	36.02	43.14
	Spillways Discharge	0.00	0	0
	Evaporation	8.92	9.79	10.49
	Sub-total	45.85	45.81	53.63
	Storage Increase/Decrease	7.69	-26.97	8.16
	Total	53.54	18.84	61.79

Table 4: Comparative Annual Water Balance for Lake Kariba (January - December) (All volumes in Millions)

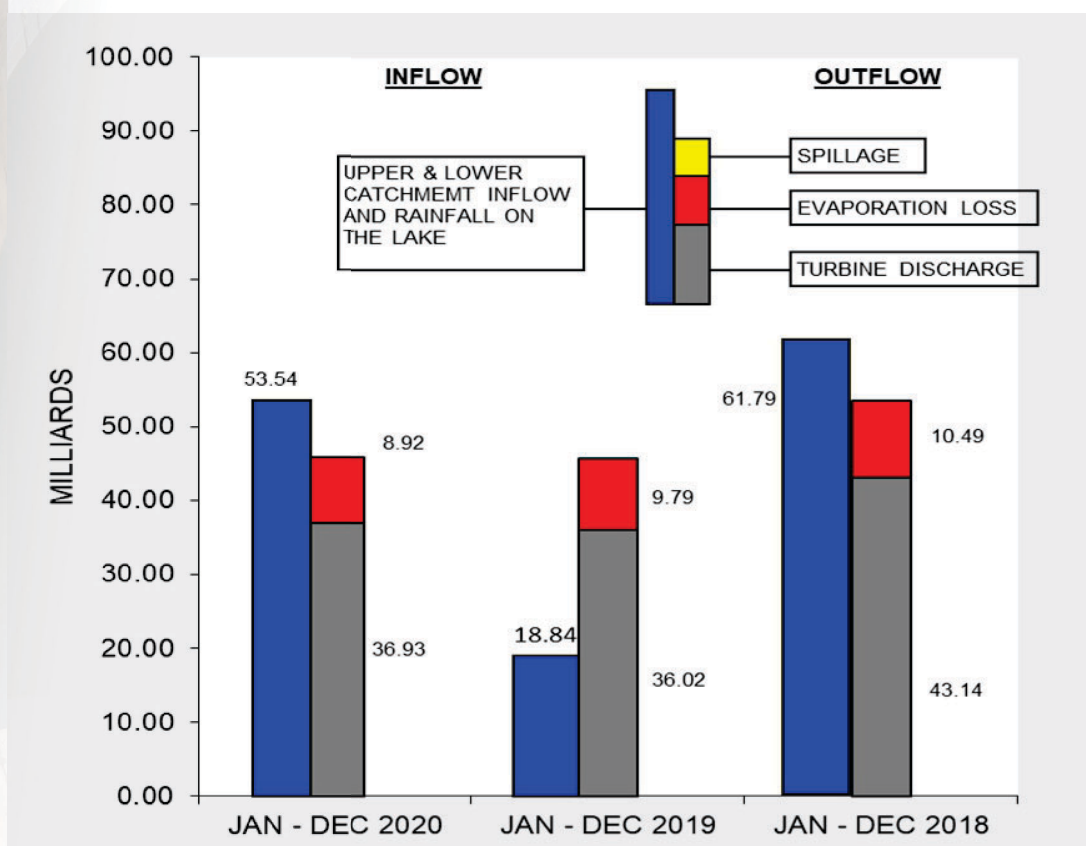


Figure 8: Lake Kariba water balance comparisons over three recent years.

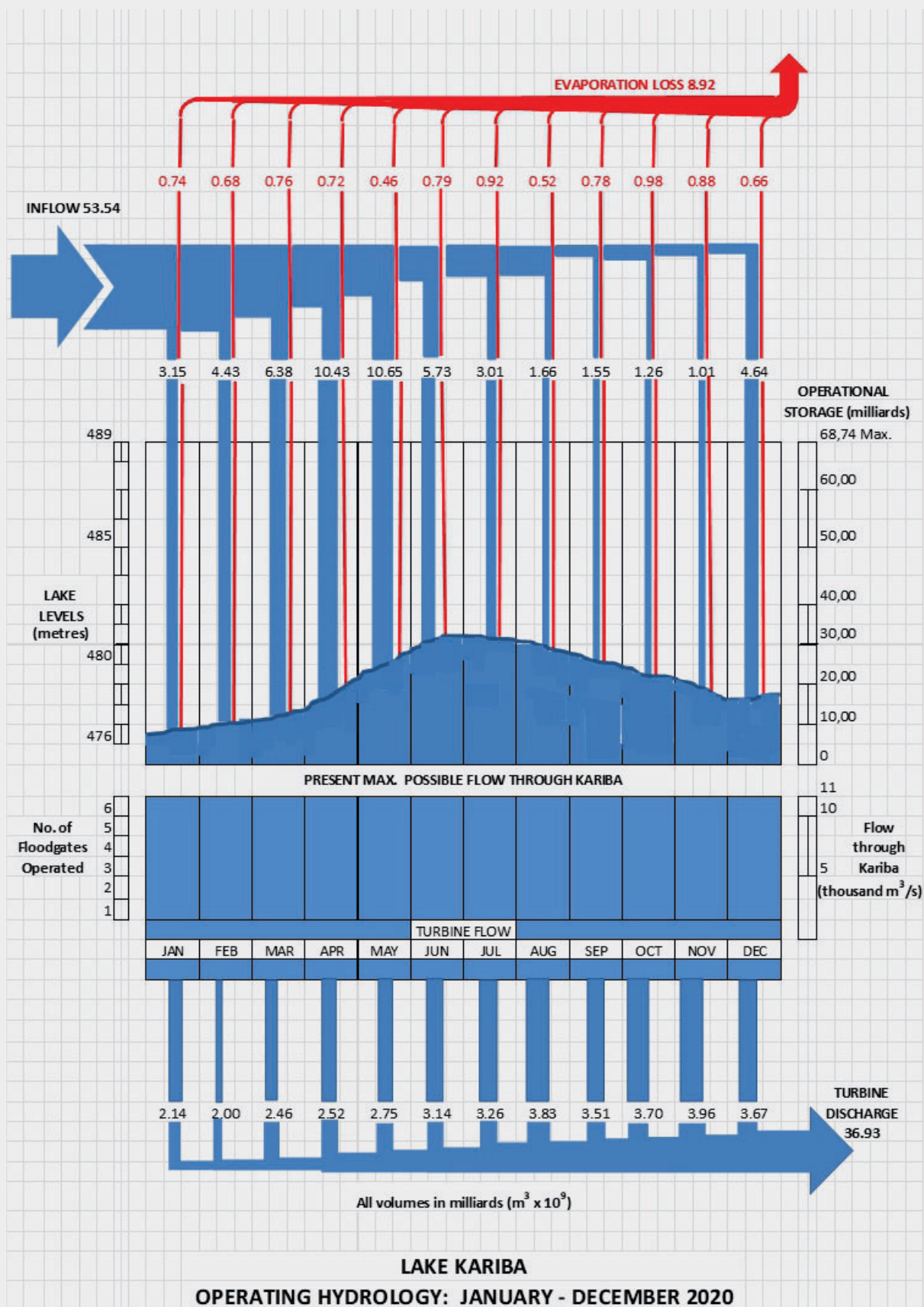


Figure 9: Schematic representation of the Kariba Water Balance for 2020.

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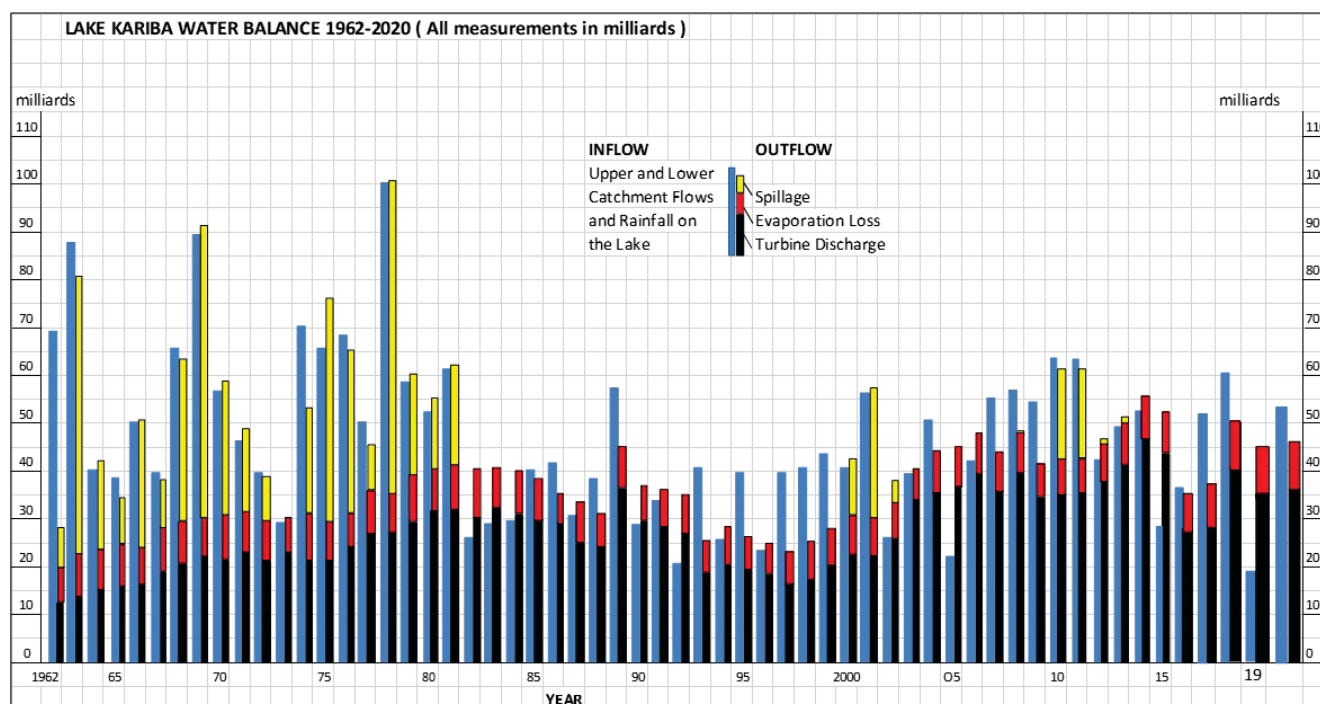


Figure 10: Lake Kariba water balance 1962 - 2020 (All Volumes in Milliards)

1.5 Water Usage for Energy Generation at Kariba

The positive outlook in rainfall over the Zambezi Catchment that resulted in increased Lake Kariba inflows during the first half of the year made it possible for the Authority to raise the 2020 combined water allocation for energy generation at Kariba Dam from the initial 22 BCM at the beginning of the year to 27 BCM in July 2020, potentially providing for a combined average generation of 750 MW at Kariba for the period January to December 2020.

MONTH	ZRA Monthly Allocation per Power Utility	Kariba North Bank ZESCO LTD				Kariba South Bank ZPC LTD				Cumulative Total (Actual) Utilisation at Kariba for Power Generation	
		Utilisation Plan	Actual Utilisation	Variance		Utilisation Plan	Actual Utilisation	Variance			
		(BCM)	(BCM)	(BCM)	...from Allocation Plan	...from Utilisation Plan	(BCM)	(BCM)	...from Allocation Plan	...from Utilisation Plan	(BCM)
JAN	1.13	1.13	1.23	8.39%	8.18%	0.90	0.92	-18.61%	1.74%	2.14	6.30%
FEB	1.13	1.13	1.13	0.45%	0.02%	0.90	0.87	-22.63%	-3.28%	4.14	12.18%
MAR	1.13	1.35	1.44	28.24%	6.87%	1.00	1.01	-9.80%	1.48%	6.60	19.41%
APR	1.13	1.20	1.78	58.40%	48.69%	0.70	0.73	-34.74%	4.89%	9.12	26.81%
MAY	1.13	1.20	1.84	63.90%	53.85%	0.90	0.91	-19.10%	1.12%	11.87	34.91%
JUN	1.13	1.35	1.67	48.13%	23.58%	1.50	1.47	31.09%	-1.68%	15.01	44.15%
JUL	1.13	1.46	1.50	33.38%	2.78%	1.90	1.76	56.18%	-7.52%	18.27	53.73%
AUG	1.13	1.41	2.02	79.73%	43.10%	1.70	1.80	60.39%	6.14%	22.09	64.98%
SEP	1.13	1.41	1.87	66.60%	32.65%	1.00	1.63	45.22%	63.37%	25.60	75.30%
OCT	1.13	0.81	1.99	77.03%	145.57%	1.00	1.71	51.60%	70.55%	29.30	86.18%
NOV	1.13	0.44	2.39	112.25%	443.93%	1.00	1.57	39.72%	57.19%	33.26	97.82%
DEC	1.13	0.45	2.35	108.89%	417.63%	1.00	1.32	17.51%	32.20%	36.93	108.62%
TOTAL	13.50	13.35	21.22	57.16%	58.95%	13.50	15.71	16.40%	16.40%	36.93	136.78%

Monthly Break-down for the 27BCM Allocation

Power Stations' Utilisation Plans for the 27BCM allocation

Table 5: Summary of Water Used for Power Generation at Kariba Complex in Billion Cubic Meters (BCM) January – December 2020

Cumulatively, the two Utilities utilized a combined total of 36.93 BCM of water during the period January to December 2020, with both ZESCO Limited and KHPC utilizing 57.16% and 16.40% respectively above their annual allocation.

Table 5 displays the detailed water usage statistics at Kariba Complex during the period January – December 2020.

1.6 Joint Operation Technical Committee (JOTC)

The Authority participated in meetings and processes involving the JOTC Dam Synchronisation Subcommittee (JOTC-DSS) on the proposed CIWA Project to enhance cooperation on Dam Management under the JOTC framework. The background is that the JOTC operators expressed interest in the CIWA-financed Zambezi River Basin Management Project (P143546) supporting basin-wide planning; water information systems; and legal studies to improve cooperation across the basin. Under this initiative, which is jointly coordinated with the World Bank, the JOTC intends to develop and apply digital tools to enhance member institutions' capability to optimize dam operations in the Zambezi Basin. Under the JOTC, the processes underway will see the establishment of Dam Synchronization among the basin's dam operators and water resources managers.

The activities that have continued to take place involve the development of a customized digital decision-support tool for JOTC operators to facilitate better operational decision-making and more optimized use of the water in the Zambezi watercourse. Much progress was recorded by the JOTC member institutions during the year regarding stream-lining the project concept note and implementation arrangements.

Spectacular view Upstream and Downstream of the Kariba Dam Complex.



1.7 Environmental Monitoring and Management

During 2020, the Authority's implementation of the Environmental Management Programme (EMP) was negatively impacted by the COVID-19 Global pandemic. Most of the remote areas could not be visited due to a reduction in general field travel by employees of the Authority arising from the rising numbers of COVID-19 cases. However, environmental monitoring of the lake Kariba area was undertaken in line with the provisions of the Annual Work Plans driven by the Environmental Monitoring objectives of the 2020-2024 Corporate Strategy.

The activities undertaken included the following:

- a) Water quality monitoring and testing of water samples from Lake Kariba's lower catchment and confirming sample's compliance against the Authority's Water Quality Monitoring Guideline provisions. Sample analysis was undertaken to check the status of water Temperature; pH; Electrical Conductivity; Dissolved Oxygen; Total Alkalinity; Total Suspended Solids; Total Dissolved Substances; Heavy Metals content among others.
- b) Water hyacinth monitoring through physical observation of hot spot areas around Lake Kariba.

1.8 Environmental Monitoring Operational Domain

Figures 11; 12 and 13 show the Authority's operational domain and stations used to carry out the environmental monitoring programme. Figure 11 is a map of the Zambezi River Basin showing the location of the Authority's water sampling stations. Figure 12 shows the sampling sites on Lake Kariba corresponding to the five (5) hydro-geographic sub-basins. Figure 13 highlights the sub-basin of importance – the Kariba Eastern Basin (Basin 5), being the most downstream end of the Lake.

Figure 11: (Right) Location of ZRA Water Quality Sampling Sites in the Zambezi Basin.

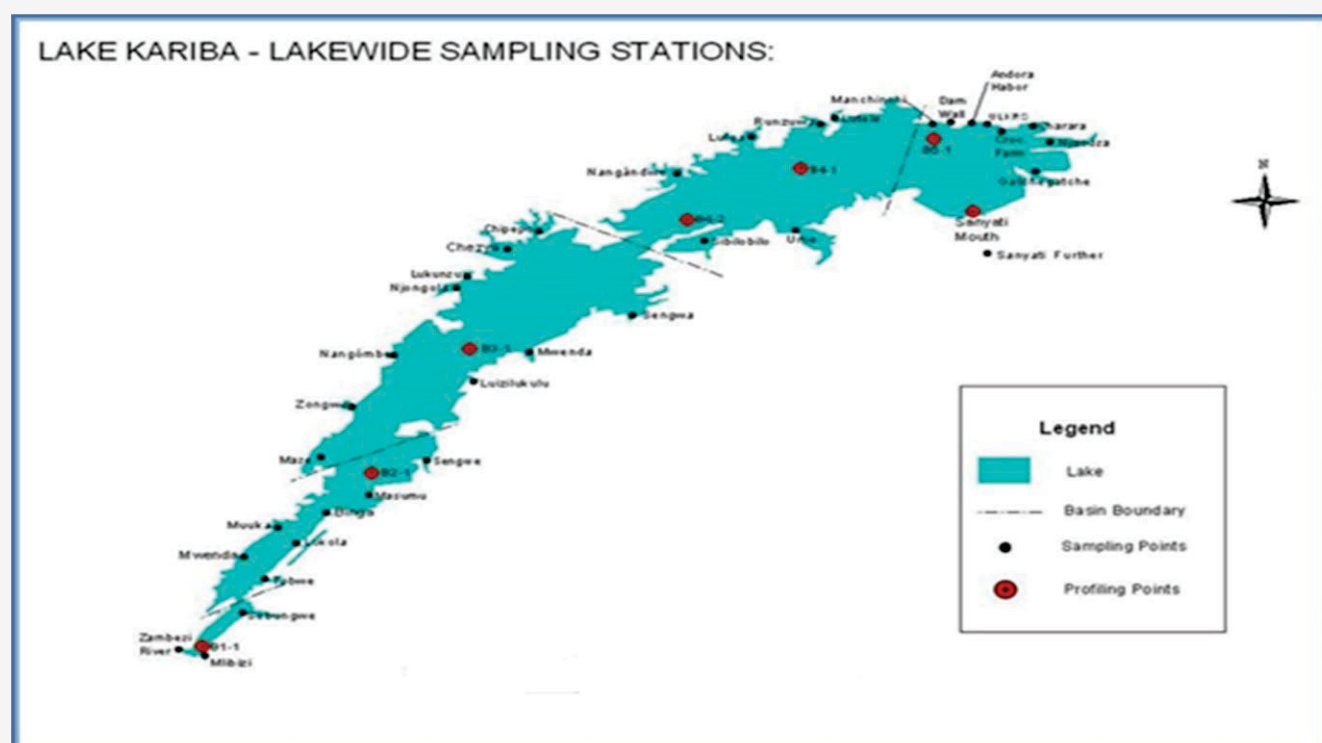


Figure 12: Location of ZRA Water Quality Sampling Sites Lake Kariba.



Figure 13: Monitoring Stations in the Kariba Eastern Basin.

1.9 Water Hyacinth (*Eichhornia crassipes*) Monitoring

From the Water Hyacinth (*Eichhornia crassipes*) Monitoring Program carried out on Lake Kariba's Eastern Basin, the weed mats were only observed at Gatche Gatche in December. Localised weed mats along the water shores were also observed at University of Lake Kariba Research Station (ULKRS) and Charara.

The morphological monitoring of the water hyacinth was conducted at Gatche Gatche, to assess the physical damage on the leaves caused by the weevils of *Nichortina* species. These bio-control agents are an environmentally-friendly method of constraining the growth of the invasive plant species.

Below are pictures showing the trend of the weed at Gatche Gatche during those noted months.



Figure 14: Water Hyacinth (*Eichhornia crassipes*) spotted at Gatche-Gatche site.

1.10 Aquatic System Monitoring

Analysed trend data from the lower Catchment stations for temperature and ammonia nitrogen shown in figures 15 and 16 below confirm that both parameters were within the Authority's quality guidelines indicating a healthy aquatic ecosystem in Lake Kariba.

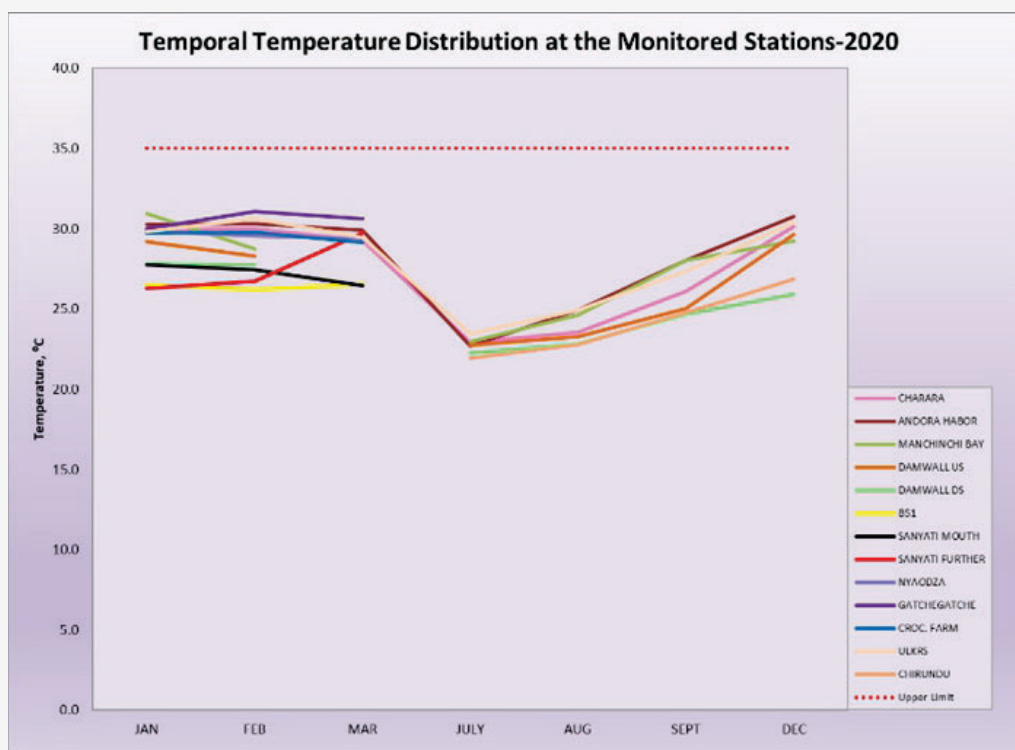


Figure 15: Graph of water temperature.

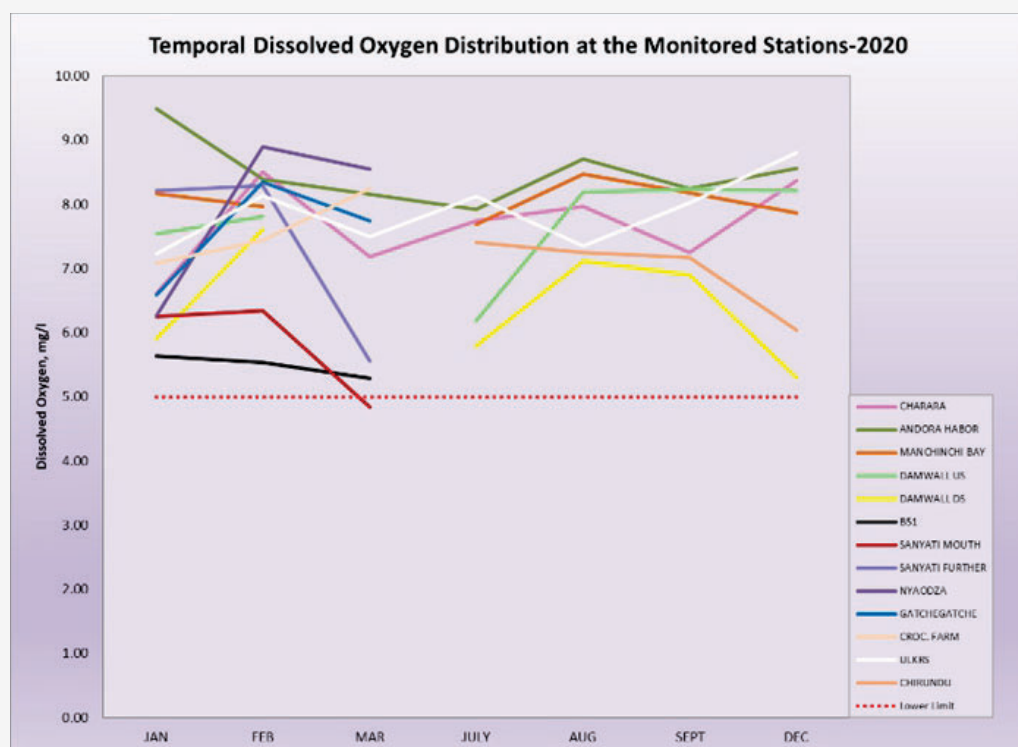


Figure 16: Graph of dissolved oxygen.

View of the vast Kariba water body seen from Kariba Heights (Zimbabwe) overlooking the Marineland Harbour.



2. Projects and Dam Management Services (P&DMS)

This report gives an update regarding the state of the Dam Safety Management activities consisting of data collection, data analyses and evaluations as well as dam inspections. It also seeks to provide reasonable assurance that the dam continued to be managed in accordance with the established guidelines and criteria as indicated in the Standing Operating Procedures (SOP) Manual. The program endeavored to closely track conformance; to understand and manage identified risks. Overall, the dam safety program and processes continued to be executed in a manner that was consistent with objectives of the SOP. Further, the status of the dam regarding Enterprise Risk Management were also profiled as indicated in Figure 17 which shows that no changes were recorded during the year.

2.0 DAM SAFETY MANAGEMENT

2.1 Dam Safety Contribution to Enterprise Risk

Dam Safety is assigned a high “risk priority”. Part of the identified risks were being mitigated through the implementation of the Kariba Dam Rehabilitation Project (KDRP) which seeks to reshape the plunge pool and rehabilitate the spillway. The profiling shown in Figure 17 recognises that: severe public safety and environmental consequences can arise from a dam failure incident; dam failure can progress quickly, within seconds as demonstrated through results of the Dam Break Analysis studies; and the ability of the Authority to mitigate the risks is moderate given that ongoing dam safety activities and the rehabilitation counter measures were being undertaken to manage the risks.

In addition to corrective rehabilitation works through the KDRP, effectiveness of the dam safety program depends on other operational, maintenance and surveillance processes. Efficient data collection and treatment are especially key processes that precede the analysis and evaluations necessary to verify the adequacy of the dam's physical behaviour. To this end, this report presents results of selected dam monitoring instruments illustrating the structural performance of the dam.

2.2 Implications of the COVID-19 pandemic on Dam Safety management processes

Since mid-March 2020, the Republics of Zambia and Zimbabwe announced a series of measures to control the spread of the coronavirus pandemic. The measures impacted business operations and the number of employees that could report for duty during lockdown periods. However, arrangements were made to ensure that there were no interruptions to the collection and evaluation of dam safety data. As a result, consistence was maintained in the delivery of the dam safety program.

2.3 Dam Instrumentation

Regular inspections and collection of instrumentation data and subsequent evaluations to identify unusual dam behaviour and to ensure continued accuracy of measurements were carried out during the year. Results of a few selected dam monitoring instruments of dam pendulums, crest precision levelling,

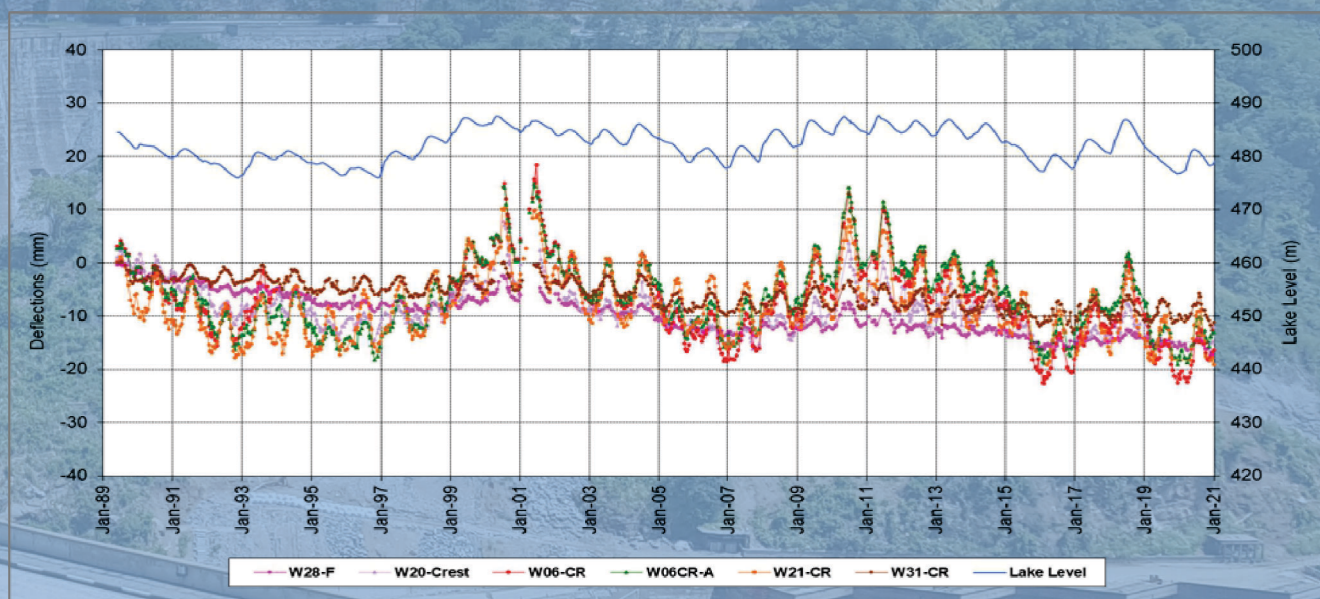


Figure 17: Dam pendulum deflections at the crest.

mini-geodetic survey of target T434 and gallery joint meters are discussed below to illustrate the overall behaviour of the dam. The analysis of data from other instruments was performed using a similar approach. The behaviour of the dam remained normal as expected.

2.4 Dam Pendulums

Pendulums installed in the dam are designed to monitor relative internal horizontal movements in the foundation and abutments along a true vertical line. Results of data collection and treatment give deflections in the upstream-downstream direction as shown in Figure 17. Analysis of results of the dam pendulums showed normal behaviour that was consistent with the loading conditions.

2.5 Crest Rise

Kariba Dam suffers from Alkali Aggregate Reaction (AAR). Analysis of precision levelling data revealed concrete swelling effects due to AAR. The risk associated with this phenomenon relates to potential jamming of stop logs and spillway gates. Failure to operate one or more gates in an open position would result in continuous loss of water as the existing stop logs cannot be operated on an open gate. This risk is being addressed under the spillway refurbishment of the KDRP whose scope includes installation of an emergency gate.

Based on results of precision levelling measurements that were carried out during the year, the dam crest has continued rising as shown in Figure 18. The observed behaviour is consistent with the expected response during the periods of measurement and prevailing conditions of reservoir water level. It is noticeable from the plot that the dam crest level appeared lower in August 2020 when compared to the same period in 2019. This behaviour is particularly because of the relatively higher reservoir water level during the August 2020 period than in 2019. This response is normal and consistent with the loading conditions.

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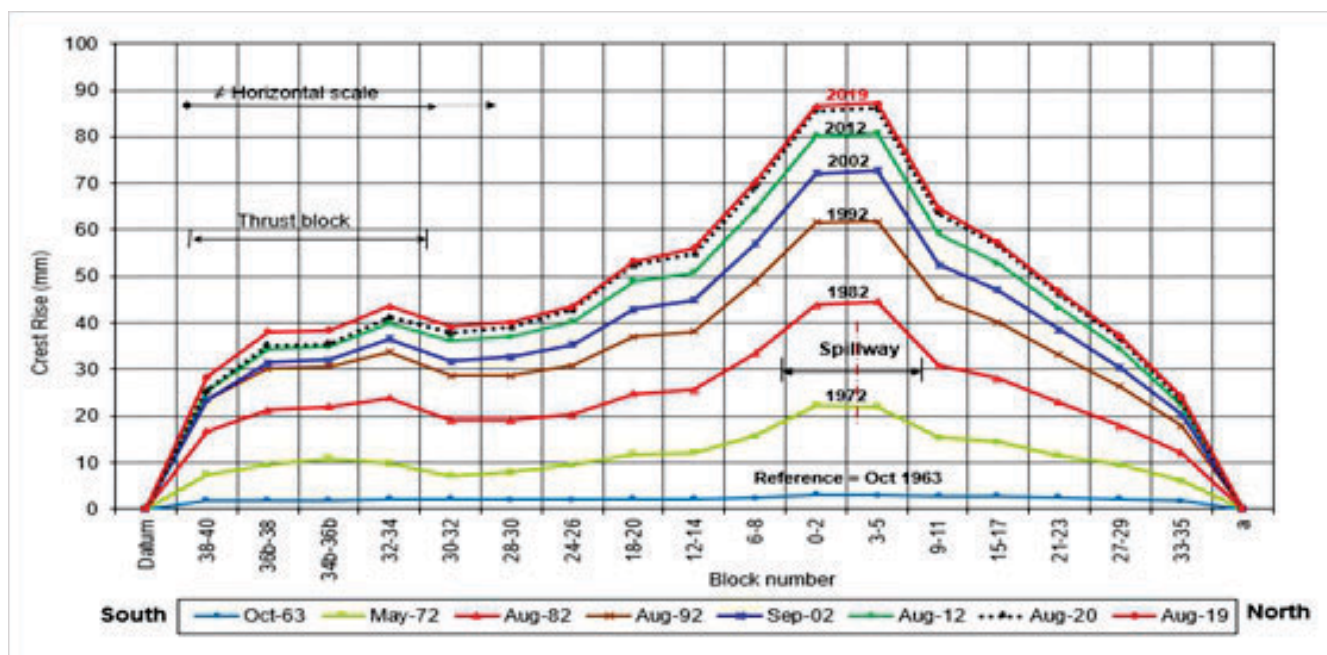


Figure 18: Dam crest rise since 1963

Whilst the effects of AAR have continued, Figure 19 shows that the rate of concrete expansion is decreasing. It can be observed from figures 18 and 19 that the rate of expansions is highest around the spillway and decreases towards the abutments. Further, the rate of expansion is progressively decreasing, confirming depletion of the reactants in the dam concrete.

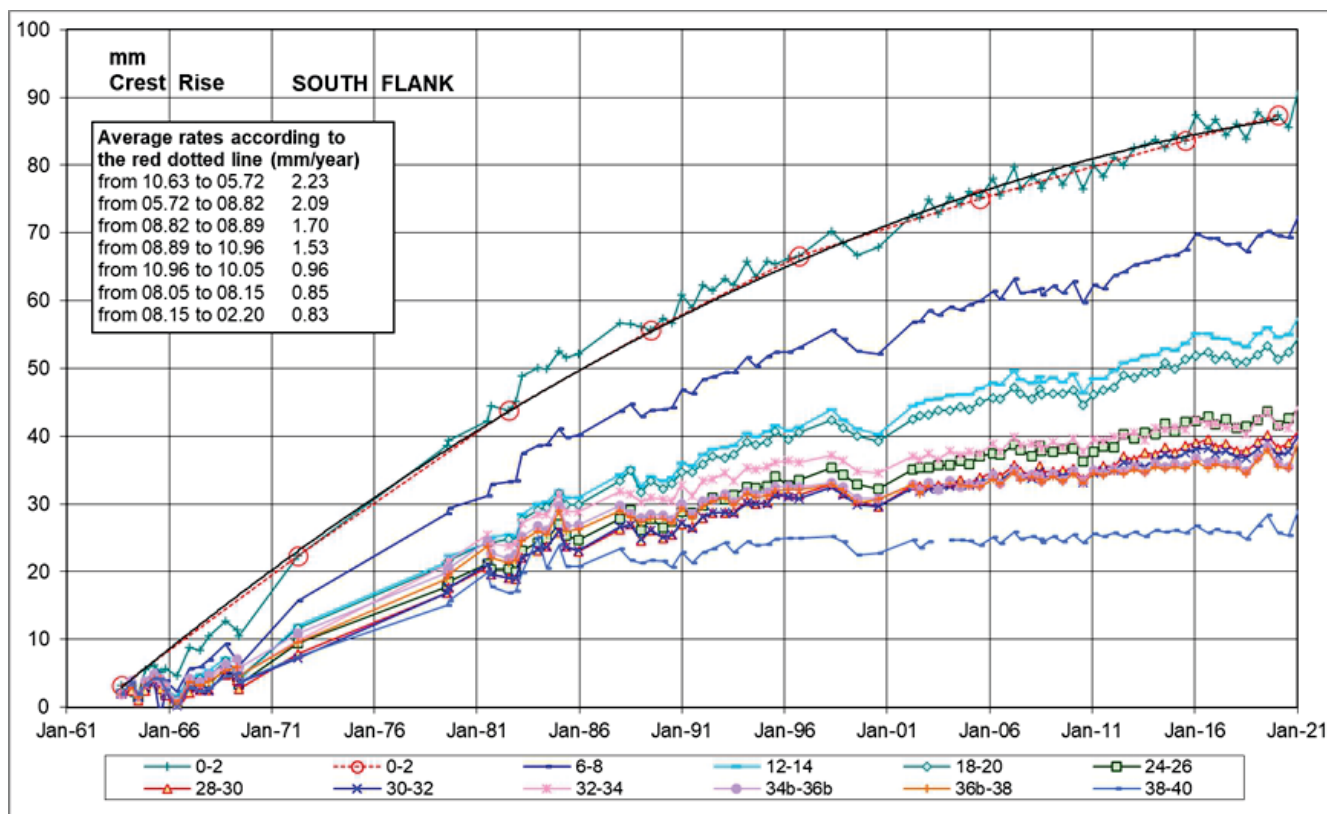


Figure 19: Rate of crest rise on the South Flank of the dam crest (0.83 mm/yr in last 5 years).

2.6 Target P434

Target T434 located on the upstream of pier no. 2 is used to monitor horizontal deformations of the dam along its axis as shown in Figure 20. The results are consistent with results of other dam monitoring systems such as pendulums and geodetic surveys. Whilst the dam showed signs of deflection towards the downstream during periods of high reservoir water levels, it maintained an upstream position due to AAR induced swelling of the concrete and elongation of the dam arch.

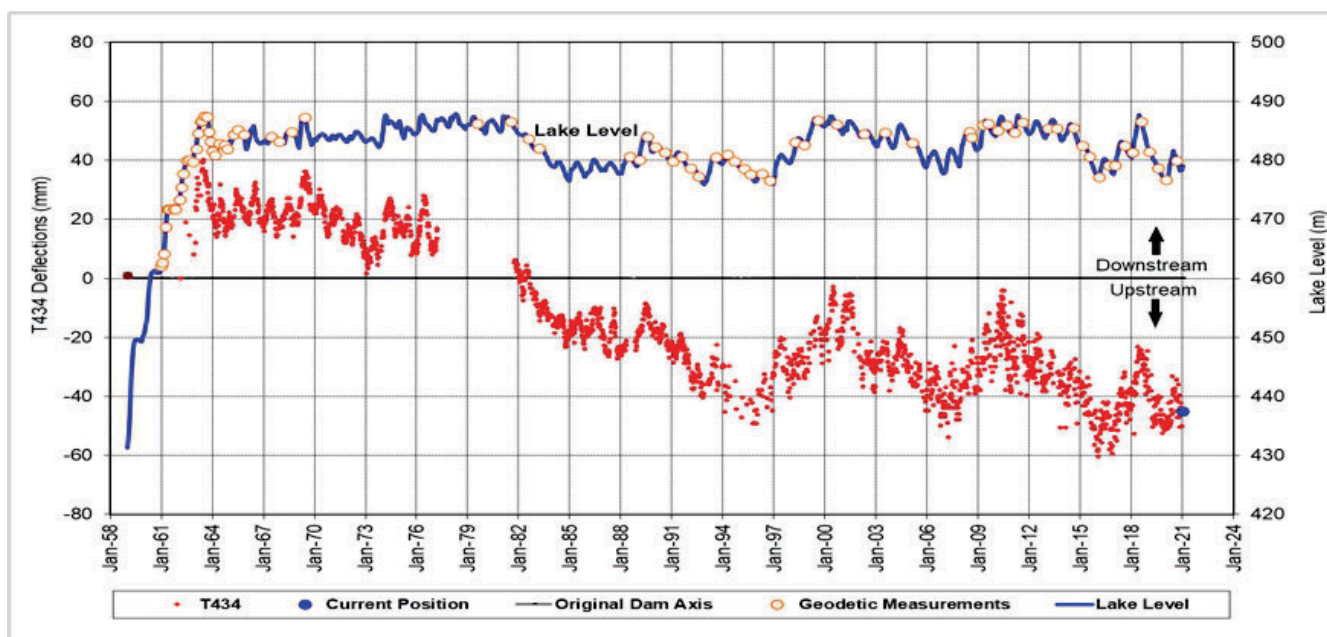


Figure 20: Results of target T434

2.7 Gallery Dam Joints

The objective of monitoring the dam gallery joints is to assess the water tightness of construction joints, grouted between the blocks. An analysis of results of the measurements carried out during the year under review illustrates that the dam joints remained closed and watertight.

2.8 South Bank Slope Movements

Stability concerns around the geologically unstable south bank slope remains one of the probable risks around the dam. It is largely considered that failure of the south bank slope may result in flooding of the Kariba South Power Station when rubble blocks the entrance and outfall areas. An additional risk of losing the abutment support is also not remote.

The south bank slope is monitored by several pendulums and surface and underground geodetic survey networks. Results from the deep sliding zone showed small to insignificant movement compared to the shallow sliding zone, closer to the surface. The difference is attributable to the geological profile where the deep sliding zone is largely constituted of foliated but fresh gneisses compared to the high to moderately weathered quartzites and gneisses with micaceous bands found closer to the surface. This shallow sliding zone is vulnerable to failure that threaten safety of the dam and operations of the Kariba South Power Station.

Based on results of pendulum PS1-1(y) located within the most active zone of the slope, the rate of sliding has been slower and stable since mid-May in 2016 as shown in Figure 21. This behaviour is due to improved drainage following the excavation of additional adits during the Kariba South Expansion Project (KSEP).

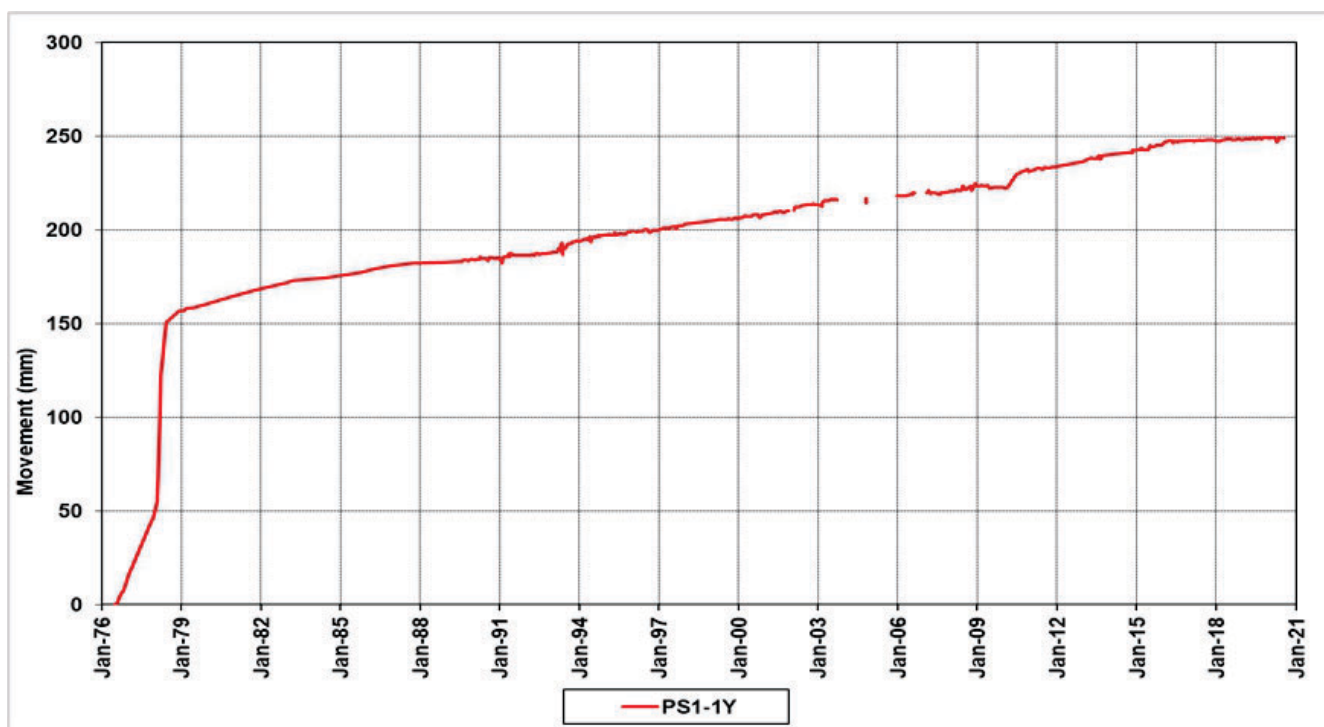


Figure 21: Movement of the shallow sliding zone measured at PS1-1(y)

2.9 Seismic Performance Assessments

Three earthquakes of moment magnitudes of between Mw3.9 and Mw4.0 occurred in the areas surrounding Kariba Dam between April and June 2020. Although the Zambezi valley is naturally prone to earthquakes, two of the three earthquakes had their epicenters located in a zone that started experiencing seismicity associated with the filling of Lake Kariba. The dam was inspected after the occurrence of the earthquakes in accordance with the SOP. No unusual occurrences were observed primarily because the ground accelerations generated from such small earthquakes are too small to cause any structural damage to the dam wall.

2.10 Kariba Dam Maintenance 2020

Aside from the major rehabilitation works at the dam, maintenance of the dam and associated structural areas continued during the year under review as prescribed in the SOP Manual.

The year began with the annual clean-up and repair programme with contract staff assisting the maintenance employees in the galleries, adits, shafts, and south bank surface sealed areas. With the lockdowns instituted by the Zambian and Zimbabwean governments at the beginning of April, all maintenance activities ground to a halt for several months. Consequently, only limited work was being undertaken and only where the same was extremely necessary.

The advent of the rainy season caused an upsurge in the work to be done as there were drains that needed to be opened, roadways that were put at risk due to landslides, as well as portions of the South Bank sealed areas that failed due to the intense rainfall at Kariba.

The year ended with some work being postponed as a result of the COVID-19 pandemic and government-directed responses to the same.

2.11 Conclusion

The Authority continued to deliver the dam safety management program in accordance with the SOP guidelines. Results of evaluation of dam safety data and inspections showed that the response of the dam conformed to the expected behaviour and was consistent with the loading conditions of reservoir water levels and environment. Accordingly, based on the analysis of the results of dam monitoring instruments and dam inspections, the structural health of the dam remained satisfactory.

3. Dam Project Management



Above: BGHES Project Manager, Eng. Avitol Nkweendenda (center) and the Health, Safety and Environment Manager, Mr. Phillip Ziduche (right) conversing with an Engineer representing Power China at the project site during a site visit.

3.1 Batoka Gorge Hydro-Electric Project (BGHES)

The Batoka Gorge Hydro-Electric Scheme (BGHES) is one of the schemes out of a cascade of potential hydro-electric schemes on the Zambezi River, common to Zambia and Zimbabwe. An option analysis, which was part of the engineering feasibility studies, recommended a site 47km downstream of the Victoria Falls as the most viable site out of several sites considered for developing the full generating head between the Victoria Falls and the Kariba Dam. The feasibility studies recommended a run-of-river scheme with limited peaking capacity for environmental needs and an installed capacity of 1200MW on each bank, with a total installed capacity of 2,400MW.

The Authority continued to undertake activities for the development of the BGHES as follows:

- a) Preparatory studies
- b) Pre-development activities by the Developer
- c) Land acquisition for the project
- d) Mobilisation of project finances

a) Preparatory studies

Having completed the Engineering Feasibility studies in 2019, there were two ongoing preparatory studies during the period under review, namely:

- i) Environmental and Social Impact Assessment (ESIA) studies to evaluate the design for the BGHES and to develop the required Environmental and Social Impact Assessments (ESIA), together with the Environmental and Social Management Plans (ESMPs); Resettlement Policy Frameworks (RPFs) and the Resettlement Action Plans (RAPs)/Livelihood Restoration Plans (LRPs), as required for each infrastructure investment associated with the project. The draft ESIA report and the associated ESMPs were completed in the fourth quarter of 2019.
- ii) Legal and Financial Transaction Advisory Studies to identify legal and financial transaction issues to be considered and put in place for the development of the Batoka Gorge Hydro-Electric Scheme. The provision of the related services will continue to financial close.
- ii) In addition to the above studies, the Authority progressed with the procurement of a technical advisor to provide technical support to the Authority during the negotiations and construction phases. The contract was expected to be signed by the end of the first quarter of 2021. However, other stakeholders such as the African Legal Support procured a Consortium of Technical, Legal and Financial Advisors to support the Authority.

b) Pre-development activities by the developer

Following the Council of Ministers (COM) Extra-Ordinary Meeting, a decision to award the contract for the development of the BGHES to a Consortium of Power Construction Corporation of China Limited (Power China) and General Electric (GE) on a BOT mode was made. The Developer continued with pre-financial close activities including due diligence studies. The technical feasibility studies were completed and submitted in October 2020. The Authority, with support of its advisors and Utilities continued to review the reports from the Developer with the aim of reaching agreement within the following year.

c) Land acquisition for the project

The Authority continued to engage key stakeholders in the Contracting States for the acquisition of land on which the dam; the two power houses; offices; employee townships and all other auxiliary infrastructure will be developed. This was being undertaken with the involvement of the Utilities from Zambia and Zimbabwe. By December 2020, over 2700 hectares of land had been secured on the North Bank while over 3000 hectares was secured on the South Bank.

d) Financing of the project

The Authority continued to be the sole financier of the preparatory studies and other project preparatory activities. Discussions were held with the African Development Bank to consider financing some project components and same were still ongoing as of December 2020.

Spectacular view of the Batoka Gorge, the site for the 2,400 MW Batoka Hydro-Electric Scheme (BGHES) seen from the South bank point of view.



3.2 Kariba Dam Rehabilitation Project (KDRP)



The implementation of the Kariba Dam Rehabilitation Works continued throughout the year under review and the status of the progress by year end was as outlined below:

3.2.1 Plunge Pool Reshaping Works Mobilisation

i) Supervisor's Representative (Engineer)

The Supervisor's Representative, Stucky Limited, continued to mobilise expert staff required for the supervision and management of the project. The year 2020 ended with 5 expatriate and 8 local staff on site.

ii) Contractor

The contractor's total workforce was 151 persons by year end; 93 being local while 58 were from outside Siavonga. A further 32 personnel were engaged and comprised the subcontractor's workforce.

Whilst all the Contractor's equipment, including that for the construction of the cofferdam was at site, additional equipment, and personnel (including that of the subcontractors) were mobilized to address the geo-technical challenges encountered in the cofferdam foundations (Piers 6 to 8 area). Equipment for the plunge pool excavation works was yet to be mobilized with the exception of two Dump Trucks that were mobilised towards the end of the year.

iii) Status of Works

The status of works was as follows:

Completed works:

- a) Establishment of the construction camp.
- b) Construction of explosives magazines.
- c) Construction of the temporary access road above water level (up to 390 m.a.s.l).
- d) Construction of the permanent access road over the ZESCO Limited tailrace platform.
- e) Construction of the lift platform which will be used in the construction of the cofferdam piers.
- f) Excavation of the cofferdam foundations for piers number 2 to 5, from the left bank (North Bank).
- g) Fabrication of the 41 stop-logs for the cofferdam and their transportation from South Africa.
- h) Construction of Pier 1 and the north-bank wing wall.

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- i) Construction of Piers 2 to 5.
- j) Construction of Sills 2 to 5 and installation of Embedded Parts.
- k) Installation of Anchors for Sills 2 to 5.
- l) Demobilization of Tower Crane from Zambian side (North Bank).
- m) Mobilization of the Tower Crane on the Zimbabwean side (South Bank).
- n) Installation of the additional Pontoon facilities used for housing the 130-ton Crane and Long Arm Excavator specifically for the additional excavation works on the Cofferdam between Piers 6 to 8.
- o) Construction of Right Bank Abutment (in the dry).
- p) Installation of Precast L-shape walls phase 1 for Piers 6 to 8 bedrock reconstruction.
- r) Construction of Piers 6 to 8 Hulls up to a height of 7.7m (Pier hull 6 has been temporarily stored at the dam apron while Pier hulls 7 and 8 are on the Lift platform awaiting completion of the mass concrete foundation).
- s) Trial Tendons on both the Zambian and Zimbabwean side.
- t) Acceptance and ordering of tendons for Piers 2 to 5.
- u) Contact grouting of Piers 2 to 4.
- v) Installation of monitoring equipment (robotic total station).

Work in Progress

The status of works in progress was as follows:

- a) Cofferdam foundation excavations – Piers 6 to 8.
- b) Delivery of Piers 2 to 5 Tendons
- c) Pre-grouting of Piers 2 to 5
- d) Installation of Tendons for Piers 2 to 5
- e) Construction of the Dump Site Access Road
- f) Installation of monitoring equipment
- g) Fault Treatment concrete mix design
- h) Additional hydro-geological investigations

Pending Activities

The following activities were pending by the close of the year:

- a) De-watering of the plunge pool.
- b) Blasting excavation to re-shape the plunge pool.
- c) Mucking of the excavated rock.
- d) Repair of the fault-zone with reinforced, abrasion-resistant concrete.
- e) Filling of the Plunge pool.
- f) Cofferdam foundation excavations – Piers 6 to 8.

iv) Project Timelines

The cofferdam foundation faced some challenges relating to poor geological conditions that impacted the construction of the access road and this had a significant impact on the previously planned project timelines, resulting in the shifting of the estimated completion date from December 2021 to May 2024 as indicated in Figure 22 below:



Figure 22: Project timelines, May 2017 to May 2024

3.2.2 Spillway Refurbishment (Emergency Gate, New Gantry and Associated Civil Works)

Progress regarding the implementation of the Spillway Refurbishment Works was as presented below:

Commencement Date	Contract Duration	Projected End Date	Contractor
23rd September, 2019	51 Months	23rd December, 2023	Consortium of GE Hydro France & Freyssinet International

Figure 23: Key project timeline information.

i) Activities and Milestones

During the year under review, the following main activities were undertaken and milestones achieved:

- a) Manufacturing with successful Final Acceptance Test of Stop beams elements completed in China (remote inspection organized by the Contractor)
- b) Commencement of the concrete trial test process with the new source of aggregates located in Zimbabwe.
- c) New methodology proposed to deal with the asbestos components of top concrete beams 1 to 4 by cutting the beams in such a way as to remove the pipes without breaking them.
- d) Completion of the civil works for the site offices, which include offices for the Employer, the Engineer and Contractor. Completion of the Storage shed and Site Laboratory.
- e) The assembly and erection of the Portal Frame commenced by year end.
- f) The lifting and sliding of the pre-cast concrete beams on sluice no. 5 and 6.
- g) Cutting of the concrete beams from Sluice 5 and 6 was completed; the parts were disposed-off at an authorized dumpsite in Zimbabwe and in Zambia.
- h) The COVID-19 pandemic had a very small to no direct impact on the execution of the project. However, the Contractor was expected to submit a Global Extension of Time with associated costs on project delays caused by the pandemic.

4.

Corporate Social Responsibility and Visibility

4.1 Zambezi Valley Development Fund (ZVDF)

The Authority continued to carry out various planned projects under the auspices of the Zambezi Valley Development Fund (ZVDF). This is part of an ongoing endeavour to improve the well-being of the communities that were displaced during the construction of the Kariba Dam. This report highlights some projects that were being undertaken during the year under review.

4.1.1 Projects Based in Zambia

a) Sinafala Secondary School, Gwembe District

The ZVDF continued to support the construction of two classroom blocks at Sinafala Secondary School. The two blocks, a 1x3 classroom and a 1x2 laboratory reached the final stages of completion. The completion of the two classroom blocks was expected to improve the current status of the school, which had only one existing classroom block, thereby providing an enabling learning environment for the children.



Figure 25: The 1x3 Classroom Block under construction at Sinafala Secondary School, Gwembe, Zambia



Figure 26: 1x2 Science Laboratory under construction at Sinafala Secondary School, Gwembe, Zambia

b) Nkandazovu Secondary School , Kalomo District

The project to construct a 1x3 classroom block at Nkandazovu Secondary School was on-going and had reached gable level by December 2020. The construction of this additional classroom block will improve the current status of the school and enable a quick transformation from primary to secondary school thereby providing an opportunity for local children to access secondary education.



Figure 27: A 1x3 Classroom Block under construction at Nkandazovu Secondary School, Kalomo, Zambia

4.1.2 Projects Based in Zimbabwe

a) Ntivule Primary School, Binga District

The project to construct a 1x2 classroom block at Ntivule Primary School in Binga was progressing well. As of December 2020, the classroom block had reached gable level and was awaiting roofing. The local community supported the project through the provision of labour during the moulding of concrete blocks used for constructing the classroom block.

b) Chisipite Primary School, Hurungwe District

The project to construct a 1x2 classroom block at Chisipiti Primary School reached gable level and was awaiting roofing. The local community supported the project through the provision of locally made bricks and provision of labour as part of their contribution to the project.



Figure 28: The 1x2 Classroom block under construction at Ntivule Primary School, Binga, Zimbabwe



Figure 29: The 1x2 Classroom block under construction at Chisipite Primary School, Hurungwe, Zimbabwe

c) Gatche Gatche Irrigation Scheme, Binga District

The Gatche Gatche Irrigation Scheme continued to operate fully. The Authority continued to support the Project through the provision of diesel for the water pump, servicing of equipment, and provision of inputs like seeds and fertilizers. Seven (7) hectares of land was utilized by a co-orporative comprising 22 farmers.



Figure 30: A farmer inspecting the crop at Gatche Gatche Irrigation Scheme, Kariba, Zimbabwe



Figure 31: Farmers working in the field at Gatche Gatche Irrigation Scheme, Kariba, Zimbabwe

4.2 Media Coverage

During the year under review, the Authority, through the Public Relations and Communications Unit (PRCU), continued to strengthen media relations by working closely with key local, regional, and international media houses in a deliberate and planned effort to enhance coverage of the authority's activities.

The year opened with a 17% coverage and closed off at 30% as shown in Figure 32. The stories generated were positive with a few isolated negative ones. The coverage was primarily initiated inhouse through the timely preparation and issuance of press releases on water levels; KDRP and BGHES, among others.

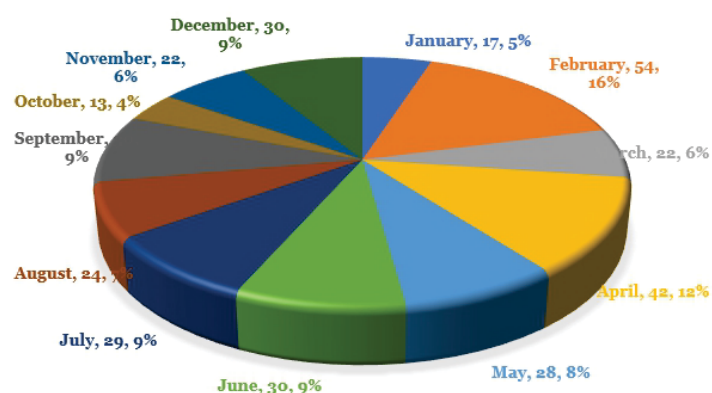


Figure 32: Trends of coverage from January to December 2020

4.2.1 Authority Owned Media

- a) **Social Media** – The Authority through the PRCU has taken a deliberate stance meant to maximize the use of social media which has a much greater influence, especially on the youthful audience.

Strategic interventions were made to increase the social media followers particularly on the primary social media site, Facebook, which opened the year with 9,631 Likes and closed with 18,022 Likes (users).

Further, the Authority added Twitter and YouTube to its pool of social media platforms.

The comments and discussions that followed every post revealed that followers were increasingly getting interested in understanding the Authority and its operations.

- b) **Website** – The Authority website continued to serve as another vital information distribution channel. Several updates were made to enhance the appearance and quality of information. The website recorded an average of 28,134 visits per month with the Hydro-section being the most frequently visited web page.
- c) **Press Releases** – The Authority circulated several press statements to the media and downstream stakeholders informing them of various activities by the Authority such as updates on KDRP and the BGHES which resulted in increased publicity.

5. Corporate Services

5.1 Strategic Leadership and People Management

The Authority continued to experience harmonious Employee-Employer relations during the period under review.

5.1.1 Employee Establishment

The employee complement as at 31st December 2020 was 155 against the approved establishment of 188 including five (5) positions which were being funded by the World Bank and the African Development Bank.

5.1.2 Summary of the opening and closing numbers of employees

The details of the employee complement for the period under review were as indicated in Figure 33.

following employees were engaged during the period under review.

Summary of Opening and Closing number of employees	Numbers
Opening number of employees as at 1 st January 2020	147
Engagements	16
Separations	8
Closing number of employees as at 31st December 2020	155

Table 6: Summary of Engagements and Separations

5.1.3 Summary of employee engagements and separations

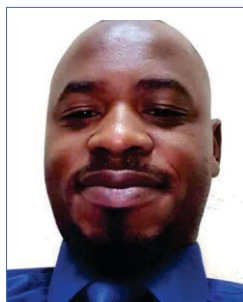
The details of employee engagements and separations during the period under review and for the year 2019 were as indicated in Figure 34.

5.1.4 Details of Employee Engagements

The Employment Contract in respect of the Board Secretary/Corporate Services Director which was terminated on 31st December 2019, was renewed for a further period of three (3) years on 1st January 2020. Further, the following employees were engaged during the period under review.

Engagements/Separations	2020	2019
Engagements	16	145
Deaths	1	1
Retirement/Medical Discharge	4	4
Resignation	2	1
Dismissal	0	0
Expiry of Employment Contracts	0	10
Retrenchments	0	134

Table 7: Details of Engagements and Separations



Mr. Kabunda Hichoonga,
Appointed as Information
Communication Technology
Technician on 04/02/2020
under the Information
Communication Technology
Section in the Corporate
Services Department.



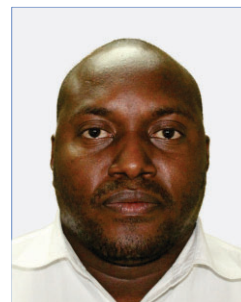
Miss Kulambisha Ngoma,
Appointed as Projects
Assistant on 24/02/2020
under the Projects Section in
the Projects & Dam
Management Services
Department



Eng. Kozanai Gurukumba,
Appointed as Project Manager,
Kariba Dam Rehabilitation
Project (KDRP) on
02/03/2020 under the
Projects Section in the Projects
& Dam Management Services
Department



Mr. Brighton Kalonga
Appointed as Civil Technician
on 30/03/2020 under the
Projects Section in the Projects
& Dam Management Services
Department



Eng. Stephen Maidza,
Appointed as Quality & Risk
Officer, BGHES on
02/04/2020 under the Projects
Section in the Projects & Dam
Management Services
Department



Mr. Munesushe Mudzi,
Appointed as Civil Technician,
Kariba on 02/03/2020 under
the Projects Section in the
Projects & Dam Management
Services Department



Mr. Charles Makwangwara,
Appointed as Accounts Officer
on 02/03/2020 under the
Financial Accounting Section
in the Finance Department



Eng. Britius Mupeyo,
Appointed as Project
Planning Officer – KDRP
on 02/03/2020 under the
Projects Section in the
Projects and Dam
Management Services
Department



Mr. Cuthbert Vengesa
Appointed as Safety, Health &
Environmental Officer, KDRP
on 02/06/2020 under the
Projects Section in the Projects
& Dam Management Services
Department



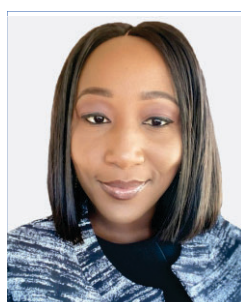
Eng. Relent N Ncube
Appointed as Project
Planning Officer, BGHES on
02/03/2020 under the
Projects Section in the
Projects and Dam
Management Services
Department



Mr. Fitzgerald Muchindu
Appointed as Public Relations
and Communications Officer
on 10/03/20 under the
Executive Office



Eng. Remmy I. Sinyangwe
Appointed as Quality & Risk
Officer – KDRP on 13/03/2020
under the Projects Section in
the Projects and Dam
Management Services
Department



Ms. Mwelwa N. Sata
Appointed as Safety, Health &
Environmental Officer, KDRP
on 02/06/2020 under the
Projects Section in the Projects
& Dam Management Services
Department



Mrs. Constance L. L. Bwalya
Appointed as
Stakeholder Relations Officer,
KDRP on 01/07/2020 under
the Projects Section in the
Projects & Dam Management
Services Department



Ms. Cynthia Alufaneti
Appointed as Records
Supervisor on 01/12/2020
under the Human Resource &
Administration Section in
the Corporate Services
Department

5.1.5 Details of Employee Separations

The following employees separated from the employ of the Authority but were re-appointed:

No	Name	Department	Position	Mode of Separation	Date of Separation
1	Mr. Peter Kapinga	Corporate Services	Board Secretary / Corporate Services Director	Termination of Employment Contract	31 st December 2019
2	Eng. Kozanai Gurukumba	Projects & Dam Management Services	Project Manager – Kariba Dam Rehabilitation Project	Resigned to take up the position of KDRP Project Manager	2 nd March 2020

Corporate Services Report

The Authority bade farewell to six (6) employees who left the employ of the Authority as indicated below:

No	Name	Department	Position	Mode of Separation	Date of Separation
1	Mr. Swedi Friday	Projects and Dam Management Services	Dam Maintenance Attendant	Death	2 nd May 2020
2	Mr. Edward Sakala	Corporate Services	Messenger	Normal Retirement	4 th May 2020
3	Mr. Daniel K. Phiri	Finance	Accounts Assistant – Payment	Normal Retirement	26 th June 2020
4	Mr. Gilbert Zulu	Corporate Services	Human Resource and Administration Officer	Resignation	31 st July 2020
5	Ms. Elizabeth M. Karonga	Executive Office	Manager – Public Relations and Communications	Normal Retirement	12 th November 2020
6	Mr. Zenase Mwanza	Corporate Services	Messenger	Normal Retirement	31 st December 2020

5.1.6 Employee Placements and Promotions

There were no employee placements and promotions recorded during the period under review.

5.1.7 Training and Development / Capacity Building

Every year, the Authority empowers employees with knowledge and skills vital for ensuring effective execution of the Corporate Strategic Objectives through the facilitation of attendance of training and development programmes. However, due to the liquidity situation the Authority was facing and the outbreak of the Corona Virus Pandemic, the Training and Development Plan for 2020 could not be implemented.

5.1.8 Performance Management System

The Performance Management System Action Plan for the year 2020 was developed. However, the Performance Management System processes were not executed on schedule mainly due to the outbreak of the Coronavirus Pandemic.

5.1.9 Retrenchment Exercise for employees on permanent and pensionable employment service and their re-engagement on revised Terms and Conditions of Service

Three (3) employees and three (3) former employees could not be paid their retrenchment packages in Zimbabwe as of 31st December 2020.

On the other hand, fifty (50) employees based in Zambia were not paid retrenchment packages. Of the three (3) employees who separated from the Authority through resignation and normal retirement, one was paid his full retrenchment package while the other two (2) were not paid. In this regard, the Authority developed payment plans for the two (2) employees that would subsist for the periods October 2020 to January 2021 and November 2020 to April 2021, respectively.

As of 31st December 2020, the Authority had one hundred and two (102) employees serving under revised Terms and Conditions of Service against the employee complement of one hundred and fifty-five (155).

Management will continue effecting payment of retrenchment packages to eligible employees in phases as and when funding is available.

5.1.10 Employee Welfare and Wellness Programmes

The Authority recognizes that healthy employees build a healthy organization and that a healthy organization in turn produces excellent business performance results. Consequently, the Authority continued to improve the welfare and well-being of employees through human resource strategies aimed at achieving the following:



*Mr. Daniel K. Phiri
who retired from the Authority on
26th June, 2020*



*It is with great sadness that we
report the demise of one of the
Authority's employees, Mr. Swedi
Friday, who departed after serving
the Authority for an unbroken period
of twenty-seven (27) years. May His
Soul Rest in Eternal Peace.*

- a) Improving employee satisfaction.
- b) Improving employee productivity.
- c) Mitigating occupational health and safety risks.
- d) Reducing costs associated with absenteeism.
- e) Improving employees' organizational culture; and
- f) Improving the organization's image by carrying out corporate social responsibility obligations.

In that regard, the Authority undertook the following initiatives:

5.1.11 HIV/AIDS

The Authority continued to support employees by facilitating the provision of counselling services and medical support. Employees who had disclosed their HIV/AIDS status continued to receive food packs and nutritional supplements monthly.

The Workplace HIV/AIDS Annual Plan for the year 2020 could not be fully implemented due to the liquidity challenges the Authority was facing.

5.1.12 Health and Safety

In keeping with the Authority's core values, the safety of employees and other stakeholders is cardinal to the operations of the Authority. In that regard, the Occupational Health and Safety Committee and the Occupational Health and Safety Representatives continued spearheading the management of the health and safety issues in the Authority.

The COVID-19 pandemic which subsisted during this period as well as the Authority's liquidity challenges compromised the execution of the Occupational Health and Safety Annual Plan.

5.1.13 Social Sports

The Authority values the health and vitality of its employees. However, planned Social Sports could not take place due to the outbreak of the COVID-19 Pandemic that subsisted during the period under review and the Authority's liquidity challenges.



Colleagues bidding farewell to Mr. DK Phiri on his last day at work. From left to right, Musonda Bwalya, Daniel K. Phiri, Eunice Kumwenda, and Emeldah Katungu. (26th June, 2020)

Financials

**ZAMBEZI RIVER AUTHORITY ANNUAL REPORT
FOR THE YEAR ENDED 31 DECEMBER 2020**

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The Directors submit their report together with the audited annual financial statements for the year ended 31 December 2020, which disclose the state of affairs and financial performance of Zambezi River Authority ("the Authority").

Establishment and Functions

The Zambezi River Authority ("the Authority") was established as a corporate body on 1 October 1987 by parallel legislation in the Parliaments of Zambia and Zimbabwe under the Zambezi River Authority Acts No.17 and 19 respectively. It was tasked with the management of the Zambezi River, which flows between the two countries' common border. ZRA is also mandated to maintain the Kariba Dam Complex (Kariba Complex) and to construct and maintain other dams or infrastructure on the river forming the border between the two countries.

Principal Functions

The functions of the Authority are set out in the schedule to the Zambezi River Authority Acts of 1987 as follows:

- (a) Operate monitor and maintain the Kariba Complex. Kariba complex means:
 - (i) the Kariba Dam and reservoir
 - (ii) all telemetering stations relating to the Kariba Dam
 - (iii) any other installations owned by the Authority
- (b) 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 of Ministers ("the Council");
- (c) Subject to the approval of the Council, construct, operate, monitor, and maintain any other dams on the Zambezi River;
- (d) Collect, accumulate and process hydrological and environmental data of the Zambezi River for the better performance of its functions and for any other purpose beneficial to the Contracting States;
- (e) In consultation with the National Electricity undertakings, regulate the water level in the Kariba reservoir and in any other reservoir owned by the Authority;
- (f) Make such recommendations to the Council as will ensure the effective and efficient use of the waters and other resources of the Zambezi;
- (g) Liaise with the National Electricity Undertakings in the performance of its functions that may affect the generation and transmission of electricity to the Contracting States;
- (h) Subject to provisions of Article 13, recruit employ and provide for the training of staff as may be necessary for the performance of its functions under the Agreement;
- (i) From time to time and subject to the approval of the Council, make such revision of salaries, wages, and other remuneration to its employees as it considers appropriate
- (j) Submit development plans and programmes to the Council approval;
- (k) Give effect to such directions, as may from time to time, be given by the Council; and
- (l) Carry out such other functions as are provided for in the Agreement or are incidental or conducive to the better performance of its functions.

Zambezi River Authority
Director's Report
For the year ended 31 December 2020

Place of Business

- (a) Head Office: House, 32 Cha Cha Cha Road, P.O. Box 30233, Lusaka, Zambia
(b) Harare Office: Club Chambers, Nelson Mandela Avenue, P.O. Box 630, Harare, Zimbabwe
(c) Kariba Office: Administration Block, 21 Lake Drive, Pvt. Bag 2001, Kariba, Zimbabwe

Results

	Year ended 31 December					
	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Revenue	1,141,117	426,566	23,705	239,972	314,940	24,151
Surplus/(deficit) for the year	174,678	65,298	3,634	(83,240)	(111,722)	(8,376)

The surplus for the year has been added to the revenue reserve.

Property, plant, and equipment

The Authority purchased property, plant and equipment amounting to US\$ 16.23 million, ZMW 291.97 million, ZWL 781.07 million (2019 US\$ 18.88 million; ZMW 246.07 million or ZWL 187.58) during the year. In the opinion of the Directors, the carrying value of property, plant and equipment is not more than their recoverable value.

Average number of employees

The total remuneration of employees during the year amounted to US\$ 9.93 million, ZMW 178.70 million, ZWL 478.05 million (2019: US\$ 20.50 million; (ZMW 277.19 million); (ZWL 203.71 million)). The average number of employees was as follows:

Month	Number of Employees	Month	Number of Employees
January	147	July	157
February	149	August	156
March	156	September	156
April	157	October	156
May	155	November	155
June	156	December	155

The Authority has policies and procedures to safeguard the occupational health, safety, and welfare of its employees.

Related party transactions

The Authority has a common enterprise relationship with Governments of the Republic of Zambia and Zimbabwe. Other related party relationships and material balances that the Authority has with its related parties are listed in Note 24 to the annual financial statements.

Gifts and donations

The Authority made the following donations to charitable organisations and events during the year.

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Donations and sponsorships	11,818	4,418	245	2,281	2,992	230

Breach of loan terms of agreement

The Authority has a 30-year subsidiary loan agreement dated 20 August 2015 with the Government of the Republic of Zambia for a principal loan amount of US\$ 114 million to finance the Kariba Dam rehabilitation Project. According to schedule 1 of this subsidiary loan agreement, the Authority is required to make repayments biannually on 1 March and 1 September. Due to the liquidity challenges that the Authority has faced over the past three years, the Authority has defaulted on its repayments on the loan facility for a third consecutive year bringing the total amount in default to US\$ 14,791,000. The amount in default is made up of current year repayments of US\$ 5,871,000 (principal of US\$ 3,800,000 and interest of US\$ 2,071,000), 2019 arrears of US\$ 5,947,000 (principal US\$ 3,800,000 and interest of US\$ 2,147,000) and, US\$2,973,000 principal arrears for 2018. This is in contravention of section 3.04(ii) of Article III of the subsidiary loan agreement which states that repayments should not be delayed by more than 30 days from due date and failure of which the Government of Zambia has the right to cancel the loan agreement in accordance with Section 5.03 of Article V of the subsidiary loan agreement. The Authority has engaged both the Zambian and Zimbabwean Government highlighting the challenges in settlement of the said obligation due to delayed payments from the Utilities and the failure to easily access the United States Dollars funds held in Zimbabwe. Subsequent to year end, the Authority and GRZ have agreed to restructure the subsidiary loan agreement to allow for terms that will be manageable by the Authority.

Risk management and control

The Board, through the Audit, Corporate Governance and Risk Management Committee exercises oversight over Enterprise Risk Management (ERM) processes in the Authority. The Authority adopted ISO31000:2009 as its framework for ERM. Using this framework, the Authority systematically identifies, analyses and responds to risks, including the mapping of inter-relationships between risks. The Board accomplishes its oversight role through:

- (i) Developing policies and procedures on risk management;
- (ii) Following up executive management's implementation of policies and procedures on risk management,
- (iii) Following up on assurance that risk management policies and procedures are working as intended; and
- (iv) Taking steps to foster a risk aware culture

The Authority manages risk under five (5) categories namely: Operational, Financial, Project Management, Strategic and Reputational risk. The significant risks dealt with by the Authority across the five (5) categories in the period under review included Credit, Liquidity, Dam safety, Hydrological, Protracted stakeholder approval and Funding withdrawal risks. In the period under review the Audit, Corporate Governance and Risk Management Committee held four (4) meetings as scheduled.

Risk management and control (continued)

(a) Operational risk

Operational risk in this instance is the risk of dam failure due to operational deficiencies. The following are the significant risks noted under this category:

- (i) Dam Safety risk – This is the risk of compromise to the safety of Kariba Dam complex. To manage this risk the Authority has adopted international standards for dam maintenance and safety monitoring. Furthermore, the Authority is currently undertaking the Kariba Dam Rehabilitation Project aimed at securing the long-term safety and reliable operation of Kariba Dam Complex.
- (ii) Hydrological Risk – This is a risk to the sustainable operation of the reservoir. The Authority continues to operate the reservoir in line with international best practice. Dialogue with the Power Utilities on the water usage is another migratory factor being employed by the Authority to manage the Hydrological risk.

(b) Financial risk

This is the risk that the Authority will experience financial loss due to change in market conditions. The following are the significant risks noted under this classification:

- (i) Credit Risk – This is the risk that the Authority may be unable to collect what it is owed. This ranges from sales receipts to deposits and investments placed with financial institutions. The Authority has suffered loss from impairment of its long term investments with the Commercial Bank of Zimbabwe following the conversion of investments from United States Dollars to the Zimbabwean Dollar.

Furthermore, the deterioration of the receivable collection days on its balances outstanding from the Utilities has raised credit risk due to the effect on liquidity that has materialised itself in the Authority's failure to meet its obligations including loans.

- (i) Liquidity Risk - This is the risk that the Authority may fail to settle its obligations as and when they fall due. Liquidity risk is strongly correlated with credit risk and the consequence of it materialising can give rise to an exposure to reputational risk. The Authority continues to explore ways of tightening its credit control mechanisms, including lobbying the principal shareholders for preferred consideration by trade creditors, so as to ensure sufficient liquidity for its operations.

The Authority's financial risk exposures are discussed in Note 21 to the annual financial statements.

(c) Project Management Risk

This is this risk that a project may not be properly implemented or delayed. The Authority considered the risk of protracted stakeholder approval during the period under review. The risk emanates from the need to secure prior approval from financiers before proceeding to the next stage of any project related procurement. The Authority continues to interact with project financiers for quick turnaround time on all prior approvals. Any delay in obtaining prior approval affects subsequent processes relating to the project.

(d) Strategic Risk

This is the risk that the strategy may not be properly implemented. To manage this risk, the Authority has adopted a rational approach to Strategy formulation and performs a periodic evaluation of strategy implementation.

Zambezi River Authority
Director's Report
For the year ended 31 December 2020

Risk management and control (continued)

(e) Reputational Risk

This is the risk that adverse publicity will negatively impact the Authority's operations. To manage this risk, the Authority has a policy framework in place to manage all communication on its operations with existing and potential stakeholders.

Governance Structure

The Council of Ministers and Directors who held office during the year and to the date of this report were as below:

(a) Council of Ministers

Name	Title	Resigned/Appointed
Hon. Soda Zhemu	Chairperson	Appointed August 2020
Hon. Mathew Nkhuwa MP	Co - Chairperson	
Hon. Prof. Mthuli Ncube MP	Member	
Hon. Dr. Bwalya Ng'andu MP	Member	
Hon. Fortune Chasi MP	Chairperson	Retired August 2020

(b) Board of Directors

Name	Title	Resigned/Appointed
Dr. Gloria S. Magombo	Chairperson	
Mr. Trevor Kaunda	Co - Chairperson	
Mr George T Guvamatanga	Member	
Mr. Mukuli Chikuba	Member	
Engineer Israel Rwodzi	Member	
Mr. Pascal Mubanga	Member	

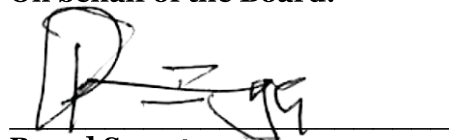
(c) Executive management

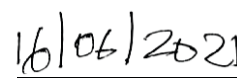
Name	Position
Engineer. Munyaradzi C. Munodawafa	Chief Executive
Mr. Peter Kapinga	Board Secretary/Corporate Services Director
Mr Edward M. Kabwe	Director – Finance
Engineer. David Mazvidza	Director – Projects & Dam Safety
Engineer. Christopher Chisense	Director – Water Resources & Environmental Management

Auditor

PricewaterhouseCoopers, were appointed to fill a casual vacancy in accordance with the Zambezi River Authority Acts No. 17 and 19 for the audit of the annual financial statements for the financial periods from 2020 to 2022. The auditor, PricewaterhouseCoopers, has indicated its willingness to continue in office and a resolution for its reappointment will be proposed at the next Council of Ministers Meeting.

On behalf of the Board:


Board Secretary


Date

Zambezi River Authority
 Director's Report
 For the year ended 31 December 2020

The Zambezi River Authority Acts No. 17 and 19 require the Directors to prepare annual financial statements for each financial year that give a true and fair view of the state of affairs of the Authority as at the end of the financial year and of its financial performance. It also requires the Directors to ensure that the Authority keeps proper accounting records that disclose, with reasonable accuracy, the financial position of the Authority. The Directors are also responsible for safeguarding the assets of the Authority.

The Directors accept responsibility for the annual financial statements, which have been prepared using appropriate accounting policies supported by reasonable estimates, in conformity with International Financial Reporting Standards and with the requirements of the Zambezi River Authority Acts No. 17 and 19. The Directors are of the opinion that the annual financial statements give a true and fair view of the state of the financial affairs of the Authority and of its financial performance in accordance with International Financial Reporting Standards. The Directors are also responsible for such internal control, as the Directors determine necessary to enable the preparation of annual financial statements that are free from material misstatements, whether due to fraud or error.

The Directors note that despite the Authority's having defaulted on its on lent loan facility with the Government of the Republic of Zambia (GRZ), sufficient safe guards to assure the Authority's going concern status have been put in place in the form of agreeing on renegotiated terms with the GRZ.


Nothing has come to the attention of the Directors to indicate that the Authority will not remain a going concern for at least twelve months from the date of these annual financial statements.



Chairperson

16 / 06 / 2021

Date



Co-Chairperson

16 / 6 / 2021

Date



Independent auditor's report

To the Shareholders of Zambezi River Authority

Report on the audit of the annual financial statements

Our opinion

In our opinion, the annual financial statements give a true and fair view of the financial position of Zambezi River Authority (the "Authority") as at 31 December 2020, and of its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and the requirements of the Zambezi River Authority Act 17 and 19.

What we have audited

Zambezi River Authority's annual financial statements are set out on pages 10 to 52 and comprise:

- the statement of financial position as at 31 December 2020;
- the statement of income and expenditure and other comprehensive income for the year then ended;
- the statement of changes in reserve for the year then ended;
- the statement of cash flows for the year then ended; and
- the notes to the annual financial statements, which include, a summary of significant accounting policies and other explanatory information.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the annual financial statements* section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of the Authority in accordance with the International Ethics Standards Board for Accountants' (IESBA) International Code of Ethics for Professional Accountants (including International Independence Standards) (the "IESBA Code"). We have fulfilled our other ethical responsibilities in accordance with the IESBA Code.

Key Audit Matters

We have determined that there are no Key audit matters to communicate in our report.

Other information

The Directors are responsible for the other information. The other information comprises the Authority's Annual Report but does not include the annual financial statements and our auditor's report thereon.

Our opinion on the annual financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

PricewaterhouseCoopers, PwC Place, Stand No 2374, Thabo Mbeki Road, P.O. Box 30942, Lusaka, Zambia
T: +260 (211) 334000, F: +260(211) 256474, www.pwc.com/zm



Report on the audit of the annual financial statements (continued)

Other information (continued)

In connection with our audit of the annual financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the annual financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Directors for the annual financial statements

The Directors are responsible for the preparation of annual financial statements that give a true and fair view in accordance with IFRS as issued by the IASB and the requirements of the Zambezi River Authority Act 17 and 19 and for such internal control as the Directors determine is necessary to enable the preparation of annual financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the annual financial statements, the Directors are responsible for assessing the Authority's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the Authority or to cease operations, or have no realistic alternative but to do so.

The Directors are responsible for overseeing the Authority's financial reporting process.

Auditor's responsibilities for the audit of the annual financial statements

Our objectives are to obtain reasonable assurance about whether the annual financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the annual financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Directors.



Report on the audit of the annual financial statements (continued)

Auditor's responsibilities for the audit of the annual financial statements (continued)

- Conclude on the appropriateness of the Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the annual financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the annual financial statements, including the disclosures, and whether the annual financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

From the matters communicated with the Directors, we determine those matters that were of most significance in the audit of the annual financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Report on other legal and regulatory requirements

The Zambezi River Authority Act 17 and 19 requires that in carrying out our audit we consider whether the Authority has kept proper accounting records and other records and other registers required by this Act.

In respect of the foregoing requirements, we have no matters to report.

PricewaterhouseCoopers
Chartered Accountants
Lusaka

Charity Mulenga
Practicing Certificate Number: AUD/F000945
Partner signing on behalf of the firm

28th June

2021

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Statement of income and expenditure and other comprehensive income

	Notes	Year ended 31 December					
		2020			2019		
		ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Revenue	5	1,141,117	426,566	23,705	239,972	314,940	24,151
Other income	6	4,098	1,532	85	2,362	6,129	238
Fair value gain on financial assets through profit or loss	13	-	-	-	479	674	48
Loss on trade and other receivables	21	(268,398)	(100,331)	(5,575)	(47,902)	(62,844)	(4,821)
Depreciation on property, plant, and equipment	9	(167,214)	(62,507)	(3,473)	(37,625)	(49,364)	(3,786)
Depreciation on Investment Property	10	(1,896)	(709)	(39)	(391)	(513)	(39)
Employee benefits expense	8	(478,050)	(178,701)	(9,928)	(203,712)	(277,187)	(20,502)
Governance costs		(18,856)	(7,049)	(392)	(8,205)	(10,793)	(826)
Administration and travel costs		(82,336)	(30,778)	(1,710)	(28,093)	(36,575)	(2,826)
Other operating expenses		(20,572)	(7,690)	(427)	(6,178)	(8,273)	(622)
Results from operating activities		107,893	40,333	2,246	(89,293)	(123,806)	(8,985)
Finance income	7	74,199	27,737	1,542	19,475	24,928	1,960
Finance costs	7	(7,414)	(2,772)	(154)	(13,422)	(12,844)	(1,351)
Surplus/(Deficit) for the year		174,678	65,298	3,634	(83,240)	(111,722)	(8,376)
Other comprehensive income for the year							
Items that will be subsequently reclassified to profit or loss:							
Exchange differences on translation		9,779,106	1,077,157	-	2,428,332	290,445	-
Total other comprehensive income for the year		9,779,106	1,077,157	-	2,428,332	290,445	-
Total comprehensive income for the year		9,953,784	1,142,455	3,634	2,345,092	178,723	(8,376)

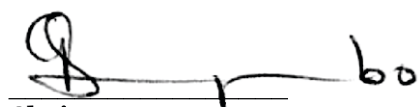
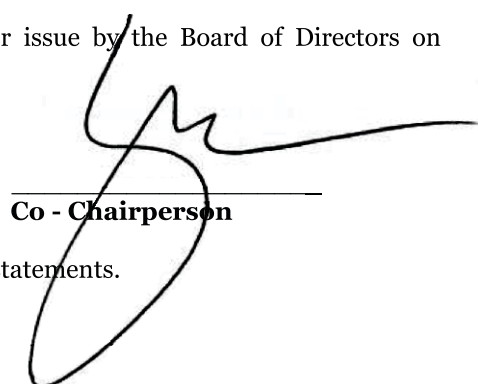
The notes on pages 15 to 52 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Statement of financial position

		Year ended 31 December					
		2020			2019		
	Notes	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Non - current assets							
Property, plant and equipment	9	14,156,972	3,603,621	168,870	2,699,317	2,190,249	156,559
Investment property	10	113,153	28,803	1,350	23,951	19,434	1,389
Long term investments	11	987	251	12	932	756	54
Other receivables	14	49,959	12,717	596	10,005	8,118	580
		<u>14,321,071</u>	<u>3,645,392</u>	<u>170,828</u>	<u>2,734,205</u>	<u>2,218,557</u>	<u>158,582</u>
Current assets							
Inventory	12	11,623	2,959	139	2,321	1,888	135
Financial assets at fair value through profit or loss	13	36,491	9,289	435	761	617	44
Trade and other receivables	14	4,931,614	1,255,327	58,829	736,383	597,507	42,710
Cash and cash equivalents	15	83,755	21,320	1,000	13,988	11,350	811
Restricted cash	16	1,400,536	356,502	16,707	338,593	274,738	19,638
		<u>6,464,019</u>	<u>1,645,397</u>	<u>77,110</u>	<u>1,092,046</u>	<u>886,100</u>	<u>63,338</u>
Total assets		<u>20,785,090</u>	<u>5,290,789</u>	<u>247,938</u>	<u>3,826,251</u>	<u>3,104,657</u>	<u>221,920</u>
Funds and Liabilities							
Revaluation reserve		6,489,724	1,651,939	77,414	1,377,507	1,117,723	79,894
Translation reserve		5,637,922	944,921	-	1,090,435	446,614	-
Revenue reserve		324,510	572,798	71,124	30,429	462,866	65,010
		<u>12,452,156</u>	<u>3,169,658</u>	<u>148,538</u>	<u>2,498,371</u>	<u>2,027,203</u>	<u>144,904</u>
Non - current liabilities and grants							
Capital grants	19	4,235,666	1,078,176	50,526	680,800	552,408	39,486
		<u>4,235,666</u>	<u>1,078,176</u>	<u>50,526</u>	<u>680,800</u>	<u>552,408</u>	<u>39,486</u>
Current liabilities							
Borrowings	17	1,194,610	304,084	14,250	185,590	150,589	10,764
Trade and other payables	18	2,902,658	738,871	34,624	461,489	374,457	26,766
		<u>4,097,268</u>	<u>1,042,955</u>	<u>48,874</u>	<u>647,079</u>	<u>525,046</u>	<u>37,530</u>
Total funds and liabilities		<u>20,785,090</u>	<u>5,290,789</u>	<u>247,938</u>	<u>3,826,250</u>	<u>3,104,657</u>	<u>221,920</u>

The annual financial statements on pages 10 to 52 were approved for issue by the Board of Directors on 16th June 2021 and signed on its behalf by:


Chairperson

Co - Chairperson

The notes on pages 15 to 52 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

**Statement of changes in reserves
(ZWL)**

	Revaluation reserves ZWL'000	Translation reserve ZWL'000	Revenue reserve ZWL'000	Total Reserves ZWL'000
Balance at 1 January 2019	82,374	-	70,906	153,280
Deficit for the year	-	-	(83,240)	(83,240)
<u>Other comprehensive income for the year</u>				
Amortisation of revaluation reserve	(42,764)	-	42,764	-
Exchange differences on translation	1,337,897	1,090,435	-	2,428,332
Total comprehensive income for the year	1,295,133	1,090,435	(40,476)	2,345,092
Balance at 1 January 2020	1,377,507	1,090,435	30,430	2,498,372
Surplus for the year	-	-	174,678	174,678
<u>Other comprehensive income for the year</u>				
Amortisation of revaluation reserve	(119,402)	-	119,402	-
Exchange differences on translation	5,231,619	4,547,487	-	9,779,106
Total comprehensive income for the year	5,112,217	4,547,487	294,080	9,953,784
Balance at 31 December 2020	6,489,724	5,637,922	324,510	12,452,156

Statement of changes in reserves (ZMW)

	Revaluation reserve ZMW'000	Translation reserve ZMW'000	Revenue reserve ZMW'000	Total reserves ZMW'000
Balance at 1 January 2019	993,393	315,198	539,889	1,848,480
Deficit for the year	-	-	(111,722)	(111,722)
<u>Other comprehensive income for the year</u>				
Amortisation of revaluation reserve	(34,699)	-	34,699	-
Exchange differences on translation	159,029	131,416	-	290,445
Total comprehensive income for the year	124,330	131,416	(77,023)	178,723
Balance at 1 January 2020	1,117,723	446,614	462,866	2,027,203
Surplus for the year	-	-	65,298	65,298
<u>Other comprehensive income for the year</u>				
Amortisation of revaluation reserve	-44,634	-	44,634	-
Exchange differences on translation	578,850	498,307	-	1,077,157
Total comprehensive income for the year	534,216	498,307	109,932	1,142,455
Balance at 31 December 2020	1,651,939	944,921	572,798	3,169,658

The notes on pages 15 to 52 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Statement of changes in reserves (US\$)

	Revaluation reserves US\$'000	Revenue reserve US\$'000	Total Reserves US\$'000
Balance at 1 January 2019	82,374	70,906	153,280
Deficit for the year	-	(8,376)	(8,376)
<u>Other comprehensive income for the year</u>			
Amortisation of revaluation reserve	(2,480)	2,480	-
Total comprehensive income for the year	(2,480)	(5,896)	(8,376)
Balance at 1 January 2020	79,894	65,010	144,904
Surplus for the year	-	3,634	3,634
<u>Other comprehensive income for the year</u>			
Amortisation of revaluation reserve	(2,480)	2,480	-
Total comprehensive income for the year	(2,480)	6,114	3,634
Balance at 31 December 2020	77,414	71,124	148,538

The notes on pages 15 to 52 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Statement of cash flows

	Year ended 31 December					
	ZWL'000	2020 ZMW'000	US\$'000	ZWL'000	2019 ZMW'000	US\$'000
Cash Inflow From Operating Activities						
Operating Results	174,678	65,298	3,634	(83,240)	(111,722)	(8,376)
Depreciation on property, plant and equipment	167,214	62,507	3,473	37,625	49,364	3,786
Depreciation on investment property	1,896	709	39	391	513	39
Impairment loss on trade and other receivables	268,398	100,331	5,575	47,902	62,844	4,821
(Gain) on disposal of assets	(762)	(285)	(16)	(967)	(1,233)	(97)
Interest received	(74,199)	(27,737)	(1,542)	(19,475)	(24,928)	(1,960)
Fair value gain on financial assets through profit and loss	-	-	-	(479)	(674)	(48)
Increase in accounts receivable	(5,165,278)	(832,457)	(21,709)	(837,011)	(350,933)	(21,059)
Restricted cash	1,061,943	81,764	2,932	(314,329)	17,874	4,626
Increase in Inventories	(9,302)	(1,070)	(4)	(2,125)	474	61
Increase in trade and other payables	2,441,169	364,413	7,858	449,974	235,592	15,251
Cash generated From Operations	(1,134,243)	(186,527)	240	(721,734)	(122,829)	(2,956)
Interest received	74,199	27,737	1,542	19,475	24,928	1,960
Net Cash inflow from Operating Activities	(1,060,044)	(158,790)	1,782	(702,259)	(97,901)	(996)
Investing Activities						
Purchase of property plant and equipment	(781,070)	(291,974)	(16,225)	(187,562)	(246,068)	(18,876)
Proceeds from disposal of property, plant and equipment	1,492	558	31	108	142	11
Proceeds from disposal of financial assets at fair value through profit and loss	-	-	-	14,938	19,428	1,490
Purchase of financial instruments at fair value through profit or loss	(18,831)	(7,039)	(391)	(660)	(866)	(66)
Net Cash Outflow from Investing Activities	(798,409)	(298,455)	(16,585)	(173,176)	(227,364)	(17,441)
Financing Activities						
Revenue Grants Received	3,554,866	525,768	11,040	84,151	110,401	8,468
Proceeds From Long-Term Loans	1,009,020	153,495	3,486	82,009	115,464	8,254
Net Cash Outflow on Financing	4,563,886	679,263	14,526	166,160	225,865	16,722
Changes in Cash and Cash Equivalents	2,705,433	222,018	(277)	(709,275)	(99,400)	(1,715)
Effects of changes in exchange rates on cash held in foreign currencies	(2,635,666)	(212,048)	466	721,315	87,253	578
Cash and Cash Equivalents at start of year	13,988	11,350	811	1,948	23,497	1,948
Cash and Cash Equivalents at end of year	83,755	21,320	1,000	13,988	11,350	811

The notes on pages 15 to 52 are an integral part of these annual financial statements.

Notes to the annual financial statements

1 General information

The Zambezi River Authority (“the Authority”) is mandated to manage the Zambezi River, which flows between Zambia and Zimbabwe, the two contracting states’ common borders. The Authority is also charged with the responsibility to maintain the Kariba Dam Complex (Kariba Complex) and construct and maintain other dams or infrastructure on the river forming the border between the two states. Its registered Head Office is:

Kariba House
32 Cha Cha Cha Road
P O Box 30233
Lusaka, Zambia.

2 Summary of significant accounting policies

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all years presented, unless otherwise stated.

(a) Basis of preparation

The annual financial statements of Zambezi River Authority have been prepared in accordance with International Financial Reporting Standards (IFRS) and interpretations issued by the IFRS Interpretations Committee (IFRS IC) applicable to entities reporting under IFRS and the requirements of the Zambezi River Authority Act. The annual financial statements comply with IFRS as issued by the International Accounting Standards Board (IASB).

The measurement basis applied is the historical cost basis, as modified by the revaluation of buildings and financial assets at fair value through profit or loss. The annual financial statements are presented in United States Dollars (US\$), Zambian Kwacha (“ZMW” or “K”) and in Zimbabwean Dollars (“ZWL”) rounded to the nearest US\$, Zimbabwean dollar or kwacha.

In accordance with the Zambezi River Authority Acts No. 17 and 19, the annual financial statements for the period ended 31 December 2020 have been approved for issue by the Directors.

The preparation of annual financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires the Directors to exercise judgement in the process of applying the Authority’s accounting policies. The areas involving a higher degree of judgement or complexity, or where assumptions and estimates are significant to the annual financial statements, are disclosed in Note 3.

(b) Changes in accounting policy and disclosures

(i) New and amended standards adopted by the Authority

The Authority has adopted all the new, revised or amended accounting pronouncements as issued by the International Accounting Standards Board (IASB), which were effective for the from 1 January 2020.

The amendments listed below did not have any material impact on the amounts recognised in prior periods and are not expected to significantly affect the current or future period:

- (i) Amendments to IFRS 1, “Presentation of financial statements” and IAS 8 “Accounting policies, changes in accounting estimates and errors on the definition of material.
- (ii) Amendments to IFRS 9, “Financial Instruments”, IAS 39, “Financial Instruments: Recognition and Measurement” and IFRS 7, “Financial Instruments: Disclosure” – Interest rate benchmark reform (Phase 1).
- (iii) Annual Improvements to IFRS Standards 2018-2020 Cycle

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(b) Changes in accounting policy and disclosures (continued)

(i) New and amended standards adopted by the Authority

Amendment to IAS 1, 'Presentation of financial statements' and IAS 8, 'Accounting policies, changes in accounting estimates and errors' on the definition of material.

These amendments to IAS 1 and IAS 8 and consequential amendments to other IFRSs:

- use a consistent definition of materiality throughout IFRSs and the Conceptual Framework for Financial Reporting;
- clarify the explanation of the definition of material; and
- incorporate some of the guidance in IAS 1 about immaterial information.

The amended definition is:

"Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity."

The amendment did not have any significant impact on the Authority's annual financial statements for the period under review.

Amendments to IFRS 9, 'Financial Instruments', IAS 39, 'Financial Instruments: Recognition and Measurement' and IFRS 7, 'Financial Instruments: Disclosure' – Interest rate benchmark reform (Phase 1)

These amendments provide certain reliefs in connection with interest rate benchmark reform (IBOR). The reliefs relate to hedge accounting and have the effect that IBOR should not generally cause hedge accounting to terminate. However, any hedge ineffectiveness should continue to be recorded in the income statement.

The amendments did not have any impact on the Authority's annual financial statements as there are currently no hedge instruments held by the Authority.

(ii) New and amended standards not early adopted by the Authority

Certain new accounting standards and interpretations have been published that are not mandatory for 31 December 2020 reporting periods and have not been early adopted by the Authority. These standards are not expected to have a material impact on the entity in the current or future reporting periods and on foreseeable future transactions.

IFRS 16, 'Leases' COVID-19-Related Rent Concessions Amendment

The IASB has provided lessees (but not lessors) with relief in the form of an optional exemption from assessing whether a rent concession related to COVID-19 is a lease modification, provided that the concession meets certain conditions. Lessees can elect to account for qualifying rent concessions in the same way as they would if they were not lease modifications. In many cases, this will result in accounting for the concession as a variable lease payment.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(b) Changes in accounting policy and disclosures (continued)

(ii) *New and amended standards not early adopted by the Authority*

Amendments to IFRS 9 ‘Financial Instruments’, IAS 39 ‘Financial Instruments: Recognition and Measurement’, IFRS 7 ‘Financial Instruments: Disclosures’, IFRS 4 ‘Insurance Contracts’ and IFRS 16 ‘Leases’ – interest rate benchmark (IBOR) reform (Phase 2)

The Phase 2 amendments address issues that arise from the implementation of the reform of an interest rate benchmark, including the replacement of one benchmark with an alternative one. The amendment clarifies that liabilities are classified as either current or non-current, depending on the rights that exist at the end of the reporting period. Classification is unaffected by expectations of the entity or events after the reporting date (for example, the receipt of a waiver or a breach of covenant).

Annual Improvements to IFRS Standards 2018-2020 Cycle

These amendments include minor changes to:

- IFRS 1, ‘First time adoption of IFRS’ has been amended for a subsidiary that becomes a first-time adopter after its parent. The subsidiary may elect to measure cumulative translation differences for foreign operations using the amounts reported by the parent at the date of the parent’s transition to IFRS.
- IFRS 9, ‘Financial Instruments’ has been amended to include only those costs or fees paid between the borrower and the lender in the calculation of “the 10% test” for derecognition of a financial liability. Fees paid to third parties are excluded from this calculation.
- IFRS 16, ‘Leases’, amendment to the Illustrative Example 13 that accompanies IFRS 16 to remove the illustration of payments from the lessor relating to leasehold improvements. The amendment intends to remove any potential confusion about the treatment of lease incentives.

Amendment to IAS 1 ‘Presentation of Financial Statements’ on Classification of Liabilities as Current or Non-current.

The amendment clarifies that liabilities are classified as either current or non-current, depending on the rights that exist at the end of the reporting period. Classification is unaffected by expectations of the entity or events after the reporting date (for example, the receipt of a waiver or a breach of covenant).

Amendments to IAS 16 ‘Property, Plant and Equipment’ on Proceeds before Intended Use.

The amendment to IAS 16 prohibits an entity from deducting from the cost of an item of PPE any proceeds received from selling items produced while the entity is preparing the asset for its intended use (for example, the proceeds from selling samples produced when testing a machine to see if it is functioning properly). The proceeds from selling such items, together with the costs of producing them, are recognised in profit or loss.

Amendments to IAS 37 ‘Provisions, Contingent Liabilities and Contingent Assets’ on Onerous Contracts—Cost of Fulfilling a Contract

The amendment clarifies which costs an entity includes in assessing whether a contract will be loss-making. This assessment is made by considering unavoidable costs, which are the lower of the net cost of exiting the contract and the costs to fulfil the contract. The amendment clarifies the meaning of ‘costs to fulfil a contract’. Under the amendment, costs to fulfil a contract include incremental costs and the allocation of other costs that relate directly to fulfilling the contract.

The above standards are expected not to have a material impact on the Authority.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(c) Foreign currency translation

(i) Functional and presentation currency

The Authority as a bi national institution has operations in both Zambia and Zimbabwe and the presentation currency is the respective currencies of the two Contracting States which are, the Zimbabwe Dollar ("ZWL") and, the Zambian Kwacha. The functional currency of the Authority is the United States Dollar.

Income statement items have been translated into the presentation currencies using the average exchange rate for the year as an approximation to the actual exchange rate. Assets and liabilities have been translated using the closing exchange rate. Any differences arising from this process have been recognised in other comprehensive income and accumulated in the foreign exchange reserve in equity.

Equity items have been translated at the closing exchange rate. Exchange differences arising on retranslating equity items and opening net assets have been transferred to the foreign exchange reserve within equity.

(ii) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuations where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement.

Foreign exchange gains and losses that relate to borrowings and cash and cash equivalents are presented in income and expenditure within 'finance income or cost'. All other foreign exchange gains and losses are presented in income or expenditure within 'other income or expenses'.

(d) Revenue recognition

Revenue comprises the fair value of the consideration received or receivable for the sale of goods and services in the ordinary course of the Authority's activities.

The Authority identifies contracts with customers, the performance obligations within it, the transaction price, and its allocation to the performance obligations. Revenue is recognised when control of the product passes to the customer and is measured based on expected consideration. It is the Authority's policy to recognise revenue from a contract when it has been approved by both parties, rights have been clearly identified, payment terms have been defined, the contract has commercial substance, and collectability has been ascertained as probable.

Collectability of customer's payments is ascertained based on the customer's historical records, guarantees provided, the customer's industry and advance payments made if any.

Water Sales Revenue is a product of the following:

- Water used as measured using flow meter equipment
- The agreed annual fixed charge
- The variable charge

Disaggregation of revenue from contract with customers

The Authority derives revenue from one source i.e. sale of water to Kariba Hydro Power Company (KHPC) and ZESCO Limited (ZESCO).

The Authority has determined that the disaggregation of revenue based on the criteria of type of products meets the revenue disaggregation disclosure requirement of IFRS 15 as it depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. See further details in note 5.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(e) Other income

Other income is recognised on an accruals basis in accordance with the substance of the relevant agreements.

(f) Interest income

Interest income is recognised using the effective interest method.

(g) Rental income

Rental income from properties is recognised in the income and expenditure on a straight-line basis over the term of the relevant lease agreement.

(h) Property, plant, and equipment

Land and buildings are recognised at fair value based on periodic, but at least triennial, valuations by external independent valuers, less subsequent depreciation for buildings. A revaluation surplus is credited to revaluation reserve. All other property, plant and equipment is stated at historical cost less accumulated depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Construction work in progress is carried at cost and is not depreciated until the asset is brought into use.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Authority and the cost of the item can be measured reliably. The carrying amount of any component accounted for as a separate asset is derecognised when replaced. All other repairs and maintenance are charged to income and expenditure during the reporting period in which they are incurred.

Increases in the carrying amounts arising on revaluation of buildings are recognised in other comprehensive income and accumulated in the revaluation reserve. To the extent that the increase reverses a decrease previously recognised in income and expenditure, the increase is first recognised in income and expenditure. Decreases that reverse previous increases of the same asset are first recognised in other comprehensive income to the extent of the remaining surplus attributable to the asset; all other decreases are charged to income and expenditure. Each year, the difference between depreciation based on the revalued carrying amount of the asset charged to income and expenditure and depreciation based on the asset's original cost is reclassified from the property, plant, and equipment revaluation surplus to revenue reserve.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost or revalued amounts to their residual values over their estimated useful lives, as follows:

Buildings	2.5%
Kariba Dam Complex	2.5%
Motor Vehicles	25%
Equipment and Machinery	10 - 20%
Furniture and Fittings	20%
Computers	25%

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Property, plant, and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units).

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

h) Property, plant, and equipment (continued)

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are included in income and expenditure. When revalued assets are sold, the amounts included in the revaluation reserve relating to that asset are transferred to retained earnings.

(i) Investment Property

Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the Authority is classified as investment property. Investment property also includes property that is being constructed or developed for future use as investment property.

All investment property is stated at historical cost less accumulated depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the items. Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Authority and the cost of the item can be measured reliably. All other repairs and maintenance costs are expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

Depreciation on investment property is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives over 40 years.

Investment properties are derecognised when they have been disposed. If an investment property becomes owner-occupied, it is reclassified as property, plant, and equipment. Its fair value at the date of reclassification becomes its cost for subsequent accounting purposes.

If an item of owner-occupied property becomes an investment property because its use has changed, any difference resulting between the carrying amount and the fair value of this item at the date of transfer is treated in the same way as a revaluation under IAS 16. Any resulting increase in the carrying amount of the property is recognised in income statement to the extent that it reverses a previous impairment loss, with any remaining increase recognised in other comprehensive income and increase directly to equity in revaluation surplus within equity. Any resulting decrease in the carrying amount of the property is initially charged in other comprehensive income against any previously recognised revaluation surplus, with any remaining decrease charged to income and expenditure.

(j) Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is determined using the average cost method. Net realisable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses.

(k) Financial Instruments

Financial instruments comprise trade and other receivables (excluding prepayments), financial assets at fair value through profit or loss, cash and cash equivalents, borrowings, other non-current liabilities (excluding provisions) and trade and other payables.

Financial assets and liabilities are recognised in the Authority's statement of financial position when the Authority becomes a party to the contractual provisions of the instruments.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(k) Financial Instruments (continued)

All financial assets and liabilities are initially measured at fair value, including transaction costs except for those classified as at fair value through profit or loss which are initially measured at fair value, excluding transaction costs. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognised immediately in income and expenditure. Financial assets are recognised (derecognised) on the date the Authority commits to purchase (sell) the instruments (trade date accounting).

Financial assets and liabilities are classified as current if expected to be realised or settled within 12 months; if not, they are classified as non-current.

(i). Offsetting financial instruments

Offsetting of financial assets and liabilities is applied when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. The net amount is reported in the statement of financial position.

(ii). Financial instrument classification

The Authority classifies financial assets on initial recognition as measured at amortised cost, or fair value through profit or loss on the basis of the Authority's business model for managing the financial asset and the cash flow characteristics of the financial asset. The Authority classifies its financial instruments into the following categories:

Amortised cost

The asset is held within a business model with the objective to collect the contractual cash flows; and the contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal outstanding.

Financial assets are not reclassified unless the Authority changes its business model. In rare circumstances where the Authority does change its business model, reclassifications are done prospectively from the date that the Authority changes its business model.

(iii). Financial liabilities are classified as measured at amortised cost.

(iv). Subsequent measurement

Subsequent to initial recognition, financial instruments are measured as described below.

Financial assets at fair value through profit and loss: These financial assets are subsequently measured at fair value and changes therein (including any interest or dividend income) are recognised in income and expenditure.

Financial assets at amortised cost: These financial assets are subsequently measured at amortised cost using the effective interest method, less any impairment losses. Interest income, foreign exchange gains and losses and impairments are recognised in income and expenditure. Any gain or loss on derecognition is recognised in income and expenditure.

Financial liabilities comprise trade and other payables, borrowings, and other non-current liabilities (excluding provisions). All financial liabilities are subsequently measured at amortised cost using the effective interest method.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(k) Financial Instruments (Continued)

(v). De-recognition

Financial assets are derecognised when the rights to receive cash flows from the assets have expired or have been transferred and the Authority has transferred substantially all risks and rewards of ownership. Financial liabilities are derecognised when the obligations specified in the contracts are discharged, cancelled, or expires.

(vi). Substantial modification

A substantial modification of the terms of an existing debt instrument or part of it is accounted for as an extinguishment of the original debt instrument and the recognition of a new debt instrument. Substantial modification (continued). Gains or losses arising from the modification of the terms of a debt instrument are recognised immediately in income and expenditure where the modification does not result in the derecognition of the existing instrument.

(vii). Impairment

Under IFRS 9 the Authority calculates allowance for credit losses as expected credit losses (ECL's) for financial assets measured at amortised cost and contract assets. ECL's are a probability weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Authority expects to receive). ECLs are discounted at the original effective interest rate of the financial asset.

The Authority applies the simplified approach to determine the ECL for trade receivables and contract assets. This results in calculating lifetime expected credit losses for trade receivables and contract assets. ECL for trade receivables is calculated using a provision matrix. Refer to note 21 for more detail about ECL and how this is calculated.

(l) Trade receivables

Trade receivables are amounts due from customers for services rendered in the ordinary course of business. If collection is expected in one year or less (or in the normal operating cycle of the business if longer), they are classified as current asset. If not, they are presented as non-current assets.

Trade receivables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method less provision for impairment.

(m) Cash and cash equivalents

Cash and cash equivalents include cash in hand, deposits held at call with banks, other short term highly liquid investments with original maturities of three months or less.

(n) Borrowings

Borrowings are initially recognised at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortised cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognised in income and expenditure over the period of the borrowings using the effective interest method. Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw down occurs. To the extent there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalised as a prepayment for liquidity services and amortised over the period of the facility to which it relates.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(n) Borrowings (continued)

Borrowings are removed from the statement of financial position when the obligation specified in the contract is discharged, cancelled or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in income and expenditure as other income or finance costs. Borrowings are classified as current liabilities unless the Authority has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period.

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale.

Other borrowing costs are expensed in the period in which they are incurred.

(o) Trade payables

These amounts represent liabilities for goods and services provided to the Authority prior to the end of financial year which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition. Trade and other payables are presented as current liabilities unless payment is not due within 12 months after the reporting period. They are recognised initially at their fair value and subsequently measured at amortised cost using the effective interest method.

(p) Employee benefits

(i) Retirement benefit obligations

The Authority subscribes to defined contribution schemes for the benefit of its permanent and pensionable staff. The funds are managed by Prudential Insurance for the Zambian employees and Zimnat life Assurance for the Zimbabwean employees. Both funds are overseen by a Board of Trustees composed of management and employee representative trustees.

A defined contribution plan is a pension plan under which the Authority pays fixed contributions into a separate entity. The Authority has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods.

The Authority's contributions to the defined contribution schemes are charged to income and expenditure in the period to which they relate. The Authority has no further obligation once contributions have been paid.

The Authority and all its employees contribute to the appropriate National Social Security Funds in the two Contracting States, which are defined contribution schemes.

(ii) Termination benefits

Termination benefits are payable when employment is terminated by the Authority before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Authority recognises termination benefits at the earlier of the following dates: (a) when the Authority can no longer withdraw the offer of those benefits; and (b) when the entity recognises costs for a restructuring that is within the scope of IAS 37 and involves the payment of termination benefits.

Notes to the annual financial statements (continued)

2 Summary of significant accounting policies (continued)

(p) Employee benefits (continued)

(ii) Termination benefits (continued)

In the case of an offer made to encourage voluntary redundancy, the termination benefits are measured based on the number of employees expected to accept the offer.

(q) Grants

Grants are not recognised until there is reasonable assurance that the Authority will comply with the conditions attaching to them and that the grants will be received. Grants whose primary condition is that the Authority should purchase, or otherwise acquire non-current assets are recognised as capital grants in the statement of financial position and transferred to income and expenditure on a systematic and rational basis over the useful lives of the related assets. Other grants are recognised as deferred revenue over the periods necessary to match them with the costs for which they are intended to compensate, on a systematic basis.

Compensations for expenses or losses already incurred or for the purpose of giving immediate financial support to the Authority with no future related costs are recognised in income and expenditure in the period in which they become receivable.

(r) Income tax

The Authority is exempted from paying taxes on capital, income, or profit under Articles 17 and 19 of the Zambezi River Authority Acts, 1987 of Zambia and Zimbabwe respectively. As such no allowance is made for current or deferred taxes

(s) Comparatives

Where necessary, prior year comparatives have been reclassified in line with current year presentation.

3 Critical accounting estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Critical estimates made include the following:

Buildings

The Authority owns land and buildings classified either as residential or commercial properties. The said properties are carried at valuation with the valuation exercise performed triannual. The valuation is conducted by professional external valuers, who apply various techniques that consider among other things:

- Location
- Value of surrounding properties
- Impact of planned investments in the area

The land and buildings were revalued in 2018 using the sales comparison approach based on recent sales of comparable properties in the area.

Notes to the annual financial statements (continued)

4 Segmental Reporting

The Authority operates in two geographical segments i.e. Zambia and Zimbabwe. An operating segment is a component of the Authority for which discrete financial information is available; engages in business activities (earns revenue, incurs expenses); and for which operating results are regularly reviewed to assess performance and to make resource allocation decisions (to the segment). The Authority currently derives its revenues from water sales to ZESCO Limited and Kariba Hydro Power Company (Pvt) Limited ("KHPC"). The Chief Executive is presented with the results of each segment for the purposes of resource allocation and assessment of the results of each segment.

Segment performance:

The operating income is based on water tariffs charged based on the water consumed in the generation of electricity as invoiced to the two utility companies, ZESCO Limited and Kariba Hydro Power Company (Pvt) Ltd. The formula used is intended to provide the Authority with sufficient revenues to carry out its mandate and not to generate profits.

Segment information is presented in respect of the Authority's business. The primary format is based on the Authority's geographical segments and then on the management and internal reporting structure. Segment results presented below are based on income and expenses directly attributable to a segment as well as those that can be allocated on a reasonable basis.

Amounts are Stated in ZWL'ooo	Year ended 31 December 2020		
	Zambia	Zimbabwe	Consolidated
Revenue	632,057	509,060	1,141,117
Finance income	68,854	5,393	74,247
Other income	3,735	315	4,050
Segment income	704,646	514,768	1,219,414
Segment costs			
Board expenses	10,281	8,575	18,856
Repairs and maintenance	4,555	9,011	13,566
Staff costs	311,704	166,346	478,050
Finance costs	5,678	1,736	7,414
Other administration expenses	326,241	200,609	526,850
	658,459	386,277	1,044,736
Net Surplus	46,187	128,491	174,678

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Notes to the annual financial statements (continued)

4 Segmental Reporting (continued)

Amounts are Stated in ZMW'000	Year ended 31 December 2020		
	Zambia	Zimbabwe	Consolidated
Revenue	236,280	190,286	426,566
Finance income	25,739	2,016	27,755
Other income	1,395	118	1,513
Segment income	263,414	192,420	455,834
Segment costs			
Board expenses	3,843	3,206	7,049
Repairs and maintenance	1,703	3,368	5,071
Staff costs	116,519	62,182	178,701
Finance costs	2,123	649	2,772
Other administration expenses	121,968	74,975	196,943
	246,156	144,380	390,536
Net Surplus	17,258	48,040	65,298

Amounts are Stated in US\$'000	Year ended 31 December 2020		
	Zambia	Zimbabwe	Consolidated
Revenue	13,130	10,575	23,705
Finance income	1,430	112	1,542
Other income	78	7	85
Segment income	14,638	10,694	25,332
Segment costs			
Board expenses	214	178	392
Repairs and maintenance	95	187	282
Staff costs	6,475	3,453	9,928
Finance costs	118	36	154
Other administration expenses	6,776	4,166	10,942
	13,678	8,020	21,698
Net surplus	960	2,674	3,634

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Notes to the annual financial statements (continued)

4 Segmental Reporting (continued)

Amounts are Stated in ZWL'ooo	Year ended 31 December 2019		
	Zambia	Zimbabwe	Consolidated
Revenue	129,280	110,692	239,972
Finance income	15,658	3,817	19,475
Other income	1,037	1,804	2,841
Segment income	145,975	116,313	262,288
Segment costs			
Board expenses	4,750	3,455	8,205
Repairs and maintenance	1,280	3,372	4,652
Staff costs	132,072	71,640	203,712
Finance costs	409	13,013	13,422
Other administration expenses	56,314	59,223	115,537
	194,825	150,703	345,528
Net Deficit	(48,850)	(34,390)	(83,240)

Amounts are Stated in ZMW'ooo	Year ended 31 December 2019		
	Zambia	Zimbabwe	Consolidated
Revenue	171,651	143,289	314,940
Finance income	22,217	2,711	24,928
Other income	3,310	3,493	6,803
Segment income	197,178	149,493	346,671
Segment costs			
Board expenses	6,237	4,556	10,793
Repairs and maintenance	1,656	2,411	4,067
Staff costs	185,308	91,879	277,187
Finance costs	409	12,435	12,844
Other administration expenses	91,410	62,092	153,502
	285,020	173,373	458,393
Net Deficit	(87,842)	(23,880)	(111,722)

Notes to the annual financial statements (continued)

4 Segmental Reporting (continued)

Amounts are Stated in US\$'000	Year ended 31 December 2019		
	Zambia	Zimbabwe	Consolidated
Revenue	13,011	11,140	24,151
Finance income	1,576	432	2,008
Other income	104	134	238
Segment income	14,691	11,706	26,397
Segment costs			
Board expenses	478	348	826
Repairs and maintenance	129	339	468
Staff costs	13,292	7,210	20,502
Finance costs	31	1,319	1,350
Other administration expenses	7,132	4,495	11,627
	21,062	13,711	34,773
Net Deficit	(6,371)	(2,005)	(8,376)

5 Revenue from contracts with customers

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL '000	ZMW'000	US\$'000
Water Sales	825,820	308,703	17,155	174,892	229,042	17,601
Variable Charge						
Water Sales Fixed	315,297	117,863	6,550	65,080	85,898	6,550
Charge						
	<u>1,141,117</u>	<u>426,566</u>	<u>23,705</u>	<u>239,972</u>	<u>314,940</u>	<u>24,151</u>

All the revenues of the Authority are recognised at a point in time.

a) Water sales

The Authority uses a formula for the sale of water to ZESCO Limited ("ZESCO") and Kariba Hydro Power Company (Pvt) Limited ("KHPC") which was adopted in 1998. The formula was derived to ensure the costs associated with the operations of the Authority were covered by the fees charged to ZESCO Limited and KHPC (Pvt) Limited.

The fees chargeable are contained in a tripartite Water Purchase Agreement (WPA) signed between the Authority and the Utilities and are split between a fixed charge and a variable charge which is dependent on the cubic meters of water dispensed through the generators. In the year 2020, the Authority applied a 2% increment on the variable charge as per the said agreement.

b) Water allocation

During the year ended 31 December 2020, the Authority allocated a total of 27 bm³ of water to be shared equally between the Utilities for purposes of power generation. The Utilities' combined usage in the year was 36.96 bm³ resulting in overutilisation of 9.96%. Of this overutilisation KHPC (Pvt) Limited contributed 2.22 bm³ whereas, ZESCO Limited contributed 7.75 bm³ translating to 16% and 57% respectively.

Zambezi River Authority
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For the year ended 31 December 2020

Notes to the annual financial statements (continued)

Revenue from Contracts with Customers

c) Over utilisation

When there is over utilisation of water above annual base allocation, the following penalties apply;

- Over utilisation by up to 5% of annual allocation, no penalty shall be chargeable.
- Over utilisation of up to 20% of annual allocation, extra volume shall be charged at a water tariff in US\$/m³ x 1.5.
- Over utilization by over 20% of annual allocation, extra volume shall be charged at a water tariff in US\$/m³ x 2.

6 Other income

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Rent received from investment properties	2,007	750	42	864	1,116	87
Profit on disposal of property, plant, and equipment	762	285	16	967	1,233	97
Miscellaneous income	594	222	12	263	3,426	27
Sale of data	7	3	-	4	6	1
Toll fees	718	268	15	262	345	26
Plant hire charges	10	4	-	2	3	-
	<u>4,098</u>	<u>1,532</u>	<u>85</u>	<u>2,362</u>	<u>6,129</u>	<u>238</u>

7 Finance income

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Finance income						
Interest on overdue accounts	60,683	22,684	1,261	14,286	19,111	1,438
Interest on term deposits	2,401	898	50	1,883	1,249	189
Interest on staff housing loans	6,836	2,555	142	3,161	4,378	318
Interest on staff car loans	<u>4,279</u>	<u>1,600</u>	<u>89</u>	<u>145</u>	<u>190</u>	<u>15</u>
	74,199	27,737	1,542	19,475	24,928	1,960
Finance cost						
Exchange loss on cash and cash equivalents	<u>(7,414)</u>	<u>(2,772)</u>	<u>(154)</u>	<u>(13,422)</u>	<u>(12,844)</u>	<u>(1,351)</u>
Net finance income	<u>66,785</u>	<u>24,965</u>	<u>1,388</u>	<u>6,053</u>	<u>12,084</u>	<u>609</u>

8 Employee benefits expense

Salaries and wages	358,224	133,909	7441	71,581	95,499	7,204
Pension	26,062	9,742	541	5,871	7,709	591
Gratuity	20,772	7,765	431	3,828	4,992	385
Retrenchment costs	33,982	12,703	706	112,876	156,124	11,360
Other employment costs	<u>39,010</u>	<u>14,582</u>	<u>810</u>	<u>9,556</u>	<u>12,863</u>	<u>962</u>
	<u>478,050</u>	<u>178,701</u>	<u>9,928</u>	<u>203,712</u>	<u>277,187</u>	<u>20,502</u>

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Notes to the annual financial statements (continued)

9 Property, plant, and equipment

	Kariba Dam Complex	Land and buildings	Motor vehicles & Furniture & fittings	Capital work in progress	Total
As at 1 January 2019					
	ZWL'000	ZWL'000	ZWL'000	ZWL'000	ZWL'000
Cost or valuation	101,152	7,417	9,615	52,499	170,683
Accumulated depreciation	(22,216)	-	(7,084)	-	(29,300)
Net book amount	<u>78,936</u>	<u>7,417</u>	<u>2,531</u>	<u>52,499</u>	<u>141,383</u>
Year ended 31 December 2019					
Opening net book amount	78,936	7,417	2,531	52,499	141,383
Additions	-	-	4,095	183,481	187,576
Transfers from WIP	-	164	3,267	(3,445)	(14)
Scrapping /Disposal	-	-	857	-	857
Effects of foreign exchange difference	1,263,444	119,104	39,584	985,008	2,407,140
Depreciation charge	(25,301)	(2,029)	(10,295)	-	(37,625)
Closing net book amount	<u>1,317,079</u>	<u>124,656</u>	<u>40,039</u>	<u>1,217,543</u>	<u>2,699,317</u>
At 31 December 2019					
Cost or valuation	101,152	7,581	12,875	232,535	354,143
Accumulated depreciation	(47,517)	(2,029)	(12,420)	-	(61,966)
Effects of foreign exchange difference	1,263,444	119,104	39,584	985,008	2,407,140
Net book amount	<u>1,317,079</u>	<u>124,656</u>	<u>40,039</u>	<u>1,217,543</u>	<u>2,699,317</u>
Year ended 31 December 2020					
Opening net book amount	1,317,079	124,656	40,039	1,217,543	2,699,317
Additions	-	-	1,526	779,544	781,070
Transfers from WIP	-	156	3,442	(24,451)	(20,853)
Scrapping/Disposal	-	-	(313)	-	(313)
Depreciation charge	(122,579)	(9,840)	(34,795)	-	(167,214)
Effects of foreign exchange differences	4,995,966	474,264	132,209	5,262,526	10,864,965
Closing net book amount	<u>6,190,466</u>	<u>589,236</u>	<u>142,108</u>	<u>7,235,162</u>	<u>14,156,972</u>
At 31 December 2020					
Cost or valuation	101,152	7,737	17,529	987,628	1,114,046
Accumulated depreciation	(170,096)	(11,869)	(47,215)	-	(229,180)
Effects of foreign exchange differences	6,259,410	593,368	171,794	6,247,534	13,272,106
Net book amount	<u>6,190,466</u>	<u>589,236</u>	<u>142,108</u>	<u>7,235,162</u>	<u>14,156,972</u>

Zambezi River Authority
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For the year ended 31 December 2020

Notes to the annual financial statements (continued)

9 Property, plant, and equipment (continued)

	Kariba Dam Complex	Land and buildings	Motor vehicles, Furniture & fittings	Capital work in progress	Total
	ZMW'000	ZMW'000	ZMW'000	ZMW'000	ZMW'000
At 1 January 2019					
Cost or valuation	1,120,763	79,254	106,545	542,173	1,848,735
Accumulated depreciation	(242,661)	1,960	(77,302)	-	(318,003)
Effects of foreign exchange difference	73,826	8,233	1,283	90,934	174,276
Net book amount	951,928	89,447	30,526	633,107	1,705,008
Year ended 31 December 2019					
Opening net book amount	951,928	89,447	30,526	633,107	1,705,008
Additions	-	-	5,372	240,696	246,068
Transfers from WIP	-	215	4,286	(4,501)	-
Scrapping / Disposal	-	-	1,124	-	1,124
Effects of foreign exchange differences	149,957	14,148	4,687	118,621	287,413
Depreciation charge	(33,194)	(2,663)	(13,507)	-	(49,364)
Closing net book amount	1,068,691	101,147	32,488	987,923	2,190,249
At 31 December 2019					
Cost or valuation	1,120,763	81,429	110,822	778,368	2,091,382
Accumulated depreciation	(275,855)	(2,663)	(84,304)	-	(362,822)
Effects of foreign exchange differences	223,783	22,381	5,970	209,555	461,689
Net book amount	1,068,691	101,147	32,488	987,923	2,190,249
At 31 December 2020					
Opening net book amount	1,068,691	101,147	32,488	987,923	2,190,249
Additions	-	-	570	291,404	291,974
Transfers from WIP	-	58	1,287	(9,140)	(7,795)
Scrapping/Disposal	-	-	(117)	-	(117)
Effects of foreign exchange difference	552,895	52,461	14,952	571,509	1,191,817
Depreciation charge	(45,822)	(3,678)	(13,007)	-	(62,507)
Net book amount	1,575,764	149,988	36,173	1,841,696	3,603,621
At 31 December 2020					
Closing net book amount	1,120,763	81,487	112,562	1,060,632	2,375,444
Accumulated depreciation	(321,677)	(6,341)	(97,311)	-	(425,329)
Effects of foreign exchange differences	776,678	74,842	20,922	781,064	1,653,506
Net book amount	1,575,764	149,988	36,173	1,841,696	3,603,621

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9 Property, plant, and equipment (continued)

	Kariba Dam Complex	Land and buildings	Motor vehicles & Furniture & fittings	Capital work in progress	Total
As at 1 January 2019	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000
Cost or valuation	101,152	7,417	9,615	52,499	170,683
Accumulated depreciation	(22,216)	-	(7,084)	-	(29,300)
Net book amount	78,936	7,417	2,531	52,499	141,383
Year ended 31 December 2019					
Opening net book amount	78,936	7,417	2,531	52,499	141,383
Additions	-	-	412	18,464	18,876
Transfers from WIP	-	17	329	(346)	-
Scrapping/Disposal	-	-	86	-	86
Depreciation charge	(2,546)	(204)	(1,036)	-	(3,786)
Closing net book amount	76,390	7,230	2,322	70,617	156,559
At 31 December 2019					
Cost or valuation	101,152	7,434	9,944	70,617	189,147
Accumulated depreciation	(24,762)	(204)	(7,622)	-	(32,588)
Net book amount	76,390	7,230	2,322	70,617	156,559
Year ended 31 December 2020					
Opening net book amount	76,390	7,230	2,322	70,617	156,559
Additions	-	-	32	16,193	16,225
Transfers from WIP	-	3	71	(508)	(434)
Scrapping/Disposal	-	-	(7)	-	(7)
Depreciation charge	(2,546)	(204)	(723)	-	(3,473)
Closing net book amount	73,844	7,029	1,695	86,302	168,870
At 31 December 2020					
Cost or valuation	101,152	7,437	10,040	86,302	204,931
Accumulated depreciation	(27,308)	(408)	(8,345)	-	(36,061)
Net book amount	73,844	7,029	1,695	86,302	168,870

The Authorities' head office building and residential properties were revalued as at 31 December 2018 by respective Government Valuation Department independent professionally qualified valuers, who hold recognised relevant professional qualifications and have recent experience in the locations and segments of the properties valued. Valuations were based on Open Market Value approach based on current prices of similar properties. The key inputs under this approach are the price per square metre from current year sales of comparable lots of property in the area (location and size). It is the Authority's accounting policy to revalue properties after every three years

If head office building and other residential properties were stated on the historical cost basis, the amounts would be as follows:

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9 Property, plant, and equipment (continued)

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Cost	446,402	113,630	5,325	98,812	74,497	5,325
Accumulated Depreciation	(44,347)	(11,288)	(529)	(6,845)	(5,554)	(397)
Net book value	402,055	102,342	4,796	91,967	68,943	4,928

10 Investment property

	ZWL'000	ZMW'000	US\$'000
At 1 January 2019			
Cost	1,581	15,727	1,581
Accumulated depreciation	(153)	(1,614)	(153)
Effects of foreign exchange differences	-	3,102	-
Net book amount	1,428	17,215	1,428

Year ended 31 December 2019

Opening net book amount	1,428	17,215	1,428
Depreciation charge	(391)	(513)	(39)
Effects of foreign exchange differences	22,914	2,732	-
Net book amount	23,951	97,169	6,941

Year ended 31 December 2019

Cost	1,581	15,727	1,581
Accumulated depreciation	(544)	(2,127)	(192)
Effects of foreign exchange differences	22,914	3,102	-
Net book amount	23,951	16,702	1,389

At 1 January 2020

Opening net book amount	23,951	16,702	1,389
Depreciation charge	(1,896)	(709)	(39)
Effects of foreign exchange differences	91,098	12,810	-
Closing net book amount	113,153	28,803	1,350

At 31 December 2020

Cost	1,581	15,727	1,581
Accumulated depreciation	(2,440)	(2,836)	(231)
Effects of foreign exchange differences	114,012	15,912	-
Net book amount	113,153	28,803	1,350

The investment property is carried at cost because their fair values cannot be reliably determined on a continuing basis. Comparable market transactions are infrequent and alternative reliable estimates of fair value are unreliable. This is due to the location of the investment properties.

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11 Long term investments	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of year	932	756	54	892	10,755	892
Interest earned	51	19	1	93	121	9
Interest redeemed	(15)	(6)	-	(93)	(121)	(9)
Effects of exchange differences	19	(524)	(43)	14,489	1,724	-
Gross carrying amount	987	251	12	15,381	12,479	892
Less impairment provision	-	-	-	(14,449)	(11,723)	(838)
At end of year	987	251	12	932	756	54

The long term investments are held with the Commercial Bank of Zimbabwe (CBZ) with an average tenor of 10 years and yielding a return of 5% per annum. The investment has continued to be eroded following the conversion of the funds to local currency Zimbabwe Dollar (ZWL). In period under review US\$ 43,342 was lost in exchange losses.

12 Inventory	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Consumable stores	11,623	2,959	139	2,321	1,888	135

Inventory comprises stock of consumables and other items held for use in the business.

13 Financial assets at fair value through profit or loss

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of the year	1,420	617	44	1,420	17,123	1,420
Additions	18,831	7,039	391	660	866	66
Fair value gain	-	-	-	479	674	48
Withdrawals	-	-	-	(14,938)	(19,428)	(1,490)
Effect of exchange rate differences	16,240	1,633	-	13,140	1,382	-
	36,491	9,289	435	761	617	44

Financial assets held at fair value through profit or loss represent funds invested with African Life Financial Services Zambia Limited (AFLIFE) and a remnant amount held with the previous fund manager Madison Asset Management Company (MAMCO) Limited. The funds are a sinking fund set up to meet gratuity obligations for employees on fixed term contracts. There was no fair value movement in the period under review as there was low uptake of United States Dollar denominated debt backed instruments which form the majority of the asset allocation in the investment. Management has agreed to a modification to the asset allocation to include other asset classes to enhance returns on the investment.

On 2 February 2021 the Securities and Exchange Commission (SEC) took over operations of MAMCO in order to assure the investing public of the safety of their funds. The Authority still awaits resolution of issues at MAMCO and would be putting in an application for withdrawal of the balance USD 44,034 once the fund starts paying out.

Notes to the annual financial statements (continued)

14 Trade and other receivables

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
ZESCO Limited	2,763,801	703,517	32,969	455,942	369,955	26,444
Kariba Hydro Power Company (KHPC)	1,216,354	309,619	14,510	135,262	109,753	7,845
Trade receivables	3,980,155	1,013,136	47,479	591,204	479,708	34,289
Less: Provision for impairment losses	(1,049,897)	(267,248)	(12,524)	(119,804)	(97,210)	(6,949)
	2,930,258	745,888	34,955	471,400	382,498	27,340
Prepayments	1,928,436	490,878	23,004	244,928	198,737	14,206
Rental debtors	2,300	585	27	3,103	2,517	180
Sundry receivables	11,620	2,958	139	4,943	4,011	287
Staff debtors	108,959	27,735	1,300	22,014	17,862	1,277
	2,051,315	522,156	24,470	274,988	223,127	15,950
	4,981,573	1,268,044	59,425	746,388	605,625	43,290
Less: Long-term receivables						
Staff housing loans	29,601	7,535	353	7,816	6,342	453
Staff car loans	20,358	5,182	243	2,189	1,776	127
	49,959	12,717	596	10,005	8,118	580
	4,931,614	1,255,327	58,829	736,383	597,507	42,710

(i) Classification as trade and other receivables

Trade receivables are amounts due from Utilities for water sales arising in the ordinary course of business. Trade and other receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. If collection of the amounts is expected in one year or less, they are classified as current assets. If not, they are presented as non-current assets. Trade receivables are generally due for settlement within 45 days and therefore are all classified as current. The Authority's other accounting policies for trade and other receivables are outlined below:

(ii) Other receivables

These amounts generally arise from transactions outside the usual operating activities of the Authority. Interest is not charged on these amounts and neither is collateral normally obtained.

(iii) Staff debtors

These relates to car and housing loans which carry interest rates of 6% and 10% per annum respectively. As at year end, these have been fair valued using the market related interest rates for similar loans.

(iv) Fair values of trade and other receivables

Due to the short-term nature of the current receivables, their carrying amount is considered to be the same as their fair value.

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Notes to the annual financial statements (continued)

15 Cash and cash equivalents	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Cash at bank and in hand	69,623	17,722	831	11,195	9,080	649
Short term investments	14,132	3,598	169	2,793	2,270	162
	<u>83,755</u>	<u>21,320</u>	<u>1,000</u>	<u>13,988</u>	<u>11,350</u>	<u>811</u>

In the statement of cash flows, cash and cash equivalents include cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less.

Cash flow information: Net debt reconciliation

Amendments to IAS 7; Effective 1 January 2017, now requires entities to explain changes in their liabilities arising from financing activities. This includes changes arising from cash flows (e.g. drawdowns and repayments of borrowings) and on cash changes such as acquisitions, disposals, accretion of interest and unrealised exchange differences. Below is the tabular presentation of the movements in the Authority's net debt movement reconciliation. In the year under review, US\$ 3,006,687, was drawn from the International Development Association ("IDA"), World Bank US\$ 75 million loan facility. Furthermore, an amount of US\$ 200,000 meant to meet small eligible payments, was disbursed to a designated bank account and same remained unspent at the reporting date.

		2020			2019		
		ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Cash and cash equivalents		1,484,291	377,822	17,707	352,581	286,088	20,449
Reclassified to restricted cash	16	(1,400,536)	(356,502)	(16,707)	(338,593)	(274,738)	(19,638)
Liquid Investments	13	36,491	9,289	435	-	-	-
Borrowings – repayable within one year	17	(1,194,610)	(304,084)	(14,250)	(185,590)	(150,589)	(10,764)
Net debt		<u>(1,074,364)</u>	<u>(273,475)</u>	<u>(12,815)</u>	<u>(170,602)</u>	<u>(139,239)</u>	<u>(9,953)</u>
Cash and liquid investments		120,246	30,609	1,435	13,988	11,350	811
Gross debt – fixed interest rates		(1,194,610)	(304,084)	(14,250)	(185,590)	(150,589)	(10,764)
Net debt		<u>(1,074,364)</u>	<u>(273,475)</u>	<u>(12,815)</u>	<u>(171,602)</u>	<u>(139,239)</u>	<u>(9,953)</u>

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Notes to the annual financial statements (continued)

15 Cash and cash equivalents (continued)

ZWL\$'000	Cash and cash equivalent	Liquid investments	Borrowings within 1 year
Net debt as at 1 January 2019	1,948	1,420	(2,294)
Cash flows	(11,298)	660	(82,009)
Redemptions	-	(14,938)	(2,143)
Foreign exchange differences	23,338	13,140	(99,144)
Other non - cash movements	-	479	-
Restricted investment	-	(761)	-
Net debt at 31 December 2019	13,988	-	(185,590)
Cash flows	9,098	18,831	(154,370)
Redemptions	-	-	(13,450)
Foreign exchange differences	60,689	13,961	(841,200)
Other non - cash movements	-	-	-
Net debt at 31 December 2020	83,755	32,792	(1,194,610)

ZMW'000	Cash and cash equivalent	Liquid investments	Borrowings within 1 year
Net debt as at 1 January 2019	23,947	17,123	(27,688)
Cash flows	(75,126)	866	(115,464)
Redemptions	-	(19,428)	(3,017)
Foreign exchange differences	62,529	1,382	(4,440)
Other non - cash movements	-	674	-
Restricted investment	-	(617)	-
Net debt as at 31 December 2019	11,350	-	(150,609)
Cash flows	3,401	7,039	(57,706)
Redemptions	-	-	(5,028)
Foreign exchange differences	6,569	1,308	(90,741)
Other noncash movements	-	-	-
Net debt as at 31 December 2020	21,320	8,347	(213,343)

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Notes to the annual financial statements (continued)

15 Cash and cash equivalents (Continued)

US\$'000	Cash and cash equivalent	Liquid investments	Borrowings within 1 year
Net debt as at 1 January 2019	1,948	1,420	(2,294)
Cash flows	(1,137)	66	(8,254)
Redemptions	-	(1,490)	(216)
Other non - cash movements	-	48	-
Restricted Cash	-	(44)	-
Net debt as at 31 December 2019	811	-	(10,764)
Cash flows	189	391	(3,207)
Redemptions	-	-	(279)
Other non - cash movements	-	-	-
	-	-	-
Net debt as at 31 December 2020	1,000	391	(14,250)

Liquid investments comprise current investments that are held at fair value through profit or loss.

16 Restricted cash

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Restricted cash	1,400,536	356,502	16,707	338,593	274,738	19,638

Restricted cash refers to cash balances held in Zimbabwean banks. The funds are treated as Restricted funds due to the Authority's inability to readily access United States Dollars as and when required. Included in the USD 2,931 million movement in restricted cash, is the US\$ 990,000 released by the Ministry of Finance and Economic Development in liquidation of ring-fenced funds.

Notes to the annual financial statements (continued)

17 Borrowings

Government of the Republic of Zambia

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of year	185,590	150,589	10,764	2,294	27,665	2,294
Draw downs						
-World Bank IDA	154,370	57,706	3,207	36,900	51,953	3,714
-AFDB Loan	-	-	-	45,109	63,511	4,540
Interest charged	13,450	5,028	279	2,143	3,017	216
Effects of exchange differences	841,200	90,761	-	99,144	4,443	-
At end of year	1,194,610	304,084	14,250	185,590	150,589	10,764

World Bank IDA

In February 2015, the International Development Association ("IDA") made available to the Government of the Republic of Zambia ("GRZ") a credit facility worth US\$75,000,000 for the rehabilitation of the Kariba Dam. In August 2015, the GRZ agreed to on-lend the proceeds of the credit to the Authority. The interest rates applicable are at 2% per annum on withdrawn amounts with a repayment period of 30 years, including a grace period of 2 years on repayment of the principal. In the year under review, the Authority drew US\$ 3,006,687.

US\$ 2,009,267.21 was paid directly to Stucky; the consultant engaged to provide Technical and Supervisory services to the KDRP and, US\$ 277,123 was paid directly to the panel of experts engaged on the same Project. US\$ 720,296 was paid to the Consortium of General Electric – France and Freyssinet International who are the contractor undertaking the Spillway Refurbishment Project. To facilitate for small eligible amounts payments, the Bank allowed the Authority to open a Designated Bank account with Standard Chartered Bank, Zambia and disbursed US\$200,000 into it in 2020 which was unutilised at the reporting date.

African Development Bank Group AFDB

The Authority also has a 30-year subsidiary credit facility from the AFDB through the GRZ dated February 2015, amounting to US\$ 39,000,000 for the rehabilitation of the Kariba Dam. The interest rates applicable are at 2% per annum, on withdrawn amounts. The Authority commenced making principal repayments on the facility in 2017, following a 2 years grace period.

In the year under review no funds were drawn from this facility due to slow progress on the works financed by this instrument due to Covid - 19.

Breach of the terms of loans agreement

The Authority has a 30-year subsidiary loan agreement dated 20 August 2015 with the Government of the Republic of Zambia for a principal loan amount of US\$ 114 million to finance the Kariba Dam rehabilitation Project. According to schedule 1 of this subsidiary loan agreement, the Authority is required to make repayments biannually on 1 March and 1 September. Owing to the liquidity challenges that have plagued the Authority over the past three years, the Authority has defaulted on its repayments on the on loan facility for a third consecutive year bringing the total amount in default to US\$ 14,791,000. The amount in default is made up of current year repayments of US\$ 5,871,000 (principal of US\$ 3,800,000 and interest of US\$ 2,071,000) and 2019 arrears of US\$ 5,947,000 (principal US\$ 3,800,000 and interest of US\$ 2,147,000) and US\$2,973,000 principal arrears for 2018. This is in contravention of section 3.04(ii) of Article III of the subsidiary loan agreement which states that repayments should not be delayed by more than 30 days from due date and failure of which the Government of Zambia has the right to cancel the loan agreement in accordance with Section 5.03 of Article V of the subsidiary loan agreement.

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Notes to the annual financial statements (continued)

17 Borrowings

Breach of the loan agreement

The Authority has engaged both the Zambian and Zimbabwean Governments highlighting the challenges in settlement of the said obligation due to delayed payments from the Utilities and the failure to access the United States Dollars held in Zimbabwe. These borrowings have been classified as current in the statement of financial position.

18 Trade and other payables

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Trade creditors	510,826	130,029	6,093	88,058	71,451	5,107
Accruals	1,400,790	356,567	16,710	180,658	146,587	10,478
ZVDF Zambia	22,402	5,702	267	4,434	3,598	257
Sundry creditors	-	-	-	34	28	2
Statutory liabilities	251,940	64,131	3,005	17,121	13,892	993
Employee benefits	716,700	182,442	8,549	171,184	138,901	9,929
Total	2,902,658	738,871	34,624	461,489	374,457	26,766

The carrying amounts of trade and other payables are considered to be the same as their fair values, due to their short-term nature.

19 Capital Grants

The Authority has three grants financing facilities for the Kariba Dam Rehabilitation Project (KDRP) and they are briefly described below:

(a) Kariba Dam Rehabilitation Project (KDRP)

The Authority has three grant facilities for the KDRP as below:

- i. **Swedish International Development Agency Trust Fund (SIDA)** - The International Development Association acting as administrator of the Swedish International Development Agency (SIDA) Trust Fund provided a grant of a maximum of US\$25,000,000 to finance the rehabilitation of the Kariba Dam. The grant is to be accessed through direct payment requests as well as requests for reimbursements. In the financial year 2020, US\$ 1,335,175 was accessed from this facility, US\$ 673,674 of which was applied towards Dam Break Analysis and Lidar Survey works while US\$ 661,424 was paid for Interim Payment Certificates to the Consortium of General Electric- France and Freyssinet International.
- ii. **African Development Bank (AFDB)** – On 20 February 2015, the AFDB availed a grant facility through the two contracting states i.e. Zambia and Zimbabwe for the financing of specific foreign payments on the Kariba Dam Rehabilitation project under the Transitional Support Facility (TSF). In 2020, the Authority drew a total of US\$ 1,456,408 and applied all of it towards technical supervision for the project.

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Notes to the annual financial statements (continued)

19 Capital Grants (Continued)

European Union (EU) – The EU through the European Development Fund Bridging Facility has given the Authority through the Government Republic of Zambia (GRZ) a grant of up to EUR 74,000,000 towards the rehabilitation of the Plunge Pool at the Kariba Dam. During the year ended 31 December 2020, US\$ 8,247,570.11 was disbursed through direct payments under this facility to Razelbec, the contractor engaged on the Plunge pool.

(b) Movements in grants

	2020			2019		
	ZWL'000	ZMW'000	US\$'0000	ZWL'000	ZMW'000	US\$'000
Movements in deferred capital grant						
At start of year	-	-	-	361	4,354	361
<u>Received during the year:</u>						
International Development Association (CIWA)	-	-	-	4,823	6,328	485
Transferred to capital grants	-	-	-	(8,406)	(11,028)	(846)
Effects of foreign currency exchange differences	-	-	-	3,222	346	-
At end of year	-	-	-	-	-	-

Movements in capital grants

At start of year	680,800	552,408	39,486	31,018	374,063	31,018
Received during the year:						
African Development Bank	70,160	26,227	1,457	11,128	14,599	1,120
European Union	397,038	148,418	8,248	22,162	29,075	2,230
Swedish International Development Agency (Sida)	64,275	24,027	1,335	42,451	55,693	4,272
CIWA - World Bank	-	-	-	8,410	11,034	846
Effects of exchange Differences	3,023,393	327,096	-	565,631	67,944	-
At end of year	4,235,666	1,078,176	50,526	680,800	552,408	39,486

(c) Amortisation of Grants

All the projects currently being funded by grants are yet to be completed and are still being carried in work in progress and as such not being amortised to the statement of income and expenditure yet.

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20 Financial instruments by category

	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Financial assets at amortised cost						
Trade and other receivables (excluding pre-payments)	3,053,137	777,166	36,421	501,460	406,888	29,084
Cash and cash equivalents	83,755	21,320	1,000	13,988	11,350	811
Restricted cash	1,400,536	356,502	16,707	338,593	274,738	19,638
Long term investments	987	251	12	932	756	54
	<u>4,538,415</u>	<u>1,155,240</u>	<u>54,140</u>	<u>854,973</u>	<u>693,732</u>	<u>49,587</u>
Financial assets at fair value through profit or loss	<u>36,491</u>	<u>9,289</u>	<u>435</u>	<u>761</u>	<u>617</u>	<u>44</u>
Other Financial liabilities at amortised cost						
Financial liabilities						
Borrowings	1,194,610	304,084	14,250	185,590	150,589	10,764
Trade and other payables (excluding statutory liabilities)	<u>2,650,718</u>	<u>674,740</u>	<u>31,619</u>	<u>444,368</u>	<u>360,565</u>	<u>25,773</u>
	<u>3,845,328</u>	<u>978,824</u>	<u>45,869</u>	<u>629,958</u>	<u>511,155</u>	<u>36,537</u>

21 Financial risk management objectives and policies

The Authority's activities expose it to a variety of financial risks: market risk (including foreign exchange risk and interest rate risk), credit risk and liquidity risk. The Authority's overall risk management programme focuses on the assessment of the liquidity positions of key customers and the unpredictability of financial markets and seeks to minimise potential adverse effects on its financial performance and position.

Financial risk management is carried out by the finance department under policies approved by the Board of Directors. The policies are embedded in the overall enterprise risk management policy of the Authority.

Market risk

(i) Foreign exchange risk

The Authority primarily generates its revenue in United States Dollar but does from time to time meet some of its obligations in Zambian Kwacha, the Zimbabwe Dollar and, other major convertible currencies through payments for goods and services needed for the day to day operations. Foreign exchange risk arises when future recognised assets or liabilities are denominated in a currency that is not the entity's functional currency. Management's policy to manage foreign exchange risk is to hold foreign currency bank accounts which act as a natural hedge for meeting foreign currency denominated expenses.

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (continued)

At 31 December 2020, if the either the Zambian Kwacha or the Zimbabwe Dollar had weakened/strengthened by 4% against the United States Dollar with all other variables held constant, operating surplus and accumulated reserves for the Authority would have been ZMW 0.5696 million (2019: ZMW 0.468 million) and, ZWL 1.524 and (2019 : ZWL 0.578 million) higher or lower than the 2020 result.

ii) Interest rate risk

The Authority's interest rate risk arises from long-term borrowings contracted for the Kariba dam rehabilitation project. Borrowings issued at concessional fixed interest rates, but with a clause for default penalties expose the Authority's to cash flow interest rate risk. Management manages this risk by ensuring sufficient liquidity to meet loan obligations when they fall due. As at 31 December 2020, an increase/decrease of 200 (2019: 200) basis points on US\$ did not have a material impact on the operating surplus and accumulated reserves.

Credit risk

Credit risk arises from cash and cash equivalents and deposits with banks and financial institutions, as well as credit exposure to customers, including outstanding receivables.

Risk management

The Authority assesses the credit quality of each customer, taking into account its financial position, past experience, and other factors. Individual risk limits are set based on internal or external ratings in accordance with limits set by the Board. The utilisation of credit limits is regularly monitored. The compliance with credit limits by customers is regularly monitored by line management.

For cash and cash equivalent balances, the Authority's exposure and credit ratings of counterparties are regularly monitored, and the aggregate value of transactions spread amongst approved financial institutions. The Authority actively seeks to limit the amount of credit exposure to any one financial institution and credit exposure is controlled by counterparty limits that are reviewed and approved by the Treasury. For banks and financial institutions, only independently rated parties with a minimum rating of 'A' for International and regional banks with a local presence are accepted.

The Authority has significant concentrations of credit risk as it has two main customers which are ZESCO Limited and KHPC. The continued increase in the receivables balances with the Utilities is a clear indication that the credit risk is now at the fore of the financial risks that the Authority has struggled to bring under control. This has had spill over effects on the liquidity situation that has deteriorated as a consequence.

Impairment of financial assets

The Authority's financial assets that are subject to the expected credit loss model are trade and other receivables and Long term investments. Cash and cash equivalents is also subject to impairment requirements of IFRS 9 but the identified impairment loss was immaterial.

Due to the nature of the Authority's debtors, it has applied the IFRS 9 general approach in calculating its expected credit loss. The debtors are in default due to the Authority's debtors payment policy. There has been delays in receiving payments from the Authority's only two main debtors and historically the Authority has not suffered any losses on non payment of debt.

IFRS 9 requires that credit losses on financial assets be measured and recognised using the expected credit loss (ECL) approach. Credit loss is calculated as the difference between the carrying amount of the contractual cash flows and the present value (PV) of expected future cash flows over a period of 3 years for KHPC and 6 years for ZESCO Limited. The expected cash flows are based on the historical payment pattern of the debtors. The present values have been discounted at the opportunity cost market borrowing rate of 10%.

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (continued)

On that basis, the loss allowance as at 31 December 2020 was determined as follows for trade and other receivables:

KHPC Limited Impairment		Year ended 31 December 2020			
ZWL'000	Year 1	Year 2	Year 3	Total	
Outstanding balance	-	-	-	1,216,354	
Expected cash flows	210,345	210,345	795,664	1,216,354	
Discounted cash flows	191,223	173,839	597,794	962,856	
Impairment loss	19,122	36,506	197,870	253,498	

KHPC Limited Impairment					
ZMW'000 KHPC	Year 1	Year 2	Year 3	Total	
Outstanding balance	-	-	-	309,619	
Expected cashflows	53,543	53,543	202,533	309,619	
Discounted cash flows	48,675	44,250	152,167	245,092	
Impairment loss	4,868	9,293	50,366	64,527	

KHPC Limited Impairment					
US\$'000	Year 1	Year 2	Year 3	Total	
Outstanding balance	-	-	-	14,510	
Expected cash flows	2,509	2,509	9,492	14,510	
Discounted cash flows	2,281	2,074	7,131	11,486	
Impairment loss	228	435	2,361	3,024	

Notes to the financial statements (continued)

21 Financial risk management objectives and policies (continued)

ZESCO Limited Impairment

Year ended 31 December 2020

ZWL'ooo	Year 1 & 2	Year 3	Year 4	Year 5	Year 6	Total
Outstanding cash flows	-	-	-	-	-	2,763,801
Expected cash flows	303,934	388,589	518,279	292,577	328,373	1,831,752
Discounted cash flows	276,303	321,148	389,391	199,834	203,894	1,390,570
Impairment loss	27,631	67,441	128,888	92,743	477,799	794,502

ZESCO Limited Impairment

ZMW'ooo	Year 1 & 2	Year 3	Year 4	Year 5	Year 6	Total
Outstanding amount	-	-	-	-	-	703,517
Expected cash flows	77,365	98,914	131,926	74,475	83,587	466,267
Discounted cashflows	70,332	81,747	99,118	50,867	51,901	353,965
Impairment Loss	7,033	17,167	32,808	23,608	121,623	202,239

ZESCO Limited Impairment

USD'ooo	Year 1 & 2	Year 3	Year 4	Year 5	Year 6	Total
Outstanding balance	-	-	-	-	-	32,969
Expected cash flows	3,626	4,636	6,182	3,490	3,917	21,851
Discounted cashflows	3,296	3,831	4,645	2,384	2,432	16,588
Impairment Loss	330	805	1,537	1,106	5,699	9,477

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (continued)

Year ended 31 December 2019	More than 5 days	More than 45 days but less than 90 days	More than 90 days	Total
ZWL'ooo				
Expected loss rate Trade receivables	0.1330	0.1794	0.2085	
Gross carrying amount trade	68,367	36,993	485,844	591,204
Loss allowance trade receivables	9,092	6,637	101,298	117,027
Expected loss rate other receivables	0.44	0.45	0.94	
Other receivables	155	282	2,747	3,184
Loss allowance other receivables	68	127	2,582	2,777
Total Loss allowance	9,160	6,764	103,880	119,804

Year ended 31 December 2019	More than 45 days	More than 45 days but less than 90 days	More than 90 days	Total
ZMW'ooo				
Expected loss rate trade receivables	0.1330	0.1794	0.2085	
Gross carrying amount trade	55,472	30,016	394,220	479,708
Loss allowance trade receivables	7,378	5,385	82,195	94,958
Expected loss rate other receivables	0.44	0.45	0.94	
Other receivables	126	231	2,227	2,584
Loss allowance other receivables	55	104	2,093	2,252
Total Loss allowance	7,433	5,489	84,288	97,210

Zambezi River Authority
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For the year ended 31 December 2020

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (continued)

Year ended 31 December 2019	More than 45 days	More than 45 days but less than 90 days	More than 90 days	Total
(US\$'000)				
Expected loss rate trade receivables	0.1330	0.1794	0.2085	
Gross carrying amount trade	3,966	2,145	28,178	34,289
Loss allowance trade receivables	527	385	5,875	6,787
Expected loss rate other receivables	0.44	0.45	0.94	
Other receivables	9	16	160	185
Loss allowance other receivables	4	7	151	162
Total Loss allowance	531	392	6,026	6,949

The closing allowances for the trade and other receivables as at 31 December 2020 reconcile to the opening loss allowance as follows:

	2020			2019		
At start of year	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
31 December calculated under IFRS 9	119,804	97,210	6,949	2,242	27,049	2,242
Receivables write - off	-	-	-	(1,133)	(1,486)	(114)
Impairment loss allowance recognised in profit or loss during the year	268,398	100,331	5,575	47,902	62,844	4,821
Effect of exchange differences	661,695	69,707	-	70,793	8,803	-
As at 31 December	1,049,897	267,248	12,524	119,804	97,210	6,949

Trade receivables are written off when there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include, amongst others, the failure of a debtor to engage in a repayment plan with the Authority, and a failure to make contractual payments for a period of greater than 120 days past due. Impairment losses on trade receivables are presented as net impairment losses within operating profit. Subsequent recoveries of amounts previously written off are credited against the same line item.

Staff debtors are ordinarily not expected to pose a significant recovery risk as they are usually recovered through the payroll. In the unlikely event of loss, the impairment provisioning will follow the same procedures applied to trade and other debtors

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (continued)

Liquidity risk

Liquidity risk is the risk that the Authority will not be able to meet its financial obligations as they fall due. Prudent liquidity risk management includes maintaining sufficient cash balances, and the availability of funding from an adequate amount of committed credit facilities.

The table below analyses the Authority's financial liabilities that will be settled on a net basis into relevant maturity groupings based on the remaining period at the reporting date to the contractual maturity date. The amounts disclosed in the table below are the contractual undiscounted cash flows:

	Less than 1 year ZWL'000	Between 1 and 2 years ZWL'000	Between 2 and 5 years ZWL'000	Over 5 years ZWL'000	Total ZWL'000
At 31 December 2020:					
- Borrowings	485,802	965,234	2,256,068	8,413,225	12,120,329
- trade and other payables	1,977,527	673,107	-	-	2,650,634
	<u>2,463,329</u>	<u>1,638,341</u>	<u>2,256,068</u>	<u>8,413,225</u>	<u>14,770,963</u>
At 31 December 2019:					
- Borrowings	101,225	202,520	390,488	1,747,936	2,442,169
- trade and other payables	263,711	180,658	-	-	444,368
	<u>364,936</u>	<u>383,178</u>	<u>390,488</u>	<u>1,747,936</u>	<u>2,886,538</u>

	Less than 1 year ZMW'000	Between 1 and 2 years ZMW'000	Between 2 and 5 years ZMW'000	Over 5 years ZMW'000	Total ZMW'000
At 31 December 2020:					
- Borrowings	123,660	245,697	574,275	2,141,561	3,085,193
- trade and other payables	503,373	171,337	-	-	674,710
	<u>627,033</u>	<u>417,034</u>	<u>574,275</u>	<u>2,141,561</u>	<u>3,759,903</u>
At 31 December 2019:					
- Borrowings	82,135	164,327	316,846	1,418,292	1,981,600
- trade and other payables	213,977	146,587	-	-	360,564
	<u>296,112</u>	<u>310,914</u>	<u>316,846</u>	<u>1,418,292</u>	<u>2,342,164</u>

Note : Trade and other payables exclude statutory payables

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (continued)

Liquidity risk (continued)

	Less than 1 year	Between 1 and 2 years	Between 2 and 5 years	Over 5 years	Total
	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000
At 31 December 2020:					
- Borrowings	5,795	11,514	26,912	100,359	144,580
- trade and other payables	23,589	8,029	-	-	31,619
	29,384	19,543	26,912	100,359	176,199
At 31 December 2019					
- Borrowings	5,871	11,746	22,648	101,379	141,644
- trade and other payables	15,295	10,478	-	-	25,773
	21,166	22,224	22,648	101,379	167,417

Note : Trade and other payables exclude statutory payables

(d) Fair value estimation

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value of financial assets and liabilities traded in active markets (such as publicly traded equity) are based on quoted market prices at the close of trading on the reporting date.

The carrying amounts of all financial assets and liabilities at the reporting date approximate their fair values. The following table presents the Authority's assets that are measured at fair value:

	Level 1	Level 2	Level 3	Total
	ZWL'000	ZWL'000	ZWL'000	ZWL'000
Year ended 31 December 2020				
Assets				
Financial assets				
Financial assets at fair value through profit or loss	-	36,491	-	36,491
Non-financial assets				
Buildings	-	-	589,236	589,236
	-	36,491	589,236	625,727
Year ended 31 December 2019				
Assets				
Financial assets				
Financial assets at fair value through profit or loss	-	761	-	761
Non-financial assets				
Buildings	-	-	124,656	124,656
	-	761	124,656	125,417

Zambezi River Authority
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For the year ended 31 December 2020

Notes to the annual financial statements (continued)

21 Financial risk management objectives and policies (Continued)

	Level 1	Level 2	Level 3	Total
	ZMW'000	ZMW'000	ZMW'000	ZMW'000
Year ended 31 December 2020				
Assets				
Financial assets				
Financial assets at fair value through profit or loss	-	9,289	-	9,289
Non-financial assets				
Buildings	-	-	149,988	149,988
	-	9,289	149,988	159,277
Year ended 31 December 2019				
Assets				
Financial assets				
Financial assets at fair value through profit or loss	-	617	-	617
Non-financial assets				
Buildings	-	-	101,147	101,147
	-	617	-	101,764
Year ended 31 December 2020				
	Level 1	Level 2	Level 3	Total
	US'000	US'000	US'000	US'000
Assets				
Financial assets				
Financial assets at fair value through profit or loss	-	435	-	435
Non-financial assets				
Buildings	-	-	7,029	7,029
	-	435	7,029	7,464
Year ended 31 December 2019				
Assets				
Financial assets				
Financial assets at fair value through profit or loss	-	44	-	44
Non-financial assets				
Buildings	-	-	7,238	7,238
	-	44	7,238	7,238

The different level of fair value measurement hierarchy is described as follows:

- Quoted prices(unadjusted) in active markets for identical assets (level 1)
- Inputs other than quoted shares included in level 1 that are observable for the asset, either directly (that is, as prices) or indirectly (that is, derived from prices) (level 2)
- Inputs for the assets that are not based on observable market data (that is, unobservable data) (level 3)

All fair value measurements disclosed are recurring fair value measurements, required for the purposes of measuring the Authority's assets at fair value. During the year no transfers were made amongst the different levels.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Notes to the annual financial statements (continued)

22 Capital management

The Authority's objectives when managing capital are to safeguard the Authority's ability to continue as a going concern. Adequacy of the capital of the Authority is maintained by the Authority on a regular basis. As and when required the Authority will through the respective Ministries responsible for Finance, source for funding in the form of loans and grants.

23 Contingent liabilities

The Authority has some cases in the courts of law, most of which have already been decided in the Authority's favour and are only back in the courts on appeal by the plaintiffs. No contingent liabilities have been provided for as management believe that these are remote.

24 Related party transactions

The Authority was constituted by the *Zambezi River Authority Acts 1987* of Zambia and Zimbabwe and, is a common enterprise between the Governments of the Republics of Zambia and Zimbabwe. Control of the entity is on a 50/50 basis with decisions being made by consensus.

Oversight of the Authority is vested in the Council of Ministers (CoM). Internal supervision of its management and control of the affairs of the Authority, however, is vested in the Board and the key executive officers.

The Authority's key management is made up of the Executive Management which includes the Chief Executive and four Directors.

The following transactions were carried out with related parties:

	2020			2019		
Directors compensation	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Director's fees and allowances	4,820	1,802	100	2,527	3,315	254
Other expenses	1,884	704	39	3,397	4,457	342
	<u>6,704</u>	<u>2,506</u>	<u>139</u>	<u>5,924</u>	<u>7,772</u>	<u>596</u>
Key Management compensation						
Salaries and other benefits	2,822	3,702	284	7,510	9,853	756
Pension contribution	1,889	2,478	190	2,628	3,448	265
	<u>4,711</u>	<u>6,181</u>	<u>474</u>	<u>10,138</u>	<u>13,301</u>	<u>1,021</u>
Loans to Key Management						
At start of year	196	159	11	98	1,185	98
Additions	8,537	3,191	177	-	-	-
Repayments	(541)	(202)	(11)	(288)	(1,031)	(87)
At end of year	<u>8,192</u>	<u>3,148</u>	<u>177</u>	<u>190</u>	<u>154</u>	<u>11</u>
Amounts Advanced and amounts owed to ZVDF						
ZVDF Receivable	369	94	4	2,559	2,076	148
ZVDF Payable	(22,402)	(5,702)	(267)	(4,434)	(3,598)	(257)
Net position at year end	<u>(22,033)</u>	<u>(5,608)</u>	<u>(263)</u>	<u>(1,875)</u>	<u>(1,522)</u>	<u>(109)</u>

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2020

Notes to the annual financial statements (continued)

24 Related party transactions (Continued)

Water sales revenue	2020			2019		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
ZESCO	632,057	236,280	13,130	129,280	171,651	13,011
KHPC	509,060	190,286	10,575	110,692	143,289	11,140
	<u>1,141,117</u>	<u>426,566</u>	<u>23,705</u>	<u>239,972</u>	<u>314,940</u>	<u>24,151</u>

Outstanding receivable balances from Water sales

ZESCO	2,763,801	703,517	32,969	455,942	369,955	26,444
KHPC	1,216,354	309,619	14,510	135,262	109,753	7,845
	<u>3,980,155</u>	<u>1,013,136</u>	<u>47,479</u>	<u>591,204</u>	<u>479,708</u>	<u>34,289</u>

Zambezi River Authority
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Appendix I - Statement of Capital Expenditure Compared to Budget

Year ended 31 December 2020	Spent ZWL'000	Budget ZWL'000	Balance ZWL'000
Kariba Dam Structure	-	49,584	49,584
CWIP- Kariba Rehabilitation	695,272	2,026,213	1,330,941
CWIP- Batoka HES	28,614	298,946	270,332
Devil's Gorge	-	59,453	59,453
Land & Buildings	156	28,788	28,632
Furniture, Fittings, Plant & Equip.	2,455	32,511	30,056
Motor Vehicles	-	50,547	50,547
ICT Infrastructure	54,573	146,793	92,220
	781,070	2,692,835	1,911,765

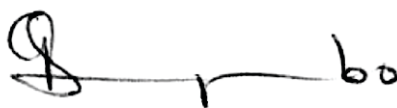
Year ended 31 December 2020	Spent ZMW'000	Budget ZMW'000	Balance ZMW'000
Kariba Dam Structure	-	18,535	18,535
CWIP- Kariba Rehabilitation	259,896	757,426	497,530
CWIP- Batoka HES	10,696	111,750	101,054
Devil's Gorge	-	22,224	22,224
Land & Buildings	58	10,761	10,703
Furniture, Fittings, Plant & Equip.	918	12,153	11,235
Motor Vehicles	-	18,895	18,895
ICT Infrastructure	20,406	54,873	34,467
	291,974	1,006,617	714,643

Zambezi River Authority
Annual Financial Statements
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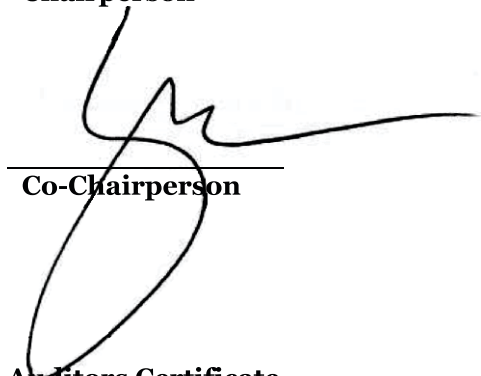
Appendix I - Statement of Capital Expenditure Compared to Budget (Continued)

Year ended 31 December 2020	Spent US\$'000	Budget US\$'000	Balance US\$'000
Kariba Dam Structure		1,030	1,030
CWIP- Kariba Rehabilitation	14,443	42,090	27,647
CWIP- Batoka HES	594	6,210	5,616
Devil's Gorge		1235	1,235
Land & Buildings	3	598	595
Furniture, Fittings, Plant & Equip.	51	675	624
Motor Vehicles		1050	1,050
ICT Infrastructure	1,134	3,049	1,915
	16,225	55,937	39,712

The budget was approved by the Council of Ministers on 15 January 2021.



Chairperson



Co-Chairperson



PricewaterhouseCoopers,
Chartered Accountants



Charity Mulenga
Partner signing on behalf of firm

Auditors Certificate

In accordance with Article 15(6)6 of the Zambezi River Authority Act 1987, we certify that the comparative statement shown above is correct.

Zambezi River Authority
 Appendices
 For the year ended 31 December 2020

Appendix II - Grant Funding Application Analysis - Batoka Gorge Hydro Electric Scheme

As at 31 December 2019	Engineering Feasibility Studies US\$'000	Environmental and Social Impact Consultancy US\$'000	Financial Legal and Transaction Advisory Consultancy US\$'000	Total US\$'000
Cash Receipts:				
International Development Association Trust Fund- Cooperation in International Waters in Africa (CIWA) grant	-	-	-	-
As at December 2019	3,463	832	1,351	5,646
As at 31 December 2020				
Cash Receipts:				
International Development Association Trust Fund- CIWA Grant	-	-	-	-
Cumulative total	3,463	832	1,351	5,646

Zambezi River Authority
 Appendices
 For the year ended 31 December 2020

Appendix IV Kariba Dam Rehabilitation KDRP Project (KDRP) Funding Source and Application Analysis

Kariba Dam Rehabilitation December 2019		Institutional Support		Dam Break & Other studies			Plunge Pool Reshaping Contract	Spillway Rehabilitation	KDRP Total
	Panel of Experts (PoE)	Technical Services & Supervisory Consultancy	Environmental & Social Impact Assessment	Dam Break	LIDAR Survey				
	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000		US\$'000
Disbursements for the Year (2020)									
International Development Association Loan (55630)) - Loan	277	2,009	-	-	-	-	-	720	3,006
International Development Association Loan (55630)) – Loan (Designated Account)	-	-	-	-	-	-	-	-	200
Swedish International Fund Grant - Grant (TF19029)	-	-	-	673	-	-	-	661	1,334
The Africa Development Fund (ADF Loan)	-	-	-	-	-	-	-	-	-
The Africa Development Fund (ADF Grant)	-	-	-	-	-	-	-	-	-
The Africa Development Fund (TSF Grant)	-	1,457	-	-	-	-	-	-	1,457
European Union Funding (ZM/FED/031-570) - Grant	-	-	-	-	-	-	8,248	-	8,248
Total Disbursements for the Year 2020	277	3,466	-	673	-	-	8,248	1,381	14,245
December 2020									
Cumulative Disbursements									
International Development Association Loan (55630)) - Loan	1,968	4,409	377	147	-	-	-	2,940	9,841
International Development Association Loan (55630)) – Loan (Designated Account)	-	-	-	-	-	-	-	-	200
Swedish International Fund - Grant (TF19029)	-	-	-	1,519	2,778	-	-	3,489	7,786
The Africa Development Fund (ADF Loan) 2100150032548	-	224	-	-	-	-	-	4,540	4,764
The Africa Development Fund (ADF Grant) 2100155029116	-	561	-	-	-	-	-	474	1,035
The Africa Development Fund (TSF Grant)	-	3,353	-	-	-	-	-	-	3,353
European Union Funding (ZM/FED/031-570) - Grant	-	-	-	-	-	-	32,530	-	32,530
Cumulative Total Disbursements 2020	1,968	8,547	377	1,666	2,778	-	32,530	11,443	59,509



Zambezi River Authority

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