



ZAMBEZI RIVER AUTHORITY ANNUAL REPORT and FINANCIAL STATEMENTS

20
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34th Edition





2021 ANNUAL REPORT AND FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2021



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Cover Photo:

Board Chairperson, Mrs. Francesca Chisangano-Zyambo accompanied by Projects and Dam Management Services Director, Eng. Sithembinkosi Mhlanga and Finance Director, Mr. Edward Kabwe ascending the portal frame at the Kariba Dam Rehabilitation Project site during a tour of the facility.

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Mrs. Francesca Chisangano - Zyambo

MESSAGE FROM THE CHAIRPERSON

I am delighted but sincerely honoured to present this report on behalf of the Zambezi River Authority's Board of Directors.

The period under review marked the second year of the COVID-19 scourge with its attendant movement restrictions. This inevitably affected the roll-out of some planned activities as well as project execution. On a positive note, it is envisaged that the Authority's improved liquidity position; relaxation in pandemic induced movement restrictions experienced towards the end of the year, coupled with the Board's commendable strategic leadership will steer the Authority away from murky waters to ensure exceptional delivery on its mandate.

Budget Performance Review

The Authority achieved an operating income of USD30.13 million compared with the budget of USD27.87 million, giving rise to a positive variance of 8.11%. Furthermore, the operating expenditure was USD11.19 million against a budget of USD19.63 million resulting in a favourable variance of 43%. The foregoing represented a budget performance of 57%. On the other hand, the Authority's Liquidity Ratio continued to show a commendable outlook of 8.71 times of current assets which could cover current liabilities. However, when the inaccessible funds as discussed in the Financial Report were disregarded; the Acid Test Ratio was calculated as an insignificant 0.23 times or only about 23% of the current liabilities that could be covered by the current assets, which well described the precarious liquidity situation the Authority was facing. The Authority continued to engage the two Power Utilities with a view to ensuring that they settled the outstanding obligations. By the close of 2021, the Authority still owed USD 21.72 million.



On the other hand, the Authority's Liquidity Ratio continued to show a commendable outlook of 8.71 times of current assets which could cover current liabilities.

Access to Finance

The liquidity challenges faced by the Authority over the past four years hamstrung its ability to make good on the instalments due on the 30-year subsidiary loan agreement signed with the Government of the Republic of Zambia (GRZ) among other creditors. To mitigate the liquidity situation with regard to the subsidiary loan, the GRZ in consultation with the primary lenders (World Bank and African Development Bank) agreed to restructure the terms of the on-lending agreements between the GRZ and the Authority. Resultantly, the interest rate was reduced from 2% to 1.25%.

Maintenance of Kariba Dam

I am pleased to announce that the Kariba Dam has been awarded a clean bill of health as no abnormal behaviour nor unexpected response from the monitoring instruments was detected. The dam's behaviour was as expected for both the deformation measurements and hydraulic conditions of the South Bank. The risk posed by non-compliance in the maintenance and testing of floodgates is acknowledged, but the likelihood of this risk occurring is very low, unless it is caused by very complex scenarios such as extreme flooding. It is expected that the risk profile will significantly improve upon completion of the ongoing KDRP works.

Kariba Dam Rehabilitation Project (KDRP)

By the end of 2021, the Plunge Pool Reshaping and Spillway Refurbishment components of the KDRP had recorded progress of 58% and 38% respectively. The project unfortunately was not spared by the negative effects of the COVID-19 pandemic as a lot of work time was lost due to the pandemic-induced restrictions. Furthermore, the Plunge Pool Reshaping component of the project encountered unforeseen challenges due to unfavourable geological conditions, resulting in time and cost delays.

Hydrological Outlook and Reservoir Operations at Kariba

The bulk of the SADC region in general and the Kariba Catchment in particular, received normal to above-normal rainfall for the period October 2020 to May 2021 as projected in the seasonal forecast released by the Twenty-Fourth Annual Southern Africa Regional Climate Outlook Forum (SARCOF-24) in August 2020 for the 2020/2021 rainfall season.

Lake Levels at Kariba

The Lake closed the year 2021 with 20.16% of live/usable storage capacity. This reading was similar to the previous year's level when the year closed at 20.08% of full usable capacity. While this may seem disconcerting, it should not cause alarm as the Authority has the capacity to regulate the reservoir or lake levels through continued engagement with the Power Utilities (ZESCO Limited of Zambia and the Zimbabwe Power Company of Zimbabwe). Due to the depressed lake levels, no spilling was undertaken during the year under review.

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

The Developer, the Consortium of Power Construction Corporation of China Limited and General Electric, completed all predevelopment activities which included additional geotechnical studies, aerial surveys on and around the project site, compilation and submission of its feasibility studies. A request for credit enhancement support and tax incentives from the Contracting States was made in the proposal, which would result in tariffs of 8.4181 c/kWh and 8.0862c/kWh in Zambia and Zimbabwe respectively.

The Governments of the two Contracting States will deliberate further regarding this project in 2022.

Land acquisition for the project

Land acquisition activities continued during the year under review with ZESCO Limited having managed to obtain title for the North bank project land for over 2,500 hectares in October 2021 while Zimbabwe Power company was expected to complete the land acquisition process of 1,070 hectares within the first quarter of 2022.

Financing of the project

The Authority continued to finance the project preparatory activities and studies. By the end of the year, USD1.3 million was outstanding for works yet to be invoiced under all the services rendered by various Consultants. The financing of the development costs for the project was the responsibility of the Developer on a Build, Operate and Transfer basis. The Developer however faced challenges in mobilizing funds from potential financiers due to the sovereign defaults (on loans) of the Contracting States. The Governments of the Contracting States are, therefore, in the process of discussing options to secure the required funding.

Enhancement of the Authority's Corporate Image: Media Coverage

Continual engagement with the media ensured generally positive coverage regarding the Authority. Going forward, members of the media fraternity will be availed training opportunities regarding Water and Energy Resources Management.

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

The Authority continued to implement various planned corporate social responsibility projects under the auspices of the Zambezi Valley Development Fund (ZVDF). The projects are meant to improve the well-being of the communities that were displaced during the construction of the Kariba Dam. Classroom blocks, staff houses and clinics were constructed or were work in progress in both Zambia and Zimbabwe. By the close of the period under review, USD 190,883.18 had been spent on these projects.

Changes in Corporate Governance

New appointments were made to the Authority's Corporate Governance Structure in 2021. In September, Hon. Peter Chibwe Kapala (MP) was appointed Minister of Energy (Zambia) and Council of Ministers' Chairperson of the Board for the year. Hon. Dr. Situmbeko Musokotwane, (MP) took over the reins as Minister of Finance and National Planning (Zambia) in August and was accordingly appointed to the Council of Ministers while I was appointed Permanent Secretary, for the Ministry of Energy Zambia, in November. I was also appointed Board Chairperson as Zambia held the Board Chairperson role for the year.



Upstream of the Spillway Cofferdam at sluice gate 6

Key milestones attained during the year under review are as follows:

Significant progress was recorded on KDRP, despite the challenges highlighted earlier. In addition, despite the concerns raised about the selected BGHES Developer, satisfactory groundwork had been executed, meaning the foundation has been laid for the next successful bidder to hit the ground running. These two projects are key in ensuring access to sustainable and clean energy for the socio-economic development of the Contracting States.

Acknowledgments

With support from Co-operating Partners and other key Stakeholders, the Authority continues to strive to enhance the economic and social lives of the peoples of Zambia and Zimbabwe.



Mrs. Francesca Chisangano - Zyambo

Board Chairperson

Permanent Secretary - Ministry of Energy, Zambia.



Pier 0 concrete pouring at the spillway gates refurbishment site

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 Contracting States).

The Authority's primary function is to operate, maintain, monitor, and regulate the water level in the Kariba 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.

Our Mission

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

Key Strategic Functions

The following are the key strategic functions of the Authority:

- a). The operation, monitoring, and maintenance of the Kariba Complex.
- 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 (COM).
- c). To construct, operate, monitor, and maintain any other dams on the Zambezi River.
- d). 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.
- e). Regulate the water level in the Kariba Reservoir and any other reservoirs owned by the Authority.
- f). 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 Zimbabwe Power Company in Zimbabwe.

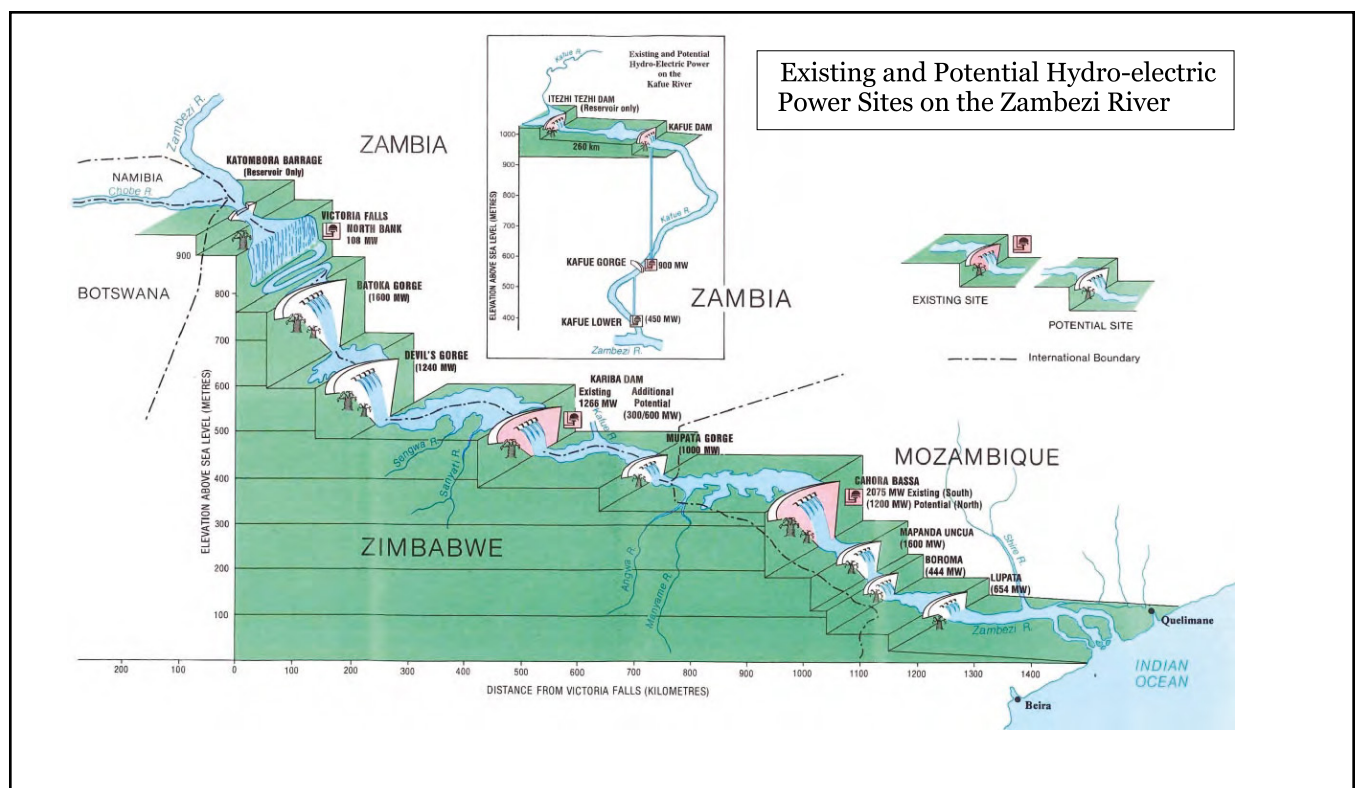
2020 to 2024 Strategic Objectives

- a). To increase water storage volume on the Zambezi River Basin catchment under the Authority from the current 181 billion cubic metres to 182.65 billion cubic metres by 2024
- b). To improve Corporate Governance and Compliance from 86% to 98% by 2024.
- c). To increase access to sustainable social- amenities in the Riparian Communities by USD1.2 million by 2024.
- d). To reduce the negative variance between actual and forecasted volume of water allocated for power generation from 10% to 3% by 2024.
- e). To reduce resistance to change by 50% annually from baseline to be established by December 2020.

- f). To increase the Partner Satisfaction Index by 10% annually from baseline to be established by December 2020.
- g). To improve the Client Satisfaction Index from 60% to 98%.
- h). To improve organisational performance by 10% annually from a baseline to be established by December 2020.
- i). To improve the Acid Test Ratio from 3% to 75% by 2024.
- j). To increase Non-Traditional Revenue Growth from 1.5% to 2.5% of Operating Revenue by 2024.

Existing and Potential Hydro-Electric Power Sites on the Zambezi River

The image below 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.





OUR MISSION

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



OUR VISION

To be the model organisation in dam and water resources management in the Zambezi River Basin.



OUR VALUES

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

- ❖ **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.

Council of Ministers (COM)

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.

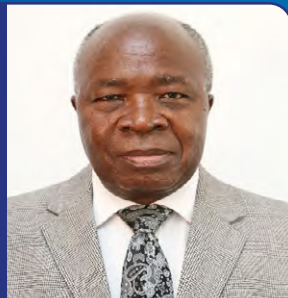
According to the ZRA Acts, the Chairpersonship of the COM is held alternately by the Ministers responsible for Energy in the Governments of Zambia and Zimbabwe. For the year under review, Zambia held the Chairpersonship of the COM.



Hon. Peter Chibwe Kapala (MP)
COM Chairperson
Minister of Energy Zambia
Appointed: 7 September, 2021



Hon. Zhemu Soda
COM Co-Chairperson
Minister of Energy and Power
Development
Zimbabwe



**Hon. Dr. Situmbeko
Musokotwane, MP**
Minister of Finance and National
Planning, Zambia
Appointed: 26th August 2021



Hon. Prof. Mthuli Ncube
Minister of Finance and
Economic Development
Zimbabwe



Hon. Mathew Nkhuwa
COM Co-Chairperson
Minister of Energy
Zambia.
Retired: 7 September, 2021



Hon. Dr. Bwalya Ng'andu
Minister of Finance
Zambia
Retired: 26th August 2021

The Board of Directors (BoD)

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.



Mrs. Francesca Chisangano - Zyambo
Board Chairperson
Permanent Secretary - Ministry of Energy, Zambia.
Appointed: 19 November, 2021



Mrs. Veronica Mwiche
Permanent Secretary - Ministry of Energy, Zambia.
Served from 30th of June to 19th Nov 2021



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



Mr. Danies Chisenda
Permanent Secretary
Minister of Finance and National Planning, Zambia



Mr. Danies Chisenda
Permanent Secretary - Ministry of Energy, Zambia.
Served from 2nd February to 31st August 2021



Mr. George T. Guvamatanga
Secretary
Ministry of Finance & Economic Development
Zimbabwe



Mr. Pascal Mubanga
Independent Board Member
Zambia



Eng. Israel Rwodzi
Independent Board Member
Zimbabwe

Summary of the 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 strategic 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 its 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 molded 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). 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 2021

The total remuneration and compensation availed to Board members during the year was **USD 111, 000**.

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. In addition, it monitors the competence with which the Budget activities are carried out and recommends to the Board measures that would ensure the Authority's continued viability; reviews and recommends comprehensive policies and strategies relating to the remuneration and terms and conditions of employment of employees, succession planning, training and development and separations to the Board. In addition, the Committee has further been charged with the prime responsibility of reviewing and recommending Executive Management Employees' and Directors' remuneration policies by ensuring that such policies remain relevant in attracting, retaining, and motivating both Executive Management Employees and Directors. The Committee was composed of the following members:

Name	Meetings Attended	Notes
Mr. Danies Chisenda Permanent Secretary, Ministry of Finance – Zambia	0/4	Represented by Proxy, Ms. M. C Munoni, in all meetings
Mr. George T. Guvamatanga Secretary, Ministry of Finance & Economic Development – Zimbabwe	2/4	Represented by Proxy, Mr. F. Ngorora, in two meetings

(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; ensures that the Authority has appropriate Risk Management systems; ensures sound Corporate Governance structures and systems; deliberates on matters relating to the Board and individual Board Members, including appointments, induction, training and development and Board Procedures. The Committee comprised the following members:

Name	Meetings Attended	Notes
Mr. Pascal Mubanga Independent Board Member -Zambia	4/4	None
Eng. Israel Rwodzi Independent Board Member – Zimbabwe	4/4	None
Mr. David Kalaba Independent Committee Member – Zambia	4/4	None
Ms Tariro Mhuka Independent Committee Member – Zimbabwe	4/4	None

The Board formulated a Risk Appetite Statement in addition to approving an Enterprise Risk Management (ERM) Policy and Procedures Manual in 2021. The two milestones are in line with the targeted performance to ensure the implementation of an ERM Framework.

(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:

Name	Meetings Attended	Notes
Mr. Pascal Mubanga Independent Board Member - Zambia	4/4	None
Eng. Israel Rwodzi Independent Board Member – Zimbabwe	4/4	None
Eng. Victor Mundende Managing Director, ZESCO Limited – Zambia	0/4	Represented by Proxy, Eng. Fidelis Mubiana, in all meetings
Eng. Kenneth Maswera Acting Managing Director, Zimbabwe Power Company-Zimbabwe	0/4	Represented by Proxy, Eng. Wellington Maphosa, in all meetings



Sunrise view of Lake Kariba showcasing the fossilized mopani trees

Executive Management



Eng. Munyaradzi C. Munodawafa
Chief Executive



Mr. Peter Kapinga
Board Secretary/Corporate
Services Director



Mr. Edward M. Kabwe
Director - Finance



Eng. Sithembinkosi Mhlanga
Director - Projects and Dam
Management Services
Appointed: 1st May 2021



Eng. Christopher Chisense
Director - Water Resources &
Environmental Management



Eng. David Mazvidza
Director - Projects and Dam
Management Services
Retired: 1st May 2021

OPERATIONS REPORTS



The Authority's speed boat, the 'Talon' trailing behind the Mukunganyika Environmental boat during an environmental monitoring and water sampling mission on the lake.

OPERATIONS REPORTS

1.0 HYDROLOGY AND ENVIRONMENTAL MANAGEMENT

1.1 Preamble

One of the functions of the Zambezi River Authority is to collect, process and accumulate both hydrological and environmental data of the Zambezi River and its tributaries for the purpose of sustainable management of the Kariba Reservoir for hydropower generation and other operations deemed necessary to foster socio-economic development in the Contracting States. To facilitate delivery on this function, the Authority operates thirteen (13) gauging stations and water quality sampling sites within the Zambezi River Basin catchment areas of both Zambia and Zimbabwe to ensure oversight of the amount of inflows and its quality into the Zambezi River.



Hydrology team led by the Hydrologist Eng. Pherry Mwiinga inspecting the hyacinth traps just before the intake points

1.2 Hydrology

1.2.1 Rainfall Performance – 2020/21 Season

Figure 1 shows cumulative amounts (in mm) recorded at the Authority's Hydro-meteorologic Stations in the Kariba Catchment for the 2020/21 rainy season that commenced in October 2020 and ended in May 2021. The graph shows that all stations, save for Kalabo; Lukulu and Watopa, recorded more rainfall in 2020/21 than during the previous season of 2019/20 over the same period covering the months of October to April.

In line with the seasonal forecast released by the Twenty-Fourth Annual Southern Africa Regional Climate Outlook Forum (SARCOF-24) in August 2020 for the 2020/2021 rainfall season, the bulk of the SADC region in general and the Kariba Catchment in particular, received normal (100% - 120% of 30-year mean) to above-normal (120 – 200% of 30-year mean) rainfall for the period October 2020 to May 2021.

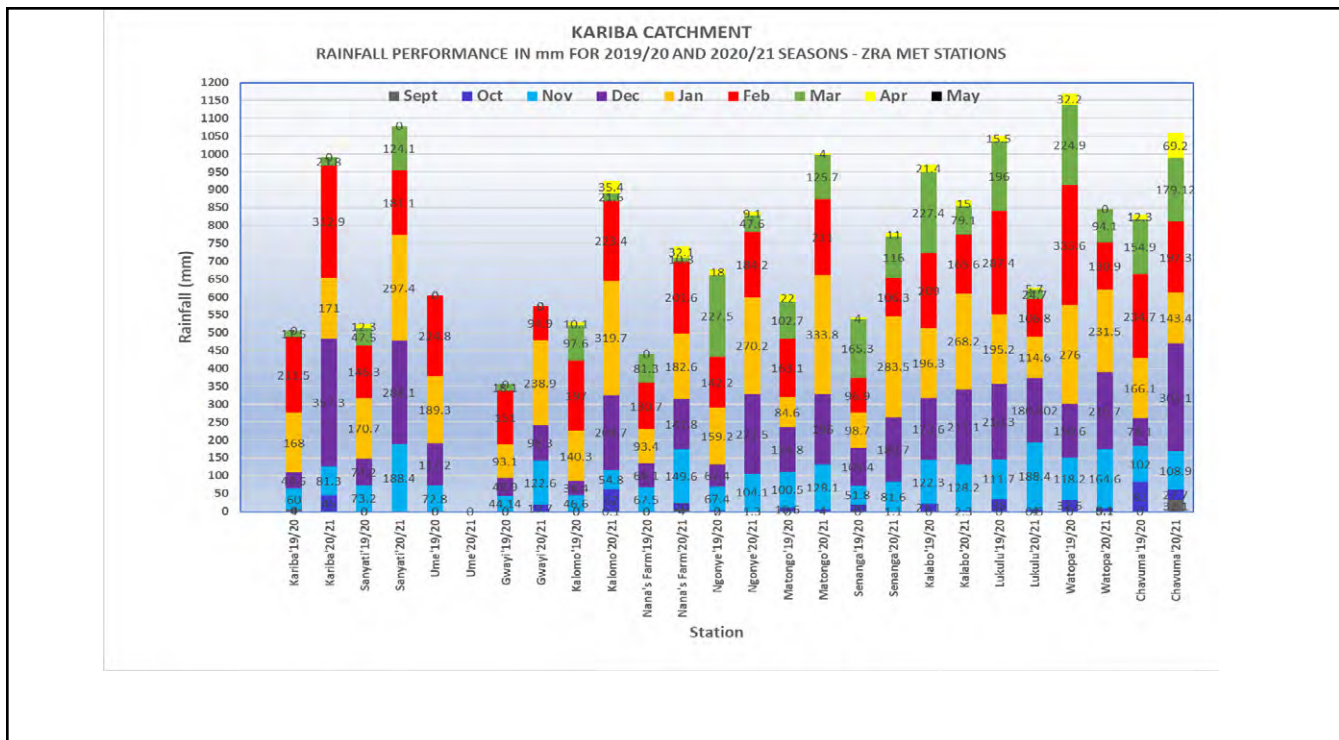


Figure 1. Rainfall Observations on the Kariba Catchment for the 2020/21 Season at Authority's Stations

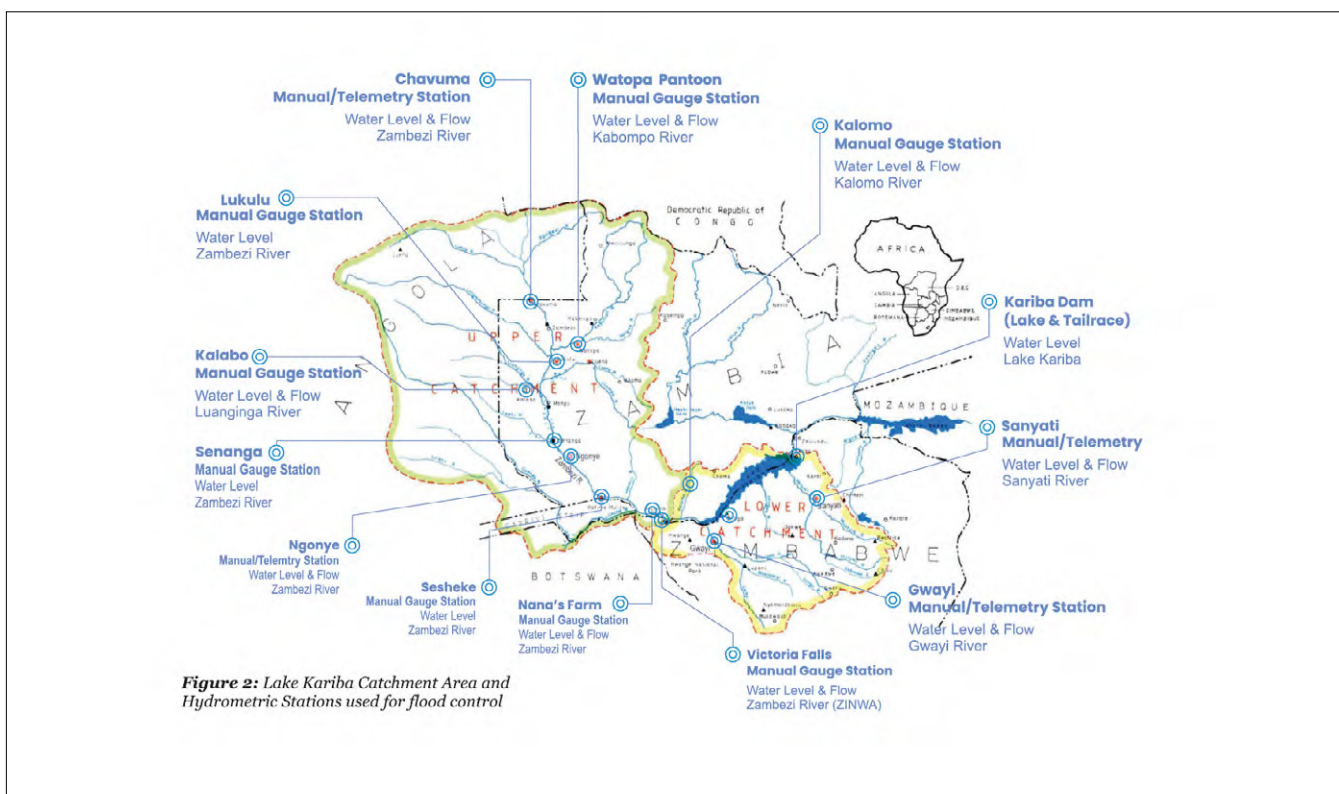


Figure 2: Lake Kariba Catchment Area and Hydrometric Stations for flood control

1.2.2 River Flows

Flows recorded at Chavuma in 2020/21 were higher than the long-term average but lower than those of the previous season (2019/20). Figure 3 presents the annual water balance for Lake Kariba for 2021 compared to the two preceding years. The graph depicts an almost equal balance between inflows and outflows at the reservoir.

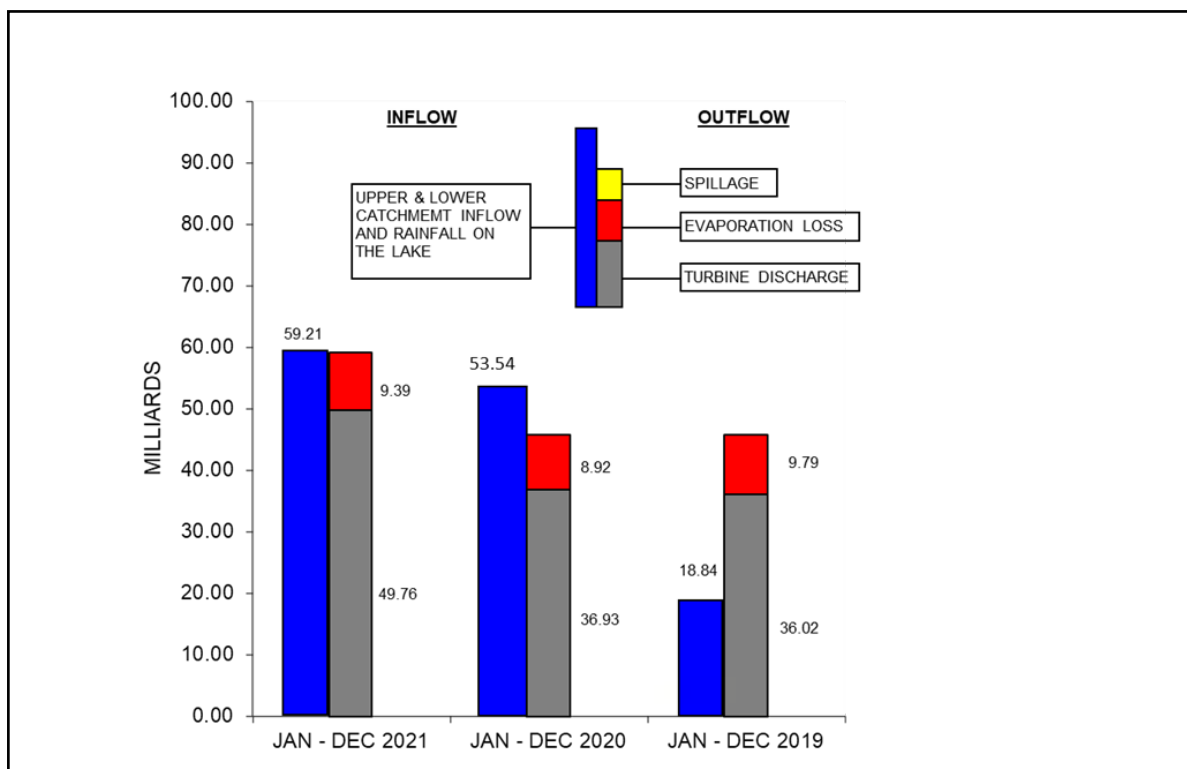
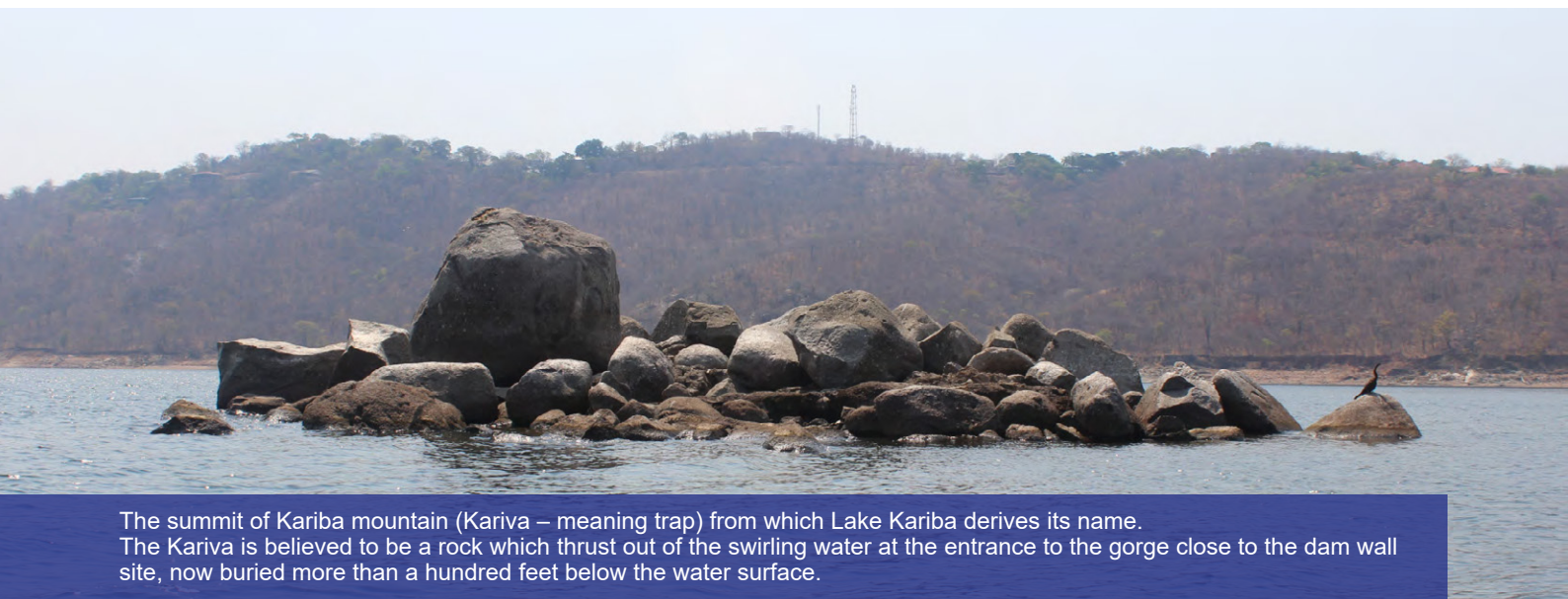


Figure 3: Lake Kariba Water balance comparisons over three recent years

1.2.3 Lake Levels

The Lake closed the year under review with 13.06 Billion Cubic Meters (BCM) usable storage (20.16% of live/usable storage capacity). In comparison, the previous year (2020) closed at nearly the same level of 478.38m on 31st December 2020 with 13.01 BCM of usable storage, representing 20.08% of full usable capacity. The Lake levels (as discussed in the above section on River Flows) recorded a net annual gain of 2.75m while the total outflow from the Lake was 59.16 BCM, composed of 49.76 BCM turbine discharge and 9.39 BCM which was lost to evaporation. Therefore, the net effect on the Reservoir was a storage increase of 0.05 BCM during the 2020/21 hydrological season. The unremarkable storage increase is not a cause for concern because the Reservoir’s outflows are controlled through regulated turbine discharge. In the event of a drastic decline in Lake levels, Power Utilities are engaged to downscale operations to ensure that the minimum operating level of 475.50 metres is not reached (in which case the power stations would have to shut down to protect their equipment from cavitation).



The summit of Kariba mountain (Kariva – meaning trap) from which Lake Kariba derives its name. The Kariva is believed to be a rock which thrust out of the swirling water at the entrance to the gorge close to the dam wall site, now buried more than a hundred feet below the water surface.

Figure 4. below shows lake level hydrographs for various past rainy seasons in comparison with the 2020/21 season.

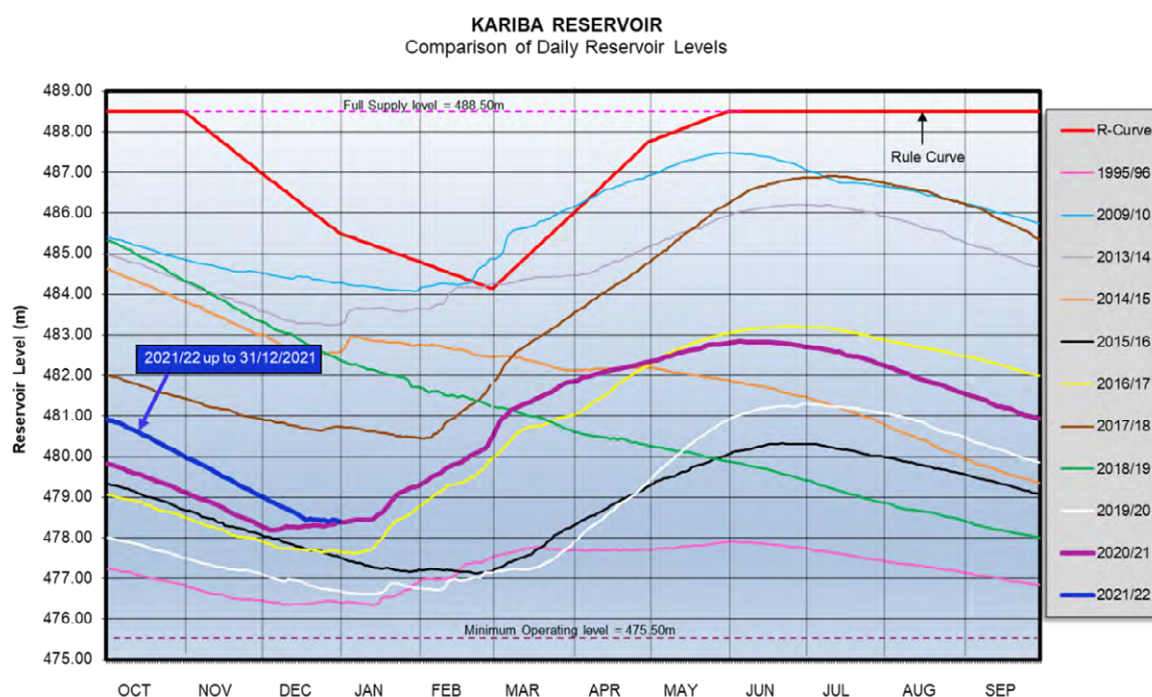


Figure 4: Lake Levels Comparison Chart

1.2.4 Operating of Spillways

There was no spilling during the period under review as the lake levels remained below the Flood Control Rule Curve (refer to Figure 3).

1.2.5 Water Usage for Energy Generation at Kariba

As of 31st December 2021, the Power Utilities had cumulatively utilized 49.76 BCM, which translated to 11% above the 2021 combined but equally shared water allocation of 45 BCM respectively apportioned as follows:

- i. Kariba North Bank Power Station (KNPS) utilized 25.18 BCM, which was 12% above the 22.5 BCM water allocation.
- ii. Kariba South Bank Power Station utilized 24.58 BCM, which is 9% above the 22.5 BCM water allocation.

Resultantly, the Power Utilities were charged over-utilisation penalties amounting to USD12,098 million in accordance with the provisions of Statutory Instrument No. 109/199 (Water Tariff) By-Laws.

The water utilization statistics between the two Power Utilities at Kariba are as indicated in Table 1.

Table 1: Summary of Water Used for Power Generation at Kariba Complex in Billion Cubic Meters (BCM) January – December 2021

Month	Kariba North			Kariba South			Cumulative Allocation for Kariba Complex (MCM)	Cumulative Water Used at Kariba Complex (MCM)	% of Allocation
	Water Allocated (MCM)	Actual Used (MCM)	% of Allocation	Water Allocated (MCM)	Actual Used (MCM)	% of Allocation			
JAN	1,750.00	1,748.70	100	1,750.00	1,537.27	88	3,500.00	3,285.97	94
FEB	1,750.00	1,805.65	103	1,750.00	1,713.99	98	7,000.00	6,805.61	97
MAR	1,750.00	2,559.04	146	1,750.00	2,180.51	125	10,500.00	11,545.16	110
APR	1,750.00	2,348.02	134	1,750.00	2,130.43	122	14,000.00	16,023.61	114
MAY	1,750.00	2,266.58	130	1,750.00	1,942.53	111	17,500.00	20,232.72	116
JUN	1,750.00	2,315.13	132	1,750.00	2,174.57	124	21,000.00	24,722.42	118
JUL	1,750.00	2,301.68	132	1,750.00	2,022.53	116	24,500.00	29,046.63	119
AUG	1,750.00	2,093.13	120	1,750.00	2,076.98	119	28,000.00	33,216.74	119
SEP	1,750.00	1,738.37	99	1,750.00	1,866.43	107	31,500.00	36,821.54	117
OCT	1,750.00	2,140.92	122	1,750.00	2,221.53	127	35,000.00	41,183.99	118
NOV	2,500.00	2,128.18	85	2,500.00	2,364.10	95	40,000.00	45,676.27	114
DEC	2,500.00	1,732.30	69	2,500.00	2,355.98	94	45,000.00	49,764.55	111
Total:	22,500.00	25,177.70	112	22,500.00	24,586.85	109	45,000.00	49,764.55	111

MCM - Million Cubic Metres

The impact of the two Power Utilities exceeding their 2021 water allocation was a 1.3m drawdown in the Lake Level from the projected 2021 closing (preferred) lake level of 479.69m (19.15 BCM or 30% usable storage) to the actual closing level of 2021 of 478.39m (13.06 BCM or 20% usable storage) recorded on 31st December 2021.

The Authority continued to engage the Power Utilities to reduce generation as informed by hydrological reviews of potential emerging hydrological risks that could call for further reduced water allocation to the Power Stations.

1.2.6 Hydrological Data Collection and Forecasting

In a bid to improve the ease of hydrological data acquisition and processing as well as forecasting accuracy, the Authority purchased the Hydrological Inflow Forecasting Model while an Annual Licence Agreement was signed with Hydra Database System. The Hydrological Inflow Forecasting System (IFS) for Kariba Dam is a hydrological model that uses the latest satellite rainfall measurements as well as rainfall forecasts to automatically issue new flow forecasts along the Zambezi River in daily timestamps. Fully deployed, the Kariba IFS includes planned reservoir releases to compute water level and energy generation forecasts for Kariba. Currently, the Kariba IFS provides short-term forecasts for the next two weeks as well as seasonal outlooks over the next twelve months. The system has since been deployed and its results extensively utilised in the HEC-3 Reservoir Simulation model and the bi-weekly hydrological bulletin.

2.0 ENVIRONMENTAL MONITORING AND MANAGEMENT

2.1 Environmental Monitoring and Management Programme

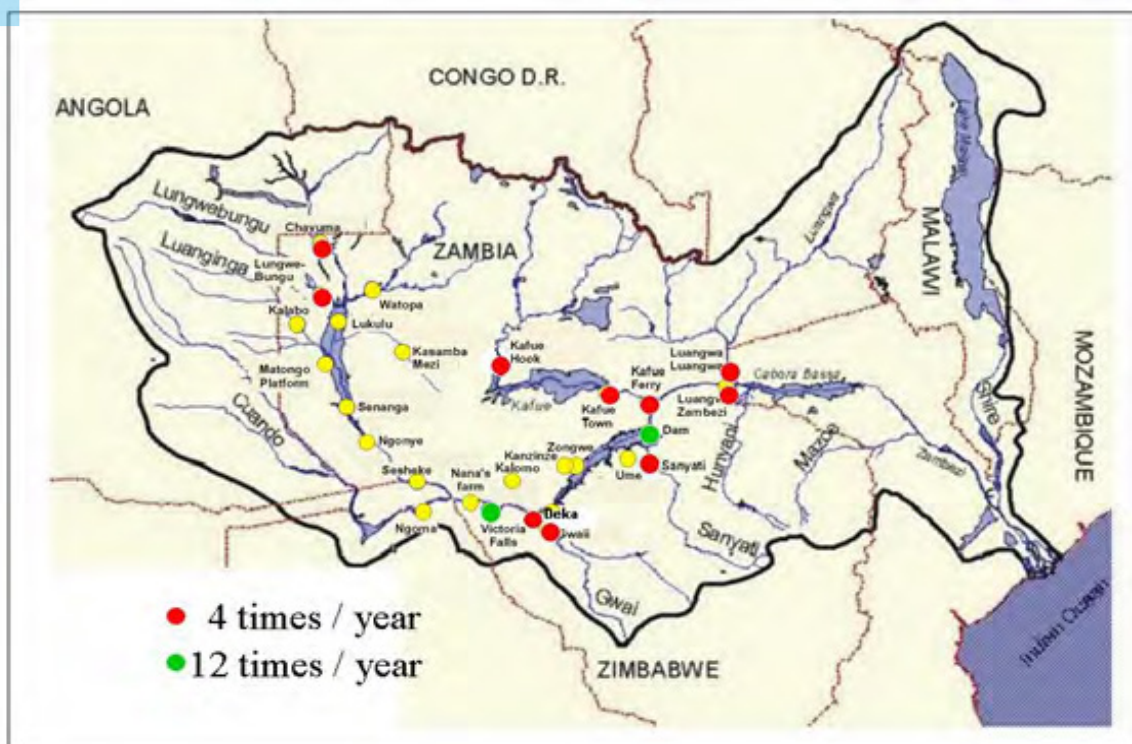


Figure 5: Location of ZRA water quality sampling sites

The Environmental Monitoring Programme comprises monthly, quarterly, and semi-annual sampling of Lake Kariba, the Zambezi River and its tributaries. However, only the monthly programme and the Fourth Quarter Lower/Upper Zambezi Catchment Programmes were carried out mainly due to the Authority's liquidity challenges.

Water quality data collection and processing activities were carried out during the period under review for some stations on Lake Kariba and the Zambezi River. The water quality data was generated through in-situ measurements and laboratory analyses. These include parameters such as Temperature; pH; Electrical Conductivity; Dissolved Oxygen; Alkalinity; Total Suspended Solids; Total Dissolved Substances; Turbidity; Total Phosphorus; Total Chlorophyll; Total Nitrogen; Nitrate; Nitrite; Secchi Depth; Alkalinity and Fecal Coliforms. The water samples that were analysed during the period under review were observed to be within the Authority's quality guidelines indicating a healthy aquatic ecosystem.

2.2 Water Hyacinth (*Eichhornia crassipes*) Monitoring

Water Hyacinth (*Eichhornia crassipes*) monitoring on Lake Kariba's Eastern Basin was conducted and weed mats were observed at Gatche Gatche during the months of February to August 2021. Localised weed mats along the water shores were also observed at University of Lake Kariba Research Station (ULKRS); Crocodile Farm; Andora Harbor; Nyaodza and Charara sampling stations. Some of the weed mats were driven by wind current and trapped at the Kariba North and South Bank weed booms near the dam wall but were physically removed. The weed mats covered an insignificant area, but routine monitoring continued throughout the year.

Morphological monitoring of Water Hyacinth was conducted at Gatche Gatche to assess the characteristic physical damage on the leaves caused by weevils of the *Neochetina eichorniae* species. The bio-control agents (i.e., weevils), in conjunction with lake level variation; low nutrient levels; wind, and wave action have largely been successful in controlling the pervasion of the mats on the Lake.

2.3 Climate Change Mitigation Plans

The Authority is developing an Environmental and Climate Change Policy whose overall objective is to provide a framework for mainstreaming and coordinating Climate Change actions in discharging its corporate mandate to enhance response, adaptation and mitigation that contributes to national and international objectives in respect to Climate Change.

The development of a cascade of dams along the shared portion of the Zambezi River between the two Contracting States is also a key strategy in ensuring the Authority is climate change resilient in its reservoir operations. To this end, the Authority has already made considerable progress in packaging one of the existing potential dam sites for development, the Batoka Gorge Hydro-Electric Scheme, with due consideration for conjunctive operation of the facility with the existing scheme at Kariba.



The Zimbabwean Ambassador to Zambia, H.E. Charity Charamba (r) looking into the Batoka Gorges during a site tour of the proposed site for the Batoka Gorge Hydro-Electric Scheme (BGHES).

3.1 Projects and Dam Management Services Report

3.1.1 General

This report presents activities of the Projects and Dam Management Services Department that is responsible for delivery of capital projects and Dam Safety management. Among capital projects are the Kariba Dam Rehabilitation Project (KRDP) and development of the Batoka Gorge Hydro-Electric Scheme (BGHES). The former seeks to address dam safety concerns at the Kariba Dam. The projects are presented separately.

3.1.2 Dam Safety Management Programme

Dam Safety is primarily about the management of internal and external hazards by assessing the fitness-for-purpose of dams. Internal hazards are errors and omissions arising from the design; construction; operation, and maintenance of the dam. These are managed through monitoring; surveillance; operations, and maintenance processes in accordance with the Standing Operations Procedures (SOP). In contrast, external hazards originate from outside boundaries of the dam-reservoir system and are thus beyond the control of dam operators. As these external hazards may have an implication on the safety of the dam, the Authority has in place an Emergency Preparedness Plan (EPP) which could be invoked in order to mitigate or manage crises.

3.1.3 Dam Safety Monitoring

Delivery of dam safety monitoring activities of data collection and treatment, surveillance and inspections seek to identify anomalous behaviour early and before same develops into dam safety risks. The processes are carried out in accordance with the SOP.

The results of geodetic surveys carried out during the year showed known behaviour dominated by deflections towards the downstream during periods of high reservoir water levels, or upstream at low water levels. This response to seasonal hydrostatic loadings was considered normal and attributed to the effects of the Alkaline Aggregate Reaction (AAR) that forces the dam arch to assume a downstream or upstream position depending on the loading conditions from the upstream reservoir. More importantly, the observed response was consistent with the behaviour recorded from other instruments such as pendulums.

3.1.4 Dam Safety Inspections

Dam safety inspections are a key component of the mandatory surveillance compliance activities that are performed to check for unusual developments. Inspections are essential for early identification of abnormalities in either the dam or secondary installations such as floodgates.

Ten dam safety inspections were carried out during the year. Among these, six (6) inspections were scheduled while four were necessitated by earthquake incidences four (4) earthquakes of moment magnitudes ranging between M_w 3.6 and M_w 4.5 occurred in June and August 2021, but their magnitudes were considered low and they did not cause any damages on either the dam wall or secondary installations).

The scheduled inspections could not be carried out every month in accordance with the SOP due to physical interaction restrictions imposed by Health Authorities due to the outbreak of the COVID-19 pandemic. Regardless, ad hoc dam inspections were routinely carried out by the resident engineers and support staff during data collection activities and whenever it was deemed necessary.

The four (4) monthly inspections and one (1) bi-annual inspection concluded that there were no unusual observations while all maintenance requirements were recorded and scheduled as part of the on-going dam maintenance activities. The Five-Yearly Inspection was delayed due to, among other reasons, the COVID-19 pandemic related restrictions that hindered international travels for Tractebel Engineering SA (the Authority's Consultant). The inspection was ultimately carried out in August and the report was released in October 2021. The main findings and conclusions made in the report included the following:

- a). **Dam** – no significant changes were observed since the last Five-Yearly inspection that was carried out in 2015. While recommendations for improvement of lighting in some areas were made, the levels of dam maintenance were deemed satisfactory.
- b). **Spillway** – while a detailed inspection of the spillway and floodgates could not be carried out due the on-going rehabilitation works; no changes were observed from the time the last inspection was conducted. Concerns were, however, raised around the servicing and testing of floodgates under full load that remained constrained by the KDRP works.
- c). **South Abutment and Bank** – measures to mitigate against slope-failure through surface protection, drainages and tendons remained relatively effective. Movement of the slope remained constant along the deep and shallow slides. It was, however, noted that the intensity of adverse conditions of sliding remained low primarily because there was neither spilling nor major earthquakes recorded over the last few years.

Although the South Bank remained stable, the effectiveness of existing stabilisation measures (slope protection by stone pitching; drainage systems in adits and shafts) now requires updating. This is primarily because of uncertainties related to adverse conditions of heavy rainfall, long spillages, or major earthquakes.

On the other hand, in the long term, the Authority will ensure that the instrumentation systems are automated to enhance the collection and treatment of data.

- d). **Monitoring systems** – Maintenance of the dam safety instruments, including the control, treatment and management of dam safety monitoring data was deemed satisfactory. Specific recommendations were made to automate some monitoring instruments and the need to use a database management software for the storage and treatment of dam safety data.

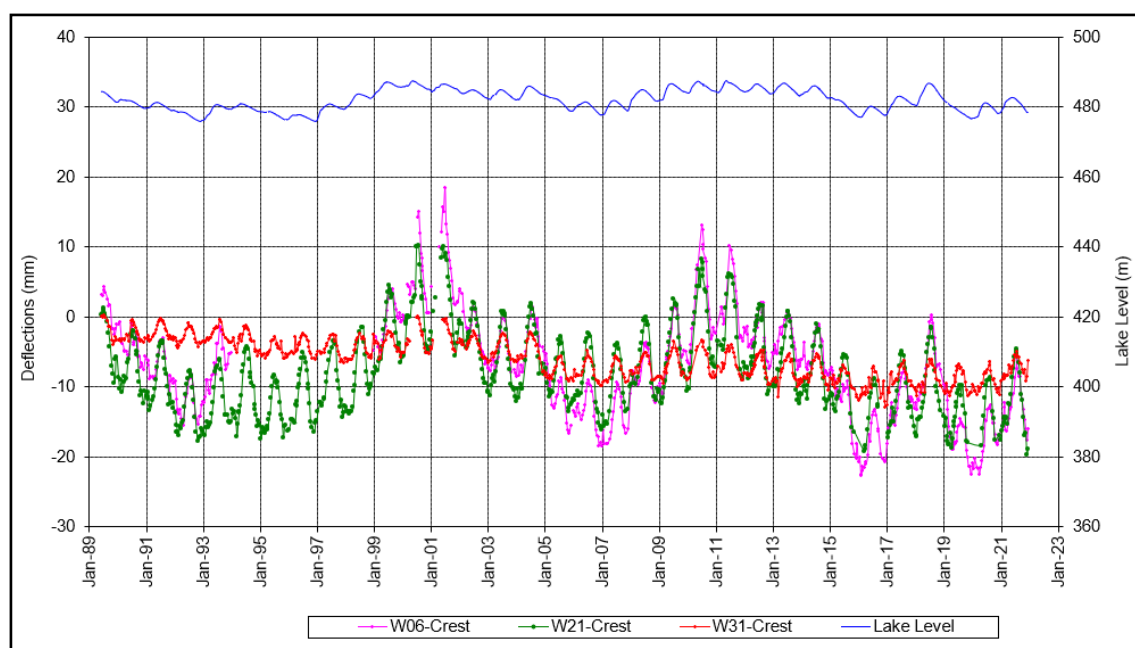


Fig 6: Main dam pendulum deflections measured at the crest. Displacements recorded during the year were in accordance with known behaviour.

3.1.5 South Bank Slope Monitoring

Displacements of the south bank are measured by pendulums and the geodetic method from several points at PS1-PS3, P4-P7 and P8-P13. Several piezometers and drainage weirs serve to monitor the groundwater level within the south bank. Both instruments showed no changes in either the rate of slope movements or hydraulic conditions during the year.

South Bank drainage discharge was measured from abutment drain holes in various adits (these are tunnels in the riverbank and dam wall). As neither spilling nor significant rainfall occurred around the dam during the year, no changes were recorded from the hydraulic monitoring systems of the South Bank.

3.1.6 Dam Maintenance

The effectiveness of a dam safety programme highly depends on adequacy of operations, along with compliance with maintenance and testing of the dam and secondary installations such as the electro-hydraulic equipment of spillway floodgates. This should be carried out in accordance with the SOP. Furthermore, backup power supply facilities are required to sustain floodgates operations should the conventional system fail during emergencies.

3.1.7 Maintenance of Floodgates



Based on historic hydrological behaviour of the lower catchment and low reservoir water levels, it was considered that the likelihood of failing to operate the floodgates for flood management is low.

The servicing and testing of floodgates under full load could not be achieved during the year because of the ongoing plunge pool reshaping and spillway rehabilitation works of the KDRP. The 2020 Five-Yearly Inspection report highlighted some operational hazards and risks related to this non-compliance in maintenance of floodgates in accordance with the SOP. Particularly, dam safety risks related to failure to operate the floodgates during emergencies exist. On the other hand, the operations team successfully operated Floodgate No. 6 in November 2021 and there are plans to open Floodgate No. 2 upon the installation of the upstream cofferdam early in 2022.

Hydrological emergencies associated with flooding caused by the lower catchment were also evaluated from a floodgates' operational systems failure angle and availability of backup power should the conventional supply fail. Based on historic hydrological behaviour of the lower catchment and low reservoir water levels, it was considered that the likelihood of failing to operate the floodgates for flood management is low. This is primarily because the need to operate the gates for flood management will be known in advance and the Authority will be able to connect the backup generator that was temporarily removed to give way to the spillway rehabilitation works at the dam crest. The Contractor is also able to provide backup power from several generators located within the Spillway area in accordance with the provisions of the Rehabilitation Contract should the need arise.

3.1.8 COVID-19 Effects on Delivery of the Dam Safety Programme

The COVID-19 pandemic significantly affected the undertaking of planned maintenance works during the year. This was primarily because large groups of people could not be mobilised to execute the labor-intensive activities. In contrast, most dam safety activities were not affected except some inspections that could not be performed. This contrasting situation was largely due to the fact that dam safety activities are not labor-intensive, and the team was able to continue operating even in smaller groups.

3.1.9 Dam Safety Contribution to Enterprise Risk.

A “high risk” priority was maintained on dam safety notwithstanding the ongoing plunge pool reshaping and spillway rehabilitation works. The likelihood of occurrence for both internal and external hazards was low while the severity or consequences remained high.

The high-risk priority is indexed based on the severity of potential hazards to public safety as well as economic and environmental impacts should failure occur. This is largely because recent dam break studies of the facility showed that progression of a failure incident will be quick, leaving an inadequate amount of time to take meaningful measures to reverse the progression of dam failure risks.

3.1.10 Conclusion

Monitoring instruments of the dam and South Bank together with visual ad hoc and scheduled inspections showed that neither abnormal behaviour nor unexpected response was detected. The dam behaviour remained as known for both displacement and hydraulic conditions of the South Bank. While the risk posed by non-compliance in the maintenance and testing of floodgates exists, the likelihood of this risk occurring is very low, unless it is caused by very complex scenarios such as extreme flooding, which should be foreseen in advance (as informed by lake inflow data) to prepare for operating the floodgates. Further, the risk profile remained high notwithstanding the ongoing works of the KDRP that are expected to significantly improve the risk profile when completed. In conclusion, the report highlights that based on the dam safety and maintenance activities performed during the year, the long-term safety and reliability of the Kariba Dam remains satisfactory.



A joint team of Authority staff from Dam Monitoring, Water Resources and Public Relations pose for a photo during one of the Dam Inspection missions held in September 2021.

4.0 BATOKA GORGE HYDRO-ELECTRIC SCHEME (BGHES)



Aerial view of the Batoka Gorge Hydro-Electric Scheme (BGHES) site

4.1 Preparatory Studies

The preparatory studies for the development of the Batoka Gorge Hydro - Electric Scheme advanced during the year 2021. These studies were carried out at a cost of USD2,496,807.21 (almost USD2.5 million). Having completed the updating of the Engineering Feasibility Studies in 2019, the focus was on the Environmental and Social Impact Assessment (ESIA) studies and the Legal and Financial Transaction Advisory (LFTA) services. The Authority also engaged the services of the Technical Advisor within the third quarter of the year to assist in the review of the Developer's proposals. The ESIA studies were completed in December 2021 following a rigorous public disclosure process while phase one support under the LFTA and Technical Advisory Services (TSA) was also completed within the fourth quarter of 2021.

In December 2021, the Authority commenced discussions with the Environmental Regulatory Agencies - Zambia Environmental Management Authority (ZEMA) and the Environmental Management Agency (EMA) of Zimbabwe – regarding the approval of the ESIA reports.

4.2 Pre-Development Activities by the Developer

The Authority continued to finance the project preparatory activities and studies. By December 2021, works worth USD1,300,000 (USD1.3 million) were yet to be invoiced under all the services rendered by various Consultants. The Environmental and Social Impact Assessment Report had been completed and submitted to the Zambia Environmental Management Agency and Zimbabwe's Environmental Management Agency for approval. Preliminary comments had been received and were still under consideration by the Authority by the end of the period under review.

The Developer (the Consortium of Power Construction Corporation of China Limited and General Electric) completed all pre-development activities which included additional geo-technical studies, aerial surveys on and around the project site, compilation and

submission of feasibility studies and proposal. In the proposal, the Developer requested credit enhancement support having faced challenges in mobilizing funds from potential financiers due to the sovereign defaults of the Contracting States. In addition, the Developer sought tax incentives from the Contracting States; 100% power offtake by Utilities and a project investment cost of USD 4.9 billion dollars resulting in tariffs of 8.4181 usc/kWh and 8.0862 usc/kWh in Zambia and Zimbabwe respectively.

Further engagements involving the Governments of the Contracting States will continue to ensure the success for execution of this Project.

4.3 Land Acquisition for the Project

Land acquisition activities continued during the year under review with ZESCO Limited managing to obtain title for the North Bank project land (over 2,500 hectares) in October 2021 while Zimbabwe Power Company was expected to complete the land acquisition (1,070 hectares) process within the first quarter of 2022.

4.4 Kariba Dam Rehabilitation Project (KDRP)



Challenges encountered included the impacts of COVID-19 and unfavorable geological conditions on the South Bank side of the Plunge Pool, resulting in time and cost delays.

The Authority continued with the project activities of the Plunge Pool Reshaping and Spillway Refurbishment with recorded progress being 58% and 38% respectively by December 2021. Challenges encountered included the impacts of COVID-19 and unfavorable geological conditions on the South Bank side of the Plunge Pool, resulting in time and cost delays. Discussions on restructuring of the project to address the funding gaps identified on the Grout Curtain Construction (which is meant to stem seepage through the porous rocks and facilitate reshaping the Plunge-Pool under dry conditions) component of the Plunge Pool sub-project (which was being financed by the European Union Delegation) were ongoing by the end of the year under review. The restructuring would, among others, involve virement of funds from the World Bank, African Development Bank and the Swedish Government funding basket to finance the Grout Curtain works. Progress on the two project components was recorded as follows:



Work in progress at the plunge pool as part of the Kariba Dam Rehabilitation works.

4.4.1 Plunge Pool Reshaping Works

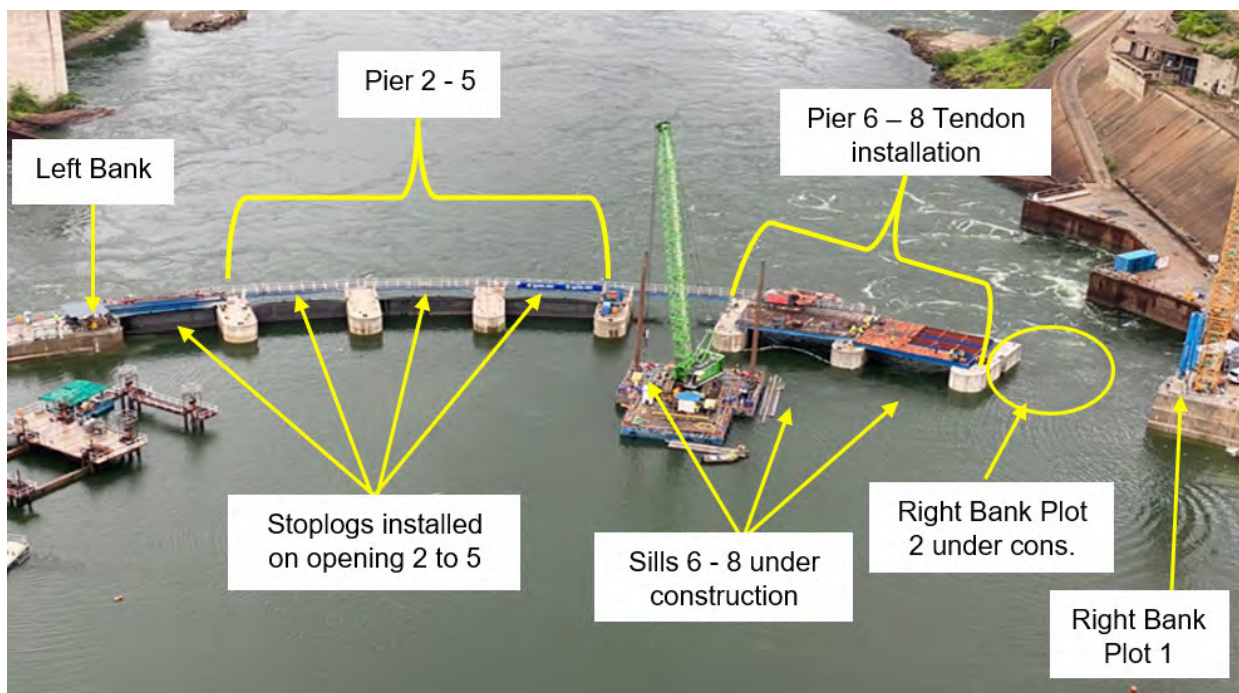


Figure 7: General Layout of the activities on Site

The project’s cumulative disbursements reached USD12,17 million, which is 33% of the budget while progress towards completion was at 58% by the end of the year. All temporary structures and major works regarding the construction of the Cofferdam were completed. The progress of the project is summarised in figure 7.

Works in progress included: a 3-D Geologic modelling of the Plunge Pool area; installation of monitoring instrumentation; installation of tendons on Pier 6; dimensioning and design of the Plunge - Pool Dewatering System as well as a concrete mix design for fault treatment.

Pending activities included completion of construction of the Cofferdam and Grout Curtain; completion of installation of monitoring equipment; de-watering of the Plunge Pool; blasting and rock excavation to clear the area in respect of which the Plunge Pool will be re-shaped; repair of the fault-zone with reinforced, abrasion-resistant concrete and Plunge Pool filling.

4.4.2 Project Timelines

The project timelines which indicate the projection to the completion of works are illustrated in the figure below:

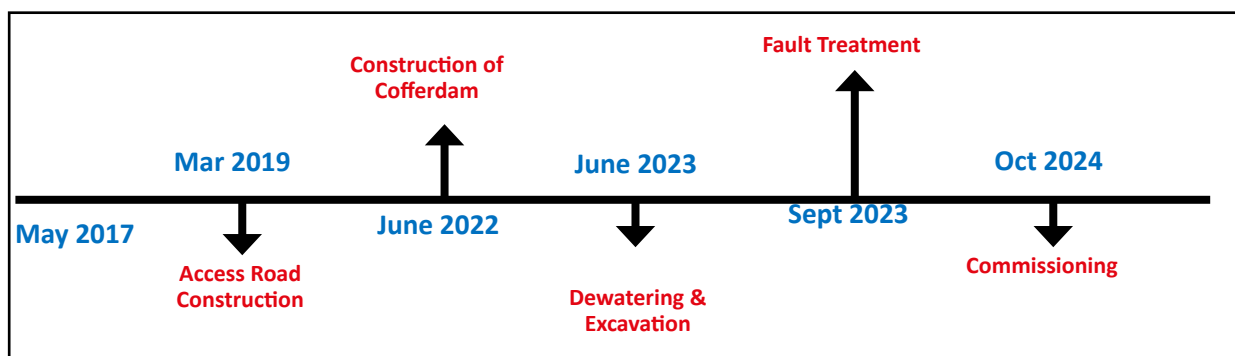


Figure 8: Projection to the completion of works

4.4.3 Spillway Refurbishment Works

Works progressed well during the year with manufacturing of key components having commenced while others, such as the Gantry Crane and Emergency Gates, due to commence during the first quarter of 2022. By the end of the year, cumulative disbursement stood at USD 12,64 million this project component is still within budget. Due to the restrictive impact of the COVID-19 pandemic and other issues, the programme of works was revised to reflect a planned completion date of 13th February 2025 instead of the initially planned 29th January 2024.

The first set of the cofferdam components for Sluice 6 was successfully installed. Hydro demolition works continued on all the piers in preparation for the installation of the cofferdam sets to facilitate the safe removal and replacement of the Built in Parts, which had been adversely affected by Alkali Aggregate Reaction (AAR).



Downstream scaffold erection in Sluice 6 of the Spillway

4.4.4 Institutional Support

The activities under institutional support progressed well and technical support by the Consultant (Stucky Limited), the Dam Safety Panel of Experts and Dispute Adjudication Board continued during the reporting period. The Authority also continued with the development of its Emergency Preparedness Plans with support from the Financing Partners. Other individual consultants were engaged and assisted in cross cutting issues on Environment, Gender, and Social Safeguards. An independent Grievance Redress Mechanism was operationalized to address various grievances reported under the project.

5.0 PARTNER AND CLIENT RELATIONSHIP MANAGEMENT

5.1 General

The Bi-Lateral nature of the Authority renders Stakeholder Engagement the fulcrum of the organisation's strategic planning process to ensure that stakeholder needs are translated into organisational goals to ensure successful fulfillment of the same. Couched in the Authority's Partner Relationship Management Key Result Area of the Authority's Corporate Strategy for the period 2020-2024, Stakeholder Engagement is the prerogative of all the Authority's departments but is primarily driven by the Public Relations and Communications Unit under the Executive Department and the Stakeholder Relations Office as well the ZVDF Project Office under the Projects and Dam Management Services Department. Key highlights from these Units are summarized below.

5.2 Partner and Client Satisfaction Baseline Indices

The Authority's Corporate Strategy for the period 2020-2024 identified key outputs such as the establishment of a Partner Satisfaction Baseline Index; the development and implementation of a Partner Management Framework as well as the development and implementation of a Client Service Charter by December 2024.

A digital survey was internally developed and distributed to 132 target respondents drawn from across the stakeholder spectrum. The response rate was poor (at 18%) and could not be generalised to the population under study nor deemed useful in developing a Partner Satisfaction Index nor a Client Service Charter. Invaluable insight, however, was obtained from this basic survey as follows:

a. There is need to improve on Stakeholder Engagement

COVID-19 pandemic induced lockdowns affected the levels and quality of engagements. Whereas virtual engagements were facilitated or attended as relevant, physical engagements with key stakeholders such as Traditional Leaders and members of displaced communities retain pole position as the most effective form of Stakeholder Engagement. It is therefore expected that physical stakeholder engagements will be undertaken in 2022.

b. There is need to facilitate training for the Media

Continual engagement, including training, is required to sustain objective and positive coverage of the Authority. As such, an Energy Reporting course, which will include input from the Authority, will be co-ordinated under the European Union (EU) - sponsored Pamodzi4Energy initiative during the first quarter of 2022.

The engagement of a Research Services Consultant to carry out a Partner and Client Satisfaction Baseline has been budgeted for 2022. The results of that Survey will inform a comprehensive Partner Relationship Management Framework as well as a Client Service Charter.

5.3 External Media Coverage

Continual engagement with the media ensured generally positive coverage regarding the Authority. A total of 233 articles were published through the year. Of these, 20 (8%) were considered negative as they misrepresented facts. The journalists were contacted to discuss opportunities for improvement in future reporting. These same journalists are expected to attend the Energy Reporting course to be coordinated under the EU's Pamodzi4Energy programme. Coverage was mainly regarding the ongoing Kariba Dam Rehabilitation (KDRP) works; water levels at Kariba Dam and the planned Batoka Gorge Hydro-Electric Scheme (BGHES).

5.4 Owned Digital Media

a) Social Media

The Authority continued to engage with its online followers via its Social Media channels, primarily Facebook. The engagements in the comments section that follow every post are evidence that the public is keen to fully understand the Authority's operations and development activities. Facebook followers increased by almost 250% (from 18 292 in 2020 to 45 052 in 2021), a sharp increase that is reflective of the success of the Social Media Engagement Strategy.

b) Website

The Authority's website continued to serve as another key information dissemination channel. The contacts page carried a messaging platform where followers shared their views on matters of concern thus providing a two-way communication platform. To ensure a more comprehensive understanding of the Authority's vision - *To be the model organisation in dam and water resources management in the Zambezi River basin* – the website will be re-designed in 2022 to include more information on Dam and Water Resources Management.

5.5 Stakeholder Engagement

The COVID – 19 pandemic induced restrictions reduced the number of stakeholder engagements that could be held during the year under review. High level engagements with various Embassy Officials; Co-operating Partner missions (e. g. the World Bank, European Union) and the respective Ministries responsible for the Energy and Finance portfolios in the Contracting States were held during tours to the Kariba Dam and the Batoka Gorge Hydro-Electric Scheme Site. The high-level engagements included one by the Zimbabwean Ambassador to Zambia, H.E Charity Charamba; Minister of Energy, Eng. Peter Kapala; Permanent Secretaries of Energy, Mrs Francesca Chisangano Zyambo and Dr. Gloria Magombo; former PS -Energy Zambia, Mrs Veronica Mwiche; their Royal Highnesses Chief Simaamba of the Bagande people in Zambia, Chief Mukuni of the Toka-Leya in Zambia and Chief Shana of Jambezi Area in Zimbabwe. A highly successful exhibition was also held in Zambia's Siavonga District on Independence Day (24th October).



Zimbabwean Ambassador to Zambia, Ambassador Charity Charamba, (centre) talks to ZRA staff during a tour of KDRP



Manager PR and Communications, Selusiwe Sibanda discussing ZRA operations with Siavonga residents during the Independence Day exhibition at the ZESCO Grounds in Siavonga

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

The Authority continued to implement various planned projects under the support of the Zambezi Valley Development Fund (ZVDF). The projects are meant to improve the well-being of the communities that were displaced during the construction of the Kariba Dam. The following are highlights of some projects that were executed in 2021 in the two Contracting States:

Country	Project location	Description	Status	Project Cost
Zambia	Nkandazovu Secondary School in Kalomo	Construction of 1x3 Classroom Block	Completed and handed over to the school administration	USD 42,456.66
	Nkandazovu Secondary School in Kalomo	Two staff houses	On-going, completion planned for second quarter in 2022	USD 20,303.00
	Chiyabi in Sinazongwe	Construction of a Clinic	Ongoing	USD 23,969.27
Zimbabwe	Chisipiti Primary School in Hurungwe	Construction of a 1x2 classroom block	Ongoing	USD 14,460.89
	Simchembu Clinic in Gokwe North	Construction of a staff house	Ongoing. Reached gable level	USD 16,883.03



Construction of two staff houses at Nkandazovu Secondary School in Kalomo



Construction of a staff house at Simchembu Clinic

5.7 Kariba Dam Rehabilitation Project (KDRP) Stakeholder Engagement

During the period under review, KDRP consistently engaged Kariba Border authorities, Power Utilities and main KDRP Contractors to enhance interfacing during the Project's execution. This was critical since these parties are key in facilitating cross-border access

of equipment and personnel, work fronts are shared, and because there is general personnel interaction.

Other stakeholder engagement initiatives conducted by KDRP were as follows:

5.7.1 Consultations with Road Transport and Safety Agency (RTSA)/ Labour Office

Consultations with RTSA and the District Labour Officer stationed in Siavonga were necessitated by salary increase demands proffered by KDRP vehicle drivers based on Statutory Instrument (SI) No. 106 of 2020 (Minimum Wages and Conditions of Employment - Truck and Bus Drivers). The outcome of the consultations indicated that the SI was not applicable to KDRP since the project vehicles were not considered public service vehicles.

5.7.2 Meeting with Financiers to discuss Community Development expectations of KDRP

To initiate the process of assessing the impact of ZVDF programme, a meeting was convened by the World Bank, KDRP and ZVDF Coordinator to discuss possible opportunities for collaboration between ZVDF and KDRP to foster Community Development. This was critical in meeting community development expectations of immediate project communities as the current design of KDRP does not include a Corporate Social Responsibility strategy/plan. The meeting agreed that ZRA should lead the process of developing Terms of Reference (ToRs) which would be used to engage an external consultant who will evaluate opportunities for the KDRP community under the auspices of ZVDF.

5.7.3 Consultations with the local Labour Office on New Work arrangements at the Plunge Pool Work Site

Changes to the Employee work arrangements which dictated that employees work on weekends and the introduction of night shifts from 14 May to 31 December 2021 were necessitated by the need to ensure alignment with the Plunge Pool project timelines. In cognisance of the implications of varying agreed upon work arrangements, consultative meetings were held with the Ministry of Labour officials based in Kariba and Siavonga to appreciate the legal implications of changing work arrangements.

It was resolved that awareness about the conditions leading to the need to vary work arrangements be raised and that an addendum to existing staff employment contracts be affixed to include the changes and compensation criteria for overtime if necessary was inevitable.

The contractor implemented the two actions and the transition to the new arrangements progressed smoothly.

5.7.4 Partnership with local hospital to provide Psychosocial support to KDRP personnel

The Resident Doctor at Siavonga District Hospital met with the ZRA Stakeholder Relations Officer (SRO) to discuss a partnership between KDRP and the Hospital to offer psychosocial support to KDRP employees as necessary. The outcome of the meeting was positive as the Doctor indicated that the hospital had trained Counsellors and arrangements could be made for the project's employees to access the services. The potential co-operation with the hospital will be further explored during the Gender Based Violence (GBV) service provider mapping as clear and effective referral pathways should be defined to ensure the effectiveness of the intervention.

6.0 CORPORATE SERVICES REPORT

6.1 General

This Report covers salient activities undertaken during the year 2021 under the Corporate Services Department in the following areas: Human Resource Management, Information and Communication Technology, and Procurement Management.

6.2 Human Resource and Administration Report

The Human Resource and Administration Section plays a key role in ensuring the availability of Human Capital to carry out various functions. The employee complement as of 31st December 2021 was 151 against the approved establishment of 183 positions. The Authority had 154 employees as of 1st January 2021; engaged an additional seven (7) but lost 10 due to resignations (5); expiry of contract (1); Retirement/Medical Discharge (3) and one death (Mr. Patrick Marikopo).

6.2.1 Employee / Employer Relations

The Authority continued to experience harmonious Employee-Employer relations across its entire network during the year 2021. The Employee Engagement survey was distributed to 151 employees across the organization. A response rate of about 20% was recorded as only 33 employees responded. However, the feedback was cardinal. Employees intimated that they were generally concerned about the execution of the Performance Management System and Talent Management processes. Going forward, the HRA Section will spearhead the effective implementation of the following initiatives in a bid to improve Employee Engagement:

The Employee Engagement survey was distributed to 151 employees across the organization. A response rate of about 20% was recorded as only 33 employees responded.

- Talent Management processes
- Performance Management System Processes
- Change Management programmes
- Team Building programmes
- Introduction of suggestion boxes

6.2.2 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 Coronavirus Pandemic, the Training and Development Plan for 2021 could not be implemented as envisaged. In this regard, only critical training programmes and employee sensitisation workshops were undertaken in-house in the following areas: Cyber Security and Awareness; Employee Sensitisation Workshops regarding Crisis Management Manual for the Kariba Dam Rehabilitation Project; Employee Sensitisation Workshops regarding the Authority's Vision, Mission, and Core Values; Fire Fighting & Fire Drills and First Aid.



ZRA staff being trained to extinguish a fire by members of the Fire Brigade

6.2.3 Performance Management System

The Authority engaged the Office of the President and Cabinet, Public Sector Reforms and Performance Management Department (OPC, PSRPMD) of the Republic of Zimbabwe to assist the Authority develop and implement the Integrated Result Based Management (IRBM) Performance Management System which is envisaged to improve Performance Management. The system will be rolled out in 2022.

6.2.4 Employee Welfare and Wellness Programmes / Health and Safety Performance

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 wellbeing of employees through human resource strategies aimed at achieving the following: improved employee satisfaction; improved employee productivity; mitigation of occupational health and safety risks; reduction of costs associated with absenteeism; improved employee organizational culture; and improved corporate image through implementation of corporate social responsibility programmes.

It is unfortunate that the Authority's HIV/AIDS; Occupational Health and Safety as well as Social Sports programmes could not be fully executed due to the COVID 19 induced movement restrictions as well as the unfavourable liquidity position the Authority was faced with.

6.2.5 Update regarding the payment of Retrenchment Packages

As part of strategic intervention measures to ensure that the Authority continued being sustainable, the Council of Ministers approved a re-organisation exercise which was aimed at reviewing the Authority's employment costs against the Authority's total revenues as well as against prevailing market standards. In this regard, Employees' Terms and Conditions of Service were revised accordingly. Arising from that, all Employee were retrenched and re-engaged on revised Terms and Conditions of Service.

Consequently, as of 31st December 2021, four (4) employees based in Zambia were yet to be paid retrenchment packages. As at the same date, one hundred and forty-seven (147) employees were serving under revised Terms and Conditions of Service against the employee complement of one hundred and fifty- three (153).

6.3 ICT Report on Infrastructure and ICT Governance Framework

The Information and Communication Technology (ICT) Section spearheads the digital transformation of the Authority in line with the Business objectives in a process called Business Technology aligned as espoused by the Control Objectives for Information and Related Technologies (COBIT) Framework. The overall intention is for the business to derive value from its ICT investments: ICT should be a Business enabler.

During the year under review, the SAP Enterprise Resource Planning (ERP) system roll-out continued. A Consultant, TechMahindra Limited of India, was contracted to implement the system.

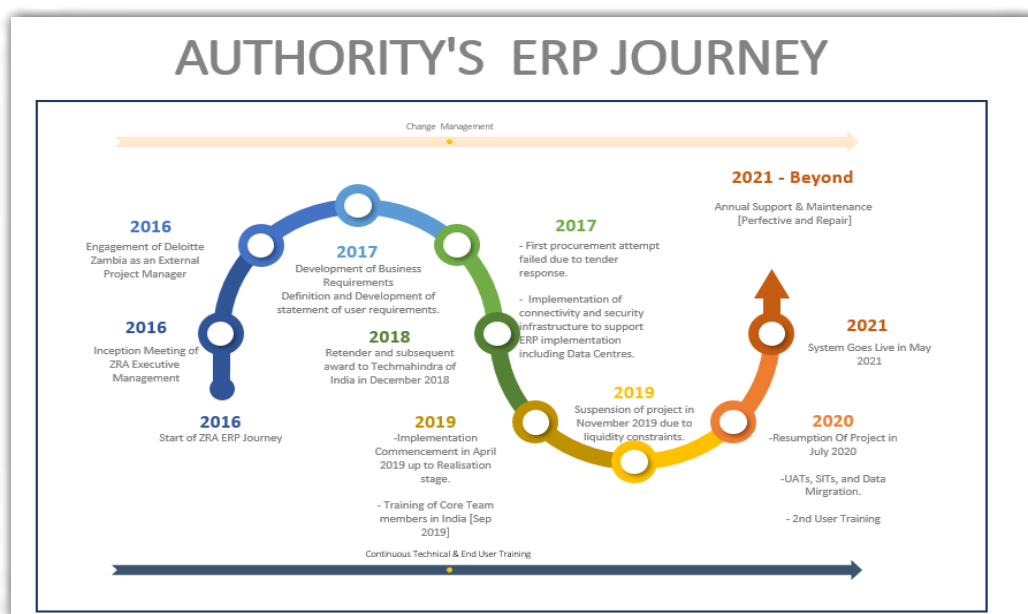
The implementation of SAP was necessitated by the disconcerting observation that almost 90% of the Authority's business processes were manually executed. The System officially went live on 1st May 2021 with twelve (12) modules running namely.

- a). Finance and Controlling (FICO)
- b). Human Capital Management (HCM)
- c). Enterprise Asset Management (EAM)
- d). Environment Health and Safety Management (EHSM)
- e). Materials Management (Procurement and Inventory)
- f). Integration with Specialized Softwares
- g). Project Systems (PS)
- h). Document Management Systems (DMS)
- i). Stakeholder Relations Management (SRM)
- j). Case Management (CM) and
- k). Business Intelligence (BI)

The estimated Budget at Completion was calculated to be USD 3,000,000.00 (USD 3 million), inclusive of Installation plus Support and Maintenance costs. By the end of the year, about USD 1,472,000 (over USD 1.4 million) had been spent on ICT infrastructure.

The system is now in support and maintenance phase. Various strategies and initiatives will be put in place in order to increase system adoption and usage for the company to realise value from the investment.

The ERP Implementation Road map is as depicted below.



6.4 Procurement Report

The Authority's Procurement processes are regulated by the Authority's Procurement Policy and Procedures Manual that was approved by the Board of Directors in 2016. In view of the new procurement law in Zimbabwe, the Public Procurement and Disposal of Public Assets Act No. 5 of 2017 being promulgated and the repeal and replacement of the Public Procurement Act 2008 with the Public Procurement Act 2020 in Zambia, Management undertook to accordingly amend the Authority's Procurement Policy and Procedures during 2022.

The execution of the Procurement Plan was severely impacted by the COVID-19 pandemic induced movement restrictions which made the local supply market increasingly unreliable while some suppliers closed shop. The restrictions resulted in inconvenient logistics bottlenecks which in turn led to substantially increased lead times for imported equipment. The online procurement interface with suppliers was fortunately extensively facilitated by the implementation of the SAP ERP System.

The Zimbabwe supply market was characterized by highly volatile pricing distortions. In order to ensure that business operations did not grind to a halt, the Procure-to-Pay cycle was streamlined in the SAP Materials Management Module. This ensured that vendors were promptly paid for goods and services already delivered.



Delivery of the cofferdam set 2 components on site

7.0 FINANCIAL PERFORMANCE

7.1 Budget Overview

During the year under review, the Authority achieved an operating income of USD 30.13 million compared with the budget of USD 27.87 million, giving rise to a favourable variance of 8.11%. This was because of the over-utilisation of water by the two Power Utilities, ZESCO Limited (Zambia) and Kariba Hydro Power Company (KHPC of Zimbabwe). The combined water utilisation was 49.76 Billion Cubic Metres (BCM) against an allocation of 45.00 BCM, representing 10% water over-utilisation. Further, the 2020 water overutilisation invoice was only booked in 2021.

In addition, the operating expenditure exclusive of depreciation and other provisions was USD 11.19 million against a budget of USD 19.63 million resulting in a favourable variance of 43%. The foregoing represented a budget performance of 57%. The low budget execution in the year was on account of liquidity challenges and the COVID-19 pandemic-induced movement restrictions. Most employees were required to work from home and while face to face meetings ceased.

The said activities which could not be undertaken due to liquidity challenges and COVID-19, were under the following expenditure lines: Board, Administration, Transport and Repairs expenses.

The adverse liquidity situation arose from non-settlement of water sales invoices by the two Utilities and the foreign exchange control regulations that restricted access to the Authority's funds that were held in Commercial Banks in Zimbabwe.

The total receivables from the two Power Utilities amounted to USD 72.81 million (USD 47.48 million previous year) representing a growth of 53% in the Power Utilities receivable over the previous year. Further, the restricted cash in Zimbabwe was USD 13.2 million, bringing the total amount of funds the Authority was not able to access to USD 86.01 million. The Authority's liquidity ratio continued to show a very good outlook of 8.71 times of current assets which could cover current liabilities. However, when the inaccessible funds mentioned above were removed; the resultant Acid Test Ratio, showed a paltry 0.23 times or only about 23% of the current liabilities that could be covered by the current assets, which well described the precarious liquidity situation the Authority was facing. The Authority continued to engage the two Power Utilities with a view to ensuring that they settled the outstanding obligations.

Nevertheless, there were positive developments in the trade receivables collections. With the agreed payment plans in place with both Power Utilities during the year under review, the Authority was able to clear off some of its obligations such as expunging retrenchment packages and payment towards the Kariba Dam Rehabilitation Project (KDRP) loan for these receipts. Further, the Authority was able to execute some priority budgetary requirements. It should be noted though, that the Power Utilities continued making payment below average monthly water invoices that led to the growth in receivables alluded to above.

The full range of the obligations the Authority was still seized withstood at USD 30.55 million with the main components of this obligation of USD 21.72 million being payments to the Government of the Republic of Zambia (GRZ) for KDRP Loans and other operating expenditure obligations of USD 8.83 million accounting for 71% and 29% respectively.

Details regarding the Authority's financial position are contained in the Financial Statements section of this report.

FINANCIAL REPORT



The Directors' submit their report together with the Audited annual financial statements for the year ended 31 December 2021, 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 2021

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					
	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Revenue	2,725,291	610,155	30,128	1,141,117	426,566	23,705
Surplus for the year	<u>2,144,686</u>	<u>480,166</u>	<u>23,710</u>	<u>174,678</u>	<u>65,298</u>	<u>3,634</u>

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\$ 29.11 million; ZMW 588.66 million; ZWL 2,629.26 million (2020 US\$ 16.23 million; ZMW 291.97 million or ZWL 781.07 million) 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\$ 8.18 million; ZMW 165.58 million; ZWL 739.59 million (2020: US\$ 9.93 million; (ZMW 178.70 million); (ZWL 478.05 million). The average number of employees was as follows:

Month	Number of Employees	Month	Number of Employees
January	154	July	153
February	153	August	153
March	154	September	153
April	152	October	151
May	154	November	151
June	153	December	151

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 25 to the annual financial statements.

Gifts and Donations

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

	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Donations and sponsorships	30,475	6,823	337	11,818	4,418	245

Restructured 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 (GRZ) 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 of each year. Due to the liquidity challenges that the Authority faced over the past four years, the Authority defaulted on its repayments on the loan facility for four consecutive years resulting in arrears of US\$ 19,786,000 at the end of 31 December 2020. The terms of the agreement were that the Authority has to pay a predetermined amount irrespective of the amount drawn down. In 2020, the Authority commenced discussions with the Ministry of Finance to restructure the terms of the loan agreement taking into account the liquidity position of the Authority. The Government of the Republic of Zambia (GRZ) in consultation with the primary lenders i.e. the World Bank's International Development Association (IDA) and the African Development Bank's Africa Development Fund (ADF) agreed to restructure the terms of the on lending agreement between the GRZ and the Authority. Key among the changes to the Restructured Credit Agreements were; reduction of interest rate from 2% to 1.25%, basing the bi annual principal and interest payments on the actual amount drawn on the facility as opposed to the allocated amount of US\$ 114 million and granting of a two year grace period on the payment of principal with the first payment due on 1 March 2024.

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 on 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 22 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.

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. Peter C Kapala	Chairperson	Appointed September 2021
Hon. Soda Zhemu	Co - Chairperson	
Hon. Mathew Nkhuwa MP	Chairperson	Retired May 2021
Hon. Prof. Mthuli Ncube MP	Member	
Hon. Situmbeko Musokotwane	Member	Appointed August 2021
Hon. Dr. Bwalya Ng'andu MP	Member	Retired May 2021

(b) Board of Directors

Name	Title	Resigned/Appointed
Francesca Chisangano-Zyambo	Chairperson	Appointed November 2021
Dr. Gloria S. Magombo	Co - Chairperson	
Veronica Mwiche	Chairperson	Retired November 2021
George T. Guvamatanga	Member	
Danies K. Chisenda	Member	Appointed January 2021
Mukuli Chikuba	Member	Retired January 2021
Engineer Israel Rwodzi	Member	
Pascal Mubanga	Member	Retired January 2022

(c) Finance Human Resource and Remuneration Board Committee

Name	Title	Resigned /Appointed
Danies K. Chisenda	Board Member and Chairperson	
George T Guvamatanga	Independent Board Member and Co-Chairperson	

(d) Audit Risk Management and Corporate Governance Board Committee

Name	Title	Resigned / Appointed
Pascal Mubanga	Independent Board Member and Chairperson	
Engineer Israel Rwodzi	Independent Board Member and Co - Chairperson	
David Kalaba	Independent Board Member	
Tariro Mhuka	Independent Board Member	

Zambezi River Authority
 Director's Report
 For the year ended 31 December 2021

Governance Structure (continued)

(e) Projects and Technical Board Committee

Name	Title	Resigned / Appointed
Pascal Mubanga	Independent Board Member and Chairperson	
Eng. Israel Rwodzi	Independent Board Member and Co - Chairperson	

(f) Executive Management

Name	Position	Retired/Appointed
Engineer. Munyaradzi C. Munodawafa	Chief Executive	
Peter Kapinga	Board Secretary/Corporate Services Director	
Edward M. Kabwe	Director – Finance	
Engineer. Sithembinkhosi Z. Mhlanga	Director – Projects & Dam Safety	Appointed May 2021
Engineer. Christopher Chisense	Director – Water Resources and Environmental Management	
Engineer. David Mazvidza	Director – Projects & Dam Safety	Retired March 2021

Auditor

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

10/06/2022
 Date

Zambezi River Authority
Statement of Directors' responsibilities
For the year ended 31 December 2021

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.

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



Co-Chairperson

10/06/2022
Date

10/06/2022
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 2021, 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 Acts 17 and 19.

What we have audited

Zambezi River Authority's annual financial statements are set out on pages 55 to 98 and comprise:

- the statement of financial position as at 31 December 2021;
- the statement of income and expenditure and other comprehensive income for the year then ended;
- the statement of changes in reserves 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.

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.



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.

Key Audit Matters

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

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 Acts 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 Authority'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 Authority'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.

Report on other legal and regulatory requirements

The Zambezi River Authority Acts 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

17 JUNE 2022

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

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Statement of Income and Expenditure and other Comprehensive Income

	Notes	Year ended 31 December					
		ZWL'000	2021 ZMW'000	US\$'000	ZWL'000	2020 ZMW'000	US\$'000
Revenue	5	2,725,291	610,155	30,128	1,141,117	426,566	23,705
Other income	6	1,117,822	250,265	12,358	4,098	1,532	85
Fair value gain on financial assets through profit or loss	14	1,575	353	17	-	-	-
Impairment of financial assets	22	(788,279)	(176,485)	(8,714)	(268,398)	(100,331)	(5,575)
Depreciation property, plant and equipment	9	(345,692)	(77,395)	(3,822)	(167,214)	(62,507)	(3,473)
Depreciation investment property	10	(3,563)	(798)	(39)	(1,896)	(709)	(39)
Amortisation of intangible assets	11	(5,921)	(1,326)	(65)	-	-	-
Employee benefit expense	8	(739,588)	(165,583)	(8,176)	(478,050)	(178,701)	(9,928)
Governance costs		(40,622)	(9,095)	(449)	(18,856)	(7,049)	(392)
Administration and travel costs		(160,163)	(35,858)	(1,771)	(82,336)	(30,778)	(1,710)
Other operating expenses		(71,797)	(16,075)	(794)	(20,572)	(7,690)	(427)
Results from operating activities		1,689,063	378,158	18,673	107,893	40,333	2,246
Finance income	7	620,414	138,902	6,859	74,199	27,737	1,542
Finance costs	7	(164,791)	(36,894)	(1,822)	(7,414)	(2,772)	(154)
Surplus for the year		2,144,686	480,166	23,710	174,678	65,298	3,634
Other comprehensive income for the year							
Items that will be subsequently reclassified to profit or loss:							
Exchange differences on translation		4,548,546	(768,112)	-	9,779,106	1,077,157	-
Net Revaluation gain		222,274	33,386	1,996	-	-	-
Total other comprehensive income for the year		4,770,820	(734,726)	1,996	9,779,106	1,077,157	-
Total comprehensive income for the year		6,915,506	(254,560)	25,706	9,953,784	1,142,455	3,634

The notes on pages 61 to 98 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Statement of financial position

Non - current assets	Notes	As at 31 December					
		2021			2020		
		ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Property, plant and equipment	9	21,844,712	3,281,187	196,126	14,156,972	3,603,621	168,870
Investment property	10	146,065	21,939	1,311	113,153	28,803	1,350
Intangible assets	11	108,527	16,301	974	-	-	-
Long term investments	12	357	54	3	987	251	12
Other receivables	15	7,371	1,107	66	49,959	12,717	596
		<u>22,107,032</u>	<u>3,320,588</u>	<u>198,480</u>	<u>14,321,071</u>	<u>3,645,392</u>	<u>170,828</u>
Current assets							
Inventory	13	15,064	2,263	135	11,623	2,959	139
Financial assets at fair value through profit or loss	14	47,893	13,166	787	36,491	9,289	435
Trade and other receivables	15	8,264,261	1,241,316	74,197	4,931,614	1,255,327	58,829
Cash and cash equivalents	16	118,589	17,812	1,065	83,755	21,320	1,000
Restricted cash	17	83,405	12,528	749	1,400,536	356,502	16,707
		<u>8,529,212</u>	<u>1,287,085</u>	<u>76,933</u>	<u>6,464,019</u>	<u>1,645,397</u>	<u>77,110</u>
Total assets		<u>30,636,244</u>	<u>4,607,673</u>	<u>275,413</u>	<u>20,785,090</u>	<u>5,290,789</u>	<u>247,938</u>
Funds and Liabilities							
Revaluation reserve		8,568,602	1,287,028	76,930	6,489,724	1,651,939	77,414
Translation reserve		8,053,601	533,611	-	5,637,922	944,921	-
Revenue reserve		2,745,459	1,094,459	97,314	324,510	572,798	71,124
		<u>19,367,662</u>	<u>2,915,098</u>	<u>174,244</u>	<u>12,452,156</u>	<u>3,169,658</u>	<u>148,538</u>
Non - current liabilities and grants							
Borrowings	18	2,419,390	363,399	21,721	-	-	-
Capital grants	20	7,865,885	1,181,478	70,620	4,235,666	1,078,176	50,526
		<u>10,285,275</u>	<u>1,544,877</u>	<u>92,341</u>	<u>4,235,666</u>	<u>1,078,176</u>	<u>50,526</u>
Current liabilities							
Borrowing		-	-	-	1,194,610	304,084	14,250
Trade and other payables	19	983,307	147,698	8,828	2,902,658	738,871	34,624
		<u>983,307</u>	<u>147,698</u>	<u>8,828</u>	<u>4,097,268</u>	<u>1,042,955</u>	<u>48,874</u>
Total funds and liabilities		<u>30,636,244</u>	<u>4,607,673</u>	<u>275,413</u>	<u>20,785,090</u>	<u>5,290,789</u>	<u>247,938</u>

The Annual Financial Statements on pages 55 to 98 were approved for issue by the Board of Directors on 10/06/2022 and signed on its behalf by:



Chairperson



Co - Chairperson

The notes on pages 61 to 98 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

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 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
<u>Total comprehensive income for the year</u>	5,112,217	4,547,487	294,080	9,953,784
Balance at 1 January 2021	6,489,724	5,637,922	324,510	12,452,156
Surplus for the year	-	-	2,144,686	2,144,686
<u>Other comprehensive income for the year</u>				
Revaluation Surplus	222,274	-	-	222,274
Amortisation of revaluation reserve	(276,263)	-	276,263	-
Exchange differences on translation	2,132,867	2,415,679	-	4,548,546
<u>Total comprehensive income for the year</u>	2,078,878	2,415,679	2,420,949	6,915,506
Balance at 31 December 2021	8,568,602	8,053,601	2,745,459	19,367,662

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 2020	1,117,723	446,614	462,866	2,027,203
Deficit 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
<u>Total comprehensive income for the year</u>	534,216	498,307	109,932	1,142,455
Balance at 1 January 2021	1,651,939	944,921	572,798	3,169,658
Surplus for the year	-	-	480,166	480,166
<u>Other comprehensive income for the year</u>				
Revaluation Surplus	33,386	-	-	33,386
Amortisation of revaluation reserve	(41,495)	-	41,495	-
Exchange differences on translation	(356,802)	(411,310)	-	(768,112)
<u>Total comprehensive income for the year</u>	(364,911)	(411,310)	521,661	(254,560)
Balance at 31 December 2021	1,287,028	533,611	1,094,459	2,915,098

The notes on pages 61 to 98 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Statement of Changes in Reserves (US\$)

	Revaluation reserves US\$'000	Revenue reserve US\$'000	Total Reserves US\$'000
Balance at 1 January 2020	79,894	65,010	144,904
Deficit 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 1 January 2021	77,414	71,124	148,538
Surplus for the year	-	23,710	23,710
<u>Other comprehensive income for the year</u>	-	-	-
Revaluation Surplus	1,996	-	1,996
Amortisation of revaluation reserve	(2,480)	2,480	-
Total comprehensive income for the year	(484)	26,190	25,706
Balance at 31 December 2021	76,930	97,314	174,244

The notes on pages 61 to 98 are an integral part of these annual financial statements.

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Statement of Cash Flows

	Year ended 31 December					
	ZWL'000	2021 ZMW'000	US\$'000	ZWL'000	2020 ZMW'000	US\$'000
Cash inflow from operating activities						
Operating Result	2,144,686	480,166	23,710	174,678	65,298	3,634
Depreciation on property, plant and equipment	345,692	77,395	3,822	167,214	62,507	3,473
Depreciation on investment property	3,563	798	39	1,896	709	39
Amortisation	5,921	1,326	65			
Impairment loss on trade and other receivables	788,279	176,485	8,714	268,398	100,331	5,575
Gain on disposal of property plant and equipment	(16,973)	(3,800)	(188)	(762)	(285)	(16)
Interest received	(66,846)	(14,966)	(739)	(74,199)	(27,737)	(1,542)
Fair value gain on financial assets through profit and loss	(1,575)	(353)	(17)	-	-	-
Increase in trade and other receivables	(3,290,059)	25,621	(14,838)	(5,165,278)	(832,457)	(21,709)
Restricted cash	1,317,131	343,974	15,958	1,061,943	81,764	2,932
Decrease in inventories	(3,441)	696	4	(9,302)	(1,070)	(4)
Net unrealised gains	(388,777)	(87,042)	(4,298)	-	-	-
Increase in trade and other payables	(1,919,351)	(591,173)	(25,796)	2,441,169	364,413	7,858
Cash generated from operations	(1,081,750)	409,127	6,436	(1,134,243)	(186,527)	240
Interest Received	66,846	14,966	739	74,199	27,737	1,542
Net Cash inflow from operating activities	(1,014,904)	424,093	7,175	(1,060,044)	(158,790)	1,782
Investing activities						
Purchase of property plant and equipment	(2,629,260)	(588,655)	(29,066)	(781,070)	(291,974)	(16,225)
Purchase of intangible assets	(115,707)	(17,380)	(1,039)	-	-	-
Proceeds from disposal of property plant and equipment	26,137	5,852	289	1,492	558	31
Proceeds from financial assets at fair value through profit and loss	4,861	1,088	54	-	-	-
Payments to purchase assets at fair value through profit and loss	(41,869)	(9,374)	(464)	(18,831)	(7,039)	(391)
Proceeds from redemption of long term investments	789	176	8	15	6	-
Net cash outflow from investing activities	(2,755,049)	(608,293)	(30,218)	(798,394)	(298,449)	(16,585)
Financing Activities						
Revenue Grants Received	1,817,667	364,088	20,094	3,554,866	525,768	11,040
Proceeds From Long-Term Loans	748,104	167,490	7,846	531,473	198,672	3,486
Loan repayment	(72,366)	(16,202)	(800)	-	-	-
Net cash outflow from financing activities	2,493,405	515,376	27,140	4,086,339	724,440	14,526

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Statement of Cash Flows (Continued)

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Changes in Cash and Cash Equivalent	(1,276,548)	331,176	4,097	2,227,901	267,201	(277)
Effects of changes in exchange rates on cash held in foreign currencies	1,074,204	(334,684)	(4,032)	(2,158,134)	(257,231)	466
Cash and Cash Equivalents at start of year	83,755	21,320	1,000	13,988	11,350	811
Cash and Cash Equivalents at end of year	118,589	17,812	1,065	83,755	21,320	1,000

The notes on pages 61 to 98 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 the 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\$), Zambia Kwacha (“ZMW” or “K”) and in Zimbabwean Dollars (“ZWL”) rounded to the nearest United States Dollar; Zimbabwean Dollar or Zambian Kwacha.

In accordance with the Zambezi River Authority Acts No. 17 and 19, the annual financial statements for the period ended 31 December 2021 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 period beginning 1 January 2021.

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) Covid-19-related Rent Concessions Amendments to IFRS 16
- (ii) Interest Rate Benchmark Reform Phase 2 Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16
- (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 (continued)*

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.

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 2)

In August 2020, the IASB made amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 to address the issues that arise during the reform of an interest rate benchmark rate, including the replacement of one benchmark with an alternative one. The Phase 2 amendments provide the following reliefs:

- When changing the basis for determining contractual cash flows for financial assets and liabilities (including lease liabilities), the reliefs have the effect that the changes, that are necessary as a direct consequence of IBOR reform and which are considered economically equivalent, will not result in an immediate gain or loss in the income statement.
- The hedge accounting reliefs will allow most IAS 39 or IFRS 9 hedge relationships that are directly affected by IBOR reform to continue. However, additional ineffectiveness might need to be recorded.

Affected entities need to disclose information about the nature and extent of risks arising from IBOR reform to which the entity is exposed, how the entity manages those risks, and the entity's progress in completing the transition to alternative benchmark rates and how it is managing that transition. Given the pervasive nature of IBOR-based contracts, the reliefs could affect companies in all industries.

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 2021 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.

Property, Plant and Equipment: Proceeds before Intended Use Amendments to IAS 16

The amendment to IAS 16 Property, Plant and Equipment (PP&E) prohibits an entity from deducting from the cost of an item of PP&E any proceeds received from selling items produced while the entity preparing the asset for its intended use. It also clarifies that an entity is 'testing whether the asset is functioning properly' when it assesses technical and physical performance of the asset. The financial performance of the asset is not relevant to this assessment. Entities must disclose separately the amounts of proceeds and costs relating to items produced that are not an output of the entity's ordinary activities.

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*

Reference to the Conceptual Framework Amendments to IFRS 3

Minor amendments were made to IFRS 3 Business Combinations to update the references to the Conceptual Framework for Financial Reporting and add an exception for the recognition of liabilities and contingent liabilities within the scope of IAS 37 Provisions, Contingent Liabilities and Contingent Assets and Interpretation 21 Levies. The amendments also confirm that contingent assets should not be recognised at the acquisition date.

Onerous Contracts Cost of Fulfilling a Contract Amendments to IAS 37

The amendment to IAS 37 clarifies that the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling contracts. Before recognising a separate provision for an onerous contract, the entity recognises any impairment loss that has occurred on assets used in fulfilling the contract.

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'.

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 (continued)*

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

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.

(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 (“ZMW”). The functional currency of the Authority is the United States Dollar (“US\$”).

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.

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(d) Revenue Recognition (continued)

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.

(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.

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(h) Property, Plant, and Equipment (continued)

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%
Intangible Assets	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).

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.

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(j) Intangible Assets

Intangible assets are separately identifiable non monetary assets without physical substance such as computer software. The Authority initially recognises intangible assets at cost and subsequently measures them at cost less accumulated amortisation and impairment losses save for instances where the asset has an infinite life.

Intangible assets with an indefinite life are not amortised, however their useful life should be reviewed at each reporting period to determine whether events and circumstances continue to support an indefinite useful life assessment for the assets. If they do not, the change in the useful life assessment from indefinite to finite is accounted for as a change in an accounting estimate.

Intangible assets with a finite useful life are amortised on a straight line basis and in the case of software, the estimated useful life is four (4) years. Subsequent expenditure relating to intangible assets such as annual license fees is expensed to the profit and loss.

(k) 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.

(l) Financial Instruments

Financial instruments comprise trade and other receivables (excluding prepayments), long term investments, 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.

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:

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(I) Financial Instruments (continued)

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

(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. 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.

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(l) Financial Instruments (Continued)

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. ECL for trade receivables is calculated using a provision matrix. Refer to note 22 for more detail about ECL and how this is calculated.

(m) 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.

(n) 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.

(o) 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.

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.

(p) 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.

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(q) 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.

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.

(r) 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.

(s) 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

Notes to the annual financial statements (continued)

2 Summary of Significant Accounting Policies (continued)

(t) 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 triannually. 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 2021 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'000	Year ended 31 December 2021		
	Zambia	Zimbabwe	Consolidated
Revenue	1,375,307	1,349,984	2,725,291
Finance income	88,212	532,202	620,414
Fair value gain on financial assets through profit or loss	893	682	1,575
Other income	825,437	292,385	1,117,822
Segment income	2,289,849	2,175,253	4,465,102
Segment costs			
Board expenses	18,725	21,897	40,622
Repairs and maintenance	2,372	18,646	21,018
Staff costs	500,862	238,726	739,588
Finance costs	-	164,791	164,791
Other administration expenses	803,220	551,177	1,354,397
	1,325,179	995,237	2,320,416
Net Surplus	964,670	1,180,016	2,144,686

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Notes to the annual financial statements (continued)

4 Segmental Reporting (continued)

Amounts are Stated in ZMW'000	Year ended 31 December 2021		
	Zambia	Zimbabwe	Consolidated
Revenue	307,912	302,243	610,155
Finance income	19,797	119,105	138,902
Fair value gain on financial assets through profit or loss	153	200	353
Other income	184,804	65,461	250,265
Segment income	512,666	487,009	999,675
Segment costs			
Board expenses	4,193	4,902	9,095
Repairs and maintenance	531	4,174	4,705
Staff costs	112,136	53,447	165,583
Finance costs	-	36,894	36,894
Other administration expenses	179,822	123,410	303,232
	296,682	222,827	519,509
Net Surplus	215,984	264,182	480,166

Amounts are Stated in US\$'000	Year ended 31 December 2021		
	Zambia	Zimbabwe	Consolidated
Revenue	15,204	14,924	30,128
Finance income	975	5,884	6,859
Fair value gain on financial assets through profit or loss	10	7	17
Other income	9,126	3,232	12,358
Segment income	25,315	24,047	49,362
Segment costs			
Board expenses	207	242	449
Repairs and maintenance	26	206	232
Staff costs	5,537	2,639	8,176
Finance costs	-	1,822	1,822
Other administration expenses	8,879	6,094	14,973
	14,649	11,003	25,652
Net surplus	10,666	13,044	23,710

Zambezi River Authority
Annual Financial Statements
For the year ended 31 December 2021

Notes to the annual financial statements (continued)

4 Segmental Reporting (continued)

Amounts are Stated in ZWL'000	Year ended 31 December 2020		
	Zambia	Zimbabwe	Consolidated
Revenue	632,057	509,060	1,141,117
Finance income	68,810	5,389	74,199
Other income	3,761	337	4,098
Segment income	704,628	514,786	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	46,169	128,509	174,678

Amounts are Stated in ZMW'000	Year ended 31 December 2020		
	Zambia	Zimbabwe	Consolidated
Revenue	236,280	190,286	426,566
Finance income	25,722	2,015	27,737
Other income	1,406	126	1,532
Segment income	263,408	192,427	455,835
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	121,950	74,994	196,944
	246,138	144,399	390,537
Net Surplus	17,270	48,028	65,298

Zambezi River Authority
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For the year ended 31 December 2021

Notes to the annual financial statements (continued)

4 Segmental Reporting (continued)

Year ended 31 December 2020

Amounts are Stated in US\$'000	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

5 Revenue from Contracts with Customers

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Water Sales Variable Charge	2,132,835	477,512	23,578	825,820	308,703	17,155
Water Sales Fixed Charge	592,456	132,643	6,550	315,297	117,863	6,550
	2,725,291	610,155	30,128	1,141,117	426,566	23,705

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 2021, the Authority applied a 2% increment on the variable charge as per the said agreement.

b) Water Allocation

During the year ended 31 December 2021, the Authority allocated a total of 45 bm^3 of water to be shared equally between the Utilities for purposes of power generation. The Utilities' combined usage in the year was 49.76 bm^3 resulting in overutilisation of 10.59%. Of this overutilisation KHPC (Pvt) Limited contributed 2.09 bm^3 whereas, ZESCO Limited contributed 2.68 bm^3 translating to 9.3% and 11.9% respectively.

Notes to the annual financial statements (continued)

5 Revenue from Contracts with Customers

c) Over Utilisation

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

- i. Over utilisation by up to 5% of annual allocation, no penalty shall be chargeable.
- ii. Over utilisation of up to 20% of annual allocation, extra volume shall be charged at a water tariff in US\$/m³ x 1.5.
- iii. 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	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Rent received from investment properties	4,496	1,007	50	2,007	750	42
Profit on disposal of property, plant, and equipment	16,973	3,800	188	762	285	16
Miscellaneous income	582	130	6	594	222	12
Toll fees	1,406	315	16	718	268	15
Overutilisation penalty	1,094,365	245,013	12,098	17	7	-
	<u>1,117,822</u>	<u>250,265</u>	<u>12,358</u>	<u>4,098</u>	<u>1,532</u>	<u>85</u>

7 Finance Income

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Finance Income						
Interest on overdue accounts	56,602	12,673	626	60,683	22,684	1,261
Interest on term deposits	2,926	655	32	2,401	898	50
Interest on staff housing loans	675	151	8	6,836	2,555	142
Interest on staff car loans	6,643	1,487	73	4,279	1,600	89
Urealised exchange gains	553,568	123,936	6,120	-	-	-
	<u>620,414</u>	<u>138,902</u>	<u>6,859</u>	<u>74,199</u>	<u>27,737</u>	<u>1,542</u>
Finance Cost						
Exchange loss on cash and cash equivalents	(164,791)	(36,894)	(1,822)	(7,414)	(2,772)	(154)
Net Finance Income	<u>455,623</u>	<u>102,008</u>	<u>5,037</u>	<u>66,785</u>	<u>24,965</u>	<u>1,388</u>

8 Employee Benefits Expense

Salaries and wages	553,179	123,849	6,115	358,224	133,909	7,441
Pension	41,461	9,283	458	26,062	9,742	541
Gratuity	36,279	8,122	401	20,772	7,765	431
Retrenchment costs	5,865	1,313	65	33,982	12,703	706
Other employment costs	102,804	23,016	1,137	39,010	14,582	810
	<u>739,588</u>	<u>165,583</u>	<u>8,176</u>	<u>478,050</u>	<u>178,701</u>	<u>9,928</u>

Zambezi River Authority
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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
	ZWL'000	ZWL\$'000	ZWL\$'000	ZWL\$'000	ZWL\$'000
At 1 January 2020					
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	1,317,079	124,656	40,039	1,217,543	2,699,317
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	6,190,466	589,236	142,108	7,235,162	14,156,972
Year ended 31 December 2021					
Opening net book amount	6,190,466	589,236	142,108	7,235,162	14,156,972
Additions	-	-	36,302	2,592,958	2,629,260
Scrapping/Disposal	-	-	9,164	-	9,164
Revaluation adjustment-cost	-	117,489	-	-	117,489
Revaluation adjustment-Elimination of Depreciation	-	55,362	-	-	55,362
Depreciation charge	(267,172)	(18,497)	(60,023)	-	(345,692)
Effects of foreign exchange differences	1,972,597	229,473	43,224	2,976,863	5,222,157
Closing net book amount	7,895,891	973,063	170,775	12,804,983	21,844,712
At 31 December 2021					
Cost or valuation	1,317,079	242,301	90,160	4,565,594	6,215,134
Accumulated depreciation	(389,751)	27,025	(94,818)	-	(457,544)
Effects of foreign Exchange differences	6,968,563	703,737	175,433	8,239,389	16,087,122
Net Book Amount	7,895,891	973,063	170,775	12,804,983	21,844,712

Zambezi River Authority
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For the year ended 31 December 2021

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 2020					
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 difference	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
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)
Depreciation charge	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
Year ended 31 Decmber 2021					
Opening net book amount	1,575,764	149,988	36,173	1,841,696	3,603,621
Additions	-	-	8,128	580,527	588,655
Scrapping/Disposal	-	-	2,052	-	2,052
Revaluation adjustment-cost	-	21,730	-	-	21,730
Revaluation adjustment-Elimination of Depreciation	-	10,239	-	-	10,239
Depreciation charge	(59,816)	(4,141)	(13,438)	-	(77,395)
Effects of foreign exchange differences	(329,963)	(31,659)	(7,264)	(498,829)	(867,715)
Closing net book amount	1,185,985	146,157	25,651	1,923,394	3,281,187
At 31 December 2021					
Cost or valuation	1,120,763	103,217	122,742	1,641,159	2,987,881
Accumulated depreciation	(381,493)	(243)	(110,749)	-	(492,485)
Effects of foreign Exchange differences	446,715	43,183	13,658	282,235	785,791
Net Book Amount	1,185,985	146,157	25,651	1,923,394	3,281,187

Zambezi River Authority
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For the year ended 31 December 2021

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
	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000
As at 1 January 2020					
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)	(8345)	-	(36,061)
Net book amount	73,844	7,029	1,695	86,302	168,870
Year ended 31 December 2021					
Opening net book amount	73,844	7,029	1,695	86,302	168,870
Additions	-	-	401	28,665	29,066
Scrapping/Disposal	-	-	101	-	101
Revaluation adjustment-cost	-	1,299	-	-	1,299
Revaluation adjustment-Elimination of Depreciation	-	612	-	-	612
Depreciation charge	(2,954)	(204)	(664)	-	(3,822)
Closing net book amount	70,890	8,736	1,533	114,967	196,126
At 31 December 2021					
Cost or valuation	101,152	8,736	10,542	114,967	235,397
Accumulated depreciation	(30,262)	-	(9,009)	-	(39,271)
Net book amount	70,890	8,736	1,533	114,967	196,126

The Authority's head office building and residential properties were revalued as at 31 December 2021 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)

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Cost	593,113	89,087	5,325	446,402	113,630	5,325
Accumulated Depreciation	(66,305)	(14,845)	(733)	(44,347)	(11,288)	(529)
Net book value	526,808	74,242	4,592	402,055	102,342	4,796

10 Investment Property

	ZWL'000	ZMW'000	US\$'000
At 1 January 2020			
Cost	1,581	15,727	1,581
Accumulated depreciation	(544)	(2,127)	(192)
Effects of foreign exchange difference	22,914	3,102	-
Net book amount	23,951	16,702	1,389
Year ended 31 December 2020			
Opening net book amount	23,951	16,702	1,389
Depreciation charge	(1,896)	(709)	(39)
Effects of foreign exchange difference	91,098	12,810	-
Net book amount	113,153	28,803	1,350
Year ended 31 December 2020			
Cost	1,581	15,727	1,581
Accumulated depreciation	(2,440)	(2,836)	(231)
Effects of foreign exchange difference	114,012	15,912	-
Net Book Amount	113,153	28,803	1,350
At 1 January 2021			
Opening net book amount	113,153	28,803	1,350
Depreciation charge	(3,563)	(798)	(39)
Effects of foreign exchange difference	36,475	(6,066)	-
Closing net book amount	146,065	21,939	1,311
At 31 December 2021			
Cost	1,581	15,727	1,581
Accumulated depreciation	(6,003)	(3,634)	(270)
Effects of foreign exchange difference	150,487	9,846	-
Net Book Amount	146,065	21,939	1,311

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 Intangible Assets

At 31 December 2021	ZWL'000	ZMW'000	US\$'000
Opening balances	-	-	-
Addition	115,707	17,380	1,039
Depreciation charge	(5,921)	(1,326)	(65)
Effects of foreign exchange difference	(1,259)	247	
Closing Net Book Amount	108,527	16,301	974

12 Long Term Investments

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of year	987	251	12	932	756	54
Interest earned	161	36	2	51	19	1
Interest redeemed	(292)	(65)	(3)	(15)	(6)	-
Principal redemption	(497)	(111)	(5)	-	-	-
Effects of exchange differences	(2)	(57)	(3)	19	(518)	(43)
Gross carrying amount	357	54	3	987	251	12
Less impairment provision	-	-	-	-	-	-
At end of year	357	54	3	987	251	12

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 balance of the investment is set to mature in 2025 and 2027 respectively.

13 Inventory

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Consumable stores	15,064	2,263	135	11,623	2,959	139

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

14 Financial Assets at Fair Value through Profit or Loss

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of the year	36,491	9,289	435	1,420	617	44
Additions	41,869	9,374	464	18,831	7,039	391
Fair value gain	1,575	353	17	-	-	-
Write off	(3,980)	(891)	(44)	-	-	-
Withdrawals	(4,861)	(1,088)	(54)	-	-	-
Effect of exchange rate differences	(23,201)	(3,871)	(31)	16,240	1,633	-
	47,893	13,166	787	36,491	9,289	435

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Notes to the annual financial statements (continued)

14 Financial Assets at Fair Value through Profit or Loss (continued)

Financial assets held at fair value through profit or loss represent funds invested with African Life Financial Services Zambia Limited (AFLIFE), Madison Asset Management Company (MAMCO) and Zimnat Asset Management Company (ZIMNAT). The funds are a sinking fund set up to meet gratuity obligations for employees on fixed term contracts. Investments in AFLIFE and ZIMNAT recorded fair value gains of USD 9,865.93 and USD 7,541.24 respectively. Additionally a sum of USD 53,743 was withdrawn from AFLIFE to settle a gratuity obligation that fell due in 2021. Furthermore, a provision was made against the USD 44,034 currently held at MAMCO due to the later's failure to confirm the obligation and also the liquidity issues surrounding MAMCO which is currently under the management of the Securities and Exchange Commission (SEC).

15 Trade and Other Receivables

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
ZESCO Limited	5,223,075	784,521	46,893	2,763,801	703,517	32,969
Kariba Hydro Power Company (KHPC)	2,887,143	433,657	25,921	1,216,354	309,619	14,510
Trade receivables	8,110,218	1,218,178	72,814	3,980,155	1,013,136	47,479
Less: Provision for impairment losses	(2,358,064)	(354,188)	(21,171)	(1,049,897)	(267,248)	(12,524)
	5,752,154	863,990	51,643	2,930,258	745,888	34,955
Prepayments	893,801	134,252	8,025	1,928,436	490,878	23,004
Ministry of Finance and Economic Development - Zimbabwe	1,470,346	220,850	13,201	-	-	-
Rental debtors	51	8	-	2,300	585	27
Sundry receivables	97,225	14,603	873	11,620	2,958	139
Staff debtors	58,055	8,720	521	108,959	27,735	1,300
	2,519,478	378,433	22,620	2,051,315	522,156	24,470
	8,271,632	1,242,423	74,263	4,981,573	1,268,044	59,425
Less: Long-term receivables						
Staff housing loans	-	-	-	(29,601)	(7,535)	(353)
Staff car loans	(7,371)	(1,107)	(66)	(20,358)	(5,182)	(243)
	(7,371)	(1,107)	(66)	(49,959)	(12,717)	(596)
	8,264,261	1,241,316	74,197	4,931,614	1,255,327	58,829

The Authority has reclassified to receivables, an amount of US\$ 13,201,850.27 relating to the balance on the ringfenced funds previously reported as restricted cash. As at end of 2020, the balance on ringfenced funds was US\$ 16, 801,850.27. This stems from the commitment made by the Government of the Republic of Zimbabwe to release United States Dollars on a one to one basis against the Zimbabwe dollars held by the Authority following the redenomination of funds previously held as United States to Zimbabwe Dollars. In the year under review the Ministry of Finance and Economic Development released a total of US\$ 3,600,000 (2020: US\$ 990,000).

(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:

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15 Trade and Other Receivables (continued)

(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.

16 Cash and Cash Equivalents	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Cash at bank and in hand	118,574	17,812	1,065	69,623	17,722	831
Short term investments	-	-	-	14,132	3,598	169
	<u>118,589</u>	<u>17,812</u>	<u>1,065</u>	<u>83,755</u>	<u>21,320</u>	<u>1,000</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

Below is the tabular presentation of the movements in the Authority's net debt movement reconciliation.

		2021			2020		
		ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Cash and cash equivalents		118,589	17,812	1,065	83,755	21,320	1,000
Restricted cash	16	(83,405)	(12,528)	(749)	(1,400,536)	(356,502)	(16,707)
Liquid Investments		47,893	13,166	787	36,491	9,289	435
Borrowings repayable within one year	18	-	-	-	(1,194,610)	(304,084)	(14,250)
Borrowings repayable in more than one year	18	(2,419,390)	(363,399)	(21,721)	-	-	-
Net Debt		<u>(2,336,313)</u>	<u>(344,949)</u>	<u>(20,618)</u>	<u>(2,474,900)</u>	<u>(629,977)</u>	<u>(29,522)</u>
Cash and liquid investments		166,482	30,978	1,852	120,246	30,609	1,435
Gross debt – fixed interest rates		(2,419,390)	(363,399)	(21,721)	(1,194,610)	(304,084)	(14,250)
Net Debt		<u>(2,252,908)</u>	<u>(332,421)</u>	<u>(19,869)</u>	<u>(1,074,364)</u>	<u>(273,475)</u>	<u>(12,815)</u>

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Notes to the annual financial statements (continued)

16 Cash and Cash Equivalents (continued)

ZWL\$'000	Cash and cash equivalent	Liquid investments	Borrowings within 1 year
Net debt as at 1 January 2020	13,988	1,420	(185,590)
Cash flows	9,098	18,831	(154,370)
Redemptions	-	-	(13,450)
Foreign exchange adjustments	60,689	16,240	(841,200)
Net debt as at 31 December 2020	83,775	36,491	(1,194,610)
Cash flows	5,880	41,960	(709,770)
Redemptions/Repayment	-	(4,861)	72,366
Other non cash movements	-	(5,210)	(38,435)
Foreign exchange adjustments	28,934	(20,487)	4,289,839
Net debt as at 31 December 2021	118,589	47,893	2,419,390

ZMW'000	Cash and cash equivalent	Liquid investments	Borrowings within 1 year
Net debt as at 1 January 2020	11,350	617	(150,609)
Cash flows	3,401	7,039	(57,706)
Redemptions	-	-	(5,028)
Foreign exchange adjustments	6,569	1,633	(90,741)
Net debt as at 31 December 2020	21,320	9,289	(304,084)
Cash flows	1,316	9,374	(158,908)
Redemptions/Repayment	-	(1,088)	16,202
Other noncash movements	-	(538)	(8,605)
Foreign exchange adjustments	(4,824)	(3,871)	91,996
Net debt as at 31 December 2021	17,812	13,166	(363,399)

US\$'000	Cash and cash equivalent	Liquid investments	Borrowings within 1 year
Net debt as at 1 January 2020	811	-	(10,764)
Cash flows	189	435	(3,207)
Redemptions	-	-	(279)
Net debt as at 31 December 2020	1,000	435	(14,250)
Cash flows	65	464	(7,846)
(Redemptions) Repayments	-	(54)	800
Other non cash movements	-	(58)	(425)
Net debt as at 31 December 2021	1,065	787	(21,721)

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

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Notes to the annual financial statements (continued)

17 Restricted Cash	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Restricted cash	83,405	12,528	749	1,400,536	356,502	16,707

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. The Authority has reclassified to other receivables, an amount of US\$ 13,201,850 relating to the balance on the ringfenced funds previously reported as restricted cash. In 2021, the Government of the Republic of Zimbabwe through the Ministry of Finance and Economic Development released a total of US\$ 3,600,000.

18 Borrowings

Government of the Republic of Zambia

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of year	1,194,610	304,084	14,250	185,590	150,589	10,764
Draw downs						
-World Bank IDA	342,000	76,569	3,781	154,370	57,706	3,207
-AFDB Loan	367,669	82,316	4,065	-	-	-
Interest charged	38,435	8,605	425	13,450	5,028	279
Loan repayment	(72,366)	(16,202)	(800)	-	-	-
Effects of exchange differences	549,042	(91,973)	-	841,200	90,761	-
At end of year	2,419,390	363,399	21,721	1,194,610	304,084	14,250
Current	-	-	-	1,194,610	304,084	14,250
Non Current	2,419,390	363,399	21,721	1,194,610	304,084	14,250

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 two years on repayment of the principal. In the period under review, the Authority drew US\$3,780,807 (2020: US\$ 3,206,687), of this amount US\$ 1,264,012 (2020: US\$ 2,009,267) was paid directly to Stucky Ltd for technical services and supervision services and US\$205,260 (2020:US\$ 277,123) was paid directly to the Panel of Experts engaged on the KDRP project. US\$1,720,482 (2020: US\$ 720,296) was paid directly to Consortium of General Hydro Electric – France and Freyssinet International the Contractor undertaking the Spillway Refurbishment Project.

US\$504,150 was paid directly to individual consultants from the DA Account and US\$86,903 was paid to Tractebel Engineering for five-yearly inspections for Kariba Dam Rehabilitation Project (KDRP).

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. In the year under review, the Authority drew a total of US\$ 4,064,547. US\$353,740 of this amount was paid directly to Stucky for Technical and Supervision Services, US\$3,624,104 was paid directly to Consortium of General Electric Hydro France and Freyssinet while US\$86,703 was paid directly to Tractebel Engineering for five-yearly inspection for the Kariba Dam.

Notes to the annual financial statements (continued)

18 Borrowings

Subsidiary Credit Agreement Restructured

The Authority has a 30-year subsidiary loan agreement dated 20 August 2015 with the Government of the Republic of Zambia (GRZ) 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 of each year. Due to the liquidity challenges that the Authority faced over the past four years, the Authority defaulted on its repayments on the loan facility for four consecutive years resulting in arrears of US\$ 19,786,000 at the end of 31 December 2020. The terms of the agreement were that the Authority has to pay a predetermined amount irrespective of the amount drawn down. In 2020, the Authority commenced discussions with the Ministry of Finance to restructure the terms of the loan agreement taking into account the liquidity position of the Authority. The Government of the Republic of Zambia (GRZ) in consultation with the primary lenders i.e. the World Bank's International Development Association (IDA) and the African Development Bank's Africa Development Fund (ADF) agreed to restructure the terms of the on lending agreement between the GRZ and the Authority. Key among the changes to the Restructured Credit Agreements were; reduction of interest rate from 2% to 1.25%, basing the bi annual principal and interest payments on the actual amount drawn on the facility as opposed to the allocated amount of US\$ 114 million and granting of a two year grace period on the payment of principal with the first payment due on 1 March 2024.

19 Trade and Other Payables	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Trade creditors	399,697	60,036	3,588	510,826	130,029	6,093
Accruals	160,820	24,156	1,444	1,400,790	356,567	16,710
ZVDF Zambia	36,400	5,467	327	22,402	5,702	267
Statutory liabilities	3,830	575	34	251,940	64,131	3,005
Employee benefits	382,560	57,464	3,435	716,700	182,442	8,549
Total	983,307	147,698	8,828	2,902,658	738,871	34,624

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

20 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 2021, US\$ 4,146,190 was accessed from this facility and was applied towards the Spillway Rehabilitation Project.

Notes to the annual financial statements (continued)

20 Capital Grants (continued)

- 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 the year under review, US\$3,778,300 was drawn under this facility and US\$ 2,769,815 was paid directly to Stucky Ltd for Technical and Supervision Services while US\$1,008,485 (2020 : US\$ 1,456,408) was paid directly to the Consortium of General Electric Hydro France and Freyssinet.
- iii. **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 2021, US\$ 12,169,793 (2020 : US\$ 8,247,570) was disbursed through direct payments under this facility to Razelbec, the contractor engaged on the Plunge pool.

(b) Movements in Grants

	2021			2020		
	ZWL'000	ZMW'000	US\$'0000	ZWL'000	ZMW'000	US\$'000
Movements in Capital Grants						
At start of year	4,235,666	1,078,176	50,526	680,800	552,408	39,486
Received during the year:						
• African Development Bank	341,773	76,518	3,778	70,160	26,227	1,457
• European Union	1,100,842	203,601	12,170	397,038	148,418	8,248
• Swedish International Development Agency (Sida)	375,052	83,969	4,146	64,275	24,027	1,335
Effects of exchange Differences	1,812,552	(260,786)	-	3,023,393	327,096	-
At end of year	<u>7,865,885</u>	<u>1,181,478</u>	<u>70,620</u>	<u>4,235,666</u>	<u>1,078,176</u>	<u>50,526</u>

(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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21 Financial Instruments by Category

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Financial assets at amortised cost						
Trade and other receivables (excluding pre-payments)	7,377,831	1,108,171	66,238	3,053,137	777,166	36,421
Cash and cash equivalents	118,589	17,812	1,065	83,755	21,320	1,000
Restricted cash	(83,405)	(12,528)	(749)	1,400,536	356,502	16,707
Long term investments	357	54	3	987	251	12
	<u>7,413,372</u>	<u>1,113,509</u>	<u>66,557</u>	<u>4,538,415</u>	<u>1,155,239</u>	<u>54,140</u>
Financial assets at fair value through profit or loss						
	<u>47,893</u>	<u>13,166</u>	<u>787</u>	<u>36,491</u>	<u>9,289</u>	<u>435</u>
Other Financial liabilities at amortised cost						
Financial liabilities						
Borrowings Trade and other payables (excluding statutory liabilities)	2,419,390	363,399	21,721	1,194,610	304,084	14,250
	979,477	147,123	8,794	2,650,718	674,740	31,619
	<u>7,865,885</u>	<u>1,181,478</u>	<u>70,620</u>	<u>4,235,666</u>	<u>1,078,176</u>	<u>50,526</u>
	<u>11,264,752</u>	<u>1,692,000</u>	<u>101,135</u>	<u>8,080,994</u>	<u>2,057,000</u>	<u>96,395</u>

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)

22 Financial Risk Management Objectives and Policies (continued)

At 31 December 2021, if 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 0.1921 million (2020: ZMW 0.5696 million) and, ZWL 0.8579 million and (2020 : ZWL 1.524million) higher or lower than the 2021 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 2021, an increase/decrease of 200 (2020: 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%.

Zambezi River Authority
Annual Financial Statements
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Notes to the annual financial statements (continued)

22 Financial Risk Management Objectives and Policies (continued)

Credit risk (continued)

Impairment of Financial Assets (continued)

On that basis, the loss allowance as at 31 December 2021 was determined as follows for trade and other receivables:

KHPC Limited Impairment

Year ended 31 December 2021

ZWL'000	Year 1	Year 2	year 3	Total
Outstanding balance	-	-	-	2,887,143
Expected cashflows	292,526	292,526	2,302,091	2,887,143
Discounted cash flows	265,933	241,757	1,729,439	2,237,129
Impairment Loss	26,593	50,769	572,652	650,014

ZMW'000	Year 1	Year 2	year 3	Total
Outstanding balance	-	-	-	433,657
Expected cashflows	43,938	43,938	345,781	433,657
Discounted cash flows	39,944	36,313	259,767	336,047
Impairment Loss	3,994	7,625	86,014	97,610

US\$'000	Year 1	Year 2	year 3	Total
Outstanding balance				25,921
Expected cashflows	2,626	2,626	20,669	25,921
Discounted cash flows	2,388	2,171	15,527	20,086
Impairment Loss	238	455	5,142	5,835

Zambezi River Authority
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For the year ended 31 December 2021

Notes to the Financial Statements (continued)

22 Financial Risk Management Objectives and Policies (continued)

Credit Risk (continued)

Impairment of Financial Assets (continued)

ZESCO Limited Impairment

Year ended 31 December 2021

ZWL'000	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Outstanding balance	-	-	-	-	-	-	5,223,075
Expected cashflows	478,649	611,969	816,210	460,764	517,137	2,338,348	5,223,075
To be recovered	435,136	505,759	613,230	314,708	321,101	1,319,936	3,509,870
Impairment Loss	43,513	106,210	202,980	146,056	196,036	1,018,412	1,713,205

ZMW'000	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Outstanding balance	-	-	-	-	-	-	784,521
Expected cashflows	71,894	91,919	122,597	69,208	77,675	351,226	784,521
Discounted cashflow	65,359	75,966	92,109	47,270	48,230	198,258	527,193
Impairment Loss	6,535	15,953	30,488	21,938	29,445	152,968	257,328

USD'000	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Outstanding balance	-	-	-	-	-	-	46,893
Expected cashflows	4,297	5,494	7,328	4,137	4,643	20,994	46,893
Discounted cash flows	3,907	4,541	5,506	2,825	2,883	11,850	31,512
Impairment Loss	390	953	1,822	1,312	1,760	9,144	15,381

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Notes to the Financial Statements (continued)

22 Financial Risk Management Objectives and Policies (continued)

Credit Risk (continued)

Impairment of Financial Assets (continued)

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

Zambezi River Authority
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Notes to the annual financial statements (continued)

22 Financial Risk Management Objectives and Policies (continued)

Credit Risk (continued)

Impairment of Financial Assets (continued)

ZESCO Limited Impairment

Year ended 31 December 2020

ZWL'000	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	1,260,422	2,763,801
Discounted cash flows	276,303	321,148	389,391	199,834	782,623	1,969,299
Impairment loss	27,631	67,441	128,888	92,743	477,799	794,502

ZESCO Limited Impairment

ZMW'000	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	320,837	703,517
Discounted cashflows	70,332	81,747	99,118	50,867	199,214	501,278
Impairment Loss	7,033	17,167	32,808	23,608	121,623	202,239

ZESCO Limited Impairment

USD'000	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	15,035	32,969
Discounted cashflows	3,296	3,831	4,645	2,384	9,336	23,492
Impairment Loss	330	805	1,537	1,106	5,699	9,477

The closing allowances for the trade and other receivables as at 31 December 2021 reconcile to the opening loss allowance as follows:

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
At start of year	1,049,897	267,248	12,524	119,804	97,210	6,949
Receivables write - off	(6,024)	(1,349)	(67)	-	-	-
Impairment loss allowance recognised in profit or loss during the year	788,279	176,485	8,714	268,398	100,331	5,575
Effect of Exchange differences	525,912	(88,196)	-	661,695	69,707	-
Total	2,358,064	354,188	21,171	1,049,897	267,248	12,524

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Notes to the annual financial statements (continued)

22 Financial Risk Management Objectives and Policies (continued)

Credit Risk (continued)

Impairment of Financial Assets (continued)

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

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	Between 1 and 2 years	Between 2 and 5 years	Over 5 years	Total
	ZWL'000	ZWL'000	ZWL'000	ZWL'000	ZWL'000
At 31 December 2021:					
- Borrowings	30,242	30,242	539,108	11,216,349	11,815,941
- trade and other payables	181,517	547,766	-	-	729,283
	<u>211,759</u>	<u>578,008</u>	<u>539,108</u>	<u>11,216,349</u>	<u>12,545,224</u>
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>
	Less than 1 year	Between 1 and 2 years	Between 2 and 5 years	Over 5 years	Total
	ZMW'000	ZMW'000	ZMW'000	ZMW'000	ZMW'000
At 31 December 2021:					
- Borrowings	4,542	4,542	80,975	1,684,728	1,774,787
- trade and other payables	27,264	119,854	-	-	147,118
	<u>31,806</u>	<u>124,396</u>	<u>80,975</u>	<u>1,684,728</u>	<u>1,921,905</u>
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>

Note : Trade and other payables exclude statutory payables

Notes to the annual financial statements (continued)

22 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 2021:	272	272	4,840	100,701	106,085
- Borrowings	1,630	7,164	-	-	8,794
- trade and other payables	1,902	7,436	4,840	100,701	114,879
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

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 ZWL'000	Level 2 ZWL'000	Level 3 ZWL'000	Total ZWL'000
Year ended 31 December 2021				
Assets				
<i>Financial assets</i>				
Financial assets at fair value through profit or loss	-	47,893	-	47,893
<i>Non-financial assets</i>				
Buildings	-	-	973,063	973,063
	-	47,893	973,063	1,020,956
Year ended 31 December 2020				
Assets				
<i>Financial assets</i>				
Financial assets at fair value through profit or loss	-	36,491	-	36,491
<i>Non-financial assets</i>				
Buildings	-	-	589,236	589,236
	-	36,491	589,236	625,727

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Notes to the annual financial statements (continued)

22 Financial Risk Management Objectives and Policies (Continued)

Year ended 31 December 2021	Level 1 ZMW'000	Level 2 ZMW'000	Level 3 ZMW'000	Total ZMW'000
Assets				
<i>Financial assets</i>				
Financial assets at fair value through profit or loss	-	13,166	-	13,682
<i>Non-financial assets</i>				
Buildings	-	-	146,157	146,157
	-	13,166	146,157	159,323
Year ended 31 December 2020				
Assets				
<i>Financial assets</i>				
Financial assets at fair value through profit or loss	-	9,289	-	9,289
<i>Non-financial assets</i>				
Buildings	-	-	149,988	149,988
	-	9,289	149,988	159,277
Year ended 31 December 2021				
	Level 1 US'000	Level 2 US'000	Level 3 US'000	Total US'000
Assets				
<i>Financial assets</i>				
Financial assets at fair value through profit or loss	-	787	-	787
<i>Non-financial assets</i>				
Buildings	-	-	8,736	8,736
	-	787	8,736	9,523
Year ended 31 December 2020				
Assets				
<i>Financial assets</i>				
Financial assets at fair value through profit or loss	-	435	-	435
<i>Non-financial assets</i>				
Buildings	-	-	7,029	7,029
	-	435	7,029	7,464

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.

Notes to the annual financial statements (continued)

23 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.

24 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 Executive Management believe that these are remote.

25 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:

	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
Directors Compensation						
Director's fees and allowances	9,711	2,174	107	4,820	1,802	100
Other expenses	386	86	4	1,884	704	39
	<u>10,097</u>	<u>2,260</u>	<u>111</u>	<u>6,704</u>	<u>2,506</u>	<u>139</u>
Key Management Compensation						
Salaries and other benefits	53,255	11,923	589	2,822	3,702	284
Pension contribution	18,639	4,173	206	1,889	2,478	190
	<u>71,894</u>	<u>16,096</u>	<u>795</u>	<u>4,711</u>	<u>6,180</u>	<u>474</u>
Loans to Key Management						
At start of year	8,192	3,148	177	196	159	11
Additions	14,567	3,261	161	8,537	3,191	177
Repayments	(6,402)	(1,433)	(71)	(541)	(202)	(11)
At end of year	<u>16,357</u>	<u>4,976</u>	<u>267</u>	<u>8,192</u>	<u>3,148</u>	<u>177</u>
Amounts Advanced and Amounts Owed to ZVDF						
ZVDF Receivable	493	74	4	369	94	4
ZVDF Payable	(32,049)	(4,814)	(288)	(22,402)	(5,702)	(267)
Net position at year end	<u>(31,556)</u>	<u>(4,740)</u>	<u>(284)</u>	<u>(22,033)</u>	<u>(5,608)</u>	<u>(263)</u>

Zambezi River Authority
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For the year ended 31 December 2021

Notes to the annual financial statements (continued)

25 Related Party Transactions (Continued)

Water Sales Revenue	2021			2020		
	ZWL'000	ZMW'000	US\$'000	ZWL'000	ZMW'000	US\$'000
ZESCO	1,375,307	307,912	15,204	632,057	236,280	13,130
KHPC	1,349,984	302,243	14,924	509,060	190,286	10,575
	<u>2,725,291</u>	<u>610,155</u>	<u>30,128</u>	<u>1,141,117</u>	<u>426,566</u>	<u>23,705</u>

Outstanding Receivable Balances from Water Sales

ZESCO	5,223,075	784,521	46,893	2,763,801	703,517	32,969
KHPC	2,887,143	433,657	25,921	1,216,354	309,619	14,510
	<u>8,110,218</u>	<u>1,218,178</u>	<u>72,814</u>	<u>3,980,155</u>	<u>1,013,136</u>	<u>47,479</u>

Zambezi River Authority
 Appendices
 For the year ended 31 December 2021

Appendix I - Statement of Capital Expenditure Compared to Budget

Year ended 31 December 2021	Spent ZWL'000	Budget ZWL'000	Balance ZWL'000
Kariba Dam Structure	-	106,370	106,370
CWIP- Kariba Rehabilitation	2,592,958	4,013,000	1,420,042
CWIP- Batoka HES	-	550,221	550,221
Devil's Gorge	-	29,516	29,516
Land & Buildings	-	70,505	70,506
Furniture, Fittings, Plant & Equip.	7,556	112,400	104,844
Motor Vehicles	-	82,423	82,423
ICT Infrastructure	100,977	200,823	99,846
	<u>2,701,491</u>	<u>5,165,258</u>	<u>2,463,768</u>

Year ended 31 December 2021	Spent ZMW'000	Budget ZMW'000	Balance ZMW'000
Kariba Dam Structure	-	15,977	15,977
CWIP- Kariba Rehabilitation	580,527	602,764	22,237
CWIP- Batoka HES	-	82,645	82,645
Devil's Gorge	-	4,433	4,433
Land & Buildings	-	10,590	10,590
Furniture, Fittings, Plant & Equip.	1,135	16,883	15,748
Motor Vehicles	-	12,380	12,380
ICT Infrastructure	24,373	30,164	5,791
	<u>606,035</u>	<u>775,836</u>	<u>169,801</u>

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

Year ended 31 December 2021	Spent US\$'000	Budget US\$'000	Balance US\$'000
Kariba Dam Structure	-	955	955
CWIP- Kariba Rehabilitation	28,665	36,029	7,364
CWIP- Batoka HES	-	4,940	4,940
Devil's Gorge	-	265	265
Land & Buildings	-	633	633
Furniture, Fittings, Plant & Equip.	68	1,009	941
Motor Vehicles	-	740	740
ICT Infrastructure	1,372	1,803	431
	<u>30,105</u>	<u>46,374</u>	<u>16,269</u>

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.

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

Kariba Dam Rehabilitation	Institutional Support								Dam Break & Other studies			Plunge Pool Reshaping Contract	Spillway Rehabilitation	KDRP Total	
	Panel of Experts (PoE)	Technical Services & Supervisory Consultancy	5 Yearly Inspection	Gender Based Violence	Individual Consultants	Bank Charges	Environmental & Social Impact Assessment	Dam Break	LIDAR Survey	US\$'000	US\$'000				US\$'000
Dec-21	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000
Disbursements for the Year (2021)															
International Development Association Loan (55630) - Loan	10	1,123	72	-	-	-	-	-	-	-	-	-	2,006	-	3,211
International Development Association Loan (55630) – Loan (Designated Account)	195	141	15	4	120	1	-	-	-	-	-	-	94	-	570
Swedish International Fund Grant - Grant (TF19029)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,146
The Africa Development Fund (ADF Loan)	-	354	87	-	-	-	-	-	-	-	-	-	3,624	-	4,065
The Africa Development Fund (ADF Grant)	-	-	-	-	-	-	-	-	-	-	-	-	2,770	-	2,770
The Africa Development Fund (TSF Grant)	-	1,008	-	-	-	-	-	-	-	-	-	-	-	-	1,008
European Union Funding (ZM/FED/031-570) - Grant	-	-	-	-	-	-	-	-	-	-	-	12,170	-	-	12,170

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Kariba Dam Rehabilitation	Institutional Support								Dam Break & Other studies			Plunge Pool Reshaping Contract	Spillway Rehabilitation	KDRP Total	
	Panel of Experts (PoE)	Technical Services & Supervisory Consultancy	5 Yearly Inspection	Gender Based Violence	Individual Consultants	Bank Charges	Environmental & Social Impact Assessment	Dam Break	LIDAR Survey	US\$'000	US\$'000				US\$'000
Dec-21	205	2,626	174	4	120	1									
Total Disbursements for the Year 2021															
Dec-21															
Cumulative Disbursements															
International Development Association Loan (55630) - Loan	1,978	5,532	72	-	-	-				377	147	-	-	4,503	12,609
International Development Association Loan (55630) – Loan (Designated Account)	195	141	15	4	120	1				-	-	-	-	94	570
Swedish International Fund - Grant (TF19029)	-	-	-	-	-	-				-	1,519	-	-	8,300	12,597
The Africa Development Fund (ADF Loan) 2100150032548	-	578	87	-	-	-				-	-	-	-	8,164	8,829
The Africa Development Fund (ADF Grant) 2100155029116	-	561	-	-	-	-				-	-	-	-	3,244	3,805

Zambezi River Authority
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Kariba Dam Rehabilitation	Institutional Support							Dam Break & Other studies			Plunge Pool Reshaping Contract	Spillway Rehabilitation	KDRP Total
	Panel of Experts (PoE)	Technical Services & Supervisory Consultancy	5 Yearly Inspection	Gender Based Violence	Individual Consultants	Bank Charges	Environmental & Social Impact Assessment	Dam Break	LIDAR Survey	US\$'000			
	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000	US\$'000
The Africa Development Fund (TSF Grant)	-	4,361	-	-	-	-	-	-	-	-	-	-	4,361
European Union Funding (ZM/FED/031-570) - Grant	-	-	-	-	-	-	-	-	-	44,699	-	-	44,699
Cumulative Total Disbursements 2021	2,173	11,173	174	4	120	1	377	1,666	2,778	44,699	24,305	87,470	

Notes



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