

# 2022 Annual Report



**RADIATION PROTECTION AUTHORITY  
OF ZIMBABWE**

*Protecting people and the environment against the harmful effects of radiation*

**This Annual Report for the Radiation Protection Authority of Zimbabwe for the year 2022 is presented to the Office of the President and Cabinet in Line with Section 24 (3) of the Public Entities Corporate Governance Act [ Chapter 10:31] and Public Finance Management Act (PFMA) [Chapter 22:19]**

**The report covers the corporate governance, technical and financial performance of the Authority in 2022**

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## **LIST OF ACRONYMS**

<b>CPPNM</b>	Convention on Physical Protection of Nuclear Materials
<b>EMA</b>	Environmental Management Agency
<b>FNRBA</b>	Forum of Nuclear Regulatory Bodies in Africa
<b>IAEA</b>	International Atomic Energy Agency
<b>IIA</b>	Institute of Internal Auditors
<b>IPMZ</b>	Institute of People Management of Zimbabwe
<b>IRBM</b>	Integrated Results Based Management
<b>LSZ</b>	Law Society of Zimbabwe
<b>NORM</b>	Naturally Occurring Radioactive Materials
<b>OPC</b>	Office of the President and Cabinet
<b>PECGA</b>	Public Entities Corporate Governance Act
<b>RAIS</b>	Regulatory Authority Information System
<b>RPAZ</b>	Radiation Protection Authority of Zimbabwe
<b>WHO</b>	World Health Organisation
<b>ZIMRA</b>	Zimbabwe Revenue Authority
<b>ZRP</b>	Zimbabwe Republic Police
<b>ZDF</b>	Zimbabwe Defence Forces

## Background

Radiation Protection Authority of Zimbabwe is a regulatory body established by the Radiation Protection Act [Chapter 15:15] of 2004 with a mandate to protect the people and the environment from the harmful effects of ionising radiation.

The legislative administration of the Act is reserved for His Excellency the President of the Republic who delegated certain responsibilities to the Minister of Energy and Power Development.

### OUR VISION

A society and environment protected from the harmful effects of radiation by 2030

### OUR MISSION

To protect people and the environment from the harmful effects of radiation

### OUR VALUES

#### Teamwork

We thrive on stakeholder and internal synergies for responsive, proficient, and expected outcomes.

#### Accountability

We are answerable for our responsibilities and commitments.

#### Professionalism

We value proficiency and develop our staff to perform with expertise and dedication.

#### Integrity

We employ the highest ethical standards, demonstrating honesty, transparency, and fairness in every action that we take.

#### Innovation

We constantly strive to define the standard of excellence in everything we do through evidence-based approaches that make a difference to society.

In regulating the use of ionising radiation in the country, the Authority carries out the following functions:

- Authorisation of all activities and practices involving the use, operation, import and possession of radiation sources and nuclear materials.
- Inspections and compliance assurance
- Occupational exposure control
- Medical exposure control and patient protection
- Environmental monitoring and public exposure control
- Transport safety and radioactive waste management
- Emergency preparedness and response
- Nuclear security

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### Our key stakeholders include:

**IAEA** - International Atomic Energy Agency

**FNRBA** - Forum of Nuclear Regulatory Bodies in Africa

**WHO** – World Health Organisation

**EMA** – Environmental Management Agency

**ZIMRA** – Zimbabwe Revenue Authority

**ZRP** – Zimbabwe Republic Police

**ZDF** – Zimbabwe Defence Forces

**Radiation users/public**

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**Twitter:** @rpaz\_online



# Chairperson's statement



*Dr. Anna Mary Nyakabau*

Dear Members, Stakeholders, and Colleagues,

It is with great pleasure and a sense of accomplishment that I present to you the 2022 Annual Report of the Radiation Protection Authority of Zimbabwe. As the Chairperson of the Radiation Protection Board, I am honoured to lead this esteemed organisation and reflect on the remarkable achievements and progress made during the past year.

Throughout this period, our dedicated team of staff, in collaboration with our valued stakeholders, has worked tirelessly to uphold our mission of safeguarding public health and the environment from the risks associated with ionizing radiation. As we navigate the ever-evolving landscape of radiation protection, we remain steadfast in our commitment to teamwork, accountability, integrity, innovation, professionalism and proactive regulation.

In the face of unprecedented macroeconomic challenges, emerging technologies, changing regulatory frameworks, and global health crises, our Board has demonstrated resilience and adaptability. We have maintained a ro-

bust regulatory framework that ensures the safe and responsible use of ionizing radiation across various industries, including health-care, industrial applications, and research.

One of the key achievements of the past year has been the enhancement of our regulatory guidelines and standards. We have diligently reviewed and updated our protocols to align with the latest scientific advancements and international best practices. By doing so, we have fostered a culture of continuous improvement and provided clarity to our stakeholders, enabling them to implement effective radiation protection measures.

Furthermore, our Board has undertaken several initiatives to expand public awareness and education regarding radiation safety. We firmly believe that informed individuals are empowered to make better decisions for their own well-being and that of their communities.

Through targeted workshops and collaborations with various institutions, we have strived to promote radiation literacy and dispel misconceptions surrounding ionizing radiation.

In our pursuit of excellence, we have also focused on strengthening partnerships with national and international regulatory bodies, research institutions, and industry associations. By fostering these collaborations, we have enhanced knowledge exchange, harmonised regulatory approaches, and facilitated the development and implementation of innovative technologies and practices.

Looking ahead, we recognise that our field will continue to evolve rapidly, presenting new challenges and opportunities. As the Radiation Protection Board, we are committed to staying at the forefront of scientific advancements, anticipating emerging risks, and developing proactive strategies to mitigate potential hazards. We will contin-

ue to invest in research, training, and the recruitment of top talent to ensure that our organisation remains a trusted Authority in radiation protection.

In conclusion, I extend my sincerest gratitude to our dedicated staff and stakeholders who have contributed to the success of the Radiation Protection Authority of Zimbabwe. Your unwavering commitment, expertise, and collaboration have been instrumental in advancing our mission. Together, we have achieved significant milestones, and I am confident that we will continue to make a lasting impact on radiation protection for the benefit of society.

Thank you for your continued support.

## Chief Executive Officer's statement



*Mr. Justice Chipuru*

Dear Stakeholders,

I am honoured to present the annual report of the Radiation Protection Authority of Zimbabwe for the year 2022, a year that was significantly impacted by macroeconomic challenges. However, despite the challenges faced, I am pleased to highlight our commitment and resilience in fulfilling our mandate to ensure the protection of the public, workers, and the environment from the harmful effects of radiation.

The year 2022 witnessed a tumultuous economic climate, with fluctuations in currency values, inflationary pressures, and resource

constraints. These factors posed numerous difficulties for our operations, including funding limitations, reduced capacity, and the need for innovative strategies to overcome the obstacles.

Despite the economic challenges, the Authority remained steadfast in its commitment to safeguarding the nation's citizens. We successfully continued our regulatory activities, including licensing, inspection, and enforcement, to ensure compliance with radiation safety standards across various sectors. Our dedicated team of professionals worked diligently to assess and mitigate potential risks, ensuring the safe use of radiation sources and practices.

Moreover, we focused on strengthening our partnerships with relevant stakeholders, both domestically and internationally, to enhance our knowledge-sharing and capacity-building initiatives. Collaborative efforts with other regulatory bodies, research institutions, and industry experts allowed us to leverage resources, exchange best practices, and expand our expertise in radiation protection.

### **Financial Performance**

The Authority maintained a balance between revenue and expenditure and for the year ended December 31, 2022, an inflation-adjusted operating surplus margin of 36% was recorded.

The Government availed \$170 million for capital and recurrent expenditure. The financial position remained stable with total assets amounting to \$1,7 billion against total liabilities of \$0,86 billion, and the current ratio improved to 4:1 from 3:1 in 2021.

In response to the economic instability, we implemented cost optimisation strategies, efficiency measures, and prioritisation of critical activities. We carefully allocated our limited resources to areas of utmost importance, ensuring that core functions, such as emergency preparedness and response, remained robust and effective. We also explored innovative approaches, such as leveraging technology and digital platforms, to streamline our processes, increase accessibility, and improve service delivery.

Furthermore, we focused on the professional development and well-being of our staff, recognizing that their dedication and expertise are vital in achieving our organisational goals. Despite the economic challenges, we invested in training programs, skills development initiatives, and employee support systems to enhance their capabilities and maintain their morale during these testing times.

As we reflect on the year, I extend my sincere gratitude to our dedicated staff, regulatory partners, stakeholders, and the Government for their unwavering support and collaboration. Together, we have navigated through the challenging circumstances, demonstrating re-

silience and adaptability in fulfilling our mission of protecting Zimbabwe's population and environment from the hazards of radiation.

Looking ahead, we remain committed to overcoming future obstacles and seizing opportunities for growth and improvement. We will continue to advocate for adequate resources, explore innovative solutions, and foster partnerships to ensure the effective implementation of radiation safety measures in Zimbabwe.

### **Outlook**

- Initiate a patient dose monitoring framework
- Update the national Inventory of radiation sources and dose register
- Expand laboratory Infrastructure
- Map Background radiation
- Establish a non-ionising radiation framework
- Complete the disused radioactive sources management facility

Thank you for your continued trust, and I invite you to review this annual report for a comprehensive overview of our endeavours during the year under review.

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## **2 Governance**

### **2.1 Board of Directors**

The Radiation Protection Board is appointed in terms of Section 5 of the Radiation Protection Act [Chapter 15:15].

The Board is responsible for the application of corporate governance principles, providing direction for the Authority through policies delegated to the Chief Executive Officer and the overall performance of the Authority.

The Board reviews the systems and processes of the Authority and can assure stakeholders that the Authority was managed and operated with the principles incorporated in the Public Enterprises and Corporate Governance Act Chapter [10:31].

The Board embraces the principles of good corporate governance and considers these as the underlying philosophy in achieving the Authority's mandate. The directors collectively and individually acknowledge their responsibilities and duties in



terms of the Board Charter and other governance, regulatory and legislative requirements.

### 2.2 3rd Radiation Protection Board

The 3rd Radiation Protection Board comprises of 10 Board members as appointed by the Minister and can serve for 8 years.

The Board Committees are assisted by 2 expert committee members appointed by the Board in terms of paragraph 7(2)(b) of the 2nd Schedule of the Radiation Protection Act.

### 2.4 The 3rd Radiation Protection Board was comprised of the following members:

1. Dr Anna Mary Nyakabau: Chairperson
2. Mr Washington Zhakata: Vice Chairperson
3. Eng Benson Munyaradzi: Member
4. Mr Aaron Chigona: Member
5. Mr Nathan Nkomo: Member
6. Mr Nelson Charumbira: Member
7. Prof Rangarirai Masanganise: Member
8. Mrs Lizzie Mazvita Chikerema: Member
9. Dr Xolani Ndlovu: Member
10. Eng Tatenda Mawokomatanda: Member
11. Mrs Vimbai Chinyadza: Expert member of the Finance Committee
12. Mrs Shingirayi Gundu: Expert member of the Legal, Human Resources and Risk Management Committee

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### 2.5 Board members



**Dr Anna Mary Nyakabau**

Dr Nyakabau is a Radiotherapist and Oncologist, Public Health Specialist, and part-time lecturer at the University of Zimbabwe.

She holds a Bachelor of Medicine and Bachelor of Surgery Degree, Masters in Public Health and a Master of Medicine in Radiotherapy and Oncology from the University of Zimbabwe. She also holds a Diploma in Palliative Medicine from the University of Cape Town.

She has vast experience in workshop presentations and public lecturing on cancer issues to organisations as well as the public through educational programmes on national radio and television. She has several publications under her name.

Dr Nyakabau is the founder and Chairperson of Cancerserve and the Deputy Chair-

person of the Cancer Forum for Zimbabwe.

She was appointed to the 3rd Radiation Protection Board in August 2019 where she serves as the Chairperson.



**Mr Washington Zhakata**

Mr Zhakata is the Director of the Climate Change Management Department in the Ministry of Environment, Climate, Tourism and Hospitality Industry.

He worked for the Meteorological Services Department before joining the academia as a lecturer at the University of Zimbabwe in the Geography and Environmental Science Department. Thereafter he joined the UNDP as National Programme Coordinator for Climate Change.

He is a seasoned Africa Group lead climate change negotiator and has experience in the following areas: Atmospheric Physics, Greenhouse gas inventorying, environmental management, early warning systems for food security, environmental policy, Clean Development Mechanism (CDM) and carbon markets, and sectoral impact assessments, inclusive of agriculture, biodiversity, health, and others.

He served as a member of the Clean Development Mechanism (CDM) Executive Board of the United Nations on carbon trading from 2012 to 2017 and on the Emission Factors Editorial Board of the Intergovernmental Panel on Climate Change (IPCC) from 2018 to 2020, and now sits on the Adaptation Fund Board in the World Bank.

He is also a Zimbabwe Agricultural Society Council Member. He holds an MSc in Engineering (Specialisation – Atmospheric Physics).

He was appointed as Vice Chairperson and member of the 3rd Radiation Protection Board in August 2019, where he also serves as the Chairperson of the Finance Committee and sits in the Risk Management Committee.



**Eng. Benson Munyaradzi**

Engineer Munyaradzi is the Chief Director of the Ministry of Energy and Power Development.

He holds an MSc. Mechanical Engineering (Energy Technology) from the Dresden University of Technology in Germany and an MSc. in Manufacturing Systems and Operations Management from the University of Zimbabwe.

He is a member of the Zimbabwe Institute of Engineers. He was appointed as a member of the 2nd Radiation Protection Board in March 2018 where he served as the Finance Committee Chairperson.

In the 3rd Radiation Protection Board, he sits on the Finance Committee and the Operations Committee.

Eng. Munyaradzi's term expired on 30 September 2022 after serving eight years



**Mr Aaron Chigona**

Mr Chigona is the Director General of the Environmental Management Agency. He holds a Diploma in Education Specialization in Agriculture, a BSc in Agricultural Management, and an MSc. Tropical Resources Ecology. He has over 20 years of experience as an environmentalist.

He also has experience as a lecturer, having lectured to Zimbabwe Open University Agriculture students on a part-time basis between the period 2006 to 2009. He is currently a Climate Change Country Negotiator Team Member, the Focal Point for the African Ministerial Conference on the Environment and National Focal Point since 2010.

He was appointed to the 2nd Radiation Protection Board in June 2016. In the 3rd Radiation Protection Board, he sits on the Finance Committee and the Operations Committee.



**Mr Nelson Charumbira**

Mr Charumbira is the Legal Advisor to the Office of the President and Cabinet, a position he attained in 2016 after having been the Deputy Legal Advisor to the Office of the President and Cabinet from 2012.

Prior to joining the Office of the President and Cabinet, Mr Charumbira was employed by the Zimbabwe Republic Police where he rose through the ranks from Sergeant to the professional level of Senior Law Officer and was promoted to the position of Chief Superintendent in 2012.

He holds a Bachelor of Laws Honours degree from the University of Zimbabwe and a Post-Graduate Diploma in Trade Policy and Trade Law.

In the 3rd Radiation Protection Board, he serves as the Chairperson of the Legal and Human Resources and sits on the Finance Committee.



**Mr Nathan Nkomo**

Mr Nkomo is the Chief Director in the Department of Civil Protection in the Ministry of Local Government and Public Works.

He holds a Bachelor of Honours Degree in Politics and Administration and an MSc Degree in Strategic Management.

He has been in Public Service since 1991. He was appointed as an ex-officio member of the 2nd Radiation Protection Board in July 2017 and was reappointed in February 2022.

On the 3rd Radiation Protection Board, he sits on the Risk Management Committee and the Audit Committee.



**Prof. Rangarirai Masanganise**

Prof Masanganise is the Dean of the University of Zimbabwe College of Health Sciences.

He holds a Master of Medical Sciences Clinical Epidemiology and a Bachelor of Medicine and Bachelor of Surgery and was a fellow of the Royal College of Ophthalmologists in the United Kingdom.

He has over 20 years of experience in research and lecturing of Health Sciences and has several publications under his name.

He was appointed as a member of the 2nd Radiation Protection Board in April 2018. In the 3rd Radiation Protection Board, he serves as the Chairperson of the Operations Committee and sits on the Finance Committee.

After serving four years, Prof Masanganise resigned from the Board with effect from 31 August 2022.



**Mrs Lizzie Mazvita Chikerema**

Mrs Chikerema is the Director Internal Audit at the Zimbabwe Broadcasting Corporation (ZBC).

She has worked for the Scientific Industrial Research and Development Centre (SIRDC) as the Internal Audit Manager and has also worked for



the Auditor General's office and The Zimbabwe National Army (ZNA) in various auditing positions.

She holds a MSc Accounting and Finance Degree, MComm Strategic Management and Corporate Governance degree, BComm Accounting (honours) degree, HND Business Studies and CIS Intermediary Certificate.

Mrs Chikerema is also a Board member of the Traditional Medicines Practitioners Council (TMPC), a Trustee on the Board of Trustees for the Harare Diocese Anglican Church (CPCA) and a Council member for Women's University in Africa (WUA).

She is the Chairperson of the Audit Committee and also sits in the Legal and Human Resources Committee.



**Dr Xolani Ndlovu**

Dr Ndlovu is a medical practitioner specialising in diagnostic and therapeutic nuclear medicine.

He is currently employed as a Nuclear Medicine Physician Consultant and Head of Department at Mpilo Central Hospital Department of Nuclear Medicine. He has also acted as the Clinical Director.

Before this, he held the position of Hospital Medical Officer for both the Radiotherapy Department from 2005 to 2006 and the Nuclear Medicine and Radiotherapy Departments from 2005 to 2013.

He holds a Bachelor of Medicine and Bachelor of Surgery degree, an MSc in Medical Sciences, and a Master of Medicine (MMed Nuclear Medicine). He is involved in teaching medical physics and radiography students at-

tached to the Nuclear Medicine department.

Dr Ndlovu is a project coordinator and counterpart for several technical cooperation projects with the International Atomic Energy Agency through its technical cooperation programme.

He is currently the National Coordinator for the Regional (AFRA) Technical Cooperation Project (RAF 6051) 'Strengthening Education and Human Resources Development for Expansion and Sustainability of Nuclear Services in Africa'.

He is also the Project Counterpart and Coordinator for National Technical Cooperation Project "Strengthening Nuclear Medicine Services" (ZIM 6022).

He was appointed to the Radiation Protection Authority of Zimbabwe in August 2019 where he sits on the Human Resources, Legal, and Risk Management Committee and the Operations Committee.



**Engineer Tatenda Mawokomatanda**

Engineer Tatenda Mawokomatanda is currently the Acting Deputy Director for Water Resources Planning and Development in the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development mandated to produce strategic plans for the sustainable utilization of the Country's Water Resources.

She is a holder of an MSC degree in Water management specializing in Water Resources Management and a Bachelor of Engineering Honours Degree in Civil and Water Engineering from IHE Delft Institute for Water Education and the National University of Science and Technology respective-

ly with seventeen years of working experience.

She was appointed to the 3rd Radiation Protection Board in May 2021 where she sits on the Audit Committee and the Risk Management Committee.



**Mrs Shingi Gundu**

Mrs Gundu is a Human Resources generalist with over 30 years of multi-sectoral experience covering inter-alia private companies, parastatal, non-governmental organisations and small to medium-sized enterprises.

Her expertise is in the areas of Human Resources and Business Strategy, Talent Management, and Performance Management, among others.

She runs a Human Resources Consultancy and Recruitment Agency which was launched in 1990.

She holds an ILO Certificate in Human Resources Management and Strategic Management, IPMZ Diploma, MComm Strategic Management and Corporate Governance and a Master's in Business Administration.

She was appointed as an expert member of the Human Resources Committee of the Radiation Protection Board in July 2019.

## **2.6 Board Committees**

In terms of Paragraph 7 of the Second Schedule of the Radiation Protection Act, "for the better exercise of its functions, the Board may establish one or more committees in which the Board may vest such of its functions as it considers appropriate".

The mandate of the Committees is to assist the Board in discharging its mandate and responsibilities. These Committees play a key role in enhancing high standards of governance and improving effectiveness within the Authority.

The following Board Committees assisted the Board in discharging its mandate over the period under review:

### **Operations Committee**

1. Dr R. Masanganise: Chairman
2. Mr A. Chigona: Member
3. Eng B. Munyaradzi: Member
4. Dr X. Ndlovu: Member
5. Eng T. Mawokomatanda: Member

### **Finance Committee**

1. Mr Mr W. Zhakata: Chairperson
2. Mr A. Chigona: Member
3. Dr R. Masanganise: Member
4. Eng B. Munyaradzi: Member
5. Mrs V. Chinyadza: Expert Member

### **Audit Committee**

1. Mrs L.M. Chikerema: Chairperson
2. Mr N. Nkomo: Member
3. Mr N. Charumbira: Member
4. Eng T. Mawokomatanda: Member

### **Legal, Human Resources and Risk Management Committee**

1. Mr N. Charumbira: Chairperson
2. Mrs L.M. Chikerema: Member
3. Mr N. Nkomo: Member
4. Dr X. Ndlovu: Member
5. Mrs. S. Gundu: Expert Member

Board Committees meet at least once per quarter and provide feedback to the Board through Committee reports.

Board Committees have each adopted formal terms of reference, which are reviewed regularly to ensure continued relevance.



### 2.61 Board Meetings

The Board and its Committee meetings were conducted throughout the year in line with the Public Entities and Corporate Governance Act.

### 2.62 Board Development

One Board member completed the IODZ training and graduated in December 2022.

### 2.7 2021 Annual General Meeting

The 2021 Annual General Meeting was successfully held on 8 November 2022 where the the 2021 Audited Financial Statements and annual report were presented.

### 2.8 2023 IRBM Framework

In line with the IRBM framework, the Board reviewed the Authority's five year NDS1 compliant Strategic Plan from 7-11 November 2022 and developed the CEO's and Board Performance Contracts.

### 2.9 Regulations

The Board approved and submitted the **Radiation Therapy and Nuclear Medicine regulations** to the shareholder. These regulations are meant to enhance safe and secure use of nuclear technologies and strengthen patient protection in these practices

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## 3. Coordination and Cooperation

In line with the 2nd republic's foreign policy trajectory of engagement and reengagement, the following were achieved in 2022.



*Mr Chipuru*

i. As a contracting party to the joint convention on the safety of spent fuel management and safety of radioactive waste management

since September 2021, Zimbabwe presented its first national report at the 7th review meeting of contracting parties in July 2022. During the review, Zimbabwe was found to have made considerable progress in establishing an adequate legislative framework and infrastructure for the management of radioactive waste and disused sealed radioactive sources in fulfilment of provisions of the Joint Convention.

ii. Realising the transboundary nature of radiation emergencies and effects and the need to strengthen regulatory practices, the Authority entered into an agreement with the Radiation Protection Authority (Zambia) aimed at exchanging technical information and cooperation in the fields of nuclear and radiation safety.

Further, RPAZ initiated a co-operation MOU with the Atomic Energy Regulatory Authority of Malawi.

In order to promote regional cooperation within SADC, the Authority hosted the SDAC Nuclear Regulators network in Victoria Falls and subsequently Mr Chipuru was appointed the Chairperson of the network.

The Authority also signed an MOU with the Research Council of Zimbabwe to strengthen research in areas of radiation safety.

### 3.2 IRRS Mission

The IAEA conducted its Integrated Regulatory Review Service (IRRS) missions, designed to strengthen the effectiveness of the national nuclear and radiation safety regulatory infrastructure, based on IAEA safety standards and international good practices.

The mission found that Zimbabwe has made considerable improvements in its national legal and regulatory framework for nuclear and radiation safety by drafting a new law that addresses the requirements of IAEA international safety standards.

The team of experts also praised the reorganisation of the Authority to ensure an effective separation of regulatory functions from the provision of technical services, the development of a draft National Nuclear and Radiological Emergency Plan, and the enhancement of education and training in radiation protection and safety.

## 4. Operations

### 4.1 Stakeholder engagements

To raise awareness on radiation safety matters amongst stakeholders, as well as promote compliance amongst users, the Authority conducted a number of stakeholder engagements.

### 4.2 Exhibitions and Fairs

The Authority exhibited at the 2022 Zimbabwe International Trade Fair and Zimbabwe Agricultural Show.



### 4.3 Journalist awareness training

To capacitate journalists to report on radiation matters from an informed position, a Radiation Safety Awareness training for Journalists was launched on the 18th of May 2022. 21 journalists from 10 media houses were trained in two training sessions conducted.



### 4.4 Licencee training

To enhance facility compliance and capacitate employees, the Authority conducted the following trainings:



1. Basic Radiation Safety Training Course for Radiation Safety Officers (RSO Training), Industrial Facilities



2. Basic Radiation Safety Training Course for Radiation Safety Officers (RSO Training), Medical Facilities



3. Advanced Radiation Safety Training for Radiation Safety Officers, Industrial Facilities



4. Training Course on Personal and workplace Monitoring (Dosimetry)





5. Training Course on Naturally Occurring Radioactive Materials (NORM) Management



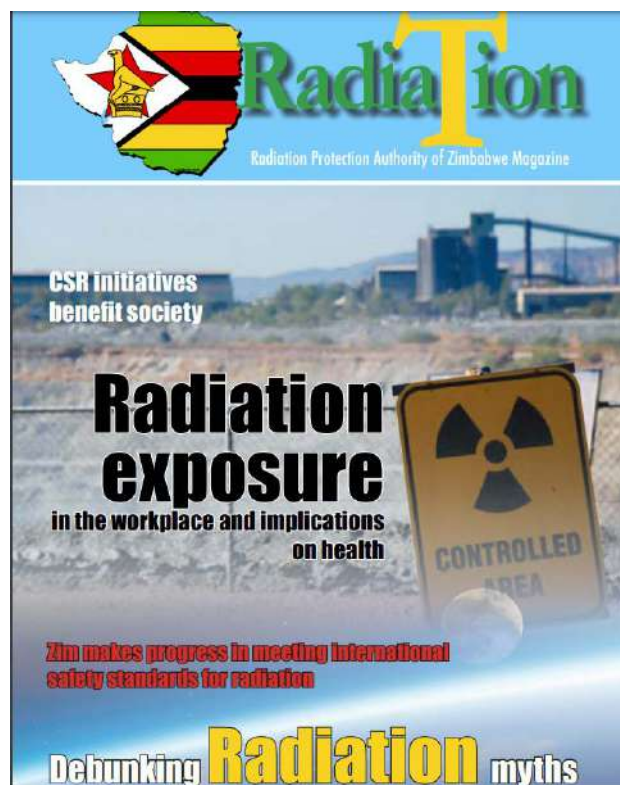
6. Radiation Protection Training for Accredited Service Providers



7. Training Workshop on Radiological Environmental Impact Assessments (REIA)

## Publications

The Authority's inaugural annual magazine was produced and published in November 2022.



## CSR initiatives

Through out the year, the Authority took part in the monthly National Clean-up campaigns.



The Authority partnered with Zimpapers in a National Power Walk/Run to commemorate Breast Cancer Awareness Month.

## Media engagements

The Authority continuously engaged with stakeholders by disseminating information and educating the public on radiation safety matters through various media platforms

## Management

### **Mr. Justice Chipuru Chief Executive Officer**



Mr Justice Chipuru joined the Authority in 2010 as a scientist and rose through the ranks becoming CEO in 2020.

He holds a BSc General Degree (Biology and Geography) from the University of Zimbabwe, MSc Degree in Strategic Management from Chinhoyi University of Technology, an MSc Degree in Safety, Health and Environmental Management, an MSc Degree in International Affairs, both from the Midlands State University, an IMM Diploma in Marketing as well as an IPMZ

Diploma in Human Resources Development.

He has developed a strong passion for institutional development and management driven by his role as an IAEA expert on Integrated Management Systems (IMS).

He has been involved in a number of expert and peer review missions to a number of countries in Africa and Europe on effective management of regulatory infrastructures.

### **Mr. Innocent Mayida Director Technical Services**



Mr Innocent Mayida joined Authority in 2011, occupying various roles in the Technical Services department before being appointed Acting Chief of Technical services in 2019.

He holds an MSc in Nuclear Physics from the University of Witwatersrand, South Africa, B.Sc. Hons Physics from the Midlands and State University and an executive Masters in Business Administration from the National University of Science and Technology.

With more than 15 years' experience in nuclear physics, Innocent has managed a number of national projects in the field of radiation and nuclear safety.

He has also participated in leadership development programs run by leading global institutions and he is a fellow of World Nuclear University.



**Mr. Lovemore Mazuru**  
**Chief Finance Officer**



Mr Lovemore Mazuru is the Chief Finance Officer of the Authority having joined at inception as the Finance, Human Resources and Administration Manager. A holder of a Master of Science (MSc.) degree in Finance and Investments, Bachelor of Commerce (Hons) degree (Banking and Finance), Intermediary level in Chartered Institute of Management Accountants (CIMA UK), and Projects Management qualification from India.

Lovemore is the immediate past Board Member (Finance Expert) of Zimbabwe AIDS Network – an umbrella body for all organisations doing HIV/AIDS advocacy in the country, and currently sits on Rise and Shine Foundation, a PVO dealing with youth empowerment and poverty alleviation in the disadvantaged communities.

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**Mr. Company Jembere**  
**Head Internal Audit**



**Ms. Vongai Mavurayi-Mutanga**  
**Company Secretary**



Ms Vongai Mavurayi-Mutanga joined the Authority at its inception in 2010 as the Legal and Corporate Secretary, a position she holds to date.

Over the years, she has excelled in implementing corporate governance principles in state enterprises.

Affectionately called by the moniker "Ms V", Vongai is a registered lawyer, conveyancer and notary public.

She holds a Bachelor of Laws Honours degree from the University of Zimbabwe and an executive Masters in Business Administration from the National University of Science and Technology.

She has also attended the International School of Nuclear Law in Montpellier, France.

Vongai also takes pride in her role as a mother and believes that given an equal employment opportunity like that which exists at RPAZ, women can have it all!

Mr Company Jembere joined the Authority in 2010 as Head of the Internal Audit function, a position he still holds today.

A holder of a Bachelor of Accounting Honours degree from Africa University and ACCA, Jembere has been instrumental in helping RPAZ establish vibrant internal control, risk management and governance systems.

Previously, he worked as a senior internal auditor for the Cotton Company of Zimbabwe.



**Mr. Brian Mutangandebvu**  
**Human Resources and Administration**  
**Manager**



Mr Brian Mutangandebvu joined the Authority at inception bringing vast experience in Human Resources Management, having worked in the public and private sector.

He is a holder of a BSc General Degree in Psychology from Zimbabwe Open University, BSc Honors Degree in Psychology from Zimbabwe Open University, MSc Degree in Strategic Management from Chinhoyi University of Technology, an IPMZ Higher Diploma with Honors in Human Resources Management, as well as an IPMZ Diploma in Personnel Management. He is currently studying a PHD management science in Leadership and Complexity with Durban University of Technology.

Brian is a member of the Institute of Directors Zimbabwe (IoDZ), Institute of People Management Zimbabwe (IPMZ) and a certified nuclear security person from the World Institute of Nuclear Security (WINS, Austria). He is also a member of the Zimbabwe Broadcasting Corporation (ZBC) Board.

**Mr. Amos Muzongomerwa**  
**Technical Services Manager**



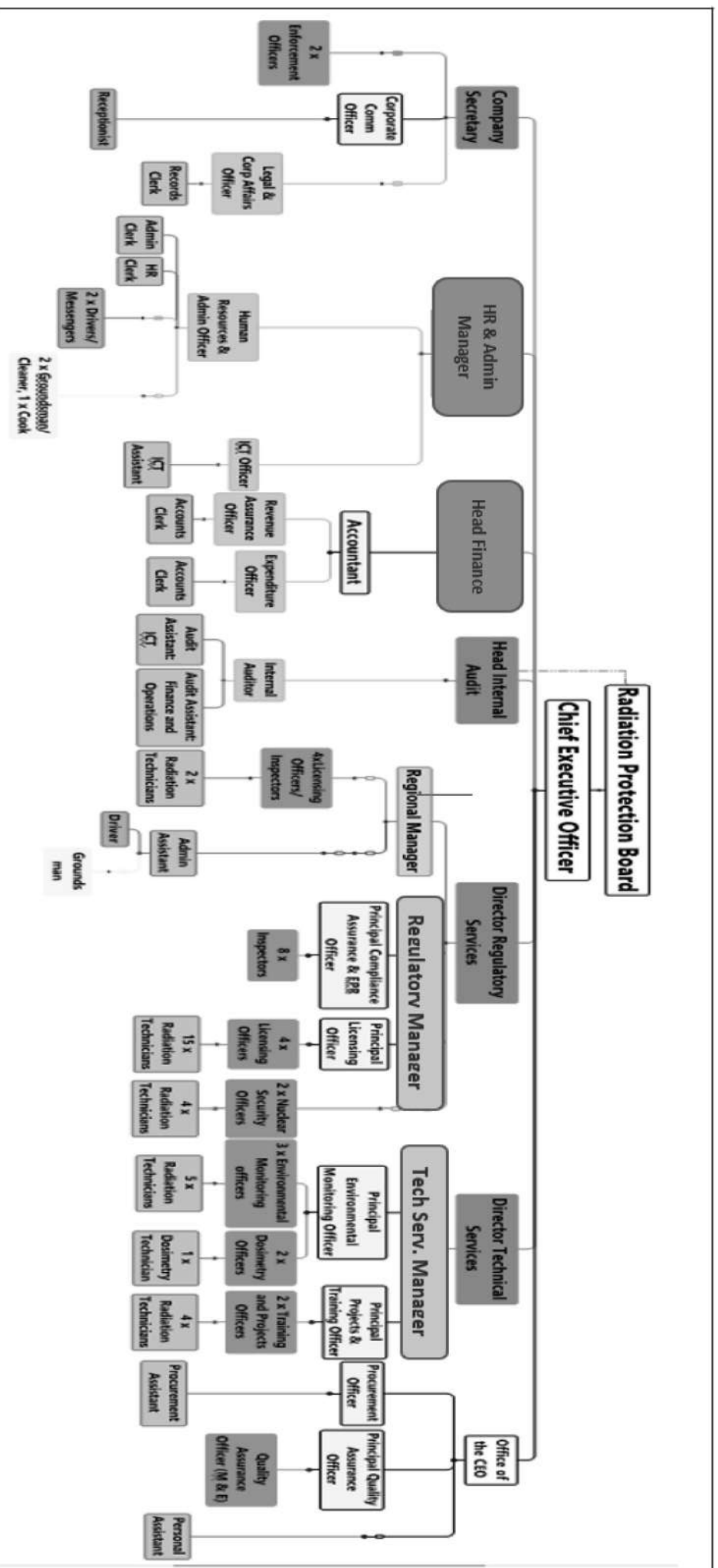
Technical Services Manager at the Radiation Protection Authority of Zimbabwe heading all technical support services. Manages the effective functioning of the radiochemistry laboratory, dosimetry laboratory, non-ionising radiation laboratory, projects, radiation safety training center and radiation safety awareness.

Amos is holder of a BSc Chemistry Degree with the University of Zimbabwe, MSc Degree in Safety, Health and Environmental Management from the Midlands State University, an Institute of Marketing Management Diploma (IMM) in Marketing as well as a Postgraduate Educational Course on Radiation Protection.

He has had extensive experience in the regulation of radiation sources and nuclear safety having been engaged in the inspections and licensing departments for more than 12 years.

He is currently running national projects on establishing laboratory capacity for environmental and food monitoring, radioactive waste management, public exposure control and capacity building/ training on radiation safety, areas to which he is a recognized expert by international partners. He has been involved in several expert missions and meetings in Africa and globally.

# ORGANASITIONAL STRUCTURE: 2021-2025





*Staff members during a clean-up exercise*

## 5. Human Capital

The Authority had sixty five staff members across all disciplines. Women contribute 42.4% in technical services, 47.4% in support services and overall 36.9% of the workforce.

As a socially responsible employer, the Authority remains committed to diversity and employment equity as shown in the table below.

### 5.1 Human capital development

The Authority offers a graduate trainee programme for young scientists who undergo a two-year programme before becoming radiation scientists. During the year under review, six sci-

entists underwent the Graduate Trainee program.

The Authority also provided attachment opportunities for university students in various departments.

To ensure that competencies remain aligned to everchanging technical and professional standards, employees attended various workshops and trainings organised by professional bodies such as IPMZ, IIA LSZ, and the IAEA.

To promote the health and well-being of employees the Authority facilitated psychosocial support, provided Personal Protective Equipment and education on HIV and AIDS.

*Table 2: Employment equity*

LEVEL	MALE	FEMALE	TOTAL
Senior Management	6	1	7
Technical Staff	25	14	33
Support Staff	10	9	19
Total	41	24	65

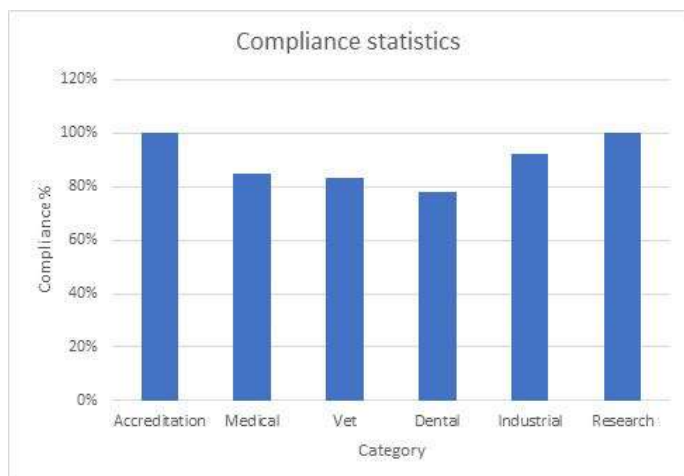


## 6. Regulatory Affairs

### 6.1 Licencee compliance

There were 465 active facilities in the RAIS database.

A compliance rate of 85.6% was achieved in 2022 compared to 82.46% during the previous year as indicated in the figure.



All facilities under accreditation and research were compliant. Out of 235 medical facilities in the RAIS database, 199 were licensed. Two out of 12 veterinary facilities did not get licensed. The industrial sector had eight out of 101 facilities that did not get licenced.

### 6.2 NORM

In the year 2022, 56 facilities met the criteria for regulatory control after NORM as-

sessments. Of those, 47 were authorised after meeting all regulatory requirements.

### 6.3 Compliance assurance/Inspections

The Authority conducted more than 668 planned, prelicensing, investigative and adhoc inspections.

The Authority noted the following:

- A number of public health facilities did not have qualified Radiation Safety Officers.
- The majority of Diagnostic Radiology facilities were not conducting Quality Assurance tests.
- Public health facilities in remote areas did not have suitably qualified personnel to operate X-ray equipment.
- A number of facilities with disused sources had challenges locating manufacturers and repatriating sources back to their countries of origin. The radioactive sources posed a security risk.

In overall the Authority noted:

- There was an improved safety culture from authorised facilities
- All employees received a radiation dose within the limit.

### 6.4 Nuclear Safeguards

Following Zimbabwe's signing of the Additional Protocol to the Comprehensive Safeguards Agreement in 2021, the Authority submitted the country's national report.

The Authority acquired the reporting software and trained inspectors.



*Authority's staff conducting an inspection at a local facility*

## 7 Services

### 7.1 Radiochemistry Laboratory

The Authority runs a radiochemistry laboratory that focuses on assessing and analyzing radiation in materials, food, water, and other consumer products, including agricultural and industrial products or by-products.

This allows licensed facilities to access services that ensure they comply with regulatory requirements related to the assessment of radiation levels within their processes and products for the safety of workers, members of the public and consumers.

To complement the existing gamma spectrometry system, a gross Alpha Beta counter was added.

The counter assesses alpha and beta radiation exposure levels for drinking water, food, raw materials, products and by-products.



*A laboratory scientist operating the gross alpha beta counter*

### 7.2 Dosimetry Laboratory

The dosimetry laboratory provides occupational exposure monitoring (workers) for all facilities licensed by the Authority, and with workers who operate or work within radiation-controlled areas. The monitoring provides assurance for worker safety and is a mandatory requirement for which lifetime results of the worker dose are updated in a National Dose Register in line with the law.

A total of 2314 were under monitoring compared to 2143 in 2021. All

readings were within the legal limits.

Plans are under way to ensure that all laboratories are accredited to ISO 17025.



*All workers exposed to radiation must be in a personal monitoring programme and provided with dosimetry badges to keep track of their dose in the period of their work.*

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## 8 Environmental Monitoring

### Radiological Environmental Impact Assessments

Radiological Environmental Impact Assessments (REIA) have been incorporated into the Environmental Impact Assessments requirements for the following projects:

#### 8.1 Background Radiation Mapping

The Authority commenced a programme to establish a national background radiation map (gamma dose rate map) for Zimbabwe.

This project shall run from 2022-2025, and the mapping shall provide information on the extent or level to which the public is exposed to natural radiation in the different regions of Zimbabwe.

The Terrestrial gamma dose rate is a key parameter for the estimation of radiation exposure to the public. It is also used as a reference for demarcating regions of radon risk to the public.

Once this data is in place, appropriate radiation safety measures can be recommended (building



construction, ventilation, radon gas trends and general radiation levels) to protect the public.

The presence of high background radiation levels constitutes a major health hazard for men and increases the risk of cancer. For the year 2022, 20% of the mapping was conducted. A provisional background radiation map is expected to be published in 2024.

## 8.2 Radioactive Waste Management

Zimbabwe acceded to and ratified the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management in 2021 and implementation of its provisions began in 2022.

Zimbabwe joined the Convention in Sep-

tember 2021 and was, therefore, required to present its first national report.

The first Joint Convention National Report was presented at a review meeting in July 2022, to other contracting parties for critical review of the country's framework and infrastructure for waste management.

Zimbabwe also provided a political commitment to implement the provisions of the IAEA Supplementary Guidance on the Management of Disused Radioactive Sources.

This Guidance details international expectations in the management of disused radioactive sources and the country has to a larger extent fulfilled the provisions of the guidance



*Construction of the Disused Radioactive Sources Management Facility proceeded well in 2022*



### 8.3 Non-Ionising Radiation assessment

There have been increased concerns over the health risks associated with practices involving non-ionising radiation, and international organizations such as the World Health Organization (WHO) and the International Commission on Non-Ionising Radiation Protection (ICNIRP) have developed requirements and exposure limits for these practices.

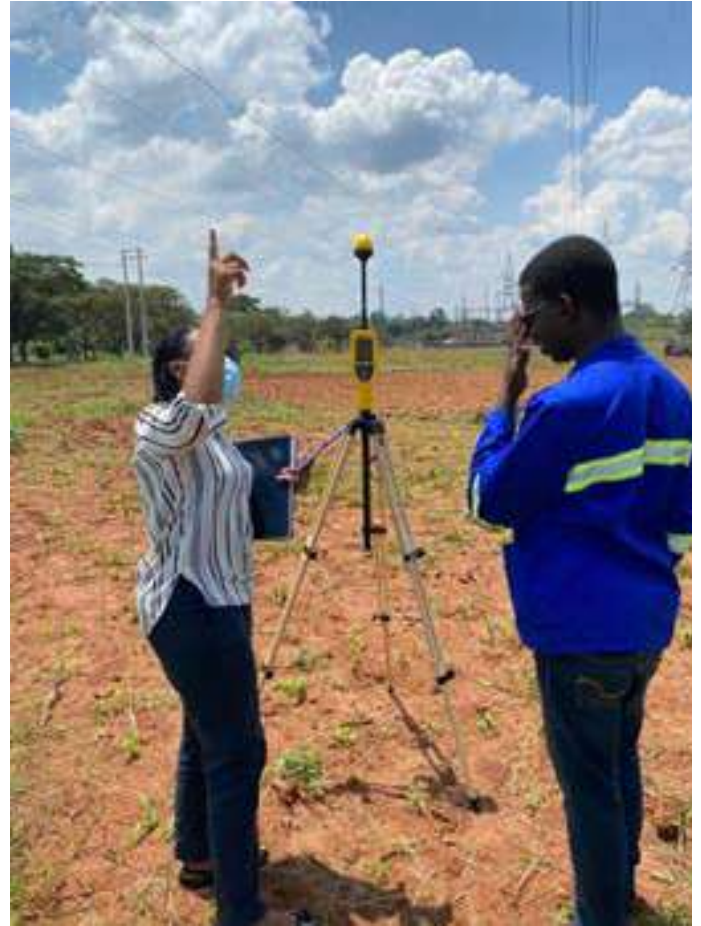
During the year under review, the Authority sought to establish a capability for monitoring and assessment of occupational and public exposure to non-ionising radiation installations.

Practices to which the assessments were targeted include telecommunication infrastructure, base stations, radio transmitters, magnetic resonance imaging equipment (MRI), class 4 Lasers, ultrasound equipment, and radar stations or any radiofrequency (RF) transmitting stations.

Equipment for NIR monitoring was procured and training of officers was undertaken. Assessments are targeted to commence in 2023.

Employers must take reasonable steps to prevent harm in the workplace and this includes considering any risks arising from exposure to radiation including electromagnetic fields

(EMFs). Results of the EMF assessments will provide assurance for workers and the public who may be exposed to non-ionising radiation.



*An assessment of high voltage power lines*











# RADIATION PROTECTION AUTHORITY OF ZIMBABWE



*Protecting people and the environment against the harmful effects of radiation*