



ANNUAL REPORT 2021/2022





TABLE OF CONTENTS

PART A: GENERAL INFORMATION	4
1 PUBLIC ENTITY'S GENERAL INFORMATION	5
2 LIST OF ABBREVIATIONS/ACRONYMS	6
3 FOREWORD BY THE MINISTER	8
4 FOREWORD BY THE CHAIRPERSON	10
5 CHIEF EXECUTIVE OFFICER'S OVERVIEW	12
6 STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF ACCURACY FOR THE ANNUAL REPORT	15
7 STRATEGIC OVERVIEW	16
7.1 VISION	16
7.2 MISSION	16
7.3 VALUES	16
7.4 STRATEGIC OUTCOME ORIENTED GOALS	16
7.5 THE NMISA AT A GLANCE	17
8 LEGISLATIVE AND OTHER MANDATES	18
9 ORGANISATIONAL STRUCTURE	19
PART B: PERFORMANCE INFORMATION	21
1 AUDITOR'S REPORT: PREDETERMINED OBJECTIVES	22
2 OVERVIEW OF PERFORMANCE	22
2.1 SERVICE DELIVERY ENVIRONMENT	22
2.2 ORGANISATIONAL ENVIRONMENT	23
2.3 KEY POLICY DEVELOPMENTS AND LEGISLATIVE CHANGES	23
2.4 PROGRESS TOWARDS ACHIEVEMENT OF INSTITUTIONAL IMPACTS AND OUTCOMES	23
3 INSTITUTIONAL PROGRAMME PERFORMANCE	24
3.1 KEY PERFORMANCE INDICATORS, PLANNED TARGETS, AND ACTUAL ACHIEVEMENTS	24
3.2 HIGHLIGHTS AND CHALLENGES	27
3.3 STRATEGY TO OVERCOME AREAS OF UNDERPERFORMANCE	29
3.4 REPORTING ON THE INSTITUTIONAL RESPONSE TO THE COVID-19 PANDEMIC	30
4 ACHIEVEMENTS ACROSS BROAD SERVICE AREAS	31
4.1 APPLIED METROLOGY	32
4.2 NATIONAL INFRASTRUCTURE	33
4.3 NUTRITION AND FOOD SAFETY	35
4.4 GREEN ECONOMY	37
4.5 LAW ENFORCEMENT	38
4.6 MEASUREMENT SOLUTIONS SUPPORTING LOCALISATION	39
4.7 METROLOGY SUPPORT FOR REGULATIONS	41
4.8 COVID-19 INDUSTRIAL INTERVENTIONS	42
4.9 REGIONAL INTEGRATION	43
4.10 KNOWLEDGE CREATION AND SCIENTIFIC ACHIEVEMENTS	44

PART C: GOVERNANCE	47
1 INTRODUCTION	48
2 PORTFOLIO COMMITTEE	48
3 EXECUTIVE AUTHORITY	48
4 THE ACCOUNTING AUTHORITY/BOARD	49
4.1 INTRODUCTION	49
4.2 THE ROLE OF THE BOARD	49
4.3 BOARD CHARTER	49
4.4 COMPOSITION OF THE BOARD	50
4.5 COMMITTEES OF THE BOARD	51
4.6 REMUNERATION OF BOARD MEMBERS	52
5 RISK MANAGEMENT	52
6 INTERNAL CONTROL	53
7 AUDIT COMMITTEE	53
8 COMPLIANCE WITH LAWS AND REGULATIONS	54
9 FRAUD AND CORRUPTION	54
10 MINIMISING CONFLICT OF INTEREST	55
11 HEALTH SAFETY AND ENVIRONMENTAL ISSUES	55
12 COMPANY/BOARD SECRETARY	56
13 SOCIAL RESPONSIBILITY	56
14 AUDIT AND RISK COMMITTEE REPORT	57
15 B-BBEE COMPLIANCE PERFORMANCE INFORMATION	60
PART D: HUMAN RESOURCE MANAGEMENT	61
1 INTRODUCTION	62
1.1 OVERVIEW OF HUMAN RESOURCES MANAGEMENT	62
1.2 HUMAN RESOURCES (HR) PRIORITIES FOR 2021/22 AND THEIR IMPACT	62
1.2.1 Rewards management	62
1.2.2 Employee retention	62
1.3 WORKFORCE PLANNING FRAMEWORK	63
1.4 EMPLOYEE PERFORMANCE MANAGEMENT FRAMEWORK	63
1.5 EMPLOYEE WELLNESS PROGRAMMES	63
1.6 POLICY DEVELOPMENT	63
1.7 ACHIEVEMENT HIGHLIGHTS	63
1.8 HR CHALLENGES	64
1.8.1 Staff turnover	64
1.8.2 Delays in filling vacant positions	64
1.9 FUTURE HR PLANS/GOALS	64
2 HUMAN RESOURCE OVERSIGHT STATISTICS	65
2.1 PERSONNEL RELATED EXPENDITURE	65
2.2 EMPLOYMENT AND VACANCIES	67
2.3 EMPLOYMENT CHANGES	67
2.4 EQUITY TARGET AND EMPLOYMENT EQUITY STATUS	68
PART E: FINANCIAL INFORMATION	69
1 GENERAL INFORMATION	70
2 CFO's REPORT	71
3 REPORT OF THE EXTERNAL AUDITOR	75
4 ANNUAL FINANCIAL STATEMENTS	78

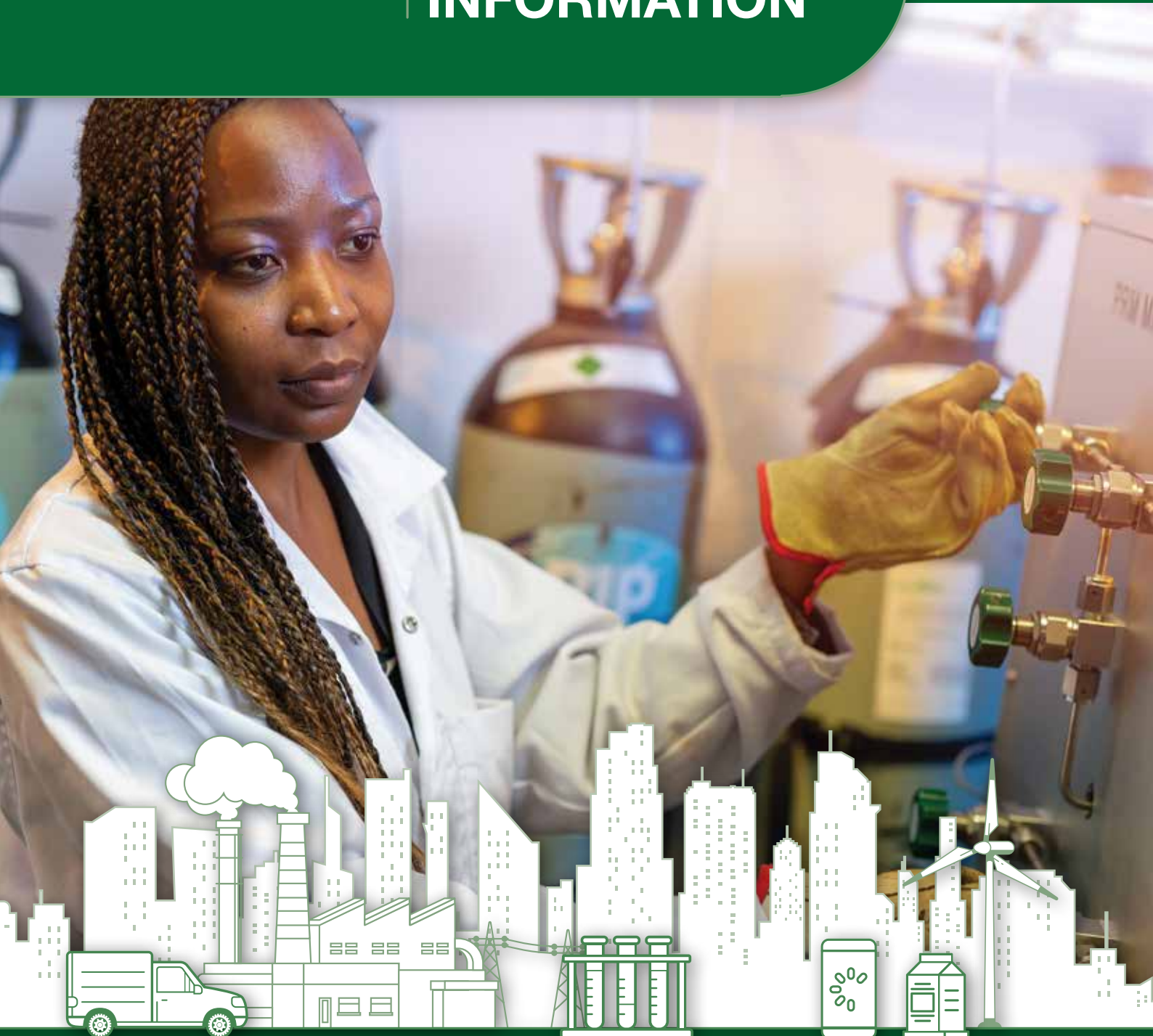
LIST OF TABLES

TABLE 1: KEY PERFORMANCE INDICATORS (KPIs), TARGETS AND ACHIEVEMENTS	24
TABLE 2: LINKING PERFORMANCE WITH BUDGETS	26
TABLE 3: INSTITUTIONAL RESPONSE TO THE COVID-19 PANDEMIC	30
TABLE 4: REPORTS DELIVERED TO THE SHAREHOLDER IN THE REPORTING PERIOD	48
TABLE 5: COMPOSITION OF THE BOARD	50
TABLE 6: AUDIT AND RISK COMMITTEE	51
TABLE 7: SOCIAL AND ETHICS COMMITTEE	51
TABLE 8: HUMAN RESOURCE AND REMUNERATION COMMITTEE	51
TABLE 9: TECHNICAL COMMITTEE	51
TABLE 10: AD HOC COMMITTEES	51
TABLE 11: REMUNERATION OF BOARD MEMBERS	52
TABLE 12: AUDIT AND RISK COMMITTEE	53
TABLE 13: AUDIT AND RISK COMMITTEE MEMBERS AND ATTENDANCE	57
TABLE 14: B-BBEE COMPLIANCE	60
TABLE 15: PERSONNEL COST BY DIRECTORATE/BUSINESS UNIT	65
TABLE 16: PERSONNEL COST BY SALARY BAND	65
TABLE 17: PERFORMANCE REWARDS	66
TABLE 18: TRAINING COSTS	66
TABLE 19: EMPLOYMENT AND VACANCIES	67
TABLE 20: EMPLOYMENT CHANGES BY SALARY BAND	67
TABLE 21: REASONS FOR STAFF LEAVING	67
TABLE 22: LABOUR RELATIONS: MISCONDUCT AND DISCIPLINARY ACTION	67
TABLE 23: MALE STAFF BY SALARY BAND	68
TABLE 24: FEMALE STAFF BY SALARY BAND	68
TABLE 25: DISABLED STAFF BY SALARY BAND	68
TABLE 26: REVENUE FROM ALL SOURCES	71

LIST OF FIGURES

FIGURE 1: ORGANISATIONAL STRUCTURE	19
FIGURE 2: TRANSFERS RECEIVED FROM 2016 TO 2021	71
FIGURE 3: REVENUE AND EXPENDITURE FORECAST 2023	73

PART A | GENERAL INFORMATION



1


PUBLIC ENTITY'S GENERAL INFORMATION

NAME	National Metrology Institute of South Africa (the NMISA)
PHYSICAL ADDRESS	Meiring Naude Road Brummeria Pretoria
POSTAL ADDRESS	Private Bag X34 Lynnwood Ridge 0040 South Africa
TELEPHONE NUMBER	027 (12) 947 2874
EMAIL ADDRESS	info@nmisa.org
WEBSITE ADDRESS	www.nmisa.org
EXTERNAL AUDITORS	MNB Chartered Accountants
BANKERS	Standard Bank Lynnwood Ridge Pretoria
COMPANY/BOARD SECRETARY	Busisiwe Mkhize

2

LIST OF ABBREVIATIONS/ACRONYMS

AfCFTA	Africa Continental Free Trade Area
AFRIMETS	Intra-Africa Metrology System
AMD	Applied Metrology Division
ARC	Audit and Risk Committee
ARI	Africa Reference Institute
B-BBEE	Broad-Based Black Economic Empowerment
BIPM	International Bureau of Weights and Measures (Bureau Internationale des Poids et Mesures)
CC	Consultative Committee
CCU	Consultative Committee for Units
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CGPM	General Conference on Weights and Measures
CIPM	International Committee for Weights and Measures
CMC	Calibration and Measurement Capability
CRM	Certified Reference Material
CT	Computerised Tomography
EBAT	Evidentiary Breath Alcohol Testing
EWP	Employee Wellness Programme
GQSP	Global Quality and Standards Programme
HCD	Human Capital Development
HR	Human Resources
IEC	International Electrotechnical Commission
ILC	Inter Laboratory Comparison
ISO	International Organization for Standardization
KCDB	Key Comparison Database



KPI	Key Performance Indicator
LIDAR	Light Detection and Ranging
MRA	Mutual Recognition Arrangement
MRL	Maximum Residue Limit
MTEF	Medium Term Expenditure Framework
NDoH	National Department of Health
NMI	National Metrology Institute
NMISA	National Metrology Institute of South Africa
NMS	National Measurement System / National Minimum Standard
PFMA	Public Finance Management Act
PTS	Proficiency Testing Scheme
SADC	Southern African Development Community
SADCMET	Southern African Development Community Cooperation in Measurement Traceability
SANAS	South African National Accreditation System
SCM	Supply Chain Management
SEC	Social and Ethics Committee
SI	International System of Units
SMME	Small Medium and Micro Enterprise
SOE	State Owned Enterprise
TBT	Technical Barriers to Trade
the dtic	Department of Trade, Industry and Competition
TQMS	Total Quality Management System
TR	Treasury Regulations
UVGI	Ultraviolet Germicidal Irradiation



3

FOREWORD BY THE MINISTER

– Mr Ebrahim Patel

I table the Annual Report of the National Metrology Institute of South Africa (NMISA) for the 2021/22 financial year in accordance with legislative requirements. The Report sets out the performance information, governance report, human resources and financial information for the past financial year.

During this financial year, NMISA continued with measurement services that contributed to government and the private sector's response to the pandemic. The services included reference gas mixtures for medical gases such as oxygen for hospital use, calibration of temperature measurement devices, especially handheld devices and the calibration of ventilators required for COVID-19 patients.

Notably, NMISA implemented an advanced three-dimensional Computed Tomography (3D-CT) scanner commissioned to support component manufacturing produced through 3D printing (additive manufacturing). The scanner determines the accuracy of manufactured components and assesses component parts post service. Components assessed originate from the automotive and aeronautics industries, and those for dental, knee and hip replacements in the medical industry. The scanner allows for innovation through additive manufacturing that is especially beneficial for the establishment and growth of innovative small and medium enterprises.

In support of the Poultry Master Plan, NMISA developed and certified reference materials for the testing of antibiotic residues for broiler chickens. These tests are important to ensure high health standards for the domestic market and allow better access to exports markets. A proficiency testing scheme for public and private laboratories was implemented utilising the certified reference materials.

In the new financial year, the work of the dtic and its entities will be evaluated in relation to three over-arching outcomes namely:

- industrialisation;
- transformation; and
- building state capability.

I thank the chairperson and members of the Board, the CEO, Management and staff of the NMISA for their contributions to the performance of the entity in the year under review.



Mr Ebrahim Patel

Minister of Trade, Industry and Competition





“Measurement science benefits consumers as it ensures that products are manufactured quicker, in a more efficient manner and to a higher standard.”

4

FOREWORD BY THE CHAIRPERSON

– Ms Jabu Mogadime

The challenges brought about by the COVID-19 pandemic required the development of new or expanded products and services. The NMISA responded vigorously, whilst not losing momentum on development work undertaken to support national government's priorities of the extensive rollout of improved infrastructure, substantial increase in local production, expansion of energy supply capacity, food security, further integration into the African continent, initiatives to enable young people to enter the job market, and importantly, building a capable State.

This report details the outcomes delivered by the NMISA under its five-year strategy, defined in 2019, which are underpinned by four strategic goals. These goals entail customised measurement solutions for regulatory purposes, State-Owned Enterprises (SOEs), industry (with specific emphasis on small and medium enterprises), and enhanced scientific metrology support for legal metrology activities. The goals are aligned with the seven Joint KPIs developed by the Department of Trade, Industry and Competition (**the dtic**) ministry to improve South Africa's economic outlook.

NMISA achieved 80% of its planned targets as defined in the Annual Performance Plan for 2021/22. Although three targets were not achieved, a considerable percentage of each of these targets was in fact accomplished.

NMISA is one of the entities that constitute the national quality infrastructure, which together stimulate improved quality of South African products and services. This ultimately leads to increased demand for such products and services and the ability to meet export requirements. NMISA has been forging enhanced relationships with various government departments and regulators, providing these public entities with direct access to the measurement solutions required to fulfil their duties in a more effective and cost-efficient manner. By disseminating technological know-how and sharing joint resources, closer collaboration between these public entities benefits society through improved confidence in the quality of related public services, shorter delivery times and cost-savings due to reduced administration costs. During this reporting period, the NMISA aimed to establish formal collaborative agreements with four public entities, whilst maintaining existing relationships. This important goal was achieved.

For much of the reporting period, the NMISA Board operated with fewer members than required due to loss of Board members in the years preceding 2021. This was resolved through the deployment of two new members by **the dtic** towards the end of the 2021/22 financial year.

The Board would like to acknowledge the NMISA CEO, executive directors, managers, and members of staff for their dedication during the reporting period in ensuring that all efforts were made during the pandemic and beyond to deliver products and services to the satisfaction of industry. As the NMISA progresses in achieving its strategic goals defined in 2019, special appreciation goes to the NMISA Board members for their contribution made in leading and governing the institution.

In conclusion, I express my gratitude to the Ministry of Trade, Industry and Competition for its continued support and guidance, enabling the realisation of the International System of Units through the NMISA to the benefit of the people of South Africa and the African continent.



Ms Jabu Mogadime

Chairperson of the NMISA Board

31 March 2022





5

CHIEF EXECUTIVE OFFICER'S OVERVIEW

– Mr Ndwakhulu Mukhufhi

“During the past year, whilst South Africa experienced a record high in youth unemployment during the pandemic, NMISA hosted 31 interns through its human capital development programme.”

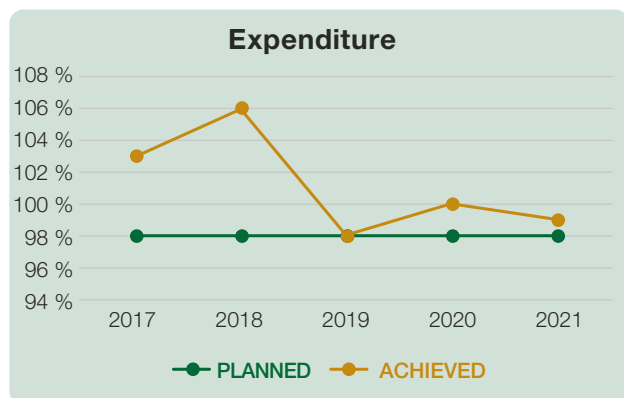
The world has observed an explosion in the pace of technological developments in the last two decades which has led to an introduction of new products and services that have changed the lives of individuals as well as the practice of every aspect of business and trade. This fast pace of technological advancement is also accompanied by the blurring of boundaries between the physical, digital, and biological worlds. These developments are characterised by the fusion of advances in Artificial Intelligence (AI), robotics, the internet of things (IoT), Additive Manufacturing or 3D Printing, genetic engineering, quantum technologies, quantum computing, and other technologies. This has been defined as the 4th industrial revolution which can be characterised by the general reliance on big data, that is collected by sensors located at different parts of the economic value chain. The increased pace of technological development has also resulted in increased demands on the quality of infrastructure in general and metrology.

The National Metrology Institute of South Africa (NMISA), like all National Measurement entities in the world, has been facing a challenge of increased demands for accuracy and shorter turnaround times for developing new measurement standards and solutions. These standards and solutions are required by manufacturers for quality assurance and government regulators to ensure product performance, health, safety and environmental impact monitoring. The NMISA 2021/22 Annual Report presents an update of developments the institution has been implementing in response to the demands stated above in support of government initiatives such as the National Development Plan and the different Industry Master Plans.

The NMISA Strategic Plan 2019-2024 is focused on the modernisation of measurement technology to provide the necessary measurement capabilities to enable trade, health and safety of its citizens and the protection of the environment. Key to the success of this was also the need for specialised skills, high accuracy instrumentation and sophisticated facilities to fulfil its mandate. The Annual Report presents an update in the development of the Applied Metrology Unit through which diversification of measurement services and products, has been implemented to alleviate financial pressures due to diminishing funding allocations in a weak economy and strained fiscus. In

addition, stricter measures to optimise utilisation of resources and reduce spending have been implemented. As a result, the organisation has been able to operate efficiently within its allocated funding whilst maintaining high performance against the set targets on its key performance indicators.

The following graph depicts NMISA's spending trends over the past five years, indicating that the organisation utilises the funds allocated to it as planned (i.e., close to 100 % of budget).

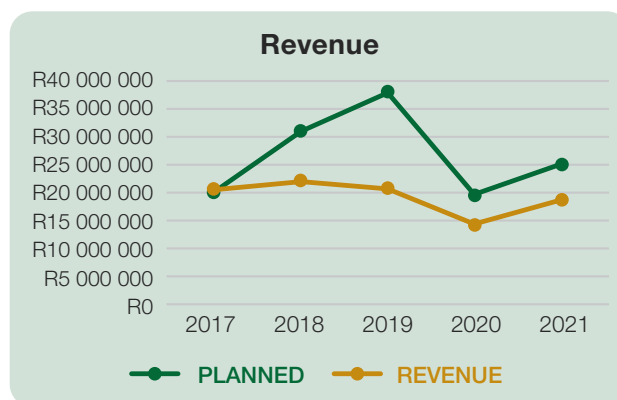


* Spending trend over a period of 5 years

The request for roll-over capital funds is supported by the need to settle procurement of highly specialised measurement equipment which require long lead times as it is manufactured on order specifically for national metrology institutes such as the NMISA. This is necessitated by the local demand for internationally equivalent and recognised measurement capabilities. The NMISA has concluded all bids as planned and approved by the Board.

The audit finding raised by the external auditors concerning the fact that the NMISA Board did not form a quorum due to the tragic passing of two of its members before the current reporting period, has been addressed by the deployment of additional members from **the dtic**. The NMISA Board has since been operating at full capacity. The non-compliance raised against non-submission of the Procurement Plan for the 2021/22 fiscal year is noted, although it did not have a material effect on the outcome of the audit.

During 2020, the NMISA's revenue generation strategy was hampered by the COVID-19 pandemic and resulting national lockdowns. External revenue collected from the sale of products and services showed a sharp decrease below the R20 million threshold. In the year following, the organisation's revenue increased as depicted in the following graph. Revenue collection is steadily recovering; however, the 2020 setback will have a negative effect on the projected five year financial target.



* Revenue from 2017 to 2021



The Applied Metrology Division (AMD) within the NMISA was established to consolidate all measurement products and services while facilitating faster responses to evolving client needs. During the year under review, the AMD established two centres: the Africa Reference Institute and the Product Development Centre. The centres are dedicated to providing novel measurement solutions to the industry.

During the past year, whilst South Africa experienced a record high in youth unemployment during the COVID-19 pandemic, the NMISA hosted 31 interns through its human capital development programme. The main objective of this programme is to ensure uninterrupted scientific output in case of retirements and resignations. The programme contributes to skills development in science and technology in South Africa. The bursary programme is aligned with the 6 administration priorities of ensuring quality education, skills development, and health as well as economic transformation and job creation. Both the internship and bursary programmes contribute to uplifting the youth of South Africa, enabling more young people to participate in the economy.

NMISA has no events to report on after the financial year end.

I would like to commend the staff members of the NMISA for their continued support, commitment and for living the NMISA values - such that the organisation did not need to discontinue any key activities during the pandemic. Finally, I would like to acknowledge the NMISA Board members for their guidance and dedication.



Mr Ndwakhulu Mukhufhi

Chief Executive Officer: NMISA

31 March 2022



6

STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF ACCURACY FOR THE ANNUAL REPORT

To the best of our knowledge and belief, we confirm the following:

All information and amounts disclosed in the Annual Report are consistent with the Annual Financial Statements audited by the external auditors.

The Annual Report is complete, accurate and is free from any omissions.

The Annual Report has been prepared in accordance with the Guidelines on Annual Reports as issued by National Treasury.

The Annual Financial Statements (Part E) have been prepared in accordance with Generally Recognised Accounting Practice and the Public Finance Management Act.

The Accounting Authority is responsible for the preparation of the Annual Financial Statements and for the judgements made in this information.

The Accounting Authority is responsible for establishing and implementing a system of internal control that has been designed to provide reasonable assurance as to the integrity and reliability of the performance information, the human resources information and the Annual Financial Statements.

The external auditors are engaged to express an independent opinion on the Annual Financial Statements.

In our opinion, the Annual Report fairly reflects the operations, the performance information, the human resources information and the financial affairs of the public entity for the financial year ended 31 March 2022.



Mr Ndwakhulu Mukhufhi
Chief Executive Officer: NMISA

31 March 2022



Ms Jabu Mogadime
Chairperson of the NMISA Board

31 March 2022

7

STRATEGIC OVERVIEW

7.1 VISION

To be the leading metrology and measurement centre of excellence on the African continent, connecting Africa to the world

7.2 MISSION

To consistently deliver outstanding innovative and internationally comparable measurement solutions that support regional and international trade, people's quality of life, and enable the protection of the environment

7.3 VALUES

- **Quality**

Integral to the quality infrastructure of South Africa, the NMISA fully adheres to the principles of quality and contributes to infrastructure for the implementation of quality in society.

- **Measurement excellence**

The pinnacle of measurement accuracy and excellence is traceability to the International System of Units (SI) and the connection of the regional measurement system internationally. The NMISA not only provides this link to the region, but lives excellence in the measurements it conducts for the community.

- **Social responsibility**

The mandate to establish and maintain the national measurement standards is augmented by the NMISA's leadership role in all measurement issues and awareness creation and training of society.

- **Economic prosperity**

The NMISA provides accurate measurement and an internationally accepted measurement system that is a prerequisite for manufacturing, trade, and the provision of health services, and is the building block for economic prosperity.

- **Good governance**

This philosophy is the moral basis on which all activities of the NMISA and its international status are based, as evidenced by its performance and its record of clean audits.

7.4 STRATEGIC OUTCOME ORIENTED GOALS

In 2018 the NMISA Board set out its Five-year Strategy (2019–24), with the following goals:

Strategic Goal 1: Metrology for regulatory purposes and in support of government laboratories: for compliance and for development of regulations.

Strategic Goal 2: Metrology consolidation for SOEs to provide efficient shared services.

Strategic Goal 3: Metrology for industry including assistance to SMEs to provide appropriate services in support of manufacturing, beneficiation, and exports.

Strategic Goal 4: Strategic alignment with the legal metrology function in the country to enhance the application of advanced scientific and applied metrology to support the implementation of the Legal Metrology Act.

7.5 THE NMISA AT A GLANCE



6

Base (SI) units realised



24

Laboratory accreditations maintained



20

Online courses presented



31

Interns hosted



10

Memberships in international committees under the Metre Convention maintained



25

Proficiency testing schemes and inter-laboratory comparisons



155

Metrologists trained



532

CMCs published in the key comparison database of the BIPM including 11 new Certified Reference Materials

8

LEGISLATIVE AND OTHER MANDATES

The National Metrology Institute of South Africa (the NMISA) was established under the Measurement Units and Measurement Standards Act, No. 18 of 2006 (The Measurement Act).

To provide for the use of measurement units of the International System of Units (SI) and certain other measurement units; to provide for the designation of the national measurement units and standards; to provide for the keeping and maintenance of the national measurement standards and units; and to provide for the establishment and functions of the National Metrology Institute of South Africa (the NMISA).

South Africa is a signatory to the Metre Convention, a global treaty dating back to 1875. Under this Convention the International Bureau of Weights and Measures (BIPM) was created to act in matters of world metrology, particularly concerning the demand for measurement standards of ever-increasing accuracy, range and diversity, as well as to address the need to demonstrate equivalence between national measurement standards. The International System of Units (SI) was also established under the Metre Convention and is overseen by the International Committee for Weights and Measures (CIPM).

South Africa signed the CIPM Mutual Recognition Arrangement (MRA) in 1999; in response to a growing need for an open, transparent, and comprehensive scheme to give users reliable quantitative information on the comparability of national metrology services, and to provide the technical basis for wider agreements negotiated for international trade, commerce, and regulatory affairs. The MRA serves as a basis for the international acceptance of national measurement standards and for calibration and measurement certificates issued by National Metrology Institutes (NMIs).

The application of the SI in South Africa and the development, improvement, and maintenance of the national measurement

standards (NMSs) are mandated to the NMISA in the Measurement Act. The NMISA is also tasked to identify and approve other measurement units for use locally and to ensure that the local measurement system is appropriately connected to the international measurement system, through its participation in the Metre Convention and its organs, the CIPM and the BIPM.

Participation in international activities at Consultative Committee (CC) and Regional Metrology Organisation Technical Committee (TC) levels enables the NMISA to provide legally sound measurement traceability. These interactions serve to benchmark South Africa's capability to compete in measurement equivalence impact; directly on the NMISA's ability to disseminate traceability for the country; and are crucial for participation in the Africa Continental Free Trade Area (AfCFTA).

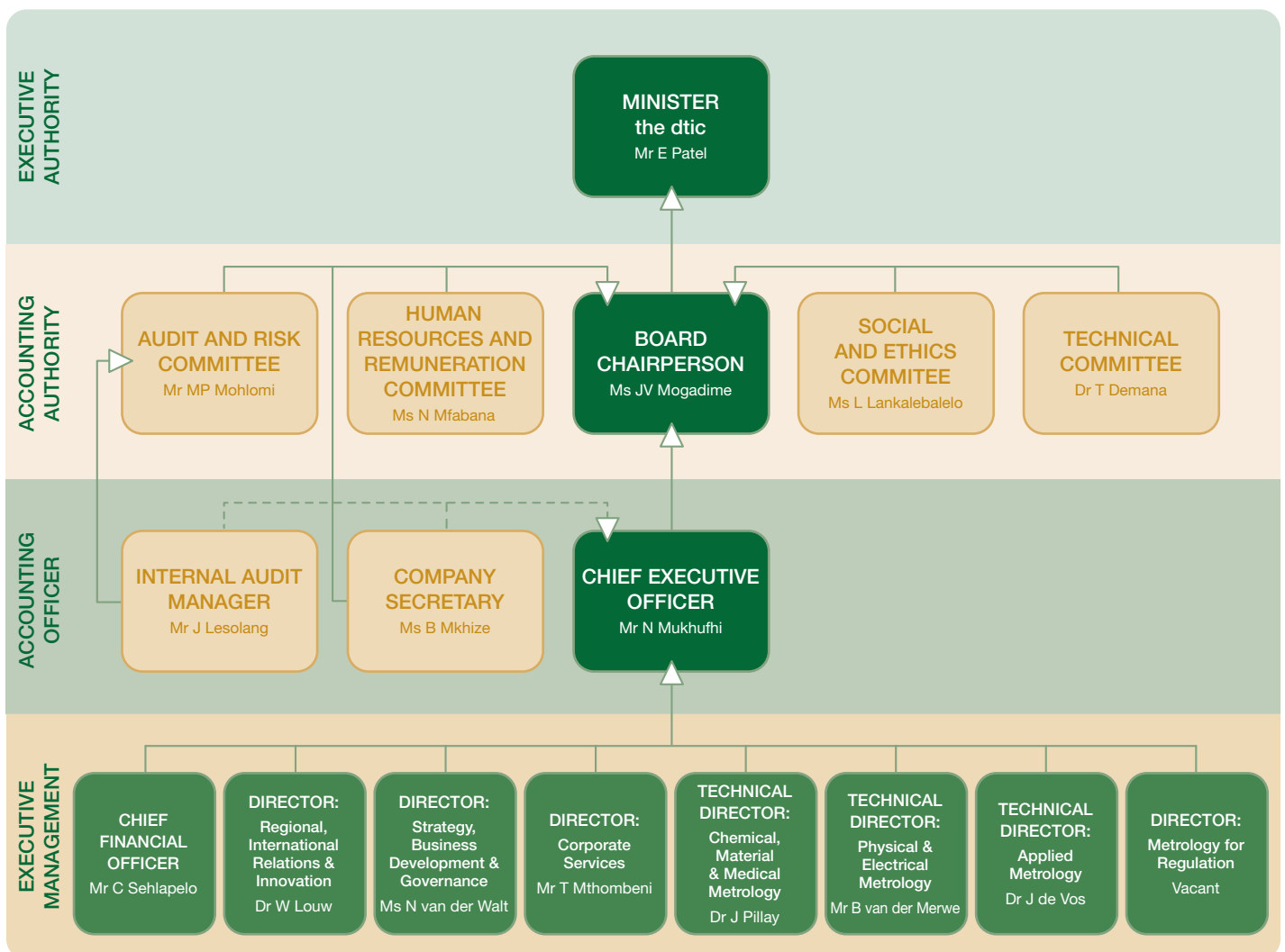
The NMISA disseminates the gazetted NMS through various products and services, not only to South African, but also Southern African communities. The NMISA thus links the South African and regional measurement system to the international measurement system through its internationally benchmarked and comparable measurement standards.

9

ORGANISATIONAL STRUCTURE

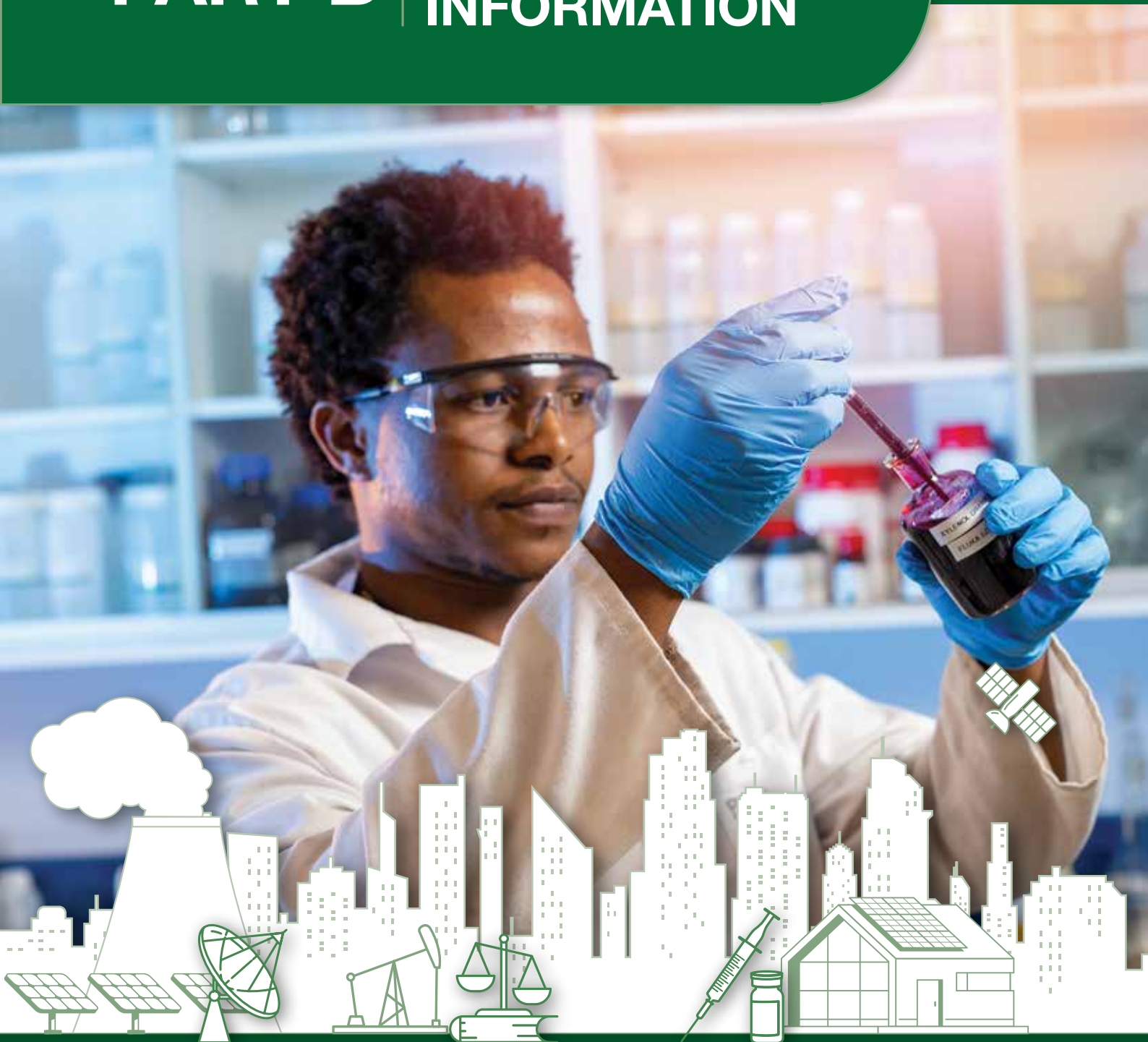
The NMISA is a Schedule 3A public entity, managed by a Chief Executive Officer (CEO), supported by an Executive Management team, and governed by the NMISA Board.

Figure 1: Organisational Structure





PART B | PERFORMANCE INFORMATION



1

AUDITOR'S REPORT: PREDETERMINED OBJECTIVES

The Auditors currently perform the necessary audit procedures on the performance information to provide reasonable assurance in the form of an audit conclusion. The audit conclusion on the NMISA's performance against predetermined objectives is included in the audit report.

Refer to page 75 of the Audit Report, published in Part E: Financial Information.

2

OVERVIEW OF PERFORMANCE

2.1 SERVICE DELIVERY ENVIRONMENT

In the aftermath of the coronavirus pandemic, South Africa is working to rebuild its economy by accelerating the implementation of the Economic Reconstruction and Recovery Plan. It prioritises industrialisation with a focus on growing small businesses, building and strengthening export platforms through the AfCFTA, developing infrastructure, improving the capability of the State, and ensuring that skills development programmes are closely aligned with job opportunities and economic development plans.

Quality assurance, including metrology as the basis for accurate and reliable measurement results, is a key enabler of these activities. Local manufacturers depend on traceability to the NMS provided by the NMISA for production and cost efficiency, and to meet international standards in export markets.

South Africa has developed quality infrastructure over a period of 70 years to support trade and the manufacturing industry, and as an essential component of environmental health and safety, and effective law enforcement. At a national level, large infrastructure programmes and the drive towards beneficiation and industrialisation require greater accuracy in measurement, necessitating continuous improvement of the NMS. Food safety, health and law enforcement increasingly require assistance from the NMISA that goes beyond traditional metrology requirements.

Over the years, technological advances have placed stringent demands on metrology to develop rapidly, which requires new measurement methods and standards. In response the NMISA, like many NMIs in the world, has invested funds in the improvement of existing measurement standards, human resource capacity, and the development of new measurement standards to address emerging national needs. The provision of measurement services and the production of reference materials have become integral parts of modern NMIs.

The redefinition of four of the seven SI base units (the kilogram, ampere, kelvin, and mole) changed the way the international equivalence of measurements is established and increased the demand on metrology. With an increase in free trade agreements, the tri-partite free trade agreement between the Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA) the East African Community (EAC), and especially the AfCFTA, it is envisaged that technical barriers to trade (TBTs) may increase in an effort to protect national markets. To mitigate this risk, trade partners require an able and efficient metrology structure to negate TBTs.

Measurements performed by the NMISA for regulatory and legal purposes require traceability to an NMS as provided by the NMISA. Regulations also apply to the use of measurement instruments in areas of trade, healthcare, environmental protection, traffic surveillance and safety at work, and the calibration of these instruments has traceability to the NMS. The NMISA therefore has a further role to play in providing technical support for many other acts and regulations.

The NMISA has encountered some difficulty in supporting and servicing regulators and government departments. If quality and traceability aspects are not correctly stipulated or considered in regulations, procurement specifications, and services required by SOEs, these entities source metrology services from non-complying entities at a lower cost; incorrectly consider imported metrology services to be superior to those provided locally; or contract costly third parties who source metrology services from the NMISA and resell to government and SOEs at a higher cost instead of approaching the NMISA directly. In response, the NMISA initiated a drive to create visibility of its mandate and related services to government departments and regulators and to sensitise them to quality infrastructure requirements. The ultimate goals are to improve the quality of government services to the community, and to negate the cost of inferior quality products and of unnecessarily importing metrology services.

2.2 ORGANISATIONAL ENVIRONMENT

The NMISA is a Section 3A public entity whose activities occur at three distinct levels; national (as mandated under the Measurement Act), regional and continental (to support the dtic with regional integration), and international (as a signatory to the Metre Convention).

The NMISA is represented at the CIPM, the highest level of scientific metrology decision making. As the only representative from the African continent, the NMISA must ensure, through its CIPM membership, that the interests of all African countries/NMIs are protected. Currently, the Presidency of the CIPM resides with Dr Wynand Louw of the NMISA.

The CIPM coordinates metrology world-wide through ten (10) technical Consultative Committees (CCs). The NMISA has full membership in nine (9) of the technical CCs owing to its internationally renowned technical expertise in the field and has guest membership to the 10th Consultative Committee for Units (CCU). Technical experts from the NMISA participate in CC working group activities and represent the region at the policy setting meetings, where they work to protect the interests of SADC and Africa.

At the regional level, the NMISA plays a leadership role in the development of accurate measurement and traceability in the sub-region and Africa. The NMISA provides the traceability link to the SI and international standards to sub-Saharan Africa and is the main driving force behind

the sub-regional Southern African Development Community Cooperation in Measurement Traceability (SADCMET) and continental Intra-Africa Metrology System (AFRIMETS) metrology programmes. The NMISA ensures the acceptance of the quality system fit for purpose for the CIPM MRA, and assists other African states who are party to the Metre Convention and Associates of the General Conference on Weights and Measures (CGPM) to gain acceptance for their quality systems.

2.3 KEY POLICY DEVELOPMENTS AND LEGISLATIVE CHANGES

There were no changes to legislation in the year under review.

2.4 PROGRESS TOWARDS ACHIEVEMENT OF INSTITUTIONAL IMPACTS AND OUTCOMES

The NMISA operates within a matrix structure through research and develop activities in thematic programmes, coordinated by a Research Project office, to deliver outcomes such as an improved NMS, certified reference materials and measurement solutions to industry. Eight (8) thematic programmes support Applied Metrology, as follows:

- Green Economies
- Manufacturing Competitiveness
- Quality of Life
- Reference Materials (in support of food testing, law enforcement, health, etc.)
- Revision of the SI (developing primary realisations of the SI base units in accordance with the 2018 revision)
- Energy Efficiency
- Advanced Measurement Solutions
- Regional Integration

The focus for the 2021/22 financial year was on the implementation of Applied Metrology to ensure that there is adequate functioning of measurement instruments used by industry in production and testing processes for the purposes of improved quality of life. The application of measurement science is aimed at enhancing local industry capability, reducing reliance on imported commodities and expertise in the following areas to facilitate trade, improve the quality of life as well as support Government drive for industrialisation and localisation.

The NMISA achieved 80 % of its planned targets in the year under review.

3.1 KEY PERFORMANCE INDICATORS, PLANNED TARGETS, AND ACTUAL ACHIEVEMENTS

Table 1: Key Performance Indicators (KPIs), Targets and Achievements

PERFORMANCE INDICATOR	ACTUAL ACHIEVEMENT 2020/21	PLANNED TARGET 2021/22	ACTUAL ACHIEVEMENT 2021/22	DEVIATION FROM PLANNED TARGET TO ACTUAL ACHIEVEMENT FOR 2021/22	COMMENT ON DEVIATIONS
Outcome 1: Shorten the traceability chain for Africa by maintaining the units and NMS at an internationally recognised level					
Realisation of the SI base units	New KPI	6 SI base units realised	6 SI base units were realised	Not applicable	Not applicable
Number of new and improved National Measurement Standards (NMS), reference material and methods	25	25	28	3	Some improved NMS came through from comparisons
Number of memberships maintained	10	10 memberships maintained	10	Not applicable	Not applicable
Number of inter laboratory comparisons (ILCs) and proficiency testing schemes (PTs) organised and completed	23 ILCs and PTs completed	Organise and complete 26 ILCs and PTs	25 ILCs and PTs completed	(1)	Due to participants not responding timeously
Percentage metrological services covered by Calibration and Measurement Capabilities (CMCs)	80 %	80 % of metrological services covered by CMCs	90.52 %	10.52 %	International Committee for Weights and Measures (CIPM) and Consultative Committees (CCs) are now advocating that comparison results should be used to support services. All measurements at a lower level, or that would entail the same level of expertise, can then be linked to this broad-scope CMC.

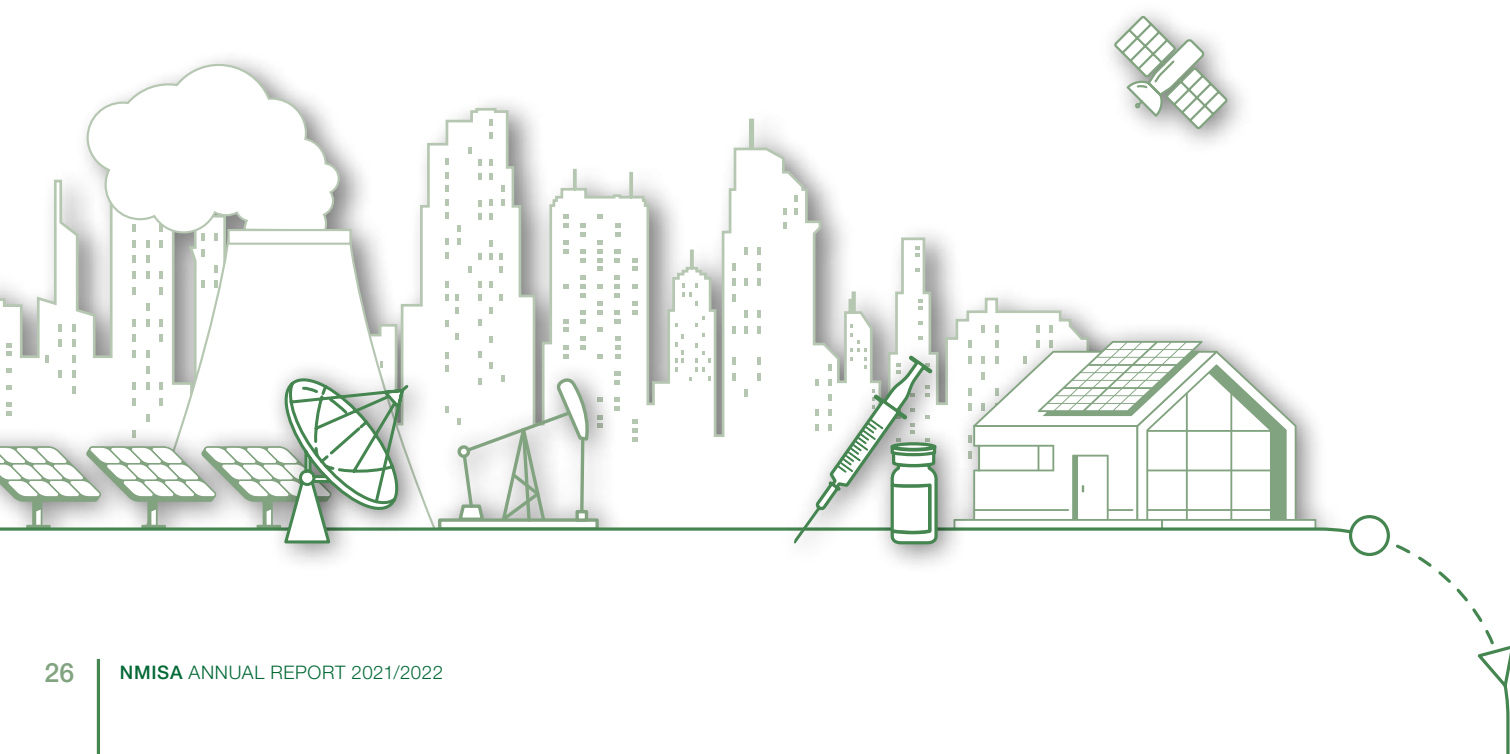
PERFORMANCE INDICATOR	ACTUAL ACHIEVEMENT 2020/21	PLANNED TARGET 2021/22	ACTUAL ACHIEVEMENT 2021/22	DEVIATION FROM PLANNED TARGET TO ACTUAL ACHIEVEMENT FOR 2021/22	COMMENT ON DEVIATIONS
Outcome 2: Ensure an effective dissemination of the Units and NMS to national and regional laboratories					
Number of accredited laboratories and new laboratory accreditations	21 maintained and 2 new accreditations	23 maintained and 1 new accreditation	23 maintained and 1 new accreditation	Not applicable	Not applicable
Number of metrologists trained	0	92 metrologists trained	155 metrologists trained	63	With the opening of borders for travel the NMISA was requested to offer training
Number of courses provided including for SMEs	10	20	20	Not applicable	Not applicable
Number of interns and in-service trainees hosted	15 hosted	28 hosted	31	3	Additional interns were hosted through a new collaboration with a research institute
Amount of income generated through services dissemination activities	R14 203 999	R24 994 554	R 18 706 997	(R6 287 557)	Lower demand for products and services and breakages of instruments due to unplanned power cuts
Percentage actual expenditure to budget	100 %	98 %	99 %	1 %	The NMISA concluded its planned procurement for 2021/22 and started procuring items from the 2 nd priority procurement list from savings made
Outcome 3: Provide metrology for regulatory purposes					
Revised Measurement Act to support and contribute to national regulation	Review and revise Measurement Act	Participate in the dtic technical infrastructure (TI) review	Updates with regard to the NMISA's participation in the dtic TI review were submitted to the Board as planned. The NMISA awaits the outcome of the dtic process for the review of the Measurement Act	Not applicable	Not applicable
Outcome 4: Metrology services for government and state-owned enterprises					
Number of government department and SOEs serviced by the NMISA	2	4	4	Not applicable	Not applicable
Percentage increase visibility of the NMISA	37 %	20 %	8 %	(12 %)	Due to COVID-19 restrictions, the NMISA could not participate in some marketing events or promote the quality infrastructure tool kit at exhibitions
Percentage customer satisfaction	99 %	≥95 %	98.34 %	3.34 %	The NMISA actively manages customer complaints through the total quality management system to ensure that there are less than 5 % customer complaints

Although three of the targets planned for the financial year were not met, a significant percentage of each of these targets was met:

- 96 % of the planned PTS and ILCs was achieved
- 40 % of the target for increasing the visibility of the NMISA in the market in comparison to that of the previous year was achieved
- 75 % of the revenue target was achieved

Table 2: Linking Performance with Budgets

OBJECTIVE	2020/21			2021/22		
	BUDGET R'000	ACTUAL EXPENDITURE R'000	(OVER)/ UNDER EXPENDITURE R'000	BUDGET R'000	ACTUAL EXPENDITURE R'000	(OVER)/ UNDER EXPENDITURE R'000
Administration	97 649	95 333	2 316	119 314	112 759	6 555
Keep, Maintain and Disseminate National Measurement Standards	158 109	195 768	(37 659)	115 806	140 782	(24 976)
TOTAL	255 758	291 101	(35 343)	235 120	253 541	(18 421)



3.2 HIGHLIGHTS AND CHALLENGES

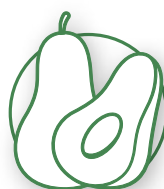
Highlights for the NMISA in 2021/22



APPLIED METROLOGY

The Africa Reference Institute and the Product Development Centre

were launched by the Applied Metrology Division as its main business units



NUTRITION AND FOOD SAFETY

13

proficiency testing schemes for foods and water coordinated by the NMISA



NATIONAL INFRASTRUCTURE

1

new measurement facility for LED and energy-efficient light testing was established



GREEN ECONOMY

Developed standards

to value assign impurities in hydrogen; this will support the green hydrogen industry



LAW ENFORCEMENT

20

speed measuring instruments from the SADC region were calibrated by the newly established calibration facility for remote speed measuring



MEASUREMENT SOLUTIONS FOR INDUSTRY

1

new 3D CT scanner
installed and commissioned by the NMISA to provide measurement services to industry

1

new capability
developed for dioxin analysis



REGIONAL INTEGRATION

4

inter laboratory comparisons
conducted in the region

5

demonstrator Kibble balances
were built by the NMISA as part of the redefinition of the unit for mass



METROLOGY SUPPORT FOR REGULATIONS

4

proficiency testing schemes
coordinated for the environmental monitoring of ambient air quality



KNOWLEDGE CREATION AND SCIENTIFIC ACHIEVEMENT

8

articles
published in
scientific journals

20

courses
offered



INDUSTRIAL INTERVENTIONS

15

temperature screening devices
calibrated

1

new National Measurement Standard
for Ultraviolet Germicidal Irradiation (UVGI) devices developed

155

metrologists
trained

Challenges for the NMISA in 2021/22

The NMISA is adversely affected by the lack of regulations with regard to ensuring that measurement results that affect health and safety of citizens are demonstrated to be accurate by industry through traceability to the National Measurement Standards, which are realised and maintained by the NMISA. This often leads to lack of enforcement and opens opportunities for legal challenges. The NMISA is awaiting the revision of the Measurement Act as an enabler to support government and industry with international comparable traceable measurements.

Funding for new premises was not made available despite acceptance of the NMISA Feasibility Study by Treasury. To avoid the challenges of being accommodated in aged infrastructure the NMISA had to re-allocate a portion of its recapitalisation funding towards the renovation of the existing leased premises and had to lease and renovate additional space to accommodate new capabilities.

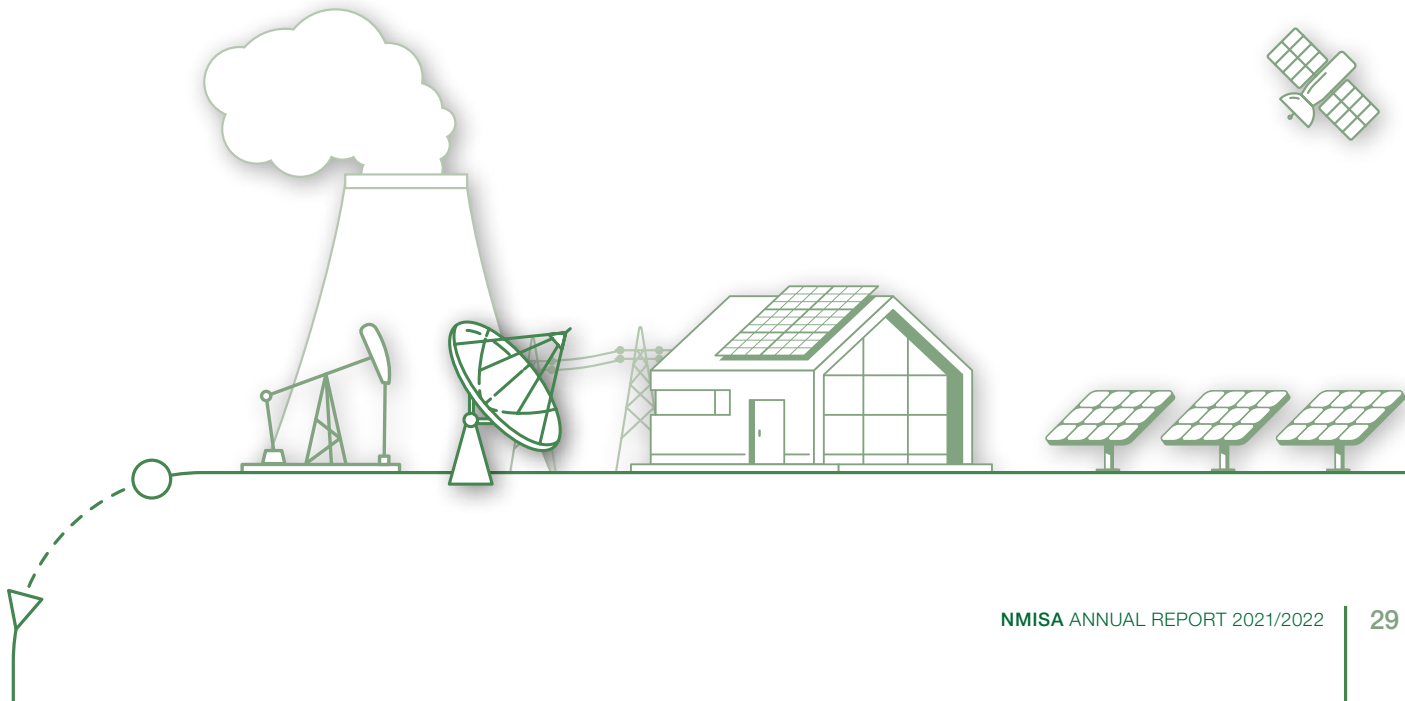
However, a series of events linked to aged infrastructure were experienced during the year that affected production and caused downtime in some areas.

3.3 STRATEGY TO OVERCOME AREAS OF UNDERPERFORMANCE

The NMISA met or exceeded 12 of its 15 targets for the period under review. The following three (3) targets were not met:

- PTS and ILCs organised and completed
- Percentage increase in visibility of the NMISA
- Amount of income generated

The NMISA's services, as a specialised institution, are largely reliant on international Original Equipment Manufacturers (OEMs) and labour productivity. The COVID-19 pandemic weighed heavily on investments and hindered trade during the 2020/21 reporting period. With the easing of regulations in the 2021/22 reporting period, certain activities resumed and economic activity recommenced, albeit slowly. This lag affected the achievement of some KPIs. It is hoped that further economic recovery will alleviate the situation.



3.4 REPORTING ON THE INSTITUTIONAL RESPONSE TO THE COVID-19 PANDEMIC

The NMISA developed a risk adjusted strategy and protocols to ensure the organisation functions amidst the pandemic. Internally, protocols were developed to which the NMISA employees, clients, and stakeholders were required to adhere while on site. Twenty-seven (27) employees contracted COVID-19 during the reporting period; however none of these infections were acquired in the workplace. In response to the pandemic, the NMISA continued to provide hand sanitiser to employees.

The NMISA also embarked on the improvement of the National Measurement Standard for Ultraviolet Measurement as depicted in table 3 below.

Table 3: Institutional Response to the COVID-19 Pandemic

PROGRAMME	INTERVENTION	GEOGRAPHICAL LOCATION	NO. OF BENEFICIARIES	TOTAL BUDGET ALLOCATION	BUDGET SPENT PER INTERVENTION	CONTRIBUTION TO THE OUTPUTS IN THE APP	IMMEDIATE OUTCOMES
Keep, Maintain and Disseminate National Measurement Standards	Ultraviolet measurements to ensure safety and performance of devices used to decontaminate surfaces and air volumes infected with COVID-19	Gauteng	4 companies	R50 000	Not applicable	Improvement in UV-C measurement capability	Report on the safety and germicidal efficacy of commercial UV-C disinfection devices

4

ACHIEVEMENTS ACROSS BROAD SERVICE AREAS

The NMISA's service areas are aligned with the following:



Material science and services: The NMISA provides services to local producers, such as automotive component manufacturers, through its Dimensional Measurement Unit and other physical metrology laboratories. The institute provides working solutions for real measurement problems for both industry and academia through its materials metrology group, thus supporting local development, and manufacturing and beneficiation of additive materials.



Agriculture, food and environmental monitoring: This programme supports food safety and feed-and-food trading in the AfCFTA. The NMISA enables local farmers and producers to meet food safety and export regulations and aids the air quality and air monitoring industries with provision of primary reference gas mixtures for reliable air pollution monitoring.



Health and safety: Inaccurate measurements can result in death. Whether from a medical device measuring inaccurately or a clinical measurement that results in a false positive or false negative, inaccuracy of a measurement has dire implications. This programme provides for reliable results from medical instrumentation to facilitate accurate diagnosis and correct treatment. The NMISA's accurate reference measurement in clinical medicine and calibration of diagnostic equipment has far reaching effects on the population's trust in the field of medicine and clinical diagnostics, including the response to the COVID-19 pandemic.



Energy efficiency: The NMISA provides measurement support for the evaluation and implementation of energy saving and clean energy technologies. This includes measurement services to assist in assuring the stability of the national electricity grid; measurement solutions and standards that enable South Africa to optimise the use of its energy sources and aid in the verification of the performance of energy saving products (such as LED lighting); and solutions that support accurate measurements in a smart grid, thus facilitating grid stability and acceptable network power quality.



Digital economy: The NMISA provides reliable telecommunication devices, and high-accuracy time synchronisation of digital events.



Conformity assessment support: Important decisions are based on the results of measurements. The NMISA provides certified reference measurements and standards for agricultural processing activities, food safety, medical audits and quality control, and safety in industrial processes.



Law enforcement: In support of law enforcement and consumer protection, the NMISA provides calibration and/or reference standards and methods for accurate blood alcohol measurements, accurate speed measurements, and reference materials for forensic analysis (illicit drugs), and contributes to consumer protection in trade. This assists with dispute resolution in terms of compliance with regulations.



Training and knowledge services: The NMISA's Metrology Training Centre is a newly established centre dedicated to providing training in chemical and physical metrology. Training and consultancy services are provided to local and international (SADC and AFRIMETS) scientists, engineers and technologists, and professionals from other regional measurement institutes.



4.1 APPLIED METROLOGY

A key focus for the NMISA during the 2021/22 financial year was the implementation of applied metrology through its newly established division, with its main business units being the Africa Reference Institute (ARI) and the Product Development Centre.

The main objective of the ARI is to provide authoritative expertise, dedicated to providing thought leadership, access to advanced technologies and reliable application information in those fields critical to economic growth and social development in South Africa and throughout the continent. Its services include reference measurements and analysis, consultation and specialist advice, as well as education and training.

The ARI is a trusted partner to government entities, supporting the development of policies and regulations with impartial, reliable data. Recognising the need to enhance the ability of local producers to compete in international markets, the ARI assists companies in improving the performance of their products, gain efficiencies in production and develop reputable African brands.

The ARI plays a key role in enabling the NMISA to contribute to a common and reliable African measurement system in support of African Union objectives, policies and regulations.

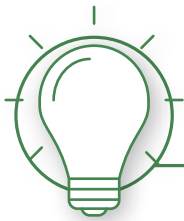
The fields of operation are:

- Food reference material production facility
- Calibration of evidential alcohol breathalysers for traffic law enforcement
- Measurement of user mobile data consumption
- Surface and structure analysis for failure analysis in production processes
- Characterisation of energy efficient lighting products (LEDs)
- Formal training in all aspects of measurement science and related technologies to meet the needs of South Africa, the SADC region, and the African Continent as a whole

The Africa Reference Institute and the Product Development Centre

were launched by the Applied Metrology Division as its main business units





4.2 NATIONAL INFRASTRUCTURE

The quality of national infrastructure, such as clean water, stable electricity supply, reliable telecommunications and efficient transport systems, is dependent on accurate reference measurements.

The quality of drinking water needs to be tested regularly for the presence of contaminants and the accuracy of such test results is assured through traceability to the National Measurement Standards maintained by the NMISA.

Maintenance of the national electricity grid includes calibration and testing of its electric components, whilst the ability to measure power accurately enables fair billing. Introduction of power from renewable resources through independent producers requires that power quality specifications be met in order to maintain grid stability. The results of power quality measurements must be traceable to the standards for power quality realised at the NMISA in order to verify compliance with the relevant grid codes. The accuracy of electrical power measurements will increase in importance in the near future as it is a key enabler for a competitive energy supply market.

Energy efficiency of all connected electrical devices is a key consideration when constrained electrical supply needs to meet the national demand. Energy saving lighting technology, such as light emitting diodes (LEDs), is becoming commonplace in South African for residential, commercial and industrial applications. Measurements and tests to verify the power saving, quality and safety claims made by suppliers of such lighting products must be traceable to the National Measurement Standards for optical radiation maintained by the NMISA.

The NMISA supports railway, road, sea and air transport systems through a range of measurement services. During 2021/22, the NMISA provided material characterisation services through failure analysis for speed trains and by improving ceramics for the built environment.

1

**new measurement facility
for LED and energy-efficient
light testing was established**



Achievements

- **Comparison of national resistance standards**

The comparison of national resistance standards between six African NMIs, piloted by the NMISA (AFRIMETS.EM-S1) was completed, and the results were published in the international key comparison database (BIPM KCDB). The results validated the measurement capabilities of these African countries for direct current resistance, which is a necessary condition for international recognition.

- **Water proficiency testing scheme**

The NMISA supports laboratories through the provision of the water proficiency testing scheme (PTS) which allows them to demonstrate analytical competence. The NMISA ran the water PTS to support laboratories to trace levels of organic contaminant in water. This ensures that the water that South Africans drink has acceptable or tolerable limits of contaminants that may otherwise be harmful to the citizens of the country.

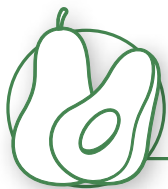
- **New measurement facility**

One new measurement facility was established under the ARI for testing requirements for all LED and energy-efficient light testing. The intention is that this facility will become a one-stop-shop. Photometric and electrical equipment were installed and commissioned. The equipment is specified to meet all industry testing requirements – from domestic A-type lamps to streetlights.

- **Accuracy of mobile data**

A short practical study was done to determine accuracy of mobile data consumption against data billing and the factors that may influence discrepancies between the two. It was concluded through the study that these factors did not increase the likelihood of discrepancies. In addition it was noted that where discrepancies were found they were random, with some in favour of the user and others against.





4.3 NUTRITION AND FOOD SAFETY

The NMISA supports industry through the development of National Measurement Standards (NMS) to provide for measurement traceability and the safety of goods produced in South Africa. Laboratory test results traceable to the NMISA result in fewer border rejections of exported goods and growth in the economy as South Africa can trade within the AfCFTA and internationally. With the development of the NMS and reference methods South Africa is able to trade with confidence, removing technical barriers to trade. The NMISA coordinates proficiency testing schemes as part of providing traceability, and supports food labelling, agriculture, and the food safety industry.

13
proficiency testing
schemes
for foods and water
coordinated by
the NMISA



Achievements

• Proficiency testing schemes

During 2021/22, the NMISA coordinated the following proficiency testing schemes:

- Aflatoxins in nut slurry
- Pesticides in oranges
- Pesticides in strawberries
- Pesticides in apricots
- Pesticides in peaches
- Pesticides in apples
- Mycotoxin in animal feed
- Vitamin A in corn soya
- Aflatoxin M1 in milk
- Elements in milk powder
- Antibiotics in chicken (see Measurement Solutions for Food Production)
- Contaminants in water (see National Infrastructure)
- Peroxide value and fatty acid determination in peanut oil and whole peanuts

• Reference methods and/or NMS

Reference methods and/or NMS for the following foods were either improved or developed as solutions to support industry in ensuring that the minimum acceptable limits for contaminants are met in compliance with regulations:

- Veterinary drugs in animal tissue
- Elements in cured meat
- Nutritional content in fortified corn soya
- Dioxin in fish and sediment
- Gas reference mixtures for liquid natural gas

• Heavy metals in fish and seafood

A new method for the determination of heavy metals in fish and seafood was developed to trace major and minor toxic and nutritional elements. For South Africa to participate internationally and trade with the world in seafood and fish, measurements done by the country must be equivalent internationally





4.4 GREEN ECONOMY

The NMISA supports the growth and greening of the economy through actions to support project facilitation, policy development, investment promotion, new product development or industrial processes.

Achievements

- **Value-assignment of hydrogen**

The NMISA used internationally accepted standards to value-assign hydrogen samples to check impurities present in samples received from clients. This assisted clients with their processes to provide quality assurance and ensure acceptable limits in compliance with regulations.

Value-assignment of hydrogen samples

The NMISA has developed internationally accepted standards to value-assign Impurities present in the hydrogen sample. These include ethane, butane, propane pentane, and hexane in hydrogen samples. The NMISA participated in a green hydrogen webinar to be well-positioned to provide measurement solutions to support the green hydrogen industry





4.5 LAW ENFORCEMENT

In support of law enforcement and consumer protection, the NMISA provides calibration and/or reference standards and methods for accurate blood alcohol measurements, accurate speed measurements, reference materials for forensic analysis (illicit drugs). This assists with dispute resolution in terms of compliance with regulations.

Achievements

- **Calibration facility for remote speed measuring equipment**
The NMISA established a calibration facility for remote speed measuring equipment using light detection and ranging (LIDAR) technology, applying a simulation technique. The new capability was successfully accredited by the South African National Accreditation System (SANAS) in 2020. The NMISA is currently the only laboratory in South Africa that uses simulation to perform the calibration of speed measuring equipment. Calibrations were performed for 20 speed measuring instruments from the SADC region. The facility was established to support law enforcement agencies with the calibration of LIDAR speed measurement devices to enhance road safety, and hence reduce the number of accidents caused by those driving over the speed limit.
- **Forensic blood alcohol proficiency testing scheme**
During the year under review, the NMISA-accredited forensic blood alcohol proficiency testing scheme was delivered in support of the National Department of Health (NDoH) Forensic Pathology Laboratories. Regular participation in the proficiency scheme provides the NDoH with the legal evidence needed to confirm that test results are credible and hence to enforce the law on the legal blood alcohol limit while driving.
- **Calibration services for evidential breath analysers**
Through collaboration with the National Departments of Transport and Justice, the NMISA supports law enforcement agencies with calibration services for evidential breath analysers. Calibration ensures the accuracy of evidentiary breath alcohol testing (EBAT) and aids in assessing compliance with the legal alcohol content limit in roadside screening of drivers on South African roads. Traceability provided by the NMISA for the calibration of instruments used for EBAT and their usage by provincial and metropolitan departments of transport, collectively aims to reduce alcohol related accidents, enabling improved road safety in South Africa.

20

**speed measuring
instruments**

**from the SADC region were
calibrated by the newly
established calibration
facility for remote speed
measuring**





4.6 MEASUREMENT SOLUTIONS SUPPORTING LOCALISATION

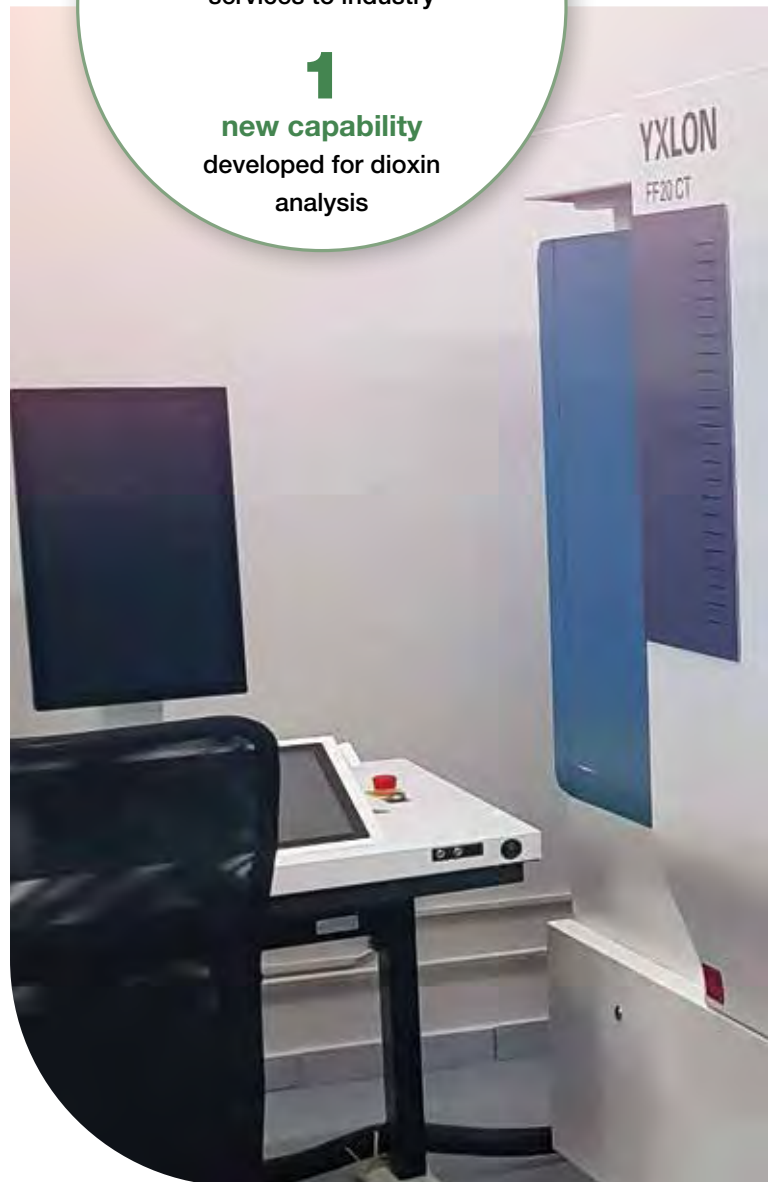
The NMISA undertook a number of projects which help to drive industrialisation in support of economic recovery, covering industry master plans, localisation initiatives across the economy (including COVID-industrial interventions) and beneficiation.

Achievements

- **Computerised tomography three-dimensional scanning**
A computerised tomography three-dimensional scanner (CT 3D scanner) is a system that uses x-rays to determine the exact size of objects in three-dimensional space. It is now used by the (additive) manufacturing industry for quality control of manufactured parts. Such a system permits verification of the 3D accuracy of printed parts as well as evaluation of the performance of the part by inspection after use. Since CT scanners are costly, high-end diagnostic instruments, the technology is inaccessible to many manufacturing companies, especially Small Medium and Micro Enterprises (SMMEs). The NMISA has installed and commissioned a 3D CT scanner to provide measurement services and expert advice, thereby making the technology accessible to all.
- **Improved measurement capability for Force below 5 kN**
The NMISA improved its measurement capability for Force below 5 kN, which is utilised by the construction, manufacturing, mining, automotive, construction and machine testing industries. The Torque laboratory received SANAS accreditation during the reporting period. The improvement of these measurement capabilities continues to support local industrial development.
- **Proficiency Test (PT) for antibiotic residue in chicken**
The poultry industry is one of the main agricultural industries targeted for expansion by the dtic. The South African Poultry Sector Master Plan (dtic, 2019) identified the inability to export to the European Market as a challenge to be addressed in this sector. One of the factors influencing the export of chickens includes not meeting requirements set by the export market. Among these is antibiotic maximum residue limits (MRLs). This PT will support testing laboratories to provide accurate results, and reassure consumers that poultry being exported complies with antibiotic MRLs.

1
new 3D CT scanner
installed and commissioned by
the NMISA to provide measurement
services to industry

1
new capability
developed for dioxin
analysis



- **Accredited essential oil testing services**

The NMISA is establishing a suite of accredited essential oil testing services that will be made available to SMEs in the region. The certificate of analysis provided will enable SME products to gain entry into the international market. The UNIDO Global Quality and Standards Programme (GQSP) is providing some support for this activity through the procurement of an instrument for the NMISA to establish one of the essential oil test parameters. However, there have been delays in procuring the system, together with finding suitable PT providers to benchmark the service. The GQSP project extension until September 2022 will allow for the system to be procured and delivered, and benchmarking to take place. Three of the six test parameters to be established have been implemented since the project was initiated in August 2021.

- **Dioxin analysis services**

Due to an increase in requests from industry for dioxin testing, the complexity of the tests and the associated cost, there are currently no routine testing laboratories to measure dioxin-like chemicals. The NMISA has thus developed the capability to deliver dioxin analysis services as an advanced measurement solution for industry.





4.7 METROLOGY SUPPORT FOR REGULATIONS

Among others, air quality is an important indicator of environmental safety, relating not only to manufacture and trade, but importantly to the safety of the individuals involved and the population as a whole.

- **Proficiency testing schemes to support environmental monitoring of ambient air quality**

- Sulphur dioxide
- Carbon oxide
- Ozone at ambient level
- Hydrogen sulphide in nitrogen

- **Reference gas mixtures**

Reference gas mixtures were provided to a local company for monitoring air quality during the 2021 unrest in KwaZulu-Natal after a factory was set alight.

4
proficiency testing schemes
coordinated for the
environmental monitoring
of ambient air quality





4.8 COVID-19 INDUSTRIAL INTERVENTIONS

Following the outbreak of the COVID-19 pandemic in South Africa, NMISA re-prioritised its technical projects to allocate resources to projects on ultraviolet germicidal disinfection studies, guidance on accurate infrared temperature screening for COVID-19, reference mixtures for medical gasses, chemical analysis of sanitiser liquids and gels and the calibration of ventilators. These measurement service offerings enable local manufacturers to meet product specifications and quality standards to reduce dependence on international supply. The NMISA undertook two key projects towards ensuring the safety and reliability of COVID-19 related equipment.

Achievements

- **COVID-19 Temperature Measurements**

The COVID-19 temperature measurement project investigated the reliability of measurement results obtained by the thermometers used by retailers and businesses for COVID-19 screening. The NMISA calibrated a number of such temperature screening devices, trained operators on the correct procedure to perform such measurements to ensure better accuracy of results, collected data from measurements performed and analysed the results. The intervention offered participants the ability to conform to the applicable South African National Standards and the World Health Organisation (WHO) guide for thermometers.

- **Safety and Efficacy of Ultraviolet Disinfection Irradiance Devices**

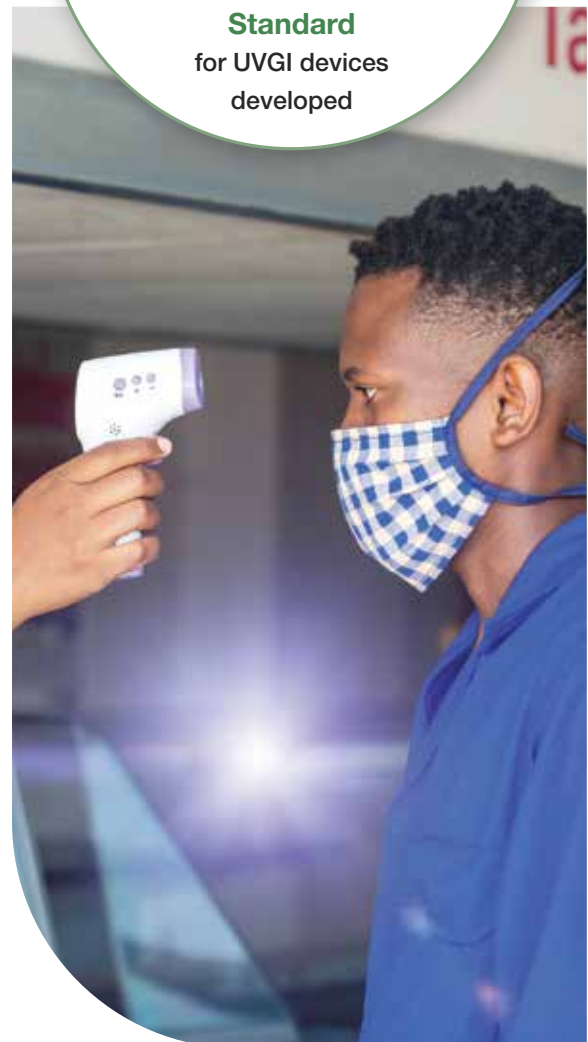
Following the onset of the COVID-19 pandemic, a variety of products that used ultraviolet radiation to disinfect surfaces of commonly used articles such as mobile phones, laptops, sunglasses, etc. entered the South African market. To evaluate consumer concerns about the efficiency of such disinfection claims by the manufacturers, the NMISA undertook a study to verify the spectral irradiance of such sources against international standards. The results of this study will be made available to consumers through publication in a local trade magazine.

New equipment, including UV-C radiometers and UV array spectrometers, was commissioned to provide industry and consumers with this service.

The NMISA's experts participated in a review of the SATSS1706 and ARP010 on UVGI device testing, installation, commissioning, and maintenance for the development of the National Measuring Standard for UVGI devices.

15
temperature
screening devices
calibrated

1
new National Measurement
Standard
for UVGI devices
developed





4.9 REGIONAL INTEGRATION

As the only NMI in Africa with membership of all the International Committee for Weights and Measures (CIPM's) Consultative Committees (CCs), the NMISA provides the link to the international measurement system for Africa. The NMISA thus ensures that the interests of South Africa, SADC and Africa are protected at the highest possible level internationally and plays a leading role in the development of metrology infrastructure in Africa.

Achievements

- **Redefinition of the unit for mass – the kilogram**

Following the international redefinition of the International System of Units (SI), the NMISA initiated a research project to redefine the unit for mass – the kilogram – in electrical parameters, using a Kibble Balance. This was necessary to ensure that the NMSs realised by the NMISA remain internationally equivalent, enabling trade. A table-top, high accuracy Kibble balance is being developed in collaboration with the National Physical Laboratory of the UK. The final product is expected to be operational by 2023 and will then be the primary realisation of the unit of mass – the kilogram – on the African continent. During the year under review, the NMISA built five demonstration Kibble balances that are being used to introduce this measurement standard to NMIs in SADC countries and to expand the knowledge of African metrologists on the redefinition of the SI unit and the practical implementation of the revised system.

4

**inter laboratory
comparisons**
conducted in the region

5

demonstrator Kibble balances
were built by the NMISA as part
of the redefinition of the
unit for mass





4.10 KNOWLEDGE CREATION AND SCIENTIFIC ACHIEVEMENTS

Through their scientific metrology skills and expertise, the NMISA staff made sound contributions to the metrology knowledge base through the publication of articles in scientific journals, publications in the International Key Comparison Database and the presentation of courses.

Achievements

• Articles Published in Scientific Journals

1. Accurate clinical tympanic measurement system at the NMISA, NCSLI measure, *Journal of Measurement Science*
2. Stimulated parametric down-conversion for spatiotemporal metrology, *Physical Review*
3. Ten bird species, six guilds, three habitats and 59 chlorinated and brominated POPs: what do 64 eggs from the largest economic hub of Southern Africa tell us? *Archives of Environmental Contamination and Toxicology*
4. Spatiotemporal effects on squeezing measurements, *Physical Review*
5. Toolbox for non-classical state calculations, *Journal of Optics*
6. Toward a quantum future for South Africa, *AVS Quantum Science*
7. All-digital 3-dimensional profilometry of nano-scaled surfaces with spatial light modulators, *Applied Physics*
8. Quantitation of hydrogen sulphide reference gas mixtures to provide traceability for indoor air quality monitoring, *Accreditation and Quality Assurance (ACQUAL) Journal*

8
articles

published in scientific journals

20
courses
offered

155
metrologists
trained



- **Publications in the International Key Comparison Database**

The NMISA was the pilot laboratory for the DC-Low Frequency AFRIMETS.EM-S1 comparison for DC resistance. In total, seven (7) African NMIs participated in the comparison with the objective of underpinning and strengthening the capabilities of their National Metrology Institutes and establishing the degree of equivalence and comparability. This is the first AFRIMETS DC-LF comparison to be published in the Key Comparison Database (KCDB) of the BIPM.

The Regional Metrology organisations reviewed and approved the NMISA's 11 new calibration and measurement capabilities (CMCs) for mycotoxin Certified Reference Materials (CRMs), matrix CRMs as well as broad-scope CMCs for polar and non-polar organic substance purity assignment, and it was published in the Key Comparison Database (KCDB) of the BIPM. The NMISA is recognised internationally as a key reference material producer in the region.

- **Courses Presented**

The NMISA's training offerings have increased over the years, resulting in the establishment of the NMISA's Metrology Training Centre. The centre offered 20 courses in the following topics and trained 155 metrologists during the 2021/22 financial year:

- Laser safety
- Africa food safety
- Chemical Metrology for BSc Honours Students
- 3D
- Mass
- Uncertainty of Measurement
- Uncertainty of Measurements - Analytical
- Humidity Metrology
- Time and Frequency
- Strengthening Food Safety Chemical Metrology Capacity in SADC (External Quality Assessment – sample analysis)
- Uncertainty of Measurements – Guide to the Expression of Uncertainty in Measurement





PART C | GOVERNANCE



1

INTRODUCTION

Corporate governance is underpinned by effective leadership, oversight and management responsibility, underscored by high ethical standards. This results in governance outcomes inclusive of effective controls and an ethical culture. The NMISA has adopted the King IV Report on Corporate Governance for South Africa, 2016 (King IV) as a guiding principle for good governance in conjunction with applicable laws and regulations. The King IV principles foster reporting that focuses on the impact of the organisation on the economy, environment, and social aspects. The NMISA's Annual Report includes statements on the effectiveness of internal controls and the governance of risk; remuneration; compliance with applicable laws and regulations; ethics codes; and the NMISA's response to social needs. These are also in line with the *National Treasury Guidelines* on reporting.

2

PORTFOLIO COMMITTEE

The NMISA does not report directly to a Portfolio Committee.

3

EXECUTIVE AUTHORITY

Mr Ebrahim Patel, Minister responsible for Trade, Industry and Competition, is the Executive Authority accountable to Parliament for the NMISA's activities as defined in Section 1(c) and (d) of the Public Finance Management Act, No. 1 of 1999 (PFMA). The Minister also serves as the Shareholder for the NMISA. The operating results and state of affairs of the entity are fully set out in the Annual Financial Statements.

In the year under review the NMISA submitted the following reports to the Shareholder, who raised no issues:

Table 4: Reports delivered to the Shareholder in the reporting period

REPORT	DATE
NMISA Quarter 1 Report	31 July 2021
NMISA Quarter 2 Report	30 October 2021
NMISA Annual Report 2019/20	30 October 2021
NMISA Quarter 3 Report	31 January 2022
NMISA Quarter 4 Report	28 April 2022

4

THE ACCOUNTING AUTHORITY/BOARD

4.1 INTRODUCTION

The Board serves as the NMISA's Accounting Authority in terms of the PFMA. The Board is principally responsible for directing and overseeing the business of the NMISA, balancing the interests of stakeholders, and ensuring the NMISA's long-term economic, social and environmental sustainability.

4.2 THE ROLE OF THE BOARD

The Board leads the NMISA in:

- Achieving its strategic objectives by approving and directing the NMISA's overall strategy and associated operational objectives
- Ensuring that adequate processes are in place for budget planning and allocation to advance the NMISA's mandate, which includes overseeing its socioeconomic programmes
- Ensuring that the NMISA can achieve its statutory and commercial objectives
- Determining policy processes to ensure the integrity of the NMISA's risk management and internal controls
- Putting in place a Communications Policy, and Director selection, orientation and evaluation

4.3 BOARD CHARTER

The Board is committed to executing its duties in accordance with the principles espoused in King IV and as envisaged in the Board Charter.



4.4 COMPOSITION OF THE BOARD

Table 5: Composition of the Board

NAME	DESIGNATION (IN TERMS OF THE PUBLIC ENTITY BOARD STRUCTURE)	DATE APPOINTED	DATE RESIGNED	QUALIFICATIONS	AREA OF EXPERTISE	BOARD DIRECTORSHIPS	OTHER COMMITTEES OR TASK TEAMS	NO. OF MEETINGS ATTENDED
Ms Jabu Mogadime	Chairperson of the Board	05/04/2013	-	<ul style="list-style-type: none"> Diploma Marketing (CIM) BA MBA 	Auditing	-	Chairperson of: <ul style="list-style-type: none"> Licensing Committee Risk Committee Pension Fund Adjudicator's Office FAIS Ombud's Office 	8
Ms Nobom Mfabela	Non-executive member	01/07/2018	-	<ul style="list-style-type: none"> HD in Municipal Governance BA BA Honours Political Science Masters in Labour studies 	Labour Expert	-	<ul style="list-style-type: none"> SEC Human Resource and Remuneration Committee (HRRC) Remuneration Task Team 	23
Mr Molekoa Petrus Mhloni	Non-executive member	01/07/2018	-	<ul style="list-style-type: none"> MBL BSC: Microbiology and Biochemistry National Higher Diploma: Microbiology 	-	-	<ul style="list-style-type: none"> Technical Committee ARC Remuneration Task Team 	22
Ms Lindie Lankalebalelo	Non-executive member	01/07/2018	-	<ul style="list-style-type: none"> LLB Postgraduate Certificate in Legislative Drafting Postgraduate Certificate in Corporate Law 	-	-	<ul style="list-style-type: none"> SEC ARC Remuneration Task Team 	17
Dr Tshenge Demana	Non-executive member	05/05/2013	-	<ul style="list-style-type: none"> BSc PhD in Analytical Chemistry 	-	-	<ul style="list-style-type: none"> Technical HRRC Remuneration Task Team 	21
Mr Ndwakhulu Mukhufhi	Ex-officio member	01/07/2018	-	<ul style="list-style-type: none"> BSc Biochemistry MSc Biochemistry and Molecular Biology Postgraduate Diploma Project Management 	-	-	-	-

4.5 COMMITTEES OF THE BOARD

The Board is assisted by various governance structures in discharging its duties and responsibilities. Each governance structure is governed by approved terms of reference articulating the delegated levels of authority and responsibility. The following governance structures are in place:

- Audit and Risk Committee
- Social and Ethics Committee
- Human Resources and Remuneration Committee
- Technical Committee
- Ad hoc Committees (Tender Committee, Remuneration Task Team, IT Strategic Committee)

Table 6: Audit and Risk Committee

COMMITTEE	NO. OF MEETINGS HELD	NO. OF MEMBERS	NAME OF MEMBERS
Audit and Risk Committee	5	5	Mr Petrus Mohlomi, Mr Zenzele Myeza, Ms Lindie Lankalebalelo, Ms Nobom Mfabana, Ms Romeshni Govender

Table 7: Social and Ethics Committee

COMMITTEE	NO. OF MEETINGS HELD	NO. OF MEMBERS	NAME OF MEMBERS
Social and Ethics Committee	4	2	Ms Lindie Lankalebalelo, Ms Nobom Mfabana

Table 8: Human Resource and Remuneration Committee

COMMITTEE	NO. OF MEETINGS HELD	NO. OF MEMBERS	NAME OF MEMBERS
Human Resource and Remuneration Committee	4	2	Dr Tshenge Demana, Ms Nobom Mfabana

Table 9: Technical Committee

COMMITTEE	NO. OF MEETINGS HELD	NO. OF MEMBERS	NAME OF MEMBERS
Technical Committee	2	2	Dr Tshenge Demana, Mr Petrus Mohlomi

Table 10: Ad hoc Committees

COMMITTEE	NO. OF MEETINGS HELD	NO. OF MEMBERS	NAME OF MEMBERS
Tender Committee	5	4	Ms Lindie Lankalebalelo, Dr Tshenge Demana, Mr Petrus Mohlomi, Ms Nobom Mfabana
Remuneration Task Team	2	5	Ms Nobom Mfabana, Dr Tshenge Demana, Ms Lindie Lankalebalelo, Mr Petrus Mohlomi
IT Strategic Committee	5	2	Mr Sipho Masinga, Mr Senzo Dhlamini

4.6 REMUNERATION OF BOARD MEMBERS

Table 11: Remuneration of Board Members*

NAME	REMUNERATION (R)	OTHER ALLOWANCE (R)	OTHER RE-IMBURSEMENTS (R)	TOTAL (R)
Ms Jabu Mogadime	96 710	-	9 009	105 719
Mr Molelekoa Petrus Mohlomi	160 800	-	1 304.37	162 104.37
Ms Nobom Mfabana	144 720	-	-	144 720
Dr Tshenge Demana	-	-	-	-
Ms Lindie Lankalebalelo	104 520	-	-	104 520
Ms Romeshni Govender	32 160	-	-	32 160
Mr Zenzele Myeza	32 160	-	-	36 160
Mr Sipho Masinga	20 100	-	-	20 100
Mr Senzo Dlamini	20 100	-	-	20 100

* Refer to the Annual Financial Statements, page 104

5 RISK MANAGEMENT

Risk management is embedded in the NIMSA's processes and driven at all levels of the organisation. It ensures the efficient and effective execution of the NIMSA's strategy and achievement of the organisational mandate, with minimum disruptions and a greater capacity to seize opportunities.

The Board is ultimately responsible for the governance of risks at the NIMSA. The Board sets the direction for how risks should be managed through relevant policies, strategy and the board-approved Risk Management Framework. The Board also ensures that a formal risk assessment occurs annually to identify and evaluate key risk areas, and undertakes ongoing reviews to determine the effectiveness of the risk management process. The Audit and Risk Committee (ARC) assists the Board in reviewing the risk management process and made recommendations to management during the year to enhance the risk management function.

The Board's Risk Management Policy is clearly communicated to all employees to ensure that the risk strategy is incorporated into the culture of the NMISA. Responsibility for implementing and executing effective risk and resilience management is delegated to the NMISA management.

The NMISA has a combined Assurance Committee that advises the Board and management on the overall risk and risk mitigation strategies. While the NMISA's risk management approach is considered sound, the Assurance Committee has identified areas for improvement, and the organisation is engaging in ongoing improvement processes.

6

INTERNAL CONTROL

Internal auditing is an independent and objective assurance and consulting activity that is designed to add value and improve the operations of the NMISA. Internal auditing assists the NMISA to accomplish its objectives by using a systematic and disciplined approach (risk-based audit approach) to evaluate and improve the effectiveness of governance, risk management and internal control processes.

Internal Audit implemented its revised Annual Risk-Based Audit Plan for 2021/22 as part of a three-year rolling plan, after consultation with management and approval by the ARC. The audit comprised reviews in the sphere of governance, risk management and internal controls to provide reasonable assurance to management and the ARC on the state of internal controls within the NMISA. All audits and other work of the Internal Audit function were conducted in accordance with the International Standards for the Professional Practice of Internal Audit, as issued by the Institute of Internal Auditors (IIA).

7

AUDIT COMMITTEE

The Audit and Risk Committee (ARC) was established as a statutory committee in terms of Section 38(1)(a)(ii) and Section 77 of the PFMA and Treasury Regulations. The responsibilities of the Committee are outlined in its terms of reference, while its activities are set out in an annual work plan. The table below discloses relevant information on the audit committee members.

Table 12: Audit and Risk Committee

NAME	QUALIFICATIONS	INTERNAL OR EXTERNAL	IF INTERNAL, POSITION IN THE PUBLIC ENTITY	DATE APPOINTED	DATE RESIGNED	NUMBER OF MEETINGS ATTENDED
Mr Molelekoa Petrus Mohlomi	<ul style="list-style-type: none"> • MBL • BSc: Microbiology and Biochemistry • National Higher Diploma: Microbiology 	External	-	26 September 2018	-	5
Ms Nobom Mfabana	<ul style="list-style-type: none"> • Higher Diploma in Municipal Governance • BA Honours in Political Science • Masters in Labour Studies 	External	-	28 January 2021	-	4
Ms Romeshni Govender	<ul style="list-style-type: none"> • Bachelor of Accounting • Postgraduate Diploma in Accounting • CA(SA); CIA; CCSA; CRMA 	External	-	19 November 2018	-	5
Ms Lindie Lankalebalelo	<ul style="list-style-type: none"> • LLB • Postgraduate Certificate in Legislative Drafting • Postgraduate Certificate in Corporate Law 	External	-	26 September 2018	-	3
Mr Zenzele Myeza	<ul style="list-style-type: none"> • BCom: Accounting and Auditing • MBA 	External	-	19 November 2018	-	5

8

COMPLIANCE WITH LAWS AND REGULATIONS

The NMISA's compliance philosophy respects compliance with applicable laws and regulations, and commits to the highest standard of compliance.

The Board has an oversight role over compliance of the organisation and its employees as provided for in the PMFA. Management is responsible for ensuring that the effective compliance process and controls are in place to mitigate compliance risks. The management of compliance and its risks follows the entity's overall Risk Management Framework.

The internal audit function regularly appraises the NMISA's compliance requirements and reports its findings to the ARC, which in turn reports compliance concerns and matters to the Board.

Although compliance with the principles of the King Code is not legislated, it has become a business best practice, and in this regard the NMISA is compliant with those aspects of the Code that are applicable to public entities. No material or repeated regulatory penalties, sanctions, or fines for contraventions of, or non-compliance with, statutory obligations were reported. However, during the reporting period, the Board composition was found to be non-compliant with Section 10 (a) of the Measurement Units and Measurement Standards Act, No. 18 of 2006. This Act requires that the Board of the NMISA must consist of not less than seven and not more than twelve members, appointed by the Minister. The number of board members was not correctly constituted for the year ended 31 March 2022.

The matter was submitted for consideration to **the dtic** as the Executive Authority in terms of PFMA Section 83 and Treasury Regulation Section 33.1. As a remedial action, the Minister appointed two non-executive board members for a six-month period, effective from 13 April 2022.

9

FRAUD AND CORRUPTION

There were no reported cases of fraud and corruption during the period under review. The NMISA has a zero tolerance policy with regards to fraud and corruption. One of the issues that are emphasised during the induction of new employees is ethical behaviour.

There are two committees that ensure proper governance in relation to fraud and corruption, namely the Audit and Risk Committee and the Social and Ethics Committee.

There is a constant and continuous drive to encourage all employees and external stakeholders to report any unethical behaviour to the fraud and corruption hotline.

If a case of fraud or corruption is reported to the hotline a detailed investigation is conducted. Integrity and ethical behaviour are embedded in the culture of the organisation.

The NMISA continues to strengthen its systems and processes, to ensure that any fraud and corruption is detected early especially when it comes to cybercrime.

The clean audit also bears testimony to the good checks and balances that the organisation has put in place to prevent any fraud and corruption.

10

MINIMISING CONFLICT OF INTEREST

A register of declarations of interest for the NMISA's management is kept and updated annually, with an opportunity provided to declare changes or interests that might affect the day's proceedings, at all Board, Committee and EXCO meetings. In addition to the director's personal interest, directors also disclose interests of their spouses, partners, or close family members.

Full disclosure of the nature of a director's interest on any matter before the Board is required.

Each director, as an individual, is disqualified, by his/her office in the NMISA, from contracting with the NMISA. However, any organisation he/she may represent is not, in like manner, disqualified.

The NMISA is committed to a policy of fairness, transparency, honesty, impartiality, objectivity, credibility, integrity and, above all, accountability, in the conducting of all its business affairs, both inside and outside the organisation. This commitment is based on a fundamental belief in honest, fair, and legal conduct in all business activities.

Employees are expected to share this commitment to high moral, ethical and legal standards. The purpose of the Code of Conduct Policy is therefore to lay down a strict ethical code with which each employee, contract employee and consultant is required to comply.

Failure to comply with this policy amounts to misconduct and is dealt with in terms of the NMISA's Disciplinary Code.

11

HEALTH SAFETY AND ENVIRONMENTAL ISSUES

The NMISA's Total Quality Management System (TQMS) is primarily based on the ISO/IEC 17025:2017 standard of the International Organization for Standardization/International Electrotechnical Commission, which is the internationally accepted standard for the competence of testing and calibration laboratories. In addition, the NMISA's environmental management system is certified against ISO 14001:2015 (Environmental Management Systems). Occupational health and safety management systems are certified against ISO 45001:2018 (Occupational Health and Safety Management Systems).

12

COMPANY/BOARD SECRETARY

The Company Secretary oversees corporate governance and is responsible for assisting the Board with ensuring that it adheres to the principles of sound corporate governance. The Company Secretary supports the Board and its committees by advising them on directors' statutory duties, disclosure duties, good corporate governance practices, proper compilation and timely circulation of Board and committee papers. The Company Secretary serves as a direct channel of communication between the Board and its chairperson and the shareholder, management, and other stakeholders. The Company Secretary also coordinates the training of Board members and Executive Management on fiduciary/governance matters and assists with the Board member and Executive Management evaluation process.

13

SOCIAL RESPONSIBILITY

As the NMISA strives to deliver on its mandate, connecting Africa to the world through measurement science, the Institute is committed to creating value for its stakeholders in the long term in a sustainable manner. In accordance with the King IV Report on Corporate Governance, sustained value addition is founded on good governance and on responsiveness to significant social and environmental challenges.

Accurate and reliable measurement results are a key enabler for successful enforcement of regulations promoting the health, safety and well-being of people, as well as the responsible use of scarce natural resources. The outcomes of all the NMISA's programmes therefore contribute to governmental sustainability priorities, as well as to the sustainable development goals defined by the United Nations in 2015 as a universal view of development priorities for the years leading up to 2030.

In addition to these scientific outputs, the NMISA purposefully equips students and recent graduates, selected through its Human Capital Development (HCD) programmes, with the knowledge required to enter the job market. Preference is given to deserving female applicants from previously disadvantaged backgrounds to facilitate increased representation of this group within ISET fields. During this period, 31 interns were employed and trained by the NMISA. All interns who have completed their internship at the NMISA thus far have successfully entered the job market. Many of these youngsters were qualified but unemployed until their internships. Due to lockdown restrictions, other socio-economic outreach programmes have been put on hold temporarily.

True to its values and the NMISA brand, the organisation is mindful of the sustainability impact caused by its everyday activities. These impacts are managed through the TQMS policies, procedures, and practices. The NMISA's Environmental Management System is certified against ISO 14001:2015 (Environmental management system requirements). The Occupational Health and Safety Management System is certified against ISO 45001:2018 (Occupational Health and Safety Management Systems requirements).

14

AUDIT AND RISK COMMITTEE REPORT FOR THE YEAR ENDED 31 MARCH 2022

The Audit and Risk Committee (ARC) herewith presents its report for the financial year ended 31 March 2022.

LEGISLATIVE REQUIREMENTS

The ARC was constituted as required by Section 77 of the Public Finance Management Act, No. 1 of 1999, as amended by Act No. 29 of 1999 (PFMA), read together with Treasury Regulation 27.1.10.

AUDIT AND RISK COMMITTEE'S RESPONSIBILITY

The ARC reports that it has complied with its responsibilities arising from Section 38(1)(a)(ii) of the Public Finance Management Act and Treasury Regulation 3.1.13. The ARC also reports that it has adopted appropriate formal terms of

reference as its Audit Committee Charter, has regulated its affairs in compliance with this charter and has discharged all its responsibilities as contained therein, except that the committee has not reviewed changes in accounting policies and practices.

AUDIT AND RISK COMMITTEE MEMBERS AND ATTENDANCE

The ARC's Terms of Reference (ToR) require that the ARC comprises a minimum of three non-executive board members elected by the Board and two external members. In terms of Section 77(b) of the PFMA, the ARC must meet at least twice a year. During the financial year ended 31 March 2022 the ARC held five (5) meetings, with attendance as indicated in Table 13.

Table 13: Audit and Risk Committee members and attendance

NAME	DATE APPOINTED	QUALIFICATIONS	NUMBER OF MEETINGS SCHEDULED	NUMBER OF MEETINGS ATTENDED
Mr Molelekoa Petrus Mohlomi	26 September 2018	<ul style="list-style-type: none"> • MBL • BSc: Microbiology and Biochemistry • National Higher Diploma: Microbiology 	5	5
Ms Lindie Lankalebalelo	26 September 2018	<ul style="list-style-type: none"> • LLB • Postgraduate Certificate in Legislative Drafting • Postgraduate Certificate in Corporate Law 	5	3
Ms Nobom Mfabana	28 January 2021	<ul style="list-style-type: none"> • Higher Diploma in Municipal Governance • BA Honours in Political Science • Masters in Labour Studies 	5	4
Ms Romeshni Govender	19 November 2018	<ul style="list-style-type: none"> • Bachelor of Accounting • Postgraduate Diploma in Accounting • CA(SA); CIA; CCSA; CRMA 	5	5
Mr Zenzele Myeza	19 November 2018	<ul style="list-style-type: none"> • BCom: Accounting and Auditing • MBA 	5	5

EFFECTIVENESS OF INTERNAL CONTROL

The ARC considered reports, issued by the various assurance providers taking combined assurance into account, and acknowledges management's efforts to strengthen internal controls. The system of internal control, for the period under review, is considered to have been adequate and effective with the exception of IT Governance and cyber security controls which require a level of enhancement.

QUALITY OF QUARTERLY REPORTS SUBMITTED

The ARC is satisfied with the content and quality of management and quarterly reports prepared and issued during the year under review. The ARC has reviewed and commented on the Annual Financial Statements and reports on performance information and their timely submission to the external auditors by 31 May 2022.

INTERNAL AUDIT FUNCTION

The ARC is responsible for the appointment, compensation, retention, and oversight of the Internal Audit Manager. The Internal Audit function operates within the ambit of the Internal Audit Charter approved by the ARC. The Internal Audit function reports functionally to the ARC and administratively to the Accounting Officer.

The ARC approved a risk-based, three-year rolling Internal Audit Plan in the 2021/22 financial year. The committee is satisfied with the effectiveness and independence of the Internal Audit function. The internal audit function also reported on the overall control environment and fraud hotline activities of the NMISA during the year.

The Internal Audit function completed and covered all planned audits and recommended appropriate remedial actions to management in order to enhance the control environment.

RISK MANAGEMENT FUNCTION

Risk management is embedded in all NIMSA's processes and is driven at all levels of the organisation to ensure the efficient and effective execution of the NIMSA's strategy and achievement of the organisational mandate with minimum disruption and enhanced taking of opportunities.

The ARC is responsible for the oversight of the risk management function. Management reports to the ARC on the management of risks. The ARC is generally satisfied with the maturity of risk management.

The Board is ultimately responsible for the governance of risks in NIMSA and sets the direction for how they should be managed through policies and frameworks. As laid out in the Board-approved risk management framework, the Board ensures that a formal risk assessment is undertaken annually to identify and evaluate key risk areas. The Board also ensures that it continually reviews and forms its own opinion on the effectiveness of the risk management process. The ARC assists the Board in reviewing the risk management process and significant risks facing NMISA.

EVALUATION OF THE FINANCE FUNCTION

The Committee is of the opinion, based on the information and explanations provided by management, as well as the results of audits performed by the internal auditors, and MNB Chartered Accountants, that the financial information provided by management to users of such information is adequate, reliable and accurate.

The quality of in-year reports received from the finance function was adequate. The ARC is satisfied with the adequacy and effectiveness of NMISA's Chief Financial Officer and the finance function.

PERFORMANCE MANAGEMENT

Part of the responsibilities of the ARC includes the review of performance management. The ARC has performed the following functions:

- Reviewed and commented on the alignment of the annual performance plan, budget, strategic plan, and performance agreements
- Reviewed and commented on the relevance of indicators to ensure that they are measurable and relate to functions of NMISA
- Reviewed reported non-compliance with legislation
- Reviewed the quarterly performance reports submitted by the internal audit function
- Reviewed and commented on the performance management system and made recommendations for its improvement.

The ARC is satisfied that the performance report has been prepared in terms of the PFMA, the Treasury Regulations and any other related regulatory requirements for reporting performance.

ACCOUNTING AND AUDITING CONCERNS IDENTIFIED BY INTERNAL AUDIT

There were no accounting and auditing concerns noted or brought to the Committee's attention.

EVALUATION OF THE ANNUAL FINANCIAL STATEMENTS

The ARC has reviewed the Annual Financial Statements. Its review focused on the following:

- Significant financial reporting judgements and estimates contained in the Annual Financial Statements
- Clarity and completeness of disclosures and whether disclosures made have been set properly in context
- Quality and acceptability of, and any changes in, accounting policies and practices
- Compliance with accounting standards and legal requirements
- The basis for the going concern assumption, including any financial sustainability risks and issues

The ARC is comfortable that the Annual Financial Statements have been prepared in terms of Generally Recognised Accounting Practice (GRAP) and the PFMA.

EXTERNAL AUDITOR'S REPORT

The ARC concurs with and accepts the conclusion and audit opinion of the external auditors on the Annual Financial Statements. The committee is of the view that the audited financial statements be accepted and read in conjunction with the report of the external auditors. The ARC confirms that it has been actively involved throughout the audit process.

The external audit function performed by MNB Chartered Accountants is independent of the entity. The ARC has met with the external auditors to ensure that there are no unresolved issues and acknowledges the diligence and cooperation of the external audit team.

We would like to express our appreciation to the Board for their leadership and support, as well as the Chief Executive Officer, Chief Financial Officer, Internal Audit and Management for their commitment and achievement of an unqualified audit opinion.

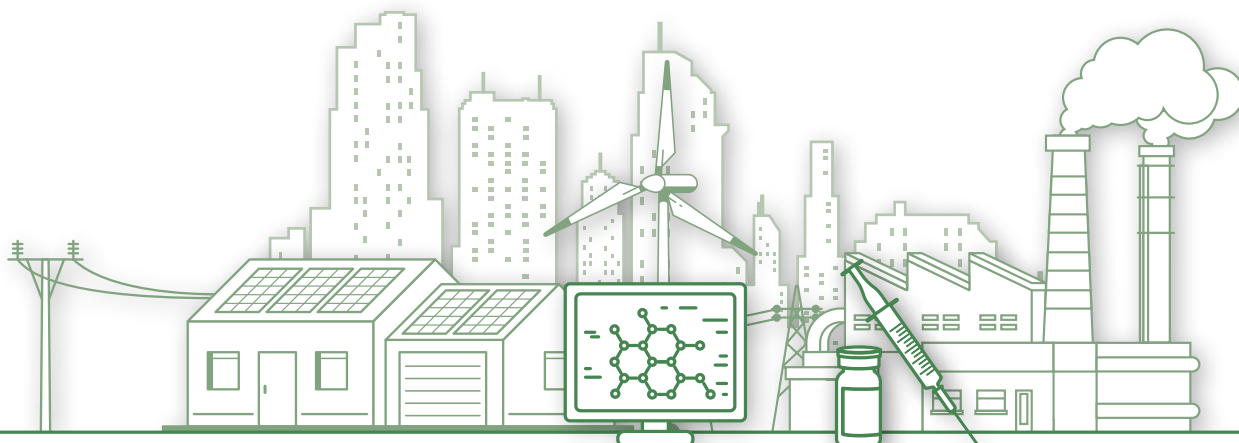
On behalf of the ARC:



Mr Petrus Mohlomi

Audit and Risk Committee Chairperson

31 July 2022



15

B-BBEE COMPLIANCE PERFORMANCE INFORMATION

B-BBEE compliance is reported by the NMISA in terms of Section 13(G)(1) of the Broad-Based Black Economic Empowerment Act, No. 53 of 2003, as amended by Act No. 46 of 2013.

Table 14: B-BBEE Compliance

APPLICATION OF RELEVANT CODE OF GOOD PRACTICE (B-BBEE CERTIFICATE LEVELS 1–8) WITH REGARD TO THE FOLLOWING:		
CRITERIA	RESPONSE	DISCUSSION
Determining qualification criteria for the issuing of licences, concessions or other authorisations in respect of economic activity in terms of any law	No	Not within the NMISA's mandate
Developing and implementing a preferential procurement policy	Yes	The NMISA utilises the Preferential Procurement Policy Framework in determining winning bidders for goods and services above R30 000
Determining qualification criteria for the sale of state-owned enterprises	No	Not within the NMISA's mandate
Developing criteria for entering into partnerships with the private sector	No	Not within the NMISA's mandate
Determining criteria for the award of incentives, grants and investment schemes in support of Broad-Based Black Economic Empowerment	No	The NMISA does, however, employ a prepayment methodology to assist exempted micro enterprises in delivering goods and services procured from them

The NMISA is non-compliant due to the our training interventions not being registered with PSETA and not meeting the target for disabled persons.

Assessment of NMISA's compliance with the B-BBEE codes of good practice will take place in the next financial year and NMISA has added B-BBEE compliance as a KPI in the APP to track performance against this target.

PART D

HUMAN RESOURCE MANAGEMENT



1

INTRODUCTION

1.1 OVERVIEW OF HUMAN RESOURCES MANAGEMENT

Human Resources Management's core function is to source, develop and retain talent to enable the organisation to fulfil its mandate. Key activities for the financial year included workforce planning, recruitment, policy review, performance management framework review, talent management and employee engagement.

With the easing of restrictions brought about by the COVID-19 pandemic, the organisation continued its implementation of flexible working arrangements. A hybrid model was implemented where employees continued working from home while maintaining offices as their primary workstations except where their roles required them to work from the office. Challenges such as power cuts and unreliable internet connections were mitigated by working from the office.

Control measures put in place to ensure the health and safety of employees remained effective and no workplace-acquired COVID-19 cases were reported.

1.2 HUMAN RESOURCES (HR) PRIORITIES FOR 2021/22 AND THEIR IMPACT

Workforce planning and recruitment were prioritised to ensure that the organisation remains well equipped to deliver on its strategic goals and objectives. Key positions that became vacant during the year were filled.

The section also focused on the review of outdated policies to ensure alignment with legislation.

The NMISA continued its focus on training and development through its Human Capital Development (HCD) Programme. Employees and managers attended training in line with their development plans. Newly appointed metrologists attended metrology courses presented by the NMISA through its

newly established Training Centre. Planned collaborations between Human Resources and the Training Centre will allow for more courses to be included, to enhance overall staff development.

1.2.1 Rewards management

No changes were made to other remuneration structures other than monitoring and maintenance of changes made to salary scales after the job evaluation and salary benchmarking that was conducted during the previous reporting period. The organisation continues to manage employee rewards and remuneration through its policy and implementation of a career ladder and pay progression system. Job grading and salary benchmarking that are performed periodically will ultimately help to enhance the NMISA's overall employee offerings.

1.2.2 Employee retention

Staff retention is critical for knowledge-based organisations like the NMISA. The organisation lost key skills during the year under review. The strategies and initiatives put in place will be reviewed to improve employee engagement and retention. The NMISA will continue offering personal and career development opportunities to employees, competitive rewards and recognition offerings, work-life balance initiatives, enhanced organisational and work culture and employee socialisation.

The NMISA will monitor its succession plans to ensure that the organisation has adequate numbers of people with the requisite knowledge, skills and attributes to qualify them to step into vacant senior roles. Through its HCD Programme, the organisation managed to fill numerous positions which became vacant due to resignations and retirement of staff. With continued investment in people through training and development initiatives, internal resourcing has become very beneficial to the organisation.

1.3 WORKFORCE PLANNING FRAMEWORK

Workforce planning involves identifying the organisation's current and future human resource requirements, developing and implementing plans to meet these requirements and monitoring their overall effectiveness. The focus for the reporting period was on the placement of senior management while reviewing workforce plans to ensure that the organisation is adequately resourced to deliver on its mandate. Divisional organograms were reviewed, and are undergoing the approval process. The selection process was concluded for eight senior management positions and successful individuals will assume their new roles at the beginning of the new financial year.

Filling of other vacant positions, created as part of the reorganisation process and movement of employees to new roles, will continue during the new reporting period.

1.4 EMPLOYEE PERFORMANCE MANAGEMENT FRAMEWORK

The Employee Performance Management Framework guides performance planning, facilitation, review, reporting as well as reward and recognition. No changes were made to the framework during the year under review; however, employees' performance contracts were reviewed and realigned with the strategic objectives. Individual KPIs were reviewed and standardised to ensure consistency and fairness at various job levels; the review process is continuing.

KPIs reviewed and approved for implementation:

1. Middle Management
2. Metrology/Technical Roles

1.5 EMPLOYEE WELLNESS PROGRAMMES

A Behavioural Risk Management Survey was conducted for the organisation to better understand individual and overall organisational health and wellness risk factors that could potentially impact on employees and, as a result, hamper organisational effectiveness. A report was submitted to management and the recommendations will be considered when developing an operational plan for implementation during 2022/23. Employee participation was 30 %, and efforts will be made to improve participation during future surveys to ensure an inclusive plan which will help improve organisational health and wellness.

HR, in partnership with the Employee Wellness Programme (EWP) service provider, hosted a virtual wellness day. Health and wellness talks were provided by experts including a medical doctor, legal expert, dietician and a yoga specialist. Despite the COVID-19 restrictions, wellness day was well attended and beneficial to employees.

1.6 POLICY DEVELOPMENT

Although the focus was on policy review as indicated in the preamble, new policies are developed in response to new legislation and to support the organisational strategy.

One new policy was developed, and four policies were reviewed and are still undergoing the approval process.

The following policies were reviewed and approved:

- Remuneration policy
- Code of Conduct/Ethics

1.7 ACHIEVEMENT HIGHLIGHTS

Once again the NMISA celebrated academic achievements attained through its Integrated HCD Programme during the year under review. Amongst those who completed new qualifications were two employees, one a PhD student, and three undergraduate students who completed their degrees during the 2021/22 fiscal year. All four students were offered full-time employment after completion of their studies.



Ms Nompumelelo Leshabane

MSc in Environmental Sciences (with distinction), University of South Africa (Unisa). Her dissertation was focused on the "Development of selected sulphur compounds and oxygenated volatile organic compounds reference gas mixtures for Air Quality Monitoring". Her research produced improved National Measurement Standard for hydrogen sulphide.



Dr Sfiso Khanyile

Doctor of Philosophy (PhD): Physics, Western Cape. The research project was titled: "Silicon nanowires by metal-assisted chemical etching and its incorporation into hybrid solar cells".



Mr Zamokuhle Luthuli

MEng – Mechanical Engineering, University of Stellenbosch (the research topic was "Achieving the traceability of measurements in optical coordinate measurement systems"). Mr Luthuli is currently completing his 'work back' at the NMISA's Length Laboratory



Mr Brighton Ndlovu

Advanced Diploma in Mechanical Engineering, Cape Peninsula University of Technology. Mr Ndlovu is based at the NMISA's Pressure Laboratory



Mr Landile Mdebele

BSc Physics, University of Pretoria

The NMISA will continue to fund further studies for its employees and students in its mission to develop and inspire talent. The organisation's continued success depends on its people.

1.8 HR CHALLENGES

1.8.1 Staff turnover

Staff turnover increased from less than 5 % to 6 %. The organisation lost key skills in the metrology functions and support roles. The NMISA will address these losses through prioritised recruitment for key positions and will continue to improve the employee value proposition.

1.8.2 Delays in filling vacant positions

Delays were experienced in the development of an eRecruitment module as part of the recently implemented ERP system. HR continued to manage recruitment and selection process manually, including screening of job applications. The latter is a huge challenge, especially in the case of internship opportunities where up to 1 000 applications are received. The development of the module is expected to be completed during the first quarter of the 2022/23 reporting period.

1.9 FUTURE HR PLANS/GOALS

In the upcoming year HR will continue reviewing policies and procedures, conclude placement of senior management, facilitate appointment of programme managers who are critical for the implementation of the organisational strategy, and will pursue recruitment to replace lost skills.

HR will also focus on updating the succession plan to properly equip the organisation for present and future needs. Retention strategies and initiatives will be reviewed and enhanced. An employee wellness operational plan will be crafted and implemented to improve overall organisational wellness.

2

HUMAN RESOURCE OVERSIGHT STATISTICS

2.1 PERSONNEL RELATED EXPENDITURE

Table 15: Personnel cost by directorate/business unit

DIRECTORATE/BUSINESS UNIT	TOTAL EXPENDITURE FOR THE ENTITY (R'000)	PERSONNEL EXPENDITURE (R'000)	PERSONNEL EXP. AS A % OF TOTAL EXP. (R'000)	NUMBER OF EMPLOYEES	AVERAGE PERSONNEL COST PER EMPLOYEE (R'000)
CEO's Office	199	3 476	3 %	2	1 738
Strategy, Business Development & Governance	323	10 116	8 %	14	723
Applied Metrology	1 684	5 804	4 %	8	726
Finance and Corporate Services	232 600	23 366	18 %	33	708
Manufacturing Competitiveness and Redefinition of the SI	3 879	26 752	20 %	29	922
Advanced Measurement Solutions and Energy Efficiency	4 522	22 282	17 %	27	825
Quality of Life	146	7 819	6 %	10	782
Reference Materials, Green Economy and Commercial Services	7 420	28 554	21 %	33	865
Research, International and Infrastructure Development	2 153	4 704	4 %	3	1 568
TOTAL	252 926	132 873	100 %	159	836

Table 16: Personnel cost by salary band

SALARY BAND	PERSONNEL EXPENDITURE (R'000)	% OF PERSONNEL EXPENDITURE TO TOTAL PERSONNEL COST	NO. OF EMPLOYEES	AVERAGE PERSONNEL COST PER EMPLOYEE (R'000)
Top Management	14 870	11 %	8	1 859
Senior Management	28 383	21 %	21	1 352
Professional qualified	76 872	58 %	88	874
Skilled	11 629	9 %	37	314
Semi-skilled	1 119	1 %	5	224
Unskilled	0	0 %	0	0
TOTAL	132 873	100 %	159	836

Table 17: Performance rewards

SALARY BAND	PERFORMANCE REWARDS	PERSONNEL EXPENDITURE (R'000)	% OF PERFORMANCE REWARDS TO TOTAL PERSONNEL COST
Top Management	1 423	14 870	8 %
Senior Management	2 574	28 383	10 %
Professional qualified	5 559	76 872	7 %
Skilled	1 235	11 629	11 %
Semi-skilled	124	1 119	11 %
Unskilled	0	0	0
TOTAL	10 915	132 873	8 %

Table 18: Training costs

DIRECTORATE/BUSINESS UNIT	PERSONNEL EXPENDITURE (R'000)	TRAINING EXPENDITURE (R'000)	TRAINING EXPENDITURE AS A % OF PERSONNEL COST	NUMBER OF EMPLOYEES TRAINED	AVERAGE TRAINING COST PER EMPLOYEE (R'000)
Chief Executive Officer	3 476	108	3 %	8	14
Strategy, Business Development & Governance	10 116	320	3 %	13	25
Applied Metrology	5 804	105	2 %	7	15
Finance and Corporate Services	23 366	501	2 %	139	4
Manufacturing Competitiveness and Redefinition of the SI	26 752	330	1 %	27	12
Advanced Measurement Solutions and Energy Efficiency	22 282	302	1 %	27	11
Quality of Life	7 819	52	1 %	11	5
Reference Materials, Green Economy and Commercial Services	28 554	170	1 %	31	5
Research, International and Infrastructure Development	4 704	118	3 %	3	39
TOTAL	132 873	2 006	2 %	266	8

2.2 EMPLOYMENT AND VACANCIES

Table 19: Employment and vacancies

DIRECTORATE/BUSINESS UNIT	2020/2021 NO. OF EMPLOYEES	2021/2022 APPROVED POSTS	2021/2022 NO. OF EMPLOYEES	2021/2022 VACANCIES	FUNDED VACANCIES	% OF FUNDED VACANCIES
Chief Executive Officer	19	2	2	0	0	0 %
Strategy, Business Development & Governance	-	19	14	5	2	11 %
Applied Metrology	-	18	8	4	0	0 %
Finance and Corporate Services	32	46	33	13	0	0 %
Manufacturing Competitiveness and Redefinition of the SI	30	35	29	6	2	6 %
Advanced Measurement Solutions and Energy Efficiency	24	38	27	11	2	5 %
Quality of Life	11	12	10	2	1	8 %
Reference Materials, Green Economy and Commercial Services	32	40	33	7	2	5 %
Research, International and Infrastructure Development	7	19	3	22	0	0 %
TOTAL	155	229	159	70	9	4 %

2.3 EMPLOYMENT CHANGES

Table 20: Employment changes by salary band

SALARY BAND	EMPLOYMENT AT BEGINNING OF PERIOD	APPOINTMENTS	TERMINATIONS	PROMOTIONS	EMPLOYMENT AT END OF THE PERIOD
Top Management	7	1	0	0	8
Middle Management	22	0	0	1	21
Professional qualified	93	2	7	0	88
Skilled	29	10	2	0	37
Semi-skilled	5	0	0	0	5
Unskilled	0	0	0	0	0
TOTAL	155	13	9	1	159

Table 21: Reasons for staff leaving

REASON	NUMBER	% OF TOTAL NO. OF STAFF LEAVING
Death	0	0 %
Resignation	9	82 %
Dismissal	0	0 %
Retirement	2	18 %
Ill health	0	0 %
Expiry of contract	0	0 %
Other	0	0 %
TOTAL	11	100 %

Table 22: Labour relations: misconduct and disciplinary action

NATURE OF DISCIPLINARY ACTION	NUMBER
Verbal warning	1
Written warning	1
Final written warning	0
Dismissal	0

2.4 EQUITY TARGET AND EMPLOYMENT EQUITY STATUS

Table 23: Male staff by salary band

SALARY BAND	MALE									
	AFRICAN		COLOURED		INDIAN		WHITE		FOREIGN NATIONALS	
	CURRENT	TARGET	CURRENT	TARGET	CURRENT	TARGET	CURRENT	TARGET	CURRENT	TARGET
Top Management	3	3	0	0	1	0	2	2	0	0
Senior Management	0	0	0	0	0	0	0	0	0	0
Middle Management	7	7	0	0	1	2	4	4	0	0
Professional qualified	40	40	3	3	2	2	9	12	3	4
Skilled	10	10	0	0	0	0	0	0	0	0
Semi-skilled	3	3	0	0	0	0	0	0	0	0
Unskilled	0	0	0	0	0	0	0	0	0	0
TOTAL	63	63	3	3	4	4	15	18	3	4

Table 24: Female staff by salary band

SALARY BAND	FEMALE									
	AFRICAN		COLOURED		INDIAN		WHITE		FOREIGN NATIONALS	
	CURRENT	TARGET	CURRENT	TARGET	CURRENT	TARGET	CURRENT	TARGET	CURRENT	TARGET
Top Management	0	1	0	0	0	0	2	2	0	0
Senior Management	0	0	0	0	0	0	0	0	0	0
Middle Management	5	6	0	0	0	0	3	3	0	0
Professional qualified	21	23	2	3	0	0	16	18	1	1
Skilled	18	18	0	1	1	1	0	0	0	0
Semi-skilled	2	2	0	0	0	0	0	0	0	0
Unskilled	0	0	0	0	0	0	0	0	0	0
TOTAL	46	50	2	4	1	1	21	23	1	1

Table 25: Disabled staff by salary band

LEVELS	DISABLED STAFF			
	MALE		FEMALE	
	CURRENT	TARGET	CURRENT	TARGET
Top Management	0	0	0	0
Senior Management	0	0	0	0
Professional qualified	0	0	0	0
Skilled	1	1	0	0
Semi-skilled	1	0	0	0
Unskilled	0	0	0	0
TOTAL	2	1	0	0

PART E | FINANCIAL INFORMATION



1

GENERAL INFORMATION

COUNTRY OF INCORPORATION AND DOMICILE

South Africa

BOARD MEMBERS

Ms Jabu Mogadime (Chairperson)
Dr Tshenge Demana (**the dtic** representative)
Ms Lindie Lankalebalelo
Ms Nobom Gcinashe Mfabana
Mr Molelekoa Petrus Mohlomi
Mr Ndwakhulu Mukhufhi

BUSINESS ADDRESS

Meiring Naude Road
Brummeria
Pretoria
0040

POSTAL ADDRESS

Private Bag X34
Lynnwood Ridge
0040

BANKERS

Standard Bank
Lynnwood Bridge

AUDITORS

MNB Chartered Accountants
Chartered Accountants (S.A.)
Registered Auditors

COMPANY SECRETARY

Busisiwe Mkhize

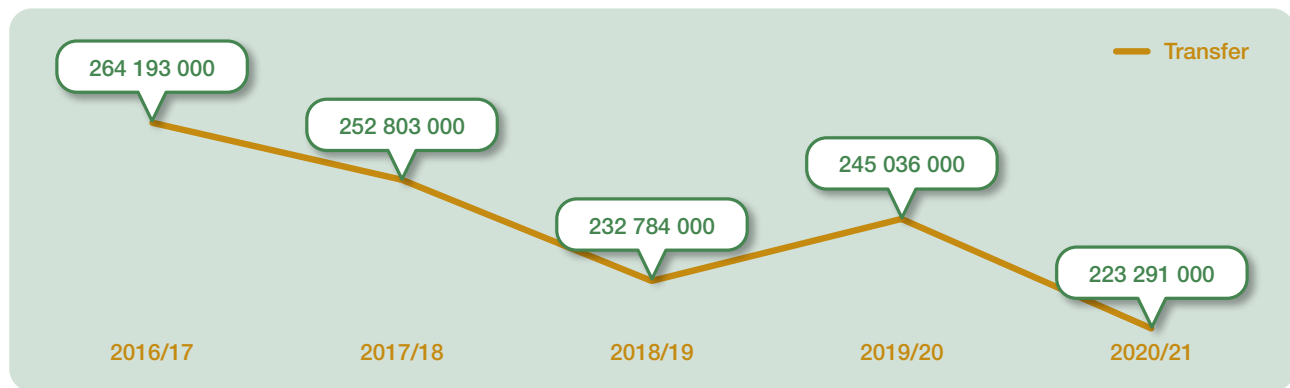
2

CFO's REPORT

2.1 OVERVIEW OF FINANCIAL PERFORMANCE

NMISA's main source of revenue is the transfer/allocation received from **the dtic**. Due to financial constraints on the fiscus, NMISA's allocation has declined for five consecutive financial years, both in nominal and real terms, as indicated in Figure 26.

Figure 2: Transfers received from 2016 to 2021



The organisation has, over the past ten years, grown in size and strategic impact, thus the decline in allocation has resulted in significant financial distress. The baseline funding received for operations does not cover the bill for compensation of employees which has increased as a percentage of the total budget in line with the strategic direction of the organisation.

The decline in allocation, coupled with the organisations' growth in size and strategic impact, have dictated the need for external revenue generation activities to enhance sustainability in the short, medium, and long terms. Spending focus in the review period was on maintenance and improvement of existing standards, development of new measurement standards, equipment and improvements for outdated facilities and infrastructure to support the NMS. This was performed congruently with increased compensation and continuous development of employees, both in the support and technical functions.

2.2 REVENUE

NMISA has three sources of revenue: transfer received from **the dtic**, revenue from the rendering of services, and interest income. The transfer received from **the dtic** of R262 million (2021: R223 million) represents 91 % (2021: 90 %) of total revenue.

Table 26: Revenue from all sources

SOURCES OF REVENUE	2022			2021		
	BUDGET	ACTUAL AMOUNT	(OVER)/UNDER COLLECTION	BUDGET	ACTUAL AMOUNT	(OVER)/UNDER COLLECTION
Transfer revenue	261 716 000	261 716 000	-	223 291 000	223 291 000	-
Rendering of services	24 994 554	18 700 997	6 293 557	19 466 680	14 833 737	4 632 943
Interest received	6 171 740	8 422 725	(2 250 985)	13 000 000	8 694 342	4 305 658
Other income	-	117 028	(117 028)	-	162 449	(162 449)
Donations received	-	-	-	-	40 347	(40 347)
	292 882 294	288 956 750	3 925 544	255 757 680	247 021 875	8 735 805

The services on offer vary, from calibrations, reference measurements/material, and training/consulting, to sponsorships.

It is expected that the enactment of the revised Measurement Act, together with increased compliance regulations by the relevant regulators, will result in a marked increase in the requirement for NMISA's services by the industry at large. Although the budget was not achieved, the significant improvement from the previous financial year is a positive sign, indicating a modest recovery from levels experienced during the COVID-19 pandemic. The medium-term revenue generation strategy is expected to yield noticeable revenue increases from the rendering of services – equivalent to at least 15 % of transfers received.

2.3 EXPENDITURE

The success of the modernisation of NMISA and shortening the traceability chain for Africa is dependent on a skilled, competent, transformed workforce and scarce skills transfer from retiring scientists to younger experienced scientists. For this reason, compensation of employees constitutes 52 % (2021: 56 %) of total expenditure. An analysis of other National Metrology Institutes clearly indicates the current focus, namely investing more funds in development activities towards the improvement of existing standards and facilitating the development of new measurement standards that addresses emerging international needs and trends. However this need is exacerbated by technological advances creating a doubling of accuracy requirements within ten years, together with scientific inflation being well above 10 %.

The recent international "Revision of the SI" together with some of the derived units, has necessitated that NMISA invest in new equipment and a capable workforce to perform the necessary scientific work. These developments are at times done as projects with international partners over an extended period, further emphasizing the need for succession planning, multiple technical signatories and the extension of the Human Capital Development Programme.

The capital allocation from **the dtic**, received to cover the recapitalisation and modernisation of the entity, is used to cover multiple requirements, some of which do not meet the GRAP capital definition as they are allocated from a cash basis. NMISA considers this allocation from **the dtic** as a transfer and subsidy and not part of the budget vote allocation. NMISA, in line with its mandate to maintain and disseminate the National Measurement Standards (NMS) uses all funding received for this purpose. The NMS are inclusive of infrastructure, equipment, and the resultant maintenance plan, as well as increased, transformed and capable human capital to ensure that NMISA and the nation keep abreast and support continental and international developments.

Thus, NMISA has had to strike a balance between the required capital investment and the need to offset this against the appointment and maintenance of a capable workforce to perform the scientific work and implement the ambitious strategy as approved by the Board and **the dtic**.

The increase in depreciation and amortisation is mainly due to an increase in the asset book value. Other operating expenditure amounted to R64 million (2021: R57 million) and is in line with budgeted expenditure. From a GRAP perspective the amount fluctuates based on the delivery of equipment purchased as determined by the cash balance available.

2.4 WORKING CAPITAL

The high cash balance is required for payment of the reported commitments for goods and services that have yet to be delivered (see Commitments below). Trade receivables have remained fairly stable at R7 million. The high balance is largely attributable to government departments which make normal recovery processes difficult; however, the NMISA is in constant communication with them regarding recovery of outstanding balances. The trade payables balance of R20 million (2021: R13 million) has increased due to several large deliveries of capital assets made in March, whose invoices were not yet due at year end. The provisions are related to employee-related expenses and fluctuate based on compensation needs, leave, resignation or bonuses.

2.5 CAPITAL INVESTMENT

In line with its strategic objectives, NMISA continues with the ongoing process of recapitalising and modernisation of the NMI infrastructure through the replacement of aged and obsolete equipment. This has resulted in an increase in the net book value of fixed assets from R128 million since 2014 to R531 million in the current financial year.

2.6 COMMITMENTS

NMISA procures equipment that is technically specialised, custom made or assembled to order according to specification, mostly from international manufacturers or NMIs. The delivery lead times for this equipment vary from five (5) to more than 12 months. This has a resultant impact in that funds need to be rolled over from year to year in the form of commitments. The commitments reported in the current financial year amount to R108 million (2021: R145 million), with 90 % (2021: 91 %) committed to capital expenditure. Planning in terms of procurement is done well in advance to reduce the commitments at the end of the financial year; however, the nature of the NMISA's environment renders it difficult to conclude all procurement in a single year. Although further improvements to the NMISA's balance were expected in the current financial year, the situation in fact worsened slightly due to supply chain disruptions during the COVID-19 pandemic.

2.7 SUPPLY CHAIN MANAGEMENT OVERVIEW

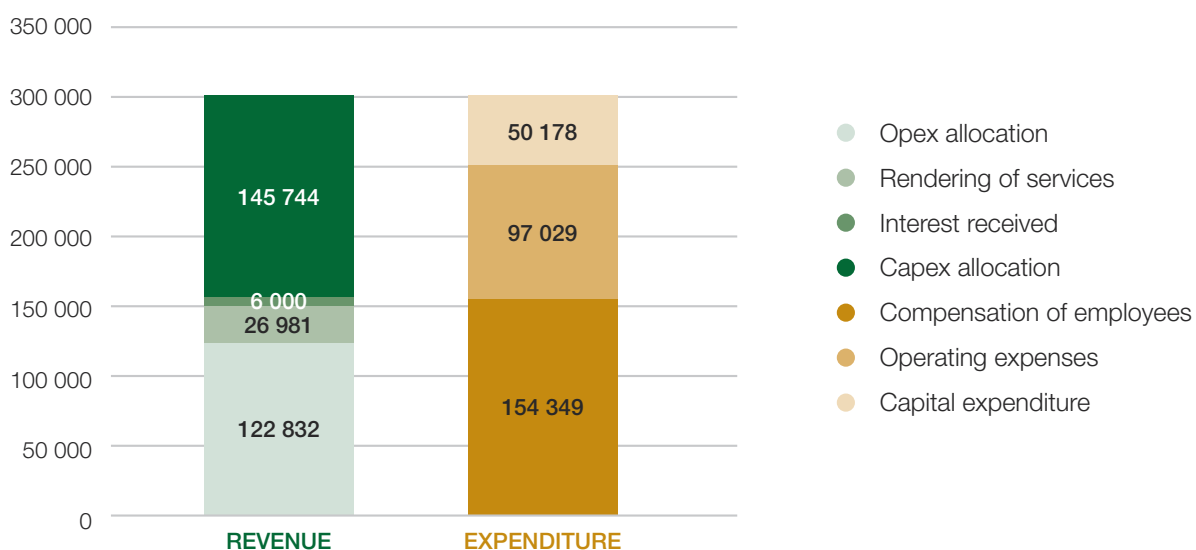
The Supply Chain Management Unit is strategically positioned for service delivery to the institute through the procurement of NMS equipment, property and infrastructure, facilities management, and general goods and services. The unit is extending its focus on logistics services to ensure effective management of the movement of NMS equipment, both internally and for clients, in support of the NMISA's calibration services. NMISA continues to have strong controls to curb irregular and fruitless and wasteful expenditure.

2.8 FINANCIAL OUTLOOK

As a result of the reduction in grant funding from the fiscus, the financial sustainability of NMISA in the medium to long term is impacted. Furthermore, strides made in the current and previous financial years to increase external revenue generation have been negatively impacted by COVID-19.

The revenue sources of the institute need to cover all capital and operational costs on a year-to-year basis. Figure 3 reflects financial projections for the 2022/23 financial year.

Figure 3: Revenue and expenditure forecast 2023



The institute is trading as a going concern and will continue to receive grant funding from **the dtic** over the Medium Term Expenditure Framework (MTEF). **The dtic** has previously confirmed that the capital/recapitalisation allocation will be provided for the next 20 years towards construction of a new campus. However, since the entity cannot borrow, a new approach will be needed to cater for both operational sustainability and infrastructure requirements.

Given the difficult operating environment, NMISA has strategically focused on how different potential revenue sources can be exploited in order to reposition itself. This exciting and fundamental switch to an impactful client-focused enterprise will take time to implement in a manner that will be sustainable in the long term, but improvements are already evident. An example is the establishment of the Strategy and Business Development Unit, managed by an executive director. This will enhance the revenue-generation capability of NMISA to support operations and the maintenance of new equipment purchased. It will also ensure long-term sustainability and that the NMISA remains at the cutting-edge of measurement science, thereby fulfilling its mandate in support of industry and government programmes.



Mr Mogau Sehlapelo CA(SA)

Chief Financial Officer: NMISA

3

REPORT OF THE EXTERNAL AUDITOR

INDEPENDENT AUDITOR'S REPORT TO PARLIAMENT ON THE NATIONAL METROLOGY INSTITUTE OF SOUTH AFRICA

REPORT ON THE AUDIT OF THE FINANCIAL STATEMENTS

Opinion

1. We have audited the financial statements of the National Metrology Institute of South Africa (NMISA) set out on pages 79 to 108 which comprise the statement of financial position as at 31 March 2022, the Statement of Financial Performance, Statement of Changes in Net Assets, Cash Flow Statement and Statement of Comparison of Budget Information with Actual Amounts for the year then ended, as well as notes to the financial statements, including a summary of significant accounting policies.
2. In our opinion, the financial statements present fairly, in all material respects, the financial position of the National Metrology Institute as of 31 March 2022, and its financial performance and cash flows for the year then ended in accordance with Generally Recognised Accounting Practice (GRAP) and the requirements of the Public Finance Management Act 1 of 1999 (PFMA).

Context for the opinion

3. We conducted our audit in accordance with the International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the financial statements section of our report.
4. We are independent of the NMISA in accordance with Independent Regulatory Board for Auditors' *Code of Professional Conduct for Auditors* (IRBA Code) and other independence requirements applicable to performing audits of financial statements in South Africa. We have fulfilled our other ethical responsibilities in accordance with the IRBA Code and in accordance with other ethical requirements applicable to performing audits in South Africa. The IRBA Code is consistent with the corresponding sections of the International Ethics Standards Board for Accountants' *International Code of Ethics for Professional Accountants (Including International Independence Standards)*.
5. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of the Accounting Authority for the financial statements

6. The Board of Directors, which constitutes the Accounting Authority, is responsible for the preparation and fair presentation of the financial statements in accordance with GRAP and the requirements of the PFMA, and for such internal control as the Accounting Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.
7. In preparing the financial statements, the Accounting Authority is responsible for assessing the public entity's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless the Accounting Authority either intends to liquidate the public entity or to cease operations, or has no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

8. Our objectives are to obtain reasonable assurance about whether the 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 the 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 aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.
9. A further description of our responsibilities for the audit of the financial statements is included in the annexure to this auditor's report.

REPORT ON THE AUDIT OF THE ANNUAL PERFORMANCE REPORT

Introduction and scope

10. In accordance with the Public Audit Act 25 of 2004 (PAA) and the general notice issued in terms thereof, we have a responsibility to report on the usefulness and reliability of the reported performance information against predetermined objectives for selected objectives presented in the annual performance report. We performed procedures to identify material findings but not to gather evidence to express assurance.
11. Our procedures address the usefulness and reliability of the reported performance information, which must be based on the public entity's approved performance planning documents. We have not evaluated the completeness and appropriateness of the performance indicators included in the planning documents. Our procedures do not examine whether the actions taken by the public entity enabled service delivery. Our procedures do not extend to any disclosures or assertions relating to the extent of achievements in the current year or planned performance strategies and information in respect of future periods that may be included as part of the reported performance information. Accordingly, our findings do not extend to these matters.
12. We evaluated the usefulness and reliability of the reported performance information in accordance with the criteria developed from the performance management and reporting framework, as defined in the general notice, for the following selected objective presented in the public entity's annual performance report for the year ended 31 March 2022:

OBJECTIVE	PAGES IN THE ANNUAL PERFORMANCE REPORT
Objective 1 – Shorten the traceability chain for Africa by maintaining the units and NMS at an internationally recognised level	24

13. We performed procedures to determine whether the reported performance information was properly presented and whether performance was consistent with the approved performance planning documents. We performed further procedures to determine whether the indicators and related targets were measurable and relevant, and assessed the reliability of the reported performance information to determine whether it was valid, accurate and complete.

Objective 1 – Shorten the traceability chain for Africa by maintaining the units and NMS at an internationally recognised level

14. We did not identify any material findings on the usefulness and reliability of the reported performance information for the objective.

REPORT ON THE AUDIT OF COMPLIANCE WITH LEGISLATION

Introduction and scope

15. In accordance with the PAA and the general notice issued in terms thereof, we have a responsibility to report material findings on the public entity's compliance with specific matters in key legislation. We performed procedures to identify findings but not to gather evidence to express assurance.
16. We did not identify any material findings on compliance with the specific matters in key legislation set out in the general notice issued in terms of the PAA.

OTHER INFORMATION

17. The Accounting Authority is responsible for the other information. The other information comprises the information included in the Annual Report, which includes forewords by the Minister, Chairperson and Chief Executive Officer's Overview. The other information does not include the financial statements, the auditor's report and those selected objectives presented in the annual performance report that have been specifically reported in this auditor's report.
18. Our opinion on the financial statements and my findings on the reported performance information and compliance with legislation do not cover the other information and we do not express an audit opinion or any form of assurance conclusion on it.
19. In connection with our audit, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements and the selected objectives presented in the annual performance report, or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

INTERNAL CONTROL DEFICIENCIES

20. We considered internal control relevant to our audit of the (consolidated and separate) financial statements, reported performance information and compliance with applicable legislation; however, our objective was not to express any form of assurance on it.

AUDITOR TENURE

21. In terms of the IRBA rule published in Government gazette number 39475 dated 4 December 2015, we report that MNB Chartered Accountants firm has been the auditor of National Metrology Institute of South Africa for five months.

MNB Chartered Accountants Inc.

MNB Chartered Accountants inc.

Engagement Partner: Wisani Shirinda, CA (SA), RA

Chartered Accountant (SA) and Registered Auditors (RA)

29 July 2022

38 Boerneef Street

Vorna Valley

Midrand

1686

4

ANNUAL FINANCIAL STATEMENTS

INDEX

The reports and statements set out below comprise the Annual Financial Statements presented to the Department of Trade, Industry and Competition (**the dtic**):

	PAGE
STATEMENT OF FINANCIAL POSITION	79
STATEMENT OF FINANCIAL PERFORMANCE	80
STATEMENT OF CHANGES IN NET ASSETS	81
CASH FLOW STATEMENT	82
STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS	83
ACCOUNTING POLICIES	84
NOTES TO THE ANNUAL FINANCIAL STATEMENTS	94



Mr Mogau Sehlapelo

Chief Financial Officer: NMISA

Date: 31 May 2022



Mr Ndwakhulu Mukhufhi

Chief Executive Officer: NMISA

Date: 31 May 2022

STATEMENT OF FINANCIAL POSITION

AS AT 31 MARCH 2022

Figures in Rand	Note(s)	2022	2021
Assets			
Current assets			
Inventories	7	9 128 731	8 185 039
Receivables from exchange transactions	8	6 779 185	6 693 410
Prepayments	6	40 545 248	35 963 024
Cash and cash equivalents	9	134 643 680	144 880 407
		191 096 844	195 721 880
Non-current assets			
Property, plant and equipment	3	530 544 039	486 654 274
Intangible assets	4	1 766 651	1 358 742
Receivables from exchange transactions	8	2 890 147	605 419
Prepayments	6	809 593	916 566
		536 010 430	489 535 001
Total assets		727 107 274	685 256 881
Liabilities			
Current liabilities			
Payables from exchange transactions	5	20 068 432	12 930 162
Provisions and contingencies	10	14 289 285	14 992 228
Total liabilities		34 357 717	27 922 390
Net assets			
Accumulated surplus		692 749 557	657 334 491
Total net assets		692 749 557	657 334 491

STATEMENT OF FINANCIAL PERFORMANCE

FOR THE YEAR ENDED 31 MARCH 2022

Figures in Rand	Note(s)	2022	2021
Revenue			
Revenue from exchange transactions			
Rendering of services		18 700 997	14 833 737
Other income		-	162 449
Interest received - investment		8 422 725	8 694 342
Gain on disposal of assets		117 028	-
Total revenue from exchange transactions		27 240 750	23 690 528
Revenue from non-exchange transactions			
Transfer revenue			
Transfer from controlling entity		261 716 000	223 291 000
Donations received		-	40 347
Total revenue from non-exchange transactions		261 716 000	223 331 347
Total revenue	11	288 956 750	247 021 875
Expenditure			
Employee related costs	12	(132 872 510)	(133 123 200)
Depreciation and amortisation		(43 733 270)	(41 114 512)
Repairs and maintenance		(10 588 131)	(6 452 334)
Credit losses on receivables	13	(1 164 818)	(347 589)
General expenses	14	(64 313 303)	(57 541 439)
Loss on disposal of assets		-	(46 654)
Loss on foreign exchange		(869 652)	(253 714)
Impairments loss		-	(672 758)
Total expenditure		(253 541 684)	(239 552 200)
Surplus for the year		35 415 066	7 469 675

STATEMENT OF CHANGES IN NET ASSETS

FOR THE YEAR ENDED 31 MARCH 2022

Figures in Rand	Accumulated surplus/deficit	Total net assets
Balance at 1 April 2020	649 864 816	649 864 816
Changes in net assets		
Surplus for the year	7 469 675	7 469 675
Total changes	7 469 675	7 469 675
Balance at 1 April 2021	657 334 491	657 334 491
Changes in net assets		
Surplus for the year	35 415 066	35 415 066
Total changes	35 415 066	35 415 066
Balance at 31 March 2022	692 749 557	692 749 557

CASH FLOW STATEMENT

FOR THE YEAR ENDED 31 MARCH 2022

Figures in Rand	Note(s)	2022	2021
Cash flows from operating activities			
Receipts			
Rendering of services		17 816 401	16 421 003
Transfer from controlling entity		261 716 000	223 291 000
Interest received		8 422 725	8 694 342
Other income		-	162 449
Donations received		-	40 347
		287 955 126	248 609 141
Payments			
Employee related expenses		(133 126 886)	(132 877 261)
Suppliers		(77 151 051)	(81 803 108)
		(210 277 937)	(214 680 369)
Net cash flows from operating activities	15	77 677 189	33 928 772
Cash flows from investing activities			
Purchase of property, plant and equipment	3	(86 503 021)	(50 690 384)
Proceeds from sale of property, plant and equipment	3	158 023	720
Purchase of intangible assets	4	(1 568 917)	(858 689)
Net cash flows from investing activities		(87 913 915)	(51 548 353)
Net increase/(decrease) in cash and cash equivalents		(10 236 726)	(17 619 581)
Cash and cash equivalents at the beginning of the year		144 880 407	162 499 988
Cash and cash equivalents at the end of the year	9	134 643 680	144 880 407

The accounting policies on pages 84 to 93 and the notes on pages 94 to 108 form an integral part of the Annual Financial Statements.

STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS FOR THE YEAR ENDED 31 MARCH 2022

BUDGET ON MODIFIED CASH BASIS

Figures in Rand	Approved budget	Adjustments	Final budget	Actual	% Difference between final budget and actual	Reference
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Statement of Financial Performance

Revenue

Revenue from exchange transactions

Rendering of services	24 994 554	-	24 994 554	18 700 997	25 %	25.1
Interest received – Investment	6 171 740	-	6 171 740	8 422 725	-36 %	25.2
Gains on disposal of assets	-	-	-	117 028		25.8
Total revenue from exchange transactions	31 166 294	-	31 166 294	27 240 750	13 %	

Revenue from non-exchange transactions

Transfer revenue

Transfer from controlling entity	261 716 000	-	261 716 000	261 716 000		
Total revenue	292 882 294	-	292 882 294	288 956 750	1 %	

Expenditure

Employee related costs	(149 439 756)	-	(149 439 756)	(132 872 510)	11 %	25.3
Depreciation and amortisation	-	-	-	(43 733 270)		25.8
Credit losses on receivables	-	-	-	(1 164 818)		25.8
Repairs and maintenance	(8 113 111)	(142 000)	(8 255 111)	(10 588 131)	-28 %	25.4
General expenses	(77 316 927)	142 000	(77 174 927)	(64 313 303)	17 %	25.5
Loss on foreign exchange	(250 000)	-	(250 000)	(869 652)	-248 %	25.6
Total expenditure	(235 119 794)	-	(235 119 794)	(253 541 684)	-8 %	
Capital expenditure	(57 762 500)	-	(57 762 500)	(88 071 938)	-52 %	25.7
Deficit	-	-	-	(52 656 872)		

Reconciliation

Format and classification differences

Property, plant and equipment				86 503 021		
Intangible assets				1 568 917		
Actual amount in the Statement of Financial Performance				35 415 066		

ACCOUNTING POLICIES

1. PRESENTATION OF ANNUAL FINANCIAL STATEMENTS

The Annual Financial Statements have been prepared in accordance with the Standards of Generally Recognised Accounting Practice (GRAP) including any interpretations, guidelines and directives, issued by the Accounting Standards Board in accordance with Section 91(1) of the Public Finance Management Act, No. 1 of 1999, as amended.

These Annual Financial Statements have been prepared on an accrual basis of accounting and are in accordance with historical cost convention as the basis of measurement, unless specified otherwise. They are presented in South African Rand, which is NMISA's functional currency. Amounts in the financial statements are rounded to the nearest Rand.

A summary of the significant accounting policies, which have been consistently applied in the preparation of these Annual Financial Statements, are disclosed below.

These accounting policies are consistent with the previous period.

1.1 Going concern assumption

These Annual Financial Statements have been prepared based on the expectation that the entity will continue to operate as a going concern for at least the next 12 months.

1.2 Significant judgements and sources of estimation uncertainty

In preparing the Annual Financial Statements, management is required to make estimates and assumptions that affect the amounts represented in the Annual Financial Statements and related disclosures. Use of available information and the application of judgement is inherent in the formation of estimates. Actual results in the future could differ from these estimates which may be material to the Annual Financial Statements. Significant judgements include: allowance/provision for doubtful debts, provision for cost of living adjustments, useful life of assets and impairment of assets.

Impairment testing

The recoverable amounts of cash-generating units and individual assets have been determined based on the value-in-use calculations. These calculations require the use of estimates and assumptions. It is reasonably possible that the value-in-use assumption may change which may then impact our estimations and may then require a material adjustment to the carrying value of tangible assets.

The entity reviews and tests the carrying value of assets when events or changes in circumstances suggest that the carrying amount may not be recoverable. If there are indications that impairment may have occurred, estimates are made for value-in-use. The entity assesses its financial assets carried at amortised cost for impairment at each reporting date. In determining whether an impairment loss should be recorded in surplus or deficit, the entity makes judgements as to whether there is observable data indicating a measurable decrease in the estimated future cash flow from a financial asset.

Provisions

Provisions were raised and management determined an estimate based on the information available. Additional disclosure of these estimates of provisions are included in note 10 – Provisions.

1.2 Significant judgements and sources of estimation uncertainty (continued)

Useful lives and residual values of property, plant and equipment

Management made certain estimates with regard to the determination of estimated useful lives and residual values of items of property, plant and equipment. An annual assessment and review of estimated useful lives and residual values is performed and any significant change is accounted for as a change in accounting estimate in accordance with GRAP 3.

Estimates involve judgement based on recently available, reliable information and therefore an estimate may change as new information becomes known, circumstances change or more experience is obtained. The entity recognises the effect of changes in accounting estimates prospectively, by including the effects in surplus or deficit in the period of the change if the change affects that period only or in the period of the change and future periods, if the change affects both.

Allowance for doubtful debts

On debtors an impairment loss is recognised in surplus and deficit when there is objective evidence that it is impaired. NMISA estimates the level of provision required for doubtful debts on an ongoing, basis based on historical experience, as well as other specific relevant factors.

1.3 Property, plant and equipment

Property, plant and equipment are tangible non-current assets (including infrastructure assets) that are held for use in the production or supply of goods or services, rental to others, or for administrative purposes, and are expected to be used during more than one period.

The cost of an item of property, plant and equipment is recognised as an asset when:

- it is probable that future economic benefits or service potential associated with the item will flow to the entity; and
- the cost of the item can be measured reliably.

Property, plant and equipment is initially measured at cost.

The cost of an item of property, plant and equipment is the purchase price and other costs attributable to bring the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Trade discounts and rebates are deducted in arriving at the cost.

Where an asset is acquired through a non-exchange transaction, its cost is its fair value as at date of acquisition.

When significant components of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Property, plant and equipment is carried at cost less accumulated depreciation and any impairment losses.

Property, plant and equipment are depreciated on the straight-line basis over their expected useful lives to their estimated residual value.

The useful lives of items of property, plant and equipment have been assessed as follows:

ITEM	DEPRECIATION METHOD	USEFUL LIFE IN YEARS
Plant and equipment	Straight-line	7 to 20
Furniture and fixtures	Straight-line	7
Motor vehicles	Straight-line	7 to 10
Office equipment	Straight-line	5
Leasehold improvements	Straight-line	<Lease period/Useful life

The cost of leasehold improvements is depreciated over the shorter of the lease period or the useful life.

1.3 Property, plant and equipment (continued)

The entity assesses at each reporting date whether there is any indication that the entity expectations about the residual value and the useful life of an asset have changed since the preceding reporting date. If any such indication exists, the entity revises the expected useful life and/or residual value accordingly. The change is accounted for as a change in an accounting estimate.

Parts of some items of property, plant, and equipment may require replacement at regular intervals, the cost of replacing parts of such items is capitalised if the recognition criteria is met. The carrying amount of those parts that are replaced is derecognised in accordance with the derecognition provisions.

The depreciation charge for each period is recognised in surplus or deficit unless it is included in the carrying amount of another asset.

Items of property, plant and equipment are derecognised when the asset is disposed of or when there are no further economic benefits or service potential expected from the use of the asset.

The gain or loss arising from the derecognition of an item of property, plant and equipment is included in surplus or deficit when the item is derecognised. The gain or loss arising from the derecognition of an item of property, plant and equipment is determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

The entity separately discloses expenditure to repair and maintain property, plant and equipment in the notes to the financial statements.

1.4 Intangible assets

An asset is identifiable if it either:

- is separable, i.e. is capable of being separated or divided from an entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable assets or liability, regardless of whether the entity intends to do so; or
- arises from binding arrangements (including rights from contracts), regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

An intangible asset is recognised when:

- it is probable that the expected future economic benefits or service potential that are attributable to the asset will flow to the entity; and
- the cost or fair value of the asset can be measured reliably.

Intangible assets are initially recognised at cost. The cost of intangible assets is the purchase price and other costs attributable to bring the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Trade discounts and rebates are deducted in arriving at the cost.

Intangible assets are carried at cost less any accumulated amortisation and any impairment losses.

The amortisation period and the amortisation method for intangible assets are reviewed at each reporting date.

Internally generated brands, mastheads, publishing titles, customer lists and items similar in substance are not recognised as intangible assets.

Amortisation is provided to write down the intangible assets, on a straight-line basis, to their residual values as follows:

ITEM	DEPRECIATION METHOD	USEFUL LIFE IN YEARS
Computer software	Straight-line	2

1.4 Intangible assets (continued)

Intangible assets are derecognised:

- on disposal; or
- when no future economic benefits or service potential are expected from its use or disposal.

The gain or loss arising from the derecognition of intangible assets is included in surplus or deficit when the asset is derecognised. The gain or loss arising from derecognition of an intangible asset is determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

1.5 Financial instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or a residual interest of another entity.

A financial asset is:

- cash;
- a residual interest of another entity; or
- a contractual right to:
 - receive cash or another financial asset from another entity; or
 - exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity.

A financial liability is any liability that is a contractual obligation to:

- deliver cash or another financial asset to another entity; or
- exchange financial assets or financial liabilities under conditions that are potentially unfavourable to the entity.

Classification

The entity has the following types of financial assets (classes and category) as reflected on the face of the Statement of Financial Position or in the notes thereto:

Class	Category
Receivables	Receivables from exchange transactions
Bank balances	Cash and cash equivalents

The entity has the following types of financial liabilities (classes and category) as reflected on the face of the Statement of Financial Position or in the notes thereto:

Class	Category
Payables	Payables from exchange transactions

Initial measurement of financial assets and financial liabilities

The entity measures a financial asset and financial liability at its fair value plus transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability.

Subsequent measurement of financial assets and financial liabilities

Financial assets and liabilities are measured at amortised cost after initial recognition.

1.5 Financial instruments (continued)

Financial assets

NMISA's principal financial assets are receivables from exchange transactions, and cash and cash equivalents. Receivables from exchange transactions are classified as financial assets at amortised cost, a provision for impairment of trade receivables is established when there is objective evidence that the entity will not be able to collect amounts due according to the original terms of receivables. Cash and cash equivalents comprise deposits held on call with banks and are classified as financial assets at amortised cost.

Impairment and uncollectability

The entity assesses at the end of each reporting period, whether there is any objective evidence that a financial asset or group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a loss event) and that loss event (or events) has an impact on the estimated future cash flow of the financial asset or group of financial assets that can be reliably estimated.

It may not be possible to identify a single, discrete event that caused the impairment since it may have been the combined effect of several events that did so. Losses expected as a result of future events, no matter how likely, are not recognised. The entity first assesses whether objective evidence of impairment exists individually for financial assets that are individually significant, and then follows a portfolio approach with the remaining financial assets. The impairment loss estimates equal the best estimates within a range of long outstanding assets with similar credit risk characteristics.

If there is objective evidence that an impairment loss on financial assets, measured at amortised cost, was incurred the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flow (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The carrying amount of the asset is reduced directly through the use of an allowance account. The amount of the loss is recognised in surplus or deficit.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed directly or by adjusting an allowance account. The reversal does not result in a carrying amount of the financial asset that exceeds what the amortised cost would have been had the impairment not been recognised at the date the impairment is reversed. The amount of the reversal is recognised in surplus or deficit.

The entity derecognises a financial asset when:

- the contractual rights to the cash flow from the financial asset expire, are settled or waived;
- the entity transfers to another party substantially all of the risks and rewards of ownership of the financial asset; or
- the entity, despite having retained some significant risks and rewards of ownership of the financial asset, has transferred control of the asset to another party and the other party has the practical ability to sell the asset in its entirety to an unrelated third party and is able to exercise that ability unilaterally and without needing to impose additional restrictions on the transfer.

Financial liabilities

NMISA's principal financial liabilities are payables from exchange transactions. Payables from exchange transactions are classified as financial liabilities at amortised cost.

Derecognition

The entity derecognises financial liabilities when, and only when, the entity's obligations are discharged, cancelled or when they expire.

1.6 Leases

A lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership. A lease is classified as an operating lease if it does not transfer substantially all the risks and rewards incidental to ownership.

Operating leases – lessee

Operating lease payments are recognised as an expense on a straight-line basis over the lease term. The difference between the amounts recognised as an expense and the contractual payments are recognised as an operating lease asset or liability.

1.7 Inventories

Inventories are initially measured at cost except where inventories are acquired through a non-exchange transaction, then their costs are their fair value as at the date of acquisition.

Subsequently inventories are measured at the lower of cost and net realisable value.

Inventories are measured at the lower of cost and current replacement cost where they are held for;

- distribution at no charge or for a nominal charge; or
- consumption in the production process of goods to be distributed at no charge or for a nominal charge.

Net realisable value is the estimated selling price, in the ordinary course of operations, less the estimated costs of completion and the estimated costs necessary to make the sale, exchange or distribution.

Current replacement cost is the cost the entity incurs to acquire the asset on the reporting date.

The cost of inventories comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

The cost of inventories is assigned using the weighted average cost formula. The same cost formula is used for all inventories having a similar nature and use to the entity.

When inventories are sold, the carrying amounts of those inventories are recognised as an expense in the period in which the related revenue is recognised. If there is no related revenue, the expenses are recognised when the goods are distributed, or related services are rendered. The amount of any write-down of inventories to net realisable value or current replacement cost and all losses of inventories are recognised as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realisable value or current replacement cost, are recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs.

1.8 Impairment of cash-generating assets

Assets are classified as cash-generating if the entity intends to generate positive cash inflows from the asset and earn a commercial return that reflects the risks involved in holding the asset.

At each reporting date, the entity reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). The recoverable amount is the higher of fair value less costs to sell and value-in-use.

If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognised immediately as an expense.

Where an impairment loss subsequently reverses, the carrying amount of an asset is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior years. A reversal of an impairment loss is recognised immediately in surplus or deficit.

1.9 Impairment of non-cash-generating assets

Non-cash-generating assets are assets other than cash-generating assets. When the carrying amount of a non-cash-generating asset exceeds its recoverable service amount, it is impaired. At each reporting date, the entity assesses whether there is any indication that a non-cash-generating asset may be impaired.

If any such indication exists, the entity estimates the recoverable service amount of the asset.

The present value of the remaining service potential of a non-cash-generating asset is determined, using one of the following approaches:

- depreciated replacement cost approach;
- restoration cost approach; or
- service units approach.

If the recoverable service amount of a non-cash-generating asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable service amount. This reduction is an impairment loss. An impairment loss is recognised immediately in surplus or deficit.

At each reporting date, the entity assesses whether there is any indication that an impairment loss, recognised in prior periods for a non-cash-generating asset, may no longer exist or may have decreased. If any such indication exists, the entity estimates the recoverable service amount

1.10 Employee benefits

Short-term employee benefits

The cost of short-term employee benefits (those payable within 12 months after the service is rendered, such as paid vacation leave and sick leave, bonuses, and non-monetary benefits such as medical care) are recognised in the period in which the service is rendered and are not discounted.

The expected cost of compensated absences is recognised as an expense as the employees render services that increase their entitlement or, in the case of non-accumulating absences, when the absence occurs.

The expected cost of surplus sharing and bonus payments is recognised as an expense when there is a legal or constructive obligation to make such payments as a result of past performance.

Defined contribution plans

Payments to defined contribution retirement benefit plans are charged as an expense as they fall due.

1.11 Provisions and contingencies

Provisions are recognised when:

- the entity has a present obligation as a result of a past event;
- it is probable that an outflow of resources embodying economic benefits or service potential will be required to settle the obligation; and
- a reliable estimate can be made of the obligation.

The amount of a provision is the best estimate of the expenditure expected to be required to settle the present obligation at the reporting date.

Provisions are reviewed at each reporting date and adjusted to reflect the current best estimate. Provisions are reversed if it is no longer probable that an outflow of resources embodying economic benefits or service potential will be required to settle the obligation.

1.11 Provisions and contingencies (continued)

Contingent liabilities are recorded in the notes to the financial statements when there is a possible obligation that arises from past events, and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not within the control of NMISA or when there is a present obligation that is not recognised because it is not probable that an outflow of resources will be required to settle the obligation or the amount of the obligation cannot be measured reliably.

1.12 Commitments

Items are classified as commitments when an entity has committed itself to future transactions that will normally result in the outflow of cash.

Commitments are recorded at cost in the notes to the financial statements when there is a contractual arrangement or an approval by management in a manner that raises a valid expectation that NMISA will discharge its responsibility thereby incurring future expenditure that will result in the outflow of cash.

1.13 Revenue from exchange transactions

An exchange transaction is one in which the entity receives assets or services, or has liabilities extinguished, and directly gives approximately equal value (primarily in the form of goods, services or use of assets) to the other party in exchange.

Revenue is measured at the fair value of the consideration received or receivable, net of trade discounts and volume rebates.

Rendering of services

When the outcome of a transaction involving the rendering of services can be estimated reliably, revenue associated with the transaction is recognised by reference to the stage of completion of the transaction at the reporting date. The outcome of a transaction can be estimated reliably when all the following conditions are satisfied:

- the amount of revenue can be measured reliably;
- it is probable that the economic benefits or service potential associated with the transaction will flow to the entity;
- the stage of completion of the transaction at the reporting date can be measured reliably; and
- the costs incurred for the transaction and the costs to complete the transaction can be measured reliably.

Revenue is measured at the fair value of the consideration received or receivable.

Interest

Interest is recognised, in surplus or deficit, using the effective interest rate method.

1.14 Revenue from non-exchange transactions

Non-exchange transactions are transactions that are not exchange transactions. In a non-exchange transaction, an entity either receives value from another entity without directly giving approximately equal value in exchange, or gives value to another entity without directly receiving approximately equal value in exchange.

Revenue from a non-exchange transaction is measured at the amount of the increase in net assets recognised by the entity. NMISA receives an unconditional grant via **the dtic**.

Gifts and donations, including goods in-kind

Gifts and donations, including goods in-kind, are recognised as assets and revenue when it is probable that the future economic benefits or service potential will flow to the entity and the fair value of the assets can be measured reliably.

1.15 Translation of foreign currencies

Foreign currency transactions

A foreign currency transaction is recorded, on initial recognition in Rand, by applying to the foreign currency amount the spot exchange rate between the functional currency and the foreign currency at the date of the transaction.

At each reporting date:

- foreign currency monetary items are translated using the closing rate;
- non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction; and
- non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined.

Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous Annual Financial Statements are recognised in surplus or deficit in the period in which they arise.

1.16 Comparative figures

Where necessary, comparative figures have been reclassified to conform to changes in presentation in the current year.

1.17 Fruitless and wasteful expenditure

Fruitless expenditure means expenditure which was made in vain and would have been avoided had reasonable care been exercised.

Fruitless and wasteful expenditure is accounted for in line with all relevant requirements, including but not limited to, ruling Legislation, Regulations, Frameworks, Circulars, Instruction Notes, Practice Notes, Guidelines etc. (as applicable).

Fruitless and wasteful expenditure is recorded in the notes to the financial statements when confirmed. The amount recorded is equal to the total value of the fruitless and wasteful expenditure incurred. The expenditure is removed from the notes to the financial statements when it is resolved or transferred to receivables for recovery.

Fruitless and wasteful expenditure receivables are measured at the amount that is expected to be recoverable and are derecognised when settled or subsequently written off as irrecoverable.

1.18 Irregular expenditure

Irregular expenditure means expenditure other than unauthorised expenditure, incurred in contravention of or that is not in accordance with a requirement of any applicable legislation, including:

- The PFMA.
- The State Tender Board Act, No. 86 of 1968, or any regulations made in terms of the Act.
- Any provincial legislation providing for procurement procedures in that provincial government.

Irregular expenditure is accounted for in line with all relevant requirements, including but not limited to, ruling Legislation, Regulations, Frameworks, Circulars, Instruction Notes, Practice Notes, Guidelines etc. (as applicable).

Irregular expenditure is recorded in the notes to the financial statements when confirmed. The amount recorded is equal to the value of the irregular expenditure incurred unless it is impracticable to determine, in which case reasons therefore are provided in the note.

Irregular expenditure is removed from the note when it is either condoned by the relevant authority, transferred to receivables for recovery or not condoned and is not recoverable. Irregular expenditure receivables are measured at the amount that is expected to be recoverable and are de-recognised when settled or subsequently written off as irrecoverable.

1.19 Budget information

The approved budget is prepared on a modified cash basis and presented by economic classification over the 12-month period of the financial year

The Annual Financial Statements and the budget are on the same basis of accounting therefore a comparison with the budgeted amounts for the reporting period have been included in the Statement of Comparison of Budget and Actual Amounts. The reasons for significant variances are disclosed in the notes to the Annual Financial Statements.

1.20 Related parties

A related party is a person or an entity with the ability to control or jointly control the other party, or exercise significant influence over the other party, or vice versa, or an entity that is subject to common control or joint control.

Control is the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities.

Joint control is the agreed sharing of control over an activity by a binding arrangement, and exists only when the strategic financial and operating decisions relating to the activity require the unanimous consent of the parties sharing control (the venturers).

A related party transaction is a transfer of resources, services or obligations between the reporting entity and a related party, regardless of whether a price is charged.

Significant influence is the power to participate in the financial and operating policy decisions of an entity, but is not control over those policies.

Management are those persons responsible for planning, directing and controlling the activities of the entity, including those charged with the governance of the entity in accordance with legislation, in instances where they are required to perform such functions.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by that person in their dealings with the entity.

The entity is exempt from disclosure requirements in relation to related party transactions if that transaction occurs within normal supplier and/or client/recipient relationships on terms and conditions no more or less favourable than those which it is reasonable to expect the entity to have adopted if dealing with that individual entity or person in the same circumstances and terms and conditions are within the normal operating parameters established by that reporting entity's legal mandate.

Where the entity is exempt from the disclosures in accordance with the above, the entity discloses narrative information about the nature of the transactions and the related outstanding balances, to enable users of the entity's financial statements to understand the effect of related party transactions on its Annual Financial Statements.

1.21 Events after reporting date

Events after reporting date are those events, both favourable and unfavourable, that occur between the reporting date and the date when the financial statements are authorised for issue. Two types of events can be identified:

- those that provide evidence of conditions that existed at the reporting date (adjusting events after the reporting date); and
- those that are indicative of conditions that arose after the reporting date (non-adjusting events after the reporting date).

The entity will adjust the amount recognised in the financial statements to reflect adjusting events after the reporting date once the event occurs.

The entity will disclose the nature of the event and an estimate of its financial effect or a statement that such estimate cannot be made in respect of all material non-adjusting events, where non-disclosure could influence the economic decisions of users taken on the basis of the financial statements.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

2. NEW STANDARDS AND INTERPRETATIONS

Standards and interpretations issued, but not yet effective

The entity has not applied the following standards and interpretations, which have been published and are mandatory for the entity's accounting periods beginning on or after 1 April 2022 or later periods:

GRAP 104 (amended): Financial Instruments

Following the global financial crisis, a number of concerns were raised about the accounting for financial instruments. This included that (a) information on credit losses and defaults on financial assets was received too late to enable proper decision-making, (b) using fair value in certain instances was inappropriate, and (c) some of the existing accounting requirements were seen as too rules based. As a result, the International Accounting Standards Board® amended its existing Standards to deal with these issues.

The revisions better align the Standards of GRAP with recent international developments. The amendments result in better information available to make decisions about financial assets and their recoverability, and more transparent information on financial liabilities.

The most significant changes to the Standard affect: financial guarantee contracts issued, loan commitments issued, classification of financial assets, amortised cost of financial assets, impairment of financial assets and disclosures. The amended Standard is not expected to have a material impact on the entity's Annual Financial Statements in future.

The effective date of the Standard is for years beginning on or after 1 April 2025.

GRAP 25 (amended): Employee Benefits

The objective of this Standard is to prescribe the accounting and disclosure for employee benefits. This Standard requires an entity to recognise: (a) a liability when an employee has provided service in exchange for employee benefits to be paid in the future, and (b) an expense when the entity consumes the economic benefits or service potential arising from service provided by an employee in exchange for employee benefits. The amended Standard is not expected to have a material impact on the entity's Annual Financial Statements in future.

The effective date of the standard is not yet set by the Minister of Finance.

IGRAP 7: The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction

The issues addressed in this Interpretation are: (a) How a minimum funding requirement might affect the availability of reductions in future contributions. (b) When refunds or reductions in future contributions should be regarded as available in accordance with the definition of the asset ceiling in paragraph 08 of GRAP 25. The Interpretation is not expected to have a material impact on the entity's Annual Financial Statements in future.

The effective date of the standard is not yet set by the Minister of Finance.

3. PROPERTY, PLANT AND EQUIPMENT

Figures in Rand	2022			2021		
	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Plant and equipment	722 600 262	(236 180 772)	486 419 490	660 677 072	(197 717 052)	462 960 020
Furniture and fixtures	6 108 756	(3 983 611)	2 125 145	4 782 087	(3 738 219)	1 043 868
Motor vehicles	1 001 096	(283 735)	717 361	677 814	(193 769)	484 045
Office equipment	25 214 848	(15 579 954)	9 634 894	19 819 678	(12 924 824)	6 894 854
Leasehold improvements	43 669 153	(12 022 004)	31 647 149	26 198 456	(10 926 969)	15 271 487
Total	798 594 115	(268 050 076)	530 544 039	712 155 107	(225 500 833)	486 654 274

Reconciliation of property, plant and equipment – 2022

Figures in Rand	Opening balance	Additions	Disposals	Depreciation	Total
Plant and equipment	462 960 020	61 923 189	-	(38 463 719)	486 419 490
Furniture and fixtures	1 043 868	1 326 669	-	(245 392)	2 125 145
Motor vehicles	484 045	323 282	-	(89 966)	717 361
Office equipment	6 894 854	5 459 185	(40 994)	(2 678 151)	9 634 894
Leasehold improvements	15 271 487	17 470 696	-	(1 095 034)	31 647 149
	486 654 274	86 503 021	(40 994)	(42 572 262)	530 544 039

Reconciliation of property, plant and equipment – 2021

Figures in Rand	Opening balance	Additions	Disposals	Depreciation	Impairment loss	Total
Plant and equipment	458 985 053	40 579 266	(1 559)	(35 929 986)	(672 754)	462 960 020
Furniture and fixtures	1 066 009	263 477	-	(285 618)	-	1 043 868
Motor vehicles	69 952	484 844	-	(70 751)	-	484 045
Office equipment	5 555 413	3 661 720	(45 815)	(2 276 460)	(4)	6 894 854
Leasehold improvements	9 885 715	5 701 077	-	(315 305)	-	15 271 487
	475 562 142	50 690 384	(47 374)	(38 878 120)	(672 758)	486 654 274

Included in the carrying value of property, plant and equipment is work in progress to the value of R71 224 268 (2021: R43 765 434). The work in progress is in respect of assets delivered but not yet installed and commissioned, as well as renovations in progress.

The carrying value of property, plant and equipment has not been pledged as security.

Expenditure incurred to repair and maintain property, plant and equipment

Figures in Rand	2022	2021
Repairs and maintenance	10 588 131	6 452 334

4. INTANGIBLE ASSETS

Figures in Rand	2022			2021		
	Cost/ Valuation	Accumulated amortisation and accumulated impairment	Carrying value	Cost/ Valuation	Accumulated amortisation and accumulated impairment	Carrying value
Computer software	13 476 143	(11 709 492)	1 766 651	11 907 226	(10 548 484)	1 358 742

Reconciliation of intangible assets – 2022

Figures in Rand	Opening balance	Additions	Amortisation	Total
Computer software	1 358 742	1 568 917	(1 161 008)	1 766 651

Reconciliation of intangible assets – 2021

Figures in Rand	Opening balance	Additions	Amortisation	Total
Computer software	1 358 742	1 568 917	(1 161 008)	1 766 651

5. PAYABLES FROM EXCHANGE TRANSACTIONS

Figures in Rand	2022	2021
Trade payables	8 128 725	1 866 951
Payments received in advanced – Contract in process	2 970 086	2 657 346
Deferred income	84 771	81 732
Accrued leave pay	7 290 452	6 841 885
Accrued expenses	1 594 398	1 482 248
	20 068 432	12 930 162

6. PREPAYMENTS

Figures in Rand	2022	2021
Prepayments – Non-current assets	809 593	916 566
Prepayment – Current assets	40 545 248	35 963 024
	41 354 841	36 879 590

NMISA procures specialised equipment (custom made on order or assembled to order by international manufactures according to NMISA's specifications). Some of the equipment is only used by NMIs and the components need to be characterised and tested on assembly. This equipment must be thoroughly tested, verified and calibrated to ensure traceability to International Standards before delivery thus the delivery lead times for equipment procured by NMISA can be anything up to a year, as a result most suppliers require a portion of the award amount to be prepaid on placement of an order or on completion of certain stages in the production process.

7. INVENTORIES

Figures in Rand	2022	2021
Raw materials	6 200 465	5 674 887
Finished goods	2 928 266	2 510 152
	9 128 731	8 185 039
Inventories recognised as an expense during the year	40 765	405 918

Inventories are carried at the lower of cost or net realisable value. Inventories were not pledged as security for liabilities.

8. RECEIVABLES FROM EXCHANGE TRANSACTIONS

Figures in Rand	2022	2021
Trade receivables	8 832 175	7 634 839
Employee advances and other receivables	88 936	35 679
Rental deposit*	2 890 147	605 419
Less: Provision for impairment of trade receivables	(2 141 926)	(977 108)
	9 669 332	7 298 829
Non-current assets*	2 890 147	605 419
Current assets	6 779 185	6 693 410
	9 669 332	7 298 829

NMISA does not hold any collateral as security. The impairment of trade receivables was determined with reference to the probability of collection of the amounts.

* The rental deposit is refundable to the entity at the end of the lease term. The deposit was invested by the lessor in an interest-bearing account with a financial institution and is capitalised at a rate of 100 basis points lower than the actual interest rate earned on the interest-bearing account to make provision for administration costs.

Reconciliation of provision for impairment of trade and other receivables

Figures in Rand	2022	2021
Opening balance	977 108	629 520
Amounts recovered	(370 528)	977 108
Unused amounts reversed	-	(629 520)
Provision raised – Current year	1 535 346	-
	2 141 926	977 108

The Department of Health makes up 44 % of the provision for impairment at R932 808.

9. CASH AND CASH EQUIVALENTS

Figures in Rand	2022	2021
Cash and cash equivalents consist of:		
Cash on hand	8 718	9 537
Bank balances	3 384 533	1 528 048
Short-term deposits*	131 250 429	143 342 822
	134 643 680	144 880 407

* Short-term deposit is the Money Market account held with Standard Bank and the Call account held with the South African Reserve Bank.

Credit quality of cash at bank and short-term deposits, excluding cash on hand

There are no restrictions on cash held with banks. Cash and cash equivalents (excluding cash on hand) are held with Standard Bank, which is rated AA+ based on rating agency Fitch Ratings.

10. PROVISIONS AND CONTINGENCIES

Reconciliation of provisions and contingencies – 2022

Figures in Rand	Opening balance	Additions	Utilised during the year	Reversed during the year	Total
Provision for performance bonuses	9 552 565	11 303 213	(9 552 565)	-	11 303 213
Provision for career ladder adjustments	3 040 943	-	(3 040 943)	-	-
Provision for cost of living adjustments	2 398 720	2 986 072	(1 669 123)	(729 597)	2 986 072
	14 992 228	14 289 285	(14 262 631)	(729 597)	14 289 285

Reconciliation of provisions and contingencies – 2021

Figures in Rand	Opening balance	Additions	Utilised during the year	Reversed during the year	Total
Provision for performance bonuses	15 214 239	9 552 565	(13 406 231)	(1 808 008)	9 552 565
Provision for career ladder adjustments	732 190	3 040 943	(732 190)	-	3 040 943
Provision for cost of living adjustments	356 230	2 398 720	(356 230)	-	2 398 720
	16 302 659	14 992 228	(14 494 651)	(1 808 008)	14 992 228

Surrender of surpluses

The entity declares all surpluses or deficits annually to National Treasury. The entity submits requests to National Treasury to retain surpluses in terms of Section 53(3) of the PFMA, as and when appropriate. The entity will be required to surrender for re-depositing into the relevant Revenue Fund, all surpluses that were realised in a particular financial year which were not approved for retention by National Treasury in terms of Section 53(3) of the PFMA.

Contingent liabilities

The entity is a defendant in two pending legal cases. Claims of R144 000 and R22 040 for damage to vehicles from accidents in 2017 and 2019 respectively. NMISA anticipates spending R60 000 in defending the matters.

11. REVENUE

Figures in Rand	2022	2021
Rendering of services	18 700 997	14 833 737
Other income	-	162 449
Gain or loss on disposal of assets	117 028	-
Interest received – Investment	8 422 725	8 694 342
Transfer from controlling entity	261 716 000	223 291 000
Donation received	-	40 347
	288 956 750	247 021 875
The amount included in revenue arising from exchanges of goods or services are as follows:		
Rendering of services	18 700 997	14 833 737
Other income	-	162 449
Gain or loss on disposal of assets	117 028	-
Interest received – Investment	8 422 725	8 694 342
	27 240 750	23 690 528
The amount included in revenue arising from non-exchange transactions is as follows:		
Transfer from controlling entity	261 716 000	223 291 000
Donations received	-	40 347
	261 716 000	223 331 347

12. EMPLOYEE RELATED COSTS

Figures in Rand	2022	2021
Basic	126 335 971	118 387 088
Performance bonuses	8 337 505	7 744 557
UIF	669 150	601 051
Career ladder adjustments	(3 040 943)	4 713 227
Leave pay provision charge	448 567	1 552 363
Long-service awards	122 260	124 914
	132 872 510	133 123 200

13. CREDIT LOSSES ON RECEIVABLES

Figures in Rand	2022	2021
Contributions to debt impairment provision	1 164 818	347 589

The contribution is made up of an amount recovered (R370 528) and a R1 535 346 impairment relating to the current year, refer to note 8.

14. GENERAL EXPENSES

Figures in Rand	2022	2021
Auditors' remuneration	1 022 415	985 061
Bursaries	1 440 928	381 551
Catering, events and meetings	275 897	112 608
Chemicals and lab consumables	5 736 202	10 188 379
Consulting and professional fees	1 121 457	593 656
Discount allowed	36 509	-
Electricity	3 514 379	3 751 941
External calibration costs	1 651 233	1 360 770
Health and safety services	686 852	483 221
Insurance	1 697 314	1 587 973
IT expenses	11 968 579	5 862 813
Lease rentals on operating lease	20 895 794	19 675 889
Marketing and advertising	600 338	589 603
Other expenses	230 063	1 229 633
Postage and courier	2 035 366	1 888 293
Printing and stationery	1 133 715	1 081 366
Recruitment costs	266 076	140 629
Research and development costs	150 000	86 250
SANAS assessment/Quality expenses	798 895	647 618
Staff welfare	283 865	163 405
Subscriptions and membership fees	1 066 820	615 259
Technical components	3 840 185	3 685 099
Telephone and fax	544 825	446 422
Training	2 396 465	1 139 169
Travel – Local	301 570	33 710
Travel – Overseas	313 291	(2 074)
VAT on imported services	304 270	813 195
	64 313 303	57 541 439

15. CASH GENERATED FROM OPERATIONS

Figures in Rand	2022	2021
Surplus	35 415 066	7 469 675
Adjustments for:		
Depreciation and amortisation	43 733 270	41 114 512
(Gain)/Loss on sale of assets	(117 028)	46 654
Loss on foreign exchange	869 652	253 714
Impairment deficit	-	672 758
Credit losses on receivables	1 164 818	347 589
Movement in provision for career ladder adjustments	(3 040 943)	2 308 753
Movement in provision for performance bonuses	1 750 648	(5 661 674)
Movement in provision for cost of living adjustments	587 352	2 042 490
Changes in working capital:		
Inventories	(943 692)	405 918
Receivables from exchange transactions	(3 535 321)	1 493 782
Prepayments	(4 475 251)	(12 297 230)
Payables from exchange transactions	6 268 618	(4 268 169)
	77 677 189	33 928 772

16. COMMITMENTS

Figures in Rand	2022	2021
Authorised capital expenditure		
Already contracted for but not provided for		
- Property, plant and equipment	87 566 227	132 836 669
Not yet contracted for and authorised by members		
- Property, plant and equipment	9 400 000	-
Authorised operational expenditure		
Already contracted for but not provided for		
- General expenses	11 318 052	12 559 954
Total commitments	96 966 227	132 836 669
Capital expenditure	11 318 052	12 559 954
Operational expenditure	108 284 279	145 396 623

The delivery lead times for equipment procured by NMISA can be anything up to a year and in some cases beyond a year. At times, funds are rolled over annually in the form of commitments for those awards made for which equipment has not yet been delivered.

NMISA procures specialised equipment (custom made on order or assembled to order according to specification by international manufacturers). Some of the equipment is only used by NMIs and the components need to be characterised and tested on assembly. This equipment must be thoroughly tested, verified and calibrated to ensure traceability to International Standards before delivery, since the results generated are used as input into uncertainty of measurement calculations.

Figures in Rand	2022	2021
Operating leases – as lessee (expense)		
Minimum lease payments due		
- within one year	22 191 333	20 895 794
- in second to fifth year inclusive	103 403 765	97 367 010
- later than five years	92 808 310	121 036 397
	218 403 408	239 299 201

Operating lease payments represent rentals payable by the entity for office properties and printers. The lease for properties is negotiated for a term of nine years and eight months, commencing on 1 April 2020. The rental increases on 1 April each year and the increase will be based on CPI plus 3 %. The rental is payable monthly in advance. The lease for printers is negotiated for an average term of 12 months. No contingent rent is payable.

Figures in Rand	2022	2021
Rental expenses relating to operating leases		
Minimum lease payments	20 895 794	19 675 889

17. RELATED PARTIES

Relationships

Controlling entity	Department of Trade, Industry and Competition (the dtic)
Board Members	Ms Jabu Mogadime Mr Molelekoa Petrus Mohlomi Ms Lindie Lankalebalelo Ms Nobom Gcinashe Mfabana Dr Tshenge Demana (the dtic representative) Mr Ndwakhulu Mukhufhi
External members of the Audit and Risk Committee	Mr Zenzele Myeza Ms Romeshni Govender
External members of the IT Steering Committee	Mr Senzo Dlamini Mr Sipho Masinga
Members of key management	Mr Ndwakhulu Mukhufhi Mr Mogau Sehlapelo Mr Benjamin van der Merwe Dr Wynand Louw Ms Natasha van der Walt Dr Jayne de Vos Mr Tebogo Mthombeni Dr Jessie Pillay (appointed 1 February 2022)
Entities under common control	Companies and Intellectual Property Commission (CIPC) Companies Tribunal Competition Commission Competition Tribunal Export Credit Insurance Corporation of South Africa SOC Limited (ECIC) Industrial Development Corporation (IDC) International Trade Administration Commission (ITAC) National Consumer Commission (NCC) National Consumer Tribunal (NCT) National Creditor Regulator (NCR) National Empowerment Fund (NEF) National Gambling Board (NGB) National Lotteries Commission (NLC) National Regulator for Compulsory Specifications (NRCS) South African Bureau of Standards (SABS) South African National Accreditation Systems (SANAS)

Key management information

CLASS	DESCRIPTION	NUMBER
Non-executive board members	Board Members	5
Executive management	Executive Committee	8

17. RELATED PARTIES (continued)

Figures in Rand	2022	2021
Related party balances		
Amounts included in trade receivables regarding related parties		
South African National Accreditation System (SANAS)	188 807	119 126
South African Bureau of Standards (SABS)	64 920	13 906
Receivables in respect of assessments, calibration and other services provided in the ordinary course of business.		
Amounts included in trade payables regarding related parties		
South African National Accreditation System (SANAS)	41 524	10 408
South African Bureau of Standards (SABS)	16 923	10 364
Payables in respect of accreditation fees, certification services and training provided in the ordinary course of business.		
Commitments with related parties		
South African National Accreditation System (SANAS)	759 886	828 790
South African Bureau of Standards (SABS)	218 892	247 059
Commitments for accreditation fees, certification services and training to be provided.		
Provision for doubtful debts related to outstanding balances with related parties		
South African National Accreditation System (SANAS)	29 792	6 750
South African Bureau of Standards (SABS)	11 918	6 850
Related party transactions		
Sales to related parties		
South African National Accreditation System (SANAS)	210 064	250 746
South African Bureau of Standards (SABS)	111 884	35 874
National Regulator for Compulsory Specifications (NRCS)	-	36 080
Purchases from related parties		
South African National Accreditation System (SANAS)	1 071 976	710 240
South African Bureau of Standards (SABS)	174 837	163 058
Transfer received from related parties		
Department of Trade, Industry and Competition (the dtic)	261 716 000	223 291 000

17. RELATED PARTIES (continued)

Remuneration of the Board and management

Board members

Figures in Rand	Fees for services as a member of the Board	Other expenses	Total
2022			
Ms Jabu Mogadime	96 710	9 009	105 719
Ms Lindie Lankabalelo	104 520	-	104 520
Ms Nobom Mfabana	144 720	-	144 720
Mr Molelekoa Petrus Mohlomi	160 800	1 304	162 104
	506 750	10 313	517 063

Figures in Rand	Fees for services as a member of the Board	Other expenses	Total
2021			
Ms Jabu Mogadime	93 656	461	94 117
Ms Lindie Lankabalelo	112 560	1 368	113 928
Mr Odirile Dingoko (deceased November 2020)	64 320	-	64 320
Ms Nobom Mfabana	116 580	821	117 401
Mr Molelekoa Petrus Mohlomi	123 816	1 192	125 008
	510 932	3 842	514 774

Independent committee members of the Board

Figures in Rand	Fees for services as an independent member	Total
2022		
Mr Senzo Dlamini	20 100	20 100
Mr Sipho Masinga	20 100	20 100
Mr Zenzele Myeza	32 160	32 160
Ms Romeshni Govender	32 160	32 160
	104 520	104 520

Figures in Rand	Fees for services as an independent member	Total
2021		
Mr Senzo Dlamini	12 060	12 060
Mr Sipho Masinga	12 060	12 060
Mr Zenzele Myeza	28 140	28 140
Ms Romeshni Govender	24 120	24 120
	76 380	76 380

17. RELATED PARTIES (continued)

Executive management

Figures in Rand	Basic salary	Performance related payments	Annual bonus/ Long-service award	Post-employment benefits	Allowances	Other expenses	Total
2022							
Mr Ndwakhulu Mukhufhi	2 647 298	335 614	18 057	63 434	24 000	-	3 088 403
Mr Mogau Sehlapelo	1 941 777	283 749	-	45 832	18 000	-	2 289 358
Mr Teboho Mthombeni	1 287 521	149 952	-	180 309	114 000	-	1 731 782
Dr Wynand Louw	1 467 217	187 095	-	117 164	121 860	6 894	1 900 230
Ms Natasha van der Walt	1 511 433	179 920	-	118 731	18 000	-	1 828 084
Dr Jayne de Vos	1 562 756	124 730	35 792	136 567	18 000	-	1 877 845
Mr Benjamin van der Merwe	1 348 227	162 149	119 307	195 928	18 000	-	1 843 611
Dr Jessie Pillay (appointed 1 February 2022)	297 866	-	-	10 672	3 000	-	311 538
	12 064 095	1 423 209	173 156	868 637	334 860	6 894	14 870 851

Figures in Rand	Basic salary	Performance related payments	Annual bonus/ Long-service award	Post-employment benefits	Allowances	Other expenses	Total
2021							
Mr Ndwakhulu Mukhufhi	2 312 011	481 532	40 128	55 520	24 000	-	2 913 191
Mr Mogau Sehlapelo	1 590 914	325 693	-	37 552	18 000	-	1 972 159
Mr Teboho Mthombeni	1 075 327	132 398	-	152 655	114 000	-	1 474 380
Ms Zakithi Msimang (resigned 31 October 2020)	819 721	206 517	-	66 802	10 500	1 507	1 105 047
Dr Wynand Louw	1 219 774	229 069	-	108 045	121 860	13 733	1 692 481
Ms Natasha van der Walt	1 276 500	192 749	-	100 278	18 000	3 125	1 590 652
Dr Jayne de Vos	1 240 396	157 485	117 766	115 056	18 000	-	1 648 703
Mr Benjamin van der Merwe	1 117 091	229 069	147 940	195 281	18 000	-	1 707 381
	10 651 734	1 954 512	305 834	831 189	342 360	18 365	14 103 994

18. CHANGE IN ESTIMATE

Property, plant and equipment

The entity has reassessed the useful lives of property, plant and equipment and intangible assets, which resulted in certain assets' remaining useful lives to change by an average of one year. The effect of this reassessment has increased depreciation charges for the current and future periods by R975.

19. COMPARATIVE FIGURES

Certain comparative figures have been reclassified. Contracted services, income received in advance and rental deposit, previously disclosed on the face of the Statement of Financial Performance and Statement of Financial Position, have been reclassified to operating expenses, payables from exchange transactions and receivables from exchange transactions respectively. The reclassification was due to the immateriality of the amounts, thus increasing the figures for operating expenses by R186 228, payables from exchange transactions by R2 657 346 and receivables from exchange transactions by R605 419.

20. RISK MANAGEMENT

Financial risk management

The entity's activities expose it to a variety of financial risks: market risk (including currency risk, interest rate risk and cash flow risk), credit risk and liquidity risk.

COVID-19's impact on organisations is rapidly increasing, not only affecting the supply and demand dynamics but has also disrupted the financial markets as well as the macro-economy. This has had a direct impact on the entity's ability to generate revenue and collect receivables, as most organisations are under financial distress.

The entity has and will continue to prioritise immediate financial and operational measures such as protecting liquidity and cash flows and ensuring core business activities are kept going.

Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash. NMISA's primary source of funding is the grant received from **the dtic**. NMISA maintains liquidity by limiting capital and operational expenditure within the pre-approved budget. The entity manages liquidity risk through an ongoing review of future commitments and funding availability.

The table below analyses the entity's financial liabilities into relevant maturity groupings based on the remaining period at the Statement of Financial Position date to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows. Balances due within 12 months equal their carrying balances as the impact of discounting is not significant.

Figures in Rand	Less than 1 year	Between 1 and 2 years	Between 2 and 5 years	Over 5 years
At 31 March 2022				
Payables from exchange transactions	20 068 432	-	-	-

Figures in Rand	Less than 1 year	Between 1 and 2 years	Between 2 and 5 years	Over 5 years
At 31 March 2021				
Payables from exchange transactions	12 930 162	-	-	-

20. RISK MANAGEMENT (continued)

Credit risk

Credit risk consists mainly of cash deposits, cash equivalents and trade debtors. The entity only deposits cash with major banks with high quality credit standing and limits exposure to any one counterparty.

Trade receivables comprise a widespread customer base. Management evaluates credit risk relating to customers on an ongoing basis. If customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, management assesses the credit quality of the customer, taking into account its financial position, past experience, trade references and other factors. The utilisation of credit limits is regularly monitored. Sales to all customers are settled in cash or using major credit cards. The entity establishes an impairment that represents its estimate of potential losses in respect of trade receivables, all receivables between 60 and 120 days are considered for impairment. The provision for impairment is 13 % (2021: 24 %) of the total receivables book.

Financial assets exposed to credit risk at year-end were as follows:

Figures in Rand	2022	2021
Financial instrument		
Trade receivables	8 832 175	7 634 839
Less: Provision for impairment of trade receivables	(2 141 926)	(977 108)
Rental deposit	2 890 147	605 419

Interest rate risk

NMISA's interest rate risk arises from markets and economic factors, payables, and cash and cash equivalents. The entity's exposure to interest rate risk is minimal due to the following factors:

- interest is not paid on trade payables as it is the policy of the entity to settle within 30 days of receipt of a valid invoice; and
- the PFMA does not allow for the entity to utilise bank overdraft facilities.

Based on the activities of NMISA, the only area affected by interest rate risk is investment income earned on call deposits. These call deposits are held in the short-term, and the interest rate is linked to the prime rate. The exposure to changes in interest rates for a short-term deposit is not material.

NMISA's exposure to the risk of changes in market interest rates relates primarily to cash in notice deposits held with banks.

Cash and cash equivalents

Figures in Rand	2022	2021
Short-term deposits	131 250 429	143 342 822

Cash flow risk

The entity manages its cash flow risk by aligning the allocation received from **the dtic** and other sources of income to its estimated monthly activity levels.

Foreign exchange risk

The entity does not hedge foreign exchange fluctuations.

The entity's exposure to this risk is due to the purchase of specialised equipment from foreign suppliers. To the extent that the transactions are considered to be material, where possible, suppliers are required to provide firm prices to minimise the risk.

21. GOING CONCERN

The Annual Financial Statements have been prepared on the basis of accounting policies applicable to a going concern. This basis presumes that funds will be available to finance future operations and that the realisation of assets and settlement of liabilities, contingent obligations, and commitments will occur in the ordinary course of business.

22. EVENTS AFTER THE REPORTING DATE

No events after the reporting date were identified by management that would affect the operations of NMISA or the results of those operations significantly.

23. FRUITLESS AND WASTEFUL EXPENDITURE

Figures in Rand	2022	2021
Opening balance as previously reported	-	12 614
Less: Amount recoverable – Current	-	(12 614)
Closing balance	-	-

24. IRREGULAR EXPENDITURE

Figures in Rand	2022	2021
Opening balance as previously reported	432 085	-
Opening balance as restated	432 085	-
Add: Irregular expenditure – Current	-	432 085
Closing balance	432 085	432 085

25. BUDGET DIFFERENCES

Material differences between budget and actual amounts

- 25.1** Revenue was less than budgeted due to a lower demand than anticipated coupled with unplanned electricity power failures, which caused instrument breakages in most of the laboratories thus resulting in delays in the completion of jobs in progress and those already planned/scheduled.
- 25.2** The favourable variance of 36 % is due to an increase in the balance invested as a result of funds in respect of awarded tenders which remains committed due to delivery having not taken place. The transfer for 2021/22 was received in full in April instead of quarterly as was anticipated.
- 25.3** Variance was due to lower than budgeted provisions for cost of living adjustments and performance bonuses, as well as vacant positions being filled later than anticipated.
- 25.4** Unplanned power failures resulted in higher than expected breakages of instruments.
- 25.5** Funds were committed but not yet expensed, hence the variance of 17 %.
- 25.6** Variance was due to depreciation of the Rand and increased deliveries from foreign suppliers who are sole suppliers for some of the specialised instruments the entity procures.
- 25.7** Expenditure recorded in the actual year to date figures includes payments/deliveries attributable to prior year commitments.
- 25.8** Depreciation, credit losses, and gains/losses on disposal of assets are non-cash items which are not budgeted for.

NOTES





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