South African Weather Service

Annual Report 2022/23

The future of weather, climate and water across generations

South African Weather Service

The South African Weather Service logo represents the movement of weather systems and their interaction with the earth, sun and atmosphere. It also portrays a fresh and dynamic visual appearance that identifies the South African Weather Service as a proudly South African organisation.

THE LIGHT BLUE
represents water which is our main source of life.

THE GREEN
symbolises sustainability and life.

THE DARK BLUE
represents the atmosphere in which all weather conditions occur.

THE RED-BROWN
represents the earth from which all growth and life originate.

THE PINK-BROWN
over the sun represents a South African sunset when air pollution is present.

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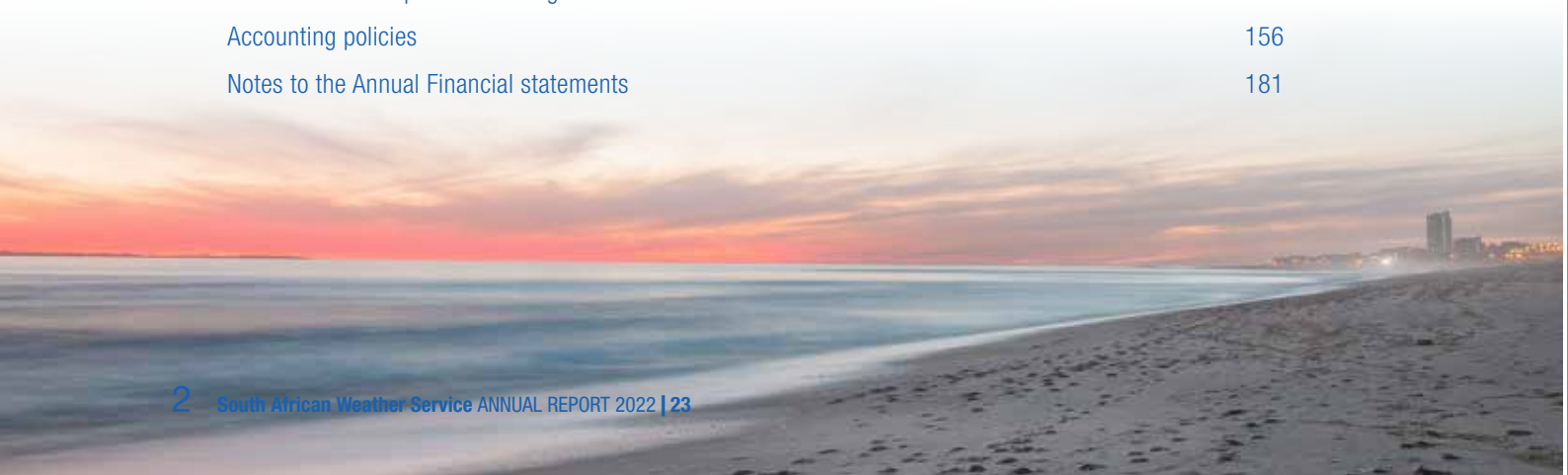

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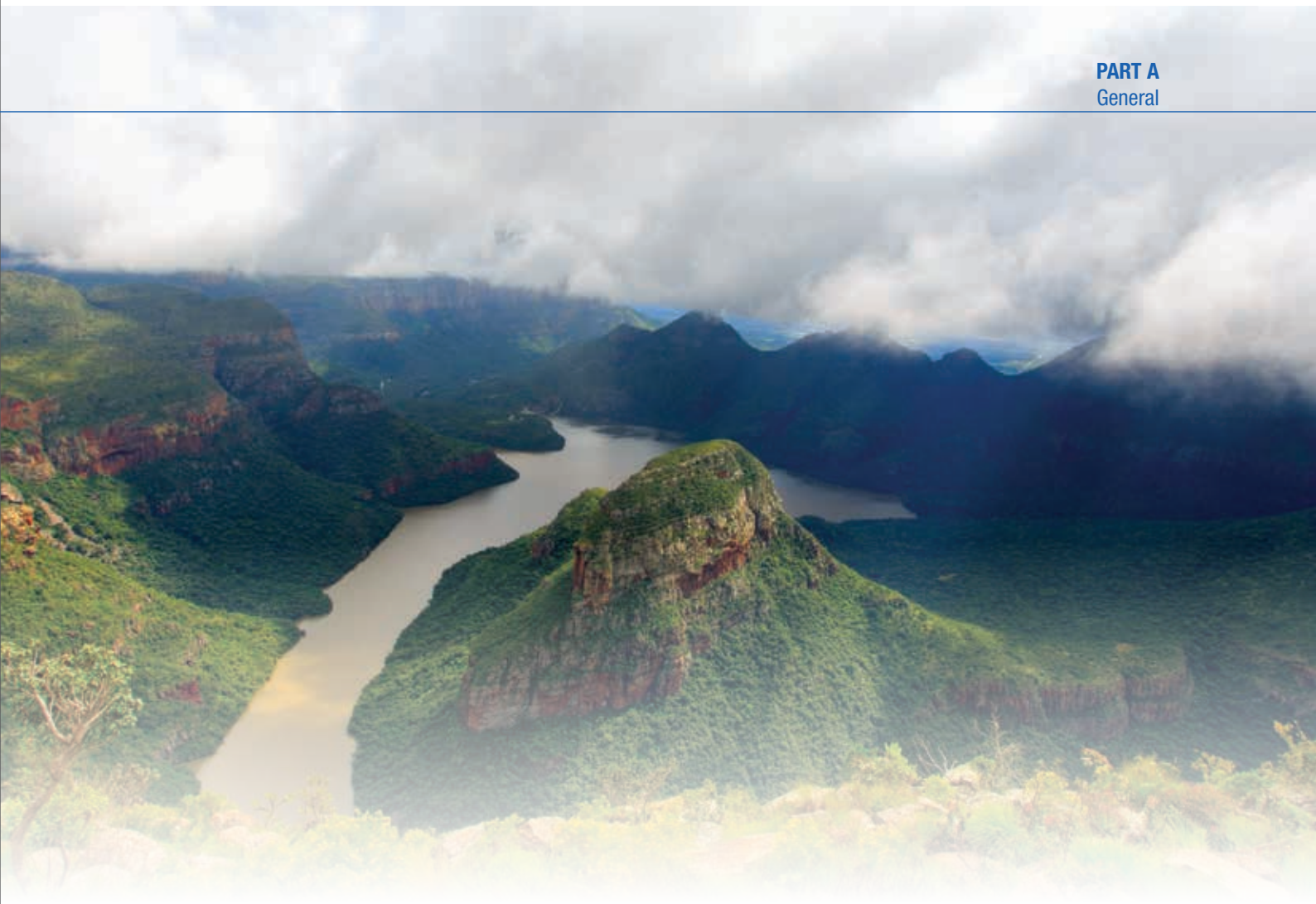

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PART A:
General

1. General Information

Registered name	South African Weather Service
Registration number (if applicable):	N/A
Physical address	Eco Glades Block 1B Cnr. Olievenhoutbosch and Ribbon Grass Streets Eco Park Centurion 0157
Postal address	South African Weather Service Private bag X097 Pretoria 0001
Telephone number	+27 12 367 6000
Email address	SAWS_ceo@weathersa.co.za
Website address	www.weathersa.co.za
External auditors	Auditor-General of South Africa
Bankers	Standard Bank
Company Secretary	Mr Steve Mbengo (interim)

RP21/2023
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2. List of Abbreviations/Acronyms

AASA	Airlines Association of Southern Africa
AAD	Africa Aero and Defence
ACAMS	Aeronautical Committee for Aeronautical Meteorological Services
A-CDM	Airport Collaborative Decision-making
ACE	Accumulated Cyclone Energy
AGSA	Auditor-General of South Africa
AI	Artificial Intelligence
ALF	Aerodrome Licensing Forum
AMC	Airport Management Centre
ARC	Agricultural Research Council
ARS	Automatic Rainfall Station
AFS	Annual Financial Statements
AGSA	Auditor-General of South Africa
APP	Annual Performance Plan
AVR	Automatic Voltage Regulators
AWS	Automatic Weather Station
AWOS	Automatic Weather Observation Systems
B-BBEE	Broad-Based Black Economic Empowerment
CARS	Civil Aviation Regulations
CATS	Civil Aviation Technical Standards
CEO	Chief Executive Officer
CoS	Committee on Services
CORDEX	Coordinated Regional Downscaling Experiment
COIDA	Compensation for Occupational Injuries and Diseases Act
Covid-19	Coronavirus disease of 2019
CPUT	Cape Peninsula University of Technology
CSIR	Council for Scientific and Industrial Research
DALRRD	Department of Agriculture, Land Reform and Rural Development
DFFE	Department of Forestry, Fisheries and the Environment
DIRCO	Department of International Relations and Cooperation
DoT	Department of Transport
DPME	Department of Planning, Monitoring and Evaluation
DWS	Department of Water and Sanitation
DWD	Deutscher Wetterdienst
EAP	Employee Assistance Programme
EAP	Economically Active Population
EVP	Employee Value Proposition
EC	Executive Council (WMO)
ECMWF	European Centre for Medium-Range Weather Forecasts

2. List of Abbreviations/Acronyms (continued)

ENSO	El Niño Southern Oscillation
EU	European Union
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
FDI	Fire Danger Index
GAW	Global Atmosphere Watch
GBON	Global Basic Observing Network (WMO)
GDP	Gross Domestic Product
GISC	Global Information Systems Centre (WMO)
GOOS	Global Ocean Observing System
GRAP	Generally Recognised Accounting Practice
HPC	High-Performance Computer
IATA	International Air Traffic Association
ICAO	International Civil Aviation Organization
ICT	Information and Communications Technology
IDDR	International Day for Disaster Reduction
ImpB	Impact-Based
INFCOM	Infrastructure Commission (WMO)
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
LDN	Lightning Detection Network
LEDET	Limpopo Economic Development, Environment and Tourism
MATCOM	Meteorological Authority Transfer Committee
METARs	Meteorological reports
MG	Management Group
MINMEC	Ministers and Members of Executive Councils
MoU	Memorandum of Understanding
MPLS	Multiprotocol Label Switching
MSP	Master Surveillance Plan
NFCS	National Framework for Climate Services
NMS	National Meteorological Services
NWP	Numerical Weather Prediction
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OCIMS	National Oceans and Coastal Information Management System
OECD	Organisation for Economic Co-operation Development
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
OPMET	Operational Meteorology
OTP	On-Time-Performance
PAIA	Promotion of Access to Information Act

2. List of Abbreviations/Acronyms (continued)

PFMA	Public Finance Management Act
POPIA	Protection of Personal Information Act
PR	Permanent representative
PRMA	Post-Retirement Medical Aid
RADAR	Radio Detection and Ranging
RA I	Regional Association I
RCMS	Regulating Committee for Meteorological Services
RSMC	Regional Specialized Meteorological Center
RTC	Regional Training Centre
SAAQIS	South African Air Quality Information Systems
SAASTA	South African Agency for Science and Technology Advancement
SABC	South African Broadcasting Corporation
SACAA	South African Civil Aviation Authority
SADC	Southern African Development Community
SAEON	South African Environmental Observation Network
SANAE	South African National Antarctic Expedition
SANSA	South African National Space Agency
SAPRI	South African Polar Research Infrastructure
SARCOF	Southern Africa Regional Climate Outlook Forum
SMCRI	Shallow Marine and Coastal Research Infrastructure
SAWS	South African Weather Service
SBD	Standard Bidding Document
SCM	Supply Chain Management
SERCOM	Commission for Weather, Climate, Water and Related Environmental Services and Applications (WMO)
SMA	Seychelles Meteorological Agency
SOFF	Systematic Observations Financing Facility (WMO)
SOLAS	Safety of Life at Sea (Convention)
TAF	Terminal Aerodrome Forecast
TLP	Taking the Legislature to the People
TR	Treasury Regulations
TV	Television
UNFCCC	United Nations Framework Convention on Climate Change
UPS	Uninterruptable Power Supply
VI	Ventilation Index
WCSSP	Weather and Climate Science for Service Partnership
WIGOS	WMO Integrated Global Observing System
WMO	World Meteorological Organization
WRC	Water Research Commission

3. Message from the Minister of Forestry, Fisheries and the Environment

Ms Barbara Creecy, MP
Minister of Forestry,
Fisheries and the Environment

The 2022/23 financial year was marked by a number of severe weather events, disasters and long-term climatological events that placed the South African Weather Service (SAWS) at the forefront of public attention as it fulfilled its role as the authoritative voice for weather and climate warnings in the country.

Despite implementing drastic cost-cutting measures, the SAWS's ability to predict and warn the public of severe weather events was unbroken. The 2022/23 financial year saw the issuing of warnings for weather hazards such as severe thunderstorms, heavy rains, extreme temperatures and strong winds. Warnings issued for aerodromes were 99% accurate.

In the past two financial years, South Africans experienced the La Niña phase of what is known as the El Niño-Southern Oscillation (ENSO) phenomenon. This is associated with above-normal rainfall over most of the summer rainfall regions. As a result, the drought in parts of South Africa was broken, while the central interior, in particular, experienced warmer temperatures. The annual mean temperature anomaly for 2022, based on the data of 26 climate stations, was, on average, about 0,4°C higher than the average of the reference period (1991-2020), making it the fourth hottest year on record since 1951.

April 2022 is a month many will not easily forget. This was when the eThekwini metropole was hit by severe flooding with rainfall over nine days measuring between 200 mm and 705 mm at the Margate Airport. As a result, more than 400 people lost their lives, and several were unaccounted for. It also resulted in the loss of more than 4 000 homes and severe damage to infrastructure. In February 2023, many parts of Southern Africa were also affected by Cyclone Freddy.

One of the SAWS' aims is to create a *WeatherSMART* nation. As a result, 39 community outreach programmes were conducted throughout the year. Alongside this, the SAWS grew its presence on social media platforms such as Twitter and Facebook to ensure communities which dealt daily with the realities of climate change and severe vulnerability were timeously informed of extreme events which may affect them.

In addition to met-ocean information provided to the marine sector, the SAWS is investigating regulating the provision of meteorological services to the marine industry. The final report in this regard is eagerly awaited.

The Department of Forestry, Fisheries and the Environment (DFFE) is proud of the long-term initiative to monitor the sustainability of the Agulhas Current through the Global Ocean Observing System (GOOS) Co-Design project endorsed by the United Nations Ocean Decade for Sustainable Development. This work will better understand the world's most powerful Western Boundary Currents, a current not accurately designated in any of the Intergovernmental Panel on Climate Change (IPCC) models used for Climate Change scenario work.

Collaboration between the SAWS and the SA Civil Aviation Authority (SACAA) was sealed by transferring the Meteorological Authority function from the SAWS to the aviation body. This has been implemented since 1 May 2023. The transfer was made possible with the support of the Department of Fishery Forestry and the Environment (DFFE) and the Department of Transport (DoT).

Internationally, the SAWS plays a key role in the World Meteorological Organization (WMO), its African Regional Group, SADC and the Meteorological Association of Southern Africa. I want to commend the Chief Executive Officer of the SAWS and the country's Permanent Representative with the WMO, Mr Ishaam Abader, and the support personnel for their re-election to the WMO Executive Council.

I confirm that the SAWS' 2022/23 Annual Report complies with the statutory requirements of the Public Finance Management Act and National Treasury Regulations.

Ms Barbara Creecy, MP
Minister of Forestry, Fisheries and the Environment

4. Message by the Deputy Minister of Forestry, Fisheries and the Environment

Ms Makhotso Maggie Sotyu, MP
Deputy Minister of Forestry,
Fisheries and the Environment

I am pleased to present the SAWS Annual Report for the 2022/23 financial year. The report examines the organisation's performance in the execution of its objectives for the year under review.

It reflects on the successes, challenges and future opportunities to ensure that the SAWS delivers on its mandate. It is a mandate premised on keeping the nation abreast with reliable, accurate and timeous meteorological information to save lives and property.

The DFFE supports the SAWS' vision and implements the Impact-Based Warning System that assists the country in responding proactively to weather-related natural disasters and mitigating the associated impacts.

This report marks a restoration period for national and global economies as they steadily recover from the relentless Covid-19 pandemic. South Africa's economy picked up momentum at the beginning of 2022 and grew by over a percentage. However, the flash floods that besieged KwaZulu-Natal (KZN) and the current energy crisis continue to strain the already fragile economy, which had just recovered to pre-pandemic levels.

We sympathise with victims of floods in KZN and our neighbours, Malawi, Madagascar, Zimbabwe, and Mozambique, as they pick up the pieces from the devastating cyclone "Freddy", which occurred in February 2023. Severe weather events have become more frequent and extreme than in the past. This is because of climate change.

In the period under review, the SAWS suffered a substantial loss in revenue from the aviation sector, and its strategic partnerships also declined significantly. The organisation also experienced several operational challenges, especially with an ageing and insufficient observation infrastructure, which remains vulnerable to vandalism. We need a concerted effort from the government and communities to combat crime in our country and to protect our infrastructure from vandalism.

Despite the challenges, the SAWS remains committed to optimising its technical and technological infrastructure to provide quality weather and climate data that meets the WMO-set standards.

As businesses looked to redirect their budgets in the past financial year to essential spending, the SAWS saw a decrease in requests for weather and climate data. That notwithstanding, the organisation had to implement a price increase on its products and services in 2022 to ensure sustainability. We are adamant that this increase, coupled with implementing its Revenue Turnaround Plan, including cost-containment measures, will put the organisation on a better financial trajectory in the future. It is commendable that throughout all these organisational challenges, the entity maintained ten international designations, including its ISO 9001:2015 certification.

I am pleased to report that the SAWS researchers and officials reached 50 research publications against the target of 40. Through this over-achievement, the organisation continues to live up to its reputation of providing reliable climate-specific data to support its public good and commercial ventures.

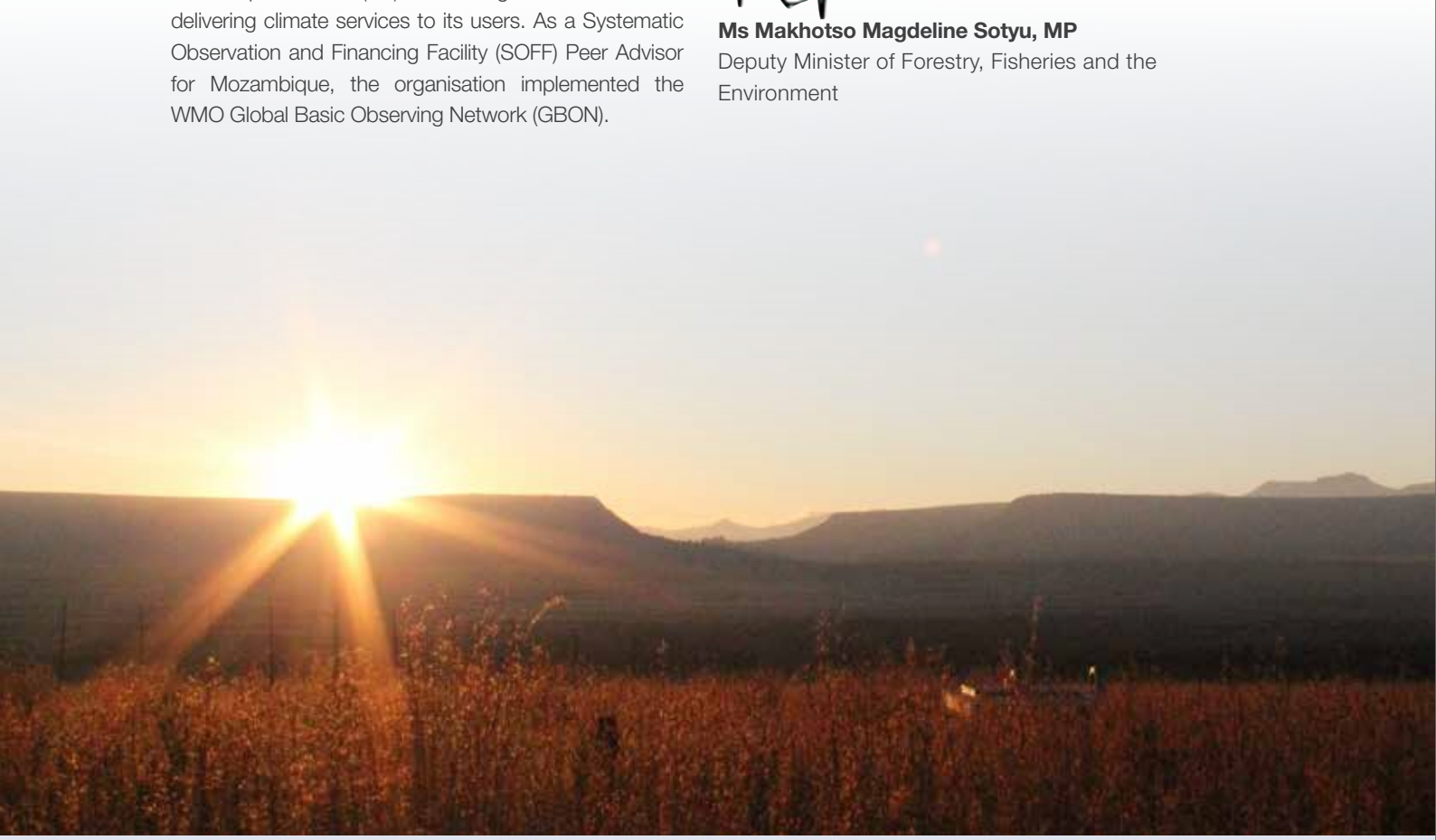
During the 2022/23 financial year, the SAWS intensified its international relations by participating in several WMO international events. This included collaborating with the European Union (EU) on a dialogue that focused on delivering climate services to its users. As a Systematic Observation and Financing Facility (SOFF) Peer Advisor for Mozambique, the organisation implemented the WMO Global Basic Observing Network (GBON).

On the regional front, SAWS hosted some notable activities such as the On-the-Job Training and Competency Development training, the WMO Climate Science Information for Climate Action Regional Workshop, a Workshop on Aviation Met Services focused on Cost Recovery Strategies in Africa, as well as the National Framework for Climate Service (NFCS). The Department commends the SAWS for helping the country contest and reclaim its seat in the WMO Executive Council (EC). Congratulations to the SAWS Chief Executive Officer, Mr Ishaam Abader, and his team.

At home, the SAWS continued to inform, educate, and empower its stakeholders, particularly the public, about weather and climate through the media and social media, community outreach programmes, career programmes, and the WeatherSMART App. Timeous forecasts inform planning and preparedness in the unfortunate events of extreme weather conditions.

I want to sincerely thank all the SAWS stakeholders, including the staff and the Board, who play valuable roles in carrying out the organisation's mandate in South Africa and beyond. The DFFE continues to support the work of SAWS and therefore supports the tabling of this report.

Ms Makhotso Magdeline Sotyu, MP
Deputy Minister of Forestry, Fisheries and the Environment



5. Foreword by the Board Chairperson

Ms Feziwe Renqe
Board Chairperson
South African Weather Service

On behalf of the Board, I am pleased and honoured to present the SAWS Annual Report for the 2022/23 financial year.

This report covers a period during which the SAWS' work came into sharp focus, following the extreme weather events visited upon communities, particularly in KwaZulu-Natal and the Eastern Cape, among other localities.

The loss of life, displacement of people, damage to property and untold infrastructural ruin observed in the wake of the storm that lashed the two provinces at the dawn of the financial year once again underscored the mammoth responsibility that rests on the shoulders of the Board, management, and the workforce of the SAWS.

As a national meteorological organisation and the authoritative voice on severe weather-related warnings in a country so prone to harmful weather and climate events such as droughts, floods, landslides, storms, and wildfires, the SAWS exists essentially to safeguard life and property.

Its value-add to South Africa's democratic project includes informing public and private decision-making concerning health, agriculture and food security, aviation, marine transport, water resources, Disaster Risk Reduction, and climate change adaptation. In this regard, the organisation has its work cut out for it.

Accordingly, it must constantly invest in and maintain its observational, monitoring and Information Communication Technology (ICT) infrastructure and in its innovation and research services. This will enable the organisation to provide both public good and commercial meteorological services and products to meet its objectives as envisaged in the South African Weather Service Act 2001 (Act No. 8 of 2001), as amended.

But success in this regard will not result from a solo effort. The SAWS must continue to draw from and leverage on its relations with stakeholders. These include, but are not limited to, the World Meteorological Organization (WMO); International Civil Aviation Organisation (ICAO); the aviation, maritime, air quality and water sectors; academic and atmospheric science and research;

Disaster Management Authorities, humanitarian aid-oriented Non-Governmental Organisations, and the mass media.

Moreover, the organisation must work closely with disadvantaged and vulnerable communities through public awareness programmes and information dissemination. This will have a significant impact on the promotion of the ideal of a nation that is safe, more informed, alert, resilient and has timely access to information and services regarding matters of weather — a concept known in meteorology circles as being WeatherSMART.

As the Board, we are alive to the challenges that have, thus far, hamstrung the SAWS. Chief among these has been the resource squeeze brought about by the Covid-19 induced loss of revenue, particularly from the aviation sector, which had proven over the years its contribution to sustaining the services of organisation's services.

In addition, there have been problems with the stability of some the SAWS' Radio Detection and Ranging (RADAR) infrastructure. The problem was primarily the result of frequent power outages including loadshedding, cable theft, insufficient fuel for backup generators during prolonged power outages, and breakdowns.

To this end, the Board worked with management to make the little resources the organisation has at its disposal go a long way, while recovering from the pandemic's effects, and also paying attention to the maintenance of available and ageing infrastructure to prevent a collapse of the system.

The Board commits to continue focusing the organisation's efforts on the provision of weather, climate and environmental solutions rooted in science. Improved scientific competence, accessible meteorological products and services, and dissemination of easy-to-digest information will underpin these efforts.

As the implementation of the SAWS' five-year Strategic Plan enters its penultimate year, it will be critical for the SAWS to continue pouring all its resources and energy into meteorology-related solutions to meet users' needs, enhanced meteorology-related body of knowledge, optimal core technological capability and organisational stability.

Over these last two years, the Board, management, and personnel of the SAWS will need to join hands and "put shoulder to the wheel", pulling together in pursuit of the successful implementation of the Strategic Plan. Ultimately, this will lead the organisation towards the realisation of the goal to cushion communities, property, and public infrastructure from the effects of adverse weather and climate occurrences.

It is opportune at this juncture to congratulate the SAWS management and staff on the entity achieving a clean audit outcome. This marks a significant improvement from the previous year, during which the entity obtained an unqualified audit. It is the Board's hope that this feat will be maintained, going forward.

The Board is indebted to Minister Barbara Creecy, Deputy Minister Makhotso Sotyu, the Department of Forestry, Fisheries and the Environment (DFFE) at large; the Forestry, Fisheries and the Environment Portfolio Committee, Board Committees, and the SAWS Chief Executive Officer, Mr Ishaam Abader and his management team, as well as the SAWS staff for their unwavering support.

We depend on and look forward to more of this support as we continue carrying out our corporate governance function.

Ms Feziwe Renqe
Board Chairperson
South African Weather Service

Date: 1 August 2023

6. Overview and Executive Report by the Chief Executive Officer

Mr Ishaam Abader
Chief Executive Officer
South African Weather Service

The SAWS is an ISO 9001:2015 certified provider of meteorological services as well as the national provider of weather and climate-related information.

The organisation is well positioned to contribute to socio-economic development through the creation of a prosperous and equitable society. The provision of reliable weather and climate information through its various products and services, enables various sectors and communities to develop weather and climate risk-mitigating strategies to reduce the impact of both climate change and weather-related natural disasters.

Extreme weather events, natural disasters, and the failure of climate change mitigation and adaption, pose the biggest threats to humanity. With the changing global climate, the frequency and intensity of extreme weather events continue to evolve and intensify. In pursuit of protecting lives and property against meteorological-related risks, the entity monitored its ability to avail timely weather-related services and accurate aviation information. Over the mid-term review period, the availability of weather-related services was rated at 98,7% while the aviation information accuracy achievement was at 96,1%. These results compare favourably to the respective 2024/25 targets of ≥96% and ≥90%.

The SAWS realised its mandate through the execution of four programmes during the 2022/23 reporting period, namely:

- Programme 1: Weather and Climate Services
- Programme 2: Research and Innovation
- Programme 3: Infrastructure and Information Systems
- Programme 4: Administration

During the period under review, the targets for Programme 1: Weather and Climate Services, were achieved through the issuing of severe weather warnings in advance to alert citizens of the impending extreme weather, as well as the impacts these conditions were likely to cause.

The SAWS continued to provide the required Aeronautical Meteorological Service to the aviation industry users, both domestic and international. The services were provided in accordance with Annexure 3: Meteorological Service for International Air Navigation, as well as

Part 174 of the South African Civil Aviation Authority (SACAA) Regulations. During the period under review, 604 aerodrome warnings were issued with a 98.56% accuracy achieved. Thunderstorms proved to be the dominant phenomena which the aviation community was warned for, contributing 80,3% of the warnings issued over the period under review.

In the period under review, Programme 2: Research and Innovation, saw the SAWS achieving a total of 50 research output against the set target of 40. This is against the backdrop of being a recognised research institution with a mandate to provide reliable weather services to support public good and commercial ventures. Being a research organisation in the atmospheric sciences field of study, scientists and researchers across the organisation are encouraged to publish as many scientific papers as possible.

The focus for Programme 3: Infrastructure and Information Systems for the year under review was the implementation of the infrastructure turnaround plan and systems optimisation initiatives. This area of work was particularly challenged during the period under review. However, numerous projects were rolled out to support the improvement of infrastructure performance. The organisation also strengthened its redundancy, as its effectiveness was compromised by long periods of power loss never experienced before.

Loadshedding, combined with limited human resources capacity and budget constraints, remained an on-going challenge. Connectivity interruptions due to loadshedding negatively impacted the uptime of meteorological instruments to collect data optimally and has resulted in data loss in certain regional sites, notwithstanding that the allocated ICT budget had assisted in upgrading the ICT infrastructure.

The strategy to overcome areas of underperformance consists of, amon others, developing a RADAR Infrastructure Sustainability Plan that looks at addressing the ageing infrastructure, dual polarisation to ensure optimal performance for disaster risk reduction, RADAR software upgrades to enable forecasters to accurately interpret RADAR data, RADAR training to ensure shorter turnaround time for RADAR maintenance, while building more skills for the interpretation and usage of RADAR data. Critical within this plan is the introduction of alternative sources of energy, in a phased approach, as from the 2023/24 financial year.

The process of developing an Integrated Infrastructure Sustainability Plan was initiated towards the end of the period under review. This plan looks at the modernisation and the expansion of the SAWS' meteorological observation network and will ensure that these networks conform to international requirements such as the Global Basic Observation Network (GBON), Global Climate Observing System (GCOS) and others.

During the year under review Programme 4: Administration, succeeded in its purpose to provide leadership, strategic guidance, centralised administration, executive support, corporate services and facilitate effective cooperative governance, international relations and environmental education and awareness.

The SAWS monitored its compliance against 20 prescripts. The process enabled the entity to provide assurance on a wide range of applicable legislation. The organisation determined the laws applicable to its operations and activities and these were contained in the SAWS compliance universe, which is part of the SAWS compliance framework. The level of risk for the identified legislation was assessed as per the adopted SAWS risk assessment methodology to ensure that the different laws are prioritised according to their level of risk to the organisation. Given the continuous changes in legislation, the SAWS continues to monitor developments, particularly those that would have an impact on its operations and activities.

With government's easing of Covid-19 restrictions towards the end of the year 2021, indoor and outdoor crowd gatherings were permitted to occupy 50% of venue capacity. This boded well for the entity's aim to reach out to more citizens of South Africa in pursuit of creating WeatherSMART communities, as public awareness programmes executed by the entity surpassed the target set for the period under review. A total of 39 community outreach programmes were conducted throughout the year with assistance from the SAWS Regional Offices.

The SAWS experienced a decrease in the number of requests for weather and climate data and products and services since April 2020, as companies re-evaluated their spend on commitments and started spending only on essentials. Additional fiscal pressure from the broader

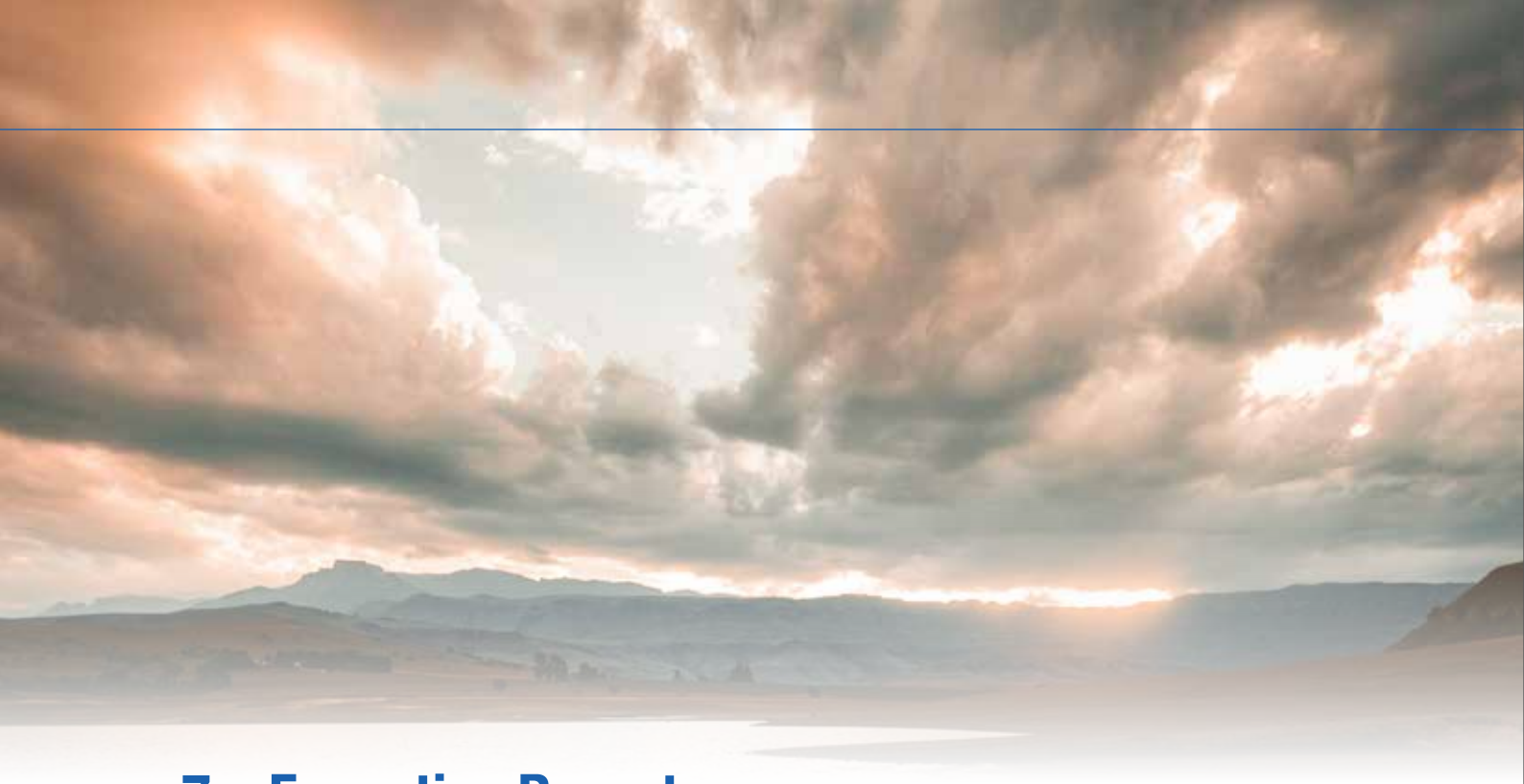
public service, including state-owned companies, meant that the fiscal trajectory remained a major source of uncertainty. Irrespective of the financial challenges experienced, the SAWS continued to work towards its revised targets. the SAWS was successfully awarded tenders for various solutions, including Air Quality maintenance and support for the City of Tshwane, the City of Ekurhuleni and Eskom Gourikwa. The SAWS also gained revenue from leasing of meteorological equipment at various smaller airports, thereby also contributing to airline safety, as well as support for Disaster Management.

On the international front, South Africa enhanced its international representation by reviewing the current nominations and made new nominations to various bodies of the WMO. Of paramount significance, was the alignment of the country's hydrological activities with the WMO, by nominating hydrological experts from the national Department of Water and Sanitation (DWS) to the WMO's Joint Expert Team on Hydrological Monitoring. This aimed at improving hydrological activities at national level. Subsequently, the country was represented in the WMO launch and presentation of its First State of Global Water Resources held in November 2022, which aimed to integrate hydrological activities in key WMO programmes.

The SAWS' continuous progress in the face of adversity would not be possible without the support given to the entity. I would like to thank the Minister, Deputy Minister, the Portfolio Committee on Environment, Forestry and Fisheries, the Auditor-General, the Board Chairperson and Board members as well as the various Board committees, executive management and all the employees of the organisation for their continued contributions during the reporting period. In particular, the invaluable assistance of the DFFE and the Minister during this difficult financial year, is highly appreciated.

Mr Ishaam Abader
Chief Executive Officer
South African Weather Service

Date: 1 August 2023



7. Executive Report

Report by the Chief Executive Officer to the Executive Authority and Parliament of the Republic of South Africa

Preparation and presentation of the Annual Financial Statements

The Annual Financial Statements were prepared in accordance with the South African Statements of Generally Recognised Accounting Practice (GRAP), including any interpretations of such Statements issued by the Accounting Standards Board.

The South African Weather Service (SAWS) complies, where applicable, with the Public Finance Management Act 1999 (Act No. 1 of 1999) (PFMA); Treasury Regulations; the Companies Act 2008 (Act No. 71 of 2008); and the principles of Good Corporate Governance recommended by King IV in managing its financial affairs.

The Annual Financial Statements for the year ended 31 March 2023 were compiled on a going concern basis as the SAWS is expected to continue operations in the foreseeable future.

General review of the state of affairs

The SAWS is the primary provider of weather and climate-related information within South Africa, as legislated in the South African Weather Service Act 2001 (Act No. 8 of 2001 as amended) – also referred to as the "SAWS Act". It supplies weather related and early warning information to the public as part of its public good mandate, for which a government grant is received to support these activities.

The SAWS furthermore provides weather-related information to the aviation industry on a cost recovery basis through a regulated tariff. The Regulating Committee for Meteorological Services (RCMS) plays a pivotal role in ensuring that the recommended tariff is just and fair to all parties involved and recommends accordingly to the Minister of Forestry, Fisheries and the Environment for approval and subsequent promulgation in the Government Gazette.

The SAWS Act further allows the SAWS to provide weather and climate-related information to commercial clients, including various industries such as mining, insurance, tourism, telecommunication, municipalities and other international meteorological organisations.

According to the SAWS Act, the SAWS is the custodian of the South African Air Quality Information System, which includes selling ambient air-quality or meteorological information packages.

The improvement in aviation revenue and the application of cost containment measures have resulted in the entity achieving a surplus of R39,89 million for the year (a deficit of R9,37 million after capital expenditure).

Financial analysis

Revenue

The total revenue increased by 11,29% from R488,9 million to R544,18 million year-on-year as represented in Table 1 below.

Table 1: Movement in revenue 2022/23 versus 2021/22 (year-on-year)

REVENUE	2022/23 R	2021/22 R	Variance R	Variance %
Revenue from non-exchange transactions				
Revenue from non-exchange transactions - Operational Expenditure	**386 281 335**	**360 414 617**	**25 866 718**	**7,81%**
Government grant - operational expenditure	386 281 335	360 414 617	25 866 718	7,81%
Contributions and donations	**12 656 166**	**21 981 669**	**(9 325 503)**	**-42,42%**
TETA - SETA grant	1 433 727	985 030	448 697	45,55%
Donor funding - research projects	11 222 439	20 996 639	(9 774 200)	-46,55%
Revenue from non-exchange transactions	**398 937 501**	**382 396 286**	**16 541 215**	**4.33%**
Revenue from exchange transactions				
Statutory commercial revenue				
Aviation income	**108 805 418**	**77 718 055**	**31 087 363**	**40,00%**
Non-regulated commercial revenue	**26 046 706**	**26 853 478**	**(806 772)**	**-3,00%**
Aviation instruments - maintenance income	1 667 987	1 099 840	568 147	51,66%
Information fees	16 983 793	17 451 517	(467 724)	-2,68%
Air quality revenue	628 629	985 498	(356 869)	-36,21%
Training - Regional Training Centre	759 122	271 044	488 078	180,07%
Lightning detection network sales	5 406 401	4 812 106	594 295	12,35%
Sale of instruments	600 774	2 233 473	(1 623 699)	-73,10%
Total commercial revenue	**134 852 124**	**104 571 533**	**30 280 591**	**29,96%**
Other Revenue	**10 390 285**	**2 021 357**	**8 368 928**	**414,03%**
Miscellaneous income	5 127 992	1 203 194	3 924 798	326,20%
Interest received from receivables	106 760	28 989	77 771	268,28%
Income from investments	5 155 533	789 175	4 366 358	553,28%
Revenue from exchange transactions	**145 242 009**	**106 592 890**	**38 649 519**	**36,26%**
Total revenue	**544 179 910**	**488 989 176**	**55 190 734**	**11,29%**

Government grant

The total government grant revenue increased by 7,18% (R25,87 million) from R360,41 million to R386,28 million year-on-year.

The Department of Forestry, Fisheries and the Environment approved the SAWS request to convert R124,04 million of the original conditional grant allocation of R190,04 million, which was earmarked for infrastructure investment into an operational grant to enable the entity to fulfil its day-to-day operations and employment commitments.

The entity's revenue was largely affected by the Covid-19 pandemic and low national economic growth, and to ensure organisational sustainability, the conversion was necessary.

Aviation revenue

Aviation revenue increased by 40% from R78,82 million to R110,47 million year-on-year. The easing of lockdown regulations due to improved and lower reported cases of the Covid-19 pandemic resulted in improved air-traffic volumes for the year. As a result, industry experts anticipate that air-traffic volumes and aviation revenue will recover to pre-Covid-19 levels by 2024/25.

Non-regulated commercial revenue

Non-regulated commercial revenue decreased by 3% from R25,75 million to R24,38 million year-on-year. The decrease is attributed to unfavourable economic conditions locally and globally, which have resulted in stagnant economic activity. In addition, most of the SAWS commercial partners reported a loss of key commercial clients during the year resulting in lower commercial revenue.

Donor funding revenue

Donor funds income mainly consists of revenue from various organisations, both locally and abroad, where agreements are entered into with the SAWS to collaborate with the funders on meteorological and climate services research.

Revenue from donor funding decreased by R9,77 million year-on-year from R21 million to R11 million. This is because revenue from donor funding has specific conditions attached to how the funds are to be spent; revenue is only recognised once those conditions have been met.

Externally and internally generated revenue

The table below depicts the proportion of revenue that has been internally generated (government funding) and externally generated revenue (commercial revenue):

Table 2: Relation between externally and internally generated revenue (2022/23)

	2023	2022
Internal revenue as % of total revenue	73%	78%
External revenue as % of total revenue	27%	22%

- Internal revenue comprises all government grant revenue and TETA grants; and
- External revenue comprises commercial revenue, mainly aviation and non-statutory commercial revenue.

Expenditure

Total expenditure increased by 6,03% from R456,92 million to R484,48 million year-on-year.

Table 3: Total expenditure (2022/23)

DESCRIPTION	2022/23 R	2021/22 R	Variance R	Variance %
Administrative	11 397 548	6 988 276	4 409 272	63,10%
Employee costs	286 521 036	268 509 222	18 011 814	6,71%
Amortisation	2 456 044	2 781 885	(325 841)	-11,71%
Depreciation	29 990 145	29 074 347	915 798	3,15%
Bad debts written-off	4 437 395	1 664 034	4 271 361	166,67%
Other operating expenses	149 679 643	147 906 587	1 773 056	1,20%
Total expenditure	**484 481 811**	**456 924 351**	**27 557 460**	**6,03%**

Employee costs

The compensation of employees increased by 6,71% year-on-year to R286,52 million (2021/22: R268,51 million), mainly attributed to salary adjustments for the year and the filling of critical positions.

Operating expenditure

Other operating expenses increased by 1,20% (R1,77 million) from R147,91 million to R149,68 million year-on-year, mainly due to implementing cost-containment measures.

Administrative expenses increased by R4,41 million from R6,99 million to R11,40 million, mainly due to legal fees spent on contractual and litigation matters and conference fees for scientific-related meetings and workshops.

Supply chain management system

The SAWS maintains an appropriate procurement and provisioning system which is fair, equitable, transparent, competitive and cost-effective, in accordance with the Public Finance Management Act 1999 (Act No. 1 of 1999, as amended), Treasury Regulations, cost-containment measures as issued by National Treasury and other applicable legislative frameworks.

Post-retirement medical aid benefit

The SAWS has a Defined Benefit Liability in the form of a Post-Retirement Medical Aid (PRMA) Benefit Plan for staff employed before November 2008. This obligation has been funded by payments from the entity and its employees, considering the recommendations of the independent qualified Actuaries.

Actuarial gains and losses are recognised in surplus or deficit in accordance with GRAP 25. As at 31 March 2023, the SAWS' liability on the Post-Retirement Medical Aid (PRMA) decreased from R2,164 million to R2,131 million.

The PRMA liability represents 46 members, a decrease from 49 members in the previous financial year. Of the 46 members, 31 are already on retirement/pension, while the remaining 15 are still in service.

Budgeted revenue and expenditure compared to actual

Total revenue for the year was below the budget by 4,28%, amounting to R544,18 million (Budget: R568,53 million), while the total expenditure is below the budget of R502,48 million by 3,58% (Actual: R484,48 million).

Services rendered by the South African Weather Service

Services rendered by the SAWS and the significant events during the year, including major projects undertaken, are discussed in detail in the annual report.

Capacity and other constraints

Funding sources - the SAWS' optimal productivity relies heavily on the availability of financial enablers to ensure that the desired yields on the investment are attained. In this context, the SAWS continues to rely heavily on support from the Government in the form of a government grant allocation from the Shareholder, which is significant in ensuring the long-term sustainability of the entity.

There has been improvement in the organisation in mobilising funds from other external funders through project fees with other scientific organisations. These collaborations enable the entity to perform research in various weather and climate fields, and the funds are utilised in accordance with the conditions agreed between the SAWS and the funders.

The approved and implemented commercial revenue turnaround strategy is expected to yield positive results in the medium- to long-term and is dependent on future economic growth.

Operational capacity – As a scientific institution, the SAWS continues to invest in its human capital through capacity building. At the same time, the modernisation of technology and replacement of old infrastructure has been temporarily delayed in the last couple of years due to the financial challenges emanating from the Covid-19 pandemic.

The enhancement in capital injections and technology ensures that there are up-to-date enablers to generate relevant research applications that will assist the government in planning- and decision-making processes.

The SAWS management is acutely aware that the organisation must invest in the ageing and old infrastructure to be sustainable and continue to deliver on its mandate.

An amount of R49,25 million was spent on maintenance and infrastructure investment during the year, mainly on meteorological and technical equipment, as well as information communication technology which supports the technical infrastructure.

Employees – Inadequate funding has impacted the SAWS attraction and retention strategy. The entity faces a strong challenge in ensuring its minimal employee turnover rate. A conducive working environment is important for the entity to maintain this target.

The impact of Covid-19 on the SAWS' revenue has resulted in the entity prioritising filling vacancies that were limited to only critical and scarce skills. This situation is being monitored regularly, considering the entity's financial performance.

The SAWS is responsible for creating a larger pool of scientists and technologists with a greater focus on previously disadvantaged individuals. However, achieving these objectives at scale, without the necessary financial resources is difficult.

The award of bursaries to staff was resumed during the financial year after it had been suspended due to reduced revenue because of Covid-19 and low economic growth in the last two financial years, which was management's strategy to re-prioritise funds and as part of the application of the cost-containment measures, and thus impacting negatively on the organisation's transformational focus and succession plan.

The SAWS, where possible, continues to fully fund bursaries for external students who are given opportunities to work at the SAWS through internships and/or full-time employment at the end of their studies.

Corporate governance arrangements

The SAWS is committed to the objectives and principles of transparency, accountability, and integrity, as explained in the King IV Report on Corporate Governance. A detailed discussion of the application and results of Corporate Governance in the organisation is provided in the annual report.

Risk Management is disclosed under note 36 in the Annual Financial Statements, whereas Related Party Transactions are reflected in note 35 Disclosure of Remuneration to Members of the Accounting Authority and Executive Management is contained in note 35 of the Annual Financial Statements.

The SAWS Strategic Plan, which sets out the direction for the entity for the next five years, was developed by the Board and approved by Parliament and is aligned to the key government priorities, including the National Development Plan.

The Audit and Risk Committee meets regularly and ensures that management adheres to internal controls, accounting policies and procedures. An independent person chairs this committee, and most of its members are non-executive.

The Chief Audit Executive manages the internal audit function comprising in-house and outsourced processes. In addition, the Chief Audit Executive reports to the Chief Executive Officer on administrative duties and to the Audit and Risk Committee on functional issues.

The Audit and Risk Committee has adopted formal terms of reference, and this committee is satisfied that it covered its responsibilities for the year in compliance with its terms of reference. (Refer to the Audit and Risk Committee report in the annual report).

Performance information

Performance targets are set annually - refer to the specific section in the annual report for the disclosure of these targets and related performance. In addition, quarterly performance reports are prepared by the SAWS and submitted to the Department of Forestry, Fisheries and the Environment (DFFE), stating achievements during the previous year and assessing results against the set targets of the current year.

Events after the reporting date

Management is unaware of any matters arising since the financial period's end, which would affect the figures, as disclosed in the Annual Financial Statements. The Meteorological Authority was transferred to the South African Civil Aviation Authority (SACAA) on 1 May 2023.

Fruitless and wasteful expenditure

There was no fruitless and wasteful expenditure incurred during the year. Further information is contained in Part B of this report.

Irregular expenditure

No irregular expenditure was incurred during the year. Further information on irregular expenditure is contained in Part B of this report.

Discontinued activities / activities to be discontinued

The Meteorological Authority was transferred to the SACAA on 1 May 2023.

8. Statement of responsibility and confirmation of accuracy for the Annual Report

To the best of my knowledge and belief, I confirm the following:

All information and amounts disclosed in the annual report are consistent with the annual financial statements audited by the Auditor-General South Africa.

The annual report is complete, accurate and free from any omissions.

The annual report has been prepared in accordance with the guidelines on the annual report as issued by National Treasury.

The Annual Financial Statements (Part E) have been prepared in accordance with the Generally Recognised Accounting Practice (GRAP) standards applicable to the public entity.

The Accounting Authority is responsible for preparing the annual financial statements and the judgements and estimates made by management.

The Accounting Authority is responsible for establishing and implementing a system of internal control 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, performance information, human resources information, and financial affairs of the public entity for the financial year ending 31 March 2023.

Yours faithfully

Mr Ishaam Abader
Chief Executive Officer

Date: 31 July 2023

Ms Feziwe Renqe
Chairperson of the Board

Date: 31 July 2023

9. Members of the Board

Ms Feziwe Renqe
Chairperson

Mr Itani Phaduli
Deputy Chairperson

Ms Sandika Daya
Board Member

Ms Nana Magomola
Board Member

Ms Mmapula Kgari
Board Member

Mr Grant Son
Board Member

Dr Mmaphaka Tau
Board Member

Prof. Sylvester Mpandeli
Board Member

Mr Ishaam Abader
Chief Executive Officer

Mr Peter Lukey
DFFE Representative (until 3 March 2023)

Mr Maesela Kekana
DFFE Representative (from 1 March 2023)

10. Executive Management

Mr Ishaam Abader
Chief Executive Officer

Mr Norman Mzizi
Chief Financial Officer

Dr Jonas Mphepya
Executive: Weather and Climate Services

Mr Mnikeli Ndabambi
Executive: Information and Infrastructure Systems

Ms Petro Dekker
Executive: Corporate Services

The year in numbers

R568,53 m
Budget

R544,18 m
Revenue generated

R484,48 m
Expenditure

R386,28 m
Government grant revenue

453
Severe weather warnings issued

604
Aerodrome warnings issued

9 090 450
Aviation website hits

53
Research outputs

79%
(22 out of 28)
Targets achieved

23
Footprint (number of weather offices)

474
Number of employees

15 518
New Facebook followers

26 457
New Twitter followers

11
Collaborations

39
Positioning activities

26
Public awareness events

11. Strategic Overview

"South African weather-related solutions for everyone, every day"

The vision clearly articulates the desired end state in which the SAWS is central to a situation where citizens, communities and business sectors can use the information, products and services across the weather, climate and related environmental space to support socio-economic development and build resilience.

"To provide meteorological solutions for improved quality of life for all in South Africa"

Meteorological solutions include:

- *Weather-related solutions*
- *Climate-related solutions*
- *Air quality solutions*
- *Other related environmental solutions, including water*

Integrity
A consistent sense of honesty, truthfulness and trust in one's own actions while valuing others' opinions and beliefs.

Collaborative
An approach to working together in a mutually beneficial environment with internal and external stakeholders to reach organisational goals.

Solution-oriented science
A quest for science excellence to find weather, climate and air quality solutions for all.

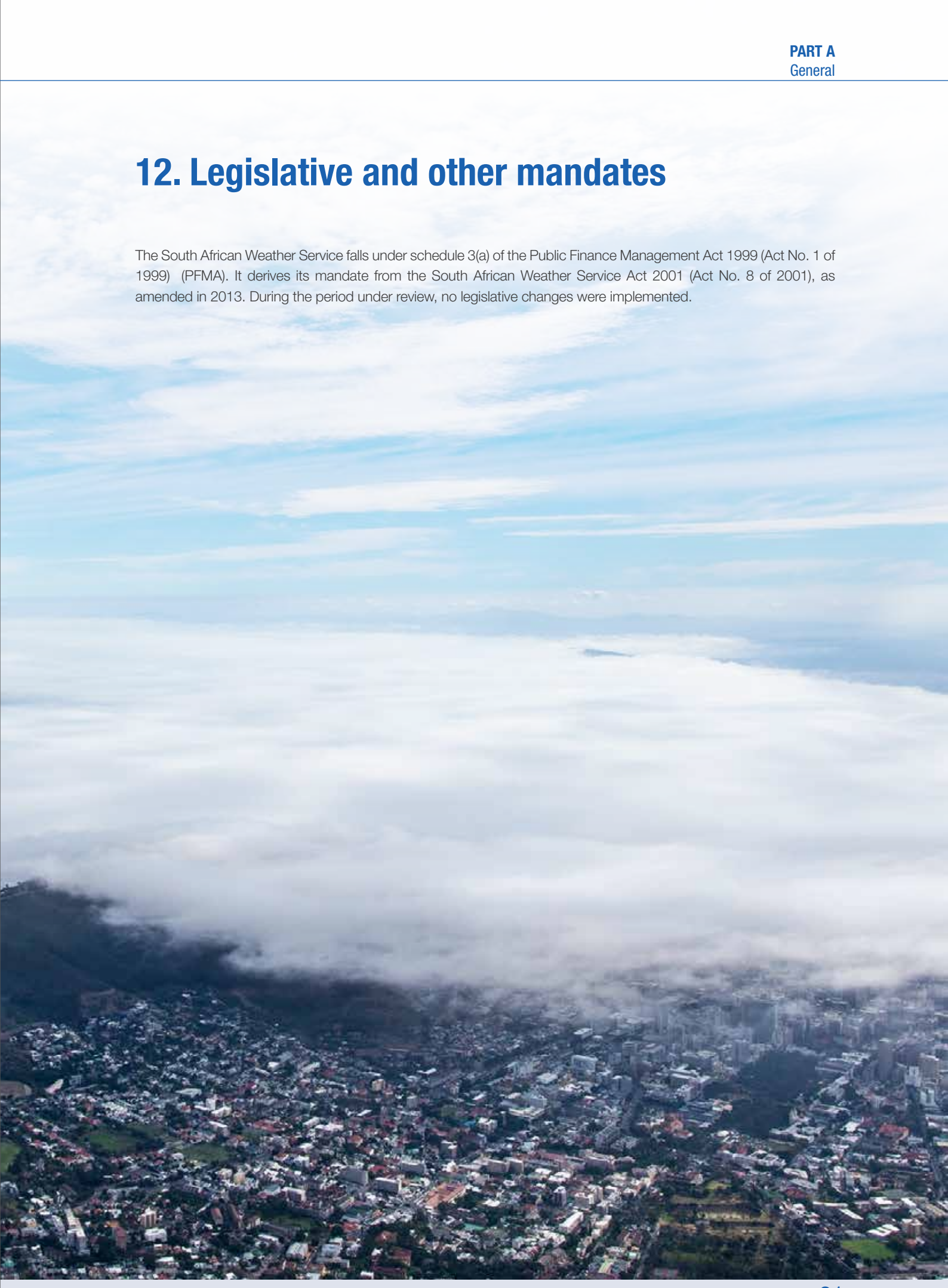
Passion for service excellence
A desire to deliver exceptionally high work and performance standards.

The SAWS is committed to implementing initiatives about its strategic output areas to realise the desired impact. Priority initiatives to be responded to include:

- *Enhanced meteorological-related body of knowledge*
- *Meteorological-related solutions provided to meet user needs*
- *Optimal core technical ability*
- *Internal excellence achieved within the organisation*

12. Legislative and other mandates

The South African Weather Service falls under schedule 3(a) of the Public Finance Management Act 1999 (Act No. 1 of 1999) (PFMA). It derives its mandate from the South African Weather Service Act 2001 (Act No. 8 of 2001), as amended in 2013. During the period under review, no legislative changes were implemented.



13. Organisational Structure

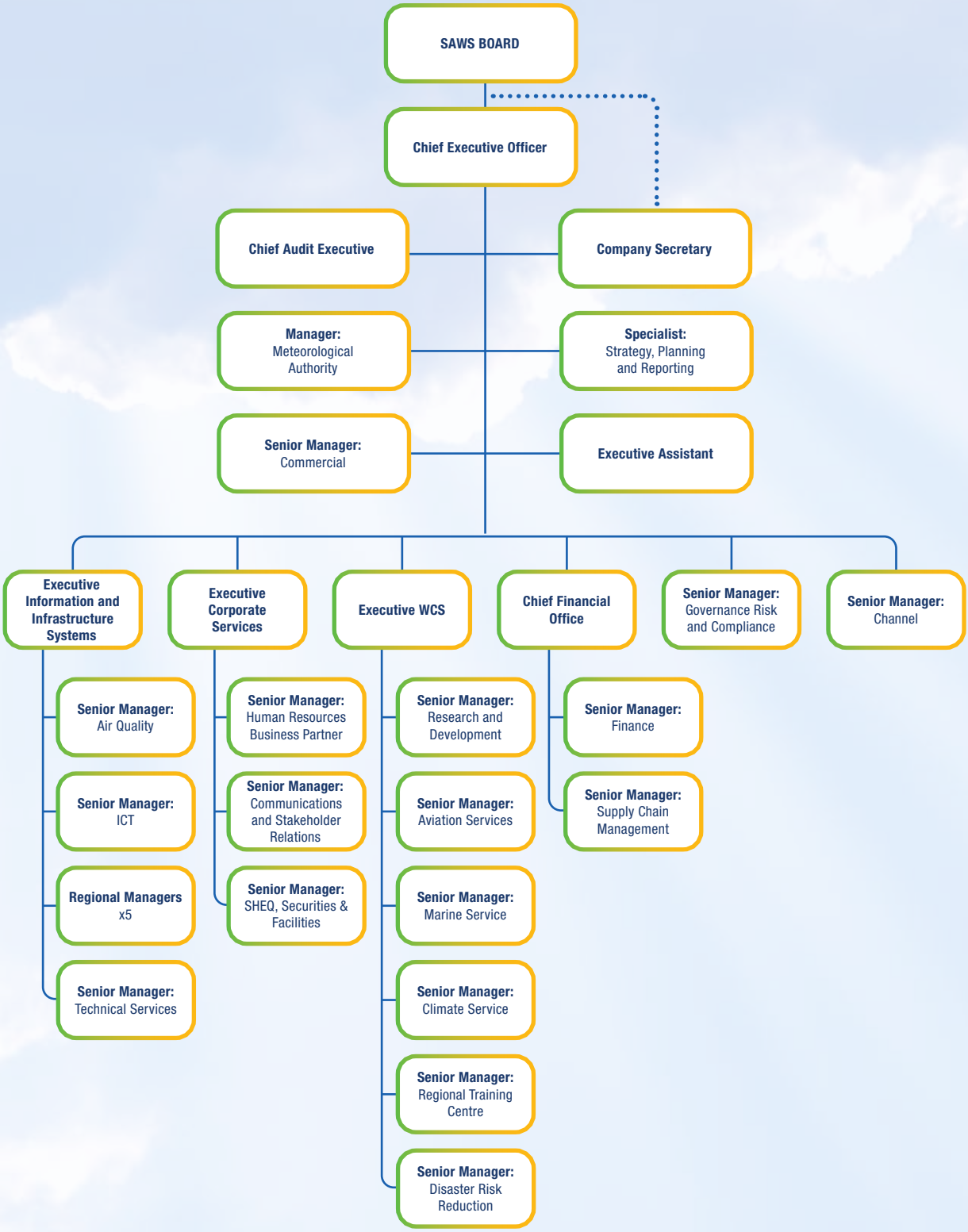


Figure 1: The SAWS organisational structure

14. The Meteorological Authority

Overview

The SAWS is designated in terms of the South African Weather Services Act 2001 (Act No. 8 of 2001), as amended in 2013, as the aeronautical meteorological authority for South Africa. The designation places an obligation on the SAWS in terms of Article 28 of the Convention on International Civil Aviation ("Chicago Convention") to provide meteorological services and related facilities in support of the safety, efficiency, and regularity of international civil air navigation in South Africa. In addition, article 38 of the Chicago Convention requires that air navigation services and related facilities be consistent with international standards and recommended practices prescribed by the International Civil Aviation Organization (ICAO) and set out in various Annexures to the Chicago Convention.

In aeronautical meteorology, the Meteorological Authority Unit is responsible for enforcing compliance with these international and national safety standards, with the latter prescribed under the Civil Aviation Act 2009 (Act No. 13 of 2009). To achieve this, the Meteorological Authority has established and implemented a safety oversight system anchored on eight critical elements of the safety oversight system, as depicted in Figure 2.

Figure 2: Critical elements of the state safety oversight system

Safety oversight

The Master Surveillance Plan (MSP) for the Meteorological Authority was successfully developed and implemented. The MSP guided the activities of the Meteorological Authority during the year under review, including the inspection of Automatic Weather Observation Systems (AWOS). The AWOS is one of the critical infrastructures in aviation which monitors and reports meteorological information required for the safe operation of an aircraft. These systems contribute to the safety, efficiency, and regularity of flight operations in South Africa and the protection of life and property.

During the year under review, AWOS at 26 airports were inspected by the Meteorological Authority for compliance with Civil Aviation Regulations (CAR) Part 174 and 139, focusing on the maintenance and calibration of these systems. Furthermore, the existence and effective implementation of the service level agreements between the service providers and airport authorities relating to the equipment were assessed. Table 4 below summarises the outcome of these assessments for the period under review.

Table 4: Summary of most common key findings per airport ownership

Ownership \ Type of finding	Lack of personnel accredited	Non-compliant MET equipment	Lack of service level agreement (SLA)	No MET equipment
Airports Company South Africa (ACSA)	0	0	2	0
Municipality	0	1	2	1
Provincial government	0	0	1	0
Private	2	3	2	1
Total	**2**	**4**	**7**	**2**

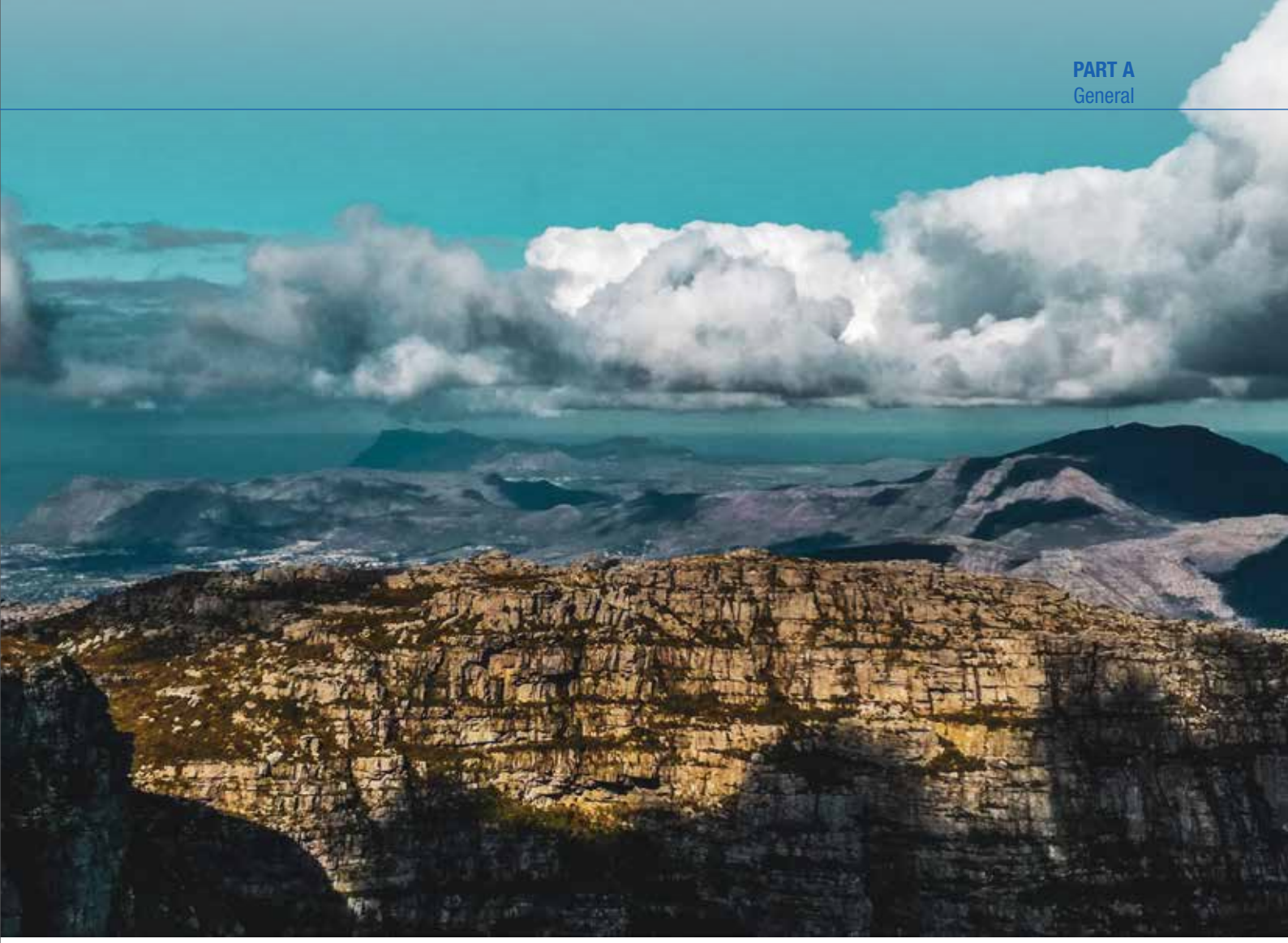
Aerodrome Licensing Forum (ALF)

The ALF is a platform within the South African Civil Aviation Authority (SACAA) where decisions are made to license or not to license aerodromes in South Africa. These decisions are based on the level of compliance by these aerodromes to the Civil Aviation Regulations (CARs) and Civil Aviation Technical Standards (CATS) published under the Civil Aviation Act 2009 (Act No. 13 of 2009). The Meteorological Authority provides inputs into aerodrome licensing regarding the compliance status of aerodromes in aeronautical meteorology. The Meteorological Authority attended all nine ALF meetings during the year under review.

Meteorological Authority function transfer

The process to transfer the Meteorological Authority function from the SAWS to SACAA is at an advanced stage. This was possible due to the collaboration between the SAWS and SACAA with the support of the Department of Fishery Forestry and Environment (DFFE) and the Department of Transport (DoT). The rationale behind the transfer is to ensure a distinct separation between the SAWS (service provider) and the Meteorological Authority (regulator), with the primary objective being to eliminate perceived conflict of interest and align with international best practices and national civil aviation policy.

Both Minister Barbara Creecy and Minister Fikile Mbalula representing the DFFE, and the DoT, respectively, approved the transfer of the Meteorological Authority function from the SAWS to SACAA. President Cyril Ramaphosa approved the transfer on 22 January 2023, completing the last step of the political approval process. At an entity level, the SAWS and the SACAA continued to work together to ensure a smooth function transfer. A Meteorological Authority Transfer Committee (MATCOM) was established to oversee the implementation of the project plan and deal with any obstacles that may emerge. The composition of the MATCOM comprises Executive Management from both the SAWS and SACAA. The MATCOM held three meetings during the reporting period.



Stakeholder engagement

During the year under review, the Meteorological Authority engaged with various stakeholders across the aviation community, government departments, and regional and international organisations. The list of key stakeholders engaged during the reporting period is shown in Table 5.

Table 5: List of stakeholders engaged by the Meteorological Authority

Key Stakeholder	Nature of engagement (list not exhaustive)
South African National Space Agency (SANSA)	Implementation of space weather service and development of space weather regulations.
South African Civil Aviation Authority (SACAA)	Regulations development and implementation of the state safety programme.
Department of Transport (DoT)	Ministerial submissions on the Met Authority Transfer. Response to State letters. ICAO related matters, preparation for the 45th ICAO Assembly.
Department of Forestry, Fisheries and the Environment (DFFE)	Ministerial submissions on the Met Authority Transfer.
Airport and Air Traffic Service Authorities	Enforce regulatory compliance.
Aeronautical Committee for Aeronautical Meteorological Services (ACAMS)	Reporting to the aviation industry on surveillance activities.
Airlines Association of Southern Africa (AASA)	Aviation industry consultation.
The International Civil Aviation Organisation (ICAO)	Development of International Standards under the Meteorological Panel.

PART B:
Performance Information

1. Auditor's Report: Predetermined objectives

The Auditor-General of South Africa (AGSA) performed the necessary audit procedures on the performance information to provide reasonable assurance in the form of an audit conclusion. The audit conclusion on the performance against predetermined objectives is included in the Auditor's Report to management.

Refer to page 139 - 142 of the Auditor's Report, published as Part E: Financial Information.

2. Overview of performance

Service delivery environment

South Africa finds itself engaged in the recovery from the impacts of the Covid-19 pandemic, which plagued the globe since 2020. Although the pandemic negatively affected economies and lives across the globe, a steady, though slow, recovery continues to occur as sectors implement recovery plans to bring the situation back to pre-Covid levels.

The country's economy picked up momentum in the first few months of 2022 and grew by 1,9%. However, severe weather activity in April 2022, including historic flooding, the loss of life and throttled freight operations at sub-Saharan Africa's busiest port in the key province of KwaZulu-Natal, coupled with the implementation of unprecedented power cuts, are delaying recovery efforts.

The devastating floods in KwaZulu-Natal and load shedding weakened a fragile national economy that had just recovered to pre-pandemic levels. In addition, there were disruptions to the water supply caused by both the floods in KwaZulu-Natal and the drought in Eastern Cape. This challenge, combined with other local and international factors, such as the recent floods, a weaker rand, higher inflation, a faster increase in interest rates, slower economic growth and a continued rise in the unemployment rate, weighed on the outlook for local economic growth during this financial year.

The SAWS was affected by the pandemic and other local challenges as its revenue generation from the aviation sector and strategic partnerships declined drastically. Vandalism to the weather observations and air quality monitoring infrastructure also impacted the SAWS financially and in terms of delivering services as desired.

Organisational environment

The SAWS is an ISO 9001:2015 certified provider of meteorological services and the national provider of weather and climate-related information. As a result, the organisation is well-positioned to contribute to socio-economic development by creating a prosperous and equitable society. Providing reliable weather and climate information through its various products and services enables multiple sectors and communities to develop weather and climate risk-mitigating strategies to reduce the impact of climate change and weather-related natural disasters. In addition, the operationalisation of the Impact-Based (ImpB) warning system enabled the country to proactively respond to weather-related natural disasters, more especially to those induced by flash flooding.

Longstanding structural constraints, such as electricity outages, also affected the SAWS' ability to keep key observation network infrastructure operating, affecting the upload of data into products and services and disseminating essential products and services to our partners and key clients.

The SAWS also saw a definitive slowdown in requests for weather and climate data and products and services since April 2020 as companies re-evaluated their spending on essential commitments. In addition, additional fiscal pressures from the broader public the budgetary trajectory remained a significant source of uncertainty. This, coupled with prolonged air travel restrictions impacting the SAWS' commercial revenue and the risk-averse approach being taken by many organisations, placed the SAWS under severe financial pressure and forced it to carefully analyse its financial position, given the uncertainty regarding economic impacts.

Against this background, the SAWS implemented a price increase of 5,9% during August 2022, which was aligned with inflation and current market trends. The focus was on addressing customers' pain points with flexible pricing and payment terms while complying with the Public Finance Management Act 1999 (Act No. 1 of 1999) (PFMA). In short, the SAWS focuses on driving long-term value creation rather than seeking short-term advantage.

As part of its Employee Value Proposition (EVP), the entity introduced a Work-From-Home policy allowing flexible work arrangements. While the Covid-19 pandemic may have necessitated it, the policy implementation seems to be fully entrenched in the entity as employees continue to perform against the set targets while business continuity is safeguarded. Furthermore, the entity also managed to stabilise employee turnover, achieving an attrition rate of 4,87% against a target of ≤8% in the year under review.

Key policy developments and legislative changes

During the period under review, no policy or legislative changes were implemented.

Progress towards achievement of institutional impacts and outcomes

The SAWS is at the core of meteorological, climatological and environmental service provision to the Republic and its ever-diverse economic sectors. It maintains its vision to ensure that citizens, communities and business sectors can use information, products and services across the weather, climate and related environmental space to support socio-economic development and build resilience.

The vision of *"South African Weather-related solutions for everyone, every day"* continued to drive the SAWS' efforts as considerable strides were made, despite challenges hampering the organisation's operations.

The SAWS relies on effective and functional observation infrastructure to produce products and services that safeguard lives and property against increasingly adverse weather impacts. Much of the infrastructure is aged in terms of lifespan and technology and requires investment for refurbishment, modernisation and upgrading, as well as investment in relevant and contemporary information and communications technologies. Notwithstanding these challenges, the SAWS continued discharging its duties towards protecting lives and property against meteorological-related risks, including providing air quality information.

Improved quality of life for all in South Africa is the SAWS impact statement for its strategic plan 2020/21 to 2024/25.

The SAWS envisages this impact to be realised through the consistent achievement of desired outputs, which contribute to the attainment of outcomes related to: lives and property protected against meteorological-related risks and organisational sustainability.

Extreme weather events, natural disasters, and the failure of climate change mitigation and adaptation pose the biggest threats to humanity. With the changing global climate, the frequency and intensity of extreme weather events continue to evolve and intensify. To help achieve the outcome relating to protecting lives and property against meteorological-related risks, the organisation monitored its ability to avail timely weather-related services and accurate aviation information. Over the mid-term review period, the availability of weather-related services was rated at 98,7%, while the aviation information accuracy achievement was 96,1%. These results compare favourably to the respective 2024/25 targets of ≥96% and ≥90%.

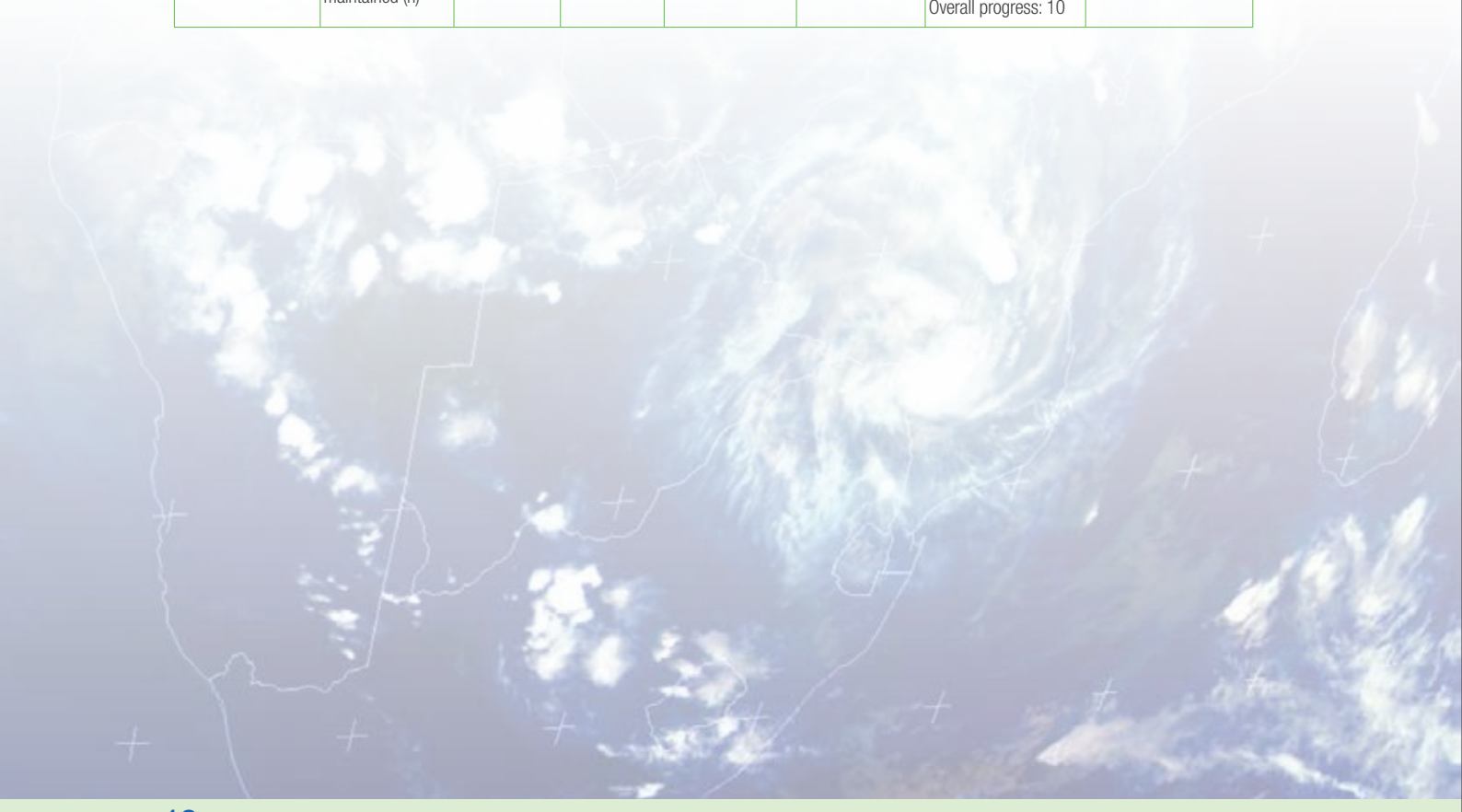
In promoting the relevance of the SAWS, the organisation committed itself to engaging the public, particularly vulnerable communities, thereby creating a WeatherSMART Nation. This commitment saw over 45 engagements executed over the strategic plan's first two and half years, notwithstanding serious challenges. The entity's ability to generate non-statutory revenue to augment the government grant and contribute to its sustainability was challenged by Covid-19, which impacted the globe.

The SAWS continued to implement its revenue turnaround plan to generate revenue from multiple sources, with the entity realising R26,8 million by the end of the 2021/22 financial year. At the end of September 2022, the organisation had realised R10,5 million in non-regulated revenue against an annual target of R27 million. The SAWS continues to be globally recognised in the meteorological field and has managed to, throughout the period, maintain a total of ten international designations, inclusive of its ISO 9001:2015 certification.

The Minister approved the progress towards achieving the impact and outcomes as committed to in the 2020/21 to 2024/25 strategic plan and submitted it to the Department of Planning, Monitoring and Evaluation (DPME) in November 2022. The summary of progress is indicated in the log frame in Table 6.

Table 6: Progress log frame of achievement of the impact and outcomes as committed to in the 2020/21 to 2024/25 strategic plan

Outcome	Outcome Indicator	2019/20 Baseline	2024/25 Target	Actual achievement 2020/21	Actual achievement 2021/22	Actual achievement as at 30 September 2022 and overall progress (2020-2022)	Improvements required for the remainder of the planning period
Lives and property protected against meteorological-related risks	Percentage accuracy of aviation information	90%	≥90%	95,55%	95,73%	Q1 2022/23: 97,13% Q2 2022/23: 97,02% Overall progress: 96,1%	None
	Percentage availability of weather-related services	96%	≥96%	98,22%	98,87%	Q1 2022/23: 99,31% Q2 2022/23: 98,91% Overall progress: 98,7%	None
	Number of engagements to reach vulnerable communities	2	20	0	16	Q1 2022/23:15 Q2 2022/23: 14 Overall progress: 45	None
Organisational sustainability	Total non-regulated income growth (R-value)	R32,4 million	R53,1 million	R25,04 million	R26,8 million	Q1 2022/23: R5,02m Q2 2022/23: R5,52m Overall progress (as at the end of 2021/22): R26,8m	Address gaps in revenue generation by appointing strategic partners with experience in commercialising products and services to key sectors in South Africa
	Number of accreditations maintained (n)	10	10	10	10	Q1 2022/23: 10 Q2 2022/23: 10 Overall progress: 10	None



3. Institutional programme performance information

Programme 1: Weather and Climate Services

Purpose: To safeguard life and property and provide meteorological solutions to all South Africans

Sub-programme 1.1: Warnings, alerts and advisories

Purpose: To provide timeous and accurate impact-based early warnings, alerts and advisories to safeguard life and property against the impact of severe weather on land, oceans and in the air

Outcome: Lives and property protected against meteorological-related risks

LONG-LIVED TROPICAL CYCLONE FREDDY ONE FOR THE HISTORY BOOKS

What was a zone of disturbed weather quickly turned into one of the longest-lived and longest tracked tropical systems in the southern Indian Ocean in recorded history. On 3 February 2023, a zone of unsettled weather developed within a monsoon trough near the Timor Sea in the Australian cyclone basin, roughly 900 km northwest of the town of Broome in Australia. The Australian Bureau of Meteorology, a Tropical Cyclone Warning Center (TCWC) for the south-west Pacific and south-eastern Indian Oceans, formally gave the system the name *Freddy* on 6 February 2023 after the system rapidly intensified into a tropical cyclone during the morning.

Freddy remained at least a category 1 tropical cyclone for its entire journey from 6 February until 21 February 2023, when it made landfall along the central Madagascar coast. Up to this point, *Freddy* remained at intense tropical cyclone category 3 status from 10 to 21 February, even reaching very intense tropical cyclone status (category 5), with winds of up to 250 km/h, on 15 and 19 February 2023. Finally, on the evening of 21 February, *Freddy* slammed into the central coast of Madagascar as a high-end category 1 tropical cyclone.

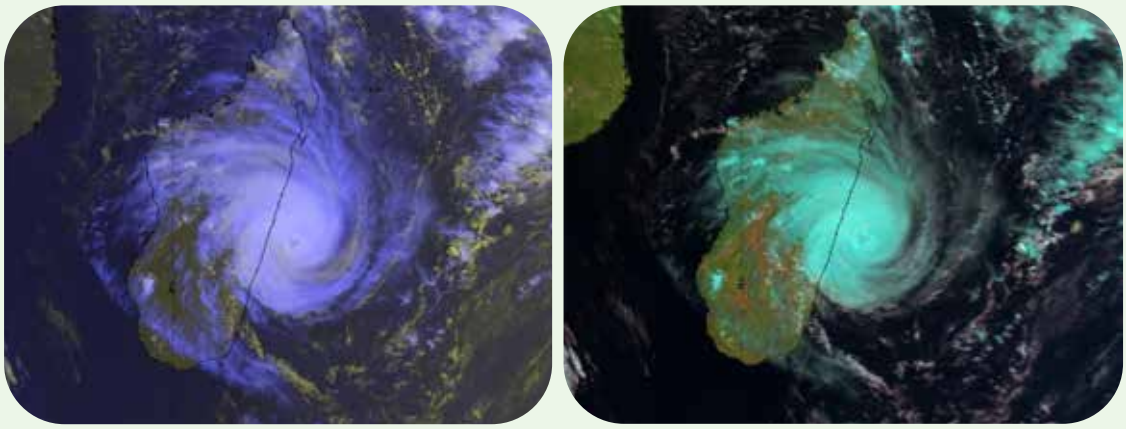


Figure 3: High-resolution visible (left) and day natural colours (right) satellite images of tropical cyclone Freddy just before making landfall along the eastern Madagascar coast on Tuesday, 21 February 2023 (Source: Eumetsat)

Freddy immediately weakened overland due to the rugged terrain and became an overland depression, bringing widespread heavy rainfall and damaging winds near the core of the system. Unfortunately, according to United Nations Office for the Coordination of Humanitarian Affairs (OCHA), seven people lost their lives in Madagascar. According to a report released by OCHA on 1 March 2023, 226 000 people were affected by *Freddy* in Madagascar, with thousands of houses and classrooms destroyed.

The system then continued in a west-south-westerly direction and re-emerged in the Mozambique channel in the afternoon of 22 February 2023. By this time, a subtropical upper-air ridge was preventing *Freddy* from moving southwards and kept the system on track for landfall in Mozambique on Friday morning, 24 February 2023, as a severe tropical storm between Vilanculos and Pomene.

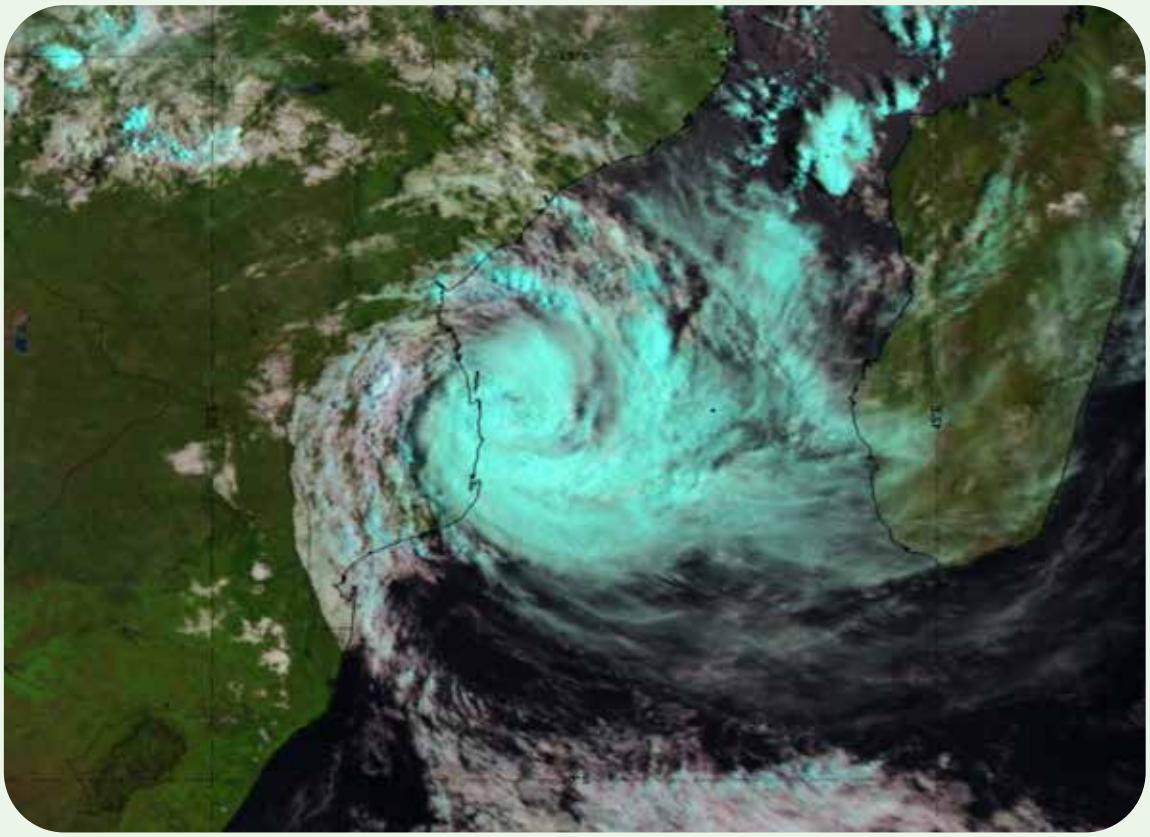


Figure 4: Day natural colours satellite image of severe tropical storm Freddy before making landfall between Vilanculos and Pomene along the Mozambican coast on Friday, 24 February 2023 (Source: Eumetsat)

After that, *Freddy* again became an overland depression and remained relatively stationary over southern Mozambique from 24 February until 1 March 2023. It also briefly went into the extreme south-eastern parts of Zimbabwe on 27 February. During this time, 300 to 500 mm of accumulated rainfall was widely observed over southern Mozambique, with some observations near and in Vilanculos reporting accumulated rainfall in the order of 600 mm within six days. Unfortunately, observational data was limited.

By 28 February, 163 000 people were affected in Mozambique, with 27 000 houses destroyed or damaged and 658 km of road damaged by flooding, according to OCHA. Unfortunately, another seven people lost their lives in Mozambique at this time.

The SAWS issued several media releases regarding this system from 21 February 2023. Fortunately, the cyclone did not significantly impact South Africa, although rainy conditions were observed in the Lowveld and escarpment regions of Limpopo and Mpumalanga. To the relief of South Africans, *Freddy* was blocked by a strong subtropical ridge over South Africa, accompanied by several surface systems which prevented the low-pressure core from moving into the country.

Freddy is one of only two tropical cyclones that have reached a track of this length since the beginning of the 21st Century. Tropical cyclone *Eline* of 2000 (called Leon in the Australian Basin before it moved into the Indian Ocean waters) had a very similar path to *Freddy* and persisted for about 30 days before dying out.

Nevertheless, *Freddy* remained in the Mozambique Channel from 3 March to 10 March. The latest forecast from the WMO designated Regional Specialised Meteorological Centre (RSMC) located at La Reunion suggested that *Freddy* would most likely have erratic movement but would not make landfall until at least the 10 of March 2023.

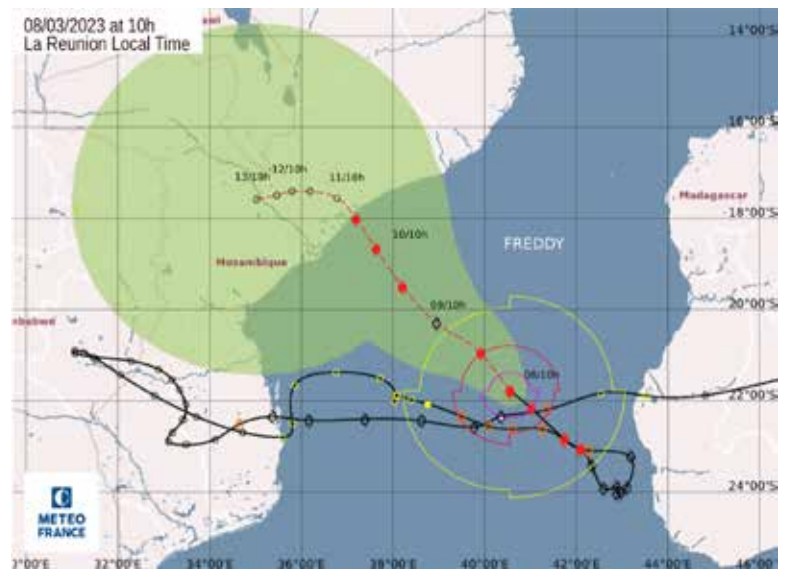


Figure 5: Freddy's predicted track on 8 March 2023 issued by La Reunion. Freddy was expected to make landfall over Mozambique for a second time (Source: MeteoFrance, La Reunion)

Freddy made landfall as a category 1 tropical cyclone on Saturday evening (11 March), just north of Quelimane over Macuse (central Mozambique coast). It was *Freddy's* second landfall in Mozambique. Torrential rain, widespread flooding and damaging winds occurred across Mozambique's central parts and Malawi's southern parts from 11 to 14 March.

As of 13 March, *Freddy* technically broke the world record for the longest-lasting tropical cyclone by lasting 36 days. The previous world record of 31 days was held by Hurricane John (1994). This record is still being investigated more fully by the World Meteorological Organization. Prof. Randall Cerveny at the World Meteorological Organization says, "At this time, it does appear to be a new record holder for 'longest lasting' recorded tropical cyclone, but we are continuing to monitor the situation".

Freddy may have recorded the highest recorded accumulated cyclone energy (ACE). Accumulated cyclone energy measures the total amount of wind energy a cyclone uses over its lifetime. Hurricane Ioke held the previous record in September 2006. The WMO will still investigate this phenomenon. *Freddy* also had the most rapid intensifications in history, with seven recorded rapid intensifications. The previous record was four. Rapid intensification is when a storm's wind increases by 56 km/h in 24 hours or less.

Extraordinary *Freddy* entered four African countries (Zimbabwe, Malawi, Mozambique and Madagascar), made landfall twice in Mozambique (24 February and 11 March) and crossed the Mozambique Channel twice (22 February and 1 March).

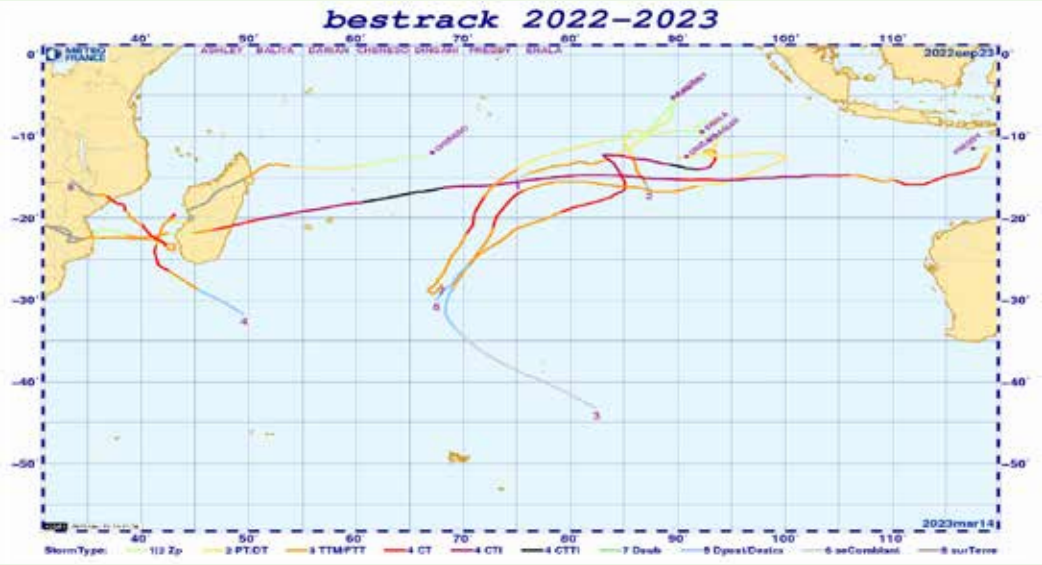


Figure 6: Freddy's observed track during its lifespan from 3 February until 14 March 2023 and the paths of the other tropical systems during the 2022/23 season (Source: MeteoFrance, La Reunion)

Freddy finally ended, disintegrating over Mozambique and Malawi on 15 March. Unfortunately, the latest reports indicate that the death toll in Malawi has risen to 270, with several people still missing. Fortunately, there are no indications that the low-pressure area will redevelop over the Mozambique Channel. Due to significant cloud cover and windy conditions over the Channel the last few weeks preceding *Freddy*, current sea surface temperatures were cooler than usual. This prevented the low pressure from intensifying, finally ending *Freddy*.

WARNINGS, ALERTS AND ADVISORIES

During the first quarter of the period under review, the SAWS issued severe weather warnings in advance to alert citizens of the impending extreme weather and the impacts these conditions were likely to cause. In addition, the authorities and the public were warned about the expected and eminent extreme weather events through warnings issued by the South African Weather Service Act 2001 (Act No. 8 of 2001 as amended).

For the summer rainfall areas of the country, the forecasts ahead of the season was for above-normal rainfall, and these were indeed realised. Above-normal rainfall conditions call for an increased number of warnings that need to be issued. This is evident from the total of 453 severe weather warnings issued throughout the year.

The most significant weather event of the year occurred in parts of the KwaZulu-Natal and the Eastern Cape from 11 to 12 April 2022, when extreme rainfall resulted in flooding in these areas. During the period 21 to 22 May 2022, another weather event occurred over the coastal districts of KwaZulu-Natal, where heavy rainfall and flooding were experienced.

CUT-OFF LOW PRESSURE SYSTEM AND SUB-TROPICAL DEPRESSION OVER KWAZULU-NATAL AND EASTERN CAPE - 11 TO 12 APRIL 2022

A cut-off low pressure weather system and a sub-tropical depression system named 'ISSA" brought very heavy rains over Ethekweni, Ilembe, and Ugu District Municipalities in the KwaZulu-Natal province, as well as OR Tambo and Alfred Nzo districts in the Eastern Cape province. The heavy rains started on the evening of 11 April 2022 and the morning of 12 April 2022, resulting in unprecedented flooding, extensive infrastructure damage, mudslides, and unfortunate loss of lives. Photos A to G below show some of the associated extensive damages.

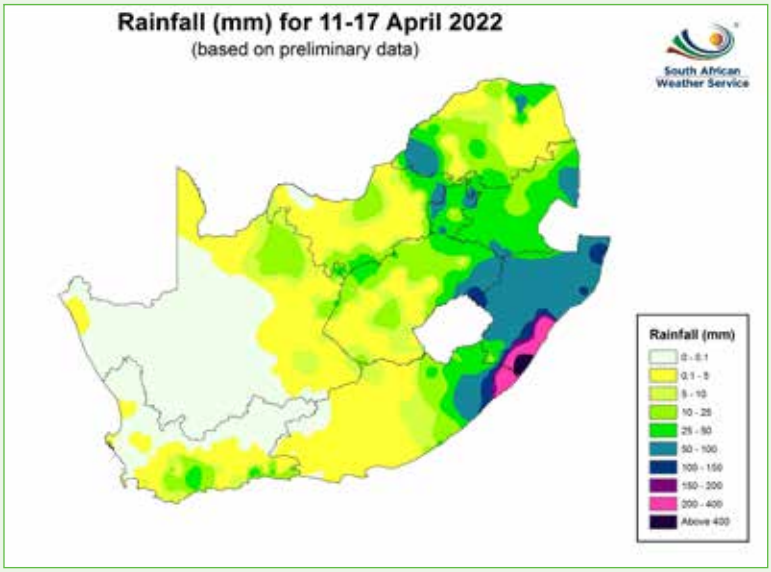
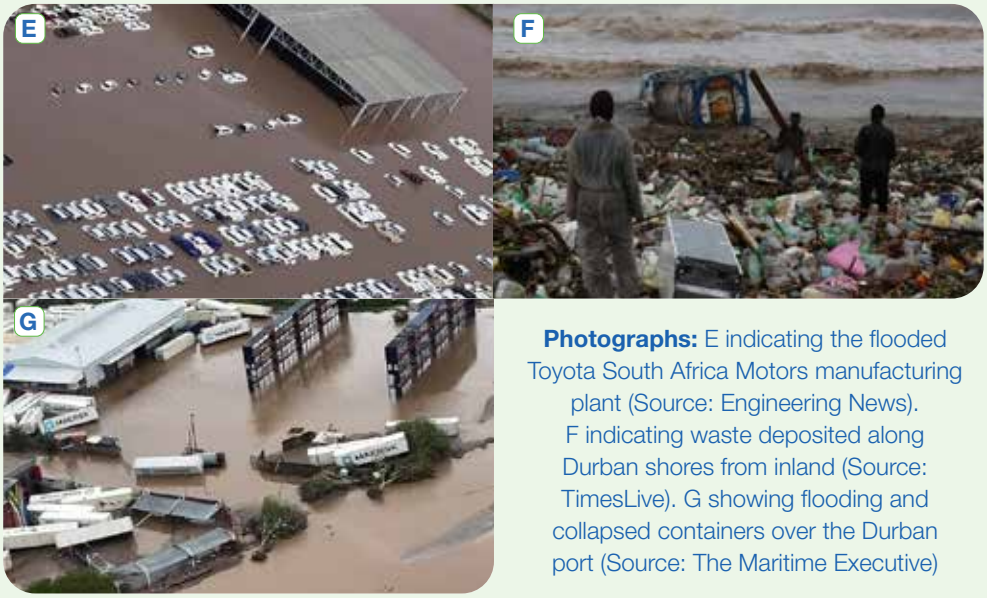


Figure 7: Measured rainfall amounts for 11-17 April 2022 (Source: The SAWS)

Photographs: A and C indicate damage to houses in parts of KwaZulu-Natal (Source: BBC News). B showing damage to road and bridge infrastructure (Source: Flood list). D indicating a flooded school classroom (Source: UNICAF SA)



Photographs: E indicating the flooded Toyota South Africa Motors manufacturing plant (Source: Engineering News). F indicating waste deposited along Durban shores from inland (Source: TimesLive). G showing flooding and collapsed containers over the Durban port (Source: The Maritime Executive)

Warnings issued by the SAWS ahead of the above-mentioned events were as follows:

On 7 April 2022, a media release was issued urging the public to be on alert as a cut-off low pressure system was forecasted to cause flooding in parts of South Africa, with the central and eastern provinces of main concern (including KwaZulu-Natal). This media release was followed by several flooding warnings for the KwaZulu-Natal coast, starting on 9 April 2022.

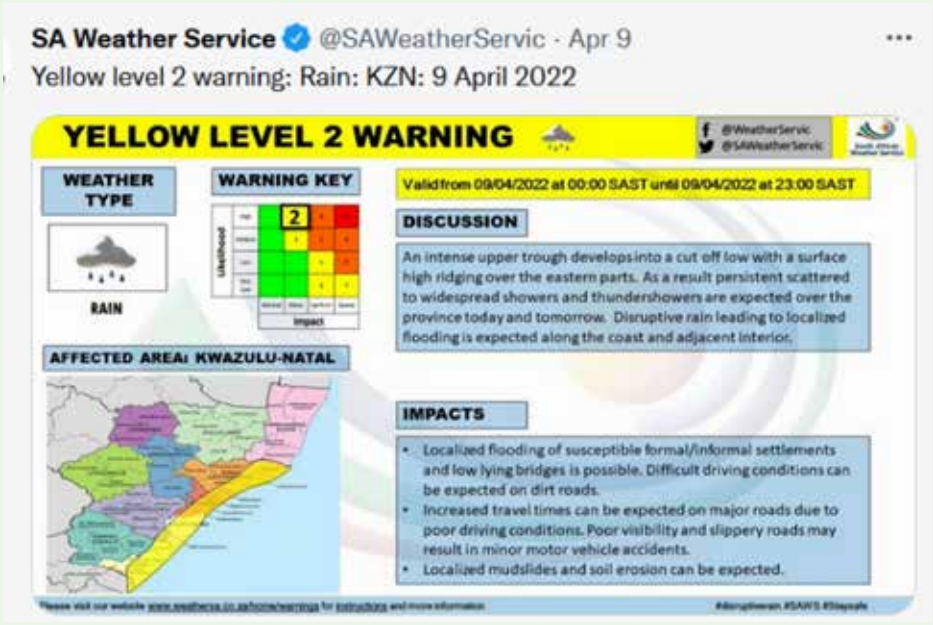


Figure 8: Yellow Level 2 Warning 9 April 2022 (Source: The SAWS Twitter account)

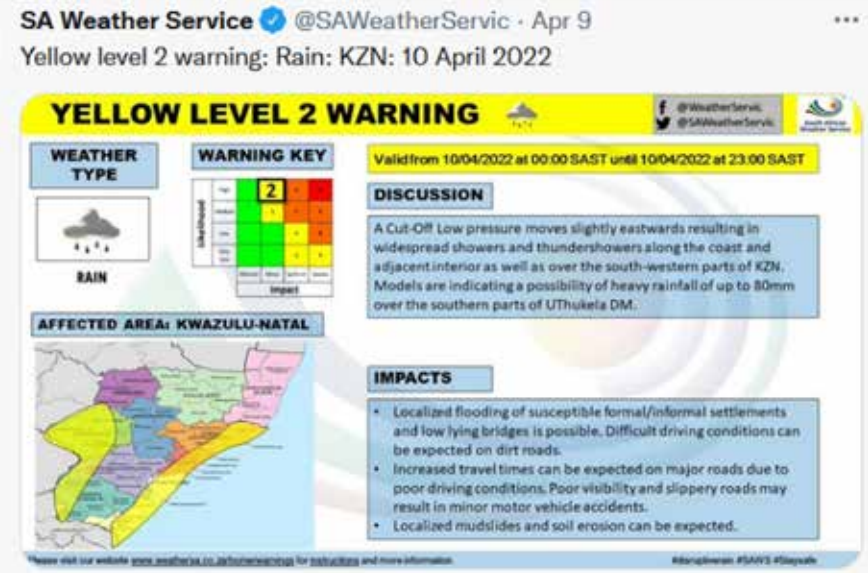


Figure 9: Warnings issued on 10 April 2022 for flooding for parts of the KwaZulu-Natal coast on 9 and 10 April 2022 (Source: The SAWS Twitter account)

On the morning of 11 April 2022, Level 2 warnings were upgraded to a Level 5 Orange Warning for the coastal areas and adjacent interior of KwaZulu-Natal, indicating a medium likelihood of significant impacts. Minor flooding was observed during the afternoon of 11 April 2022 in some coastal areas of the province. The warning was further upgraded to a Level 8 Orange Warning in the evening, indicating a likelihood of severe impacts occurring along the coast and adjacent interior, especially along the southern and central coastline. The warning was further upgraded to a Level 9 Orange Warning on the morning of 12 April 2022, and an updated media release was also issued to that effect.

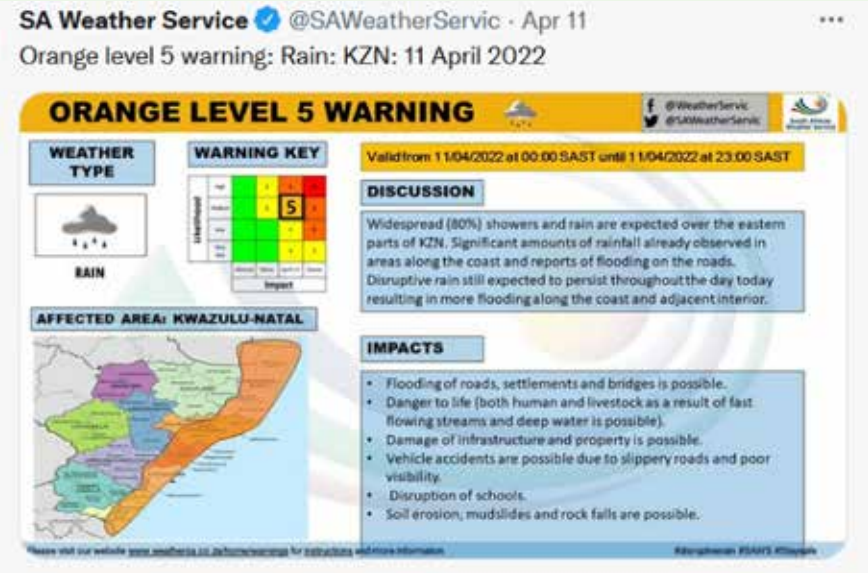


Figure 10: Orange Level 5 Warning issued on the morning of 11 April 2022 (Source: The SAWS Twitter account)

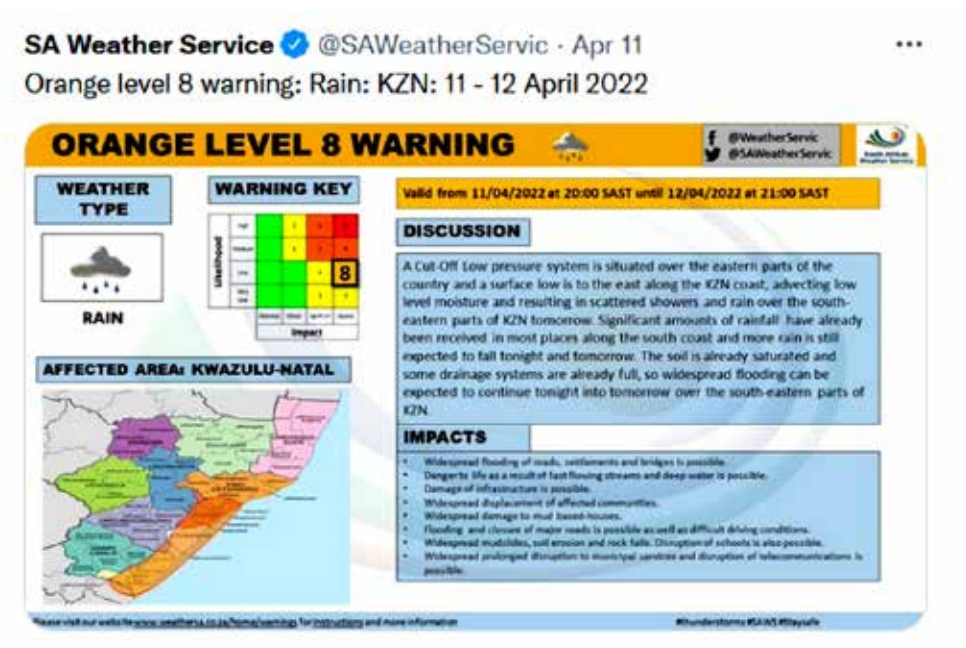


Figure 11: Orange Level 8 Warning issued by the SAWS on the evening of 11 April 2022 (Source: The SAWS Twitter account)

CUT-OFF LOW PRESSURE SYSTEM - 21 TO 22 MAY 2022

Following April 2022, another weather event caused by a cut-off low pressure system occurred in the KwaZulu-Natal province from 21 to 22 May, 2022. During this event, the highest rainfall occurred along the central and southern coast of KwaZulu-Natal, with rainfall amounts of up to 200 mm.

This exacerbated damage due to the April cut-off low pressure system event in the province. As a result, warnings issued by the SAWS included a Level 4 Yellow Warning for 21 May 2022, which was then upgraded to a Level 10 Red Warning for 22 May 2022.

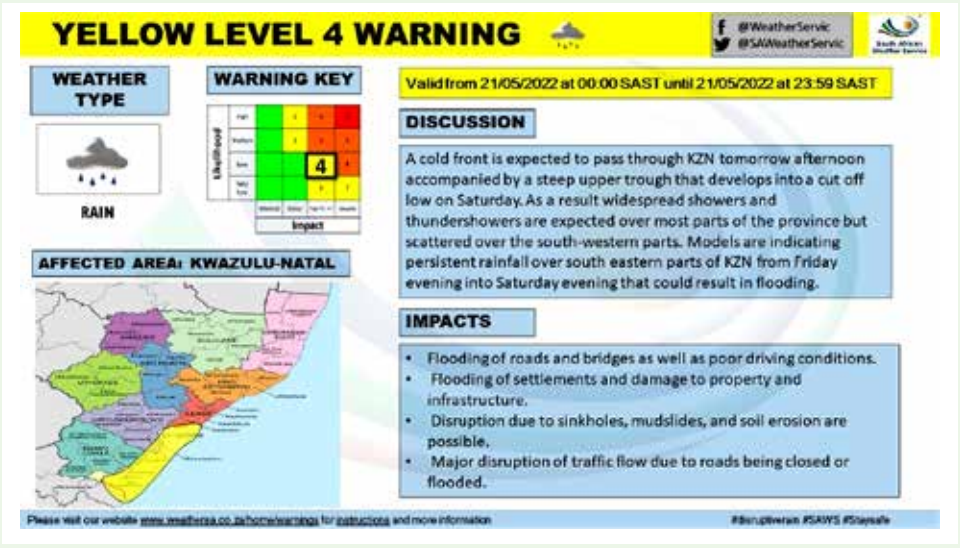


Figure 12: Yellow Level 4 Warning issued for 21 May 2022 (Source: The SAWS)

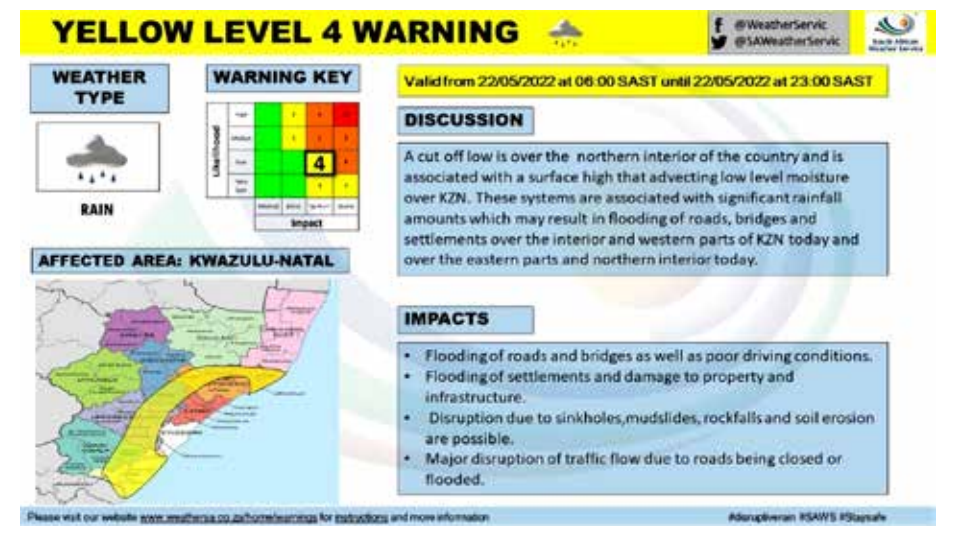


Figure 13: Yellow Level 4 Warning issued for 22 May 2022 (Source: The SAWS)

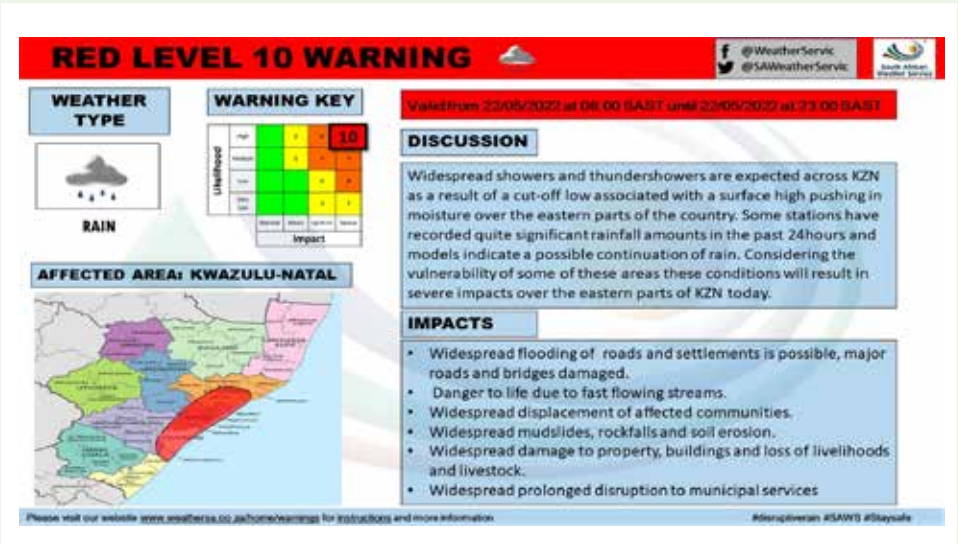


Figure 14: Red Level 10 Warning issued for 22 May 2022 (Source: The SAWS)

The second quarter of the period under review coincided with the winter season, where rain is prevalent in the south-western parts of the country. Unfortunately, as per predictions from the seasonal forecasts issued earlier in the year, there was below-normal rainfall in these areas. Despite this, there were some significant winter weather systems which necessitated the issuing of warnings by the SAWS. Here below are the most significant weather events that happened:

RAINFALL EVENT - 18 TO 20 SEPTEMBER 2022

A steep upper air trough associated with a ridging high pressure resulted in widespread showers and rain over the Eastern Cape and KwaZulu-Natal provinces between the 18 and 20 September 2022. As a result, several warnings (Level 5 for snow, Level 6 for heavy rainfall) were issued, with a significant impact-based warning for the eastern parts of the Eastern Cape for 19 to 20 September 2022. Considerable rainfall amounts were measured, but no significant impacts were reported during this event. Some snowfall was also reported over the extreme north-eastern mountains of the Eastern Cape, Lesotho and the Drakensberg region of KwaZulu-Natal.

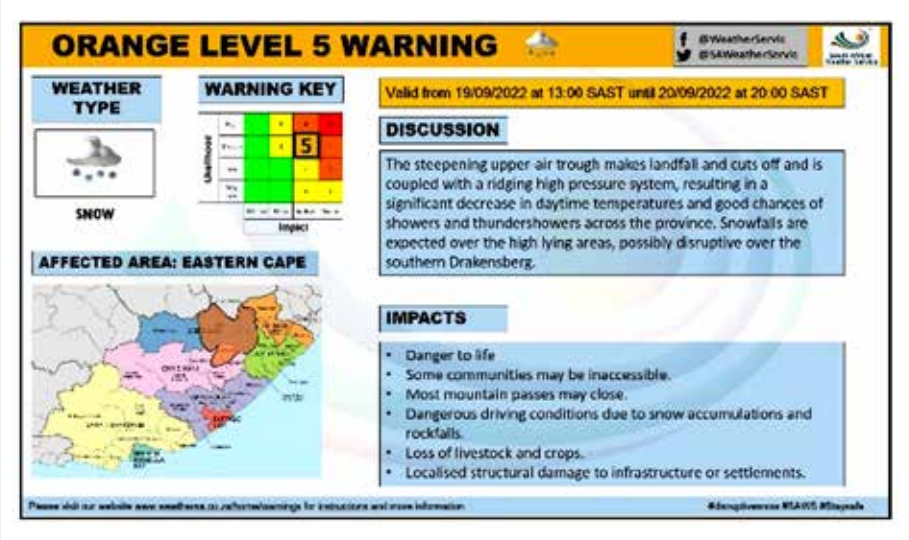


Figure 15: Orange Level 5 Warning for snow issued for 19 until 20 September 2022. (Source: The SAWS)

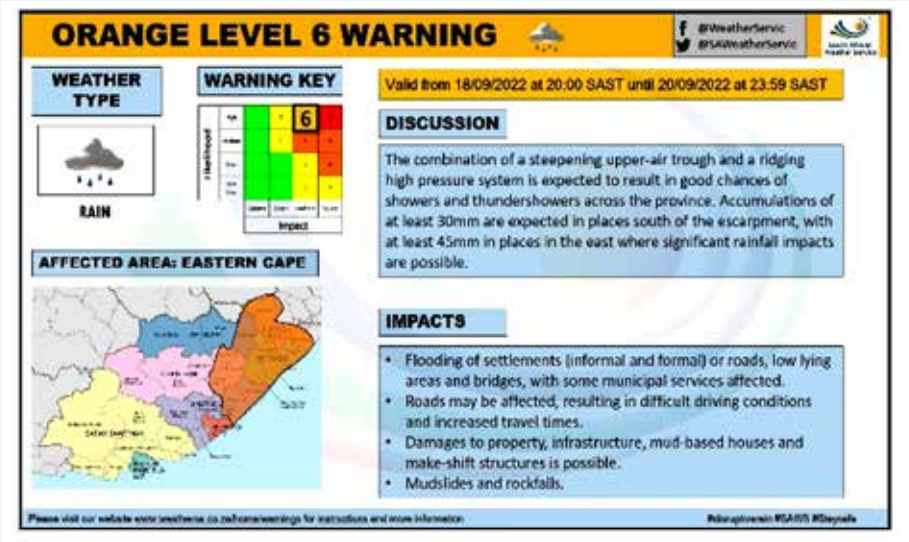


Figure 16: Orange Level 6 Warning for rain issued for 18 until 20 September 2022 (Source: The SAWS)

The third quarter heralded the start of the rainy season for the summer rainfall parts of the country, wherein for the year under review, above-normal rainfall was experienced over most areas as was predicted in the seasonal forecasts issued months before. The expected above-normal rainfall was due to the La Niña phenomenon, which positively influences the country's rainfall. Furthermore, the summer rainfall season's start (and the end) is often characterised by severe thunderstorms, and this year's season lived up to that expectation ardently. Many severe thunderstorms were experienced throughout most of the country's provinces, including the Western Cape, where these events rarely occur. The weather systems driving these events were cut-off low pressure systems.

CUT-OFF LOW PRESSURE SYSTEMS - NOVEMBER 2022

A cut-off low pressure system developed to the south-west of the country on 1 November 2022, resulting in scattered storms across the western interior and extending along the south-west coast resulting in a rare thunderstorm sight over Cape Town on 2 November 2022. This system was also responsible for isolated severe thunderstorms, which resulted in isolated flash flooding incidents in the Western Cape and parts of the Northern Cape.

Following the cut-off low pressure system, which affected the Western Cape and parts of the Northern Cape, a more intense cut-off low developed on 5 November 2022. This system resulted in widespread flooding over the central interior of the country from 6 November 2022. On 8 November 2022, flooding was reported in parts of Gauteng, North West, Free State, the western Highveld of Mpumalanga and southern Limpopo as the cut-off low progressed eastwards.

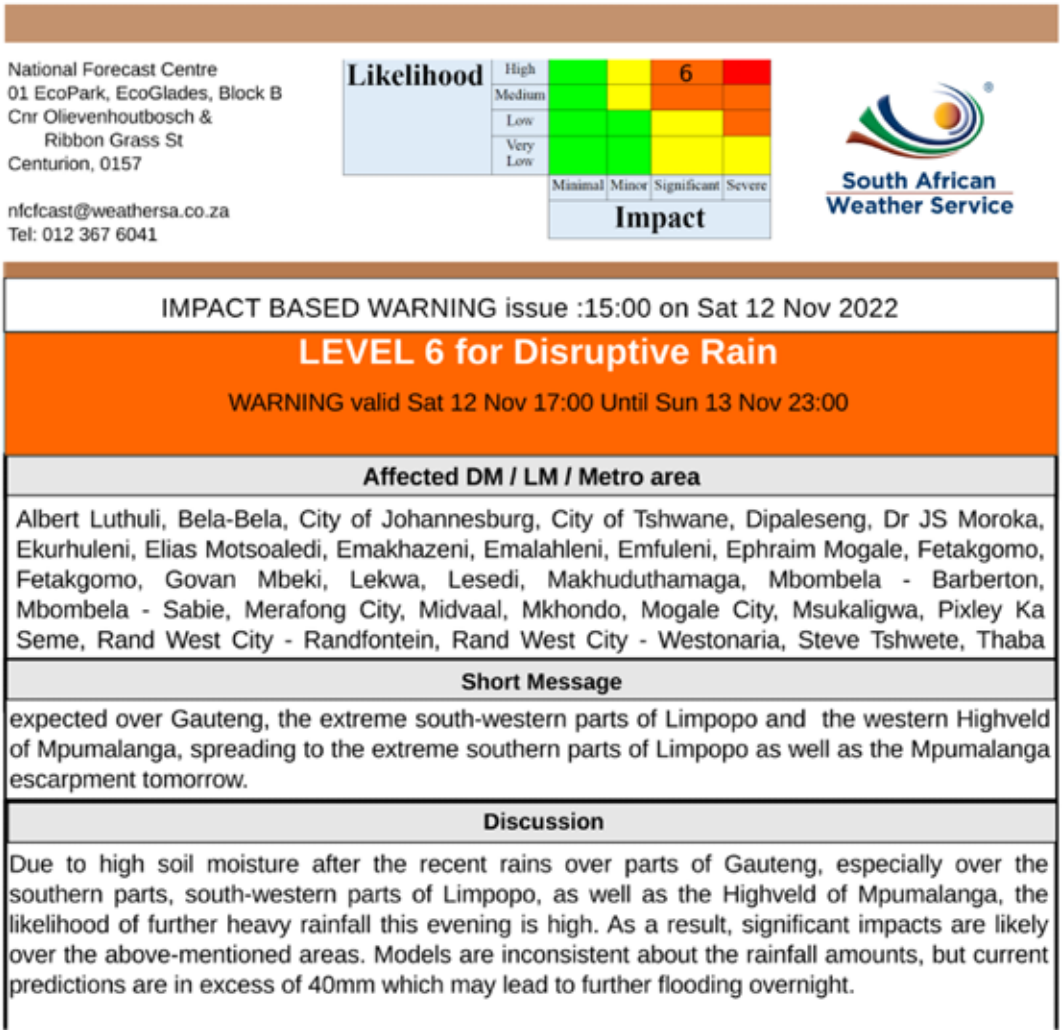
Photograph H: Flooding reported in Centurion on 8 November 2022 (Source: Yusuf Abramjee (Twitter))

Photograph I: Flooding reported near Marikana – North West on 8 November 2022 (Source: ReenvalInSA)

On 11 November 2022, another steep upper air low pressure system resulted in widespread showers and thundershowers across the central and eastern interior of the country. Warnings for severe thunderstorms were in effect for parts of the Northern Cape, western Free State and western North West, while warnings for disruptive rainfall and flooding were issued for the eastern parts of the North West, Free State and Gauteng. This widespread rainfall, in addition to previous rainfall experienced, resulted in the Vaal and Orange River catchment areas overflowing, causing widespread flooding downstream. The trough resulted in heavy rainfall, mainly over parts of Gauteng, from 12 to 13 November 2022. As a result, the SAWS issued a Level 6 warning for disruptive rainfall leading to widespread flooding on 11 and 12 November 2022 for parts of Gauteng, Mpumalanga and the south-western parts of Limpopo. On the morning of 13 November 2022, widespread flooding was observed over parts of Gauteng. Sinkholes were reported in places over the West Rand and Pretoria. Widespread flooding was also reported across the southern Highveld of Mpumalanga near Standerton and Secunda, causing a large inflow of water into the Vaal Dam and opening eight sluice gates.

Photograph J and K: Flooding reported in Mahikeng – North West (Source: ReenvalInSA)

Photographs L and M: Flooding reported in eastern Free State (L) and Randfontein - Gauteng (M) (Source: ReenvalInSA)



National Forecast Centre
01 EcoPark, EcoGlades, Block B
Cnr Olievenhoutbosch &
Ribbon Grass St
Centurion, 0157

nfcfcast@weathersa.co.za
Tel: 012 367 6041

Likelihood: High, Medium, Low, Very Low
Impact: Minimal, Minor, Significant, Severe
6

South African Weather Service

IMPACT BASED WARNING issue :15:00 on Sat 12 Nov 2022

LEVEL 6 for Disruptive Rain

WARNING valid Sat 12 Nov 17:00 Until Sun 13 Nov 23:00

Affected DM / LM / Metro area

Albert Luthuli, Bela-Bela, City of Johannesburg, City of Tshwane, Dipaleseng, Dr JS Moroka, Ekurhuleni, Elias Motsoaledi, Emakhazeni, Emalahleni, Emfuleni, Ephraim Mogale, Fetakgomo, Fetakgomo, Govan Mbeki, Lekwa, Lesedi, Makhuduthamaga, Mbombela - Barberton, Mbombela - Sabie, Merafong City, Midvaal, Mkhondo, Mogale City, Msukaligwa, Pixley Ka Seme, Rand West City - Randfontein, Rand West City - Westonaria, Steve Tshwete, Thaba

Short Message

expected over Gauteng, the extreme south-western parts of Limpopo and the western Highveld of Mpumalanga, spreading to the extreme southern parts of Limpopo as well as the Mpumalanga escarpment tomorrow.

Discussion

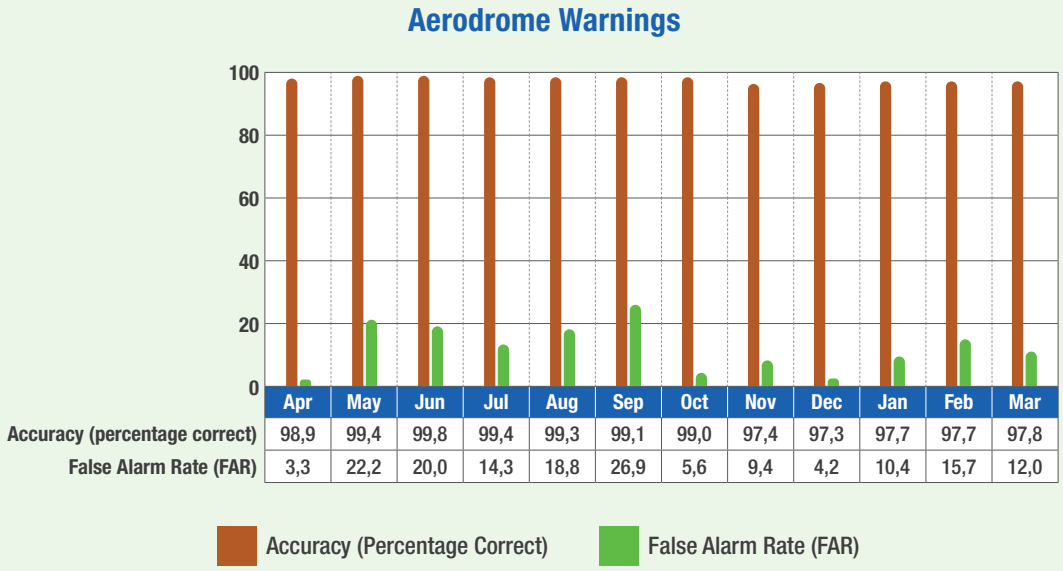
Due to high soil moisture after the recent rains over parts of Gauteng, especially over the southern parts, south-western parts of Limpopo, as well as the Highveld of Mpumalanga, the likelihood of further heavy rainfall this evening is high. As a result, significant impacts are likely over the above-mentioned areas. Models are inconsistent about the rainfall amounts, but current predictions are in excess of 40mm which may lead to further flooding overnight.

Figure 17: Level 6 Warning for disruptive rain issued for 12 until 13 November 2022 (Source: The SAWS)

AVIATION METEOROLOGICAL SERVICES

The SAWS continued to provide the required Aeronautical Meteorological Service to aviation industry users, both domestic and international. The services were provided in accordance with Annexure 3: Meteorological Service for International Air Navigation, as well as Part 174 of the South African Civil Aviation Authority (SACAA) Regulations.

During the period under review, 604 aerodrome warnings were issued, with 98,36% accuracy achieved. Thunderstorms proved to be the dominant phenomena the aviation community was warned for, contributing 80,3% of the warnings issued over the period under review.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Accuracy (percentage correct)	98,9	99,4	99,8	99,4	99,3	99,1	99,0	97,4	97,3	97,7	97,7	97,8
False Alarm Rate (FAR)	3,3	22,2	20,0	14,3	18,8	26,9	5,6	9,4	4,2	10,4	15,7	12,0

Figure 18: Monthly accuracies of aerodrome warnings

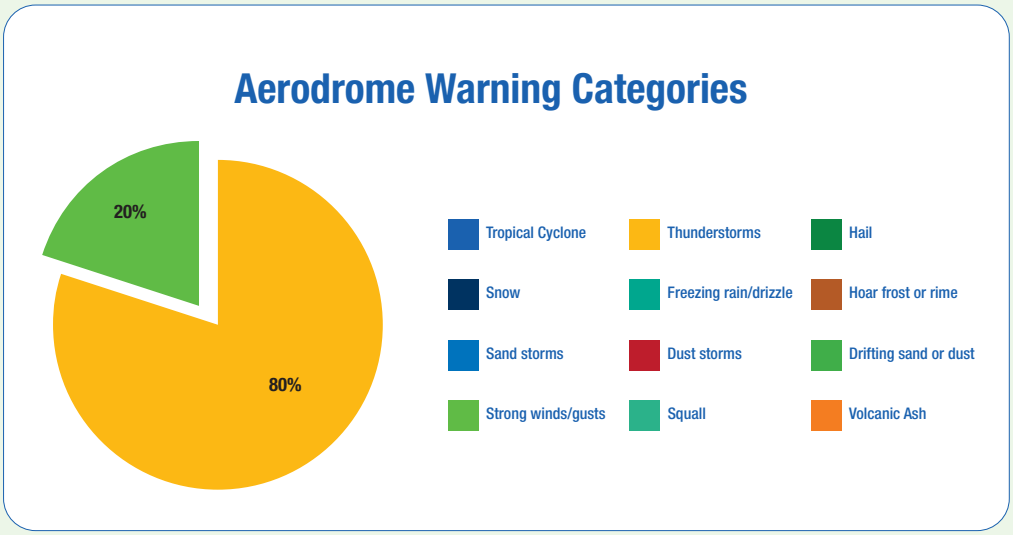
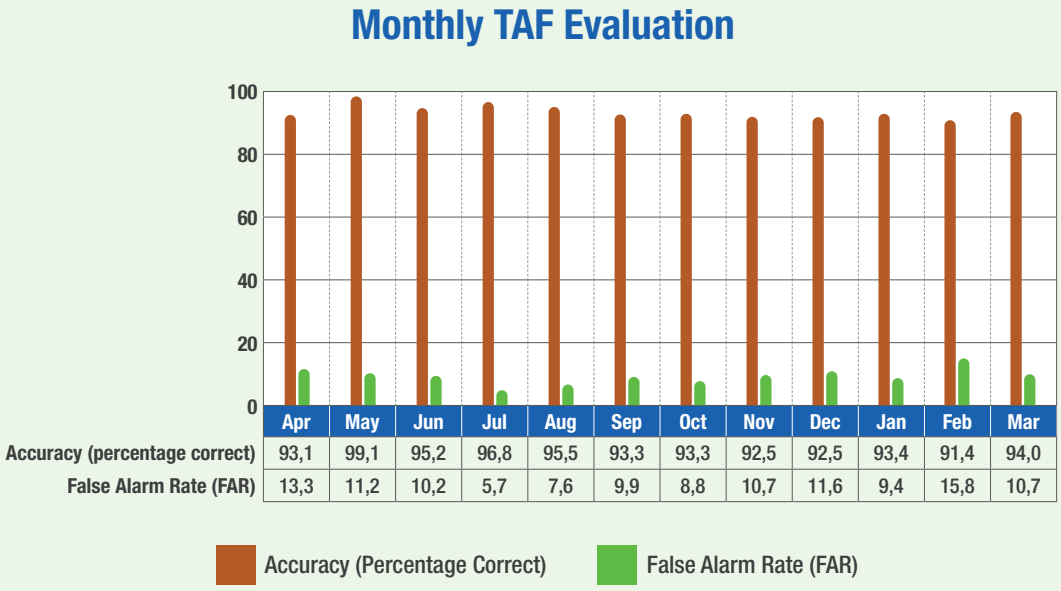


Figure 19: Types of aerodrome warnings issued

The aviation industry uses Terminal Aerodrome Forecasts (TAF) for planning purposes such as determining the amount of load to carry on aircraft and the best time for flights to operate safely. During the period under review, an accuracy of 96,75% for TAF was achieved, which is higher than the annual performance plan target of 90%. Another significant aspect to note is the low false alarm rate of 7,08%, which can be attributed to the high skills level of personnel.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Accuracy (percentage correct)	93,1	99,1	95,2	96,8	95,5	93,3	93,3	92,5	92,5	93,4	91,4	94,0
False Alarm Rate (FAR)	13,3	11,2	10,2	5,7	7,6	9,9	8,8	10,7	11,6	9,4	15,8	10,7

Figure 20: Achieved annual accuracies on terminal aerodrome forecasts

AVIATION WEBSITE AND COLLABORATIVE DECISION-MAKING ACTIVITIES

The SAWS arranged for Aeronautical Meteorological Forecasters to conduct Airport Collaborative Decision-Making (A-CDM) activities virtually at OR Tambo International Airport via a scheduled daily call, which remained in practice over the period under review. However, the organisation was preparing its forecasters to resume with on-site operations based at the Airport Management Centre (AMC) where the A-CDM activities take place, by the end of the financial year. Stakeholders involved in the A-CDM activities include Air Traffic Controllers, the Central Airspace Management Unit, the Airport Management Centre, Ground Operators as well as representatives of airlines. A-CDM aims to improve the efficiency and resilience of airport operations by optimising the use of resources and improving the movement predictability of air traffic.

The role of the SAWS in the A-CDM is to provide information to airlines and other airport users about inclement weather that may affect safe operations. This is achieved by encouraging the airport partners to work closely in a collaborative environment by exchanging relevant, accurate and timely information. The focus is primarily on improved aircraft On-Time-Performance (OTP), which depends on effectively managing slots, ground operations, seamless taxiing and take-off to minimise delays.

The overall number of 9 595 557 hits for 2021/22 compared to 9 090 450 2022/23 shows a significant decline of 415 107 in the usage of the Aviation website. Users maintained usage of aerodrome routine meteorological reports (METARs), Terminal Aerodrome Forecasts (TAFs) and weather RADAR information. In addition, a new trend of increased usage of webcam products was noticeable during the period under review. The increase in the aviation website usage can be attributed to the continuously improving global and regional domestic air traffic movement. The International Air Traffic Association (IATA) air passenger analysis demonstrated that the African region had improved domestic air movement to 13,8% pre-Covid-19 compared to the 20% pre-Covid-19 recorded in the previous financial year.

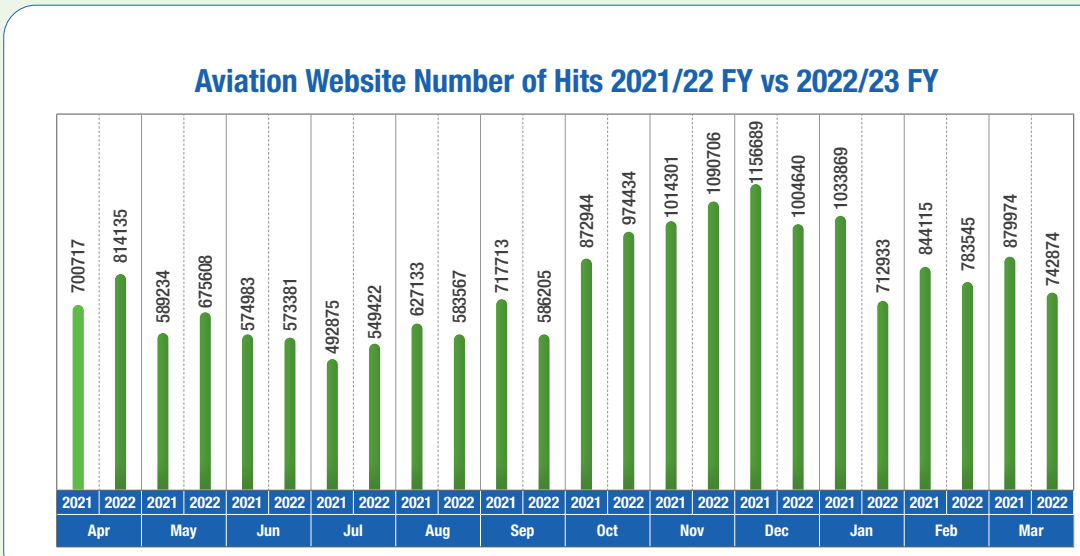


Figure 21: Aviation website user visits

MARINE SERVICES

The SAWS continued to issue the marine industry with timely marine-related products and services, including coastal and deep-sea products for those operating on the shores and those navigating South Africa's surrounding oceans. In addition, in support of Operation Phakisa, which focuses on unlocking the economic potential of South Africa's oceans, the SAWS contributed through its provision of met-ocean information for public good consumption and commercial operations.

The entity identified a need to seek the regulation of the provision of meteorological services to the marine industry, with discussions of cost recovery under Marine Services continuing in the year under review. As a result, the Regulating Committee for Meteorological Services (RCMS), in assisting the SAWS in producing a cost-recovery model for the services provided by the entity through its established Marine Unit, completed a feasibility analysis and circulated it for comment by relevant stakeholders. The outcome of this feasibility analysis will serve as input to the final report for consideration.

The SAWS developed and solidified relationships with the Oceans and Coasts Branch of the Department of Forestry, Fisheries and the Environment (DFFE), as well as the National and Coastal Information Management System (OCIMS) to support the Oceans Economy Strategy of the country. Furthermore, to establish strategic partnerships on marine research, technology, artificial intelligence, modelling capabilities and instrumentation/equipment, institutions such as the South African Environmental Observation Network (SAEON), Cape Peninsula University of Technology (CPUT), Council for Scientific and Industrial Research (CSIR) were engaged in the period under review.

Looking ahead, the SAWS intends to work closely with the DFFE on automatic weather instrumentation to be deployed at key penguin colony sites where penguin numbers have decreased significantly in the last few years. In addition, securing automatic weather instrumentation for coastal islands will benefit the SAWS' observational capabilities and help increase forecast skills and provide valuable in-situ meteorological information for the DFFE.

MARINE OBSERVATIONS

Fewer ocean observations using drifting buoys and argo floats (robotic instruments that drift with the ocean currents and move up and down between the surface and a mid-water level) were undertaken during the year under review compared to the prior year. This was primarily due to the lack of infrastructure in external organisations for relaying to South Africa for deployment as part of standard takeover and scientific voyages around South Africa's surrounding oceans. In addition to the above stated, the focus of the Global Ocean Observing Community also somewhat shifted to the severely under sampled western Indian Ocean.

Several initiatives, including ocean observations in the Southern Ocean through the South African Polar Research Infrastructure (SAPRI) and the coastal undertakings of the Shallow Marine and Coastal Research Infrastructure (SMCRI), were developed in collaboration with the SAWS Marine Research Team. These initiatives are managed through the South African Environmental Observation Network (SAEON).

Finally, a long-term initiative to monitor the Agulhas Current sustainably for the benefit of not only research but also society is under development through the Global Ocean Observing System (GOOS) Co-Design project, which is a project endorsed by the United Nations Ocean Decade for Sustainable Development. This work will bring together several oceans observing entities in Southern Africa, with support from the global community, to understand one of the most powerful Western Boundary Currents in the world; a current not accurately designated in any of the Intergovernmental Panel on Climate Change (IPCC) models used for Climate Change scenario work.

MARINE RESEARCH AND DEVELOPMENT

Two scientific cruises, the SEAmester training and the SCALE22 cruise, were undertaken in the year under review. This was over and above the observational work undertaken on the takeover cruises to Marion and Gough Islands and the South African National Antarctic Expedition (SANAE) base. These cruises were onboard the SA Agulhas II, a South African icebreaking polar supply and research ship owned by the DFFE. The SAWS Marine Research team is working on the data emanating from these cruises for publication of the work in peer-reviewed journals.

The team worked closely with the Weather and Climate Science for Service Partnership (WCSSP) project to develop coastal hazard warning models, focusing on rip currents. The team also collaborated, on an ongoing basis, with WCSSP for the development of bias correction for the current forecasting systems and the development of artificial intelligence (AI) climate wave projection models. Furthermore, the team is continuously working on enhancements to current operational systems, focusing on improving the wave period forecasts.

Linking performance with budgets

Table 7: Linking performance with budgets: Programme 1

Programme/activity/ objective	2022/23			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
Weather and Climate Services	18 225 061	14 810 204	3 415	32 089	32 392	(302)

Programme 2: Research and Innovation

Purpose: To develop meteorological solutions to inform wise socio-economic choices

Sub-programme 2.1: Research

Purpose: To generate new scientific insights in atmospheric and related sciences in collaboration with relevant stakeholders. To expand the existing knowledge base and intelligence related to climate change.

Sub-programme 2.2: Solution Development

Purpose: The provision of innovative meteorological and related products and services through the development and implementation of community weather-smart products and services

Outcome: Lives and property protected against meteorological-related risks

Research

The SAWS is recognised as a research institution with a mandate to provide reliable weather services to support public good and commercial ventures. Products and services that provide accurate and reliable weather information result from a structured research drive that focuses on generating new scientific insights in atmospheric and related sciences, specifically related to weather and climate. The development of user-relevant and innovative products and services to support socio-economic development and build resilience is the result of research which impacts the protection of lives and property against meteorological risks.

Being a research organisation in the atmospheric sciences field of study, scientists and researchers across the SAWS are encouraged to publish as many scientific papers as possible. One of the key measurements to monitor the scientific output of the SAWS is the peer-review publication process. Peer-reviewed articles in scientific journals, peer-reviewed conference papers, contributions to peer-reviewed book chapters, peer-reviewed project reports, Master of Science (MSc) and Doctoral (PhD) dissertations are acknowledged as research and scientific output. In the period under review, the SAWS achieved 53 research outputs against the set target of 40. Refer to pages 67 to 71 for detailed research output for the period under review.

Climate Services

State of the South African Climate

Temperature

South Africa experienced a warm year in 2022, especially in the central interior. The annual mean temperature anomaly for 2022, based on the data of 26 climate stations, was, on average, about 0,4°C above the average of the reference period (1991-2020), making it approximately the fourth hottest year on record since 1951 (see Figure 23). Therefore, a warming trend of 0,16°C per decade is indicated for the country over 1951-2022, statistically significant at the 5% level.

Precipitation

The most significant feature of the rainfall during 2022, presented in Figure 22, was the well-above-normal rainfall received over extensive parts of central South Africa, but clear signals of drying in the western parts of the Northern Cape and Western Cape. Dry conditions persisted in parts of the Eastern Cape.

During 2021/22 and 2022/23, El Niño-Southern Oscillation (ENSO) was in a La Niña phase, associated with above-normal rainfall over most summer rainfall regions. Overall, the parts of South Africa experiencing drought further decreased over the past year due to particularly good rains in early 2022.

Noteworthy climate and weather events

In South Africa, the year 2022 started with very wet conditions in the relatively dry western interior, continuing into March 2022. In contrast, extensive parts of the Western Cape were hot and dry, with temperatures higher than 40°C reported in places. As a result, in February 2022, rainfall in the densely populated Gauteng was often characterised by flash-flood events, displacing some communities and causing at least six casualties and extensive damage to infrastructure.

By April 2022, the region of above-normal rainfall shifted towards the central interior eastwards. As a result, numerous flooding events were reported, with the eThekwini metropole (Durban) the hardest hit. A total of 448 people lost their lives, with several unaccounted for, in the week of 8 to 12 April 2022. In addition, infrastructure was adversely affected, with more than 4 000 homes destroyed and more than 40 000 people displaced from their homes. This event, caused by a cut-off low that moved from the interior eastwards over the ocean and strengthening, is considered one of the major damaging weather events in 2022. Northern KwaZulu-Natal, stretching along the coast to adjacent areas of the Eastern Cape, received more than 200 mm of rainfall within nine days (Figure 22), and the highest total rainfall was 705 mm recorded at Margate Airport (Table 8). The above-normal rainfall continued in May 2022, with more damaging floods in eastern KwaZulu-Natal.

August 2022 saw heavy rainfall in the southwestern, southern and eastern coastal regions. However, some parts of the Eastern Cape remained dry, with the Nelson Mandela Bay Metropole in the Eastern Cape the hardest hit by a water shortage due to drought after seven years of below-normal rainfall. Good rains in places brought some relief in September and October 2022. In November 2022, normal to above-normal rainfall occurred mainly over the eastern half of the country and isolated areas of the Northern and Western Cape. However, elsewhere, conditions were below normal. As a result, some urbanised areas experienced severe flooding. For example, more than 300 families at the Nancefield Hostel in Soweto, Gauteng, were left destitute as water entered their homes due to heavy floods from 11 to 13 November 2022.

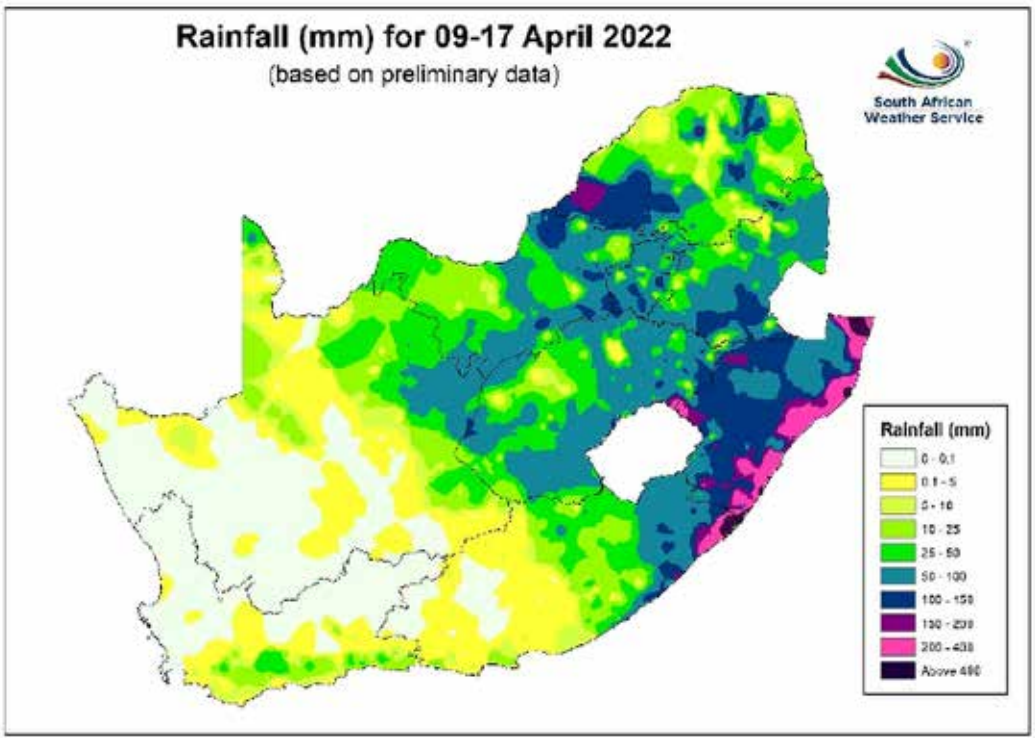


Figure 22: Accumulated rainfall over the period 9 to 18 April 2022

Table 8: Accumulated rainfall for the period 9 to 18 April 2022 from selected stations

Station name	Rain (mm)	No of days
Margate Airport	705	9
Ingwavuma Manguzi	603	9
Margate	575	9
St Lucia Forest	551	9
Pennington South	534	9
Glen Doone	523	9
Port Edward	492	9
Virginia Airport AAWS	448	9
Mount Edgecombe	408	9
Durban Heights – PUR	383	9
Virginia	376	9
Durban South Wentworth	371	9
Umzinto - municipality	360	9
King Shaka AWOS	331	9
Makakatana	330	9
Mbazwana Airfield	323	9
Kangela	323	9
Hlabisa Mbazwana	310	9
Richards Bay Airport	306	9

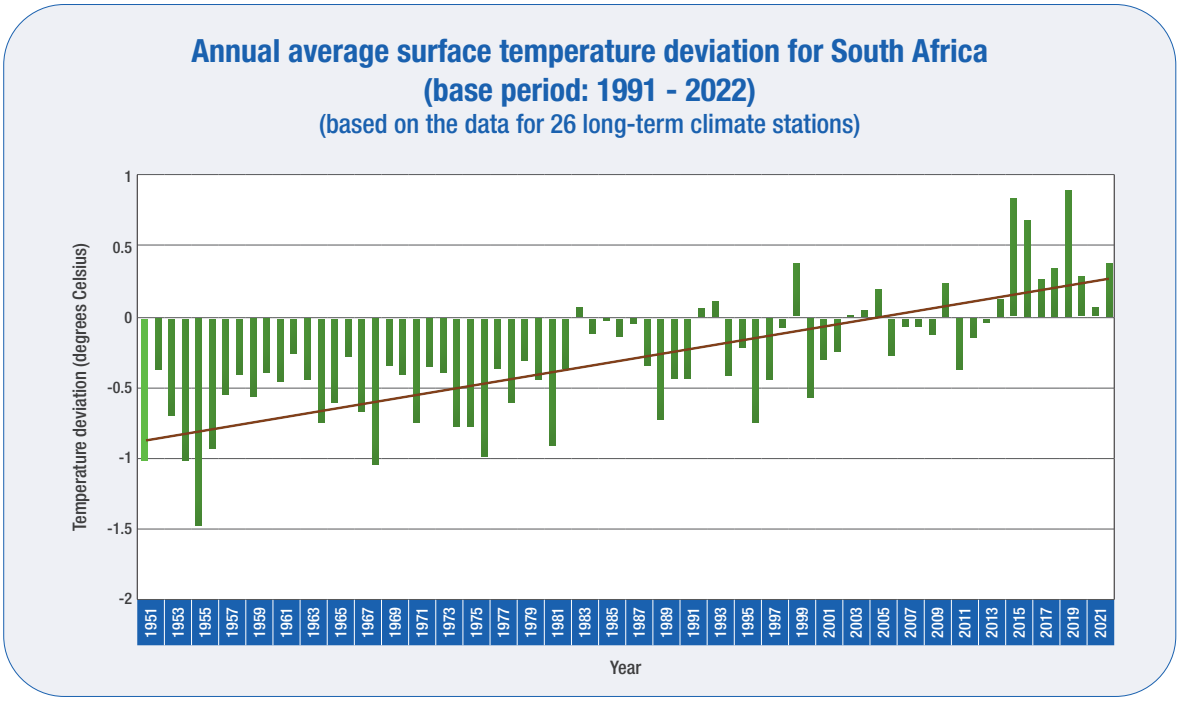


Figure 23: Average surface temperature deviation over South Africa based on 26 climate stations: 1951 to 2022 (base period: 1991 to 2020). The linear trend is indicated (Source: The SAWS)

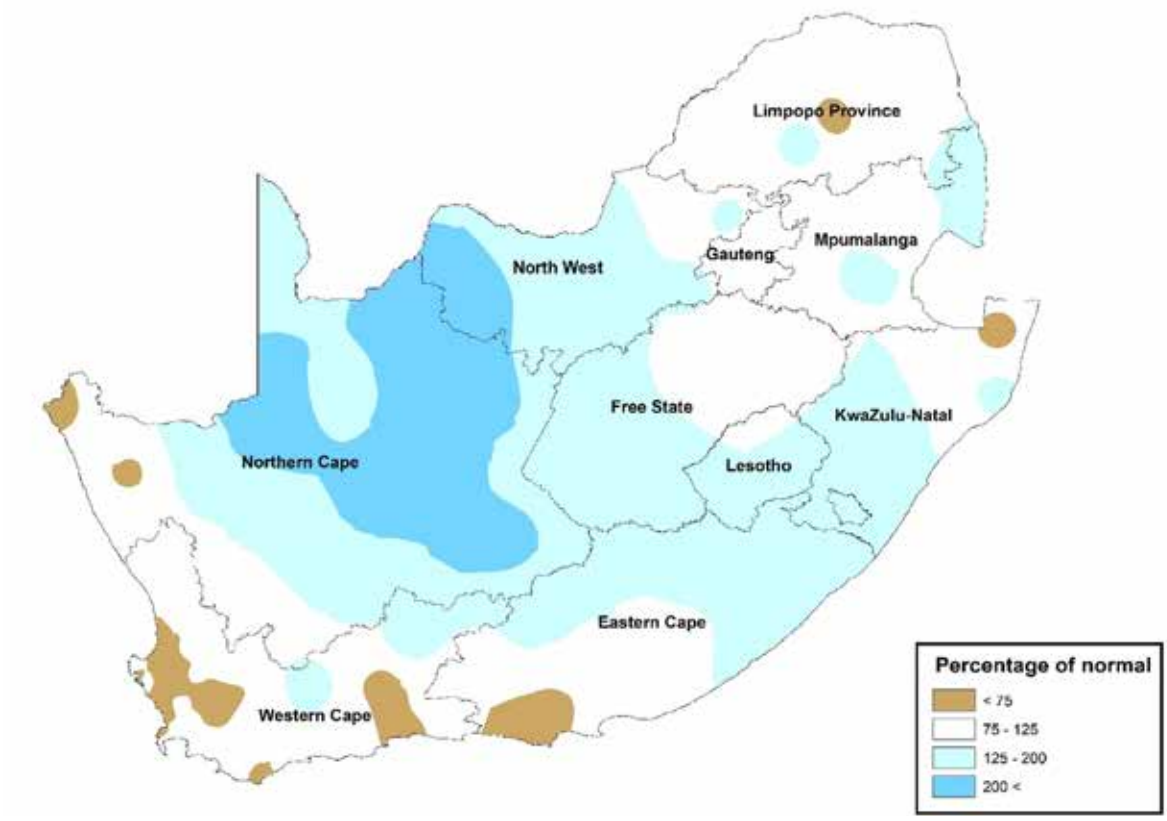


Figure 24: Rainfall anomalies (expressed as a percentage of the 1991 to 2020 annual average) for South Africa for 2022 (Source: The SAWS)

Initiatives under the National Framework for Climate Services

In terms of the National Framework for Climate Services (NFCS), the South African Weather Service (SAWS) participated in the development of the South Africa-European Union (SA-EU) Dialogue process that focused on the delivery of climate services for specific climate-sensitive sectors. This included an initial workshop where South Africa and the EU delegates shared their expertise in delivering quality and up-to-date climate services. Subsequently, two sectoral workshops were held and coordinated by the Department of Water and Sanitation (DWS) and the Agricultural Research Council (ARC) in 2021. In these workshops, stakeholders in the two sectors communicated their most critical needs in terms of weather and climate services, and consequently, the main producers of climate services gained proper sector-specific insight. Following up on the sectoral workshops, a final workshop was conducted in 2022, of which the focus was to prioritise the most needed services and discuss funding possibilities and technical support from EU institutions.

Following the last workshop, the SA-EU Dialogue Facility allowed South African participants to meet face-to-face with their EU counterparts during a study tour conducted at the end of October and beginning of November 2022. The institutions visited included the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) in Darmstadt, Frankfurt, Germany; Deutscher Wetterdienst (DWD) in Offenbach, Frankfurt, Germany; European Centre for Medium-Range Weather Forecasts (ECMWF) in Bonn, Germany and World Meteorological Organization (WMO) in Geneva, Switzerland. A wide range of potential opportunities was identified and discussed, which could be pursued either individually by the different institutions involved or collectively under the auspices of the NFCS under the Department of Forestry, Fisheries and the Environment (DFFE).

A study to investigate funding model options for financing South African Earth Observation System infrastructure in South Africa, specifically around the further implementation needs of the NFCS, was commissioned by the DFFE through financial support from the World Bank. The deliverables of the project can act as a guide to the DFFE on the optimal strategy to enhance the financial support for the implementation of the NFCS, which involves the enhancement, integration and further development of the five main pillars of the NFCS (User Interface Platform; Climate Services Information System; Observation and Monitoring; Research, Modelling and Prediction, as well as Capacity development).

Solution development

Climate-specific solutions

The SAWS continued to develop climate-specific solutions for climate-sensitive sectors, with the observed and measured historical climate data as the primary input. The needs analyses, content development and authoring of a new climate solution, i.e., the third publication in a recent regional weather and climate publication series, was completed in the previous financial year.

The Regional Weather and Climate: KwaZulu-Natal publication consists of a comprehensive overview of the weather and climate of the province of KwaZulu-Natal, comprising 79 pages, 83 figures and graphs, and 13 statistical tables. As with the previous two publications covering Gauteng and the South-Western Cape, it covers a wide range of topics, including the prevailing wind, surface temperature, sunshine, radiation and precipitation conditions in the region, and the evidence and impacts of climate change. An example of some valuable maps in the publication is illustrated below:

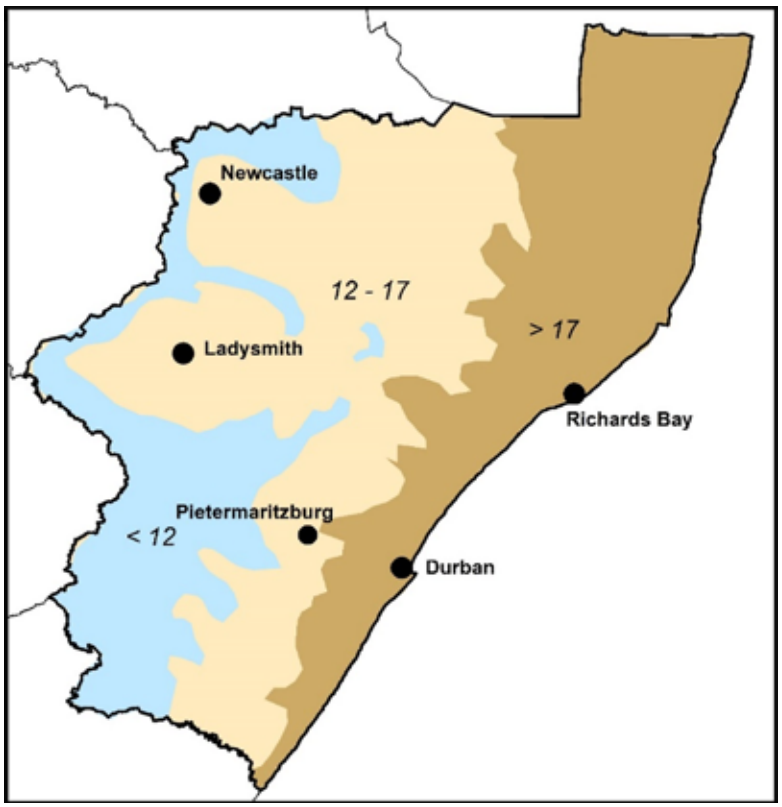


Figure 25: Mean winter (June, July and August) minimum temperature (°C) over KwaZulu-Natal, based on topography and data over the period 1991 to 2020

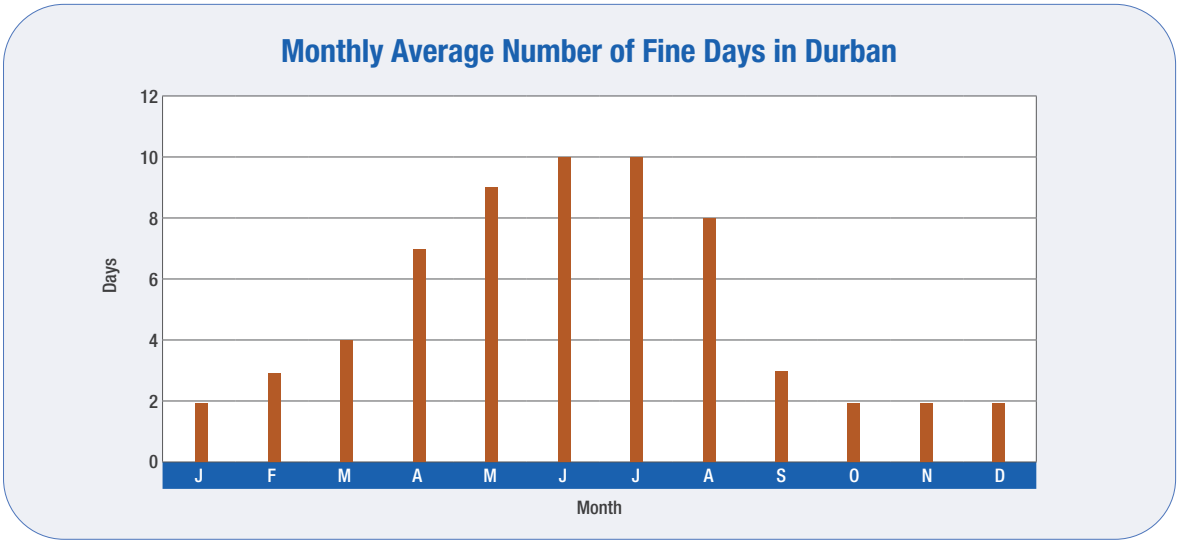


Figure 26: Average number of fine days in Durban per month (1991 to 2020)

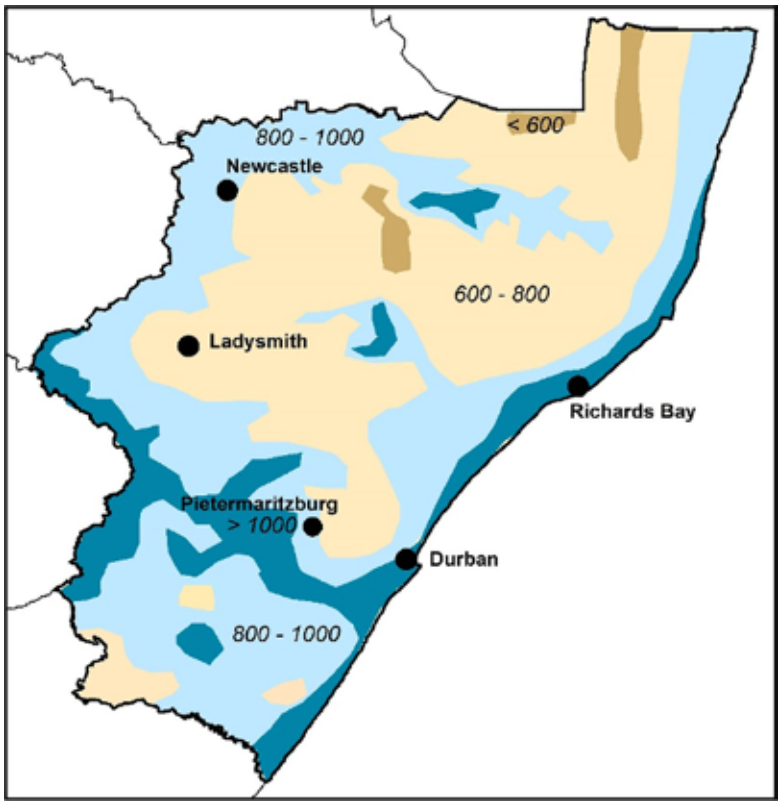


Figure 27: Mean annual rainfall (mm) based on topography and data over the period 1991 to 2020 (brown < 600, yellow 600 – 800, light blue 800 – 1000, dark blue > 1000 mm)

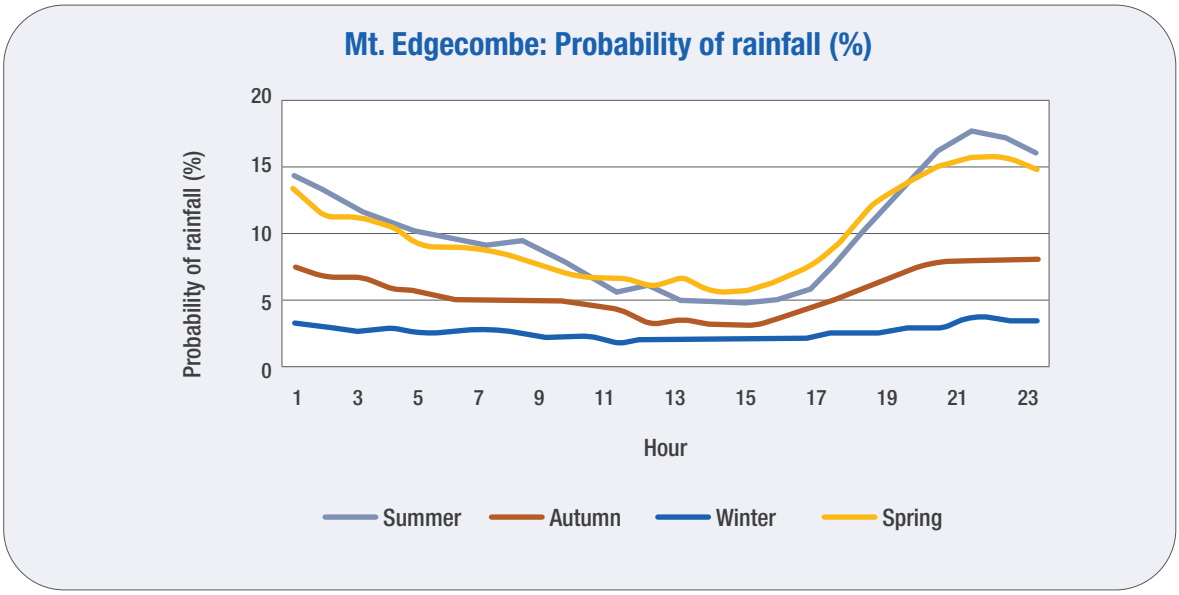


Figure 28: Probability of rainfall (%) during specific hours at Mt. Edgecombe (1995 to 2021)

Non climate-specific solutions

Developing user-relevant and innovative products and services to support socio-economic development and building resilience is one of the main activities conducted within the organisation's Research department.

The SAWS, also an operational organisation, requires its research to be product and service orientated to impact the users and clients constructively. The non climate-specific products developed during the year under review appear in Table 9.

Table 9: Non climate-specific products developed

Product	Product description and progress
Smoke Management Tool (PM-VS system) PM= Particulate Matter VS= Ventilation Scaling	During the year under review, the SAWS-Atmospheric Composition Research (ACR) group operationalised the PM-VS system. The operational implementation of such a technological decision-making tool is significant in supporting both the national and provincial governments, in terms of the following: 1. Emission reduction strategies and climate change mitigation efforts 2. Emission reduction will also benefit public health by reducing acute exposure to smoke particulates 3. Creating exposure reform that will be applied in environmental epidemiology 4. Establishing open fire management and promoting ecological conservation Within the framework of sustainable development, these benefits derived from the operationalisation of the PM-VS system and are important in supporting efforts aimed at attaining Sustainable Development Goal 13 (SDG-13): Climate Action, SDG-3: Good Health and Well-being, SDG 11: Sustainable Cities and Communities, as well as other interlinked SDGs. The SAWS-ACR group is the first in South Africa to develop and fine-tune an atmospheric Particulate Matter guided Ventilation Scaling system (i.e., PM coupled VS system). The PM-VS system is a diagnostic Smoke Management Tool (SMT) prepared for district or municipal authorities tasked to monitor open fire events. This SMT provides atmospheric particulate matter guided ventilation capacity of smoke from open fire events such as agricultural burnings, wildfire events, etc. The SAWS-ACR fine-tuned provincial scale analysis (using coupled numerical modelling, satellite retrievals and ground observations) proves that proper implementation of PM-VS product will reduce the air pollutant and greenhouse gas emissions from open fire events by about 16% to 22%, as well as decrease the open-fire-induced atmospheric pollutant concentration by about 20 to 30%.
RADAR Proxy with lightning data	RADARs remain the most useful tool for identifying severe weather, yet sections of the country are not covered by RADAR or can temporarily not be covered when a RADAR goes offline. Due to the total coverage of the country with the Lightning Detection Network (LDN), lightning data can be used to monitor and track thunderstorms in areas where RADAR is unavailable, yet information on the severity of the storms remains challenging. Total lightning (cloud-to-ground and cloud-to-cloud lightning) frequency can be quite valuable to nowcast possible severe weather up to 60 minutes ahead in time when a lightning "jump" (rapid increase in flash rates) exceeds certain thresholds. Since the SAWS LDN can measure up to 50% of cloud lightning as well, this total lightning information will be used to develop a product that can identify possible severe weather using lightning data. In addition, it will serve as a "proxy for RADAR" where RADAR coverage does not exist. Case studies to utilise the LDN and RADAR data for developing a RADAR proxy where no RADAR coverage exists were used in developing this product.

Product	Product description and progress
Projected Heat stress impacts humans	Population exposure to heat is increasing due to climate change, which will continue. Globally, extreme temperature events are increasing in frequency, duration, and magnitude. It primarily affects the weak and vulnerable individuals within the population and can trigger public health emergencies as well as the disruption of infrastructure. The Water Research Commission (WRC) appointed the SAWS to carry out a two-year project titled "Climate Change and Water Security: Developmental Perspectives for Water-Linked Sectors in a Future Climate for Africa". As part of the project, impact studies on water-linked sectors were conducted, one being that heat stress impacts human health. The WRC deemed it important to analyse human exposure to excessive heat nationally. This impact study also contributes to the National Climate Change and Health Adaptation Plan (2021-2025), an update from (2014-2019), as heat stress is identified as one of the nine environmental risk factors in South Africa, thus building a baseline understanding of heat exposure risk knowledge across different epochs. The heat stress risk knowledge constitutes an essential element of evidence-based policy decisions, risk information and communication. Heat stress potential impacts are assessed using socio-economic indicators and ensemble model data from the Coordinated Regional Downscaling Experiment (CORDEX). The projections will indicate which regions in South Africa will be most impacted by heat risks during 2036/65 and 2066/95 under the Representative Concentration Pathways (RCP), RCP4.5 and RCP8.5 emission scenarios. In addition to the burden of disease factors, the government and the health sector must develop contingency plans to deal with this threat. In cities where the "heat island" effect is most prevalent, adaptation measures are to be developed, and monitoring of environmental variables is to be enhanced.
Ultra-high-resolution modelling intervention in high-risk areas	Following the April 2022 floods in KwaZulu-Natal, the requirement for conducting ultra-high-resolution Numerical Weather Prediction (NWP) modelling interventions to assist severe weather forecasters was identified as a critical gap in managing emergency events. Based on the medium-term outlook of impending severe weather events, the ultra-high-resolution deterministic NWP model can be initialised over the target area (very limited area) where severe or high-impact weather is expected. Then, shortly before (maximum lead time of 48 hours) and during the event, the ultra-high-resolution model can provide more detailed forecast information assisting the forecasters in issuing warnings. The SAWS worked towards obtaining European Centre for Medium-Range Weather Forecasts (ECMWF) data for the initial heads-up warning for severe weather. Secondly, the high-resolution models will be activated in hot-spot areas. The product development experienced some delays with respect to the availability of ECMWF data, which slowed progress, although alternative resources were used to compensate for the lack of ECMWF information.

Detailed research output for the period under review

Articles in scientific journals

1. **ADEOLA, A.M., KRUGER, A., MAKGOALE, T.E. AND BOTAI, J.O**. 2022. Observed Trends and Projections of Temperature and Precipitation in the Olifants River Catchment in South Africa. PLoS ONE, 17(8), e0271974., 21 pp. https://doi.org/10.1371/journal.pone.0271974

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3. **BOPAPE, M-J. M**., ENGELBRECHT, F.A., **MAISHA, R**., CHIKOORE, H., NDARANA, T., LEKOLOANE, L., THATCHER, M., **MULOVHEDZI, P.T., RAMBUWANI, G.T**., BARNES, M.A., **MKHWANAZI, M**. AND MPHEPYA, J. 2022. Rainfall Simulations of High-Impact Weather in South Africa with the Conformal Cubic Atmospheric Model (CCAM). *Atmosphere*, 13(12), Dec, 1987; 24 pp. https://doi.org/10.3390/atmos13121987

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Linking performance with budgets

Table 10: Linking performance with budgets: Programme 2

Programme/activity/ objective	2022/23			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
Research and Innovation	4 535	4 361	174	27 973	25 597	2 376

Programme 3: Infrastructure and Information Systems

Purpose: To upgrade, expand and optimise infrastructure

Sub-programme 3.1: Optimal management of infrastructure

Purpose: To ensure optimal infrastructure and systems uptime of observations, information dissemination and exchange that enables saws to achieve its mandate.

Sub-programme 3.2: Quality data

Purpose: To provide quality data meeting minimum data requirements

Outcome: Lives and property protected against meteorological-related risks

Optimal management of infrastructure

The SAWS manages meteorological observations infrastructure comprising RADAR infrastructure, a Lightning Detection Network (LDN), upper-air sounding systems, and an automatic weather station and automatic rainfall station network. The SAWS also manages and monitors the air quality network for the country's priority areas.

The main focus for the year under review was implementing the infrastructure turnaround plan and systems optimisation initiatives. Numerous projects were rolled out to support the improvement of infrastructure performance. The organisation also strengthened the redundancy as its effectiveness was compromised by long periods of power loss never experienced before.

The SAWS continued implementing the Information and Communications Technology (ICT) Turnaround Strategy, which focussed on upgrading the SAWS' ICT infrastructure to optimise the use of ICT for enhancing business productivity in data collection, processing, and distribution.

Load shedding and limited human resources capacity, and budget constraints remained challenging. In addition, connectivity interruptions due to load shedding negatively impacted the uptime of meteorological instruments to collect data optimally. This has resulted in data loss in specific regional sites, notwithstanding that the allocated ICT budget had assisted in upgrading the ICT infrastructure.

To alleviate some of the connectivity challenges, the SAWS commenced to replace observational instruments' modems with dual sim connectivity and replaced the then-current Multiprotocol Label Switching (MPLS) Wide Area Network (WAN) with a Software Defined WAN. In addition, more funding was requested to replace the entity's High-Performance Computer (HPC) and to deploy new UPSs to areas with no backup power.

The SAWS was involved in various infrastructure projects to refurbish and improve its network. Some of the notable projects included the Venetia Mine RADAR Project in partnership between the SAWS and De Beers mine, which was aimed at erecting a state-of-the-art S-Band Dual Polarized RADAR, as well as three Automatic Weather Stations and one Lightning Detection Network system (LDN) in the area surrounding the Venetia mine. The S-band RADAR has the capability of reaching a radius of up to 300 km, which is a significant input network that will be able to service Limpopo communities in the Lowveld and escarpment areas, which often experience flood events due to tropical cyclones and severe thunderstorms. De Beers fully funded this project to the value of over R45 million. The project includes training the SAWS engineers, forecasters and other technical personnel to ensure the operationalisation of this critical RADAR is successfully completed.

A Multi-hazard Early Warning System pilot project, fully funded by the Government of Flanders, was implemented in Vhembe District, Limpopo. Engagements and approvals were granted by the Vhembe District Municipality and community engagements were conducted. The Bio-Met Station was installed at Malamulele Collins Chabane local municipality as part of this project.

The SAWS also manages a solar radiation network that experienced operational challenges at three sites in Mthatha, Upington and Mahikeng. The stations at these sites were down due to tracking problems due to wear and tear. The capital injection received from DFFE enabled the SAWS to address the maintenance challenges and maintain optimal operation of the solar radiation network by procuring three state-of-the-art solar radiation trackers, data display software and other network maintenance equipment.

Lastly, the Santam Surface Observation Infrastructure support project was also implemented in the review period. As a result, Santam Insurance funded four Automatic Weather Stations installed in Limpopo and Mpumalanga, particularly in identified poor and vulnerable communities.

RADAR infrastructure

The SAWS manages 12 RADARs strategically spread across the country for coverage throughout the borders of the Republic. These RADARs consist of S-band and C-band RADARs, which have been operational for 12 years and 35 years, respectively. Unfortunately, the RADAR infrastructure, with its interdependent sub-systems, which are important for its operation, i.e., UPS and emergency diesel generators and air-conditioning systems, did not perform optimally due to load shedding challenges the country faced in the year under review.

A decline in functionality of most of the RADAR peripheral and direct systems exposed the overall infrastructure ecosystem to data loss, loss of commercial feed integrity and a drop in overall performance. This decline translated into the RADAR infrastructure availability achievement of 52,23% against a target of 70% for the period under review.

A big step to mitigate these risks became the massive deployment of diesel fuelled back-up systems. However, this was not sustainable as it negatively impacted the operational budget. As part of the long-term solution, the entity began exploring an emergency solar power initiative as part of the RADAR Infrastructure Sustainability Plan (one of the biggest capital investment areas) to place the organisation back to its optimal performing state – pre-load shedding.

Table 11: RADAR infrastructure performance

RADAR	Q1	Q2	Q3	Q4	Average (%)
Irene	94,37	97,92	93,88	78,04	91,05
Polokwane	94,39	98,44	79,64	85,39	89,47
Ermelo	84,09	8,85	28,33	10,94	33,05
Ottosdal	64,51	75,83	58,05	8,68	51,77
Bethlehem	66,51	86,16	77,32	36,13	66,53
Bloemfontein	93,73	86,47	81,22	73,81	83,81
Durban	85,68	77,48	0,00	20,56	45,93
Mthatha	63,51	12,47	0,00	9,98	21,49
East London	83,59	64,45	15,36	11,09	43,62
Cape Town	0,00	33,18	34,64	8,30	19,03
De Aar	71,20	25,01	44,66	25,98	41,71
Skukuza	54,75	52,65	43,19	6,71	39,33
Quarterly average	**71,36**	**59,91**	**46,36**	**31,30**	**52,23**

Table 12: RADAR systems failures analysis

RADAR network	
The infrastructure was subjected to the same challenges, regardless of age, which affected the system performance metrics. 1. The collapse of interdependent subsystems important for system operation, such as the standby power systems in the form of UPSs and emergency diesel generators, air-conditioning systems crucial for the lifetime extension of the electronic components, computational systems, complex electronics, and high voltage systems 2. A decline in functionality of any of these systems directly affected the RADAR's availability to transmit the meteorological data it is designed for 3. Summarised below are the main challenges experienced during the period under review:	
RADAR and peripheral equipment challenges	• Load shedding over the period under review affected the performance of most RADAR sites and exposed the organisation to the need for robust standby power systems and peripheral equipment • The SAWS tried to address some of the infrastructure challenges through refurbishment and replacement of ailing peripheral equipment that had a direct impact on the weather RADAR system performance
Mitigation	• Planned modernisation of critical RADAR infrastructure • Procurement of mobile diesel generators • Installation of Automatic Voltage regulators (AVRs) • Rollout of strategically selected projects from the technical plan to strengthen the peripheral systems at RADAR sites, which included the acquisition of emergency standby generators, diesel bowsers and uninterruptible power supplies (UPS)

Lightning Detection Network (LDN) infrastructure

With an increased need to provide meteorological information for the safety of lives and property as climate change and variability impacts affect the globe more than ever, the SAWS continued to complement its observations infrastructure with a state-of-the-art Lightning Detection Network (LDN). A total of 24 lightning detection sensors continued to give coverage over South Africa and Mozambique.

In ensuring optimal operation of the LDN, the SAWS appointed skilled personnel such as an LDN Specialist and Remote Sensing Specialist to ensure that the network remained operational and contractual deliverables to key clients such as Eskom were met. Furthermore, the SAWS entered into discussions with Vaisala, the Original Equipment Manufacturer (OEM), to strengthen and improve collaboration regarding lightning detection technology and to ventilate a possible partnership and future network expansion endeavours of the SAWS.

To keep up with technical and technological advancements, the SAWS will in 2023/24 embark on a project to deploy hybrid LS7002 sensors at eight of its LDN sites in the North West, Free State, Gauteng, Limpopo, Mpumalanga and KwaZulu-Natal, to ensure that critical lightning areas of South Africa are adequately covered during the summer rainfall period.

In October 2022, the SAWS showcased its LDN and its considerable impact on the country in Paris, France, as part of the lightning technology intercomparison project and market research. The entity also participated in the Cape Town International Conference of Lightning Protection (ICLP-2022) during September and October 2022.

The annual average performance of the network for the period under review stands at 87,84% data availability against the APP target of 90%.

Table 13: LDN infrastructure performance

Name of site	Q1	Q2	Q3	Q4	Average (%)
Pretoria/Irene	89,9	97,33	85,98	78,18	87,85
Richards Bay	95,64	91,91	51	92,44	82,75
Mthatha	92,09	94,5	86,42	95,51	92,13
East London	99,65	99,54	99,37	98,49	99,26
Gqeberha/Port Elizabeth	99,89	99,61	99,67	99,93	99,78
Bethlehem	99,34	97,58	86,64	84,21	91,94
Kimberley	99,6	99,8	77,83	79,72	89,24
George	91,62	97,85	95,38	97,10	95,49
Cape Town	99,43	99,77	99,59	83,36	95,54
Upington	99,4	98,38	96,69	99,20	98,42
Calvinia	95,8	90,56	85,91	72,30	86,14
Mafikeng	82,82	77,53	66,88	52,20	69,86
Lephalale/ Ellisras	99,31	95,69	70,91	66,22	83,03
Springbok	97,74	87,57	82,66	76,81	86,20
Aliwal North	99,7	71,39	68,42	75,67	78,80
Satara	98,53	99,64	99,85	99,33	99,34
Vryheid	90,97	83,06	86,25	99,21	89,87
Lebowakgomo	80,89	38,4	79,9	58,60	64,45
Musina	91,89	95,84	69,14	99,76	89,16
Kathu	96,13	92,5	88,84	83,75	90,31
Aberdeen	98,3	98,62	84,76	98,75	95,11
Alkantpan	99,29	89,03	92,99	99,61	95,23
Wolwespruit	90,23	80,56	65,71	54,38	72,72
Vernon Crookes	94,53	88,1	50,09	69,22	75,49
Quarterly average	**95,11**	**90,2**	**82,12**	**83,91**	**87,84**

Table 14: LDN Systems failure analysis

LDN Infrastructure	
Main challenges	Overall LDN sensor failures and data losses Eskom load shedding has proven to be the main factor affecting the functioning of many of our sensors and contributing to internal UPS faults. Unstable Radio Links, faulty V-SAT links and Microwave Links at some of the sensors were also contributing factors to the availability of the Network. Communication-related failures and vandalism were some of the other challenges.
Mitigation	• Backup power systems enhanced • Replacement of internal UPS for the sensors • Improved ICT system and procurement of radio links to correct ICT communication failures • System-related concerns to be addressed include implementing an enhanced relationship-building process between the Original Equipment Manufacturer (OEM) and the SAWS, encompassing ongoing improvements and the finalisation and signing of a new maintenance contract that includes network upgrades, additional training, and skills transfer

Automatic Weather Stations and the Automatic Rain Stations infrastructure

The SAWS' surface observations technology comprises a network of Automatic Weather Stations (AWSs) and Automatic Rainfall Stations (ARSs) across South Africa. At the end of the period under review, the SAWS managed 242 AWSs and 169 ARSs across the country. The AWS and ARS infrastructure availability realised was 81,42% and 79,88%, respectively, against the set targets of 85% and 80%.

As meteorological equipment technology evolves, it becomes imperative for meteorological institutions to adapt and keep abreast with such technological advances. Therefore, training on the SAWS' newly developed surface observation systems was executed in Northern Cape Regional Office. It was followed by a written and practical assessment of technicians to prove their competencies to manage the network as the new technology rolls out effectively. Among other focus areas, the trainees were trained on basic logger programming, assembling an AWS, data manipulation, verification of an AWS, verification of test equipment, and the 4G Long Term Evolution (LTE) gateway configuration and installation.

Through such strides, the SAWS continued to keep its employees abreast with the latest technologies to effectively render the highest service delivery standards to all its stakeholders.

The table below summarises the surface observations of infrastructure performance over the period under review.

Table 15: AWS and ARS infrastructure availability

Quarter	% Availability AWS	% Availability ARS
1	85,3	84,8
2	82,92	81,18
3	80,03	80,15
4	77,38%	73,42%
Annual average	**81,42%**	**79,88%**

Table 16: AWS and ARS infrastructure failure analysis

AWS and ARS Infrastructure	
Main challenges	• Load shedding has also been a challenge in Q1 of this financial year, with a direct impact on the availability of the sensors • GSM communication has posed a challenge throughout this financial year due to weak coverage in certain areas where neither the MTN nor Vodacom infrastructure was available, exacerbated by the impact of load shedding on these service providers
Mitigation	• Replace AC power with solar panels • Procurement of LTE modems and collaboration with ICT

Global Atmosphere Watch infrastructure

The Global Atmosphere Watch (GAW) Programme of the World Meteorological Organization (WMO) focuses on building a global understanding of atmospheric composition and its changes. It helps to improve the understanding of interactions between the atmosphere, the oceans and the biosphere. It coordinates high-quality atmospheric composition observations across global to local scales to drive high-quality and impact-based science while co-producing a new generation of research-enabled products and services.

The GAW programme executed by the SAWS assists the South African government in fulfilling several international conventions to which they are signatories, including, amongst others, the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), Montreal Protocol as well as the Minamata Convention. In addition, the Cape Point GAW station forms part of an integrated global network of 30 similar stations spread across the globe under the banner of the World Meteorological Organization (WMO) GAW Programme.

During the year under review, the SAWS GAW programme, which comprises the Cape Point GAW station and the Regional GAW stations, did not achieve the targeted levels of data recovery.

Challenges experienced during this period are summarised below:

1. Cape Point GAW: The individual trace gas parameters, except for Nitrous Oxide (N_2O), showed good data recovery. The N_2O instrument suffered a catastrophic failure and required replacement. In the latter months of 2022, elevated levels of Eskom load shedding negatively impacted the instrumentation that generally functioned well, inclusive of Carbon Dioxide (CO_2), Carbon Oxide (CO) and Methane (CH_4) measuring instruments.

2. Regional GAW: Several Ultraviolet B (UVB) stations malfunctioned, such as one at Irene and the Gqeberha site. Replacement of the affected equipment will be done during the next financial year.

Additional funding of R8,9m was made available to address the challenges associated with data recovery at GAW. To this end, new N_2O, Ozone, and Mercury instruments were procured for the Cape Point laboratory. This additional funding also ensured that the laboratory air-conditioner, essential for maintaining stable laboratory temperature during analysis, was procured. Furthermore, the Regional GAW Programme was strengthened through the purchase of Ozonesondes for the measurement of atmospheric column ozone concentrations at Irene.

Table 17: Data recovery at Cape Point and Regional GAW

Cape Point data set/parameter	Q1 Average (%)	Q2 Average (%)	Q3 Average (%)	Q4 Average (%)
Carbon Dioxide (CO_2)	98,33	82,03%	71,1	88,43
Carbon Monoxide (CO)	98,33	84,1%	71,1	88,50
Methane (CH_4)	98,33	84,1%	71,0	88,40
Ozone (O_3)	97,77	97,0%	91,6	98,60
Gaseous Elemental Mercury (Hg)	97,20	95,7%	90,7	84,40
Nitrous Oxide (N_2O)	0	0	0	0
Radon (Rn)	97,73	99,2%	96,6	95,27
Totals	**83,96**	**77,4%**	**70,3**	**77,66**
Regional GAW data set/parameter	**Q1 Average (%)**	**Q2 Average (%)**	**Q3 Average (%)**	**Q4 Average (%)**
Total Ozone				
Dobson 132 - Springbok	100	100	100,0	97,67
Dobson 089 - Irene	91	79	85,7	61,33
Ozone Sonde Soundings Irene	83,33	100	83,3	66,67
UV-B Biometer network				
Irene	0	0	0	0
Cape Point	100	99,3	98,7	100
Cape Town International	100	85,3	100	100
Durban International	99,33	100	100	100
De Aar	100	100	100	91,00
Port Elizabeth	93,67	97,5	25,9	0
Totals	**85,26**	**84,6**	**77,1**	**68,52**
Overall GAW performance	**84,61**	**81,0**	**73,7**	**73,09**

Air Quality Services

The SAWS manages and reports on data collection from ambient air quality monitoring networks in the Vaal, Highveld and Waterberg national air quality management priority areas. In addition to this responsibility, the SAWS is the custodian of the South African Air Quality Information System (SAAQIS) and, as such, is responsible for the hosting, operation and maintenance of the SAAQIS to ensure access to air quality information to all users. The users include the public, business, industry, government authorities and non-government organisations. The SAWS also provides technical support to local and provincial government regarding the operation, maintenance and "live" reporting to SAAQIS of their air quality monitoring stations. In addition, the SAWS continued with its efforts to develop capacity in air quality monitoring at its Regional Offices and support local and provincial governments with their air quality monitoring endeavours.

The availability of the SAAQIS for the period under review was 99,38% versus a target of 95%. Of the 15 priority area ambient air quality monitoring stations under the responsibility of the SAWS, only 59,95% thereof met the minimum data requirements of 75% recovery against a target of 80% of the stations meeting minimum data requirements. Intermittent power failures due to load shedding, localised power supply issues, and power surges resulted in unexpected damage to ageing and new instruments. Theft and vandalism of equipment also had a catastrophic impact on the optimal functionality of stations during this period under review. Coupled with the need to secure the monitoring stations better, the SAWS identified an urgent need to replace faulty equipment and maintain a spare instrument suite to limit data loss during instrument failures.

In addition to supporting local and provincial government, a project plan for establishing regional centres for air quality monitoring in South Africa was drafted and presented to the national air quality monitoring technical meeting. This plan was submitted before the Ministers and Members of Executive Councils (MINMEC) for approval, and an outcome was still pending at the end of the reporting period. Support provided to various municipalities was as summarised below:

Table 18: Summary of the support provided to various municipalities

Station name	Station owner	Province	Description of support
NWU Vaal Campus	North-West University (NWU)	North-West (Academic)	Zero and span check General maintenance
Delmas	DARDLEA	Mpumalanga	Full operation maintenance and reporting as per service level agreement.
Balfour			
eMalahleni			
Middelburg			
Standerton			
Leondale	Ekurhuleni Metropolitan Municipality	Gauteng	Station assessment and report
Delville			
Wattville			
Tembisa			
Tsakane			
Thokoza			
Springs			
Etwatwa			
Bedfordview			
Olifantsfontein			

Linking performance with budgets

Table 19: Linking performance: Programme 3

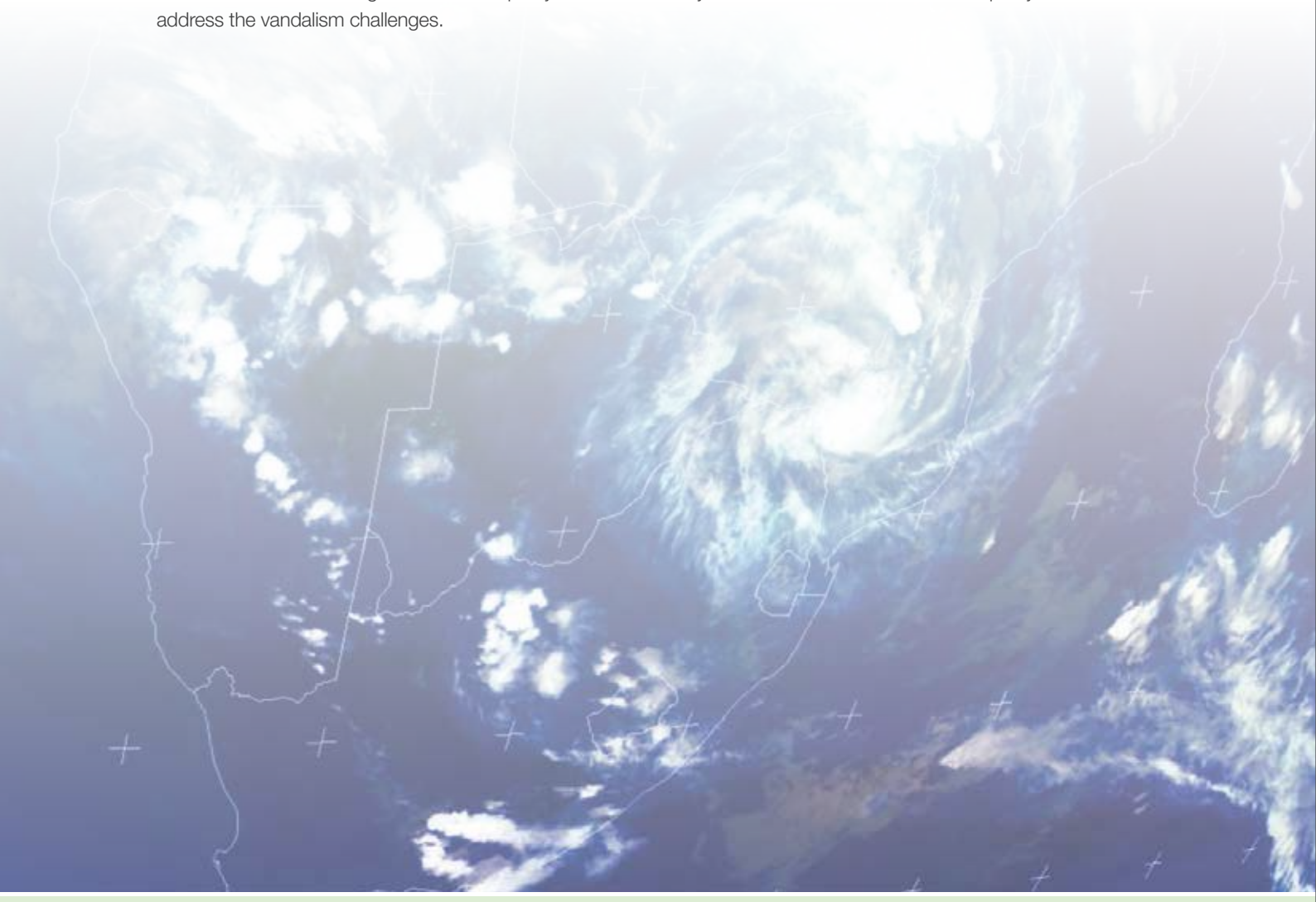
Programme/activity/objective	2022/23			2021/22		
	Budget R'000	Actual expenditure R'000	(Over)/Under expenditure R'000	Budget R'000	Actual expenditure R'000	(Over)/Under expenditure R'000
Infrastructure and Information systems	78 104	74 224	3 880	72 631	73 665	(1 033)

Strategy to overcome areas of underperformance

The organisation developed a RADAR Infrastructure Sustainability Plan that looks at addressing the ageing infrastructure, dual polarisation to ensure optimal performance for disaster risk reduction, RADAR software upgrades to enable forecasters to interpret RADAR data accurately, RADAR training to ensure shorter turnaround time for RADAR maintenance, while building more skills for the interpretation and usage of RADAR data. Critical within this plan is introducing alternative energy sources in a phased approach as from the 2023/24 Financial Year.

Developing an integrated infrastructure sustainability plan was initiated towards the end of the period under review. This plan would look at the modernisation and the expansion of the SAWS' meteorological observation network and ensure that these networks conform to international requirements such as the Global Basic Observation Network (GBON), Global Climate Observing System (GCOS) and others.

The SAWS is also working with DFFE air quality officials to identify alternative and safer sites for air quality stations to address the vandalism challenges.



Programme 4: Administration

Purpose: To provide leadership, strategic guidance, centralised administration, executive support, and corporate services and facilitate effective cooperative governance, international relations and environmental education and awareness

Sub-programme 4.1: Sound corporate governance

Purpose: To provide business management and leadership

Sub-programme 4.2: Adequate, appropriately skilled, transformed and diverse workforce

Purpose: To develop programmes which create a supportive environment for high performance, employee wellness, career development, attraction and retention

Sub-programme 4.3: Brand positioning and stakeholder network development

Purpose: To develop and maintain various platforms for engagement with stakeholders to extend the reach and increase awareness of the SAWS brand. To promote engagement of stakeholders for mutually beneficial relationships

Outcome: Organisational sustainability

Sound corporate governance

Regarding non-statutory commercial revenue, the SAWS pursued a tailored weather solutions provider strategy since its agentisation in 2001, utilising a combination of in-house business development capabilities and insourced partnerships. This business approach continued during the year under review.

In terms of economic performance, the outlook for Gross Domestic Product (GDP) growth over the medium term was relatively poor, and the SAWS was faced with the basic challenges of viability and sustainability that, in normal circumstances, should be addressed through the transformation of its commercial activities towards enterprise maturity, factoring in its public good and international obligations. Fluctuations in the SAWS' ability to generate commercial revenue against budget, coupled with impacts such as the aftermath of Covid, rising inflation and electricity shortages, resulted in a need to revise the annual target to a realistic and manageable figure. Considering pipeline leads, the seasonal change for the summer period, and contractual products and services, the budget for non-statutory commercial revenue was revised from R32,90 million to R27 million.

In working towards the revised target, the SAWS was successfully awarded tenders for various solutions, including Air Quality maintenance and support for the City of Tshwane, the City of Ekurhuleni and Eskom Gourikwa. The SAWS also gained revenue from meteorological leasing equipment at various smaller airports contributing to airline safety and support for Disaster Management.

The SAWS will continue to focus on building relationships in the government sector and, through cost recovery collaboration efforts, build on its revenue generating capabilities to modernise and maintain critical observations network infrastructure.

In line with King IV's sound governance principles, the SAWS identified risks that could negatively impact the delivery of its strategy. This process was undertaken whilst planning for the annual performance plan of 2023/24 and as part of linking the risks to the entity's strategy. Risk Management is an integral part of decision making, and the SAWS has incorporated the risks for major projects into its matrix. The SAWS continued to monitor the implementation of risk action plans and, every quarter, reported progress to the Audit and Risk Committee of the Board. Independent assurance on the effectiveness of risk management was conducted through the SAWS' Internal Audit function, with follow-ups on implementing improvement action plans being monitored and reported to the Audit and Risk Committee.

A combined assurance model was applied to cover significant risks and material matters through a combination of the SAWS' line functions such as Risk and Compliance, Internal Audit, External Auditors and other assurance providers relevant to the SAWS environment. The level of assurance provided by different lines of defence was reported every quarter to the respective oversight structures.

The SAWS monitored its compliance against 20 prescripts in the year under review. The process enabled the entity to ensure a wide range of applicable legislation. The SAWS determined the laws applicable to its operations and activities, and these are contained in the SAWS compliance universe, which is part of the SAWS compliance framework. The level of risk for the identified laws was assessed as per the adopted SAWS risk assessment methodology. This ensured that the laws were prioritised according to their level of risk to the organisation. Since the law constantly changes, the SAWS continued to monitor developments, particularly those that would impact its operations and activities. Where required, training and workshops were conducted to inform employees of new developments in legislation and regulations.

To improve the SAWS' Broad-Based Black Economic Empowerment (B-BBEE) status, the entity appointed an internal B-BBEE Task Team to ensure compliance with the prescripts of the B-BBEE Act. In addition, it outsourced the verification process to provide independent verification and assessment of the entity's contributions.

The PAIA manual was also amended to cater to the recent PAIA regulations amendments. In addition, the manual was translated into two other languages, that is, Sesotho and isiZulu. Furthermore, measures were put in place to ensure compliance with POPIA.

The SAWS implemented its approved whistleblowing policy, fraud policy, and fraud prevention plan to promote zero tolerance for fraudulent and corrupt activities. Furthermore, an independent service provider was appointed to facilitate the fraud and ethics hotline. There were no cases reported by whistle blowers through the fraud hotline and/or other reporting channels. An anti-fraud and corruption awareness session for all staff was conducted to create awareness as to what constitutes fraud and unethical activities, reporting channels that can be followed when safely reporting fraud allegations, and how whistle-blowers can be protected under Section 3 of the Protected Disclosures Act 2000 (Act No. 26 of 2000, as amended). These efforts aim to encourage employees to report fraud and any unethical behaviour they may identify.

Adequate, appropriately skilled, transformed and diverse workforce

During the year under review, the Board developed and approved a new Human Capital Management Strategy for 2022/23 to 2025/26. This strategy identifies the most critical Human Capital Programmes needed to achieve the organisation's objectives and detailed implementation plans to achieve these objectives. The Human Capital Management Strategy is intended to help the South African Weather Service (SAWS) systematically improve its operational efficiency by providing a diverse workforce with the requisite skills and expertise to drive and deliver on the SAWS mandate.

For the year under review, the Human Capital Management Strategy's implementation plan emphasised learning and development programmes supporting the World Meteorological Organization (WMO) *2023 World Meteorological Day's* theme of ***"The future of Weather, Climate and Water across Generations"***. Section D of this report provides details of these learning and development programmes.

Brand positioning and stakeholder network development

Public awareness programmes

With the government's easing of Covid-19 restrictions towards the end of 2021, indoor and outdoor crowd gatherings were permitted to occupy 50% of venue capacity. This boded well for the entity's aim to reach out to more citizens of South Africa in pursuit of creating WeatherSMART communities, as public awareness programmes executed by the entity surpassed the target set for the period under review. As a result, 39 community outreaches were conducted throughout the year with assistance from the SAWS Regional Offices.

The City of Johannesburg, the SAWS, and the Provincial Disaster Management Centre (PDMC) embarked on awareness campaigns and workshops stretching to four of the city's six regions, including Ivory Park in Thembisa and Lenasia. The campaigns intended to inform and educate communities on impact-based weather forecasting.

During the winter period, known in disaster management circles as the fire season, the SAWS partnered with several municipalities and Disaster Management Centres to create awareness about veld fires. Workshops were held in Gauteng at Bronkhorstspruit Sports Centre and Lothair Community Hall, Msukaligwa Local Municipality in Mpumalanga. Awareness was raised regarding the services offered by the SAWS to communities to help deal with fire risks. The Fire Danger Index (FDI) and the forecasting thereof were shared with local communities and farmers at these events.

The City of Tshwane hosted the 2022 World Environmental Day Commemoration seminar on 15 June 2022, with the event spearheaded by young people, and the SAWS was in attendance as a panellist. Thembisile Hani Local Municipality also hosted the Mpumalanga Youth Day Commemoration, and the SAWS was invited to come and share information about its products and services with the youth.

The National Science Week (NSW) launch and the subsequent events throughout the country were a perfect platform to engage learners studying in the Science, Technology, Engineering and Mathematics (STEM) areas. After attending the NSW launch at Mangosuthu University of Technology in Umlazi on 30 July 2022, the SAWS was involved in two more NSW events in Mkhondo (formerly Piet Retief) and Mbombela.

In following the District Development Model, which aims to improve the coherence and impact of government service delivery with a focus on 44 district and 8 metropolitan municipalities around the country, the SAWS partnered with the Department of Agriculture, Land Reform and Rural Development (DALRRD) to host events covering veld fire awareness as well managing drought in Gauteng, North West and Eastern Cape. Furthermore, a fire information session was conducted at Randfontein Municipal Hall on 11 August 2022, where the SAWS partnered with the Gauteng PDMC and Gauteng Department of Agriculture and Rural Development (GDARD). An Impact-based Early Warning training for disaster management practitioners was held in Mafikeng on 23-24 August 2022.

The United Nations General Assembly designated 13 October as the day to promote a global culture of disaster risk reduction by declaring the day the International Day for Disaster Reduction (IDDR). The 2022 edition took place during the mid-term review of the Sendai Framework, which will conclude at a High-level Meeting of the General Assembly in May 2023 with a political declaration. October 13, 2022, presented an opportunity to acknowledge the progress made toward preventing and reducing disaster risk and losses in lives, livelihoods, economies and basic infrastructure, in line with the international agreement for reducing global disaster risk and losses; the Sendai Framework for Disaster Risk Reduction 2015-2030, as adopted in March 2015. The 2022 IDDR commemoration was hosted by the NDMC at Cape Town Civic Centre, with the SAWS being presented with an opportunity to engage Disaster Management practitioners on the value of early warning.

Refer to pages 86 to 87 for detailed awareness programmes executed in the year under review.

The SAWS continued to grow its social media presence, with Facebook page followers increasing from 144 000 to 159 518 on 31 March 2023, which is a 10% growth over the year, and Twitter followers increasing from 168 343 to 194 800, which is a 15% growth over the year.

A total of 26 media releases were published, covering several severe weather forecasts (of which tropical cyclones totalled four releases), outlooks and post-weather event reports. In addition, two WeatherSMART NEWS publications containing scientific articles by the SAWS scientists and of interest to weather enthusiasts and the public were published online.

Brand positioning and international commitments

In positioning the brand of the SAWS, forecasters continued to engage and keep the South African public informed through various media platforms. For example, television (TV) interviews informing the public about inclement weather, alerts and warnings were conducted on all mainstream TV stations such as eNCA, South African Broadcasting Corporation (SABC) News and Newzroom Afrika.

Through its Cape Town Weather Office, the SAWS hosted a successful Media Day on 31 May 2022 to share information with various media stakeholders about the forecasting process and impact-based weather forecasting. The SAWS also provided an overview of the Western Cape's seasonal outlook forecast at this event.

The SAWS further participated in aviation-related events to improve its brand positioning. The Africa Aero and Defence (AAD) exposition, which ran from 19-25 September 2022, was the flagship event in the aviation defence calendar, attracting over 30 000 people. Furthermore, the SAWS used the Aero South Africa tradeshow at Wonderboom Airport to position itself in the industry by partnering with Aviation Direct to hold an exhibition stall from 7 to 9 July 2022.

Our forecasters conducted several radio interviews in the period under review. The SAWS KwaZulu-Natal Regional Office was in the spotlight when floods swept through the province in December 2022.

To ensure proper positioning of the country in the global meteorological space, the country officially expressed its interest in becoming an Executive Council (EC) member of the World Meteorological Organization (WMO) during the elections of the 19th WMO Congress of May to June 2023 to be held in Geneva, Switzerland. Subsequently, the country commenced with its lobbying processes through the Department of International Relations and Cooperation (DIRCO) and engagements with other Permanent Representatives (PRs) in the Southern African Development Community (SADC) and on the continent. This lobbying emanated from the designation of the country's Permanent Representative (PR) with the WMO, which made the Republic of South Africa eligible for the EC seat consideration.

In the country's capacity as the WMO Systematic Observation and Financing Facility (SOFF) Peer Advisor, the SAWS participated in the WMO SOFF meetings and activities, including participation in the first batch of peer advisor's meetings convened on 13 December 2022. The purpose of this meeting was for the WMO to advise its SOFF Advisors on the process and procedure to implement the WMO Global Basic Observing Network (GBON) implementation through the SOFF project. The country also embraced its advisory role in implementing the WMO GBON in Mozambique.

From the perspective of the country hosting various WMO designated regional centres, the country liaised with the SADC Global Information Systems Centre (GISC) national focal points affiliated to South Africa to update the GISC-Pretoria database for improved service delivery of the centre. Furthermore, on the Regional WIGOS Centre (RWC) front, the country participated in the WMO Global RWC Workshop convened in July 2022 to ensure its preparedness and readiness for the certification audit scheduled for the beginning of 2023. The certification audit is a pre-requisite for the official confirmation of the centre during the WMO Congress of 2023.

The Regional Training Centre (RTC) Pretoria also successfully hosted the WMO On-the-Job Training and Competency Development training in December 2022. Furthermore, South Africa, through its Centre of Excellence (CoE) in Pretoria, hosted the African Satellite Meteorology Education and Training (ASMET)-14 project meeting from 5 to 9 December 2022. This training aimed to enhance satellite meteorology in the African continent.

In September 2022, the country also hosted the WMO Climate Science Information for Climate Action Regional Workshop in Johannesburg and the WMO National Framework for Climate Service (NFCS) meeting held in Cape Town from 28 to 30 September 2022. Furthermore, in the country's continued quest to position itself internationally, the SAWS and the SADC co-hosted the 26th SADC Southern Africa Regional Climate Outlook Forum (SARCOF) Review held from 28 November to 7 December 2022 in Boksburg. The review was convened to assess the accuracy of the seasonal outlook produced in August 2022 by the SADC Long-range Forecasting experts for decision-making purposes.

Country representation

During the period under review, the country enhanced its international representation by reviewing the current nominations and making new nominations to various bodies of the WMO. In addition, aligning the country's hydrological activities with the WMO was of paramount significance by nominating hydrological experts from the national Department of Water and Sanitation (DWS) to the WMO's Joint expert team on hydrological monitoring. This aimed at improving hydrological activities at a national level. Subsequently, the country was represented in the WMO launch and presentation of its First State of Global Water Resources held in November 2022, which aimed to integrate hydrological activities in key WMO programmes.

The country also participated in the WMO Workshop on Aviation Met Services: Cost recovery strategies in Africa, convened in August 2022, where the SAWS shared and presented its experience and lessons learnt in its aviation cost recovery processes. This resulted in the country being requested to assist the Seychelles Meteorological Agency (SMA) in establishing its aviation cost recovery system.

Furthermore, the country participated in the Second Session of the WMO Commission for Weather, Climate, Water and Related Environmental Services and Applications (SERCOM-2), the Second Session of the WMO Commission for Observation, Infrastructure and Information Systems (INFCOM), the SADC ClimSA-programme meeting on the delivery and installation of equipment to the SADC Member States, as well as the Regional Association I (Africa) Management Group (MG) meeting which was primarily held to discuss the alignment of the activities of the RA I Committee on Services (CoS) with the RA I MG Implementation plan and the implication of the outcomes of the WMO SERCOM-2 held in October 2022.

Collaborations through partnerships

The following collaborations and public awareness initiatives were executed by the entity during the period under review:

- Development of the Programme of Action (POA) for the SAWS-INAM (Mozambique) memorandum of understanding (MoU) implementation
- Invitation to the Namibian PR for the review of the SAWS-Namibia Met Service (NMS) MoU for alignment with the latest meteorological developments that will better serve the two organisations
- Conclusion of the SAWS- DWD (Germany) MoU
- MoU with the Limpopo Department of Economic Development Environment and Tourism (LEDET) for cooperation in the enhancement of research, technology development, future economic development and climatological products and services
- Bilateral engagement between the SAWS and the Department of Water and Sanitation (DWS) to discuss the collaboration between the two institutions. The aim was to discuss the role of DWS in the implementation of WMO programmes, data sharing and implementation of the trilateral MoU between the SAWS, DWS and the Agricultural Research Council (ARC)

Table 20: Public awareness programmes

Detailed public awareness programmes for the period under review			
Date	**Engagement**	**Partner**	**Venue**
13 May	Taking the Legislature to the people (TLP)	Mpumalanga Provincial Government	Daggakraal, Dr Pixely ka Isaka Seme Local Municipality
17 May	Joburg Awareness	City of Joburg	Tembisa, Ivory Park
23 May	Joburg Awareness	City of Joburg	Randburg
27 Apr	Freedom Day Celebrations	Department of Sports, Arts and Culture	Taljaard Stadium, Nkagala District Municipality
20 May	Presidential Mpumalanga Imbizo 2022	Mpumalanga Provincial Government	Silobela Stadium, Carolina
27 May	Impact-Based Early Warning System Workshop	North-West Disaster Management Centre	Vryburg
8 Jun	Mpumalanga Services Day	Nkangala District Municipality	Kameelrivier Stadium
10 Jun	Climate change workshop	Komati Basin Water Authority	Driekoppies Dam, Nkomati Local Municipality
14 Jun	Bushbuckridge Awareness Campaign	Bushbuckridge Local Municipality	Malele Tribal Authority, Bushbuckridge
15 Jun	2022 World Environmental Day Commemoration	City of Tshwane	Sammy Marks Council Chambers
16 Jun	MP Government Youth Day Commemoration	Thembisile Hani Local Municipality	Solomon Mahlangu Stadium, Kwa-Mhlanga
22 Jun	Fire Season Awareness Campaign	Working on Fire	Lothair Community Hall
22 Jun	Veld fires Disaster Risk Reduction Workshop	Gauteng Provincial Disaster Management Centre	Bronkhorstspruit Sports Centre
7 July	AERO SA Trade show	Messe Frankfurt, South Africa	Wonderboom Airport, Tshwane
30 July	National Science Week Launch	DSI and SAASTA	MUT, Umlazi
1-5 August	Mondi Science Week	Mpumalanga Province, Mondi	Piet Retief
1-5 August	Penreach National Science Week	Penreach Shalamuka STEAM Centre	Penryn College, Mbombela
10 August	Environmental Green Careers Workshop and Awareness	DFFE	Bloemfontein
11 August	Fire Information Session	GDARD and Gauteng PDMC	Randfontein Municipal Hall

Detailed public awareness programmes for the period under review			
Date	**Engagement**	**Partner**	**Venue**
12 August	Lowveld National Botanical Garden Career Expo	SANBI	Botanical Gardens, Mbombela
29 August	Moses Kotane Municipality Career Exhibition	Moses Kotane Municipality and Department of Education	Sun City Resort
1-2 September	Arbor Day Build-up School Education and Awareness	DFFE	Hazyview and the City of Mbombela
1-2 September	FlyFofa Career Expo	FlyFofa Aviation	Wonderboom Airport, Tshwane
20 September	Rust de Winter Community Awareness Outreach	DALRRD	Mongena Lodge, Hammanskraal
20 September	Chrissiesmeer Awareness Campaign	DALRRD, Gert Sibande Disaster Management Centre	Chrissiesmeer, MP
21-25 September	Africa Aerospace Defence Expo	DoD, Armscor, CAASA	Waterkloof Airforce Base
23-24 September	Impact-based Early Warning Training	NW Disaster Management Centre	Mahikeng
26 August	Women's Month Engagement	Department of Education FS	Petrusburg, FS
26-29 September	Integrated climate-driven multi-hazard early warning system (ICMHEWS) Vhembe Stakeholder Workshop	Vhembe Disaster Management	Thulamela Municipality Library, Thohoyandou
28 September	Free State Career Expo	Department of Employment and Labour	Frankfort Town Hall, FS
13 October	Aviation Youth Show	SACAA	Braam Fischer Airport, Bloemfontein
13-15 October	Airline Association of Southern Africa AGM	AASA	Arabella Hotel, Cape Town
13-14 October	International Day for Disaster Reduction (IDDR)	NDMC	Cape Town Civic Centre
17-18 November	Dr Ruth Segomotsi Mompati Careers and Science Expo	DFFE and Mamusa Local Municipality	Schweizer-Reneke, NW
2 December	International Civil Aviation Day (ICAD)	SACAA	Heidelberg Airport
7 December	Dr Kenneth Kaunda District Municipality Outreach Awareness	DALRRD	Protea Hotel, Klerksdorp

Table 21: Key strategic multilateral engagements

Key strategic multilateral engagements for the period under review		
Meeting	**Purpose of the meeting**	**Dates and venue**
The WMO Workshop on Aviation Met Services: Cost recovery strategies	During this workshop, the SAWS shared and presented its experience and lessons learnt in its aviation cost recovery processes. This has resulted in the country being requested to assist the Seychelles Meteorological Agency in establishing its aviation cost recovery system.	9-11 August 2022 (virtual)
The Early warning and early action ministerial conference	This conference was significant to the country and the SADC region as it aimed at improving the multi-hazard early warning system activities in the region, which is vulnerable to climate change impacts. South Africa was instrumental in the drafting processes of the declaration and presented lessons learnt on Impact-based forecasting.	5-9 September 2022 in Maputo
The Second Session of the Commission for Observation, Infrastructure and Information Systems (INFCOM) and Commission for Weather, Climate, Water and Related Environmental Services and Applications (SERCOM)	The Commission sessions aimed to provide further guidance to the WMO members on implementing the WMO reforms adopted in 2019 and propose new programmes for tabling during the next WMO Congress held in May 2023.	17-21 and 24-28 October 2022 (virtual)
Regional Association I (Africa) Management Group (MG) meeting	The meeting aimed to primarily discuss the alignment of the RA I Committee on Services (CoS) activities with the RA I MG Implementation plan and the implication of the outcomes of the WMO SERCOM-2 held in October 2022.	18 November 2022 (virtual)
SADC ClimSA-programme meeting	The country participated in this meeting as the beneficiary of the donated servers through this SADC project that aims to enhance climate services in the sub-region.	15 November 2022 (virtual)
WMO launch and presentation of its First State of Global Water Resources	The meeting presented the WMO finding studies on the state of global water resources for relevant end users. It also aimed at integrating hydrological activities in key WMO programmes.	29 November 2022 (virtual)

Linking performance with budgets

Table 22: Linking performance with budgets: Programme 4

Programme/activity/objective	2022/23			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 (incl. Corporate and Regulatory Services)	72 356	71 838	518	31 128	23 241	887

4. Revenue collection

Table 23: Revenue collection

Sources of revenue	2022/2023			2021/2022		
	Estimate R'000	Actual amount collected R'000	(Over)/Under collection R'000	Estimate R'000	Actual amount collected R'000	(Over)/Under collection R'000
Aviation revenue	94 090	108 805	14 715	69 236	75 7718	8 482
Other commercial revenue	27 000	26 046	(954)	28 600	26 853	(1 747)
Total	**121 090**	**134 851**	**13 761**	**97 836**	**104 572**	**6 735**

The entity exceeded its revenue collection target of R121 million. The actual is R135 million for the year as improvement in air-traffic volumes increased due to the easing of lockdown regulations emanating from the Covid-19 pandemic.

Collections for other commercial revenue were lower than projected estimates as the global and local economy has not fully recovered from the Covid-19 impact and low economic growth.

Measures taken during the year to keep on target and the impact the under collection of revenue has had on service delivery

A debtors collection plan was implemented, which assists the entity in ensuring that all overdue debts are collected. In addition, commercial partners who experienced challenges meeting their sales targets were engaged with various options being explored to increase sales.

New opportunities were sought in air quality, instrumentation sales and advisory services to boost sales, with new clients being contracted while others were still under consideration at the end of the financial year.

When debtors' accounts were beyond the allowed normal credit terms and all collection avenues were exhausted without any commitment from the debtors, these were handed over to the collection attorneys. Final letters of demand and summons were issued where applicable.

The improved collection during the 2022/23 financial year has resulted in improved working capital, allowing the entity to deliver on its core mandate and annual performance targets.

Reasons for exceeding the target for revenue collection and reporting on new measures instituted during the year to raise additional revenue or to ensure more efficient/effective collection

The improved revenue from aviation income is mainly attributable to improved air-traffic volumes and the Minister's new tariff promulgated during the year. As a result, industry experts expect air-traffic volumes and aviation revenue to recover pre-Covid levels by the 2024/25 financial year.

Our large customers honoured their contracts for maintenance of equipment, lightning and forecasting products. Contracts for tenders awarded to the SAWS for the maintenance of air quality stations and forecasting and climate change adaptation products for the South African Ports have taken time to finalise but will contribute revenue returns in the future.

The entity has implemented the Commercial Revenue Turnaround Strategy to maximise its commercial revenue.

5. Capital investments

Progress made on implementing the capital, investment and asset management plan

During the year ending 31 March 2023, the Department of Forestry, Fisheries and Environment approved the SAWS request to convert R124,04 million government infrastructure grants (original government infrastructure grant budget of R190,04 million) to an operational grant as a response to the decreased revenue from commercial activities and liquidity challenges.

During the mid-year budget review, the final infrastructure budget was revised from R61 million to R51 million to align it with expected spending. As a result, R49,40 million was spent on maintenance and capital investment projects for the year.

Infrastructure projects which have been completed in the current year and the progress in comparison to what was planned at the beginning of the year

The entity made progress in acquiring infrastructure during the financial year. However, most of the government infrastructure grant was unspent. This was due to the communique from the National Treasury in terms of which all expenditures above R30 000 had to be suspended at the beginning of the financial year until June 2022. This contributed to a delay in procurement processes.

By the end of the financial year, capital investment projects amounting to R96,68 million were committed.

Infrastructure projects that are currently in progress and expected completion

The following infrastructure projects were in progress at the end of the financial year and are expected to be completed by the end of the second quarter and third quarter of the 2023/24 financial year:

- Hydrogen generators and storage vessels
- Ambient air quality monitoring instruments
- Mercury specialistion unit and spectrophotometer
- Upgrade of the Lightning Detection Network sensor system and surface observation infrastructure
- Computer equipment and the High-Performance Computing System

Plans to close down or downgrade current facilities

During the current financial year, the entity had yet to make plans to close or downgrade any of the existing facilities. Instead, efforts are targeted at upgrading and improving the performance of the infrastructure. However, it must be noted that some of the infrastructure is starting to reach the end of its useful life. It will soon be obsolete, technologically outdated, and disposed of and replaced, subject to budget availability.

Progress made on the maintenance of infrastructure

Various strategies for the maintenance of the SAWS infrastructure were implemented during the year and included the following:

- Personnel from the Information Communications Technology (ICT) unit responsible for maintenance of the SAWS ICT infrastructure were upskilled and trained, resulting in more effective maintenance execution
- The Lightning Detection Network sensor upgrades, which seek to address the current concerns and shortages of network spares to free up used parts for sustaining network maintenance, is an ongoing process that forms part of the infrastructure sustainability plan. A total of two sensors were upgraded in the year, and there is a plan to upgrade a further six sensors in a new financial year
- The entity uses the Fiix system to schedule the maintenance interventions per infrastructure network to ensure sustainability and optimum performance
- The entity is developing a solar battery storage back-up plan to stabilise the observation network currently affected by load shedding

Developments relating to the above that are expected to impact the SAWS' current expenditure

The entity continues to look for alternative means of maintaining infrastructure within the available budget.

With the adequate allocation of funding, the network performance and maintenance turn-around could be achieved; however, due to budget limitations, some of the network performances had to be reduced to align the probability of performance to the allocation of funding.

Details as to how asset holdings have changed over the period under review, including information on scrapping and loss due to theft

The change in the entity's asset holding was due to acquisition, impairment losses, and scrapping of assets.

Some assets were identified as no longer required for service due to their state of usage and deemed obsolete and technologically outdated. These assets were identified during the physical asset verification, were subsequently impaired and recommended for disposal.

The table below provides a detailed breakdown of the change in the entity's asset holding for the year:

Table 24: Asset holding movement (carrying amounts on 31 March 2023)

Accounting group	Additions R'000	Impairment/ scrapping losses and reversals R'000	Gains due to sale R'000
Property, plant and equipment	35 706	4 749	469
Intangible assets	796	15	-
Total	**36 502**	**4 764**	**469**

Measures taken to ensure that the SAWS' asset register remained up to date during the period under review

A physical asset verification process was carried out during the year as part of the asset management process to ensure the safekeeping of the entity's assets. In addition, the asset management team purchased modern asset scanners to ensure efficiency in recording and tracking assets.

The current state of the SAWS' capital assets

The table below indicates the overall condition grading and current state of the SAWS capital assets, following the physical verification process which was conducted during the year:

Table 25: Condition grading of assets

Condition grading	Capital assets state in percentages	Carrying amount on 31 March 2023 R'000
Good	46%	R 279 273
Fair	39%	R 78 546
Poor/bad condition	15%	R 13 333
Total	**100%**	**R 371 152**

Major maintenance projects that have been undertaken during the period under review

The entity was able to carry out the following repairs and maintenance on its major capital projects:

- The assessment of the ionising radiation project at selected radar sites was concluded
- The upgrade of security at the radar sites to 24-hour monitoring was completed successfully, and all selected sites now have 24-hour security monitoring
- A standby power upgrade for the Ottosdal radar site was concluded, and a new diesel backup generator was acquired
- The Technical Services team initiated procurement of several infrastructure projects, and implementation will be rolled over into the new financial year, following the infrastructure sustainability plan

Progress made in addressing the maintenance backlog during the period under review

The significant backlogs for repairs and maintenance were addressed during the current financial year by implementing the Fiix system. This resulted in a substantial decrease in the organisational repairs and maintenance backlog. However, load shedding has proven to be a major challenge to the efforts.

6. Irregular expenditure

Reconciliation of Irregular expenditure

Description	2022/23 R'000	2021/22 R'000
Opening balance	R42 839 300,20	R111 861 966,00
Add: Irregular expenditure confirmed	R0,00	R502 961,20
Less: Irregular expenditure condoned	R1 883 233,20	R64 299 636,00
Less: Irregular expenditure not condoned and removed	R40 956 067,00	R5 225 991,00
Less: Irregular expenditure recoverable	R0,00	R0,00
Less: Irregular expenditure recoverable and written off	R0,00	R0,00
Closing Balance	**R0,00**	**R42 839 300,20**

Reconciling notes to the annual financial statement disclosure

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure that was under assessment in 2021/2022	R0,00	R353 503,00
Irregular expenditure that relates to 2021/22 and identified in 2022/23 (#)	R0,00	R149 458,20
Less Irregular expenditure condoned	R0,00	R0,00
Irregular expenditure for the current year	R0,00	R0,00
Total	**R0,00**	**R502 961,20**

(##) During the year ended March 2023, an amount R149 458,20 was identified as irregular expenditure incurred in 2021/22 but was identified in the 2022/23 Financial year by Internal Auditors during the review of irregular expenditure transactions.

Details of current previous year Irregular expenditure (under assessment, determination, and investigation)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure under assessment	R0,00	R0,00
Irregular expenditure under determinaion	R0,00	R0,00
Irregular expenditure under investigation	R0,00	R0,00
Total	**R0,00**	**R0,00**

Details of Current and previous year Irregular expenditure condoned

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure condoned	R1 883 233,20	R64 299 636,00
Total	**R1 883 233,20**	**R64 299 636,00**

Details of Current and previous year Irregular expenditure removed (not condoned)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure not condoned and removed	R40 956 067,00	R5 225 991,00
Total	**40 956 067,00**	**5 225 991,00**

Details of current and previous year Irregular expenditure recovered

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure recovered	R0,00	R0,00
Total	**R0,00**	**R0,00**

Details of current and previous year Irregular expenditure written off (irrecoverable)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure recovered	R0,00	R0,00
Total	**R0,00**	**R0,00**

Details of current and previous year Irregular expenditure written off (irrecoverable)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure written off	R0,00	R0,00
Total	**R0,00**	**R0,00**

Additional disclosure relating to inter-institutional arrangements

Details of non-compliance cases where an institution is involved in an inter-institutional arrangement (Where such institution is not responsible for the non-compliance)

Description
None
Total

Details of non-compliance cases where an institution is involved in an inter-institutional arrangement (Where such institution is responsible for the non-compliance)

Description	2022/23 R'000	2021/22 R'000
The institution procured services of another organ of state to conduct a business case analysis for a division that is to be established, and it was found that the supplier that was awarded the contract did not meet the minimum requirement and Entity A was part of the bid committee meeting.	R0,00	R0,00
Total	**R0,00**	**R0,00**

Details of current and previous year disciplinary or criminal steps taken as a result of Irregular expenditure

Description	2022/23 R'000	2021/22 R'000
CSIR office accommodation - Stellenbosch office rental - corrective measures	R123 583,20	R502 961,20
Procurement of sanitisers and surface disinfectant sprays - local content not promoted - corrective measures	R25 875,00	-
Total	**R0,00**	**R0,00**

Condonation requests were submitted to National Treasury after appropriate disciplinary measures were taken. These items were subsequently removed by the Accounting Authority/Accounting Officer in line with the National Treasury Instruction No. 4 of 2022/2023. Irregular Expenditure Framework as advised by National Treasury.

7. Fruitless and wasteful expenditure

Reconciliation of fruitless and wasteful expenditure

Description	2022/23 R'000	2021/22 R'000
Opening balance	R2 286 267,60	R2 286 267,60
Add: Fruitless and wasteful expenditure confirmed	R0,00	-
Less: Fruitless and wasteful expenditure written off	R0,00	-
Less: Fruitless and wasteful expenditure recoverable	R2 286 267,60	-
Total	**R0,00**	**R2 286 267,60**

Reconciling notes to the annual financial statement disclosure

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure that was under assessment in 2022/23	R0,00	R0,00
Fruitless and wasteful expenditure that relates to 2021/2022 and Identified in 2022/24	R0,00	-
Fruitless and wasteful expenditure for the current year	R0,00	-
Total	**R0,00**	**R0,00**

Details of current previous year fruitless and wasteful expenditure (under assessment, determination, and investigation)

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful under assessment	R0,00	R0,00
Fruitless and wasteful under determination	R0,00	R0,00
Fruitless and wasteful under investigation	R0,00	R0,00
Total	**R0,00**	**R0,00**

Details of current and previous year fruitless and wasteful recovered

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure recovered	R2 286 267,60	R0,00
Total	**R2 286 267,60**	**R0,00**

The prior year fruitless and wasteful expenditure of R2 286 268 was settled with the service provider without litigation. The service provider agreed to provide service in kind of the value of the settlement amount.

Fruitless and wasteful expenditure written off

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure written off	R0,00	R0,00
Total	**0,00**	**0,00**

Details of current and previous year disciplinary or criminal steps taken as a result of fruitless and wasteful expenditure

Description	2022/23 R'000	2021/22 R'000
Corrective measures	R2 286 267,60	-
Total	**R2 286 267,60**	**R0,00**

8. Annual performance against targets

Programme 1: Weather and Climate Services

Purpose: Safeguard life and property and provide meteorological solutions to all South Africans

Sub-programme 1.1: Warnings, alerts and advisories

Purpose: To provide timeous and accurate impact-based early warnings, alerts and advisories to safeguard life and property against the impact of severe weather on land, oceans and in the air.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Lives and property protected against meteorological-related risks	Meteorological related solutions provided to meet user needs	Percentage availability of National Weather (FPZA41)	99%	98,77%	98% availability of national weather forecast (FPZA41)	Achieved • 98% availability of National Weather (FPZA41) Average of quarterly performance (99,44% + 98,92% + 98,39% + 95,05%) ÷ 4 = 97,95%	None
		Percentage accuracy of aerodrome warnings	99%	98,73%	96% accuracy of aerodrome warnings	Achieved • 98% accuracy of aerodrome warnings Average of quarterly performance (99,41% + 99,26% + 97,01% + 97,74%) ÷ 4 = 98,36%	Numerical Weather Prediction models contributed to high accuracies
		Percentage accuracy of Terminal Aerodrome Forecast (TAF)	94%	94,14%	90% accuracy of Terminal Aerodrome Forecast	Achieved • 97% accuracy of Terminal Aerodrome Forecast Average of quarterly performance (98,74% + 98,29% + 97% + 92,95%) ÷ 4 = 96,75%	Numerical Weather Prediction models contributed to high accuracies
		Percentage availability of Marine products (SOLAS - Safety of Life at Sea)	98%	98,97%	95% availability of Marine Products (SOLAS)	Achieved • 99% availability of Marine Products (SOLAS) Average of quarterly performance (99,18% + 98,89% + 99,73% + 97,25%) ÷ 4 = 98,76%	Less active weather on most days led to quicker product preparation and dissemination

Programme 2: Research and Innovation

Purpose: Develop meteorological solutions to inform wise socio-economic choices

Sub-programme 2.1: Research

Purpose: To generate new scientific insights in atmospheric and related sciences in collaboration with relevant stakeholders. To expand the existing knowledge base and intelligence related to climate change.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Lives and property protected against meteorological-related risks	An enhanced meteorological related body of knowledge	Number of research outputs	49	37	40 Research outputs	Achieved • 53 Research outputs The sum of quarterly performance 11 + 16 + 10 + 16 = 53	Due to several Journals not publishing editions (hard copies) but rather online, the online publications process results in quicker processing

Sub-programme 2.2: Solution development

Purpose: The provision of innovative meteorological and related products and services through the development and implementation of community weather-smart products and services.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Lives and property protected against meteorological-related risks	An enhanced meteorological related body of knowledge	Number of new or enhanced climate solutions for climate-sensitive sectors signed-off	1	1	One new or enhanced climate solution for climate-sensitive sectors signed-off	Achieved • One new or enhanced climate solution for climate-sensitive sectors signed-off	None
		Number of new or enhanced non-climate-specific solutions signed-off	6	4	Four new or improved non-climate-specific solutions signed-off	Achieved • Four new or enhanced non-climate-specific solutions signed-off	None

Programme 3: Infrastructure and Information Systems

Purpose: Upgrade, expand and optimise infrastructure.

Sub-programme 3.1: Optimal management of infrastructure

Purpose: To ensure optimal infrastructure and systems uptime of observations, information dissemination and exchange that enables the saws to achieve its mandate.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Lives and property protected against meteorological-related risks	Optimal core technological capability	Percentage availability of automatic weather stations infrastructure	87,8%	83,14%	85% availability of automatic weather stations infrastructure	Not achieved • 81% availability of Automatic Weather Stations Infrastructure Average of quarterly performance (85,34% + 82,92% + 80,03% + 77,38%) ÷ 4 = 81,42%	Increased load shedding over the period affected the availability of sensors. The Global System for Mobile Communications (GSM) was weak in certain areas
		Percentage availability of automatic rainfall stations infrastructure	83,3%	81,39%	80% availability of automatic rainfall stations infrastructure	Achieved • 80% availability of Automatic Rainfall Stations infrastructure Average of quarterly performance (84,76% + 81,18% + 80,15% + 73,42%) ÷ 4 = 79,88%	None
		Percentage availability of global atmospheric watch infrastructure	83%	81,58%	85% availability of global atmospheric watch infrastructure	Not achieved • 78% availability of Global Atmospheric Watch infrastructure Average of quarterly performance (84,61% + 81,06% + 73,68% + 73,09%) ÷ 4 = 78,11%	Load shedding exceeded backup power solutions implemented, significantly impacting the data recovery of the Greenhouse Gases (GHG) instrumentation
		Percentage availability of RADAR infrastructure	73%	73,83%	75% availability of RADAR infrastructure	Not achieved • 52% availability of RADAR infrastructure Average of quarterly performance (71,36% + 59,91% + 46,36% + 31,30%) ÷ 4 = 52,23%	Interruptions in the power supply due to load shedding, as well as challenges with peripheral infrastructure that is critical for optimal radar operation

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Lives and property protected against meteorological-related risks	Optimal core technological capability	Percentage availability of Lightning Detection Network infrastructure	94%	93,76%	90% availability of Lightning Detection Network infrastructure	Not achieved • 88% availability of Lightning Detection Network infrastructure Average of quarterly performance (95,11% + 90,20% + 82,12% + 83,92%) ÷ 4 = 87,84%	Load shedding, as well as faulty and unavailable uninterruptible power supplies and battery packs, affected the availability of sensors
		Percentage availability of the South African Air Quality Information System	99%	98,96%	95% availability of the South African Air Quality Information System Infrastructure	Achieved • 99% availability of the South African Air Quality Information System Average of quarterly performance (99,93% + 99,11% + 98,91% + 99,57%) ÷ 4 = 99,38%	Minimal downtime of the SAAQIS website. The South African Air Quality Information System is hosted outside the country, which mitigates the impacts of load shedding

Sub-programme 3.2: Quality data

Purpose: To provide quality data meeting minimum data requirements.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Lives and property protected against meteorological-related risks	Optimal core technological capability	Percentage of priority areas air quality stations available on SAAQIS meeting minimum data requirements	67%	69,44%	80% of priority areas air quality stations available on SAAQIS meet minimum data requirements	Not achieved • 60% of Priority Areas Air Quality Stations available on SAAQIS meeting minimum data requirements Average of quarterly performance (82,05% + 71,06% + 55,56% + 31,11%) ÷ 4 = 59,95%	• Instrument failure/faults experienced at numerous stations • Intermittent power failures due to load shedding and localised power supply issues, as well as power surges, resulted in unexpected damage to ageing and new instruments
		Percentage of AWS and ARS climate data available on national climate database meeting minimum data requirements	94%	89,81%	82% of AWS and ARS climate data available on the national climate database meet minimum data requirements	Achieved • 86% of AWS and ARS climate data available on the national climate database meet minimum data requirements Average of quarterly performance (88,88% + 87,18% + 86,43% + 82,97%) ÷ 4 = 86,37%	Despite increased load shedding and shortage of spares, data from existing operational stations could be captured

Programme 4: Administration (including corporate and regulatory services)

Purpose: Provide leadership, strategic guidance, centralised administration, executive support, corporate services and facilitate effective cooperative governance, international relations and environmental education and awareness.

Sub-programme 4.1: Sound corporate governance

Purpose: To provide business management and leadership.

Applicable to Sub-Programme 4.1: Sound Corporate Governance until 23 October 2022

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23 until 23 October 2022	Reasons for deviations	Reasons for revisions to the outputs/output indicators/annual targets
Organisational sustainability	Internal excellence achieved within the organisation	Unregulated commercial revenue generated	R25 049 591	R26 800 578	R32 890 000 unregulated commercial revenue generated	Partially achieved • R10 549 775 unregulated commercial revenue generated The sum of quarter 1 and 2 performance (R5 021 448 + R5 528 327) = R10 549 775	The achievement reflects the implementation until the end of the second quarter of the financial year, thus the deviation from the planned target. Revenue from major partners is below budget due to the loss of key clients. Air quality sales, instrument sales, as well as advisory and consulting sales were below target	The need to revise the unregulated commercial revenue target was driven by factors such as: • Rising inflation, constraints such as electricity shortages and capital-intensive increases in exchange rates placed demands on the SAWS basic infrastructure, thus impacting the ability to provide consistent weather and climate information. This resulted in reduced income from the SAWS and its commercial partners • Limited resource availability to implement revenue generating channels such as web portals and weather applications

Applicable for 2022/23 with revision applied to Sub-Programme 4.1: Sound corporate governance

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Organisational sustainability	Internal excellence achieved within the organisation	Percentage of local expenditure on affirmative procurement (Levels 1 to 4)	80%[1]	91,26%	70% of local expenditure is on affirmative procurement (Levels 1 to 4)	Achieved • 85% local expenditure on affirmative procurement (Levels 1 to 4) Average of quarterly performance (80,53% + 96,07% + 67,61% + 96,36%) ÷ 4 = 85,14%	The intentional targeting of Level 1-4 B-BBEE suppliers for local affirmative procurement for a contribution towards the improvement of the SAWS' B-BBEE Level.
		Level of B-BBEE Rating	8	8	Level 6 B-BBEE rating	Achieved • Level 6 B-BBEE rating	None
Organisational sustainability	Internal excellence achieved within the organisation	Growth in unregulated commercial revenue	R25 049 591	R26 800 578	R27 000 000 unregulated commercial revenue generated	Not achieved R25 107 707 The sum of quarterly performance (R5 021 448 + R5 528 327 + R9 491 867 + R5 066 065) = R25 107 707	Revenue from commercial partners was below budget due to the loss of key clients, as well as forecast products linked to the uptime of the radars, which were impacted by load shedding.
		External audit opinion rating	Unqualified	Unqualified	Unqualified external audit opinion	Achieved • Unqualified external audit opinion	None

1 Procurement from B-BBEE Level 1 to 8

Sub-programme 4.2: Adequate, appropriately skilled, transformed and diverse workforce

Purpose: To develop programmes which create a supportive environment for high performance, employee wellness, career development, attraction and retention.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Organisational sustainability	Internal excellence achieved within the organisation	Percentage of attrition rate	11%	6,22%	≤8% attrition rate	Achieved • 5,46% attrition rate Total attrition 23 ÷ ((462 + 483) ÷ 2) x 100 = 4,87%	None
		Percentage of Workplace Skills Plan (WSP) targets met	60%	86,89%	75% of Workplace Skills Plan targets met	Achieved • 107% of Workplace Skills Plan (WSP) targets met Total targets met (282 ÷ 263) x 100 = 107,22%	Due to increased attempts to meet the target for B-BBEE skills development score.
		Percentage compliance to Employment Equity on women in management	37%	38,71%	40% compliance to Employment Equity for women in management	Achieved • 41,18% of women in management Percentage of women in management at the end of period (56 ÷ 136) x 100 = 41,18%	Active measures focused on the recruitment of women for identified managerial positions.
		Percentage compliance to employment equity on persons living with disabilities	1,9%	3,03%	2% compliance to employment equity for persons living with disabilities	Achieved • 2,90% of persons living with disabilities Percentage of persons living with disabilities at the end of the period (14 ÷ 483) x 100 = 2,90%	Employees living with disabilities were not impacted by attrition.
		Number of youths in internships and learnership	15	15	Ten youths in internship and learnership	Achieved • 25 Youths in internships and learnership	The focus shifted to consider youth appointed in the entity's core and support services.
		Number of placements in work integrated learning	N/A	4	Five placements in work-integrated learning	Achieved • 5 Placements in work-integrated learning	None

Sub-programme 4.3: Brand positioning and stakeholder network development

Purpose: To develop and maintain various platforms for engagement with stakeholders to extend the reach and increase awareness of the SAWS brand. To promote engagement of stakeholders for mutually beneficial relationships.

Outcome	Output	Output indicators	Audited actual performance 2020/21	Audited actual performance 2021/22	Planned annual target 2022/23	Actual achievement 2022/23	Reasons for deviations
Organisational sustainability	Internal excellence achieved within the organisation	Number of positioning and profiling programmes conducted locally and internationally	N/A	9	14 positioning and profiling programmes conducted locally and internationally	Achieved • 26 positioning and profiling programmes conducted locally and internationally The sum of quarterly performance (7 + 6 + 6 + 7) = 26	Increased number of international programmes undertaken under the World Meteorological Organization (WMO).
		Number of public awareness programmes conducted	N/A	16	18 public awareness programmes conducted	Achieved • 39 public awareness programmes conducted The sum of quarterly performance (15 + 14 + 6 + 4) = 39	Partnerships with other government departments and entities contributed to increased invitations to participate in public engagements.
		Number of collaborations through partnerships implemented locally and internationally	N/A	2	11 collaborations through partnerships implemented locally and internationally	Achieved • 11 collaborations through partnerships implemented locally and internationally The sum of quarterly performance (2 + 3 + 3 + 3) = 11	Increased collaborations with other Meteorological Institutions and the World Meteorological Organization.

PART C:
Governance

1. Introduction

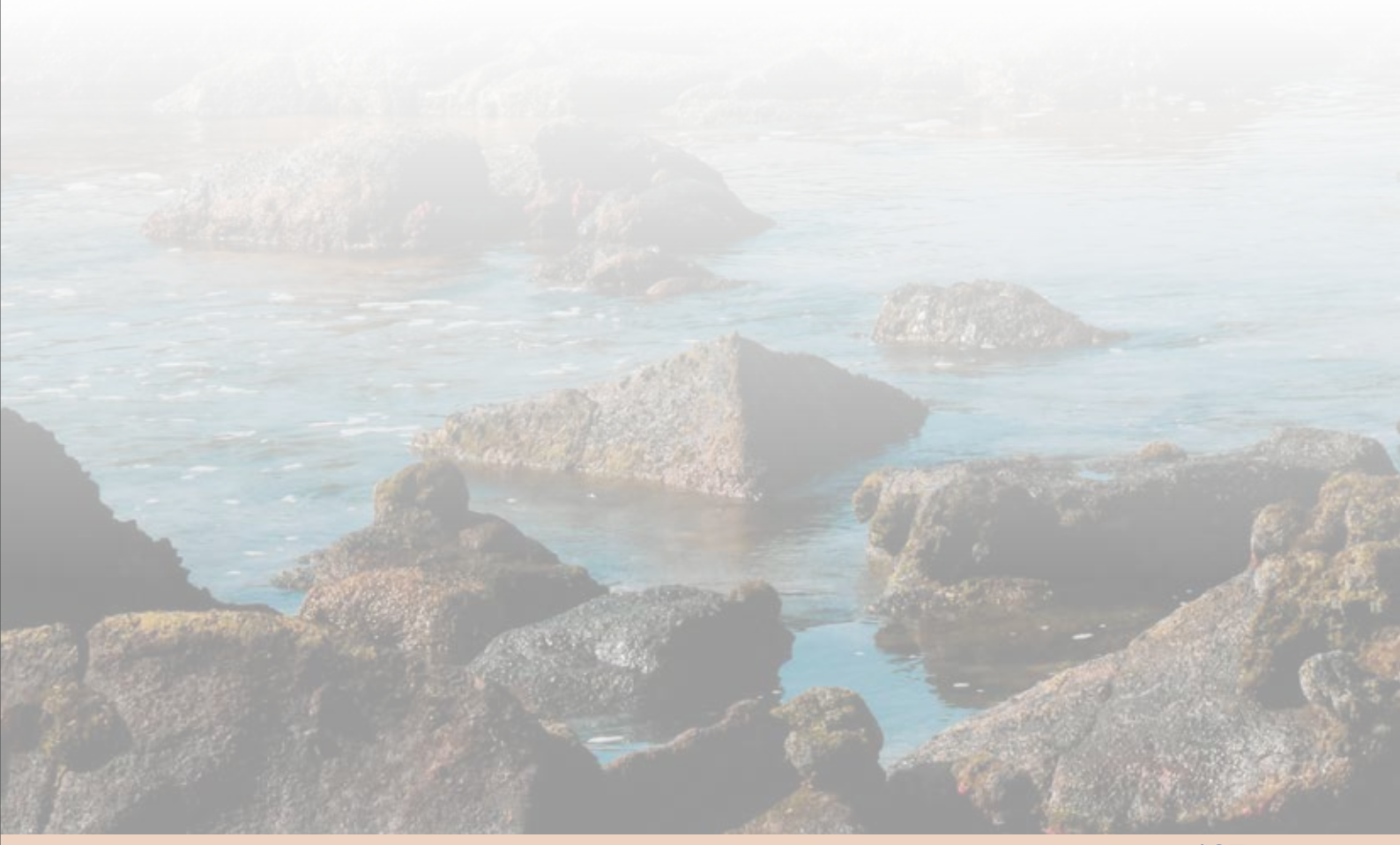
Corporate governance embodies processes and systems by which public entities are directed, controlled, and held to account. In addition to legislative requirements based on a public entity's enabling legislation and the Companies Act, corporate governance concerning public entities is regulated by, among others, the prescripts of the Public Finance Management Act 1999 (Act No. 1 of 1999) (PFMA), (as amended) and run in tandem with the principles contained in the King Report on Corporate Governance. Parliament and the Executive and Accounting Authorities of the public entity oversee the corporate governance within entities.

2. Portfolio Committees

The Environment, Forestry and Fisheries Portfolio Committee (the Portfolio Committee) monitors and oversees the work and budget of the SAWS – as an entity of the Department of Forestry, Fisheries and the Environment (DFFE) – and holds the organisation to account. During the 2022/23 financial year, the SAWS attended and took part in the following meetings with the Portfolio Committee:

19 April 2022:	Briefing on the annual performance plan for the 2022/23 financial year
23 August 2022:	Briefing on Quarter 3 and 4 performance for the 2022/23 financial year
18 October 2022:	Briefing on the annual report and financial statements for the 2021/22 financial year
28 February 2023:	Briefing on Quarter 1 and 2 performance for the 2022/23 financial year

The common thread through most of the questions from members of the Portfolio Committee had to do with the availability of the SAWS' observational tools, including the meteorological RADAR network and automatic weather stations, and their bearing on the organisation's ability to carry out its mandate. Some of the questions in this regard were triggered by the human tragedy visited upon the communities of KwaZulu-Natal following the deadly storm that lashed the area in April 2022. Members were assured that SAWS relied on much more than its RADAR network for observational data. Other tools such as our lightning detection network, automatic weather stations, automatic rainfall stations, upper-air radiosondes and satellites were also used to predict weather conditions—other questions related to governance matters, such as the proper use of financial resources. Members were assured that matters of irregular and fruitless expenditure were being attended to, including by way of consequence management.



3. Executive Authority

The Government of the Republic of South Africa is the SAWS' sole shareholder and executive authority. The shareholder representative is the Department of Forestry, Fisheries and the Environment Minister. As such, the SAWS engages the Minister on matters concerning the efficient and effective functioning of the SAWS and progress on implementing plans and the organisation's mandate.

To this end, the SAWS periodically presented progress on the implementation of the 2022/23 Annual Performance Plan to the Minister and the Deputy Minister, both of whom guided the SAWS intending to ensure that the government's priorities found expression in the performance plans for the 2022/23 financial year. The engagements with the Minister and the Deputy Minister were held as follows:

Table 26: Engagements with the Minister and Deputy Minister

Date	Engagement
5 May 2022	Quarter 4 Expenditure and performance progress report for the 2022/23 financial year
26 July 2022	Quarter 1 Performance report for 2022/23
6 October 2022	Quarter 2 Preliminary performance report and proposed mid-year review of the 2022/23 Annual Performance Plan (APP)
13 February 2023	Strategic planning session (Lekgotla) where the Minister outlined the purpose of the Lekgotla, outcomes of the Cabinet Lekgotla, State of the National Address and priorities for the 2023/24 financial year

4. The Accounting Authority / Board

The functions, roles and responsibilities of the Board are prescribed by the SAWS Act, PFMA and best practices such as the Companies Act 2008 (Act No. 71 of 2008) and the King IV Report on Corporate Governance.

In terms of the South African Weather Service Act, the Board's functions are:

- To ensure the financial viability and development of the commercial services
- To provide an efficient, cost-effective and high-quality weather service
- To set policies, standards and objectives within the framework issued by the Minister and ensure that the executive management team implements these policies, standards and objectives
- To facilitate succession and guide the appointment of senior managers
- To ensure that the SAWS has adequate systems of internal control, both operational and financial
- To monitor the performance of the SAWS and adjust the conditions of service of the personnel with due regard to the applicable labour legislation
- To recommend any budget proposals or adjustments and submit them to the Minister
- To set policy for recruitment, training and transformation at the SAWS
- Approve the Annual Performance Plan for the SAWS for the duration of its term of office and submit it to the Minister for final approval
- To ensure that the majority of the South African population benefits from the public good services
- To perform any other function assigned to it by the Minister

Board Charter

In line with best practice corporate governance, the Board reviewed and approved the Board Charter during the year under review. The purpose of the Board Charter is to:

- Set parameters within which the Board operates
- Ensure that all Board members know their duties and responsibilities derived from applicable legislation, regulations and governance frameworks affecting their conduct
- Ensure that the principles of good corporate governance are applied in all Board activities in respect of and on behalf of the SAWS

In addition, the Board approved its 2022/23 corporate calendar and the Board's annual work plan to ensure the completion of the Board's activities for the year under review. The Board's corporate calendar is used as input for developing the Board's annual work plan and Board committees' annual work plans to set out matters to be considered/approved by the Board during the year. The Board's annual work plan ensures that all issues are covered by the agendas of the meetings planned for the year and proper coverage of the matters laid out in the Board Charter. Progress reports on quarterly work plans were presented to the Board to guide critical activities to be attended to by the Board during the financial year and were amended as and when required.

Table 27: Composition of the Board

Name	Designation (in terms of the public entity board structure)	Date appointed	Date resigned/ date of the end of the Board term	Qualifications	Area of expertise	Board directorships with other entities	Other committees or task teams from other entities	Total number of Board meetings attended	Ordinary Board meetings	Specials Board meetings
Ms Feziwe Renqe	Chairperson	1 January 2019	Re-appointed 1 January 2022[2]	LLM, MAP, Post Graduate Diploma Corporate Law, B Proc	Law and Corporate Governance	LIV-LUKHANYISO NPO	Chairperson of the Adjudication Panel for Covid-19 No Fault Compensation (NFC) Scheme	12	7	5
Mr Itani Phaduli	Deputy Chairperson and Audit and Risk Committee Chairperson	1 January 2019	Re-appointed 1 January 2022[3]	Postgraduate Diploma in Accounting, CA (SA)	Finance, management and financial accounting, financial reporting, auditing and taxation	None	None	13	7	6
Dr Mmaphaka Tau	Member	1 January 2022	Current	PhD in Development and Management, Masters in Disaster Management, Masters in Development Studies, Honours in Development Studies, Higher Education Diploma, Bachelor of Arts	Disaster risk management, risk informed development, strategy formulation and execution, community development, natural resources management, water use and irrigation development, capacity building and development, policy formulation and execution, policy and legislation drafting and review, research planning, design and execution, rural development programmes formulation and implementation, communication, public and stakeholder mobilisation.	• SANBI Board • Disaster Relief Fund Board (until April 2022) • Critical Infrastructure Council (until April 2022) • Independent Trustee Armoede: Community Development Trust • Independent Trustee: Ga-Pila Community Development Trust • South African Programme Board Member: United Nations Development Programme	* Science the Technology Correspondent of South Africa: United Nations Convention to Combat Desertification (DFFE) * Examiner - Rhodes University - North-West University * Research Associate: University of the Free State * War Room Member: Department of Human Settlements (May 2022 to April 2023)	10	5	5

2 Ms Feziwe Renqe was re-appointed to the SAWS Board as the Chairperson from 1 January 2022

3 Mr Itani Phaduli was re-appointed to the SAWS Board as the Deputy Chairperson from 1 January 2022

Table 27: Composition of the Board (continued)

Name	Designation (in terms of the public entity board structure)	Date appointed	Date resigned/ date of the end of the Board term	Qualifications	Area of expertise	Board directorships with other entities	Other committees or task teams from other entities	Total number of Board meetings attended	Ordinary Board meetings	Specials Board meetings
Mr Grant Son	Member	1 January 2022	Current	MBA MPhil PhD thesis submitted	Strategic business management Risk management Environmental management	Parliament Council for Critical Infrastructure HPCSA Department of Transport Gauteng Department of Economic Development	Council member: Council for Higher Education (CHE) City of Joburg Municipalities Joburg Market Board Panel member: SARS Tax Court	13	7	6
Mr Peter Lukey	Department representative	1 January 2022	The contract ended on 3 March 2023	Higher National Diploma Civil Engineering BSc Ecology	Expert use of standard PC tools and software, laboratory management, quantity surveying, project management, project planning and monitoring, land surveying, organisational capacity development for the efficient and effective meeting of organisational objectives and service delivery, project development, project design, planning and monitoring methodologies, contract management, tenders.	None	Board	12	7	5

Table 27: Composition of the Board (continued)

Name	Designation (in terms of the public entity board structure)	Date appointed	Date resigned/ date of the end of the Board term	Qualifications	Area of expertise	Board directorships with other entities	Other committees or task teams from other entities	Total number of Board meetings attended	Ordinary Board meetings	Specials Board meetings
Ms Mmapula Kgari	Member and Human Resources and Remuneration Committee chairperson	1 January 2022	Current	B.Com Economics, Masters in Business Leadership, Executive Development Programme	Moderately networked knowledge of the public sector, strategic planning and execution, governance and oversight, commercially adept, business model, disruptions, market intelligence, stakeholder relations and management, project management risk management.	None	None	13	7	6
Ms Moipone Magomola	Member	1 January 2019	Re-appointed 1 January 2022[4]	BSc; LLB; Executive Development Programme (GIBS); Executive Development Programme (Wharton Business School, University of Pennsylvania) USA; Directors Development Programme (University of Western Cape)	Corporate governance, general management and law	GIBB (Pty) Ltd; Nelson Mandela Children's Fund; Nelson Mandela Children's Hospital (NPC)	None	12	6	6

4 Ms Moipone Magomola was re-appointed to the SAWS Board as a Board member from 1 January 2022

Table 27: Composition of the Board (continued)

Name	Designation (in terms of the public entity board structure)	Date appointed	Date resigned/ date of the end of the Board term	Qualifications	Area of expertise	Board directorships with other entities	Other committees or task teams from other entities	Total number of Board meetings attended	Ordinary Board meetings	Specials Board meetings
Ms Sandika Daya	Member	1 January 2022	Current	Executive Master in Digital Transformation and Innovation Leadership BSc Computer Science and Applied Mathematics, Professional Director, PD (SA) CDPSE (Certified Data Privacy)ISAP (SA) (Audit Professional) Certificate in Applied Project Management in an Information Technology Environment	Digital transformation Audit and risk corporate governance information technology	N/A	SAQA SAIGA	13	7	5
Prof. Sylvester Mpandeli	Member and strategic programmes committee chairperson	1 January 2022	Current	Doctor of Philosophy (PhD) in Climatology	Climate change adaptation, water – energy – food nexus, agricultural water management, food security	International Commission on Irrigation and Drainage (ICID) Executive Council	N/A	13	7	6
Mr Maesela Kekana	Department representative	1 March 2023	Current	MSc (dissertation)	Science	None	Board	1	1	0
Mr Ishaam Abader	Ex-officio member	1 April 2021	Current	BA B.Juris MBA	Legal Managerial	NNR CGS SAWS (DFFE Representative)	None	13	7	6

Table 28: Board Committees

Committee	Number of meetings held	Number of members	Names of members	
Human Resources and Remuneration Committee (HRRC)	6	4	Ms Mmapula Kgari	Chairperson
			Ms Moipone Magomola	Member
			Ms Feziwe Renqe	Member
			Mr Grant Son	Member [5]
Audit and Risk Committee (ARC)	6	5	Mr Itani Phaduli	Chairperson
			Mr Suren Maharaj	Independent Member
			Ms Sandika Daya	Member[6]
			Mr Robin Theunissen	Independent Member
			Ms Nalini Maharaj	Independent Member
		(6)	Mr Ameen Amod*	Independent Member
Special Programmes Committee (SPC)	4	4	Prof. Sylvester Mpandeli	Chairperson
			Dr Mmapaka Tau	Member
			Ms Sandika Daya	Member
			Mr Grant Son	Member[7]

* **Mr A Amod – resigned from the Audit and Risk Committee on 10 May 2022**

Remuneration of Board members

Section 9 of the SAWS Act provides that any member of the Board, other than the Chief Executive Officer and the official contemplated in section(5)(1)(b), must be paid such remuneration and allowances as the Minister, with the concurrence of the Minister of Finance, may determine.

The Director-General of the National Treasury annually publishes a Notice of Adjustment of the remuneration levels and service benefit packages for office-bearers in certain statutory and other institutions. This Notice also applies to the SAWS as a Schedule 3A public entity. Accordingly, the SAWS is further classified as a Category A Sub-category A1 entity.

The schedule indicating remuneration paid to each Board member can be found under section 33 on page 208 of the Annual Financial Statements.

5 **Appointed to the HRRC from 1 January 2022**

6 **Appointed to the ARC from 1 January 2022**

7 **Appointed to the SPC from 1 January 2022**

5. Risk management

Risk management policy and strategy

In line with the King IV good governance principles, the SAWS has identified risks that may negatively impact the delivery of the strategy. This process was completed during the strategy review to link the risk to the entity's strategy. Risk Management is treated as an integral part of the SAWS' decision-making process and adherence to its obligations in this regard: risk acceptance and incorporating risks for major projects within the SAWS. The Governance, Risk and Compliance (GRC) Department monitors the implementation of the risk action plan and reports them to Audit and Risk Committee (ARC) every quarter. In addition, risk management processes receive periodic independent assurance on the effectiveness of risk management from the Internal audit Department and follow ups on the implementation of improvement action plans are monitored monthly and reported quarterly to the Audit and Risk Committee.

Progress in the management of risks

Every quarter, the SAWS conducts risk monitoring to track progress on implementing developed risk mitigation plans. This is meant to improve internal control systems and ascertain whether there is an improvement in the management of risks.

6. Internal Control Unit

The organisation does not have a specific Internal Control Unit. However, the organisation ensures that a combined assurance model covers significant risks and material matters. The combination of the SAWS' line functions, risk and compliance functions, internal auditors, external auditors and other assurance providers relevant to the SAWS environment ensure that effect is given to the combined assurance model. The level of assurance provided by the different lines of defence is reported quarterly to oversight structures.

7. Internal Audit and Audit Committee

Internal Audit department

The Internal Audit department was accountable administratively to the SAWS CEO and functionally to the Audit and Risk Committee. This reporting ensured the effectiveness of the Internal Audit department by guaranteeing that its work was performed objectively and independently.

The SAWS Internal Audit department follows a co-sourced model whereby Internal Audits are performed in-house and by a co-sourced service provider. The Internal Audit department is governed by an Internal Audit Charter approved by the Audit and Risk Committee and reviewed annually. The Internal Audit Charter defines the purpose, authority, responsibilities, and scope of the Internal Audit department.

The PFMA, Treasury regulations and the standards for the professional practice of internal auditing govern internal audits. The objective of the Internal Audit department is to provide independent, objective assurance and advisory services designed to add value and improve the SAWS operations and to evaluate the effectiveness of risk management, control, and governance processes.

Key objectives of the Internal Audit department include:

- Review the adequacy and effectiveness of internal controls, risk management and governance processes
- Provide reasonable assurance on the integrity and reliability of financial and non-financial information
- Review compliance with applicable laws, regulations, policies and procedures
- Achievement of the organisation's strategic objectives
- Safeguard of asset
- Provide recommendations for improvement

During the 2022/23 financial year, the following internal audit reviews were conducted:

- Audit of Performance Information (Annual Performance4 of Financial Year 2021/22, Quarter 1, Quarter 2, and Quarter 3 of Financial Year 2021/22)
- Draft Annual Performance Plan Review FY 2023/24
- Risk Management Review
- Draft Annual Financial Statement Review (FY 2021/22)
- Temperature Forecast Accuracy Review
- Asset Management Review
- National Disaster Management Centre Review
- Information Technology Audits
- Quarterly Follow-up Audits (internal audit and Auditor-General)

The Internal Audit department performed its audit assignments during the year as per the approved Internal Audit Plan for 2022/23.

Audit and Risk Committee

The Audit and Risk Committee is a statutory committee of the Board, established in terms of section 77 of the PFMA, read with Treasury Regulation 27.1 published in terms of the PFMA. The Committee is accountable to the Board for the discharge of its responsibilities, which are outlined in the Audit and Risk Committee's terms of reference as follows:

- Review and recommend, for Board approval, the SAWS budget for the financial year
- Monitor the SAWS financial performance (management accounts) against the approved budget and Annual Performance Plan
- Review the appropriateness of and compliance with accounting policies
- Review the appropriateness of assumptions made by management in preparing the financial statements
- Review the significant accounting and reporting requirements and their impact on the financial statements
- Review the integrity of financial reporting, including the management report to the committee on important decisions taken during the preparation of the financial statements
- Review the Annual Financial Statements for completeness and consistency with the prescribed accounting principles before recommending them for Board approval
- Review, together with management and the external auditors, the outcome of the external audit, including any significant issues identified
- Governance of risk
- Governance of ICT
- Monitor internal controls and compliance
- Manage performance information
- Review and approve the Internal Audit Plan budget, scope and any major changes to it, and ensure that it covers the key risks and that there is appropriate coordination with the external auditor
- Ensure that the external auditors provide an assurance report on the contents of the summarised financial information
- Regularly report to the Board about committee activities, issues and related recommendations;
- Whistleblowing and reporting fraud
- Monitor the SAWS activities concerning matters relating to:
  - Social and economic development, including the organisation's standing in terms of the goals and purposes of the aspects of the ten principles of the United Nations Global Compact that are relevant to its mandate (working against corruption in all its forms, including extortion and bribery)
  - The Organisation for Economic Co-operation Development (OECD)'s recommendations regarding anti-corruption

Table 29: Attendance of Audit and Risk Committee meetings (where a "tick" is an indication of attendance)

Name	Meeting 21/04/22	Meeting 23/05/22 (Special)	Meeting 25/05/22 (Special)	Meeting 21/07/22	Meeting 25/07/22 (Special)	Meeting 27/07/22 (Special)	Meeting 29/07/22 (Special)	Meeting 20/10/22	Meeting 21/10/22 (Continuation)	Meeting 26/01/23	Meeting In-camera 09/02/23
Mr I Phaduli	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mr S Maharaj	✓	✓	✓	✓	✓	✓	Apology	Apology	Apology	✓	✓
Mr R Theunissen	Appointed 12/05/22	Apology	Apology	Apology	✓	Apology	✓	Apology	✓	✓	✓
Ms S Daya	✓	✓	✓	Apology	Apology	✓	✓	✓	✓	✓	✓
Ms N Maharaj	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mr Ameen Amond	✓										

Table 30: Composition of the Audit and Risk Committee

Name	Qualifications	Internal or external	If internal, position in the public entity	Date appointed	Date resigned / the date of the end of the term	Number of meetings attended
Mr Itani Phaduli (Chairperson)	Postgraduate Diploma in Accounting, CA (SA)	Non-executive director	N/A	1 January 2022	31 December 2024	11
Ms Suren Maharaj	Honours BCompt Degree, CA (SA)	Independent ARC Member	N/A	26 February 2019	Term ended 31 March 2022, and re-appointed for the second term, ending 31 December 2024	7
Ms Sandika Daya	Executive Master in Digital Transformation and Innovation Leadership BSc Computer Science and Applied Mathematics, Professional Director, PD (SA) CDPSE (Certified Data Privacy) ISAP (SA) (Audit Professional) Certificate in Applied Project Management in an Information Technology Environment	Board member	N/A	1 January 2022	31 December 2024	9
Mr Rob Theunissen	Bachelor of Accountancy. (B.Acc.) Chartered Accountant SA. CA (SA) Diploma in Criminal Justice and Forensic Auditing (Dip. CJFA)	External/ Independent ARC member	N/A	12 May 2022	31 December 2024	5
Ms Nalini Maharaj	B Proc LLB Financial Accounting Certificate Corporate Governance Certificate	External/ Independent ARC member	N/A	1 May 2022	31 December 2024	8

8. Compliance with laws and regulations

The organisation's Governance Risk and Compliance (GRC) department also monitors compliance implementation to prescripts of legislation applicable to the SAWS and reports it to oversight structures such as the ARC and the Board every quarter. GRC oversees compliance management so that it is understood, relates holistically to the organisation's operations and is responsive to changes and developments that follow from the continuous monitoring of the regulatory environment. This is done using a Compliance Tool, and the organisation is currently monitoring compliance of about 20 prescripts. The process enables the organisation to assure compliance with a wide range of applicable legislation.

The SAWS Board has determined what laws apply to the SAWS' operations and activities, and these are contained in the SAWS compliance universe, which is part of the SAWS compliance framework. The identified laws' risk level has been assessed as per the adopted SAWS risk assessment methodology. This ensures that the laws are prioritised according to their level of risk to the organisation.

Since the law constantly changes, the compliance department monitors these developments and advises the organisation on those that impact its operations and activities. Where required, training and/or workshops are conducted to inform the SAWS employees of the new developments in legislation and regulations.

The Board monitors compliance with the organisation's compliance universe. Management ensures that all employees and relevant stakeholders within the SAWS environment comply with provisions of the Acts included in the compliance universe. Compliance reports are presented to the Board by management quarterly to give the Board assurance that the SAWS complies with applicable laws and regulations. Non-compliance risks are highlighted and closely monitored, and plans and control measures are implemented to mitigate against non-compliance.

The various assurance providers, that is, the Auditor-General, Internal Audit, Governance, Risk, and Compliance, also assist the Board in identifying any non-compliance areas that are immediately attended to.

To improve the SAWS B-BBEE status, the organisation appointed an internal B-BBEE Task Team to ensure compliance with the prescripts of the B-BBEE Act and outsource the verification process to provide independent verification assessments of the entity's B-BBEE contribution.

The PAIA manual was also amended to cater to the recent PAIA regulations amendments. In addition, the manual has been translated into two other languages, Sesotho and isiZulu. Furthermore, measures have been put in place to ensure compliance with POPIA.

9. Fraud and corruption

To promote a zero-tolerance for fraudulent and corrupt activities, the SAWS is implementing the approved whistleblowing policy, fraud policy and prevention plan; and contracted an independent service provider to facilitate the fraud and ethics hotline. Monthly reports are provided to the organisation for further action. However, no cases were reported by whistle blowers through the fraud hotline and/or other reporting channels. These reports were included in the risk management reports and tabled at the Audit and Risk Committee meetings. GRC conducted anti-fraud and corruption awareness sessions for all staff to make them aware of what constitutes fraud and unethical activities, reporting channels that can be followed when safely reporting fraud allegations, and how whistle-blowers can be protected under Section 3 of the Protected Disclosures Act 2000 (Act No. 26 of 2000 as amended), in its efforts to encourage employees to report fraud and any unethical behaviour that they may identify.

10. Minimising conflict of interest

The conflict between the SAWS affairs and employees' private interests is managed through the Conflict of Interest policy. In terms of the policy, all employees are obliged to act in the organisation's best interests and are prohibited from conducting themselves in a manner that would constitute a conflict between their responsibilities and their private interests.

Employees involved in the SAWS' governance structures, such as the Executive Committee or Management Committee, must disclose their interests. The same is true for employees involved in procurement structures such as bid committee meetings, where transactions, contracts and/or appointments are evaluated and approved.

The chairpersons of the committees in question are responsible for ensuring that declarations of interest are part of the agenda. Accordingly, meeting participants are obligated to inform the chairpersons of any conflict or the potential thereof concerning particular agenda items. The meeting chairperson then determines an appropriate course of action concerning the affected participants. Such action may include recusing the participant from discussing the relevant agenda item. In a case where the chairperson is conflicted, the participants are required to determine the appropriate course of action.

Regarding procurement, officials are required to adhere to the Supply Chain Management (SCM) Code of Conduct. In addition, the prescribed Standard Bidding Document 4 (SBD 4), referenced "Declaration of Interest form", is applied to procuring goods and services whereby prospective suppliers/service providers are obliged to provide accurate information on their dealings with the State.

Moreover, National Treasury's Central Supplier Database is also utilised to verify if the suppliers doing business with the SAWS are not restricted suppliers and/or employees of the state before the awarding of any bid. This is done to minimise conflict of interest in SCM.

11. Code of Conduct

The SAWS relies on the Code of Conduct and Ethics to enforce ethical business conduct and compliance with corporate governance practices in the workplace. The code applies to employees, management, the Board, and any other person or party contracted to the organisation as a service provider or conducting any business on behalf of the SAWS and is also subject to its provisions.

As mentioned in this chapter, the GRC department conducted corruption awareness sessions for employees to raise their mindfulness of the kind of conduct that amounts to fraud and unethical activities. The SAWS deems failure to comply with any of the provisions of the Code a serious offence. Breaches are dealt with regarding the applicable provisions of the SAWS Disciplinary policy and/or any other relevant legislative and governance prescripts.

12. Health, safety and environmental issues

The Occupational Health and Safety (OHS) policy was reviewed to include the OHS policy statement as a commitment by top management to providing a healthy and safe working environment for all the SAWS employees and stakeholders. In addition, the SAWS developed a Covid-19 policy as a guideline for managing the pandemic throughout its offices. Many lessons were learnt over the past two years in managing possible future pandemics, which will be implemented should the country face pandemics similar to Covid-19.

The focus on Occupational Health and Safety for the 2022/23 financial year was mainly around compliance-related training and awareness activities and initiatives. The Mafikeng Weather Office was inspected by the Department of Employment and Labour inspectors in terms of the Occupational Health and Safety Act 1993 (Act No. 85 of 1993) and the Compensation for Occupational Injuries and Diseases Act 1993 (Act No. 130 of 1993) (COIDA). The office was found to comply with the requirements of both pieces of legislation.

The SAWS is a key player in the conservation of the environment space and has an obligation and commitment to make a positive contribution to the fight against climate change and its effects through:

- Participation in the green economy (through endeavours to transition to low-carbon operational activities)
- Monitoring and managing the organisation's carbon footprint
- Ensuring compliance with the prescripts of the National Environmental Management Act 1998 (Act No. 107 of 1998 as amended) (NEMA)

To this end, the SAWS has identified the following five critical environmental management characteristics that will underpin its approach:

- Monitoring of radiation emitted by key and high-tech meteorological equipment, i.e., RADARs and lighting detection equipment
- Waste management with the aim of segregation and recycling
- Safe pest control activities
- Monitoring and reduction of carbon monoxide (CO) and carbon dioxide (CO_2) emissions by the SAWS fleet (through data collection and reporting by a service provider, information to be used to develop specifications for the next tender)
- Identifying new technologies to conduct upper-air ascents, that is, move away from using current non-biodegradable materials that often fall into the sea and impact marine life negatively

The highlights relating to Total Quality Management (TQM) are reviewing the Quality Management policy and retaining the SAWS' ISO 9001:2015 certification during the 2022/23 financial year. In addition, top management has committed to providing quality products and services to all stakeholders through the quality policy statement.

13. Company Secretary

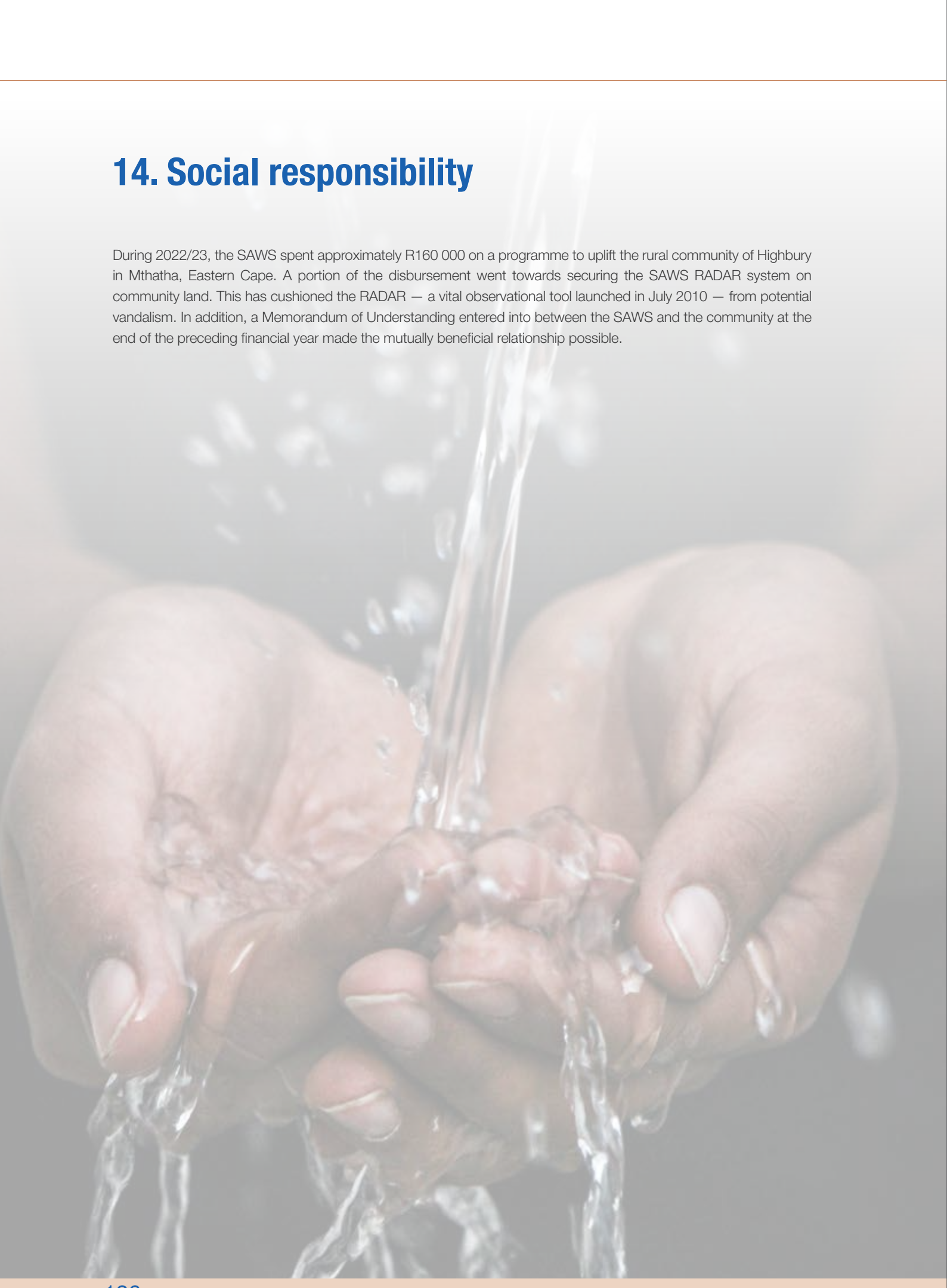
The SAWS is an entity of the DFFE, which is not incorporated in terms of the Companies Act 2008 (Act No. 71 of 2008). Therefore, the SAWS is not obliged to file returns to the Companies and Intellectual Property Commissions in line with the Companies Act regulations. However, to comply with the principles of good corporate governance, the SAWS Act provides for appointing the Company Secretary in line with the guidelines espoused in the Companies Act and King IV Code on Corporate Governance.

The responsibilities of the SAWS Company Secretary are, amongst others to:

- Provide guidance and advice to the Board to discharge their fiduciary duties and responsibilities in the best interest of the SAWS
- Ensure that the Board is aware of any new and relevant laws or any changes in the legislation that might affect the operations of the SAWS
- Ensure compliance with the PFMA, and alignment with corporate governance guidelines as well as any other relevant legislation
- Develop and review Board-related policies and monitor adherence with these and with the Delegation of Authority
- Assist the Board chairperson and chairpersons of the committees with the compilation of the annual Board and Board committees calendars and work plans and ensure circulation of these to members
- Give notice of Board meetings, prepare and circulate agendas, consolidate and disseminate Board packs and presentations, maintain attendance registers and take minutes
- Be responsible for the induction and orientation of new Board members and experts serving on the Board committees
- Facilitate the performance evaluation of the Board, Board committees and the chairperson and Board members
- Manage conflicts of interest in relation to Board members and act as the custodian of the Code of Conduct and Ethics approved by the Board
- Assist with stakeholder management

14. Social responsibility

During 2022/23, the SAWS spent approximately R160 000 on a programme to uplift the rural community of Highbury in Mthatha, Eastern Cape. A portion of the disbursement went towards securing the SAWS RADAR system on community land. This has cushioned the RADAR — a vital observational tool launched in July 2010 — from potential vandalism. In addition, a Memorandum of Understanding entered into between the SAWS and the community at the end of the preceding financial year made the mutually beneficial relationship possible.



15. Audit Committee report

We are pleased to present our report for the financial year ended 31 March 2023.

Audit and Risk Committee Responsibility

The Audit and Risk Committee complied with its responsibilities arising from Section 77 of the Public Finance Management Act, 1999 (Act No. 1 of 1999 as amended) and Treasury Regulation 1.1.13 and 27.1. The Audit and Risk Committee also reports that it has adopted appropriate formal terms of reference as its Audit Committee Charter, and that is has regulated its affairs in compliance with this charter and has discharged all its responsibilities as contained therein.

The Effectiveness of Internal Control

Risk assessments are conducted to identify potential risks, including emerging risks that could impact negatively on the achievement of the SAWS objectives, in line with the Risk Management Strategy. The Audit and Risk Committee reviews the effectiveness of the implementation of the Risk Management Strategy regularly and on an ongoing basis. The Audit and Risk Committee also reviews the combined assurance process to determine the level of assurance provided on the internal controls by various assurance providers. The Audit and Risk Committee provided guidance on the need for the SAWS to develop its Risk Appetite and Tolerance levels. During the year under review, the Audit and Risk Committee was satisfied that the Annual Internal Audit Plan was risk-based, that it took into account the risk profile of the SAWS and that Internal Audit provided the relevant assurance.

The Audit and Risk Committee's review of the findings of the Internal and External Audit was based on the Audit Reports issued. These reports revealed certain weaknesses which were then raised with the SAWS Management. Where weaknesses were identified, corrective measures were proposed for implementation – most of which were rectified immediately. Based on these reviews, the Audit and Risk Committee considers the systems of internal control for the period under review to be effective.

The Audit and Risk Committee

The SAWS has addressed most of the audit findings issued by the Auditor-General (AG) and Internal Audit from the 2020/2021 and 2021/2022 audits. Actions that are more complex in nature are still in process of being implemented. An Audit Findings Register was presented at all Committee meetings to track progress on the resolution of all findings (Internal and External Audit).

In-year Management and Monthly/ Quarterly Report

The SAWS has submitted quarterly reports to the Executive Authority. With the oversight of the Audit and Risk Committee, the SAWS submitted quarterly performance reports, as well as PFMA compliance reports to the Executive Authority and the Audit and Risk Committee was satisfied with the content and quality thereof. Furthermore, the Audit and Risk Committee reviewed the actual performance of SAWS against the targets set in the Annual Performance Plan for 2022/2023. The Audit and Risk Committee ensured that the performance information included in the quarterly performance reports (Quarter 1 – 3) were reviewed by Internal Audit, therefore any findings raised during the Audit would be corrected prior to these quarterly performance reports being sent to DFFE.

The Audit and Risk Committee was also furnished with the entity's annual performance report which underwent internal audit processes and was satisfied with the report and outcome of the internal audit. The annual performance report was subsequently recommended to the Board for approval and for the entity to submit same to the Auditor-General of South Africa (AGSA).

Evaluation of Financial Statements

The Audit and Risk Committee has performed the following activities during the review of the annual financial statements prepared by the South African Weather Service:

- Reviewed and discussed the audited financial statements to be included in the Annual Report with the Auditor-General and the Accounting Authority.
- Reviewed the Auditor-General of South Africa's management report and management's comments thereto.
- Reviewed SAWS' compliance with legal and regulatory provisions.
- Reviewed the information on predetermined objectives to be included in the Annual Report.

Auditor-General South Africa

The Audit and Risk Committee ensured that the Auditor-General of South Africa (AGSA) is presented with financial statements that are fairly presented and prepared in accordance with the standards of Generally Recognised Accounting Practice (GRAP) as required by section 55(1)(b) of the Public Finance Management Act. The Audit and Risk Committee met representatives from the Auditor-General of South Africa during the audit of the SAWS 2022/2023 annual financial statements and exercised its oversight role on the overall audit process. The Auditor-General had a standing invite to all Committee meetings conducted during the year under review.

In addition, the Audit and Risk Committee has reviewed the SAWS' implementation plan for audit issues raised in the prior year and is monitoring it on a quarterly basis.

The Audit and Risk Committee concurs and accepts the conclusions of the external auditor on the annual financial statements and is of the opinion that the audited annual financial statements be accepted and read together with the report of the auditor.

Mr Itani Phaduli
Chairperson of the Audit Committee
South African Weather Service

Date: 28 July 2023

16. Broad-Based Black Economic Empowerment (B-BBEE) compliance performance information

The following table has been completed following the compliance to the B-BBEE requirements of the Broad-Based Black Economic Empowerment Act 2013 (Act No. 46 of 2013) and as determined by the Department of Trade, Industry and Competition.

Table 31: Application of any relevant Code of Conduct of Good Practice

Has the Public Entity applied any relevant Code of Good Practice about the following:		
Criteria	**Response Yes/No**	**Discussion (include a discussion on your response and indicate what measures have been taken to comply)**
Determining qualification criteria for the issuing of licences, concessions or other authorisations in respect of economic activity in terms of any law?	No	N/A
Developing and implementing a preferential procurement policy?	Yes	The SCM has incorporated the B-BBEE Certification as Preference Points for the procurement of goods and services.
Determining qualification criteria for the sale of state-owned enterprises?	No	N/A
Developing criteria for entering into partnerships with the private sector?	Yes	The SAWS has developed criteria for the evaluation of organisations who submit documentation in relation to Specifications / Terms of Reference issued to the Market for Strategic Partnerships
Determining criteria for the awarding of incentives, grants and investment schemes in support of Broad-Based Black Economic Empowerment?	Yes	The SCM department reviews its supplier Performance Evaluation forms and identifies suppliers that were rated as poor performing suppliers by user department.

PART D:
Human Capital Management

1. Introduction

The South African Weather Service (SAWS) is a knowledge-based institution and values its Human Resources as an important asset to the organisation. Through the employees' efforts, the organisation translates science into services for society, benefitting current and future generations. The demand for weather, climate and air quality forecast information in support of decision-making will likely increase rapidly in the coming years.

In our quest towards outstanding performance, the SAWS achieved, and in some cases exceeded, all the Human Capital Management-related targets in the 2022/23 Annual Performance Plan. To maintain this high-performance culture, our employees will be supported in their leadership development through mentoring and coaching programmes, informed by the outcomes of the 360-degree assessments.

A new Human Capital Management Strategy (2022/23 to 2025/26), aligned to the SAWS Strategic Plan, was developed and approved by the Board in the year under review. The strategy identifies the most critical Human Capital Management programmes and implementation plans to achieve the organisation's objectives. In addition, the SAWS embarked on an employee engagement survey, through which employees could prioritise engagement drivers that they consider important.

In driving a high-performance culture, the entity rewarded its employees with market-related incentives. In addition, our Employee Value Proposition (EVP) aims to enhance employee engagement. It mitigates the risk of high staff turnover in critical positions while strengthening the organisation's positioning as an employer of choice, which attracts, retains and develops employees that are engaged and proud to be associated with the SAWS.

However, under the prevailing economic conditions, the need for enhanced non-monetary rewards, also through partnerships, was a critical focus area. Therefore, as part of strengthening the EVP, the SAWS implemented a Work-From-Home policy, which enables flexible work arrangements, affording employees an improved work-life balance.

Aligned with its Talent Management Strategy, the SAWS continued implementing its Workplace Skills Plan to equip its employees with the skills required to position the SAWS as "a provider of world-class meteorological solutions for improved quality of life for all South Africans". In addition, an employee wellness programme was implemented to provide employees with confidential and professional counselling services and support to enhance their well-being and personal performance.

The table below shows some of the highlights and key challenges the organisation faced in the year under review.

Table 32: Highlights and key challenges for the reporting period 2022/23

Highlights	Low lights
• Concluding a salary agreement with organised labour with a shared vision to protect the most vulnerable employees against the impact of the prevailing economic conditions	• Competitive remuneration of employees in the tight fiscal environment remains a challenge
• Implementation of the SAWS talent management strategy	• Several vacant positions could not be funded for the year under review
• Meeting, and in some instances exceeding, the 2022/23 APP targets relating to human capital management (100% achievement)	
• Achieving the lowest staff attrition rate in three years, amounting to 4,87%	

2. Human Resource oversight statistics

Personnel-related expenditure

The SAWS headcount, excluding temporary appointments, increased from 462 in March 2022 to 474 in March 2023. The personnel expenditure increased by approximately 6,6% over the same period, mainly due to an overall annual salary increase of approximately 4,5% and the filling of priority vacant positions.

Table 33: Personnel cost by programme/activity/objective

Programme/activity/objective	Total expenditure for the entity (R'000)	Personnel expenditure (R'000)	Personnel expenditure as a % of total expenditure (R'000)	Number of employees	Average personnel cost per employee (R'000)
Weather and climate services	484 200	88 451	18,3%	132	670
Infrastructure and information systems		142 982	29,5%	261	548
Finance and supply chain		20 959	4,3%	37	566
Corporate and regulatory services		31 820	6,6%	44	723
Total		**284 212**	**58,7%**	**474**	**600**

Note: The information in the table above excludes temporary employees appointed on fixed-term contracts and interns

During 2022/23, the SAWS implemented annual salary increases on a sliding scale, starting from 7,5% for salary levels up to R200 000 per annum to 2,5% for employees earning more than R1 300 000 per annum. This was done in consideration of the economic impact on the more vulnerable employees.

Table 34: Personnel cost by occupational level

Level	Personnel expenditure (R'000)	% Of personnel expenditure to total personnel cost (R'000)	Number of employees	Average personnel cost per employee (R'000)
Top management	9 775	3,4	5	1 955
Senior management	20 179	7,1	15	1 345
Professional qualified	92 605	32,6	116	798
Skilled	105 108	37,0	202	520
Semi-skilled	50 888	17,9	111	458
Unskilled	5 657	2,0	25	226
Total	**284 212**	**100,0**	**474**	**600**

Note: The information in the table above excludes temporary employees appointed on fixed-term contracts and interns

The SAWS exceeded the APP target of implementing its Workplace Skills Plan by 32% during 2022/23. The below table indicates the cost associated with relevant training to this effect.

Table 35: Training costs

Programme/activity/objective	Personnel expenditure (R'000)	Training expenditure (R'000)	Training expenditure as a % of personnel Cost (R'000)	Number of employees trained	Average training cost per employee (R'000)
Learning and development	284 212	3,734	1,3%	373	10

The staff turnover in specialist positions was of concern as the organisation continued to lose skills to similar organisations nationally and internationally. The SAWS identified a need to improve its attraction and retention of skills as a priority to curb the loss of skills and retain institutional knowledge, which is also a critical component of competitiveness. Consequently, the Talent Management Strategy implementation commenced during 2022/23 and reduced the crippling loss of scarce and critical skills.

Table 36: Employment and vacancies per programme

Programme/activity/objective	2021/22 No. of employees	2022/23 approved posts	2022/23 No. of employees	2022/23 Funded vacancies	Vacancy rate
Weather and climate services	137	11	132	16	10,8%
Infrastructure and information systems	257	9	261	5	1,9%
Finance and supply chain management	33	4	37	0	0,0%
Corporate services (incl. office of CEO)	35	9	44	0	0,0%
Total	**462**	**33**	**474**	**21**	**4,2%**

Note: The information in the table above excludes temporary employees appointed on fixed-term contracts and Interns

Table 37: Employment vacancies per level

Programme/activity/objective	2021/22 No. of employees	2022/23 approved posts	2022/23 No. of employees	2022/23 Funded vacancies	Vacancy rate
Top management	4	1	5	0	0,0%
Senior management	14	6	15	5	25,0%
Professional qualified	106	14	116	4	3,3%
Skilled	198	12	202	8	3,8%
Semi-skilled	115	0	111	4	3,5%
Unskilled	25	0	25	0	0,0%
Total	**462**	**33**	**474**	**21**	**4,2%**

Note: The information in the table above excludes temporary employees appointed on fixed-term contracts and interns

Employment changes

The total number of employees increased from 462 in March 2022 to 474 in March 2023, mainly resulting from capacitating the professionally qualified and skilled occupational levels.

Table 38: Employment changes per level

Occupational levels	Employment at the beginning of the period	Appointments	Terminations	Employment at the end of the period
Top management	4	1	0	5
Senior management	14	5	4	15
Professional qualified	106	18	8	116
Skilled	198	15	11	202
Semi-skilled	115	0	4	111
Unskilled	25	1	1	25
Total	**462**	**40**	**28**	**474**

Note: The information in the table above excludes temporary employees appointed on fixed-term contracts and interns

Table 39: Reasons for staff leaving

Reason	Number	Percentage of staff leaving
Death	n/a	n/a
Resignation	22	78,6%
Dismissal	1	3,6%
Retirement	3	10,7%
Ill health	n/a	n/a
Expiry of contract	2	7,1%
Other	n/a	n/a
Total	**28**	**100%**

Note: The figures above exclude the learnerships and internships, which ended on 31 March 2023

Table 40: Labour relations: misconduct and disciplinary action

Nature of disciplinary actions	Number
Written warning	3
Final written warning	2
Dismissal	1
Total	**6**

Employee Relations

The conclusion of the 2022/23 salary negotiations took some time, but the parties reached an amicable agreement where the protection of the more vulnerable employees against current economic conditions was prioritised. In this regard, annual salary increases for 2022/23 were implemented on a sliding scale. The negotiations were concluded with the employer and three labour unions, namely, the National Union of Public Service and Allied Workers (NUPSAW), the National Education, Health and Allied Workers Union (NEHAWU) and the Public Service Association (PSA).

A minimum service agreement, which determines the essential services and the minimum number of employees required to deliver essential services in case of a strike or lock-out, was signed in March 2022 and is valid for three years.

Building a diverse workforce

The SAWS aspires to have a truly diverse workforce, which is representative of the Economically Active Population (EAP) of South Africa at all levels of the organisation. Aligned to the Department of Forestry, Fisheries and the Environment's (DFFE) Gender Mainstreaming agenda, the SAWS is committed to improving its target of women representation in management positions. In this regard, the target for women in Management positions was 40%, and the target for employment of people with disabilities at 2%. The SAWS also offers employment opportunities to youth through internships and work-integrated learning programmes.

At the end of the period under review, female employees represented 41,18% of top management, senior management and middle management positions and people with disabilities amounted to 2,9%.

The SAWS offered a generic management learnership programme as part of its women's advancement programme, aimed to equip female employees to progress to management positions. Fourteen female employees participated in this programme, which was a collaboration between the SAWS and TETA SETA, to ensure that there is a pool of women readily available to take up management roles within the SAWS. The programme was delivered by an external service provider, with some of the SAWS senior managers participating as mentors. This was a one-year programme, and the Graduation Ceremony took place in November 2022.

Photograph N: Graduation ceremony for the SAWS women advancement programme. From left: Sindi Mdluli, Nolwazi Mpela, Mbavhi Maliage, Robin-Lee Batties, Xolelwa Ntoyonto, Pheladi Kopedi, Phumza Mbali, Nelly Boshielo, Charmaine Shibambo, Nosipho Zwane, Stella Nake, Bathobile Maseko and Elelwani Phaduli

The SAWS demographic profile as of 31 March 2023 is depicted in Tables 41 and 42 below.

Table 41: The SAWS transformation - equity target and employment equity status (male)

Levels	Male									
	African		Coloured		Indian		White		Total	
	Current	Target	Current	Target	Current	Target	Current	Target	Current	Target
Top management	3	3	1	0	0	0	0	0	4	3
Senior management	4	6	0	0	2	1	0	1	6	8
Professional qualified	47	47	4	4	1	1	15	26	67	78
Skilled	85	75	7	6	4	4	20	21	116	106
Semi-skilled	40	42	9	8	0	0	7	7	56	57
Unskilled	16	15	4	5	0	0	0	0	20	20
Total	**195**	**188**	**25**	**23**	**7**	**6**	**42**	**55**	**269**	**272**

Table 42: The SAWS transformation - equity target and employment equity status (female)

Levels	Female									
	African		Coloured		Indian		White		Total	
	Current	Target	Current	Target	Current	Target	Current	Target	Current	Target
Top management	0	2	0	0	0	0	1	0	1	2
Senior management	6	5	0	0	0	1	2	2	8	8
Professional qualified	33	28	2	1	0	0	9	10	44	39
Skilled	66	65	7	8	3	3	10	14	86	90
Semi-skilled	44	39	6	7	0	0	4	4	54	50
Unskilled	5	5	0	0	0	0	0	0	5	5
Total	**154**	**144**	**15**	**16**	**3**	**4**	**26**	**30**	**198**	**194**

Note: The figures above exclude foreign national employees (four male employees and three female employees)

Table 43: Disabled staff

Levels	Disabled Staff					
	Male		Female		Total	
	Current	Target	Current	Target	Current	Target
Top management	0	0	0	0	0	0
Senior management	0	0	1	0	1	0
Professional qualified	1	0	1	0	2	1
Skilled	4	1	3	0	7	2
Semi-skilled	1	0	2	0	3	0
Unskilled	1	0	0	0	1	0
Total	**7**	**1**	**7**	**0**	**14**	**3**

3. Key focus areas for the 2023/24 financial year

Strategic alignment to ensure the organisation is adequately capacitated

The SAWS will consider the adequacy of its organisational structure to support the implementation of its mandate. In addition, a work-study exercise will be conducted in the new financial year to systematically identify factors affecting operational efficiency to attain the best utilisation of human and financial resources. Furthermore, job evaluation and grading will be reviewed before the SAWS engages in a remuneration benchmarking exercise.

Create a conducive working environment through effective employee engagement

The SAWS implemented an Employee Wellness Programme during 2022/23. The effectiveness of this programme will be monitored and measured during 2023/24 to enhance the employee experience with additional training and awareness programmes.

The organisation also implemented 360-degree assessments to assist the leadership team in becoming more effective when they gain insight into what they are doing well and areas they still need to develop. The 360-degree assessment helps leaders to gain an understanding of their self-perception versus that of their raters, in addition. The SAWS also embarked on an Employee Engagement Survey to measure the SAWS engagement drivers and identify improvement areas.

Instil a high-performance culture

The SAWS recognises the value of rewarding high performance and managing underperformance. An environment where employees are acknowledged, recognised and rewarded fairly for their contribution towards achieving the organisational strategic objectives is essential. For this purpose, the organisation revised its remuneration and rewards policy during 2022/23 to ensure that incentives are linked to organisational and individual performance. In addition, the SAWS will embark on a process to revise its performance management policy and implement the corporate balanced scorecard during 2023/24 for effective performance measurement.

PART E:
Financial Information

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON THE SOUTH AFRICAN WEATHER SERVICE

Report on the audit of the financial statements

Opinion

1. I have audited the financial statements of the set out on pages 149 to 212, which comprise the statement of financial position as at 31 March 2023, statement of financial performance, statement of changes in net assets, cash flow statement and statement of comparison of budget and actual amounts for the year then ended, as well as notes to the financial statements, including a summary of significant accounting policies.
2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the South African Weather Service as at 31 March 2023 and its financial performance and cash flows for the year then ended in accordance with the SA Standards of Generally Recognised Accounting Practice (GRAP) and the requirements of the Public Finance Management Act 1 of 1999 (PFMA).

Basis for opinion

3. I conducted my audit in accordance with the International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the responsibilities of the auditor-general for the audit of the financial statements section of my report.
4. I am independent of the entity in accordance with the International Ethics Standards Board for Accountants' *International code of ethics for professional accountants (including International Independence Standards)* (IESBA code) as well as other ethical requirements that are relevant to my audit in South Africa. I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA code.
5. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Emphasis of matters

6. I draw attention to the matters below. My opinion is not modified in respect of these matters.

Material losses – trade debtors

7. As disclosed in note 7 to the financial statements, material losses of R13,1 million were incurred as a result of a write-off of irrecoverable trade debtors.

Restatement of corresponding figures

8. As disclosed in note 37 to the financial statements, the corresponding figures for 31 March 2022 were restated as a result of an error in the financial statements of the public entity at, and for the year ended 31 March 2023.

Other matter

9. I draw attention to the matter below. My opinion is not modified in respect of this matter.

Unaudited irregular expenditure and fruitless and wasteful expenditure

10. On 23 December 2022, the National Treasury issued Instruction Note 4 of 2022-23, which came into effect on 3 January 2023, in terms of section 76(1)(b), (e) and (f), 2(e) and (4)(a) and (c) of the PFMA. The instruction note deals with the PFMA compliance and reporting framework and addresses, among others, the disclosure of unauthorised expenditure, irregular expenditure and fruitless and wasteful expenditure. Irregular expenditure and fruitless and wasteful expenditure incurred in prior financial years and not yet addressed no longer need to be disclosed in the disclosure notes to the annual financial statements. Only the current year and prior year figures are disclosed in note 39 to the financial statements of the South African Weather Service. Movements in respect of irregular expenditure and fruitless and wasteful expenditure also no longer need to be disclosed in the notes to the annual financial statements. The disclosure of these movements

(e.g. condoned, recoverable, removed, written off, under assessment, under determination and under investigation) is now included as part of the other information in the annual report of the department. I do not express an opinion on the disclosure of irregular expenditure and fruitless and wasteful expenditure in the annual report.

Responsibilities of the accounting authority for the financial statements

11. The accounting authority is responsible for the preparation and fair presentation of the financial statements in accordance with the 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.
12. In preparing the financial statements, the accounting authority is responsible for assessing the 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 appropriate governance structure either intends to liquidate the or to cease operations, or has no realistic alternative but to do so.

Responsibilities of the auditor-general for the audit of the financial statements

13. My 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 my 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.
14. A further description of my 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

15. In accordance with the Public Audit Act 25 of 2004 (PAA) and the general notice issued in terms thereof, I must audit and report on the usefulness and reliability of the reported performance against predetermined objectives for selected programmes presented in the annual performance report. The accounting authority is responsible for the preparation of the annual performance report.
16. I selected the following programmes presented in the annual performance report for the year ended 31 March 2023 for auditing. I selected programmes objectives that measure the public entity's performance on its primary mandated functions and that are of significant national, community or public interest.

Programme	Page numbers	Purpose
Weather and climate services	23 - 57	To safeguard life and property and provide meteorological solutions to all South Africans
Infrastructure and information systems	72 - 80	To upgrade, expand and optimise infrastructure

17. I evaluated the reported performance information for the selected programmes against the criteria developed from the performance management and reporting framework, as defined in the general notice. When an annual performance report is prepared using these criteria, it provides useful and reliable information and insights to users on the public entity's planning and delivery on its mandate and objectives.
18. I performed procedures to test whether:

    - the indicators used for planning and reporting on performance can be linked directly to the 's mandate and the achievement of its planned objectives
    - the indicators are well defined and verifiable to ensure that they are easy to understand and apply consistently and that I can confirm the methods and processes to be used for measuring achievements

- the targets can be linked directly to the achievement of the indicators and are specific, time bound and measurable to ensure that it is easy to understand what should be delivered and by when, the required level of performance as well as how performance will be evaluated
- the indicators and targets reported on in the annual performance report are the same as what was committed to in the approved initial or revised planning documents
- the reported performance information is presented in the annual performance report in the prescribed manner
- there is adequate supporting evidence for the achievements reported and for the reasons provided for any over- or underachievement of targets.

19. I performed the procedures for the purpose of reporting material findings only; and not to express an assurance opinion.
20. I did not identify any material findings on the reported performance information for the selected programmes.

Other matter

21. I draw attention to the matter below.

Achievement of planned targets

22. The annual performance report includes information on reported achievements against planned targets and provides explanations for over- and under achievements.

Report on compliance with legislation

23. In accordance with the PAA and the general notice issued in terms thereof, I must audit and report on compliance with applicable legislation relating to financial matters, financial management and other related matters. The accounting authority is responsible for the public entity's compliance with legislation.
24. I performed procedures to test compliance with selected requirements in key legislation in accordance with the findings engagement methodology of the Auditor-General of South Africa (AGSA). This engagement is not an assurance engagement. Accordingly, I do not express an assurance opinion or conclusion.
25. Through an established AGSA process, I selected requirements in key legislation for compliance testing that are relevant to the financial and performance management of the , clear to allow consistent measurement and evaluation, while also sufficiently detailed and readily available to report in an understandable manner. The selected legislative requirements are included in the annexure to this auditor's report.
26. I did not identify any material non-compliance with the selected legislative requirements.

Other information in the annual report

27. The accounting authority is responsible for the other information included in the annual report, which includes the audit committee's report. The other information referred to does not include the financial statements, the auditor's report and those selected programmes presented in the annual performance report that have been specifically reported on in this auditor's report.
28. My opinion on the financial statements, the report on the audit of the annual performance report and the report on compliance with legislation, do not cover the other information included in the annual report and I do not express an audit opinion or any form of assurance conclusion on it.
29. My responsibility is to read this other information and, in doing so, consider whether it is materially inconsistent with the financial statements and the selected programmes presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated.
30. I have nothing to report in this regard.

Internal control deficiencies

31. I considered internal control relevant to my audit of the financial statements, annual performance report and compliance with applicable legislation; however, my objective was not to express any form of assurance on it.
32. I did not identify any significant deficiencies in internal control.

Other reports

33. I draw attention to the following engagements conducted by various parties. These reports did not form part of my opinion on the financial statements or my findings on the compliance with legislation.
34. Independent consultants investigated allegations of irregular procurement processes and misconduct at the request of the public entity, which covered the period 2020/21 to 2021/22. The investigations were concluded on 14 February 2023 and 16 March 2023 respectively, for which the recommended action were in the process of being implemented at the date of this auditor's report.

Auditor General

Pretoria
31 July 2023

AUDITOR-GENERAL
SOUTH AFRICA

Auditing to build public confidence

Annexure to the auditor's report

The annexure includes the following:

- the auditor-general's responsibility for the audit
- the selected legislative requirements for compliance testing.

Auditor-general's responsibility for the audit

Professional judgement and professional scepticism

As part of an audit in accordance with the ISAs, I exercise professional judgement and maintain professional scepticism throughout my audit of the financial statements and the procedures performed on reported performance information for selected programmes and on the public entity's compliance with selected requirements in key legislation.

Financial statements

In addition to my responsibility for the audit of the financial statements as described in this auditor's report, I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the 's internal control
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made
- conclude on the appropriateness of the use of the going concern basis of accounting in the preparation of the financial statements. I also conclude, based on the audit evidence obtained, whether a material uncertainty exists relating to events or conditions that may cast significant doubt on the ability of the to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements about the material uncertainty or, if such disclosures are inadequate, to modify my opinion on the financial statements. My conclusions are based on the information available to me at the date of this auditor's report. However, future events or conditions may cause a to cease operating as a going concern
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Communication with those charged with governance

I communicate with the accounting authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the accounting authority with a statement that I have complied with relevant ethical requirements regarding independence and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence and, where applicable, actions taken to eliminate threats or safeguards applied.

Compliance with legislation – selected legislative requirements

The selected legislative requirements are as follows:

Legislation	Sections or regulations
Public Finance Management Act 1 of 1999 (PFMA)	44 51(1)(a)(ii) 51(1)(b)(i) 51(1)(b)(ii) 51(1)(e)(iii) 53(4) 54(2)(c) 54(2)(d) 55(1)(a) 55(1)(b) 55(1)(c)(i) 57(b) 77(a) 77(b) 77(c)

Legislation	Sections or regulations
Treasury Regulations 2005 Gazette No. 27388	8.2.1 8.2.2 16A3.2 16A6.1 16A6.2(a) & (b) 16A6.3(a) & (b) 16A6.3(c) 16A6.4 16A6.5 16A6.6 16A.7.1 16A.7.3 16A.7.6 16A.7.7 16A8.3 16A8.4 16A9.1(b)(ii) 16A9.1(d) 16A9.1(e) 16A9.1(f) 16A9.2(a)(ii) 27.1.1 27.1.2 27.1.3 27.1.4 27.1.5 27.1.6 27.1.8 27.1.9 27.1.10(a) 27.1.11 27.1.13 29.3.1 30.1.1 30.1.3(b) 30.1.3(d) 30.2.1 31.1.2(c) 31.2.1 31.3.3 33.1.1 33.1.3
Prevention and combating of corrupt activities Act 12 of 2004	34(1)
SCM Instruction Note 02 of 2021-22	3.2.1 3.2.4 3.3.1 (bids advertised on or after 1 April 2022)
PFMA SCM instruction note 03 of 2021/22	Definitions 4.1 4.2 (b) 7.2 (tenders advertised on or after 1 April 2022)
National Treasury Instruction 4A of 2016/17	Whole instruction note
Practice Note 7 of 2009/10 par 4.1.2 (tenders advertised before 1 April 2022)	Whole instruction note
National Treasury Instruction 07 of 2017/18	4.3

Legislation	Sections or regulations
National Treasury Instruction 4A of 2016/17	6
SCM Instruction 3 of 2016	Whole instruction note
PFMA instruction note no.3 of 2021/22	Definitions 4.2 (b) 4.3 4.4 (c) 4.4 (d)
National Treasury Instruction note 01 of 2021-22	4.1
Preferential Procurement Policy Framework Act	Definitions 2(1)(a) 2(1)(f)
Preferential Procurement Regulations 2017	Functionality 4(1) 4(2) 5(1) 5(3) 5(6) 5(7) 6(8) 7(8) 8(2) 8(5) 9(1) 10(1)&(2) 11(1)
Preferential Procurement Regulations 2022	4(4)
Construction Industry Development Board Act 38 of 2000	18(1)
Construction Industry Development Board Act: Regulations	17 25(7A)
Preferential Procurement Regulations 2011	9(1) 9(5)
National Treasury Instruction note 4 of 2015/16	3.4
SBD 6.2 issued in 2015/16	N/A
Treasury Instruction note 11 of 2020/21	3.1 3.4(b) 3.9
National Treasury Instruction No 5 of 2020/21	4.8 4.9 5.3
Second amendment NT Instruction No 5 of 2020/21 and Erratum NT Instruction note No 5 of 2020/21	1 2

General Information

Country of incorporation and domicile	South Africa
Members of the Board	Ms Feziwe Renqe (Chairperson) Mr Itani Phaduli (Deputy Chairperson) Mr Maesela John Kekana Ms Mmapula Kgari Ms Sandika Daya Ms Moipone Edith Magomola Dr Mmaphaka Ephraim Tau Prof. Sylvester Mpandeli Mr Grant Son Mr Ishaam Abader (CEO)
Registered office	Eco Glades Block 1B Eco Park, Corner Olievenhoutbosch and Ribbon Grass Streets Centurion 0157
Business address	Eco Glades Block 1B Eco Park, Corner Olievenhoutbosch and Ribbon Grass Streets Centurion 0157
Postal address	South African Weather Service Private Bag X097 Pretoria 0001
Controlling entity	Department of Forestry, Fisheries and the Environment
Bankers	Standard Bank
Auditors	Auditor-General of South Africa
Level of assurance	These annual financial statements have been audited in compliance with the applicable requirements of the Companies Act 2008 (Act No. 71 of 2008).
Nature of business and principal activities	The South African Weather Service (SAWS) is an entity of the Department of Forestry, Fisheries and the Environment and derives its mandate from the South African Weather Service Act 2001 (Act No. 8 of 2001 as amended in 2013). The SAWS is a science-based, service-oriented and technology-driven entity that delivers public and commercial services to the public and weather sensitive industries, and is the authoritative voice for weather warnings in South Africa.

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The reports and statements set out below comprise the annual financial statements presented to the parliament:

Statement of Financial Position
as at March 31 2023

Figures in Rand	Note(s)	2023	2022 Restated*
ASSETS			
Current Assets			
Inventories	4	13 410 877	5 190 908
Operating lease asset	5	1 110 304	-
Accounts receivable from exchange transactions – other	6	6 374 392	4 214 062
Accounts receivable from exchange transactions – statutory receivable	7	13 598 188	11 515 562
Prepayments	8	11 402 162	2 522 038
Cash and cash equivalents	9	135 481 883	69 998 635
		181 377 806	**93 441 205**
Non-Current Assets			
Investment property	10	70 497 351	83 991 957
Property, plant and equipment	11	295 854 892	303 720 193
Intangible assets	12	4 518 579	6 193 801
		370 870 822	**393 905 951**
Total Assets		**552 248 628**	**487 347 156**
LIABILITIES			
Current Liabilities			
Operating lease liability	5	-	730 228
Accounts payable from exchange transactions	14	26 943 426	13 378 084
Employee benefit obligation	15	10 783 701	9 751 196
Unspent conditional grants and receipts	16	24 638 235	30 772 828
Unspent Government allocations – conditional grant	18	53 713 731	28 021 739
Deferred income	19	473 905	-
		116 552 996	**82 654 075**
Non-Current Liabilities			
Employee benefit obligation	15	2 131 000	2 164 000
Provisions	17	250 968	268 198
		2 381 968	**2 432 198**
Total Liabilities		**118 934 964**	**85 086 273**
		433 313 664	**402 260 883**
NET ASSETS			
Reserves Revaluation reserve		49 334 344	58 166 609
Accumulated surplus		383 979 320	344 094 274
Total Net Assets		**433 313 664**	**402 260 883**

* See note 37

Statement of Financial Performance

Figures in Rand	Note(s)	2023	2022 Restated*
REVENUE			
Revenue from exchange transactions			
Commercial revenue	20	134 852 124	104 571 533
Other income	21	5 234 752	1 232 182
Interest received – investment	22	5 155 533	789 175
Total revenue from exchange transactions		**145 242 409**	**106 592 890**
REVENUE FROM NON-EXCHANGE TRANSACTIONS			
Transfer revenue			
Government grants and subsidies	23	386 281 335	360 414 617
Public contributions and donations	24	12 656 166	21 981 669
Total revenue from non-exchange transactions		**398 937 501**	**382 396 286**
Total revenue		**544 179 910**	**488 989 176**
EXPENDITURE			
Employee related costs	25	(286 521 036)	(268 509 222)
Administration	26	(11 397 548)	(6 988 276)
Depreciation and amortisation	27	(32 446 189)	(31 856 232)
Bad debt expenses	29	(4 437 395)	(1 664 034)
General expenses	30	(149 679 643)	(147 906 587)
Total expenditure		**(484 481 811)**	**(456 924 351)**
Operating surplus		**59 698 099**	**32 064 825**
Gain/(Loss) on disposal of assets		469 099	463 131
Gain/(Loss) on foreign exchange	31	(2 391 050)	819 924
Fair value adjustments	32	(13 494 606)	12 212 836
Actuarial (losses)/gains	15	367 000	1 422 000
Impairment of assets	28	(4 763 497)	(192 596)
		(19 813 054)	**14 725 295**
Surplus for the year		**39 885 045**	**46 790 120**

* See note 37

Statement of Changes in Net Assets

Figures in Rand	Revaluation reserve	Accumulated surplus	Total net assets
Balance at 1 April 2021	**51 040 050**	**297 304 154**	**348 344 204**
Revaluation of building – Irene and Bethlehem	(515 120)		(515 120)
Revaluation of land – Irene and Garsfontein	7 641 679		7 641 679
Surplus for the year		36 616 676	36 616 676
Correction of unspent conditional grant and receipts		10 173 444	10 173 444
Total recognised income and expenses for the year	7 126 559	46 790 120	53 916 679
Balance at 31 March 2022 as restated*	**58 166 609**	**344 094 275**	**402 260 884**
Changes in net assets			
Revaluation of building – Irene and Bethlehem	132 624		132 624
Revaluation of land – Irene and Garsfontein	(8 964 889)		(8 964 889)
Net gain recognised directly in net assets	(8 832 265)		(8 832 265)
Surplus for the year		39 885 045	39 885 045
Total recognised income and expenses for the year	(8 832 265)	39 885 045	31 052 780
Total changes	(8 832 265)	39 885 045	31 052 780
Balance as at 31 March 2023	**49 334 344**	**383 979 320**	**433 313 664**

* See note 37

Cash Flow Statement

Figures in Rand	Note(s)	2023	2022 Restated*
CASH FLOWS FROM OPERATING ACTIVITIES			
Receipts			
Sale of goods and services		135 731 901	97 396 267
Grants		398 937 501	372 222 842
Interest income		5 155 533	789 175
		539 824 935	470 408 284
Payments			
Employee costs		(285 171 761)	(270 610 483)
Suppliers		(153 137 596)	(154 659 243)
		(438 309 357)	(425 269 726)
Net cash flows from operating activities	33	**101 515 578**	**45 138 558**
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of property, plant and equipment	11	(35 705 651)	(18 205 173)
Proceeds from the sale of property, plant and equipment	11	469 099	1 129 752
Purchase of other intangible assets	12	(795 778)	-
Net cash flows from investing activities		**(36 032 330)**	**(17 075 421)**
Net increase/(decrease) in cash and cash equivalents		65 483 248	28 063 137
Cash and cash equivalents at the beginning of the year		69 998 635	41 935 498
Cash and cash equivalents at the end of the year	9	**135 481 883**	**69 998 635**

* See note 37

Statement of Comparison of Budget and Actual Amounts

Figures in Rand	Approved budget	Adjustments	Final Budget	Actual amounts on comparable basis	Difference between final budget and actual	Reference
REVENUE						
Revenue from exchange transactions						
Commercial revenue	122 190 000	(1 100 321)	**121 089 679**	134 852 124	**13 762 445**	Note 1 (1,2)
Other income	3 283 000	167 000	**3 450 000**	5 234 752	**1 784 752**	Note 1 (3)
Interest received investment	370 000	830 000	**1 200 000**	5 155 533	**3 955 533**	Note 1 (11)
Total revenue from exchange transactions	**125 843 000**	**(103 321)**	**125 739 679**	**145 242 409**	**19 502 730**	
REVENUE FROM NON-EXCHANGE TRANSACTIONS						
Transfer revenue						
Government grant – operational expenditure	336 042 000	-	**336 042 000**	337 029 000	**987 000**	Note 1 (1)
Government grant – conditional grant	66 044 000	(15 000 000)	**51 044 000**	49 252 335	**(1 791 665)**	Note 1 (1,2)
Contributions and donations	20 706 000	35 000 000	**55 706 000**	12 656 166	**(43 049 834)**	Note 1 (4)
Total revenue from non-exchange transactions	**422 792 000**	**20 000 000**	**442 792 000**	**398 937 501**	**(43 854 499)**	
Total revenue	**548 635 000**	**19 896 679**	**568 531 679**	**544 179 910**	**(24 351 769)**	
EXPENDITURE						
Employee cost	(290 088 000)	-	**(290 088 000)**	(286 521 036)	**3 566 964**	Note 1 (10)
Administrative and general expenses	(165 274 000)	(7 945 974)	**(173 219 974)**	(161 077 191)	**12 142 783**	Note 1 (5)
Depreciation and amortisation	(30 666 000)	(8 503 718)	**(39 169 718)**	(32 446 189)	**6 723 529**	Note 1 (6)
Bad debt expenses	-	-	**-**	(4 437 395)	**(4 437 395)**	Note 1 (8)
Total expenditure	**(486 028 000)**	**(16 449 692)**	**(502 477 692)**	**(484 481 811)**	**17 995 881**	
Operating surplus	**62 607 000**	**3 446 987**	**66 053 987**	**59 698 099**	**(6 365 888)**	
Gain/(Loss) on disposal of assets	-	-	**-**	469 099	**469 099**	
Loss on foreign exchange	-	-	**-**	(2 391 050)	**(2 391 050)**	Note 1 (7)
Fair value adjustments	3 437 000	(3 437 000)	**-**	(13 494 606)	**(13 494 606)**	Note 1 (9)
Actuarial gains/(losses)	-	-	**-**	367 000	**367 000**	
Impairment of assets	-	-	**-**	(4 763 497)	**(4 763 497)**	Note 1 (12)
	3 437 000	**(3 437 000)**	**-**	**(19 813 054)**	**(19 813 054)**	
Surplus before capital expenditure	**66 044 000**	**9 987**	**66 053 987**	**39 885 045**	**(26 168 942)**	
Capital expenditure	(66 044 000)	-	**(66 044 000)**	(49 252 335)	**16 791 665**	
Surplus/(deficit) after capital expenditure	**-**	**9 987**	**9 987**	**(9 367 290)**	**(9 377 277)**	

1. Budget differences

Material budget adjustments and differences between budget and actual amounts

The SAWS total budgeted revenue for the year was revised upwards by R19,90 million, mainly due to improved air traffic volumes and external donor funds.

Explanation of Budget Adjustment

1. Government grant: The Department of Forestry, Fisheries and the Environment approved a request by the SAWS to convert an amount of R124,04 million from its conditional grant allocation of R190,04 million, which was earmarked for infrastructure investment into an operational grant to enable the entity to fulfil its day-to-day operations and employment commitments.
2. Included in the revised total revenue amount of R568,53 million is an amount of R51,04 million, which was allocated towards infrastructure expenditure, and an amount of R987 000, which was for the Marine and Research model data project.
3. Commercial Revenue: The downward adjustment of R1,10 million in commercial revenue was mainly attributed to reduced income from commercial partners due to limited resource availability and volatility of the economic environment in which the SAWS is positioned both locally and internationally. The slow economic activity impacted by global and local economic factors, which have decelerated economic recovery, also contributed to the reduction.
4. Government grant – conditional grant: The downward adjustment of R15 million was due to the projected delay in infrastructure procurement. The communique from National Treasury to suspend all expenditures above R30 000 until June contributed to the delay.
5. Donor funds – The upward adjustment of R35 million was based on the expected additional revenue related donor funding from external parties.
6. Administrative and Operating Expenses: Administrative and operating expenses were adjusted upwards by R7,95 million. This adjustment was effected to cater for the maintenance of infrastructure due to ageing equipment caused by under-investment in new infrastructure.
7. Depreciation and amortisation – The upward adjustment of R8,50 million was meant to align depreciation and amortisation to the newly acquired assets.
8. Fair Value Adjustments: The fair value adjustments were revised from R3,44 million to zero since these are based on general economic factors and are outside the entity's control.

Explanation of Budget and Actual (Comparison)

1. Commercial revenue – The positive variance of R13,76 million is mainly attributed to improved air-traffic volumes during this financial year and partly due to the new tariff that the Minister of the DFFE promulgated in July 2022.
2. Government Grant – conditional grant: There was under-expenditure on infrastructure investments between the budget and the actual amount of R1,65 million, as some commitments were not yet fulfilled at year end.
3. Other income: Actual exceeded budget by R10,73 million, mainly due to a settlement of R2,2 million with the service provider, a reversal of debt impairment, and insurance claims lodged.
4. Contributions and donations – The under-expenditure of R43,05 million is mainly due to the recognition requirements of realising the revenue of the assets to be donated by the Venetia Mine not being finalised at year end, due to delays in installations.
5. Administrative costs and general expenses: A positive variance of R12,44 million was realized from administrative and operating expenses, mainly due to management's implementation of cost containment measures during the year. Savings were realized by ensuring that the entity realized value for money by spending its finances on the most critical expenses for the entity aligned to its mission, public service needs, servicing of commercial clients, and attaining the annual performance objectives.
6. Depreciation and amortisation – The underspending of R6,73 million was mainly due to the assets procured late in the financial year.
7. Loss on foreign exchange – This is due to the weaker rand in the payment to foreign suppliers.

8. Bad debts are written off – These relate to debts that were uncollectible, mainly caused by major airlines that were under Business Rescue and liquidated.
9. Gain Fair Value Adjustments: The entity realized a loss of R13,49 million on its investment property held in Waterkloof based on the valuation performed by independent valuators due to depressed economic challenges experienced in the commercial property environment.
10. Employee costs – the underspending of R3,57 million is due to unfilled vacant positions.
11. Interest received – the amount of R5,16 million is due to interest earned on the higher cash balance.
12. Impairment of assets – the amount of R4,76 million is due to obsolete assets which are no longer in use and will be disposed of once approval has been granted.

Accounting policies

2. Presentation of Annual Financial Statements

The Annual Financial Statements have been prepared in accordance with the Standards of Generally Recognised Accounting Practice (GRAP), issued by the Accounting Standards Board under Section 91(1) of the Public Finance Management Act 1999 (Act No. 1 of 1999).

These Annual Financial Statements have been prepared on an accrual basis of accounting. Unless specified otherwise, they are in accordance with historical cost convention as the measurement basis. They are presented in South African Rand and are rounded off to the nearest rand.

Assets, liabilities, revenues and expenses were not offset, except where offsetting is either required or permitted by a Standard of GRAP.

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

2.1 Presentation currency

These Annual Financial Statements are presented in the South African Rand, the entity's functional currency.

2.2 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.

2.3 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. The use of available information and the application of judgement is inherent in forming estimates. Actual results in the future could differ from these estimates, which may be material to the Annual Financial Statements. Significant judgements include:

Trade receivables

The entity assesses its trade receivables for impairment at the end of each reporting period. In determining whether an impairment loss should be recorded in surplus or deficit, the surplus makes judgements as to whether there is observable data indicating a measurable decrease in the estimated future cash flows from a financial asset.

The impairment for trade receivables is calculated on a portfolio basis, based on historical loss ratios, adjusted for national and industry-specific economic conditions and other indicators present at the reporting date that correlate with defaults on the portfolio. These annual loss ratios are applied to loan balances in the portfolio and scaled to the estimated loss emergence period.

Fair value estimation

The carrying value less impairment provision of trade receivables and payables are assumed to approximate their fair values. The fair value of financial liabilities for disclosure purposes is estimated by discounting the future contractual cash flows at the current market interest rate available to the entity for similar financial instruments.

Accounting policies (continued)

2.3 Significant judgements and sources of estimation uncertainty (continued)

Impairment testing of non-financial assets

The recoverable amounts of cash-generating units and individual assets have been determined based on the higher value-in-use calculations and fair values less costs to sell. These calculations require the use of estimates and assumptions. It is reasonably possible that the assumption may change, impacting our estimations and requiring a material adjustment to the carrying value of tangible assets.

Provisions

Provisions were raised, and management determined an estimate based on available information. Additional disclosure of these estimates of provisions is included in Note 17 – Provisions.

Post-retirement benefits

The present value of the post-retirement obligation depends on several factors that are determined on an actuarial basis using a number of assumptions. The assumptions determining the net cost (income) include the discount rate. Any changes in these assumptions will impact the carrying amount of post-retirement obligations.

The entity determines the appropriate discount rate at the end of each year. This interest rate should be used to determine the present value of estimated future cash outflows expected to be required to settle the pension obligations. In determining the appropriate discount rate, the entity considers the interest rates of high-quality corporate bonds denominated in the currency in which the benefits will be paid, and have maturity terms approximating the related pension liability terms.

Other key assumptions for pension obligations are based on current market conditions. Additional information is disclosed in Note 15.

Allowance for doubtful debts

Trade receivables which are past due are not automatically considered to be impaired. Management's judgement is used to impair amounts that are past due based on being satisfied that all reasonable steps have been taken to recover the debt or that the recovery of the debt would be uneconomical, or that the recovery would cause undue hardship to the debtor or his/her dependents; or it would be to the advantage of the entity to effect a settlement or waive the claim.

Revaluations

Significant assumptions in determining fair values of revalued items of property, plant and equipment, and investment property are applied using industry methodologies to determine valuations based on the entity specific or observable market input coupled with assumptions on future expectations.

Useful lives of property, plant and equipment

The entity's management determines the estimated useful lives and related depreciation charges for property, plant, equipment, and other assets. This estimate is based on industry norms. This estimate is based on the pattern in which the entity expects to consume an asset's future economic benefits or service potential.

Accounting policies (continued)

2.4 Investment property

Investment property is held to earn rentals, for capital appreciation, or both, and are accounted for using the fair value model.

Investment property is recognised as an asset when it is probable that the future economic benefits or service potential associated with the investment property will flow to the entity. The cost or fair value of the investment property can be measured reliably.

Investment property is initially recognised at cost. Transaction costs are included in the initial measurement.

Where investment property is acquired through a non-exchange transaction, its cost is its fair value as of the acquisition date.

Costs include costs incurred initially and subsequently to add to, replace a part of, or service a property. If a replacement part is recognised in the carrying amount of the investment property, the carrying amount of the replaced part is derecognised.

Fair value

After initial measurement, investment property is measured at fair value.

A gain or loss arising from a change in fair value is included in the net surplus or deficit for the period it occurs.

2.5 Property, plant and equipment

Property, plant and equipment are initially measured at cost.

The cost of an item of property, plant and equipment is the purchase price and other costs attributable to bringing 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 the date of acquisition.

Where an item of property, plant and equipment is acquired in exchange for a non-monetary asset or monetary asset, or a combination of monetary and non-monetary assets, the asset acquired is initially measured at fair value (the cost). If the acquired item's fair value was not determinable, it's deemed cost is the carrying amount of the asset(s) given up.

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.

Costs include costs incurred initially to acquire or construct an item of property, plant and equipment and costs incurred subsequently to add to, replace part of, or service it. If a replacement cost is recognised in the carrying amount of an item of property, plant and equipment, the carrying amount of the replaced part is derecognised.

The initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located is also included in the cost of property, plant and equipment, where the entity is obligated to incur such expenditure and where the obligation arises as a result of acquiring the asset or using it for purposes other than the production of inventories.

Accounting policies (continued)

2.5 Property, plant and equipment (continued)

Recognition of costs in the carrying amount of an item of property, plant and equipment ceases when the item is in the location and condition necessary for it to be capable of operating in the manner intended by management.

Items such as spare parts, standby equipment and servicing equipment are recognised when they meet the property, plant and equipment definition.

Major inspection costs, which are a condition of continuing use of an item of property, plant and equipment and which meet the recognition criteria above, are included as a replacement in the cost of the item of property, plant and equipment. Any remaining inspection costs from the previous inspection are derecognised.

Property, plant and equipment, excluding land, buildings and aircraft, are carried at cost less accumulated depreciation and any impairment losses.

Land, buildings and aircraft are carried at a revalued amount, being the fair value at the date of revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Land is not depreciated.

Revaluations are made with sufficient regularity such that the carrying amount does not differ materially from that determined using fair value at the end of the reporting period.

When an item of property, plant and equipment is revalued, any accumulated depreciation at the date of the revaluation is restated proportionately with the change in the gross carrying amount of the asset so that the carrying amount of the asset after revaluation equals its revalued amount.

When an item of property, plant and equipment is revalued, any accumulated depreciation at the date of the revaluation is eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount of the asset.

Any increase in an asset's carrying amount due to a revaluation is credited directly to a revaluation surplus. The increase is recognised in surplus or deficit to the extent that it reverses a revaluation decrease of the same asset previously recognised in surplus or deficit.

Any decrease in an asset's carrying amount due to a revaluation is recognised as a surplus or deficit in the current period. The decrease is debited directly to a revaluation surplus to the extent of any credit balance existing in the revaluation surplus in respect of that asset.

The revaluation surplus in equity related to a specific item of property, plant and equipment is transferred directly to retained earnings when the asset is derecognised.

The revaluation surplus in equity related to a specific item of property, plant and equipment is transferred directly to retained earnings as the asset is used. The amount transferred is equal to the difference between depreciation based on the revalued carrying amount and depreciation based on the asset's original cost.

Accounting policies (continued)

2.5 Property, plant and equipment (continued)

Property, plant and equipment are depreciated on the straight-line basis over their expected useful lives. The useful lives of items of property, plant and equipment have been assessed as follows:

Item	Depreciation method	Range of useful life
Aircraft – airframes	Straight-line	20 years
Aircraft – engines	Unit of production	5 400 hours
Aircraft – propellers	Straight-line	5-20 years
Air quality equipment	Straight-line	10-50 years
Buildings	Straight-line	40-50 years
Fences	Straight-line	10-30 years
Furniture and fittings	Straight-line	2-30 years
Computer equipment	Straight-line	2-25 years
Leasehold assets	Straight-line	3-20 years
Library books and equipment	Straight-line	10-20 years
Meteorological equipment	Straight-line	10-30 years
Motor vehicles	Straight-line	3-20 years
Office equipment	Straight-line	2-30 years
Radar equipment	Straight-line	10-30 years
Tools and equipment	Straight-line	2-30 years
Computer servers	Straight-line	2-25 years

The depreciable amount of an asset is allocated on a systematic basis over its useful life.

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

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

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.

Assets the entity holds for rentals to others and subsequently routinely sells as part of the ordinary course of activities are transferred to inventories when the rentals end and the assets are available-for-sale. Proceeds from sales of these assets are recognised as other income. All cash flows on these assets are included in cash flows from operating activities in the cash flow statement.

The entity separately discloses expenditures to repair and maintain property, plant and equipment in the Notes to the financial statements (see Note 30).

Accounting policies (continued)

2.6 Intangible assets

An intangible asset is an identifiable, non-monetary asset without physical substance. The entity has classified the assets listed below as intangible assets.

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.

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

An intangible asset arising from development (or from the development phase of an internal project) is recognised when:

- it is technically feasible to complete the asset so that it will be available for use or sale
- there is an intention to complete and use or sell it
- there is an ability to use or sell it
- it will generate probable future economic benefits or service potential
- there are available technical, financial and other resources to complete the development and to use or sell the asset
- the expenditure attributable to the asset during its development can be measured reliably

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

The amortisation period and the amortisation method for intangible assets are reviewed at each reporting date. Amortisation is provided to write down the intangible assets, on a straight-line basis, to their residual values as follows:

Item	Amortisation method	Range of useful life
Computer software	Straight-line	3-15 years
Servitude	Straight-line	25 years

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 the surplus or deficit when the asset is derecognised (unless the Standard of GRAP on leases requires otherwise on a sale and leaseback).

2.7 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.

The amortised cost of a financial asset or financial liability is the amount at which the financial asset or financial liability is measured at initial recognition minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, and minus any reduction (directly or through the use of an allowance account) for impairment or not being able to collect.

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation.

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.

Accounting policies (continued)

2.7 Financial instruments (continued)

Derecognition is removing a previously recognised financial asset or liability from an entity's statement of financial position.

The effective interest method calculates the amortised cost of a financial asset or a financial liability (or group of financial assets or liabilities). It allocates the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability.

Fair value is the amount an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

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.

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

Liquidity risk is the risk encountered by an entity in the event of difficulty meeting obligations associated with financial liabilities settled by delivering cash or another financial asset.

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: currency risk, interest rate risk and other price risk.

A financial asset is past due when a counterparty has failed to make a payment when contractually due.

Classification

The entity has the following types of financial assets (classes and categories) as reflected on the face of the statement of financial position or in the Notes thereto:

Class	Category
Cash and cash equivalents	Financial asset measured at amortised cost
Trade and other receivables from exchange transactions	Financial asset measured at amortised cost

The entity has the following types of financial liabilities (classes and categories) as reflected on the face of the statement of financial position or in the Notes thereto:

Class	Category
Trade and other payables from exchange transactions	Financial liability measured at amortised cost
Unspent conditional grants and receipts	Financial liability measured at amortised cost
Unspent government allocations – conditional grant	Financial liability measured at amortised cost

Accounting policies (continued)

2.7 Financial instruments (continued)

Initial recognition

The entity recognises a financial asset or a financial liability in its statement of financial position when it becomes a party to the contractual provisions of the instrument.

The entity recognises financial assets using trade date accounting.

Initial measurement of financial assets and financial liabilities

The entity measures a financial asset and financial liability initially at its fair value plus transaction costs directly attributable to the acquisition or issue of the financial asset or financial liability, except for financial instruments subsequently measured at fair value, which are measured at its fair value.

The entity measures a financial asset and financial liability initially at its fair value [if subsequently measured at fair value].

Subsequent measurement of financial assets and financial liabilities

The entity measures all financial assets and financial liabilities after initial recognition using the following categories:

- Financial instruments at amortised cost

All financial assets measured at amortised cost are subject to an impairment review.

Gains and losses

A gain or loss arising from a change in the fair value of a financial asset or financial liability measured at fair value is recognised in surplus or deficit.

For financial assets and financial liabilities measured at amortised cost, a gain or loss is recognised in surplus or deficit when the financial asset or financial liability is derecognised or impaired or through the amortisation process.

Impairment and uncollectible financial assets

At the end of each reporting period, the entity assesses whether there is any objective evidence that a financial asset or group of financial assets is impaired.

Financial assets measured at amortised cost:

If there is objective evidence that an impairment loss on financial assets measured at amortised cost has been 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 flows (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 through an allowance account. The amount of the loss is recognised in surplus or deficit.

Accounting policies (continued)

2.7 Financial instruments (continued)

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 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 as surplus or deficit.

Financial assets measured at cost:

If there is objective evidence that an impairment loss has been incurred on an investment in a residual interest that is not measured at fair value because its fair value cannot be measured reliably, the amount of the impairment loss is measured as the difference between the carrying amount of the financial asset and the present value of estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment losses are not reversed.

Derecognition

Financial assets

The entity derecognises financial assets using trade date accounting.

Financial liabilities

The entity removes a financial liability (or a part of a financial liability) from its statement of financial position when it is extinguished — i.e., when the obligation specified in the contract is discharged, cancelled, expired or waived.

Presentation

Interest relating to a financial instrument or a financial liability component is recognised as revenue or expense in surplus or deficit.

Losses and gains relating to a financial instrument or a financial liability component are recognised as revenue or expense in surplus or deficit.

2.8 Statutory receivables Identification

Statutory receivables arise from legislation, supporting regulations, or similar means and require settlement by another entity in cash or another financial asset.

Initial measurement

The entity initially measures statutory receivables at their transaction amount.

Subsequent measurement

The entity measures statutory receivables after initial recognition using the cost method. Under the cost method, the initial measurement of the receivable is changed after initial recognition to reflect any:

- interest or other charges that may have accrued on the receivable (where applicable)
- impairment losses
- amounts derecognised

Accounting policies (continued)

2.8 Statutory receivables Identification (continued)

Accrued interest

Where the entity levies interest on the outstanding balance of statutory receivables, it adjusts the transaction amount after initial recognition to reflect any accrued interest. Accrued interest is calculated using the nominal interest rate.

Interest on statutory receivables is recognised as revenue in accordance with the policy on revenue from exchange transactions or the policy on revenue from non-exchange transactions (Taxes and transfers), whichever is applicable.

Other charges

Where the entity is required or entitled in terms of legislation, supporting regulations, by-laws or similar means to levy additional charges on overdue or unpaid amounts, and such charges are levied, the entity applies the principles as stated in accrued interest" above, as well as the relevant policy on revenue from exchange transactions or the policy on revenue from non-exchange transactions (Taxes and transfers).

Impairment losses

The entity assesses at each reporting date whether there is any indication that a statutory receivable, or a group of statutory receivables, may be impaired.

In assessing whether there is any indication that a statutory receivable, or group of statutory receivables, may be impaired, the entity considers, as a minimum, the following indicators:

- The significant financial difficulty of the debtor, which may be evidenced by an application for debt counselling, business rescue or an equivalent
- It is probable that the debtor will enter sequestration, liquidation or other financial re-organisation
- A breach of the terms of the transaction, such as default or delinquency in principal or interest payments (where levied)
- Adverse changes in international, national or local economic conditions, such as a decline in growth, an increase in debt levels and unemployment, or changes in migration rates and patterns

An impairment loss recognised in prior periods for a statutory receivable is revised if there has been a change in the estimates used since the last impairment loss was recognised or to reflect the effect of discounting the estimated cash flows.

Any previously recognised impairment loss is adjusted either directly or by adjusting the allowance account. The adjustment does not result in the carrying amount of the statutory receivable or group of statutory receivables exceeding what the carrying amount of the receivable(s) would have been had the impairment loss not been recognised at the date the impairment is revised. The amount of any adjustment is recognised as surplus or deficit.

2.9 Tax

Tax expenses

No provision has been made for taxation, as the entity is exempt from income tax in terms of Section 10 of the Income Tax Act 1962 (Act No. 58 of 1962).

Accounting policies (continued)

2.10 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.

When a lease includes both land and buildings elements, the entity assesses the classification of each element separately.

Operating leases – lessor

Operating lease revenue is recognised as revenue on a straight-line basis over the lease term.

Initial direct costs incurred in negotiating and arranging operating leases are added to the carrying amount of the leased asset and recognised as an expense over the lease term on the same basis as the lease revenue.

The aggregate cost of incentives is recognised as a reduction of rental revenue over the lease term on a straight-line basis. The aggregate benefit of incentives is recognised as a reduction of rental expense over the lease term on a straight-line basis. Income for leases is disclosed under revenue in the statement of financial performance.

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.

The aggregate cost of incentives is recognised as a reduction of rental revenue over the lease term on a straight-line basis. The aggregate benefit of incentives is recognised as a reduction of rental expense over the lease term on a straight-line basis.

2.11 Inventories

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

The 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, conversion, and other costs incurred in bringing the inventories to their present location and condition.

The cost of inventories of items that are not ordinarily interchangeable and goods or services produced and segregated for specific projects is assigned using specific identification of the individual costs.

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

Accounting policies (continued)

2.11 Inventories (continued)

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 is recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs.

2.12 Impairment of cash-generating assets

Cash-generating assets are assets used to generate a commercial return. Commercial return means that positive cash flows are expected to be significantly higher than the asset's cost.

Impairment is a loss in an asset's future economic benefits or service potential, over and above the systematic recognition of the loss of the asset's future economic benefits or service potential through depreciation (amortisation).

The carrying amount is the amount at which an asset is recognised in the statement of financial position after deducting any accumulated depreciation and accumulated impairment losses thereon.

A cash-generating unit is the smallest identifiable group of assets used with the objective of generating a commercial return that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or groups of assets.

Costs of disposal are incremental costs directly attributable to the disposal of an asset, excluding finance costs and income tax expenses.

Depreciation (Amortisation) is the systematic allocation of the depreciable amount of an asset over its useful life.

Fair value less costs to sell is the amount obtainable from the sale of an asset in an arm's length transaction between knowledgeable, willing parties, less the disposal costs.

The recoverable amount of an asset or a cash-generating unit is the higher its fair value less costs to sell, and its value in use. Useful life is either:

- the period over which an asset is expected to be used by the entity; or
- the number of production or similar units expected to be obtained from the asset by the entity

Identification

When the carrying amount of a cash-generating asset exceeds its recoverable amount, it is impaired.

The entity assesses at each reporting date whether there is any indication that a cash-generating asset may be impaired. The entity estimates the asset's recoverable amount if any such indication exists.

Irrespective of whether there is any indication of impairment, the entity also tests a cash-generating intangible asset with an indefinite useful life or a cash-generating intangible asset not yet available for use for impairment annually by comparing the carrying amount with its recoverable amount. This impairment test is performed at the same time every year. If an intangible asset was initially recognised during the current reporting period, that intangible asset was tested for impairment before the end of the current reporting period.

Accounting policies (continued)

2.12 Impairment of cash-generating assets (continued)

Value in use

Value in the use of a cash-generating asset is the present value of the estimated future cash flows expected to be derived from the continuing use of an asset and its disposal at the end of its useful life.

When estimating the value in use of an asset, the entity estimates the future cash inflows and outflows to be derived from continuing use of the asset and its ultimate disposal. The entity applies the appropriate discount rate to those future cash flows.

The basis for estimates of future cash flows

In measuring value in use the entity:

- bases cash flow projections on reasonable and supportable assumptions that represent management's best estimate of the range of economic conditions that will exist over the remaining useful life of the asset. Greater weight is given to external evidence
- bases cash flow projections on the most recent approved financial budgets/forecasts, but excludes any estimated future cash inflows or outflows expected to arise from future restructurings or from improving or enhancing the asset's performance. Projections based on these budgets/forecasts cover a maximum period of five years, unless a more extended period can be justified
- estimates cash flow projections beyond the period covered by the most recent budgets/forecasts by extrapolating the projections based on the budgets/forecasts using a steady or declining growth rate for subsequent years unless an increasing rate can be justified. This growth rate does not exceed the long-term average growth rate for the products, industries, or country or countries in which the entity operates or for the market in which the asset is used unless a higher rate can be justified

Composition of estimates of future cash flows

Estimates of future cash flows include:

- projections of cash inflows from the continuing use of the asset
- projections of cash outflows that are necessarily incurred to generate the cash inflows from continuing use of the asset (including cash outflows to prepare the asset for use) and can be directly attributed, or allocated on a reasonable and consistent basis, to the asset
- net cash flows, if any, to be received (or paid) for the disposal of the asset at the end of its useful life

Estimates of future cash flows exclude the following:

- cash inflows or outflows from financing activities
- income tax receipts or payments

The estimate of net cash flows to be received (or paid) for the disposal of an asset at the end of its useful life is the amount that the entity expects to obtain from the disposal of the asset in an arm's length transaction between knowledgeable, willing parties, after deducting the estimated costs of disposal.

Foreign currency future cash flows

Future cash flows are estimated in the currency in which they will be generated and then discounted using a discount rate appropriate for that currency. The entity translates the present value using the spot exchange rate at the value in use calculation date.

Accounting policies (continued)

2.12 Impairment of cash-generating assets (continued)

Discount rate

The discount rate is a pre-tax rate that reflects current market assessments of the time value of money, represented by the current risk-free rate of interest and the risks specific to the asset for which the future cash flow estimates have not been adjusted.

Recognition and measurement (individual asset)

If the recoverable amount of a cash-generating asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. This reduction is an impairment loss.

An impairment loss is recognised immediately in surplus or deficit.

Any impairment loss of a revalued cash-generating asset is treated as a revaluation decrease.

When the amount estimated for an impairment loss is greater than the carrying amount of the cash-generating asset it relates to, the entity recognises a liability only to the extent required in the Standard of GRAP.

After recognising an impairment loss, the depreciation (amortisation) charge for the cash-generating asset is adjusted in future periods to allocate its revised carrying amount, less its residual value (if any), on a systematic basis over its remaining useful life.

Cash-generating units

If there is any indication that an asset may be impaired, the recoverable amount is estimated for the individual asset. If it is impossible to estimate the recoverable amount of the individual asset, the entity determines the recoverable amount of the cash-generating unit to which the asset belongs (the asset's cash-generating unit).

If an active market exists for the output produced by an asset or group of assets, that asset or group of assets is identified as a cash-generating unit, even if some or all of the output is used internally. If the cash inflows generated by any asset or cash-generating unit are affected by internal transfer pricing, the entity use management's best estimate of future price(s) that could be achieved in arm's length transactions in estimating:

- the future cash inflows used to determine the asset's or cash-generating unit's value in use
- the future cash outflows are used to determine the value in use of any other assets or cash-generating units that are affected by the internal transfer pricing

Cash-generating units are identified consistently from period to period for the same asset or types of assets unless a change is justified.

The carrying amount of a cash-generating unit is determined on a basis consistent with how the recoverable amount of the cash-generating unit is determined.

An impairment loss is recognised for a cash-generating unit if the unit's recoverable amount is less than the unit's carrying amount. The impairment is allocated to reduce the carrying amount of the cash-generating assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. These reductions in carrying amounts are treated as impairment losses on individual assets.

In allocating an impairment loss, the entity does not reduce the carrying amount of an asset below the highest of:

- its fair value less costs to sell (if determinable)
- its value in use (if determinable)
- zero

Accounting policies (continued)

2.12 Impairment of cash-generating assets (continued)

The amount of the impairment loss that would otherwise have been allocated to the asset is allocated pro rata to the other cash-generating assets of the unit.

Where a non-cash-generating asset contributes to a cash-generating unit, a proportion of the carrying amount of that asset is allocated to the carrying amount of the cash-generating unit before estimating the recoverable amount of the cash-generating unit.

Reversal of impairment loss

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

An impairment loss recognised in prior periods for a cash-generating asset is reversed if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. The carrying amount of the asset is increased to its recoverable amount. The increase is a reversal of an impairment loss. The increased carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined (net of depreciation or amortisation) had no impairment loss been recognised for the asset in prior periods.

A reversal of an impairment loss for a cash-generating asset is recognised immediately in surplus or deficit. Any reversal of an impairment loss of a revalued cash-generating asset is treated as a revaluation increase.

After a reversal of an impairment loss is recognised, the depreciation (amortisation) charge for the cash-generating asset is adjusted in future periods to allocate the cash-generating asset's revised carrying amount, less its residual value (if any) on a systematic basis over its remaining useful life.

A reversal of an impairment loss for a cash-generating unit is allocated to the cash-generating assets of the unit pro rata with the carrying amounts of those assets. These increases in carrying amounts are treated as reversals of impairment losses for individual assets. No part of the amount of such a reversal is allocated to a non-cash-generating asset contributing service potential to a cash-generating unit.

In allocating a reversal of an impairment loss for a cash-generating unit, the carrying amount of an asset is not increased above the lower of:

- its recoverable amount (if determinable)
- the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the asset in prior periods.

The amount of the reversal of the impairment loss that would otherwise have been allocated to the asset is allocated pro rata to the other unit assets.

Redesignation

The redesignation of assets from a cash-generating asset to a non-cash-generating asset or from a non-cash-generating asset to a cash-generating asset only when there is clear evidence that such a redesignation is appropriate.

Accounting policies (continued)

2.13 Impairment of non-cash-generating assets

Cash-generating assets are assets used with the objective of generating a commercial return. Commercial return means that positive cash flows are expected to be significantly higher than the asset's cost.

Non-cash-generating assets are assets other than cash-generating assets.

Identification

When the carrying amount of a non-cash-generating asset exceeds its recoverable service amount, it is impaired.

The entity assesses at each reporting date 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.

Irrespective of any indication of impairment, the entity also tests a non-cash-generating intangible asset with an indefinite useful life or a non-cash-generating intangible asset not yet available for use for impairment annually by comparing the carrying amount with its recoverable service amount. This impairment test is performed at the same time every year. If an intangible asset was initially recognised during the current reporting period, that intangible asset was tested for impairment before the end of the current reporting period.

Value in use

Value in the use of non-cash-generating assets is the present value of the non-cash-generating assets remaining service potential.

The present value of the remaining service potential of non-cash-generating assets is determined using the following approach:

Service units approach

The present value of the remaining service potential of the asset is determined by reducing the current cost of the remaining service potential of the asset before impairment to conform to the reduced number of service units expected from the asset in its impaired state. The current cost of replacing the remaining service potential of the asset before impairment is determined as the depreciated reproduction or replacement cost of the asset before impairment, whichever is lower.

Recognition and measurement

If the recoverable service amount of a non-cash-generating asset is less than its carrying amount, the asset's carrying amount is reduced to its recoverable service amount. This reduction is an impairment loss.

An impairment loss is recognised immediately in surplus or deficit.

Any impairment loss of a revalued non-cash-generating asset is treated as a revaluation decrease.

When the amount estimated for an impairment loss is greater than the carrying amount of the non-cash-generating asset to which it relates, the entity recognises a liability only to the extent that is a requirement in the Standards of GRAP.

After the recognition of an impairment loss, the depreciation (amortisation) charge for the non-cash-generating asset is adjusted in future periods to allocate the non-cash-generating asset's revised carrying amount, less its residual value (if any) on a systematic basis over its remaining useful life.

Accounting policies (continued)

2.13 Impairment of non-cash-generating assets (continued)

Reversal of an impairment loss

The entity assesses at each reporting date 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 of that asset.

An impairment loss recognised in prior periods for a non-cash-generating asset is reversed if there has been a change in the estimates used to determine the asset's recoverable service amount since the last impairment loss was recognised. The carrying amount of the asset is increased to its recoverable service amount. The increase is a reversal of an impairment loss. The increased carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined (net of depreciation or amortisation) had no impairment loss been recognised for the asset in prior periods.

A reversal of an impairment loss for a non-cash-generating asset is recognised immediately in surplus or deficit. Any reversal of an impairment loss of a revalued non-cash-generating asset is treated as a revaluation increase.

After a reversal of an impairment loss is recognised, the depreciation (amortisation) charge for the non-cash-generating asset is adjusted in future periods to allocate the non-cash-generating asset's revised carrying amount, less its residual value (if any) on a systematic basis over its remaining useful life.

Redesignation

The redesignation of assets from a cash-generating asset to a non-cash-generating asset or from a non-cash-generating asset to a cash-generating asset only occurs when there is clear evidence that such a redesignation is appropriate.

2.14 Employee benefits

Other long-term employee benefits are employee benefits (other than post-employment and termination benefits) that are not due to be settled within twelve months after the end of the period in which the employees render the related service.

Vested employee benefits are employee benefits that are not conditional on future employment.

Short-term employee benefits

Short-term employee benefits (other than termination) are due to be settled within twelve months after the end of the period in which the employees render the related service.

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 entity measures the expected cost of accumulating compensated absences as the additional amount the entity expects to pay due to the unused entitlement accumulated at the reporting date.

The entity recognises the expected cost of bonus, incentive and performance related payments when the entity has a present legal or constructive obligation to make such payments due to past events, and a reliable estimate of the obligation can be made. A present obligation exists when the entity has no realistic alternative but to make the payments.

Accounting policies (continued)

2.14 Employee benefits (continued)

Post-employment benefits

Post-employment benefits are employee benefits (other than termination) which are payable after the completion of employment.

Post-employment benefit plans are formal or informal arrangements under which an entity provides post-employment benefits for one or more employees.

Post-employment benefits: Defined benefit plans

Actuarial gains and losses comprise experience adjustments (the defined effects of differences between the previous actuarial assumptions and what has actually occurred) and the effects of changes in actuarial assumptions. In measuring its benefit liability, the entity recognises actuarial gains and losses in surplus or deficit in the reporting period in which they occur.

Plan assets comprise assets held by a long-term employee benefit fund and qualifying insurance policies. The amount recognised as a defined benefit liability is the net total of the following amounts:

- the present value of the defined benefit obligation at the reporting date
- minus the fair value at the reporting date of plan assets (if any), out of which the obligations are to be settled directly
- plus any liability that may arise as a result of a minimum funding requirement

The amount determined as a defined benefit liability may be negative (an asset). The entity measures the resulting asset at the lower of:

- the amount determined above
- the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. The present value of these economic benefits is determined using a discount rate reflecting the money's time value.

Any adjustments arising from the limit above are recognised in surplus or deficit.

The entity determines the present value of defined benefit obligations and the fair value of any plan assets with sufficient regularity such that the amounts recognised in the Annual Financial Statements do not differ materially from the amounts that would be determined at the reporting date.

The entity recognises the net total of the following amounts in surplus or deficit, except to the extent that another Standard requires or permits their inclusion in the cost of an asset:

- current service cost
- interest cost
- the expected return on any plan assets and any reimbursement rights
- actuarial gains and losses
- past service cost
- the effect of any curtailments or settlements
- the effect of applying the limit on a defined benefit asset (negative, defined benefit liability)

The entity uses the Projected Unit Credit Method to determine the present value of its defined benefit obligations, the related current service cost, and, where applicable, past service cost. The Projected Unit Credit Method (sometimes known as the accrued benefit method pro-rated on service or as the benefit/years of service method) sees each service period as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.

Accounting policies (continued)

2.14 Employee benefits (continued)

In determining the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost, an entity shall attribute benefit to periods of service under the plan's benefit formula. However, if an employee's service in later years will lead to a materially higher level of benefit than in earlier years, an entity shall attribute benefit on a straight-line basis from:

- the date when service by the employee first leads to benefits under the plan (whether or not the benefits are conditional on further service); until
- the date when further service by the employee will lead to no material amount of further benefits under the plan other than from further salary increases

Actuarial valuations are conducted annually by independent actuaries separately for each plan. The valuation results are updated for any material transactions and other changes in circumstances (including changes in market prices and interest rates) up to the reporting date.

The entity recognises gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on a curtailment or settlement comprises:

- any resulting change in the present value of the defined benefit obligation
- any resulting change in the fair value of the plan assets

Before determining the effect of curtailment or settlement, the entity re-measure the obligation (and the related plan assets, if any) using current actuarial assumptions (including current market interest rates and other current market prices).

When it is virtually certain that another party will reimburse some or all of the expenditure required to settle a defined benefit obligation, the right to reimbursement is recognised as a separate asset. The asset is measured at fair value. In all other respects, the asset is treated the same way as plan assets. In surplus or deficit, the expense of a defined benefit plan is presented as the net of the amount recognised for reimbursement.

Actuarial assumptions

Actuarial assumptions are unbiased and mutually compatible.

Financial assumptions are based on market expectations, at the reporting date, for the period over which the obligations are to be settled.

The rate used to discount post-employment benefit obligations (funded and unfunded) reflects the time value of money. The currency and term of the financial instrument selected to reflect the time value of money are consistent with the currency and estimated term of the post-employment benefit obligations.

Post-employment benefit obligations are measured on a basis that reflects the following:

- estimated future salary increases
- the benefits set out in the terms of the plan (or resulting from any constructive obligation that goes beyond those terms) at the reporting date
- estimated future changes in the level of any state benefits that affect the benefits payable under a defined benefit plan, if, and only if, either:
  - those changes were enacted before the reporting date; or
  - history, or other reliable evidence, indicates that those state benefits will change in some predictable manner, for example, in line with future changes in general price levels or general salary levels

Accounting policies (continued)

Assumptions about medical costs take into account estimated future changes in the cost of medical services resulting from inflation and specific medical costs.

2.15 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
- 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.

Where the effect of the time value of money is material, the amount of a provision is the present value of the expenditures expected to be required to settle the obligation.

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.

Where discounting is used, the carrying amount of a provision increases in each period to reflect the passage of time. This increase is recognised as an interest expense.

A provision is used only for expenditures for which the provision was originally recognised. Provisions are not recognised for future operating surplus (deficit).

Contingent assets and contingent liabilities are not recognised. Contingencies are disclosed in Note 35.

2.16 Commitments

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

Disclosures are required regarding unrecognised contractual commitments, which include future capital commitment relating to property plant and equipment, investment property, intangible assets and heritage assets as applicable, operational commitments, and future commitments relating to operating leases. Refer to Note 31 – Commitments.

2.17 Revenue from exchange transactions

Revenue is the gross inflow of economic benefits or service potential during the reporting period when those inflows increase net assets, other than increases relating to owner contributions.

An exchange transaction is when 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.

Fair value is the amount an asset could be exchanged or a liability settled between knowledgeable, willing parties in an arm's length transaction.

Measurement

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

Accounting policies (continued)

2.17 Revenue from exchange transactions (continued)

Sale of goods

Revenue from the sale of goods is recognised when all the following conditions have been satisfied:

- the entity has transferred to the purchaser the significant risks and rewards of ownership of the goods
- the entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold
- the amount of revenue can be measured reliably
- the economic benefits or service potential associated with the transaction will probably flow to the entity
- the costs incurred or to be incurred in respect of the transaction can be measured reliably

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 transaction's completion stage 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
- the economic benefits or service potential associated with the transaction will probably flow to the entity
- the stage of completion of the transaction at the reporting date can be measured reliably
- the costs incurred for the transaction and the costs to complete the transaction can be measured reliably

When services are performed by an indeterminate number of acts over a specified time frame, revenue is recognised on a straight-line basis unless there is evidence that some other method better represents the completion stage. When sa specific act is much more significant than any other act, revenue recognition is postponed until the significant act is executed.

When the outcome of the transaction involving the rendering of services cannot be estimated reliably, revenue is recognised only to the extent of the expenses recognised that are recoverable.

Service revenue is recognised by reference to the transaction completion stage at the reporting date. Stage of completion is determined by services performed to date as a percentage of total services to be performed.

Interest

Revenue arising from the use by others of entity assets yielding interest, royalties and dividends or similar distributions is recognised when:

- The economic benefits or service potential associated with the transaction will probably flow to the entity
- The amount of the revenue can be measured reliably

Interest is recognised using the effective interest rate method for financial instruments and the nominal interest rate method for statutory receivables. The interest levied on transactions arising from the exchange or non-exchange transactions is classified based on the nature of the underlying transaction.

Service fees included in the product's price are recognised as revenue over the period the service is performed.

Accounting policies (continued)

2.18 Revenue from non-exchange transactions

Revenue comprises gross inflows of economic benefits or service potential received and receivable by an entity, representing an increase in net assets other than increases relating to owner contributions.

Conditions on transferred assets specify that the future economic benefits or service potential embodied in the asset must be consumed by the recipient as specified, or future economic benefits or service potential must be returned to the transferor.

Control of an asset arises when the entity can use or otherwise benefit from the asset in pursuing its objectives and can exclude or otherwise regulate the access of others to that benefit.

Exchange transactions are transactions in which one entity receives assets or services or has liabilities extinguished and directly gives approximately equal value (primarily in cash, goods, services, or use of assets) to another entity in the exchange.

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

Restrictions on transferred assets are stipulations that limit or direct the purposes for which a transferred asset may be used but do not specify that future economic benefits or service potential must be returned to the transferor if not deployed as specified.

Stipulations on transferred assets are terms in laws or regulations, or a binding arrangement, imposed upon the use of a transferred asset by entities external to the reporting entity.

Transfers are inflows of future economic benefits or service potential from non-exchange transactions other than taxes.

Measurement

Revenue from a non-exchange transaction is measured at the amount of the increase in net assets recognised by the entity.

When, as a result of a non-exchange transaction, the entity recognises an asset, it also recognises revenue equivalent to the amount of the asset measured at its fair value as at the date of acquisition unless it is also required to recognise a liability. Where liability is required to be recognised, it will be measured as the best estimate of the amount required to settle the obligation at the reporting date and the amount of the increase in net assets, if any, recognised as revenue. When a liability is subsequently reduced because the taxable event occurs or a condition is satisfied, the amount of the reduction in the liability is recognised as revenue.

Transfers

The entity recognises an asset in respect of transfers when the transferred resources meet the definition of an asset and satisfy the criteria for recognition as an asset.

Transferred assets are measured at their fair value as of the acquisition date.

Debt forgiveness and assumption of liabilities

The entity recognises revenue regarding debt forgiveness when the former debt no longer meets the definition of liability or satisfies the criteria for recognition as a liability, provided that the debt forgiveness does not satisfy the definition of a contribution from owners.

Accounting policies (continued)

2.18 Revenue from non-exchange transactions (continued)

Revenue from debt forgiveness is measured at the carrying amount of debt forgiven.

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.

Services in-kind

The entity recognises services in-kind that are significant to its operations and/or service delivery objectives as assets and recognise the related revenue when it is probable that the future economic benefits or service potential will flow to the entity. The fair value of the assets can be measured reliably.

Where services in-kind are not significant to the entity's operations and/or service delivery objectives and/or do not satisfy the recognition criteria, the entity discloses the nature and type of services received during the reporting period.

2.19 Investment income

Investment income is recognised on a time-proportion basis using the effective interest method.

2.20 Translation of foreign currencies

Foreign currency transactions

A foreign currency transaction is recorded, on initial recognition in Rands, 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 measured at fair value in a foreign currency are translated using the exchange rates 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.

When a gain or loss on a non-monetary item is recognised directly in net assets, any exchange component of that gain or loss is recognised directly in net assets. When a gain or loss on a non-monetary item is recognised in surplus or deficit, any exchange component of that gain or loss is recognised in surplus or deficit.

Cash flows arising from transactions in a foreign currency are recorded in Rands by applying to the foreign currency amount the exchange rate between the Rand and the foreign currency at the cash flow date.

2.21 Comparative figures

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

Accounting policies (continued)

2.22 Fruitless and wasteful expenditure

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

All expenditure relating to fruitless and wasteful expenditure is recognised as an expense in the statement of financial performance in the year that the expenditure was incurred. The expenditure is classified following the nature of the expense, and where recovered, it is subsequently accounted for as revenue in the statement of financial performance.

2.23 Irregular expenditure

Irregular expenditure, as defined in section 1 of the PFMA, is expenditure other than unauthorised expenditure incurred in contravention of or that is not in accordance with a requirement of any applicable legislation, including –

(a) this Act; or
(b) the State Tender Board Act 1968 (Act No.86 of 1968), or any regulations made in terms of the Act; or
(c) any provincial legislation providing for procurement procedures in that provincial government.

Irregular expenditure incurred and identified during the current financial year and for which condonement is being awaited at year end has been recorded in the irregular expenditure register. No further action is required except for updating the Note to the financial statements.

Irregular expenditure that has not been condoned and where no person is liable in law, the expenditure related to that remains against the relevant expenditure item and is updated as such in the irregular expenditure register.

2.24 Budget information

The entity is typically subject to budgetary limits in the form of appropriations or budget authorisations (or equivalent), which is given effect through authorising legislation, appropriation or similar.

General purpose financial reporting by the entity shall provide information on whether resources were obtained and used in accordance with the legally adopted budget.

The approved budget is prepared accrual and presented by economic classification linked to performance outcome objectives.

The approved budget covers the fiscal period from 2022/04/01 to 2023/03/31.

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 has been included in the Statement of comparison of budget and actual amounts.

2.25 Related parties

The entity operates in an economic sector currently dominated by entities directly or indirectly owned by the South African Government. Due to the constitutional independence of the three spheres of government in South Africa, only entities within the national sphere of government are considered related parties.

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

Accounting policies (continued)

2.25 Related parties (continued)

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

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

2.26 Events after the 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)
- 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 occurred.

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 based on the financial statements.

2.27 Prior period error

When the financial statement's presentation or classification of items is amended, prior period comparative amounts are reclassified. The nature and reason for the reclassification is disclosed.

Where accounting errors have been identified in the current financial year, the correction is made retrospectively as far as practical and the prior year comparatives are restated accordingly. Where there has been a change in accounting policy in the current year, the adjustment is made retrospectively as far as it is practical, and the prior year comparatives are restated accordingly.

Notes to the Annual Financial Statements

3. New standards and interpretations

3.1 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 2023 or later periods:

GRAP 25 (as revised 2021): Employee Benefits Key amendments to GRAP 25

The Board agreed to align GRAP 25 with IPSAS 39, but local issues and the environment need to be considered. As a result of this decision, there are areas where GRAP 25 departs from the requirements of IPSAS 39.

The amendments to GRAP 25 are extensive and mainly affect the accounting for defined benefit plans. A new renumbered Standard of GRAP (e.g. GRAP 39) will not be issued, but rather a new version of the current GRAP 25.

The effective date of these revisions has not yet been set.

It is unlikely that the revisions will have a material impact on the entity's Annual Financial Statements.

iGRAP 7 (as revised 2021): Limit on defined benefit asset, minimum funding requirements and their interaction

The Board issued the Standard of GRAP on Employee Benefits (GRAP 25) in November 2009. GRAP 25 was effective then based on the International Public Sector Accounting Standard on Employee Benefits (IPSAS 25). However, GRAP 25 was modified in some respects, where the Board decided the International Accounting Standard on Employee Benefits (IASR 19) requirements were more appropriate. Specifically, the Board:

- eliminated the corridor method and required full recognition of actuarial gains and losses in the year they arise
- required the recognition of past service costs in the year that a plan is amended rather than based on whether they are vested or unvested

In developing GRAP 25, included was the guidance from the IFRS Interpretation on IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction partly in GRAP 25 and partly in the Interpretation of the Standards of GRAP on The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction (IGRAP 7).

The effective date of these revisions has not yet been set.

Notes to the Annual Financial Statements (continued)

3. New standards and interpretations (continued)

It is unlikely that the revisions will have a material impact on the entity's Annual Financial Statements.

GRAP 104 (amended): Financial Instruments

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

The most significant changes to the Standard Affects :

- Financial guarantee contracts issued
- loan commitments issued
- classification of financial assets
- the amortised cost of financial assets
- impairment of financial assets
- disclosures

The Minister of Finance does not yet set the effective date of the amendment.

The entity expects to adopt the amendment for the first time when the Minister sets the effective date. It is unlikely that the standard will have a material impact on the entity's Annual Financial Statements.

GRAP 21: The effect of past decisions on materiality background

iGRAP 21 addresses the following two issues:

- Do past decisions about materiality affect subsequent reporting periods?
- Is applying an alternative accounting treatment a departure from the Standards of GRAP or an error?

The effective date of this interpretation has not yet been set.

The entity expects to adopt the interpretation for the first time in 2023/24.

It is unlikely that the interpretation will have a material impact on the entity's Annual Financial Statements.

GRAP 1 (amended): Presentation of Financial Statements

Amendments to this GRAP Standard are primarily drawn from the IASB's Amendments to IAS 1. Summary of amendments are:

Materiality and aggregation

The amendments clarify that:

- information should not be obscured by aggregating or by providing immaterial information
- materiality considerations apply to all parts of the financial statements
- even when a Standard of GRAP requires a specific disclosure, materiality considerations apply

Statement of financial position and statement of financial performance

The amendments clarify that the list of line items to be presented in these statements can be disaggregated and aggregated as relevant and additional guidance on subtotals in these statements.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

6. Accounts receivable from exchange transactions – other (continued)

Notes structure

The amendments add examples of possible ways of ordering the notes to clarify that understandability and comparability should be considered when determining the order of the notes and to demonstrate that the notes need not be presented in the order listed in GRAP 1.

Disclosure of accounting policies

- An entity applies judgement based on experience and current facts and circumstances
- The effective date of this amendment is for years beginning on or after 1 April 2025
- The entity expects to adopt the amendment for the first time in the 2025/26 Annual Financial Statements

It is unlikely that the amendment will have a material impact on the entity's Annual Financial Statements.

GRAP 103 (Amended) Heritage assets

The effective date is yet to be determined.

It is unlikely that the amendment will have a material impact on the entity's Annual Financial Statements.

4. Inventories

Components and finished goods*	12 648 044	4 654 682
Consumables (stationery)	52 687	56 914
Other commercial components	710 146	479 312
	13 410 877	**5 190 908**

*Inventory components for repairs and maintenance.

Inventories are recognised as an expense during the year	2 568 506	1 099 396
Inventory write-back/(write-down) for the year	(122 515)	17 223

The write down relates to inventory write-offs because the inventory on hand is less than the theoretical inventory value during the count at year end.

5. Operating lease liability/(asset)

Current liabilities/(assets)	(1 110 304)	730 228

The following lease payments are related to operating leases for the rental of premises, office equipment and motor vehicles:

The entity leases ten premises (2022: 10 premises) from various lessors. The rental agreements for the premises include escalation clauses between 5,5% and 10% per year in rental payments. The duration of the rentals varies between two and ten years. The SAWS has an agreement with Dihlabeng Municipality, which stipulates that the entity will offer free rental to the municipality in exchange for the entity incurring no levies and electricity costs on the same. As a result of this arrangement, the SAWS incurs no levies and electricity costs on the property and no rental income accrues, and this has no financial impact on the Annual Financial Statements.

The SAWS entered a lease agreement with JR 209 Investment (Pty) Ltd to rent the building. The lease was signed on 5 December 2017, effective until 30 April 2023, and extended to 31 October 2023.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

5. Operating lease liability/(asset) (continued)

The entity entered into a lease agreement for the rental of furniture and fittings with D&F Commodity Broking CC for a total amount of R608 810 for four years (13 November 2019 to 14 November 2023).

The SAWS signed a contract for the rental of motor vehicles with Fleet Horizon Solutions for R20 340 715 for three years, effective 1 October 2021.

The leases are renewed in terms of the lease agreements where applicable, and the entity does not have the option to purchase these leased assets at the end of the lease term.

2023	Furniture and fittings	Premises	Motor vehicles	Total
Future minimum lease payments not later than one year	88 785	21 324 032	6 780 238	28 193 055
Later than one year and not later than five years	-	12 820 060	3 390 119	16 210 179
Later than five years	-	460 893	-	460 893
	88 785	**34 604 985**	**10 170 357**	**44 864 127**

2022	Furniture and Fittings	Premises	Motor vehicles	Total
Future minimum lease payments not later than one year	88 785	19 350 182	6 780 238	26 219 205
Later than one year and not later than five years	-	7 511 306	10 170 358	17 681 664
Later than five years	-	1 809 432	-	1 809 432
	88 785	**28 670 920**	**16 950 596**	**45 710 301**

Straight lining effect on operating lease liability:

Opening balance	730 228	1 505 274
Deferred rental	(1 840 532)	(775 046)
	(1 110 304)	**730 228**

6. Accounts receivable from exchange transactions – other

Trade accounts receivable	2 461 125	3 478 174
Sundry receivables	4 401 074	1 502 080
Impairment of accounts receivable	(487 807)	(766 192)
	6 374 392	**4 214 062**

Trade receivables are stated at amortised cost using an effective interest rate method less impairment of receivables. An average interest rate of 10,75% was charged on invoices over 60 days during the year.

Provision for accounts receivable from exchange transactions – other	Current	31 – 120 Days	Over 120 days	Total
Insurance clients	9 012	15 353	93 682	118 047
Contract clients	1 027	2 908	111 190	115 125
Others	2 051	6 984	245 600	254 635
	12 090	**25 245**	**450 472**	**487 807**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

6. Accounts receivable from exchange transactions – other (continued)

Accounts receivable from exchange transactions – other past due but not impaired

Accounts receivable from exchange transactions which are less than three months past due are not automatically considered to be impaired. Management examines the accounts records of its debtors based on payment history, credit risk characteristics and historical loss experience for each debtor or group, which are adjusted to reflect current conditions as a basis to impair overdue amounts, R1 295 831 (2022: R 2 067 186) were past due but not impaired. Trade accounts receivable amounting to R677 488 (2022: R486 350) are neither past due nor impaired. Management considers these debtors to be of good credit quality despite not having an external credit rating.

	31 - 90 days	Over 90 days	Total
Past due but not impaired	1 030 010	265 821	1 295 831

Reconciliation of provision for impairment and bad debts written off for accounts receivable from exchange transactions – other

Opening balance	766 192	1 000 430
Provision for impairment	487 807	1 816 606
Amounts written off as uncollectible	(263 540)	(150 393)
Unused amounts reversed	(502 652)	(1 900 451)
	487 807	**766 192**

Unused amounts of prior year provisions are reversed due to improved payments.

The maximum exposure to credit risk at the reporting date is the carrying amount of each class of trade accounts receivable mentioned above. The entity does not hold any collateral on receivables as security. Trade accounts receivable are individually and collectively assessed for impairment, whether significant or not and are included within the group of trade receivable with similar credit risk characteristics.

7. Accounts receivable from exchange transactions – statutory receivables

Statutory accounts receivable	16 429 077	23 015 322
Impairment of accounts receivable	(2 830 889)	(11 499 760)
	13 598 188	**11 515 562**

In accordance with the SAWS Act, the entity provides meteorological services to the airline industry at a rate promulgated by the Minister of Forestry, Fisheries and Environment, which gets promulgated in the Government Gazette—the Regulating Committee on Meteorological. Services facilitate the consultative process between the entity and the Aviation industry for the tariff recommendation to the Minister. The entity does not hold any collateral on receivables as security.

The SAWS charges interest on all accounts overdue at a rate determined by the Minister of Finance in the Government Gazette. During the year under review, the interest rate charged varied between 7,5% and 10,75% (2022: 7% and 7,5%) on all overdue accounts. Statutory receivables amounting to R11 061 773 (2022: R7 559 205) are neither past due nor impaired and considered fully recoverable.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

7. Accounts receivable from exchange transactions – statutory receivables (continued)

Accounts receivable from exchange transactions – statutory receivable past due but not impaired

Statutory receivables are assessed for impairment monthly individually. Management's judgement is used to impair amounts that are past due. Statutory receivables of R2 536 416 (2022: R3 956 358) were past due but not impaired.

The ageing of amounts past due but not impaired is as follows:

	31 – 90 days	Over 90 days	Total
Past due but not impaired	2 172 498	363 918	2 536 416

Accounts receivable from exchange transactions (statutory receivables) impaired

Other accounts receivable from exchange transactions of R2 830 889 (2022: R11 499 760) were impaired and provided for. When calculating the impairment, management considers the debtors that default under administration and business rescue.

Reconciliation of provision for impairment and bad debts written off for statutory accounts receivable

Opening balance	11 499 760	14 034 490
Provision for impairment	2 830 889	3 421 734
Amounts written off as uncollectible	(13 121 112)	(4 282 692)
Unused amounts reversed	1 621 352	(1 673 772)
	2 830 889	**11 499 760**

Provision for statutory accounts receivable	Up to 90 Days	Over 90 Days	Total
Regulated/Statutory commercial debtors	455 765	2 375 124	2 830 889

8. Pre-payments

Pre-paid expenses	11 402 162	2 522 038

Pre-paid expenses comprise services paid in advance, license fees, subscription fees and staff travel advance payments.

9. Cash and cash equivalents

Cash and cash equivalents consist of:

Bank balances	135 461 741	69 979 146
Short-term deposits	20 142	19 489
	135 481 883	**69 998 635**

The entity does not have any cash and cash equivalents that have been pledged as security.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

10. Investment property

	2023			2022		
	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Investment property	70 497 351		70 497 351	83 991 957		83 991 957

Reconciliation of investment property - 2023

	Opening balance	Additions	Fair value adjustments	Total
Investment property	83 991 957	-	(13 494 606)	70 497 351

Reconciliation of investment property - 2022

	Opening balance	Additions	Fair value adjustments	Total
Investment property	71 779 121	-	12 212 836	83 991 957

The investment property (Land) includes portion 411, portion of 412, portion 423 and portion 424 of the farm Garsfontein 374, registration division JR, Gauteng. The total property size is 37,1116 ha, however, the portions allocated for investment property are 25,6354 ha. The property is located in the west of N1 National Freeway and immediately north of Rigel Avenue (South) in the Waterkloof Heights suburb of Pretoria.

The property was valued at 31 March 2023 by The Property Partnership CC, Registration Number CK1897/025962/23, a qualified independent professional valuer.

The valuer used the market data valuation approach, whereby similar properties' valuations are used as a motivation to value the property, which is an acceptable method to determine the value of this type of property.

If the property were stated on the historical cost basis, the amounts would be as follows:

Historical cost - investment properties	26 890 000	26 890 000

Valuations were made based on open-market value. The property was brought to book in 2003. The valuation from independent valuers was accepted to reflect the fair value at 31 March 2002 for comparative purposes.

The property is subject to several restrictions on the realisability of the investment property. These are summarised as follows:

- Eskom right of way servitude to convey electricity over the property
- Eskom underground cabling right of way servitude to convey electricity
- There is a beacon approximately six meters wide and approximately 35 m^2
- There is a Telkom Mast measuring approximately 900 m^2

Notes to the Annual Financial Statements (continued)

Figures in Rand

11. Property, plant and equipment

	2023			2022		
	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Land – Garsfontein and Irene	5 993 155	-	5 993 155	14 958 044	-	14 958 044
Buildings – Irene and Bethlehem	5 918 675	(780 494)	5 138 181	5 786 052	(640 166)	5 145 886
Fence	4 469 478	(2 957 278)	1 512 200	3 901 785	(2 674 843)	1 226 942
Furniture and fixtures	13 112 976	(7 076 602)	6 036 374	11 388 885	(6 400 101)	4 988 784
Motor vehicles	506 220	(132 628)	373 592	236 220	(104 362)	131 857
Office equipment	4 857 432	(2 668 604)	2 188 828	4 162 086	(2 405 018)	1 757 068
Computer equipment and servers	172 201 697	(96 864 898)	75 336 799	154 131 901	(82 745 124)	71 386 777
Leasehold improvements	4 003 822	(1 092 276)	2 911 546	3 837 239	(798 396)	3 038 843
Aircraft – airframes	16 852	-	16 852	-	-	-
Radar – equipment	271 447 413	(125 952 340)	145 495 073	269 225 061	(115 342 431)	153 882 630
Aircraft – propellers	3 481	-	3 481	-	-	-
Aircraft – engines	34 667	(2 491)	32 176	-	-	-
Library books and equipment	51 483	(43 787)	7 696	51 483	(41 060)	10 423
Air quality equipment	54 629 773	(25 168 971)	29 460 802	49 318 706	(20 687 838)	28 630 868
Meteorological equipment	77 945 988	(59 913 657)	18 032 331	71 540 461	(56 681 137)	14 859 324
Tools and other equipment	6 857 452	(3 541 646)	3 315 806	6 639 257	(2 936 510)	3 702 747
Total	**622 050 564**	**(326 195 672)**	**295 854 892**	**595 177 180**	**(291 456 986)**	**303 720 193**

Notes to the Annual Financial Statements (continued)

Figures in Rand

11. Property, plant and equipment (continued)

Reconciliation of property, plant and equipment – 2023

	Opening balance	Additions	Revaluations	Depreciation	Impairment loss	Total
Land – Garsfontein and Irene	14 958 044	-	(8 964 889)	-	-	5 993 155
Buildings – Irene and Bethlehem	5 145 885	-	132 624	(140 327)	-	5 138 182
Fence	1 226 942	567 693	-	(282 435)	-	1 512 200
Furniture and fixtures	4 988 784	1 724 091	-	(619 016)	(57 485)	6 036 374
Motor vehicles	131 857	270 000	-	(17 902)	(10 363)	373 592
Office equipment	1 757 068	695 346	-	(238 253)	(25 333)	2 188 828
Computer Equipment and servers	71 386 777	18 069 797	-	(13 084 700)	(1 035 075)	75 336 799
Leasehold improvements	3 038 843	166 584	-	(239 142)	(54 739)	2 911 546
Aircraft – airframes	-	16 852	-	-	-	16 852
Radar – equipment	153 882 631	2 222 351	-	(8 659 738)	(1 950 171)	145 495 073
Aircraft – propellers	-	3 481	-	-	-	3 481
Aircraft – engines	-	34 667	-	(2 491)	-	32 176
Library books and equipment	10 423	-	-	(2 728)	-	7 695
Air quality equipment	28 630 868	5 311 067	-	(3 583 130)	(898 003)	29 460 802
Meteorological equipment	14 859 324	6 405 527	-	(2 590 022)	(642 498)	18 032 331
Tools and other equipment	3 702 747	218 195	-	(530 261)	(74 875)	3 315 806
Total	**303 720 193**	**35 705 651**	**(8 832 265)**	**(29 990 145)**	**(4 748 542)**	**295 854 892**

Notes to the Annual Financial Statements (continued)

Figures in Rand

11. Property, plant and equipment (continued)

Reconciliation of property, plant and equipment – 2022

	Opening balance	Additions	Disposals	Revaluations	Depreciation	Impairment loss	Total
Land – Garsfontein and Irene	7 316 265	-	-	7 641 779	-	-	14 958 044
Buildings – Irene and Bethlehem	5 805 735	-	-	(515 119)	(144 730)	-	5 145 886
Fence	1 204 276	277 800	-	-	(255 134)	-	1 226 942
Furniture and fixtures	4 702 925	927 231	(45 861)	-	(595 511)	-	4 988 784
Motor vehicles	216 510	-	(71 481)	-	(13 171)	-	131 858
Office equipment	1 598 637	424 641	(6 747)	-	(243 468)	-	1 773 063
Computer Equipment and servers	78 544 306	5 434 258	(385 660)	-	(12 198 069)	(8 058)	71 386 777
Leasehold improvements	1 618 006	1 615 966	(1 452)	-	(193 677)	-	3 038 843
Aircraft – airframes	16 852	-	(16 852)	-	-	-	-
Radar – equipment	159 423 419	3 045 501	-	-	(8 586 289)	-	153 882 631
Aircraft – propellers	3 481	-	(3 481)	-	-	-	-
Aircraft – engines	34 669	-	(34 669)	-	-	-	-
Library books and equipment	13 891	-	-	-	(3 468)	-	10 423
Air quality equipment	27 213 728	4 858 573	(147 773)	-	(3 120 480)	(173 180)	28 630 868
Meteorological equipment	16 889 261	1 217 282	(42 299)	-	(3 204 920)	-	14 859 324
Tools and other equipment	3 825 864	403 922	(27 606)	-	(515 430)	-	3 686 750
Total	**308 427 825**	**18 205 174**	**(783 881)**	**7 126 660**	**(29 074 347)**	**(181 238)**	**303 720 193**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

11. Property, plant and equipment (continued)

Depreciation rates and impairment

No depreciation was recognised for aircraft engines in the financial year as there were no flight hours. Depreciation is based on the hours flown.

Revaluations

Reconciliation of surplus or (loss) recognised in the revaluation reserve in the statement of changes in net assets:

Revaluation of PPE

Land and building – revaluation

Land – Garsfontein and Irene	(8 964 889)	7 641 779
Building – Irene and Bethlehem	132 624	(515 120)
	(8 832 265)	**7 126 659**

Other information

There were no contractual commitments for the acquisition of property, plant and equipment entered into by the entity at the reporting date. The entity does not have assets pledged as security.

Details of properties

Bethlehem property (building)

If the property were stated historical cost basis, the amounts would be as follows: Historical cost	600 000	600 000
Accumulated depreciation	(252 000)	(240 000)
	348 000	**360 000**

The Bethlehem extension 24, Free State property, was revalued on 31 March 2023 by The Property Partnership CC, an independent valuer, regarding the provisions of the Property Valuations Professional Act 2000 (Act No. 47 of 2000). Valuations were made based on open-market value. The decrease in the carrying amount of the property was debited to the revaluation surplus.

The property includes Erf 1997, valued at R930 000 and Erf 2064, valued at R900 000, in the town of Bethlehem in the Free State province. Erf 1997, also known as 8 Dr Clark Street, Bethlehem, has an area of 1,487 square meters and includes a house and buildings.

Erf 2064, also known as 19 Gordon Dreyer Street, Bethlehem, has an area of 1,568 square meters and includes a house and outbuildings. The title deed of the Bethlehem property was not registered in the entity's name at the financial year end. However, the Minister of Public Works passed all rights, obligations and liabilities to the entity on the commencement of The SAWS Act 2001 (Act No. 8 of 2001).

Irene Property

The entity utilises Portion 110 of the farm Doornkloof 391 JR for scientific purposes for no consideration, which was fairly valued at R 3 272 730 for the land and R3 282 000 for the buildings on 31 March 2023. Property improvements include two interconnected offices, a workshop, storage wings, and some outbuildings and carports. The title deed is registered in the name of the Republic of South Africa. The property shall be used for research and experimental institute purposes. Valuations were made based on open market value.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

11. Property, plant and equipment (continued)

The property of 21.8182 hectares was valued on 31 March 2023 by The Property Partnership CC, Registration Number CK1897/025962/23, a qualified independent professional valuer.

Land – Garsfontein

The Land includes a portion of 412 and a portion of 423 of the farm Garsfontein 374, registration division JR, Gauteng. The total property size is 37,1116 ha. However, 11,4759 ha has been earmarked for administrative purposes. The property is located in the west off the N1 National Freeway and immediately north of Rigel Avenue (South) in the Waterkloof Heights suburb of Pretoria.

The property was valued at R 2 720 425 as at 31 March 2023 by The Property Partnership cc, Registration Number CK 1897/025962/23, a qualified independent professional valuer.

The valuer used the market data valuation approach, whereby similar properties' valuations are used as a motivation to value the property, which is an acceptable method to determine the value of this type of property.

12. Intangible assets

	2023			2022		
	Cost	Accumulated amortisation and accumulated impairment	Carrying value	Cost	Accumulated amortisation and accumulated impairment	Carrying value
Computer software	24 642 286	(21 028 496)	3 613 790	23 846 508	(18 617 498)	5 229 010
Servitude	1 500 000	(595 211)	904 789	1 500 000	(535 209)	964 791
Total	**26 142 286**	**(21 623 707)**	**4 518 579**	**25 346 508**	**(19 152 707)**	**6 193 801**

Reconciliation of intangible assets – 2023

	Opening balance	Additions	Amortisation	Impairment loss	Total
Computer software	5 229 010	795 778	(2 396 043)	(14 955)	3 613 790
Servitude	964 791	-	(60 002)	-	904 789
Total	**6 193 801**	**795 778**	**(2 456 045)**	**(14 955)**	**4 518 579**

Reconciliation of intangible assets – 2022

	Opening balance	Amortisation	Impairment loss	Total
Computer software	7 962 252	(2 721 884)	(11 358)	5 229 010
Servitude	1 024 792	(60 001)	-	964 791
Total	**8 987 044**	**(2 781 885)**	**(11 358)**	**6 193 801**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

12. Intangible assets (continued)

Other information

Intangible assets comprise computer software and a servitude. The servitude comprises the right of use of land for SAWS meteorological equipment from a property owned by AP Beckely in Bloemfontein. The servitude is amortised over the useful life of the meteorological equipment installed on the land. The impairment loss was recognised for software that was no longer in use.

The SAWS has no intangible assets whose title is restricted and whose carrying amounts have been pledged as security.

13. Change in estimate

During the current financial year, there was a change in estimate regarding depreciation due to changes in useful lives. Reassessments of useful lives were enacted due to discovering well-preserved assets that are still in use but nearing the end of their useful lives.

Effects of changes in the statement of financial performance:

Decrease in depreciation	(667 161)	(406 382)

Effects of changes in the statement of financial position:

Decrease in accumulated depreciation	(667 161)	(406 382)

14. Accounts payable from exchange transactions

Trade and sundry accounts payable	26 857 817	12 994 501
Payroll payables (PAYE and UIF)	3 000	354 779
Staff subsistence and travel allowances	82 609	28 804
	26 943 426	**13 378 084**

Trade and other payables are subsequently carried at amortised cost.

Spot rates at period-end		
GBP	-	19.0199
US Dollar	17.9698	14.4848
CHF	-	15.6446
EURO	19.5455	-

Unrealised foreign exchange gains and losses are calculated using the year end spot rate.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

14. Accounts payable from exchange transactions (continued)

Included in trade and other payables are foreign creditors	Currency	2023 Foreign currency	2022 Foreign currency	2023	2022
Envitech	USD	13 440	6 160	241 514	89 226
Vaisala	USD	43 112	-	774 714	-
Microsoft Ireland	USD	113 926	113 926	2 047 227	1 650 201
UK Met Office	GBP	-	99	-	1 881
World Meteorological Organisation	CHF	-	45 823	-	716 884
American Meteorological Society	USD	1 817	-	32 651	-
Eumetnet	EURO	310	-	6 059	-
		-	**-**	**3 102 165**	**2 458 192**

15. Employee benefit obligations

Defined benefit plan

Post retirement medical aid plan

All eligible employees of the entity, who joined the entity before 1 November 2008, excluding those that accepted the settlement offer in September 2011, receive a 100% subsidy of medical aid scheme contributions in retirement, provided that the employee belonged to a registered medical scheme before leaving the entity on the grounds of retirement, including early retirement and retirement due to ill-health and death. The subsidy is subject to a maximum cap amount. The Rand cap amount for 2023 is R3,173 (2022: R3,031), irrespective of the number of dependents. The Rand cap is expected to increase with healthcare cost inflation each year.

During the financial year, the number of employees eligible to receive post-employment medical aid subsidies from the entity was as follows:

	2023	2022
Current (In service) employees	15	17
Continuation members (Pensioners)	31	32
	46	**49**

The actuarial valuation of the liability regarding the post-employment medical aid benefit is performed on the statement of financial position date as summarised below. The 2023 valuation has been performed by an independent company of actuaries, Alexandra Forbes Consultants and Actuaries, registration number 2007/015447/07.

This actuarial valuation is based on economic assumptions as performed by Alexandra Forbes. These assumptions have resulted in a decrease in the present value of the liability due to the subsidy payments expected. The assumption for the net discount rate used for 2023 compared to the prior is 3,79% (Prior year: 3,24%). The return on Plan Assets is 12,20% compared to 11,40% in the prior year. In conclusion, these rates have resulted in a decrease in the actuarial liability.

Plan asset

Current service cost	1 726 000	1 774 000
Actuarial gains (losses)	(1 387 000)	133 000
	339 000	**1 907 000**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

15. Employee benefit obligations (continued)

Accrued liability

Current service cost	95 000	119 000
Interest cost	1 966 000	2 146 000
Actuarial loss/(gain)	(1 754 000)	(1 555 000)
	307 000	**710 000**

Movement in the defined benefit obligation

Balance 1 April	17 867 000	18 323 000
Current service cost	95 000	2 146 000
Interest cost	1 966 000	119 000
Actuarial gains	(1 754 000)	(1 555 000)
Benefits paid	(1 162 000)	(1 166 000)
	17 012 000	**17 867 000**

Changes in the fair value of plan assets are as follows:

Opening balance	15 703 000	15 228 000
Expected return	1 726 000	1 774 000
Actuarial gains/(losses)	(1 387 000)	(133 000)
Benefits paid	(1 161 000)	(1 166 000)
	14 881 000	**15 703 000**

Summary of the employee benefit obligation

Defined benefit obligation	17 012 000	17 867 000
Fair value of plan asset	(14 881 000)	(15 703 000)
	2 131 000	**2 164 000**

Amounts recognised in the statement of financial performance:

Current service costs	95 000	119 000
Interest costs	1 966 000	2 146 000
Expected return on plan assets	(1 726 000)	(1 774 000)
Actuarial (gain)/loss	(367 000)	(1 422 000)
	(32 000)	**(931 000)**

The entity expects to contribute R1 169 000 to its defined benefit plans in the following financial year.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

15 Employee benefit obligations (continued)

Key assumptions used

Assumptions used at the reporting date:

Discount rates used	12,20%	11,40%
Consumer price inflation	6,60%	6,40%
Medical cost trend rates	8,10%	7,90%
The expected increase in healthcare costs	65%	65%
Future changes in maximum state healthcare benefits	90%	90%

The expected return on plan assets is based on the market expectations at the beginning of the period for the returns over the entire life of the related obligation.

The two most important variables are the discount and medical aid inflation rates.

Other assumptions

Assumed healthcare cost trends rates have a significant effect on the amounts recognised in surplus or deficit. A one percentage point change in assumed healthcare cost trends rates would have the following effects:

	One percentage point decrease	One percentage point increase
Effect on the aggregate of the service cost and interest cost	-	-
Employer's accrued liability	16 841 880	17 182 120
Employer's service cost	94 050	95 950
Employer's interest cost	1 946 340	1 985 660
Employer's plan asset	14 732 190	15 029 810

Amounts for the current and previous four years are as follows:

	2023	2022	2021	2020	2019
Defined benefit obligation	17 012 000	17 867 000	18 323 000	16 920 000	19 223 713
Plan asset	(14 881 000)	(15 703 000)	(15 228 000)	(14 279 000)	(15 100 685)
	2 131 000	**2 164 000**	**3 095 000**	**2 641 000**	**4 123 028**

Defined contribution plan

The entity's policy is to provide retirement benefits to all its employees. The Pensions Fund Act regulates defined contribution provident funds.

Included in the defined contribution plan information is a Defined Benefit Plan.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

15. Employee benefit obligations (continued)

Short-term employee benefit

Leave pay accrual

Opening balance	9 751 196	10 887 780
Leave raised	16 733 516	16 206 811
Leave utilised/paid	(15 701 012)	(17 343 395)
	10 783 700	**9 751 196**

16. Unspent conditional grants and receipts

Unspent conditional grants and receipts comprise of:

Unspent conditional grants and receipts

Unspent public contributions and donations	24 638 235	30 772 828

Movement during the year

Balance at the beginning of the year	30 772 828	43 801 541
Additions during the year	6 133 835	7 967 926
Income recognition during the year	(12 268 428)	(20 996 639)
	24 638 235	**30 772 828**

Donor funds consist of funding received from various institutions. Memorandum of Understanding (MoUs) are entered between the entity and the funders to utilise the entity's expertise in meteorology.

17. Provisions

Non-current liabilities	250 968	268 198

Reconciliation of provisions – 2023

	Opening Balance	Utilised during the year	Total
Capped leave provision: non-current	268 198	(17 230)	250 968

Capped leave is calculated based on each employee's working days as of 31 July 2001, during the transition of the South African Weather Service from the national state department into a public entity. Adjustments to this provision relate to increases in salary rates, days claimed or payments through retirement, death or resignation.

18. Unspent government grant – conditional grant

Breakdown of unspent government grant – conditional grant

Opening balance	28 021 739	26 078 986
Government grant – capital expenditure	74 944 000	30 322 000
Income recognition during the year – capital expenditure	(49 252 335)	(28 378 617)
Other deferred income	327	(630)
	53 713 731	**28 021 739**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

19. Deferred income

Rental income	472 255	-
Income received in advance	1 650	-
	473 905	**-**

20. Revenue from exchange transactions

Commercial revenue		
Aviation	108 805 418	77 718 055
Aviation instruments – maintenance income*	1 667 987	1 099 840
Air quality revenue	628 629	985 498
Information fees	16 983 793	17 451 517
Regional Training Centre income	759 122	271 044
Lightning Detection Network sales	5 406 401	4 812 106
Sale of instruments	600 774	2 233 473
	134 852 124	**104 571 533**

Aviation instruments – maintenance income*

The SAWS entered into an operating lease agreement with the City of Tshwane Municipality and the Department of Transport, Eastern Cape Mthatha, for a period of three years, effective from 1 September 2021 to 30 August 2024, ACSA Kimberley and Upington for a period of five years, effective from 1 December 2022 to the 30 November 2027 as well as Air Traffic Navigation Services for a period of three years effective from 8 December 2022 to 8 November 2025. Air Traffic Navigation Services paid an amount of R531 287 in advance in October 2022. The SAWS bears all repairs and maintenance for the equipment. Upon termination of these contracts, all equipment, hardware and meteorological instrumentation supplied and installed by the SAWS shall be returned to the SAWS.

Operating lease income

2023	City of Tshwane	Airports Company South Africa – Kimberley	Airports Company South Africa – Upington	Department of Transport Eastern Cape – Mthatha	Total
Future minimum lease income not later than one year	455 839	205 162	282 737	279 928	1 223 666
Later than one year and not later than five years	189 933	861 633	1 187 428	116 637	2 355 631
	645 772	**1 066 795**	**1 470 165**	**396 565**	**3 579 297**

2022	City of Tshwane	Total
Future minimum lease income not later than one year	455 839	455 839
Later than one year and not later than three years	645 772	645 772
	1 101 611	**1 101 611**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022
21. Other income		
Miscellaneous income	5 122 733	1 203 194
Interest on debt	106 760	28 989
Recovery of accounts receivable	5 259	-
	5 234 752	**1 232 182**
22. Investment income		
Interest income		
Bank	5 155 533	789 175
23. Government grants and subsidies		
Operating grants		
Government grants	337 029 000	332 036 000
Conditional grants		
Government grants	49 252 335	28 378 617
	386 281 335	**360 414 517**
24. Public contributions and donations		
TETA SETA Grants	1 433 727	985 030
Donor funds – Other	11 222 439	20 996 639
	12 656 166	**21 981 669**
25. Employee related costs		
Salaries and wages	235 456 441	221 475 454
Expedition salary	234 160	222 225
Medical aid contributions	16 863 976	15 997 074
Unemployment Insurance Fund	1 013 243	962 724
Occupational health and safety	455 280	400 486
Post retirement medical aid	334 000	491 000
Overtime and shift allowance	15 501 802	14 842 435
Employee pension	15 070 338	14 444 504
Leave pay provision	959 969	516 902
Leave paid	631 827	(843 582)
	286 521 036	**268 509 222**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

26. Administrative expenditure

Administration fees	1 529 553	1 119 977
Audit expenses (Internal)	584 956	1 048 305
Bank charges	845 830	505 454
Board expenses	1 103 723	1 249 529
Conference costs	1 019 100	6 628
Entertainment	47 128	53 030
Entrance fees	360	-
Legal fees	4 274 478	1 107 244
Printing and stationery	345 381	423 710
Refreshments	121 624	62 475
Training	1 525 415	1 411 924
	11 397 548	**6 988 276**

27. Depreciation and amortisation

Property, plant and equipment	29 990 145	29 074 347
Intangible assets	2 456 044	2 781 885
	32 446 189	**31 856 232**

28. Impairment of assets

Impairments		
Property, plant and equipment	4 748 542	181 238
Intangible assets	14 955	11 358
	4 763 497	**192 596**

29. Bad debt expenses

Accounts receivable from exchange transactions – other	87 371	56 453
Statutory accounts receivable	4 350 024	1 607 581
	4 437 395	**1 664 034**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

30. General expenses

Aircraft expenses	385 384	264 194
Audit fees (external)	4 403 048	4 085 895
Cleaning	864 062	1 185 599
Communication costs	19 352 194	20 274 116
Computer and software licences	29 007 354	27 931 636
Computer expenses	815 665	16 665
Conferences and seminars	758 687	109 718
Consultants	3 500 110	6 132 265
Consumables spares	16 269 816	13 830 024
Electricity	6 362 665	6 639 771
Insurance	1 941 398	2 087 628
Leases and rentals	34 116 733	30 645 562
Levies	2 566 428	3 913 142
Motor vehicle leases	3 877 204	2 265 347
Placement fees (employees)	1 020 113	565 263
Postage and courier	1 308 131	339 178
Promotions and sponsorships	2 014 976	2 441 406
Publications	357 081	229 846
Repairs and maintenance	8 259 271	8 905 141
Security	3 504 304	3 375 584
Subscriptions and membership fees	1 701 113	7 820 152
Travel and accommodation	7 293 706	2 512 201
Venue expenses	200	2 336 254
	149 679 643	**147 906 587**

31. Gain/(loss) on foreign exchange

Gain/(loss) on foreign exchange	(2 391 050)	819 924

32. Fair value adjustments

Investment property	(13 494 606)	12 212 836

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

33. Cash generated from operations

(Deficit)/surplus	39 885 045	46 790 120
Adjustments for:		
Depreciation and amortisation	32 446 189	31 856 232
Loss/(gain) on sale of assets and liabilities	(469 099)	(463 131)
(Profit)/loss on foreign exchange	2 391 050	(819 924)
Fair value adjustments	13 494 606	(12 212 836)
Impairment deficit	4 763 497	192 596
Debt impairment	(5 259)	-
Bad debts written off	4 437 395	1 664 034
Movements in operating lease assets	(1 840 532)	(775 046)
Movements in the employee benefit obligation	999 505	(2 067 584)
Movements in provisions	(17 230)	(33 677)
Actuarial (gain)/loss	(367 000)	(1 422 000)
Interest income	(5 155 533)	-
Miscellaneous income	(1 300 653)	(1 129 988)
Changes in working capital:		
Inventories	(8 219 969)	(1 481 856)
Accounts receivable from exchange transactions – other	(2 160 330)	285 741
Receivables from exchange transactions – statutory receivables	(2 082 626)	(8 475 719)
Prepayments	(8 880 124)	1 403 771
Unspent government allocations – conditional grant	25 691 993	(22 289 640)
Accounts payable from exchange transactions	13 565 341	1 088 752
Unspent conditional grants and receipts	(6 134 593)	13 028 713
Deferred income	473 905	-
	101 515 578	**45 138 558**

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

34. Commitments

Capital expenditure

Approved and contracted		
• Computer equipment	399 346	3 453 892
• Office furniture	822 610	47 881
• Land and buildings	1 000 000	1 000 000
• Meteorological and technical equipment	29 678 420	8 977 501
• Computer software	19 235 010	-
• Fence	259 000	-
Approved but not yet contracted		
• Computer equipment	6 072 336	-
	57 466 722	**13 479 274**

Operational expenditure

Approved and contracted	60 211 500	67 944 258
Approved but not yet contracted	39 215 595	-
	99 427 095	**67 944 258**

Commitments split per period

Up to 12 months	58 305 727	40 274 811
Longer than 12 months	98 588 090	41 148 721
	156 893 817	**81 423 532**

35. Contingent liabilities

The table below sets out the contingent liabilities at year end with the maximum potential liability to the entity:

Contingent liabilities

Legal claims – court	123 791	835 886
Legal claims – labour court/court	1 284 697	1 284 697
Cash surplus to be retained	38 655 622	-
	40 064 110	**2 120 583**

Legal claims – court

1. On or about June 2018, the SAWS attorneys were instructed to defend a review application against the SAWS for awarding a tender for the lease of premises for the SAWS. The SAWS is disputing the attorney's bill amounting to R123 791.

Notes to the Annual Financial Statements (continued)

35. Contingent liabilities (continued)

Legal claims – labour court/court

2. The CCMA awarded a former employee an amount of R1 284 697. However, the SAWS is reviewing the award, and an urgent interdict was obtained from the Labour Court against the implementation of the award. The review process is ongoing.

Legal claim – service providers

3. Several service providers are suing the SAWS for alleged failure to issue severe weather warnings. Notices of intention to defend were filed, and initial consultations to prepare for defence have also taken place. The litigation amount cannot be determined. The matter is ongoing.

Cash surplus to be retained

4. The cash surplus to be retained – significant projects were completed in quarter four, and their goods or services were not yet delivered, hence the significant amount of commitments at year end. The SAWS Management will motivate to retain this amount.

36. Related parties

Relationships

The entity is deemed under common control with all the entities in the national sphere of government; therefore, these entities are considered related parties.

Entity structure

The SAWS was established in terms of national legislation as one of the government's essential scientific institutions providing information and services that directly impact the lives of citizens and their properties and contribute significantly to sustainable development in South Africa. The entity reports functionally to the Department of Forestry, Fisheries and Environment Affairs and therefore, the Minister of Forestry, Fisheries and Environment is the Executive Authority. The entity is governed by the Board as appointed by the Minister. The details of the Board members are disclosed below. The SAWS receive donor funds from the Department of Science and Innovation and the Water Research Council to finance some research projects.

The SAWS provides weather and climate related services to various entities in the national government. This includes the provision of services and instruments to public entities.

The SAWS further provides aviation services to the national carrier, which the national government controls. These services are provided on a cost recovery basis. The transaction amounts are included either in the Statement of Financial Performance as revenue from exchange transactions and related account balances in the Statement of Financial Position as a trade and other receivables from exchange transactions or in the respective notes.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

36. Related parties (continued)

Apart from transactions listed in the previous paragraph, the SAWS undertakes the following transactions with other entities in the public sector:

- PAYE, UIF, SDL and other payroll taxes are collected by the entity and remitted to the revenue authority monthly
- Basic services such as electricity, water and sanitation by local municipalities
- Air travel is supplied by the national carrier, which the national government controls
- Post-retirement benefits to former employees of the entity by the Government Pension Fund
- The collection of aviation and other related services revenue from entities controlled by the national government
- The provision of air quality equipment to municipalities

The transaction amounts for the above services are included either in the Statement of Financial Performance as expenditure and related account balances in the Statement of Financial Position as a trade and other payables or in the respective Notes.

The following related party transactions occurred during the financial year:

Revenue related		
Government grant and subsidies	337 029 000	332 036 000
Capital expenditure grant	47 683 725	18 205 173
	384 712 725	**350 241 173**

Notes to the Annual Financial Statements (continued)

Figures in Rand

36. Related parties (continued)

Remuneration of management

Management class: Executive management

2023

Name	Fees for services as a member of management	Basic salary	Other short-term employee benefits	Medical aid, UIF and pension	Acting allowance	Other benefits received	Total
Mr Abader I	Chief Executive Officer	1 831 060	219 727	240 163	-	67 868	2 358 818
Mr Mzizi NM	Chief Financial Officer	1 719 404	124 845	131 081	-	65 387	2 040 717
Dr Mphepya J	Executive Weather and Climate Services	1 877 260	45 101	56 485	-	65 206	2 044 052
Mr Ndabambi MF	Executive Infrastructure and Information Systems	1 282 452	520 543	175 728	-	65 521	2 044 244
Ms Dekker PA*	Executive Corporate Services	786 302	469 921	60 390	-	40 253	1 356 866
Ms Makongolo Z**	Acting Executive Corporate Services	1 047 367	185 609	80 678	88 516	48 789	1 450 959
		8 543 845	**1 565 746**	**744 525**	**88 516**	**353 024**	**11 295 656**

* Appointed in August 2022

** Acting as an Executive from April 2022 to July 2022

Notes to the Annual Financial Statements (continued)

Figures in Rand

36. Related parties (continued)

2022

Name	Fees for services as a member of management	Basic salary	Other short- term employee benefits	Medical aid, UIF and pension	Acting allowance	Other benefits received	Total
Mr Abader I	Chief Executive Officer	1 795 304	211 464	233 409	-	36 000	2 276 177
Mr Mzizi NM	Chief Financial Officer	1 683 467	-	196 559	-	157 800	2 037 826
Dr Mphepya J	Executive Weather and Climate Services	1 697 877	222 167	34 898	-	36 000	1 990 942
Mr Ndabambi MF	Executive Infrastructure and Information Systems	1 251 567	363 514	275 875	-	172 757	2 063 713
Ms Buthelezi B*	Executive Corporate Services	584 340	259 500	50 376	-	78 000	972 216
Ms Makongolo Z**	Acting Executive Corporate Services	1 023 407	175 219	162 766	127 794	24 000	1 513 186
		8 035 962	**1 231 864**	**953 883**	**127 794**	**504 557**	**10 854 060**

* Resigned on 30 September 2021
** Acting as an Executive from 6 October 2021

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

36. Related parties (continued)

Management class: Non-executive management

2023

Name	Fees for services as a member of management	Basic salary	Total
Ms Renqe F	Chairperson	236 174	236 174
Mr Phaduli I	Deputy Chairperson	218 260	218 260
Ms Magomola N	Non-Executive Member	123 612	123 612
Prof. Mpandeli S^	Non-Executive Member		
Mr Son G	Non-Executive Member	142 650	142 650
Dr Tau ME	Non-Executive Member	92 582	92 582
Ms Kgari M^	Non-Executive Member		
Ms Daya S	Non-Executive Member	150 666	150 666
Mr Lukey P*	Non-Executive Member		
Mr Kekana MJ#	Non-Executive Member		
Mr Amod A**	Independent Member of the ARC	8 517	8 517
Mr Theunissen R	Independent Member of the ARC	29 559	29 559
Ms Maharaj N	Independent Member of the ARC	54 108	54 108
Mr Maharaj S	Independent Member of the ARC	47 595	47 595
		1 103 727	**1 103 727**

* The term of office ended on 28 February 2023
\# Appointed on 1 March 2023
^ Board member works for government/public entity and thus was not remunerated
** Resigned on 21 April 2022

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

36. Related parties (continued)

2022

Name	Designation	Fees	Total
Ms Renqe F		134 595	134 595
Mr Phaduli I	Deputy Chairperson	102 266	102 266
Ms Magomola N	Non-Executive Member	217 523	217 523
Prof. Mpandeli S # ^	Non-Executive Member		
Mr Son G #	Non-Executive Member	31 104	31 104
Dr Tau ME #	Non-Executive Member		
Ms Kgari M # ^	Non-Executive Member		
Ms Daya S #	Non-Executive Member	31 590	31 590
Mr Lukey P # ^	Non-Executive Member		
Dr Dexter PD*	Deputy Chairperson	91 184	91 184
Adv. Block D*	Non-Executive Member	66 096	66 096
Mr Lefutso D*	Non-Executive Member	72 900	72 900
Dr Maila M* ^	Non-Executive Member		
Ms Mudly-Padayachie S*	Non-Executive Member	87 372	87 372
Ms Moroka-Mosia KS ###	Non-Executive Member		
Dr Khumalo T* ^	Non-Executive Member		
Mr Ndadana T	Independent Member of the ARC	42 954	42 954
Mr Labane G*	Independent Member of the ARC	59 292	59 292
Mr Maharaj S*	Independent Member of the ARC	55 404	55 404
		992 280	**992 280**

* The term of office ended on 31 December 2021
\# Appointed on 1 January 2022
^ Board member works for government/public entity and thus was not remunerated
Requested not to be remunerated

37. Prior-year error

Presented below are those items contained in the statement of financial position, statement of financial performance and cash flow statement that have been affected by prior-year adjustments:

Statement of financial position

2022

	As previously reported	Adjustments	Restated
Current liabilities			
Unspent conditional grant and reciepts	38 195 183	(10 173 444)	28 021 739

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

37. Prior-year error (continued)

Statement of financial performance

2022

	As previously reported	Adjustments	Restated
Revenue from non-exchange transactions			
Government grant and subsidies	350 241 173	10 173 444	360 414 617

Cash flow statement

	As previously reported	Adjustments	Restated
Cash flow from operating activities			
(Deficit)/Surplus	36 616 676	10 173 444	46 790 120
Unspent conditional grant	(12 116 197)	(10 173 444)	(22 289 641)

The correction of an error amounting to R10,173,444 is related to the repairs and maintenance, as well as system support and maintenance account. Government allocations/conditional grants are also used for the repairs and maintenance. For comparative purposes, the same principle has been applied to the prior year's disclosure.

Statement of financial performance

	As previously reported	Adjustments	Restated
Bad debts written-off	4 433 085	(2 769 051)	1 664 034
Other income	(4 001 233)	2 769 051	(1 232 182)

The correction of error is related to the bad debts written-off that were not taken off the provision for doubtful debts in the prior year.

38. Risk management

Financial risk management

Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, the availability of funding through an adequate amount of committed credit facilities and the ability to close out market positions. Due to the dynamic nature of the underlying businesses, entity treasury maintains flexibility in funding by maintaining availability under committed credit lines.

The entity's risk to liquidity is a result of the funds available to cover future commitments. The entity manages liquidity risk by reviewing future commitments and credit facilities.

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

38. Risk management (continued)

Cash flow forecasts are prepared, and adequate utilised borrowing facilities are monitored. Prudent liquidity risk management implies maintaining sufficient cash and obtaining a continued commitment from risk management implies maintaining sufficient cash and getting the continuous commitment from the Department of Forestry, Fisheries and Environment for the government grant and collecting aviation income from respective airlines. Due to the nature of the business, management maintains flexibility in funding by maintaining expenses below budget and continuously pursuing additional income via donor funding, information fees and the sale of lightning detection networks.

The table below analyses the entity's financial liabilities and net-settled derivative financial liabilities into relevant maturity groupings based on the remaining period at the statement of financial position 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.

Less than one year

2023	Trade and other payables	26 943 425
2022	Trade and other payables	13 378 085

Credit risk

Financial assets, which potentially subject the entity to risk.

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

Trade receivables comprise a widespread customer base. Management evaluated 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, risk control assesses the customer's credit quality, considering its financial position, experience and other factors. Individual risk limits are set based on internal or external ratings following limits set by the board. The utilisation of credit limits is regularly monitored. Sales to retail customers are settled in cash or using major credit cards. Credit guarantee insurance is purchased when deemed appropriate.

The maximum exposure to credit risk at year end was as follows:

Cash and cash equivalents	135 481 883	69 998 635
Accounts receivable from exchange transactions (excluding statutory receivables)	6 374 392	4 214 062

Market risk

Interest rate risk

The entity's exposure to market risk (in the form of interest rates risk) arises primarily from the entity's investment in cash and cash equivalents, accounts receivable and payable. The entity manages its interest rate risk by obtaining monthly competitive rates from approved financial institutions. The entity policy manages interest rate risk so that fluctuations in variable rates do not have a material impact on surplus/(deficit).

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022

38. Risk management (continued)

The entity's exposure to interest rate risk and the effective interest rates on financial instruments at the Statement of Financial Position date is as follows:

	2023 Effective interest rate	2022 Effective interest rate	2023	2022
Cash	4,36%	4,50%	135 481 883	69 998 635
Accounts receivable	10,75%	7,50%	19 972 580	15 729 624
			155 454 463	**85 728 259**

	2023 Effective interest rate	2022 Effective interest rate	2023	2022
Financial assets	7,56%	6,00%	155 454 463	85 728 259
Financial liabilities			(26 943 425)	(13 378 085)
			128 511 038	**72 350 174**

Foreign currency risk

	2023 foreign currency	2022 foreign currency	2023	2022
CHF Payables	-	45 823	-	716 884
USD Payables	172 295	120 087	3 096 107	1 739 427
GBP Payables	-	99	-	1 881
EUR Payables	310	-	6 059	-
			3 102 166	**2 458 192**

Sensitivity analysis

The entity is mainly exposed to CHF, GBP, EUR and US dollar currencies.

The following table details the entity's sensitivity to a 5% increase and decrease in Rand against the relevant foreign currencies.

The sensitivity analysis includes only outstanding foreign currency denominated monetary items and adjusts their translation at financial year end for a 5% change in foreign currency rates. A positive number below indicates an increase in surplus where the Rand strengthens by 5% against the relevant currency.

For a 5% weakening of the rand against the relevant currency, there would be an equal and opposite impact on the surplus, and the balances below would be negative.

	USD Impact		EUR Impact		CHF Impact	
Figures in Rand	2023	2022	2023	2022	2023	2022
	13 554	86 971	304	35 844	-	35 844

Notes to the Annual Financial Statements (continued)

Figures in Rand	2023	2022
39. Irregular expenditure and fruitless and wasteful expenditure		
Irregular expenditure	-	502 961
Closing balance	**-**	**502 961**

There were no irregular expenditures and fruitless and wasteful expenditures at year end. Please see the annual report.

40. Events after the reporting date

In May 2023, the Meteorological Authority was transferred to the South African Civil Aviation Authority. The total budget for the Meteorological Authority for April 2024 amounts to R275 405.

41. Heritage assets

The entity has acknowledged a heritage asset in line with GRAP 103 based on its scientific information's historical significance and environmental impact. The entity is the only institution legislated by Government in the country to provide early warning, climate and air-quality information to the public as legislated by Parliament through the SAWS Act. The intellectual and scientific information at the entity's disposal is over 150 years and will benefit future generations and, as such, needs to be protected and preserved. The SAWS management does not have old information to measure the heritage assets reliably.

For an asset to fulfil the requirements of being classified as a heritage asset, it has to meet the recognition criteria, which include reliable measurement of the cost of the heritage asset. Where an entity cannot reliably measure the heritage asset's cost, such an asset should be disclosed in the Annual Financial Statements. The SAWS cannot reliably estimate the cost of its heritage asset. Therefore, none has been recognized.

42. Going concern

The Annual Financial Statements have been prepared based on 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.

43. Authorisation for issue

The Annual Financial Statements were prepared by Finance Management and authorised for issue on 31 July 2023 by the Board.

Notes

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South African Weather Service

Eco Glades Block 1B, Eco Park,
Cnr Olievenhoutbosch and
Ribbon Grass Streets, Centurion, 0157
Private Bag X097, Pretoria 0001

Telephone: 012 367 6000
www.weathersa.co.za
Weatherline: Dial *120*7297#
Follow us on Twitter: @SAWeatherServic

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