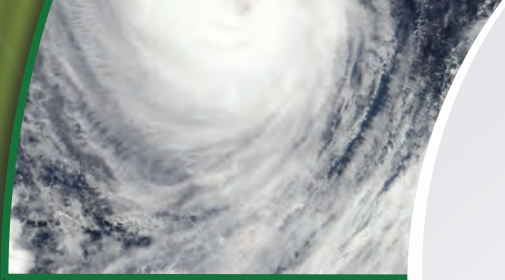

South African Weather Service

ANNUAL REPORT

2021/2022

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.

South African
Weather Service

South African Weather Service Annual Report 2021/2022

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PART A

1 PUBLIC ENTITY'S GENERAL INFORMATION

REGISTERED NAME:	South African Weather Service
REGISTRATION NUMBER (if applicable):	N/A
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EXTERNAL AUDITORS:	Auditor-General
BANKERS:	Standard Bank South Africa
COMPANY SECRETARY:	Ms Milicent Fatlane (Interim)

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2 LIST OF ABBREVIATIONS AND ACRONYMS

A-CDM	Airport Collaborative Decision-Making
A-RIP	African Regional Implementation Plan
ARS	Automatic Rainfall Station
AFI	Special Africa-Indian Ocean (region)
AFS	Annual Financial Statements
AGSA	Auditor-General of South Africa
AMDAR	Aircraft Meteorological Data Relay
APCC	African Project Co-ordination Committee
API	Application Programming Interfaces
APIRG	African Indian Ocean Planning and Implementation Regional Group
APP	Annual Performance Plan
ARDWE	Agriculture, Rural Development, Water and Environment
AQI	Air Quality Index
ATM	Air Traffic Management
ATNS	Air Traffic Navigation Services
AWS	Automatic Weather Stations
B-BBEE	Broad-based Black Economic Empowerment
BCP	Business Continuity Programme
Cb	Cumulonimbus (clouds)
CAP	Common Alert Protocol
CEO	Chief Executive Officer
CCMA	Commission for Conciliation, Mediation and Arbitration
CMAR	Coastal Marine Applied Research
CoS	Committee on Services

2 LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

COVID-19	Coronavirus disease of 2019
DBCP	Data Buoy Co-operation Panel
DFFE	Department of Forestry, Fisheries and the Environment
DRR	Disaster Risk Reduction
DSI	Department of Science and Innovation
E-AMDAR	EUMETNET Aircraft Meteorological Data Relay
EAP	Employee Assistance Programme
EC	Executive Council (WMO)
eNCA	eNews Channel Africa
ENSO	El Niño Southern Oscillation
EU	European Union
EUMETNET	European Meteorological Network
GANP	Global Air Navigation Plan
GAW	Global Atmosphere Watch
GBON	Global Basic Observing Network (WMO)
GDP	Gross Domestic Product
GFCS	Global Framework for Climate Services
GISC	Global Information Systems Centre (WMO)
GOOS	Global Ocean Observing System
GPC	Global Producing Centre
GPS	Global Positioning System
GRAP	Generally Recognised Accounting Practice
GTS	Global Telecommunication System
HCM	Human Capital Management

hPa	Hectopascal (unit of pressure)
HPC	High-Performance Computer
IBF	Impact-Based Forecasts
ICAO	International Civil Aviation Organization
ICT	Information and Communications Technology
IFRS	International Financial Reporting Standards
IGAD	Intergovernmental Authority on Development
INFCOM	Infrastructure Commission (WMO)
IPSAS 25	Public Sector Accounting Standard on Employee Benefits
ISO	International Organization for Standardization
LDCs	Least Developed Countries
LDN	Lightning Detection Network
LMM	Liverpool Malaria Model
MASA	Meteorological Association of Southern Africa
METP	Meteorological Panel (of ICAO)
MPLS	Multiprotocol Label Switching
MSA	Minimum Service Agreement
NACA	National Association for Clean Air
NCLB	No Country Left Behind (campaign)
NFCS	National Framework for Climate Services
NMHS	National Meteorological and Hydrological Services
NMS	National Meteorological Services
NSRI	National Sea Rescue Institute
OECD	Organisation for Economic Co-operation and Development
OPMET	Operational Meteorology
OTP	On-Time-Performance

2 LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

PES	Presidential Employment Stimulus
PRMA	Post-Retirement Medical Aid
QMS	Quality Management System
PABX	Private Automatic Branch Exchange
PAIA	Promotion of Access to Information Act
PFMA	Public Finance Management Act
POPIA	Protection of Personal Information Act
PR	Permanent Representative
Radar	Radio Detection and Ranging
RA I	Regional Association I
RODB	Regional OPMET Data Bank
RSMC	Regional Specialist Meteorological Centre
RTC	Regional Training Centre
RTS	Revenue Turnaround Strategy
RWC-SA	Regional WIGOS Centre – Southern Africa
SAAF	South African Air Force
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
SARCOF-25	Southern Africa Regional Climate Outlook Forum-25
SAWS	South African Weather Service
SBD	Standard Bidding Document

SC-AVI	Standing Committee on Aviation
SCM	Supply Chain Management
SERCOM	Commission for Weather, Climate, Water and Related Environmental Services and Applications (WMO)
SG	Secretary-General
SHEQ	Safety, Health, Environment and Quality
SIDS	Small Island and Developing States
SOFF	Systematic Observations Financing Facility (WMO)
SOLAS	Safety of Life at Sea (Convention)
STC	Specialised Technical Committee
SOT	Ships Observation Team
SPI	Standardised Precipitation Index
SYNOPS	Surface Synoptic Observations
SWIM	System Wide Information Management
TAF	Terminal Aerodrome Forecast
TETA SETA	Transport Education Training Authority Sector Education Training Authority
TLP	Total Lightning Processor
TFR	Transnet Freight Rail
TR	Treasury Regulations
UPS	Uninterrupted Power Supply
UTC	Co-ordinated Universal Time
VI	Ventilation Index
WG	Working Group
WIGOS	Integrated Global Observing System (WMO)
WMO	World Meteorological Organization
WPS	Workplace Skills Plan

3 MESSAGE BY THE MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

"The SAWS Marine portal was maintained and enhanced, with high-resolution marine forecast products achieving a target of 95% availability."

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

The 2021/2022 financial year has presented the South African Weather Service (SAWS) with unique challenges, given the important role it has had to play in not only predicting the weather, but also in modelling and analysing potential patterns of exposure of the population to various forms of air pollution.

During the year under review, SAWS had to continue performing its duties on a reduced budget. Despite this, the organisation showed some signs of financial recovery, with aviation income increasing as tourism started to open up. While this has been a positive sign, SAWS has not yet reached its pre-COVID-19 pandemic financial level, requiring consistent application of stringent cost containment measures.

Concerns regarding the SAWS infrastructure budget were partially mitigated through the receipt of R100 million from the Department of Forestry, Fisheries and the Environment (DFFE), spread over three years, to upgrade SAWS' infrastructure. Starting with an amount of R15 million in 2021/2022, this money will be used to strengthen, maintain and upgrade the existing infrastructure network and deal with some of the more urgent infrastructure needs.

Cost-cutting measures did not affect the organisation's ability to predict and warn of severe weather events. In the year under review, SAWS issued warnings for a wide range of weather hazards, including severe thunderstorms, heavy rains, extreme temperatures and strong winds, with predictions and warnings being 98% accurate. A total of 514 warnings were issued of which the bulk was for fire danger (273) and 126 for severe thunderstorms.

As the designated aeronautical meteorological authority for South Africa, SAWS has an obligation under 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 regulation of international civil air navigation in South Africa.

The Chicago Convention requires that air navigation services and related facilities must be consistent with international standards and recommended practices prescribed by the International Civil Aviation Organization (ICAO). SAWS has embarked on a process to transfer the meteorological authority function to the South African Civil Aviation Authority (SACAA). It is envisaged that this process will be completed in the 2022/2023 financial year.

SAWS continued to provide domestic and international aeronautical meteorological services to aviation industry users as per the South African Civil Aviation Authority (SACAA) Regulations. The pandemic necessitated the activation of existing disaster recovery and business continuity plans to ensure that user requirements were met. A total of 742 aerodrome warnings, with a 97,7% accuracy rate, were issued nationally. Seventy-eight percent of the warnings were for thunderstorms, with 94% of Terminal Aerodrome Forecasts (TAFs) issued being accurate. This exceeded the entity's target for the year of an 85% accuracy rate.

South Africans are keen weather watchers. It is noteworthy that in the 2021/2022 financial year 4,3 million listeners (7,1% of the population) tuned into weather forecasts and climate information provided by SAWS on 140 community radio stations. In addition, more than seven million television viewers and more than 42 million listeners (70% of the population) tuned into weather forecasts provided to the SABC's five TV and 19 radio stations, eTV and eNCA. The year under review also saw a 22% growth in SAWS' Twitter and Facebook following.

The SAWS Marine portal was maintained and enhanced, with high-resolution marine forecast products achieving a target of 95% availability. I have tasked the Regulating Committee to investigate the possibility of revenue generating through services that are provided to the maritime industry and South African Ports as it is believed that an opportunity exists for SAWS to provide specialised services to South African ports.

In the past year, South Africa received well-above normal rainfall over most of the country with temperatures continuing to rise. 2021 has been recorded as being the 13th hottest year on record since 1951. During 2021, the La Niña phenomenon resulted in above-normal rainfall over most of the summer rainfall region. However, certain areas in the western and southern interior still experienced persistent drought.

I am particularly delighted that SAWS has published the Regional Weather and Climate: South-Western Cape which consists of a comprehensive overview of the weather and climate of the extreme south-western part of South Africa. This publication covers a wide range of topics, including the prevailing wind, surface temperature, sunshine, radiation and precipitation conditions in the region as well as the evidence and impacts of climate change. This report is an extremely useful planning tool.

A study to investigate funding model options for the South African Earth Observation System infrastructure in South Africa was commissioned by the DFFE through financial support from the World Bank. The project will guide the DFFE on the optimal strategy to enhance the financial support needed for the implementation of the National Framework for Climate Services (NFCS).

A Revenue Turnaround Strategy (RTS), crafted in June 2021, identified strategic quick wins, with the focus on high revenue returns with minimal effort. A Commercial Committee has been assisting with the implementation of the RTS to grow the pipeline of revenue-generating solutions to support revenue growth targets.

I confirm that the 2021/2022 Annual Report of the South African Weather Service 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

"SAWS continued to maximise its research function purposed to provide reliable weather services to support public good and commercial ventures through observed and measured historical climate data"

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

During the 2021/2022 financial year, the South African Weather Service (SAWS) has continued to deliver on its mandate of providing South Africans and various industries with accurate and reliable weather and climate-related information for improved quality of life.

During this financial year, SAWS once again proved the importance of its role in the lives of our citizens by ensuring that early warnings of severe weather events were issued with the aim of lessening the impact of extreme weather on their lives. One needs to note the devastating floods that occurred in many parts of the country earlier this year, especially in KwaZulu-Natal where more than 456 people died across the province and where an unknown number of people remain missing. On behalf of the Department of Forestry, Fisheries and the Environment (DFFE) and SAWS, we would like to express our deepest condolences to the families who lost their loved ones.

It is pleasing to note the improvement in aviation revenue, the application of cost containment measures, the gains from investment property, and the resumption of some of the procurement processes following the many challenges brought about by the COVID-19 pandemic. The easing of travel restrictions by the Ministry of Health continues to improve air-traffic volumes, and various studies anticipate that the aviation industry will soon recover to pre-COVID-19 conditions.

During the year under review, SAWS continued to maximise its research function purposed to provide reliable weather services to support public good and commercial ventures through observed and measured historical climate data. SAWS published 36 scientific papers, exceeding the set target of 35 for the 2021/2022 financial year. During the first quarter, the organisation saw research findings published in 10 scientific publications, exceeding the set target of seven articles. Furthermore, the second publication in a new regional weather and climate publication series, was completed in the last year.

Two notable achievements for the Marine team have been the implementation, in testing mode, of a rip-current forecasting tool and their involvement with the Endurance22 Cruise during which the wreck of Sir Ernest Shackleton's ship, which was crushed by sea ice in 2015, was discovered by a team on board the SA Agulhas II. In collaboration

with the Coastal Marine Applied Research group (CMAR) based at Plymouth University, a rip-current forecasting tool was developed for the Cape Peninsula coastline. Rip-currents were monitored over the summer period (2021/2022) with the assistance of the National Sea Rescue Institute (NSRI) and the City of Cape Town lifeguard teams and these data will be used for validation. This rip-current forecasting tool will go a long way to warn beachgoers and lifeguards of impending rip-current conditions, with the primary aim of preventing beach drownings.

On the international front, one of the most significant World Meteorological Organization (WMO)-related processes was the appointment of the SAWS Chief Executive Officer as the Permanent Representative (PR) of South Africa. South Africa remains an active key player in aviation-related global and regional platforms, which includes the International Civil Aviation Organization (ICAO) MET Panel and operational meteorological work.

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 delegates of the two countries shared their expertise in delivering quality climate services.

South Africa participated in the Phase II technical session of the 18th session of the Regional Association I (RA I) Session held in August 2021. The meeting deliberated and provided insight on how the existing weather, water and climate information strategies and programmes could be harnessed.

From a sub-regional perspective, South Africa participated in the SADC Harmonisation Workshop convened in April 2021. The main objective of this session was to harmonise all regional meteorological efforts and programmes of the sub-region.

Subsequently, two sectoral workshops were held and co-ordinated by the Department of Water and Sanitation (for the water sector) and the Agricultural Research Council (for the agricultural and food sectors). SAWS will continue to participate in this process which, in the upcoming financial year, will require the development of a priority list of services which the engaged sectors require, and ideas around the development thereof.

As we reflect on the achievements and challenges of the year that was, it gives me great pleasure to join the Minister of Forestry, Fisheries and the Environment, and the SAWS Board and Management in presenting the 2021/2022 SAWS Annual Report. Words of appreciation also go to the leadership of SAWS and the staff in its entirety for their continued loyalty, support and contributions.

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Ms Makhotso Maggie Sotyu, MP

Deputy Minister of Forestry, Fisheries and the Environment

5 FOREWORD BY THE BOARD CHAIRPERSON

"Management's commitment and resilience in the delivery of the SAWS services in the disruptive economic environment presented by the ongoing COVID-19 pandemic (during the year under review) is commendable and I am satisfied with this performance."

Ms Feziwe Renqe
Board Chairperson
South African Weather Service

Introduction

It is my privilege to present the South African Weather Service (SAWS) Annual Report for the period 1 April 2021 to 31 March 2022 on behalf of the SAWS. This is the first Annual Report that is released under my leadership as the Chairperson of the SAWS Board.

Firstly, I would like to send my condolences to the families that lost their loved ones, families whose homes were destroyed, and the businesses that lost their assets during the devastating South African floods that occurred in some parts of the provinces in April 2022. The SAWS and its strategic partners will continue to issue impact-based severe weather warnings.

Secondly, I would like to take this opportunity to thank the former SAWS Board, led by Ms Nana Magomola, for the exemplary ethical and excellent leadership they provided to SAWS during their tenure that ended 31 December 2021. They have left a strong foundation for the new Board (whose term commenced on 1 January 2022) to continue providing oversight and strategic direction; ensure the implementation of the SAWS mandate; and take the entity to greater success. The former Board developed a detailed handover report for the new Board, and this has aided them in transiting smoothly into their role.

During the year under review, the Board ensured that SAWS operated within the relevant governance and legal prescripts. This is evidenced by the continuous improvements in our audit outcomes and the maintaining of an unqualified audit opinion from the office of the Auditor-General of South Africa, with notable significant improvements from the previous year. Furthermore, significant appointments were made to improve, among others, the governance and compliance matters in the entity. Among these was the appointment of the Company Secretary, the Internal Audit Manager, and their support staff as well as several appointments in the Supply Chain Management division of the entity.

Cabinet approved the appointment of the new CEO following the resignation of the former CEO. This was after a rigorous recruitment process that the Board followed and the Board's recommendation to the Minister in line

with the SAWS Act. The CEO was effectively appointed on 1 April 2021, and I strongly believe that under his leadership, the SAWS' strategic intent will be achieved.

High-level overview of the public entity's strategy and the performance of the public entity in its sector

SAWS is the authoritative voice for weather warnings in South Africa. It is a science-based, service-oriented and technology-driven entity. The SAWS aims to mitigate the impacts of severe weather, natural disasters and climate-related challenges by delivering public and commercial services to the public and weather sensitive industries. The Board continues to monitor the implementation of the SAWS' 2020/21 to 2024/25 strategic plan (the strategic plan) which was developed to ensure implementation of the core mandate. The Board acknowledges that the implementation of the strategic plan is critical to ensure that the entity continues to focus on its main priority, namely to provide science-based weather, climate and environmental solutions while simultaneously growing the entity. The entity also envisages to concurrently increase its scientific competence, provide user-friendly meteorological products and services and disseminate information in the most comprehensible, user-friendly way.

SAWS has completed the second year of its strategic plan. The strategy is implemented through the development of the Annual Performance Plan. The SAWS' 2021/2022 annual performance has improved by 12,14% when compared with the previous year (2021: 70% and 2022: 82,14%). This achievement was made possible through concerted efforts by Management and the employees of the SAWS, despite the challenging economic conditions that negatively affected SAWS' statutory commercial revenue from the aviation sector. Management's commitment and resilience in the delivery of the SAWS services in the disruptive economic environment presented by the ongoing COVID-19 pandemic (during the year under review), is commendable and I am satisfied with this performance.

Strategic relationships

SAWS has strong local, regional and global linkages - where best business practices and data are shared among members of the World Meteorological Organization (WMO); academia; industry and sector associations; and other bodies. These stakeholder relationships continue to remain a considerable strategic advantage for SAWS. As an example, the Republic of South Africa through the SAWS, is a member of the WMO, a United Nations (UN) agency responsible for meteorology (weather and climate), operational hydrology and related geophysical sciences.

In addition, the Republic of South Africa through the SAWS, fulfils the State's obligations under the Convention on International Civil Aviation by providing meteorological services and related facilities in support of international civil air navigation. At continental and sub-regional levels, the Republic of South Africa through the SAWS, actively participates in the African Ministerial Conference on Meteorology (AMCOMET); WMO Regional Association I (RA I) and SADC Sub-sectoral Committee (SCOM) for Meteorology. SAWS is also an active member of the Meteorological Association of Southern Africa (MASA), a subsidiary of SADC, which augments the work of the SADC SCOM on meteorology at the operational level.

Amongst other national and international engagements, SAWS was part of the South African delegation for the COP 26 Climate Change Convention and virtually attended the 26th session of the Conference of Parties to the Climate Change Convention held in Glasgow, United Kingdom, from 31 October to 12 November 2021. One of the SAWS scientists attended the meeting in person as his attendance was sponsored.

SAWS also provided technical inputs and participated in the technical segment of the 4th ordinary session of the specialised technical committee on Agriculture, Rural Development, Water and Environment that took place from 13 to 15 December 2021.

The Board commends Management for ensuring that these key strategic relationships are maintained at all times.

Challenges faced by the Board

The radar functionality and priority areas' air quality stations remained a challenge that persisted from the previous financial year. The availability of the CAPEX budget allocated for the medium term during the year under review is gradually assisting with the overall refurbishment and upgrade of the observations infrastructure. Power supply disruptions, theft and vandalism of infrastructure incidents continue to affect the stability of the infrastructure.

The illegal occupation problem of the SAWS' Garsfontein land persists. An action plan to mitigate the risks was developed and is being implemented by Management.

The strategic focus over the medium to long term

In the medium to long term, SAWS is geared towards achieving outcomes related to the protection of lives and property against meteorological-related risks and organisational sustainability. These outcomes will be derived as a result of outputs in the core operations of the entity which are focused on an enhanced meteorological-related body of knowledge, meteorological-related solutions provided to meet user needs, optimal core technological capability, and internal excellence achieved within the organisation.

The 2021/2022 financial year marks the second year of the implementation of the commercial revenue turnaround strategy. The strategy was enhanced during the year under review to include strategic initiatives that could be implemented to strengthen the SAWS' commercial position in the short and medium terms. The implementation of the commercial revenue turnaround strategy assists SAWS to increase revenue generation to supplement the already pressurised government funding for meteorological services.

In the long term, SAWS envisages realising a MEGA SAWS which includes key elements such as an optimal scientific workforce, best-in-class contemporary technology and increased revenues from multiple sources, underpinned by a high demand for SAWS' services and products.

Acknowledgements/appreciation

I would like to take this opportunity to acknowledge the role of Minister Barbara Creecy and Deputy Minister Makhotso Sotyu during the period under review and look forward to their continued guidance and support. I also want to specifically thank the Board Committees, the SAWS CEO and all SAWS employees for their continued support and hard work.

Conclusion

I proudly join the Minister and Deputy Minister in presenting the Annual Report.

Ms Feziwe Renqe

Board Chairperson

South African Weather Service

Date: 1 August 2022

6 OVERVIEW AND EXECUTIVE REPORT BY THE CHIEF EXECUTIVE OFFICER

"All targets under the SAWS Weather and Climate Services programme were achieved, which included the percentage availability of national weather information; accurate aerodrome warnings and terminal aerodrome forecasts; and the availability of marine products."

Ishaam Abader
Chief Executive Officer
South African Weather Service

The South African Weather Service (SAWS) is an entity of the Department of Forestry, Fisheries and the Environment (DFFE). SAWS is an ISO 9001:2015 certified provider of meteorological services as well as the national provider of weather and climate-related information.

The SAWS Board was succeeded by a new Board on 1 January 2022 and the organisation bid farewell to the former Board during December 2021. In January 2022, the SAWS welcomed its new Board Chairperson, Ms Feziwe Renqe, the new deputy Board Chairperson, Mr Itani Phaduli as well as a number of new Board members to the organisation.

Annual performance against targets

The organisation realised its mandate through the execution of four programmes during the 2021/2022 reporting period, namely Programme 1: Weather and Climate services; Programme 2: Research and Innovation; Programme 3: Infrastructure and Information Systems; and Programme 4: Administration.

All targets under the SAWS Weather and Climate Services programme were achieved, which included the percentage availability of national weather information; accurate aerodrome warnings and terminal aerodrome forecasts and the availability of marine products.

Our Research and Innovation programme aimed at enhancing the meteorological-related body of knowledge, thereby contributing to the protection of lives and property against meteorological-related risks. Our target to publish 35 research outputs was exceeded. In the same vein, SAWS achieved its target to develop user-specific solutions, with one new solution for climate-sensitive sectors and four enhanced climate-specific solutions being developed.

The management of SAWS' Infrastructure and Information Systems is key to optimal service delivery. Infrastructure ranges from automatic weather and rainfall stations, the Global Atmosphere Watch (GAW) station at Cape Point,

a radar network, a lightning detection network, as well as the equipment used in the South African Air Quality Information System. Apart from two targets that were not met, SAWS achieved all its other targets for this programme. Partial achievement of the targets related to the GAW programme were caused by instrument failure which resulted in less availability of the relevant infrastructure as well as the targeted data requirements of the Priority Areas Air Quality Stations. The latter was mainly due to prevalent and persistent electrical power surges at stations, causing malfunctioning equipment and downtime.

The Administration programme focused on sound governance; an adequate, appropriately skilled, transformed and diverse workforce; as well as brand positioning and stakeholder network development. Targets were achieved, except for acquiring our desired B-BBEE level 6 rating; growth in commercial revenue (R26,8 million against the target of R28,6 million); and the number of placements in work-integrated learning, due to an unexpected resignation.

In summarising our performance against the 2021/2022 annual performance plan, the entity achieved 82,14% of its annual targets, 14,29% of those targets were partially achieved, while 3,57% of the annual targets were not achieved.

Spending trends of the public entity

For the reporting period 2021/2022, SAWS spent within budget, realising a surplus of R36,62 million in the 2021/2022 financial year. This is attributed to the improvement in aviation revenue, the application of cost containment measures, the gain from investment property, and the suspension of some of the procurement processes in February and March 2022, due to the Constitutional Court judgement that impacted on the Preferential Procurement Regulations, 2017. This compares favourably with the deficit of R10,38 million incurred in the 2020/2021 financial year, which was mainly attributed to the reduction in revenue, especially aviation revenue. An in-depth discussion of these items is contained in the Executive Report.

Total revenue for the year was slightly below budget by 0,16% amounting to R481,58 million (Budget: R482,38 million), while total expenditure was below budget by 1,64% (Actual: R459,69 million).

Compensation of employees increased by 1,50% year-on-year to R268,51 million (2020/2021: R264,53 million) in line with the approved salary adjustments for the year, while Management continues to fill only those vacancies deemed critical to the functioning of the organisation.

Capacity constraints and challenges facing the public entity

With the effects of COVID-19 on the financial health of the entity, numerous vacancies could not be filled as planned. To this end, SAWS prioritised its 2021/2022 recruitment efforts towards filling those vacancies evaluated as critical. As a result, the filling of 25 positions was deferred as the entity could not afford to fill them, given our current financial constraints. Furthermore, an exercise was undertaken to review the organisational structure and ensure its relevance and alignment to the strategic intent of the entity and manage the exponential increase in employee costs. The entity was accordingly adversely impacted by capacity constraints and similar challenges during the preceding financial year.

The organisation's annual attrition rate for the year was 6,22%, which was within the targeted rate of less than 8%.

The target for the workplace skills plan of 75% was met. The organisation achieved a cumulative target of 87% during the reporting period.

Activities discontinued or new activities adopted

No activities were discontinued and no new or proposed key activities were adopted.

Requests for rollover of funds

The entity will request a rollover of surplus funds for the year ending 31 March 2022 if there is a cash surplus.

Supply chain management (SCM)

The SCM unit contributed towards the overall strategic effectiveness of SAWS by exceeding its target to spend 65% of the procurement budget locally on affirmative procurement (level 1 to 4), by achieving 91,26%.

Unsolicited bid proposals for the year under review

SAWS received two unsolicited bid proposals that were not accepted as they did not provide a unique solution to the organisation.

SCM processes and systems in place

The entity's SCM processes and systems are aligned to the National Treasury prescripts and the Preferential Procurement Regulations, 2017.

Challenges and resolution

To sustain its operations, the entity was allowed by the DFFE and National Treasury to convert its government infrastructure grant of R124,9 million into an operational expenditure grant for the year. This ensured that the entity was able to sustain its operations and pay employee costs. Cost-cutting measures were put in place to ensure that the budget was spent on areas of priority that supported the legislated organisational mandate and objectives.

The DFFE allocated R15 million during the financial year to the SAWS, as part of a R100 million grant that is to be provided over three years as a government infrastructure grant to replace ageing infrastructure and invest in new technology.

We would like to express our gratitude to the DFFE and the Minister for their continuous support to address the financial challenges during the reporting period.

Audit report matters in the previous year and how they would be addressed

Audit report matters are monitored monthly by the Executive Committee (EXCO) and the progress is reported to the Audit and Risk Committee on a quarterly basis. SAWS was able to resolve and address audit issues that were raised by the auditors, as reflected in the Management Report letters. Some work still needs to be done in addressing several legacy issues such as irregular expenditure incurred in previous financial years.

Management has prioritised these areas for resolution, while investigations and consequence management were conducted and applied during the year to resolve these matters. Where management had concluded investigations and application of consequence management, these matters were referred to National Treasury for condonation.

Plans to address financial challenges in the future

SAWS has embarked on a revenue turnaround strategy to increase its revenue generation and source external funding, and continues to have engagements with the Regulatory Committee for Meteorological Services (RCMS), where further revenue-generating opportunities are being explored in, among others, the Marine sector.

Events after the reporting date

There were no events after the reporting date that needed to be reported.

Economic viability

The low economic growth in South Africa as well as the COVID-19 pandemic resulted in a weak national economy and led to SAWS' government grant being decreased. We will continue to monitor events in the aviation industry and, based on the risks assessed, will engage both the RCMS and aviation stakeholders with the aim of ensuring that SAWS is properly funded and enabled to recover its costs from the aviation sector.

Acknowledgements

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 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.

Ishaam Abader
Chief Executive Officer
South African Weather Service
Date: 1 August 2022

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 with the Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA); Treasury Regulations; the Companies Act, 2008 (Act No. 71 of 2008) (in so far as it is applicable); 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 2022 were compiled on a going-concern basis as it is expected that SAWS will continue operations in the foreseeable future.

General review of the state of affairs

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 at large, as part of its public good mandate, for which a government grant is received to support these activities.

SAWS furthermore provides weather-related information to the aviation industry on a cost-recovery basis through a statutory commercial tariff. The Regulating Committee for Meteorological Services (RCMS) plays a pivotal role to ensure that the recommended tariff is just and fair to all parties involved. The RCMS 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 SAWS to provide weather and climate-related information to commercial clients, that is, various industries such as mining, insurance, tourism, telecommunication, municipalities and other international meteorological organisations.

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

In the previous financial year (2020/2021), SAWS incurred a deficit of R10,38 million which was mainly attributed to a reduction in revenue, especially aviation revenue. The improvement in the aviation revenue, the application of cost containment measures, the gain from the investment property, and the suspension of some of the procurement processes in February and March 2022, due to the Constitutional Court judgement on Preferential Procurement Regulations, 2017, contributed to a surplus of R36,62 million in the 2021/2022 financial year.

Financial analysis for the year

Revenue

The total revenue increased by 12,93% from R426,46 million to R481,58 million year-on-year, as presented in table 1 below.

Table 1: Movement in revenue - 2021/22 versus 2020/21 (year-on-year)

REVENUE	2021/22 R	2020/21 R	VARIANCE R	VARIANCE %
Revenue from non-exchange transactions				
Revenue from non-exchange transactions - Operational Expenditure	**350 241 173**	**361 125 173**	**(10 883 966)**	**-3,11%**
Government grant - operational expenditure	350 241 173	361 125 139	(10 883 966)	-3,01%
Contributions and donations	**21 981 669**	**3 505 941**	**18 475 728**	**526,98%**
TETA - SETA grant	985 030	332 833	652 197	195,95%
Donor funding - research projects	20 996 639	3 173 108	17 823 531	
Revenue from non-exchange transactions	**372 222 842**	**364 631 080**	**7 591 762**	**2,08%**
Revenue from exchange transactions				
Regulated commercial revenue				
Aviation	**77 718 055**	**32 511 248**	**45 206 807**	**139,05%**
Non-regulated commercial revenue	**26 853 478**	**25 049 591**	**1 803 887**	**7,20%**
Aviation instruments maintenance income	1 099 840	1 198 481	(98 641)	-8,23%
Information fees	17 451 517	16 143 487	1 308 030	8,10%
Air quality revenue	985 498	911 893	73 605	8,07%
Training - Regional Training Centre	271 044	392 750	(121 706)	-30,99%
Lightning detection network sales	4 812 106	4 803 755	8 351	0,17%
Sale of instruments	2 233 473	1 599 225	634 248	39,66%
Total commercial revenue	**104 571 533**	**57 560 839**	**47 010 694**	**81,67%**
OTHER REVENUE	**4 790 408**	**4 267 983**	**522 425**	**12,24%**
Miscellaneous income	1 203 194	246 350	956 844	388,41%
Recovery of accounts receivable	2 769 050	2 943 333	(174 283)	-5,92%
Interest received from receivables	28 989	343 594	(314 605)	-91,56%
Income from investments	789 175	734 706	54 469	7,41%
Revenue from exchange transactions	**109 361 941**	**61 828 822**	**47 533 119**	**76,88%**
TOTAL REVENUE	**481 584 783**	**426 459 902**	**55 124 881**	**12,93%**

Government grant

The total government grant revenue decreased by 3,11% (R10,88 million) from R361,13 million to R350,24 million year-on-year.

The government conditional grant of R124,90 million from the original government conditional grant of R140,23 million was converted into an operational grant. The COVID-19 pandemic and low national economic growth conditions hampered the entity's commercial activities and resulted in the shifting of funds which was critical in ensuring organisational sustainability.

Aviation revenue

Aviation revenue increased by 139% from R32,51 million to R77,72 million year-on-year. The improvement was more evident during the third quarter of the financial year due to the easing of COVID-19 restrictions which saw improved air-traffic volumes. Various studies anticipate that air-traffic volumes will recover to pre-COVID-19 conditions by 2024/2025.

Non-statutory commercial revenue

Non-statutory commercial revenue increased by 7,20% from R25,05 million to R26,85 million year-on-year. The increase is attributed to improved economic conditions in the economy following the improvement in managing the COVID-19 pandemic.

Donor funding revenue

Donor funds which are received by the organisation through collaboration with local and international institutions mainly for research-related projects in meteorology and climate services, increased by R17,82 million year-on-year from R3,17 million to R21 million. Revenue from these funds is recognised once the conditions attached to them have been met.

Revenue generated externally and internally

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	2021
Internal Revenue as % of Total Revenue	73%	85%
External Revenue as % of Total Revenue	27%	15%

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

EXPENDITURE

Total expenditure increased by 6,01% from R433,63 million to R459,70 million year-on-year.

Table 3: Total expenditure

DESCRIPTION	2021/22 R	2020/21 R	Variance R	%
Administrative	6 988 276	8 243 880	(1 288 958)	-15,64%
Employee costs	268 509 222	264 531 105	4 011 471	1,52%
Amortisation	2 781 885	2 914 895	(133 010)	-4,56%
Depreciation	29 074 347	28 034 160	1 040 187	3,71%
Bad debts written-off	4 433 085	436 293	3 996 792	916,08%
Other operating expenses	147 906 587	129 467 267	18 444 232	14,25%
TOTAL EXPENDITURE	**459 693 402**	**433 627 600**	**26 070 714**	**6,01%**

Employee costs

Compensation of employees increased by 1,50% year-on-year to R268,51 million (2020/2021: R264,53 million) in line with the approved salary adjustments for the year. Management continues to only fill critical positions and the filling of non-critical positions was deferred until the financial situation improves.

Operating expenditure

Other operating expenses increased by 14,24% (R18,44 million) from R129,47 million to R147,91 million year-on-year. The improved revenue experienced, allowed the growth in operating expenses for the organisation to deliver on its operational objectives.

Supply chain management system

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 Regulation 16A; cost-containment measures as issued by National Treasury; and other applicable legislative frameworks.

Post-retirement medical aid benefit

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. SAWS' liability on the Post-Retirement Medical Aid (PRMA) decreased from R3,095 million to R2,164 million in 2021/2022.

The PRMA liability represents a total of 49 employees, unchanged from the previous financial year. Out of the 49 employees, 32 are already on retirement/pension while the remaining 17 are still in service.

Budgeted revenue and expenditure compared to actual

Total revenue for the year is slightly below budget by 0,16% amounting to R481,58 million (Budget: R482,38 million), while total expenditure is below budget by 1,64% (Actual: R459,69 million).

Services rendered by the South African Weather Service

Services rendered by SAWS and the significant events that took place during the year, including major projects undertaken, are discussed in detail in Part B of this report.

Capacity and other constraints

Funding sources

SAWS' optimal productivity relies heavily on the availability of financial enablers to ensure that the desired yields on the investment are attained. It is in this context that SAWS continues to rely heavily on the support from 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 in the form of 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 of the funds between SAWS and the funders.

The approved and implemented commercial revenue turnaround strategy is expected to yield positive results in the medium to long term.

Operational capacity

As a scientific institution, SAWS continues to invest in its human capital through capacity building, while the modernisation of technology and the replacement of old infrastructure have been 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 assist in generating relevant applications in research that will assist Government in planning and decision-making processes.

SAWS Management is aware that the organisation must invest in new infrastructure to be sustainable and continue to deliver on its mandate.

An amount of R18,21 million was spent on infrastructure during the year, mainly on meteorological and technical equipment, as well as information communication technology which supports the technical infrastructure. The DFFE allocated R15 million in 2021/2022 to SAWS, part of a total of R100 million that is to be paid over three years as a government infrastructure grant, to replace ageing infrastructure and invest in new technology.

Employees

The SAWS attraction and retention strategy has been impacted by a lack of funding. The entity faces a strong challenge in ensuring that it keeps its employee turnover rate to a minimum. A conducive working environment is important for the entity to maintain this target.

The impact of COVID-19 on SAWS' revenue has resulted in the entity having to prioritise the filling of vacancies which were limited to critical and scarce skills only. This situation is being monitored on a regular basis, considering the entity's financial performance.

SAWS has a responsibility to create a larger pool of scientists and technologists with a greater focus on previously disadvantaged individuals. However, without the necessary financial resources, it is difficult to achieve these objectives. The award of bursaries has been impacted during the last two financial years due to the re-prioritisation of funds as part of the cost-containment measures impacting the organisation's transformational

focus. Notwithstanding, the entity has sourced external funding to provide bursaries and learning opportunities for its employees from the TETA SETA.

SAWS still provides bursaries to external students who, at the end of their studies, are given opportunities to work at SAWS, either by way of internships and/or full-time employment. Some of the students on the scientific internships are subsequently employed on a full-time basis.

Corporate governance arrangements

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

Risk management is disclosed under Note 35 in the Annual Financial Statements, whereas Related Party Transactions are reflected in Note 33. Disclosure of Remuneration to members of the Accounting Authority, independent members of the Audit and Risk Committee, and Executive Management, is provided in Note 33 in 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 on a regular basis and has oversight of management adhering to internal controls, accounting policies and procedures. All Committee members are independent members, while two of the members are also part of the Accounting Authority. The Chief Audit Executive manages the internal audit function, which comprises in-house and outsourced functions. 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 Report by the Audit and Risk Committee in Part C).

Performance information

Performance targets are set on an annual basis – refer to the specific section in the Annual Report for the disclosure of these targets and related performance. Quarterly performance reports are prepared by SAWS and submitted to the Department of Forestry, Fisheries and the Environment, stating achievements during the previous year and assessing results against current year targets. These targets are monitored on a quarterly basis and are also audited for accuracy.

Events after the reporting date

Management is not aware of any matter or circumstances arising since the end of the financial period which would affect the figures, as disclosed in the Annual Financial Statements.

Fruitless and wasteful expenditure

Fruitless and wasteful expenditure is disclosed under Note 36 of the Annual Financial Statements.

Irregular expenditure

Irregular expenditure is disclosed under Note 37 of the Annual Financial Statements.

Discontinued activities/activities to be discontinued

There were no discontinued activities during the period under review.

Ishaam Abader
Chief Executive Officer
South African Weather Service
Date: 1 August 2022

7 STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF ACCURACY OF 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 the preparation of the annual financial statements and for the judgements made in this information.

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

The external auditors are engaged to express an independent opinion on the annual financial statements.

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

Yours faithfully

Ishaam Abader

Chief Executive Officer

Date: 1 August 2022

Ms Feziwe Renqe

Chairperson of the Board

Date: 1 August 2022

MEMBERS OF THE BOARD
FROM 1 APRIL 2021 TO 31 DECEMBER 2021

CHAIRPERSON

Ms Nana Magomola

DEPUTY CHAIRPERSON

Dr Philip Dexter

BOARD MEMBER

Ms Sally Mudly-Padayachie

BOARD MEMBER

Mr David Lefutso

BOARD MEMBER

Adv Derick Block

BOARD MEMBER

Dr Mphekgo Maila


BOARD MEMBER
Mr Itani Phaduli


BOARD MEMBER
Ms Shirley Moroka-Mosia


BOARD MEMBER
Ms Feziwe Renqe


BOARD MEMBER
Dr Thuli Khumalo


CHIEF EXECUTIVE OFFICER
Mr Ishaam Abader

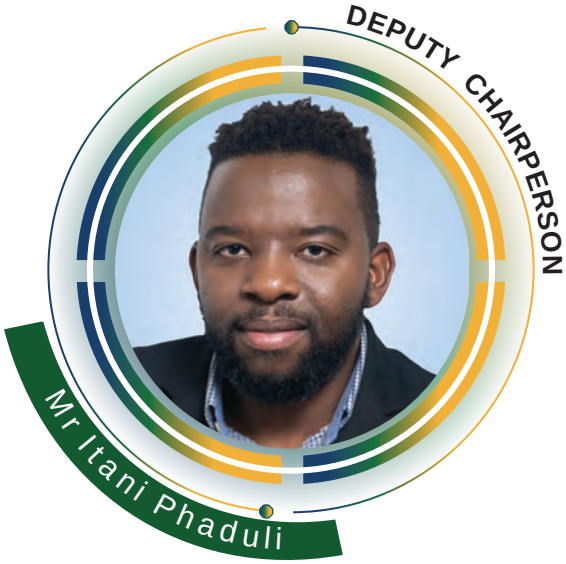

COMPANY SECRETARY
Ms Thandi Zide

MEMBERS OF THE BOARD
FROM 1 JANUARY 2022

CHAIRPERSON

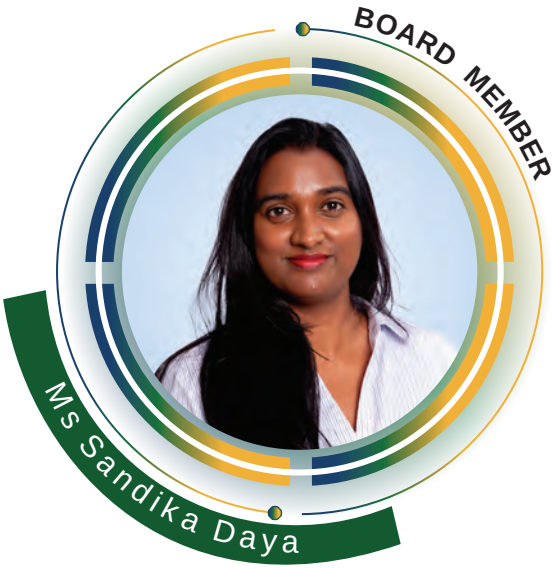
Ms Feziwe Renqe

DEPUTY CHAIRPERSON



Mr Itani Phaduli

BOARD MEMBER



Ms Sandika Daya

BOARD MEMBER

Ms Mmapula Kgari

BOARD MEMBER

Ms Nana Magomola

BOARD MEMBER

Prof Sylvester Mpandeli


BOARD MEMBER
Mr Grant Son


BOARD MEMBER
Dr Mmaphaka Tau


DFFE REP
Mr Peter Lukey


CHIEF EXECUTIVE OFFICER
Mr Ishaam Abader


INTERIM COMPANY SECRETARY
Ms Milicent Fatlane

EXECUTIVE MANAGEMENT
2021/2022

8 STRATEGIC OVERVIEW

8.1 Vision

"South African Weather-related Solutions for everyone, every day"

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

8.2 Mission

"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.

8.3 Values

- Integrity
- Collaborative
- Solution-oriented science
- Passion for service excellence

8.4 Strategic Objectives

SAWS is committed to working towards implementing initiatives in relation to its strategic output areas to ensure the realisation of 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

9 LEGISLATIVE AND OTHER MANDATES

The South African Weather Service is included in Schedule 3 (a) of the PFMA. It derives its mandate from the South African Weather Service Act, 2001 (Act No. 8 of 2001) as amended in 2013. During the financial year no legislative changes were implemented.

10 ORGANISATIONAL STRUCTURE

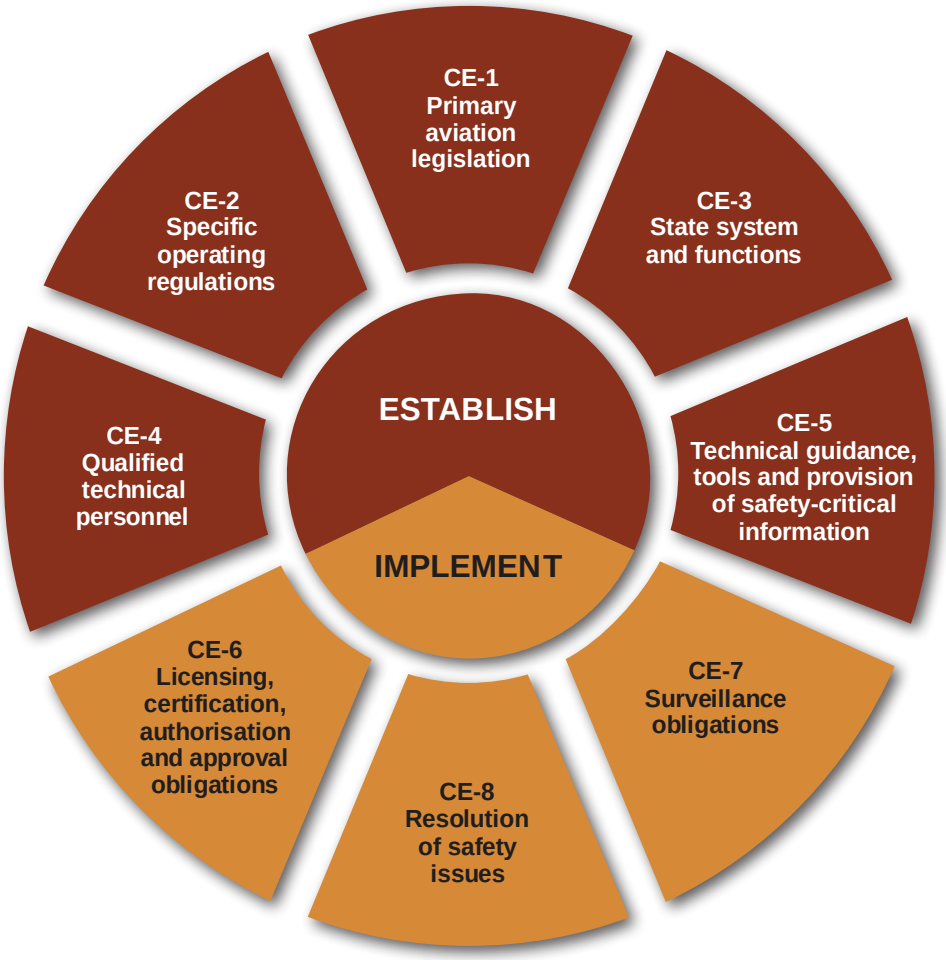
11 THE METEOROLOGICAL AUTHORITY

Overview

The Meteorological Authority is a regulatory body housed at the South African Weather Service (SAWS). As the designated aeronautical meteorological authority for South Africa, SAWS has an obligation under 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. Article 38 of the Chicago Convention requires that air navigation services and related facilities must be consistent with international standards and recommended practices prescribed by the International Civil Aviation Organization (ICAO), as set out in various annexures to the Chicago Convention.

In the area of aeronautical meteorology, the Meteorological Authority Unit is responsible for enforcing compliance with these international standards 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 implemented a safety oversight system which is anchored on eight critical elements:

Critical elements of the State safety oversight system



Safety oversight activities

During the year under review, the Meteorological Authority unit successfully implemented its annual surveillance programme resulting in the inspection of 26 airports across the country. The unit assessed issues relating to the maintenance and calibration of meteorological equipment at airports as well as the competencies and accreditation of personnel maintaining this equipment. 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: Summary of most common key findings per airport ownership

TYPE OF FINDING / OWNERSHIP	LACK OF PERSONNEL ACCREDITED	NON-COMPLIANT MET EQUIPMENT	LACK OF SERVICE LEVEL AGREEMENT (SLA)
Airports Company South Africa (ACSA)	0	0	0
Municipality	0	2	2
Provincial Government	2	1	1
Private	4	6	4
TOTAL	**6**	**9**	**7**

Aerodrome Licensing Forum (ALF)

During the reporting period, the Meteorological Authority continued to play a critical role in the aerodrome licensing process through participation in Aerodrome Licensing Forum (ALF) meetings. The ALF is a forum within the South African Civil Aviation Authority (SACAA) responsible for the issuing of aerodrome licenses to airports. The ALF convenes meetings of various stakeholders (including the Meteorological Authority) to report on the outcomes of their surveillance activities (i.e. inspections). The Meteorological Authority provides recommendations to the ALF regarding whether certain aerodromes should be licensed, or their licences be withheld or withdrawn due to safety issues identified through the implementation of its master surveillance plan (MSP).

Meteorological Authority function transfer

The SAWS has embarked on a process to transfer the Meteorological Authority function to the South African Civil Aviation Authority (SACAA). Key role players are involved in this process, namely, the Department of Forestry, Fisheries and the Environment (DFFE), the Department of Transport (DoT), the South African Civil Aviation Authority (SACAA) and the South African Weather Service. This process aims to ensure that the aeronautical meteorological service provision and regulatory oversight of such services are distinctively separated to eliminate conflict of interest. It is also to align with international best practices and national civil aviation policy.

During the year under review, a ministerial letter was completed, signed by Minister Creecy and sent to the Office of Minister Mbalula on 25 August 2021. The purpose of the ministerial letter was to seek concurrence from Minister Mbalula for the transfer of the Meteorological Authority function from SAWS to SACAA. Two processes commenced during this period, namely (a) the drafting of the enabling proclamation; and (b) the drafting of the project plan for the transfer.

Stakeholder engagement

While conducting its activities and contributing to the development and conduct of civil aviation globally and nationally, the Meteorological Authority engaged several stakeholders through various platforms. The key stakeholders that were engaged during the period under review include (a) Regulators; (b) airport authorities; (c) government departments; (d) airlines associations; (e) air navigation service providers; and (f) ICAO regional and international bodies.

PERFORMANCE INFORMATION

PART B

1 AUDITOR'S REPORT: PREDETERMINED OBJECTIVES

The 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 report to management, with no material findings being reported under the Predetermined Objectives heading in the report on other legal and regulatory requirements section of the Auditor's Report.

Refer to page **148** of the Auditors Report, published as Part E: Financial Information.

2 OVERVIEW OF PERFORMANCE

2.1 Service delivery environment

The South African Weather Service (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 that lives in harmony with its natural resources. SAWS provides reliable weather and climate information through its various products and services and 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.

Benefits derived from using SAWS products and services include:

- Safe, regular and efficient aviation operations, enabling ease of access to markets and various priority sectors, such as tourism and so forth.
- Risk management support for agriculture and fisheries, contributing to improvements in food security and the sustainability of rural livelihoods.
- Monitoring of water resources which enable shipping and other related blue economy activities.

2.2 Organisational environment

The strategic intent of SAWS is to create a nation that is WeatherSMART and able to deal with the impacts of climate change and weather-related disasters. This will be done through the provision of relevant meteorological products and services that can easily be accessed. SAWS must comply with various regulatory frameworks, national and international priorities as well as increased competition at various levels. A volatile economy and aviation industry, challenges linked to service delivery, globalisation and WMO's Resolution 40, which requires global data sharing with other countries, are all factors that could impact negatively on SAWS' agility, competitiveness and sustainability. Further risks that need to be managed include infrastructure maintenance, financial sustainability, commercialising SAWS products and services, emerging competitors, the attraction and retention of critical and scarce skills, information and knowledge management, innovation, and the safety and security of resources.

2.3 Key policy developments and legislative changes

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

2.4 Progress towards achievement of institutional impacts and outcomes

SAWS remains committed to the achievement of its strategic plan and the desired impact of contributing towards the realisation of an improved quality of life for everyone in South Africa. The impact will be realised through the attainment of outcomes relating to the saving of lives and the protection of property against meteorological-related risks, as well as organisational sustainability. 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.

To help achieve the outcome relating to the protecting of lives and property against meteorological-related risks, the entity monitored its ability to avail timely weather-related services and accurate aviation information. The availability of weather-related services was rated at 98,49%, and the aviation information accuracy achievement was at 96,85%, which compare favourably to the respective 2024/2025 targets of ≥96% and ≥90%.

In promoting the relevance of SAWS, the entity commits itself to engage vulnerable communities in weather and climate awareness raising activities. COVID-19 impeded the implementation thereof during the 2020/2021, however, the subsequent relaxation of COVID-19 regulations allowed the entity to participate in 16 public awareness programmes.

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 target to realise R53,1 million by the end of 2024/2025 is, however, still on track. SAWS continues to implement its Revenue Turnaround Plan in attempts to generate revenue from multiple sources. The entity had realised R26,8 million by the end of the financial year.

SAWS continues to be recognised as a scientific institution nationally and internationally. As a member of the World Meteorological Organization (WMO), SAWS is given certain responsibilities through designations conferred by the WMO. In addition, the entity managed to maintain a total of ten accreditations/certifications/designations which includes its ISO 9001:2015 certification.

A mid-term review of the progress made towards the achievement of the five-year targets, in relation to the outcome indicators, will be a task for the 2022/2023 financial year.

The SAWS Strategic Framework depicts the impact, outcomes and activities that will facilitate the assessment of the entity's contribution towards its strategic intent by the end of the 2023/2024 financial year.

Photo credit: Lucky Mthombeni (SAWS)

3 INSTITUTIONAL PROGRAMME PERFORMANCE INFORMATION

3.1 Programme 1: Weather and Climate Services

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

OUTPUT: Meteorological-related solutions provided to meet user needs

3.1.1 Sub-programme, output indicators and targets

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

- Percentage Availability of National Weather (FPZA41) (98%)
- Percentage Accuracy of Aerodrome Warnings (95%)
- Percentage Accuracy of Terminal Aerodrome Forecasts (85%)
- Percentage Availability of Marine Products (SOLAS) (95%)

3.1.2 Achievements

3.1.2.1 Warnings, alerts and advisories

During the year under review, where severe weather was expected, the performance was significant. In advance of the severe weather events, SAWS issued severe weather warnings to alert citizens of the impending extreme weather, as well as the impacts these conditions were likely to cause.

October is regarded as the start of the rainy season for the summer-rainfall parts of the country. Above-normal rainfall occurred over most parts of the country, due to the La Niña phenomenon, as was predicted in the seasonal forecasts. Many severe thunderstorms were experienced throughout most of the country, even in areas where these events are normally rare, such as in the Western Cape. The situation required for the SAWS to warn authorities and the public at large ahead of these extreme events. More life-saving information was communicated through numerous written media releases as well as video recordings for social media platforms.

The January-to-March period is the peak of the rainy season for the summer rainfall regions of the country, and this year, above-normal rainfall was experienced over most areas, as has been persistently predicted throughout the seasonal forecasts. The El Niño Southern Oscillation (ENSO) phenomenon was, during this period, in a La Niña phase and was the main driver for these above-normal rainfall conditions. This period under review, is also the peak of tropical cyclone season in the South-West Indian Ocean basin. In January of this year, Tropical Storm Ana's most outer rainbands caused some light-to-moderate rain over the northernmost parts of Limpopo province with very minimal impacts.

During the year under review, SAWS closely monitored all prevailing systems and kept stakeholders well informed. Extreme rainfall events over the eastern half of the country, especially during January and February 2022, posed threats of severe impacts to society. As such, situations required for the SAWS, before these extreme events, to warn disaster management authorities, and the public at large, through the established channels. More information

was communicated through numerous written media releases, as well as weather-related videos created and disseminated by the SAWS.

The severe weather warnings were supplemented by media releases to reach a wider audience and help mitigate the undesired impacts on society. The significant weather events of the period April 2021 to March 2022 are discussed below:

a) For the period 1 to 3 June 2021, a cut-off low was expected to cause extreme cold, heavy rain and disruptive snow over parts of the Eastern Cape and KwaZulu-Natal. A second event occurred from 28 June to 1 July 2021, when a series of cold fronts affected the Western and Northern Cape. Heavy rains occurred which resulted in flooding in numerous places as well as very strong and destructive winds. On both occasions, the reported impacts on the ground mirrored what was issued in the severe weather warnings to the public.

b) Two cold frontal weather events were experienced during the third week of July 2021. The latter of the systems brought dramatic cooling to large parts of the country, together with disruptive snowfall over the Western, Eastern and Northern Cape as well as the Free State provinces. Disruptive rainfall, damaging winds and waves were also expected from these weather systems.

Ahead of these expected extreme events, the SAWS issued a media release on Monday, 19 July 2021, in addition to the impact-based severe weather warnings which were carried on different media platforms. This period also saw an increase in media engagements by the forecasting offices which included a live television interview with eNews Channel Africa (eNCA) on Wednesday, 21 July 2021. The forecasted severe impacts materialised as forecasted, with extreme cold, indicated by the many records broken during this period. The table below depicts some of those temperature records that were broken.

Table 5: New temperature records

Station	Parameter	Old record (°C)	Date of old record	New record (°C)	Date of new record	Station age (years)
Bronkhorstspruit	Lowest minimum	-7,1	2011-07-02	-7,4	2021-07-23	12
King Shaka International Airport	Lowest minimum	2,1	2019-07-22	0,9	2021-07-23	11
OR Tambo International Airport	Lowest minimum	-6,3	1995-07-19	-7,0	2021-07-23	61
Kimberley	Lowest minimum	-8,1	2000-07-21	-9,9	2021-07-23	61
Mashishing	Lowest minimum	-3,2	2020-07-16	-4,3	2021-07-23	34
Venetia mine	Lowest minimum	0,9	2019-07-23	-0,1	2021-07-23	11
Port Alfred	Lowest maximum	11,7	2006-07-22	8,1	2021-07-22	20
Port of Ngqura	Lowest maximum	11,1	2009-07-23	10,0	2021-07-22	18
Patensie	Lowest maximum	10,2	2009-07-23	9,0	2021-07-22	32

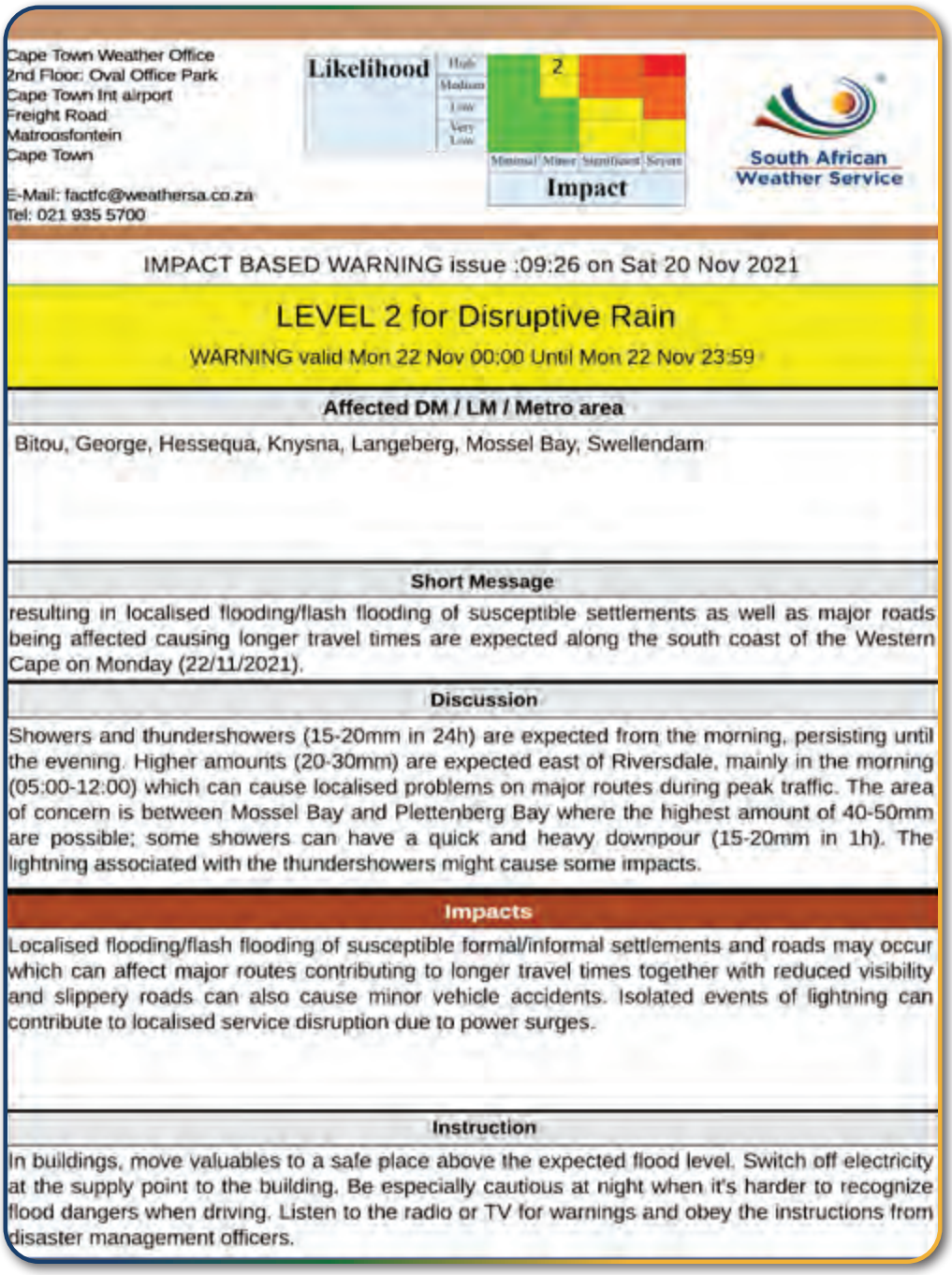
(c) From 12 to 15 August 2021, a significant weather event which was a result of a cold front as well as a cut-off low-pressure system, occurred. This system caused widespread cold to very cold conditions, snow which was heavy in places, resulting in the closure of some mountain passes, as well as strong winds. Severe weather warnings were disseminated well in advance of these events and were supplemented by a media release on 11 August 2021.

d) From 27 to 28 August 2021, an intense cold frontal system resulted in extremely low temperatures and widespread snowfalls.

e) During the afternoon of Sunday, 14 November 2021, a severe hailstorm was experienced in Mashishing, Ehlanzeni District of Mpumalanga, where large hail resulted in significant damage to property. Ahead of this event an initial Level 1 Yellow warning was issued in the morning and later escalated to a Level 5 Orange warning when it became clear that the impacts would be significant. Images of the damage caused by these storms are reflected below, by courtesy of the ReënvalSA Twitter profile.

Photographs of large hail by courtesy of the ReënvalSA Twitter profile

(f) On 22 November 2021, severe thunderstorms with heavy downpours were experienced in places over the Overberg and Garden Route Districts of the Western Cape. An intense weather system caused heavy downpours over the southern parts of the country during this period, and as a result, numerous flooding incidents occurred. This event was anticipated two days in advance, with a Yellow Level 2 warning issued accordingly, as depicted in the figure below.



Cape Town Weather Office
2nd Floor: Oval Office Park
Cape Town Int airport
Freight Road
Matroosfontein
Cape Town

E-Mail: factfc@weathersa.co.za
Tel: 021 935 5700

Likelihood

Impact

South African Weather Service

IMPACT BASED WARNING issue :09:26 on Sat 20 Nov 2021

LEVEL 2 for Disruptive Rain

WARNING valid Mon 22 Nov 00:00 Until Mon 22 Nov 23:59

Affected DM / LM / Metro area

Bitou, George, Hessequa, Knysna, Langeberg, Mossel Bay, Swellendam

Short Message

resulting in localised flooding/flash flooding of susceptible settlements as well as major roads being affected causing longer travel times are expected along the south coast of the Western Cape on Monday (22/11/2021).

Discussion

Showers and thundershowers (15-20mm in 24h) are expected from the morning, persisting until the evening. Higher amounts (20-30mm) are expected east of Riversdale, mainly in the morning (05:00-12:00) which can cause localised problems on major routes during peak traffic. The area of concern is between Mossel Bay and Plettenberg Bay where the highest amount of 40-50mm are possible; some showers can have a quick and heavy downpour (15-20mm in 1h). The lightning associated with the thundershowers might cause some impacts.

Impacts

Localised flooding/flash flooding of susceptible formal/informal settlements and roads may occur which can affect major routes contributing to longer travel times together with reduced visibility and slippery roads can also cause minor vehicle accidents. Isolated events of lightning can contribute to localised service disruption due to power surges.

Instruction

In buildings, move valuables to a safe place above the expected flood level. Switch off electricity at the supply point to the building. Be especially cautious at night when it's harder to recognize flood dangers when driving. Listen to the radio or TV for warnings and obey the instructions from disaster management officers.

Figure 1: Impact-based warning for the Overberg and Garden Route Districts issued on 20 November 2021

The expected extreme conditions materialised, with widespread reports of flooded roads, as depicted in the pictures below.

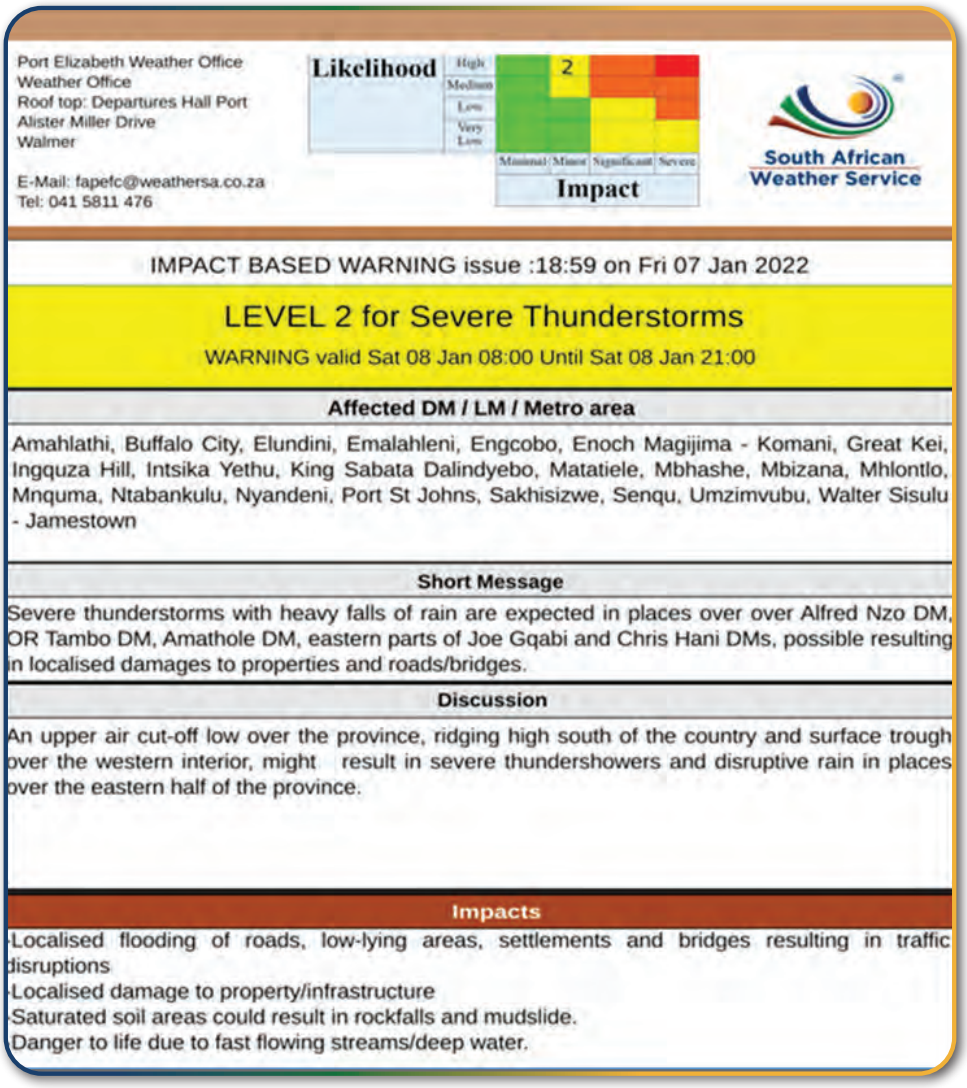
Unknown original source and photographer

(g) Severe thunderstorms, producing very strong, damaging winds, heavy downpours, excessive lightning, as well as large hail, were experienced over the eastern parts of the Eastern Cape on 9 December 2021. The most severe of these thunderstorms were in Baziya village in the King Sabatha Dalindyebo local municipality.

A Level 2 Yellow warning was issued before these conditions. There were reports of partial to complete destruction of settlements, damaged motor vehicles and injuries to people. Several small livestock were also killed by lightning strikes.

(h) Heavy rainfall resulting from thunderstorms was reported, with flooding observed over the Umtata and East London areas in the Eastern Cape on 8 January 2022. At least seven people were initially reported to have lost their lives during this event, but unfortunately, the number was later increased to ten as reported by Reuters, Flooding, January 2022. Ahead of this unfortunate event, SAWS' Regional Forecasting Office, responsible for the Eastern Cape province, issued a Yellow Level 2 Warning for severe thunderstorms on the evening of Friday, 7 January 2022. Several instances of damage, resulting from flooding of roads and settlements, were reported. According to the Buffalo City Metro Municipality, torrential rains left scores of houses and informal settlements in and around the metro, severely damaged. Numerous residents in the township of Mdantsane were displaced as roads in some parts of the area were completely submerged. The resulting rainfall measurements peaked at 58,4 mm in East London and 30 mm in Mthatha.

Photographs of floods in and around East London by courtesy of Floodlist, Buffalo City Metro Municipality



Port Elizabeth Weather Office
Weather Office
Roof top: Departures Hall Port
Alister Miller Drive
Walmer

E-Mail: fapefc@weathersa.co.za
Tel: 041 5811 476

Likelihood: High, Medium, Low, Very Low; Impact: Minimal, Minor, Significant, Severe; 2

South African Weather Service

IMPACT BASED WARNING issue :18:59 on Fri 07 Jan 2022

LEVEL 2 for Severe Thunderstorms

WARNING valid Sat 08 Jan 08:00 Until Sat 08 Jan 21:00

Affected DM / LM / Metro area

Amahlathi, Buffalo City, Elundini, Emalahleni, Engcobo, Enoch Magijima - Komani, Great Kei, Ingquza Hill, Intsika Yethu, King Sabata Dalindyebo, Matatiele, Mbhashe, Mbizana, Mhlontlo, Mnquma, Ntabankulu, Nyandeni, Port St Johns, Sakhisizwe, Senqu, Umzimvubu, Walter Sisulu - Jamestown

Short Message

Severe thunderstorms with heavy falls of rain are expected in places over over Alfred Nzo DM, OR Tambo DM, Amathole DM, eastern parts of Joe Gqabi and Chris Hani DMs, possible resulting in localised damages to properties and roads/bridges.

Discussion

An upper air cut-off low over the province, ridging high south of the country and surface trough over the western interior, might result in severe thundershowers and disruptive rain in places over the eastern half of the province.

Impacts

-Localised flooding of roads, low-lying areas, settlements and bridges resulting in traffic disruptions
-Localised damage to property/infrastructure
-Saturated soil areas could result in rockfalls and mudslide.
-Danger to life due to fast flowing streams/deep water.

Figure 2: Impact-based yellow level 2 warning issued on 7 January 2022

(i) During the middle of January 2022, a series of intense weather systems resulted in the influx of moist tropically-sourced air over parts of the central and eastern parts of the country. These conditions resulted in heavy rainfall from thunderstorms being reported in parts of KwaZulu-Natal and neighbouring provinces. The severely affected areas were the towns of Ladysmith and Msinga, where widespread flooding events took place on the weekend of 16 to 17 January 2022. According to Timeslive Media House, many families were evacuated and rescued through a collaborative effort between the Al-Imdaad Foundation, the South African Police Service (SAPS) Canine Unit, Police Search and Rescue as well as Disaster Management. Several severe thunderstorm warnings were issued on several days (11 and 16 January) for the south-western and western parts of KwaZulu-Natal for heavy rainfall, flooding and hail.

Photographs of the flooding in Ladysmith by courtesy of Al-Imdaad Foundation

Figure 3: Severe storm warnings issued for parts of KwaZulu-Natal on 16 January 2022

(j) During the first week of February 2022, an intense weather system affected the north-eastern provinces of South Africa. This event resulted in widespread flooding and damage to infrastructure, such as roads and bridges, as well as formal and informal settlements in the City of Tshwane Metropolitan Municipality. On the morning of 4 February 2022, SAWS issued a Yellow Level 4 warning for disruptive rainfall leading to widespread flooding, and later upgraded the warning in the evening to an Orange Level 6 warning. Significant flood damage was reported across the City of Tshwane Metro, with at least four people reported to have lost their lives, while many others in the informal settlements were displaced.

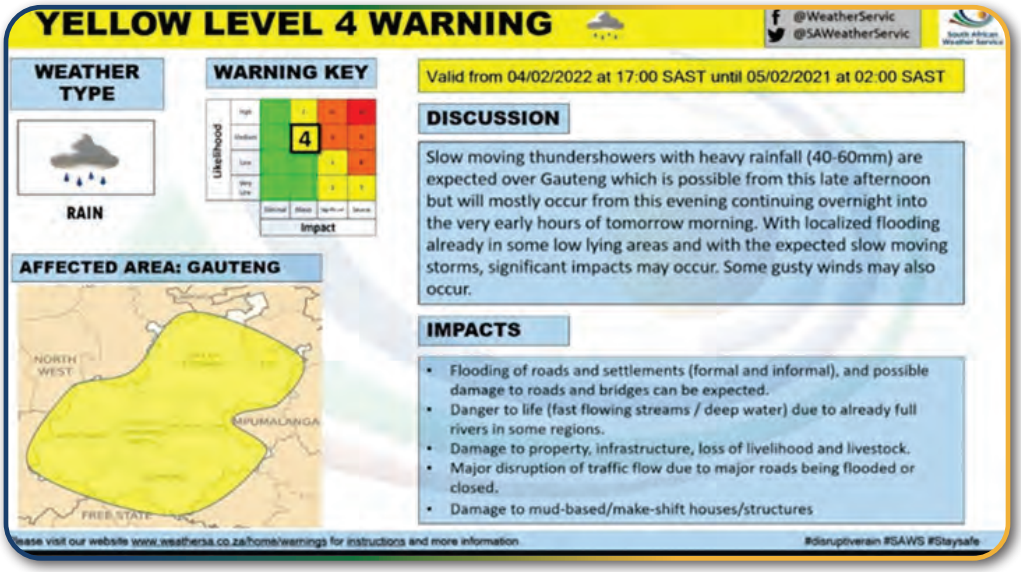


Figure 4: Disruptive rain yellow level 4 warning issued for parts of Gauteng on 4 February 2022

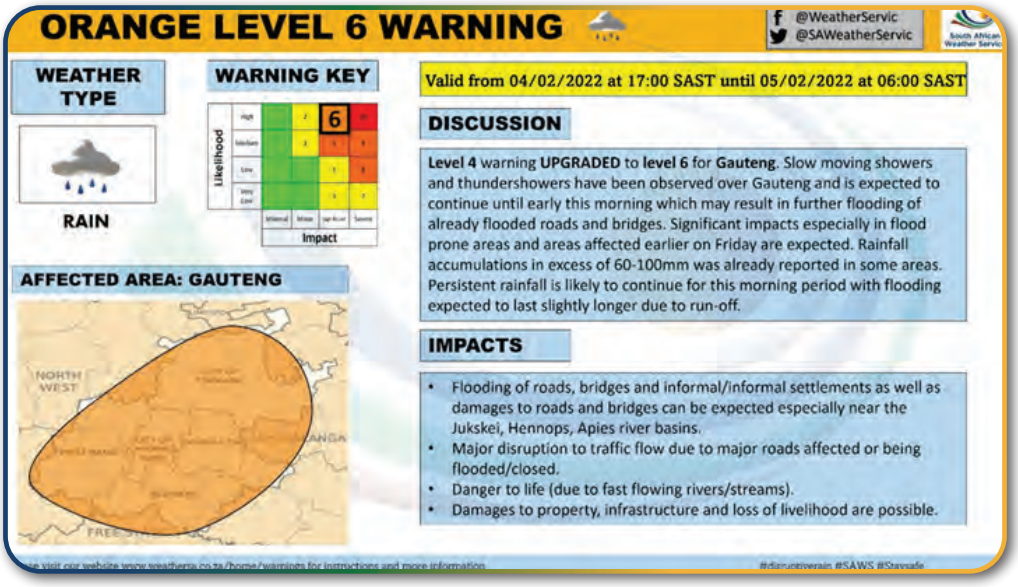


Figure 5: **Orange level 4 warning issued for parts of Gauteng on 4 February 2022, upgraded to orange level 6**

During the year under review, SAWS issued 514 warnings in total, of which the majority (399) warnings were for high fire danger (273), followed by severe thunderstorms (126).

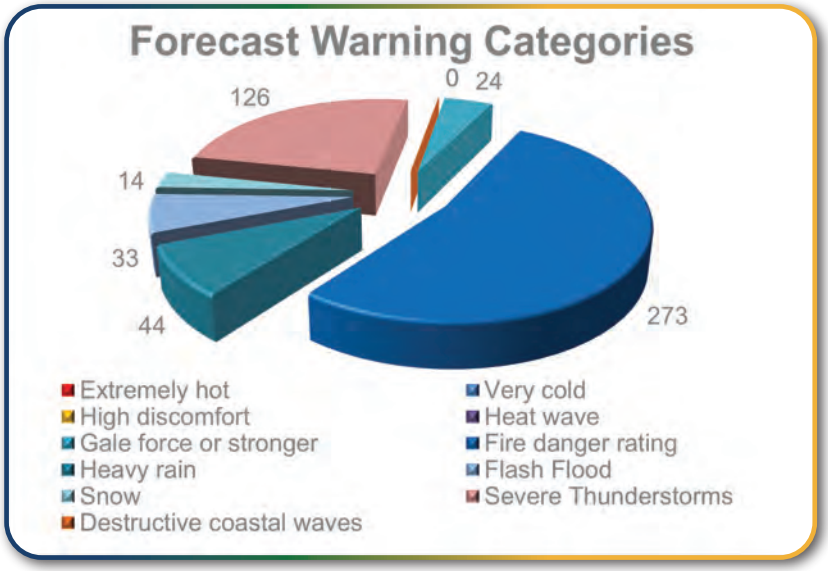


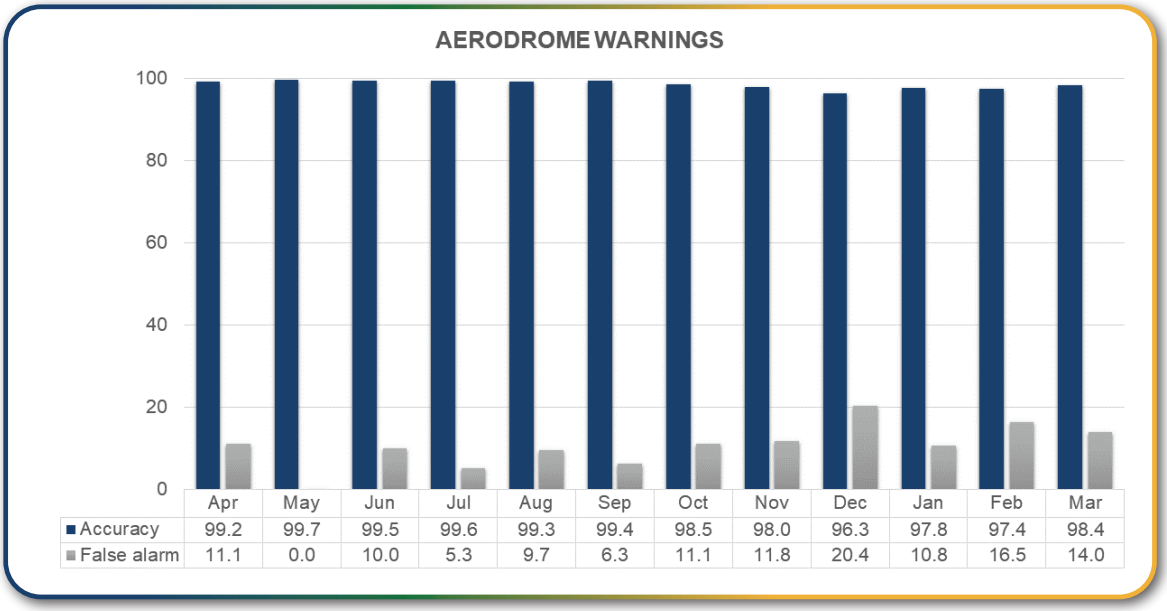
Figure 6: **Forecast warnings issued**

3.1.2.2 Aviation Meteorological Services

During the period under review, SAWS continued to provide the required Aeronautical Meteorological Service to the aviation industry users, both domestic and international. The services were provided as per Annexure 3 – Meteorological Service for International Air Navigation and the South African Civil Aviation Authority (SACAA) Regulations, Part 174. This was achieved amid the COVID-19 pandemic, which significantly impacted operational activities and the health and safety of personnel. It necessitated the activation of existing disaster recovery and business continuity plans to ensure that user requirements were met.

It has been during these trying times where SAWS' quality management system (QMS) and the quality control mechanism played a significant role in ensuring that the required level of quality is achieved and exceeded in some cases.

During the year under review, 742 aerodrome warnings with a 97,7% accuracy (figure 7) were issued nationally. The aerodrome warnings issued were mainly for thunderstorms (78%) as seen in figure 8.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Accuracy	99.2	99.7	99.5	99.6	99.3	99.4	98.5	98.0	96.3	97.8	97.4	98.4
False alarm	11.1	0.0	10.0	5.3	9.7	6.3	11.1	11.8	20.4	10.8	16.5	14.0

Figure 7: Monthly accuracies of aerodrome warnings

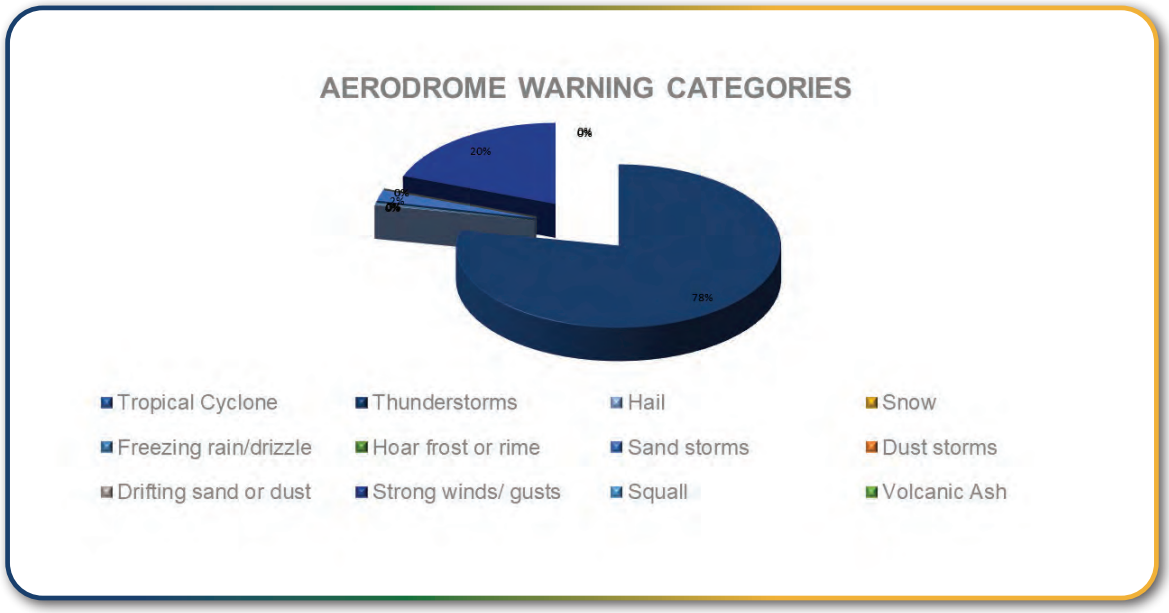


Figure 8: Types of aerodrome warnings issued

The Terminal Aerodrome Forecast (TAF) is used by the aviation industry for planning purposes such as determining the amount of load to be carried on the aircraft and the best time when the flight can be operated in a safe manner. During the period under review, an accuracy of 94,4% for TAF was achieved, which is higher than the APP target of 85% (see figure 9). Another significant aspect to note is the low false alarm rate of 10,6%, which can be attributed to the high skills level (84,9%) of personnel.

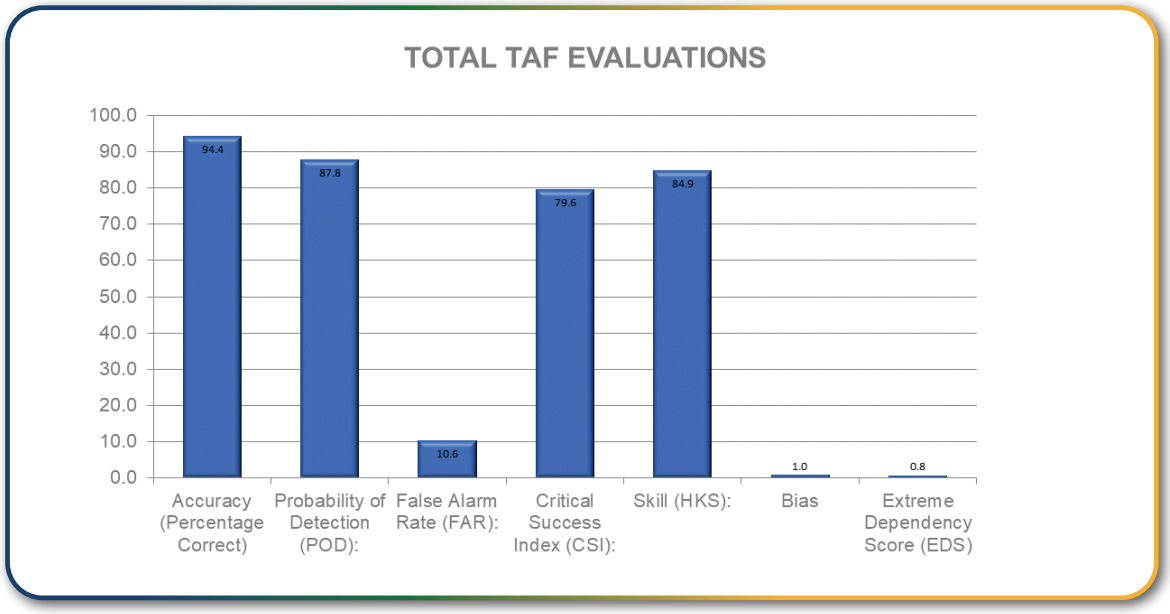
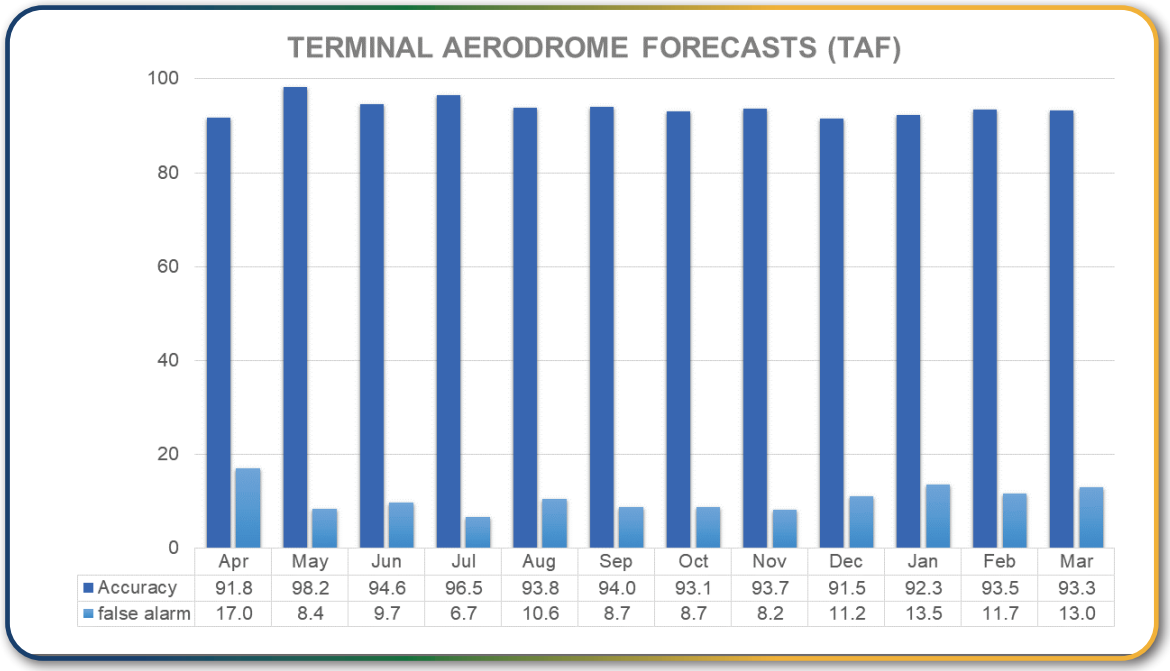


Figure 9: Achieved annual accuracies on terminal aerodrome forecasts

The average monthly accuracies of TAF during the reporting period remained above 90%, while the false alarm rate remained at an average of 10% (see figure 10).



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Accuracy	91.8	98.2	94.6	96.5	93.8	94.0	93.1	93.7	91.5	92.3	93.5	93.3
false alarm	17.0	8.4	9.7	6.7	10.6	8.7	8.7	8.2	11.2	13.5	11.7	13.0

Figure 10: Monthly accuracies on terminal aerodrome forecasts

3.1.2.3 Website and collaborative decision-making activities

Airport Collaborative Decision-Making (A-CDM) activities are currently conducted virtually via a scheduled daily call and the following stakeholders are involved: (a) air traffic controllers, Central Airspace Management Unit; (b) Airport Management Centre; (c) ground operators; and (d) airlines' representatives. The aim of A-CDM is 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 SAWS in the A-CDM is to provide information to airlines and other airport users about inclement weather that may affect the safe operation of their activities. This is achieved by encouraging the airport partners to work closely together in a collaborative environment, by exchanging relevant, accurate and timely information. The focus is especially on aircraft On-Time-Performance (OTP) and to minimise delays. This activity has continued efficiently for the duration of the COVID-19 pandemic.

A noticeable increase in the usage of the aviation website has been recorded towards the end of the reporting period, with 2 757 968 hits recorded. The products mainly accessed were METARs with 496 852 views, TAFs with 503 725 views and radar images with 578 213 views. There was also a steady increase in the number of domestic and international flight documents downloaded by aviation users. On average, downloads of 10 162 and 2 565 per month, respectively, were recorded.

Flight documentation provides users with meteorological information for situational awareness along the complete flight path, including alternative paths and destinations. For both domestic and international flight paths, the information is generated by the Aviation Weather Centre (at OR Tambo) and World Area Forecast Centres, respectively, and presented in the form of graphical charts referred to as significant weather charts. The charts depict, geographically, areas where hazardous meteorological conditions such as jet streams, wind/temperature, turbulence, icing, and cumulonimbus (Cb) clouds exist or are expected.

3.1.2.4 Aircraft Meteorological Data Relay (AMDAR data)

The Aircraft Meteorological Data Relay (AMDAR) and the African Regional Implementation Plan (A-RIP) were developed for the WMO Regional Associations. AMDAR is based on the automated measurement and transmission of meteorological data from an aircraft's platform. This data primarily consists of high-quality air temperature and wind measurements derived from existing aircraft sensors. The data is an important contribution to the WMO Integrated Global Observing System (WIGOS) and is of high value to the global meteorological community. This data has proven to increase the accuracy of numerical weather predictions with benefits to all users of weather forecasts.

The year under review has seen a reduced collection of AMDAR data, due to the COVID-19 restrictions and this had an impact on the numerical weather prediction model performance. The pandemic led to the closing of international borders, stay-at-home orders and a significant reduction of flights being operated worldwide. This saw a decline from the SA-AMDAR programme that, prior to March 2020, produced more than 6 200 monthly profiles through a fleet of approximately 43 aircraft. This has since been reduced to less than 500 profiles per month. The aircrafts' observations, in the form of AMDAR and Special Air reports, are assimilated into the model during its initialisation phase to provide temperature and wind observations and, to a lesser extent, humidity data in the upper troposphere, but also in lower atmosphere for take-off and landing.

The South African situation compares unfavourably with Europe, where regional airlines continued operating and maintained their aircraft observations at the 250 hPa level. Of course, the distribution of aircraft-based observations is not constant across the globe, and this is shown in figure 11 below, which is a snapshot of aircraft data coverage at 12 UTC on 1 February 2022. Increased aircraft reports in the data-sparse areas could be expected to improve model performance, particularly in the Southern Hemisphere.

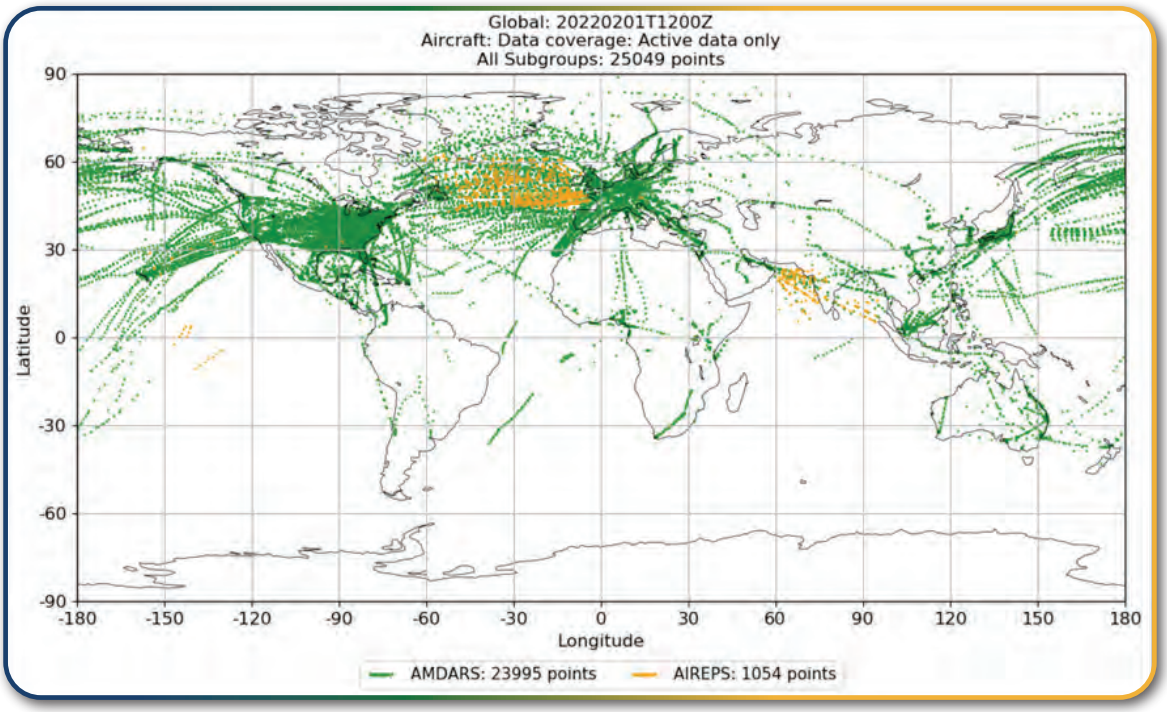


Figure 11: Aircraft observation network coverage, 12UTC, 1 February 2022 (source METPWGMOG/17)

The EUMETNET Aircraft Meteorological Data Relay (E-AMDAR) licence agreement with European carriers was renewed. The data is used for scientific research and educational purposes, the performance of weather forecasting, weather prediction and other core business. The E-AMDAR has been supplementing the SAA-AMDAR Programme. The research has shown that the development of aircraft-based observation programmes throughout the world improved the numerical weather prediction outputs' accuracy by approximately 15%.

3.1.2.5 Aviation survey

The annual aviation web survey conducted between November 2021 and March 2022 included 218 participants, of which 54% were from general aviation and 34% from commercial aviation. The survey showed an overall satisfaction rate of 89,8%. Other participants in the survey were from other sectors of aviation (SACAA, airport companies, SAAF, air schools, hot air balloons, etc.).

3.1.2.6 Marine services

The Marine portal for the South African Weather Service (marine.weathersa.co.za) has been maintained and enhanced over the last financial year. High-resolution marine forecast products, tailored for southern Africa, include forecasts of regional and coastal waves, regional wave-current interactions, regional tide and storm-surge, regional and coastal maritime Beaufort Scale, sea ice edge, and a spring tide monitoring and notification tool. The modelling system is continuously being improved through ongoing research and development. In addition to being available to the public in graphical form, they are used by the forecast desks and Disaster Management to warn for marine weather phenomena and inform marine Impact-Based Forecasts (IBF).

Of further significance is that the Regulating Committee was tasked by the Minister to investigate the potential for revenue generation through services that can be provided for the maritime industry and South African Ports and engaged with the Transnet National Ports Authority (TNPA) and Port Authorities in the individual ports to assess their needs in terms of weather and marine-related forecasts. Throughout the engagements conducted at these ports (Cape Town, Saldanha Bay, Mossel Bay, SAWS Marine, Richard's Bay and Durban), the need for reliable and regularly available weather forecasts and warnings was emphasised. Consultations are ongoing

with some of the ports at East London and Ngqura, as well as other stakeholders providing services to the ports such as the Council for Scientific and Industrial Research (CSIR), ship captains and vessel owners. Overall, an opportunity exists for SAWS to provide specialised services to the South African ports.

In terms of service delivery, SAWS achieved all availability targets for SOLAS products for 2021/2022 as it exceeded its target of 95% availability of all SOLAS products by 3,8%, reaching an overall annual performance of 98,9% (Q1-99,18%, Q2-99,73%, Q3-99,73%, Q4-96,9%). Digitised programmes allowing for electronic analysis of shipping charts have contributed to more efficiency in product generation and dissemination to stakeholders.

3.1.2.7 Marine observations

The Marine team is heavily involved with the Global Ocean Observing System (GOOS) through a number of ocean observing networks, such as the Argo programme, the Data Buoy Co-operation Panel (DBCP) and the Ships Observation Team (SOT). Through these initiatives, ocean observing infrastructure is deployed within Southern African ocean basins, complementing existing observations and improving the forecast capabilities of global forecast models. Within this financial year, 27 Argo floats (13 of which were equipped with biogeochemical sensors), 5 drifters and 20 SOFAR Ocean Spotter buoys were deployed. In addition, SYNOPS from the SA Agulhas II were undertaken on all vessel transects, along with upper air ascents every second day. The data feed from the vessel through ICT to the GTS remains an issue, and this will be dealt with in the new financial year with the employment of a Data Engineer tasked with data pipeline assessments.

Two Core Argo floats being setup for deployment. Photo credit: Tamaryn Morris (SAWS)

3.1.2.8 Climate services

State of the South African Climate

Temperature

South Africa experienced a somewhat warm year, which was quite mild compared to previous years. This can be ascribed to well-above normal rainfall over most of the country. The annual mean temperature anomalies for 2021, based on the data of 26 climate stations were, on average, about equal to the reference period (1991 to 2020), making it approximately the 13th hottest year on record since 1951 (see figure 12). A warming trend of 0,16°C per decade is indicated for the country, statistically significant at the 5% level.

Precipitation

The most significant feature of the rainfall during 2021, presented in figure 13, was the well-above normal rainfall received over extensive parts of South Africa. During 2021/2022, ENSO was in a La Niña phase, which is associated with above-normal rainfall over most of the summer rainfall regions. The section of South Africa experiencing drought, further decreased over the past year, due to the good rains in the early summer rainfall season of 2021/2022, especially from November onwards. Figure 14 presents the 24-month Standardised Precipitation Index (SPI) ending December 2021, which shows that there were still some areas in the western and southern interior that could be considered to be somewhat dry, which shows some persistence of the long-term drought this region was experiencing (for almost a decade in some places).

Noteworthy climate and weather events

In South Africa, the year started with very dry conditions in the western and southern interior. However, from January, above-normal rainfall conditions, especially in the western and central interior, started to bring alleviation. In February, the northern parts of the country received very good rains, but this was accompanied by many cases of damage to infrastructure, mainly due to flash floods. In March, while it was hot in the eastern parts, with accompanying heat waves and record high temperatures, the Western Cape received unseasonal high rainfall accompanied by flooding in places in the Cape Town metropole. The still dry conditions in the western and southern interior were exacerbated in April with very low rainfall and abnormally high maximum temperatures. These conditions extended into May, but the winter rainfall seasons started relatively early with good rains recorded in the extreme south and south-west by then.

The winter season (July to August) can be described as quite close to normal, but with unseasonal significant rainfalls in the central and north-western interior, which persisted into spring.

The early summer, starting already in October, experienced well above-normal rainfall over especially the drought-stricken western interior, and spread to the south in November. In December, the whole country received above-normal rainfall. In many places, the monthly rainfall received, were multiples of the normal rainfall figures. The effect was that the early-summer rainfall season could, as a whole, be characterised as above-normal, except for some areas in the east and south-east of South Africa.

The very high December rainfall was associated with a number of negative impacts, and only the most noteworthy are mentioned.

- Hundreds of families in Piet Retief, Mpumalanga, were left homeless after flash floods left a trail of damage and destruction on 1 December. Roofs were blown away and the windows of several houses were broken while other houses collapsed. The rain was accompanied by strong winds that blew roofs off houses. The roads were also affected.
- A man was swept off a low-lying crossing bridge near Hengelaar and Seekoei Roads in the Roodeplaat area in Tshwane, Gauteng, on 4 December, after heavy rains. The body of a man was found after the SUV he was driving was recovered on 5 December in the morning. The vehicle was found submerged about a kilometre away from where it was last seen.
- A taxi and another car were swept away by floods along the R577 road near Thorncliff Mine on the border of Mpumalanga and Limpopo on 7 December. The cars were both recovered on the riverbank, but both occupants were missing.
- Six people died and a total of 44 people, including six children, were admitted to Mthatha General Hospital after heavy rain affected Mthatha in the Eastern Cape on 9 December. In the King Sabata Dalindyebo municipal area, 77 families were left homeless and 15 other families were partially destitute when houses collapsed on them during heavy rain. Some animals including sheep, goats and chickens were killed in the storm. The Siyazama Ntilini Pre-School was damaged and infrastructure such as electrical power lines and electrical meter boxes were also damaged. The Gqunu bridge in Mhlontlo, Ward 17, was washed away.

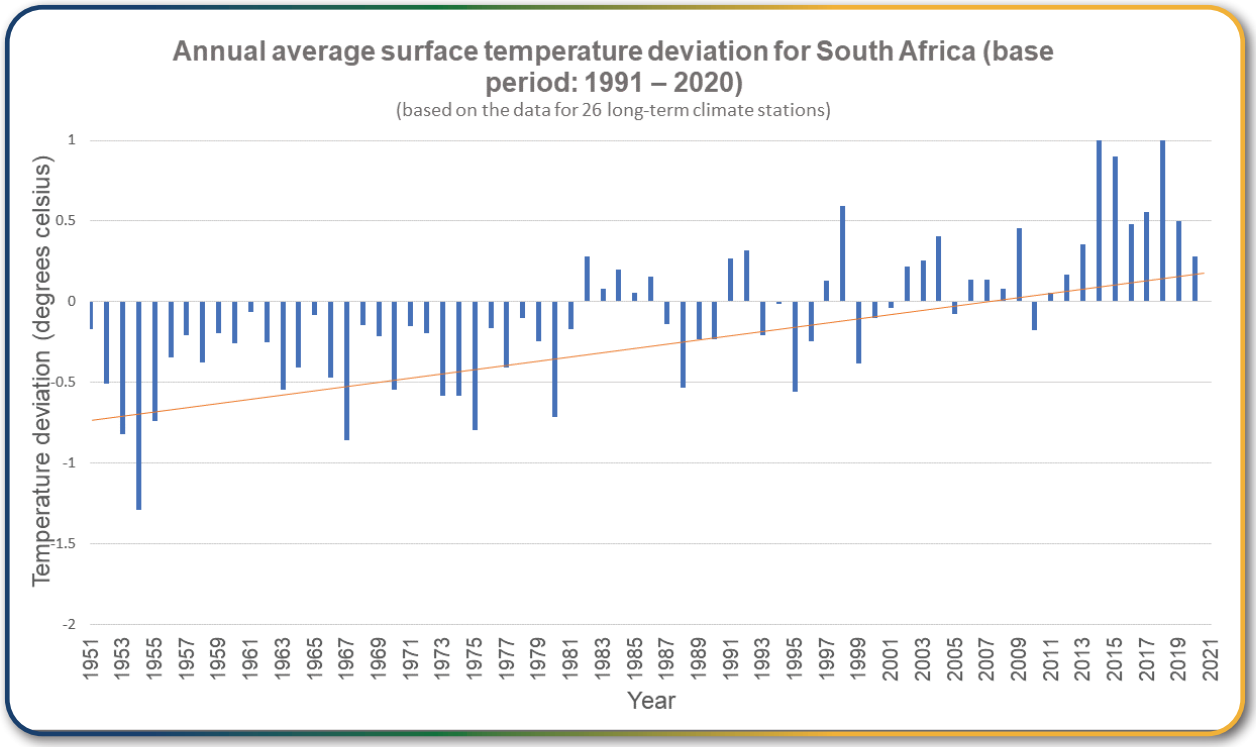


Figure 12: Average surface temperature deviation over South Africa based on 26 climate stations: 1951 to 2021 (base period: 1991 to 2020). The linear trend is indicated. (Source: South African Weather Service)

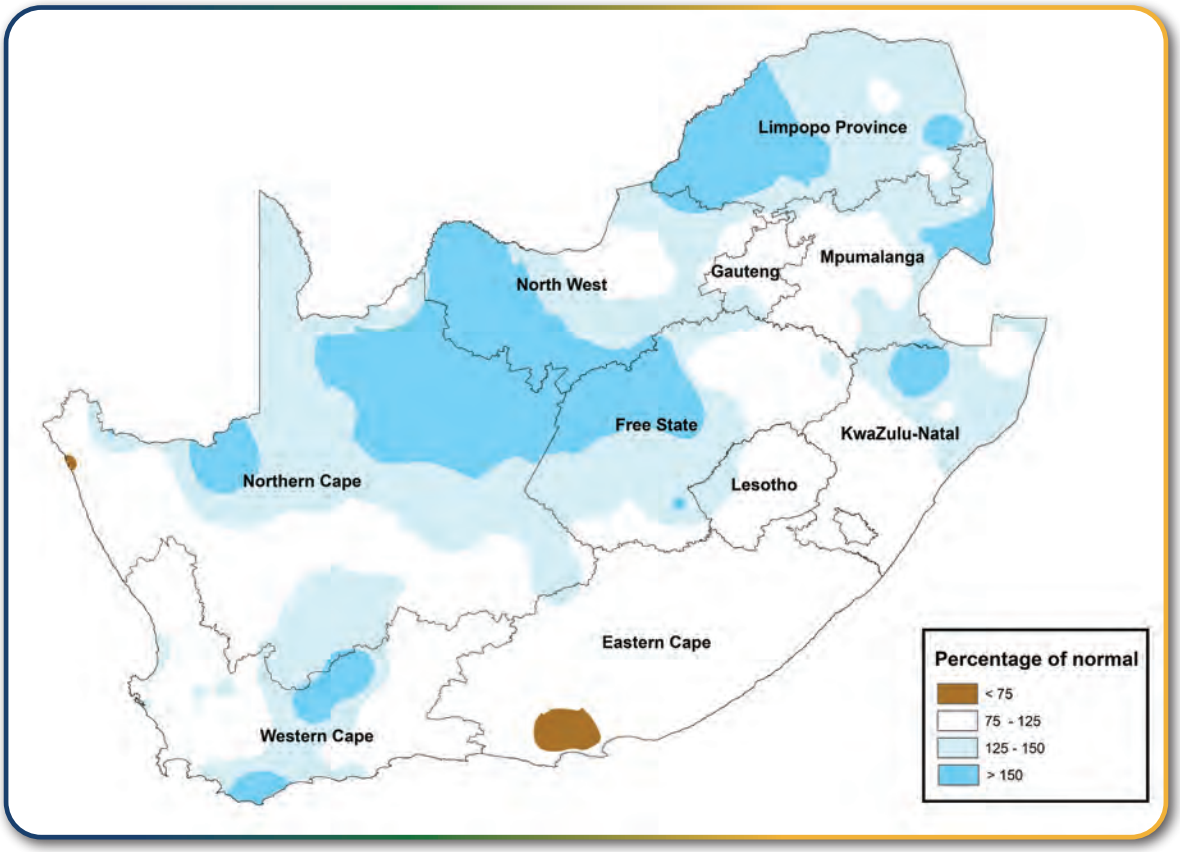


Figure 13: Rainfall anomalies (expressed as a percentage of 1991 to 2020 annual average) for South Africa for 2021 (Source: South African Weather Service)

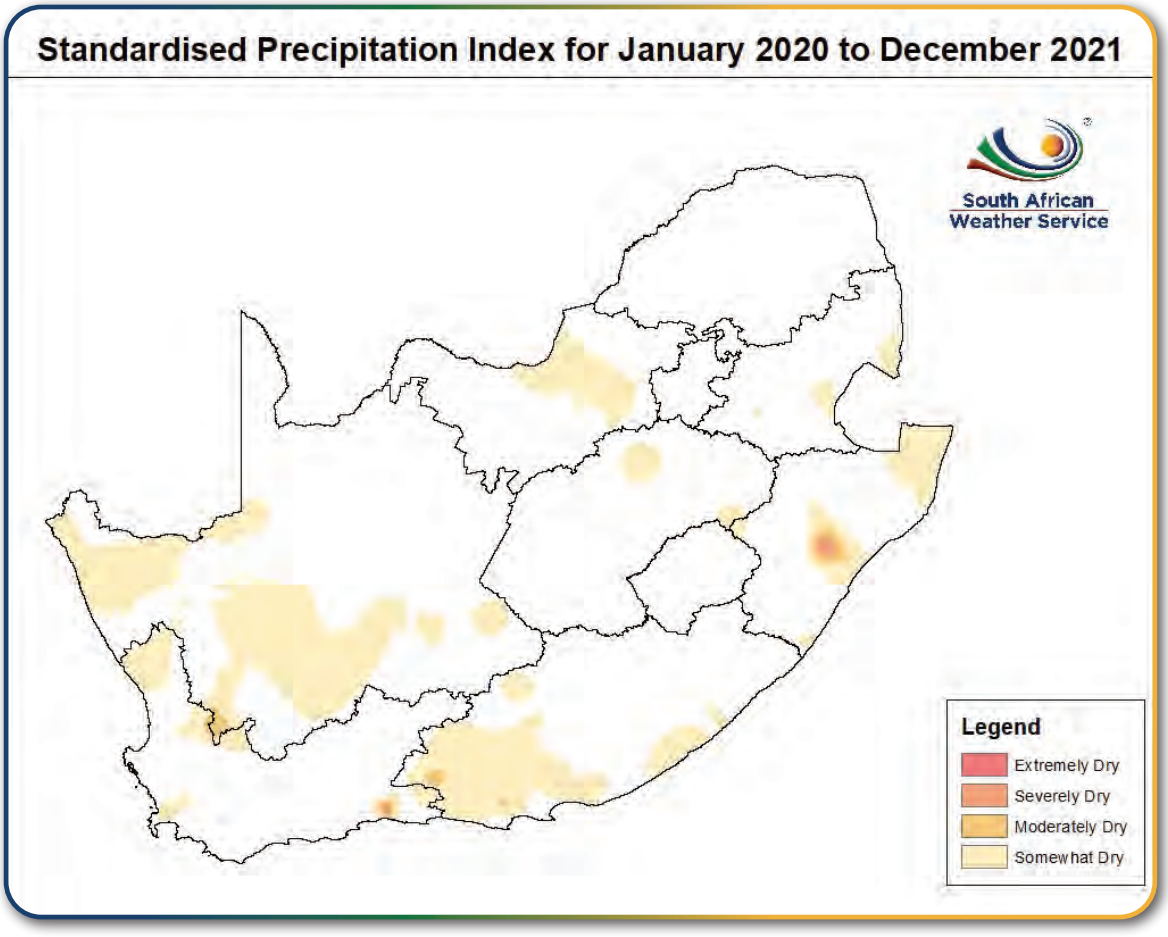


Figure 14: 24-month SPI map for South Africa ending December 2021 (Source: South African Weather Service)

3.1.2.9 New and enhanced climate information products

The SAWS continued to develop climate-specific solutions for climate-sensitive sectors, in general, with the observed and measured historical climate data as the main inputs. The needs analyses, content development and authoring of a new climate solution, i.e. the second publication in a new regional weather and climate publication series, were completed in the last year.

The Regional Weather and Climate: South-Western Cape publication consists of a comprehensive overview of the weather and climate of the extreme south-western part of South Africa, comprising 73 pages, 79 figures and graphs and 12 statistical tables. It covers a wide range of topics, including the prevailing wind, surface temperature, sunshine, radiation and precipitation conditions in the region, as well as the evidence and impacts of climate change. An example of some useful maps in the publication is illustrated below:

Figure 15: Mean winter (June, July and August) minimum temperature (°C) over the South-Western Cape, based on topography and data over the period 1991 to 2020

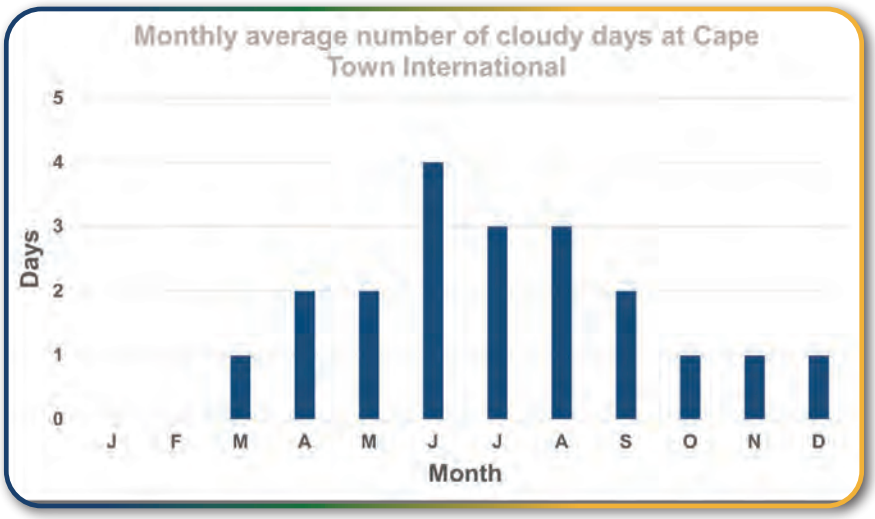


Figure 16: Average number of cloudy days at Cape Town International Airport per month (1991 to 2020)

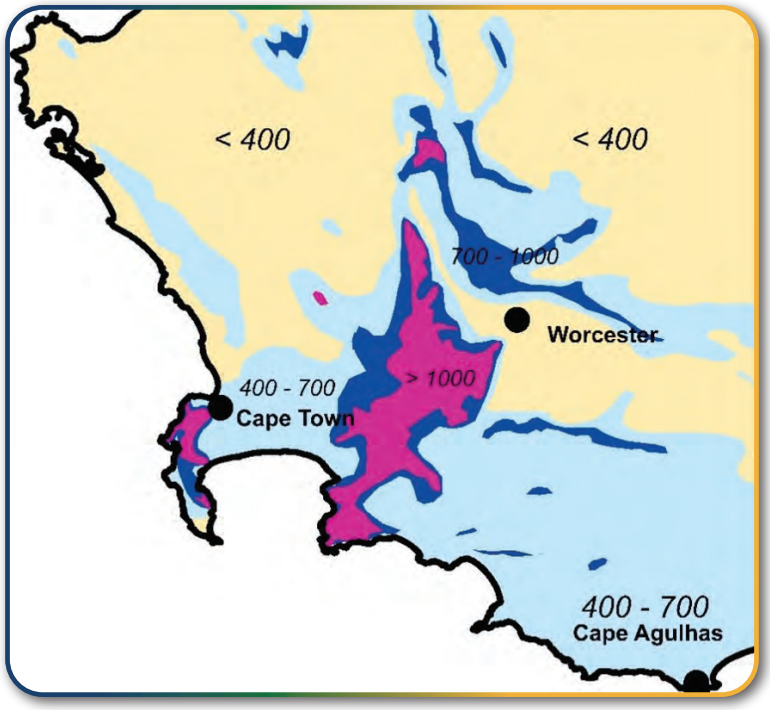


Figure 17: Mean annual rainfall (mm) based on topography and data over the period 1991 to 2020 (yellow < 400, light blue 400 – 700, dark blue 700 – 1000, purple > 1000 mm)

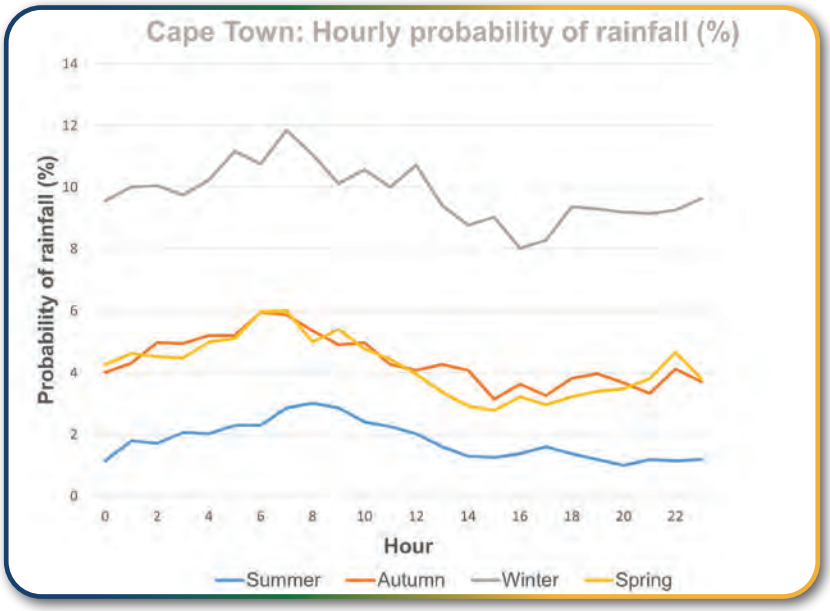


Figure 18: Probability of rainfall (%) during specific hours at Cape Town International Airport (1991 to 2020)

3.1.2.10 Initiatives under the National Framework for Climate Services

In terms of the National Framework for Climate Services (NFCS), a range of activities have been undertaken to support its implementation. The intention of the NFCS web portal, co-ordinated by DFFE, is to add new climate products and services as they become available. This initiative has been communicated to other climate-service producing institutions, which have been invited to share their own climate information products for the public good. Currently, users have access to information on the complete range of weather and climate services that SAWS provides, with the intention to expand on this as new sector-specific products and services are developed. SAWS contributions include enhanced routine drought information and the expansion of the series of detailed regional climate summaries for South Africa.

Following on the above, 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 delegates of South Africa and the EU shared their expertise in delivering quality, up to date, climate services. Subsequently, two sectoral workshops were held and co-ordinated by the Department of Water and Sanitation (for the water sector) and the Agricultural Research Council (for the agricultural and food sectors). In these workshops stakeholders in the two sectors communicated their most critical needs in terms of weather and climate services and consequently proper sector-specific insight was gained by the main producers of climate services. Following up on the sectoral workshops, a final workshop is planned, of which the focus will be to prioritise the most needed services, to discuss funding possibilities as well as technical support from EU institutions (which have been an integral part of the discussions). SAWS will continue to participate in this process which, as the main producer of weather and climate information and services, will be critical to the success thereof.

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, has recently been commissioned by the DFFE through financial support provided by the World Bank. The deliverables of the project, which are expected soon, will guide 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; and Capacity development).

3.1.2.11 Channel Management

As the authoritative voice on severe weather in South Africa, SAWS has an obligation to reach more than 60 million people with weather information on a daily basis. To achieve this, SAWS uses multiple dissemination channels and strategic partnerships to increase its reach to different sections of the South African population, thereby providing critical information in order to save lives and property. Through these different dissemination channels and strategic partnerships, SAWS can reach a wide number of South Africans, including people living with disabilities and disadvantaged and rural communities.

The major dissemination channels utilised, include community and commercial TV stations; community and commercial radio stations; mobile applications; social media; web portals; Application Programming Interfaces (APIs); and multiple strategic partnerships. Of all the dissemination channels, the widest reach is achieved through commercial and community radio and television, since they are the most widely accessible information dissemination media in South Africa and deliver content in all South African languages countrywide. SAWS currently disseminates information through SABC TV and Radio, E-TV, eNCA and multiple community and commercial TV and radio stations.

In 2021/2022, SAWS reached more than 4,3 million listeners (7,1% of the population) through 140 community radio stations that receive daily weather and climate information. Additionally, more than 7 million viewers who watch the news on SABC, E-TV and eNCA, can receive SAWS information daily. SAWS disseminated weather and climate information through the 19 SABC radio stations and 5 television stations. This gives SAWS the ability to reach more than 42 million listeners (70% of the population) who tune in to various SABC radio stations daily.

In line with the focus on newer disruptive technologies, SAWS has significantly increased its dissemination capabilities via multiple online platforms including social media, APIs and web portals. The number of online channels used to disseminate information, as well as the number of people getting access to that information, showed an increase throughout 2021/2022. The WeatherSMART application continued to grow with 13 044 downloads in 2021/2022, bringing the total number of downloads to 51 069, since this channel's facelift in 2017/2018.

3.1.2.12 Linking performance with budgets

In assessing the achievement of the outputs in comparison to the planned targets, the public entity must consider the linkages and the relation to the resources available to the public entity, in particular the financial resources. The following financial information should, therefore, be presented. The financial information must agree with the information in the annual financial statements.

Table 6: Linking performance with budgets: Programme 1

Programme/ activity/objective	2021/2022			2020/2021		
	Budget	Actual Expenditure	(Over)/ Under Expenditure	Budget	Actual	(Over)/ Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Weather and Climate Services	32 089	32 392	(302)	33 599	32 866	733

3.1.2.13 Strategy to overcome areas of underperformance

No instances of underperformance occurred.

3.1.2.14 Reporting on the institutional response to the COVID-19 pandemic

See part D, paragraph 2.5.

Photo credit:
Lucky Mthombeni (SAWS)

3.2 Programme 2: Research and Innovation

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

OUTPUT: Enhanced meteorological-related body of knowledge

3.2.1 Sub-programme, output indicators and targets

3.2.1.1 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

Number of research outputs (publications, articles, conference papers, etc.) (35)

3.2.1.2 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

- Number of new or enhanced Climate Solutions for Climate Sensitive Sectors (1)
- Number of new or enhanced Non-Climate-Specific Solutions (4)

3.2.2 Achievements

3.2.2.1 Research outputs

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 are the results of a structured research drive that focuses on the generation of 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 SAWS are encouraged to publish as many scientific papers as possible. One of the key measurements to monitor the scientific output of SAWS, is the peer-review publication process. Publications considered to make considerable input in expanding the existing knowledge base and intelligence, include peer-reviewed, scientific publications in scientific journals, peer-reviewed conference papers, contributions to peer-reviewed book chapters, as well as Masters of Science (MSc) and Doctoral (PhD) dissertations that require peer-review from academic review panels.

During the year under review, SAWS achieved a total of 36 scientific publications, exceeding the set target of 35 for the 2021/2022 financial year.

During the first quarter, SAWS achieved a total of ten scientific publications (articles in scientific journals), exceeding the set target of seven articles.

Articles in scientific journals (10)

1. BARASA, P.M., BOTAI, C.M., BOTAI, J.O. AND MABHAUDHI, T. 2021. A Review of Climate-Smart Agriculture Research and Applications in Africa. Agronomy, 11(6), Jun, 1255, 26pp. *https://doi.org/10.3390/agronomy11061255*

2. BARNES, M.A., NDARANA, T. AND LANDMAN, W.A. 2021. Cut-off Lows in the Southern Hemisphere and their Extension to the Surface. Climate Dynamics, 56(11/12), Jun, pp. 3709-3732. *https://doi.org/10.1007/s00382-021-05662-7*

3. DE VOS, M., VICHI, M. AND RAUTENBACH, C. 2021. Simulating the Coastal Ocean Circulation Near the Cape Peninsula Using a Coupled Numerical Model. Journal of Marine Science and Engineering, 9(4), Apr, 359, 30 pp. *https://doi.org/10.3390/jmse9040359*

4. LEKOLOANE, L.E., BOPAPE, M-J.M., RAMBUWANI, T.G., NDARANA, T., LANDMAN, S., MOFOKENG, P., GIJBEN, M. AND MOHALE, N. 2021. A Dynamic and Thermodynamic Analysis of the 11 December 2017 Tornadic Supercell in the Highveld of South Africa. Weather and Climate Dynamics, 2(2), 28 Apr, pp. 373-393. *https://doi.org/10.5194/wcd-2-373-2021*

5. MABASA, B., LYSKO, M.D., TAZVINGA, H., ZWANE, N. AND MOLOI, S.J. 2021. The Performance Assessment of Six Global Horizontal Irradiance Clear Sky Models in Six Climatological Regions in South Africa. Energies, 14(9), Apr, 2583, 24 pp. *https://doi.org/10.3390/en14092583*

6. MAKINDE, O.S., ADEOLA, A.M., ABIODUN, G.J., OLUSOLA-MAKINDE, O.O. AND ALEJANDRO, A. 2021. Comparison of Predictive Models and Impact Assessment of Lockdown for COVID-19 over the United States. Journal of Epidemiology and Globa Health, 11(2), Jun, pp. 200-207. *https://doi.org/10.2991/jegh.k.210215.001*

7. MARSIGLI, C., EBERT, E., ASHRIT, R., CASATI, B., CHEN, J., COELHO, C.A.S., DORNINGER, M., GILLELAND, E., HAIDEN, T., LANDMAN, S. AND MITTERMAIER, M. 2021. Review Article: Observations for High-Impact Weather and their Use in Verification. Natural Hazards and Earth System Sciences, 21(4), Apr, pp. 1297-1312. *https://doi.org/10.5194/nhess-21-1297-2021*

8. MERONI, A.N., OUNDO, K.A., MUITA, R., BOPAPE, M-J., MAISHA, T.R., LAGASIO, M., PARODI, A. AND VENUTI, G. 2021. Sensitivity of Some African Heavy Rainfall Events to Microphysics and Planetary Boundary Layer Schemes: Impacts on Localised Storms. Quarterly journal of the Royal Meteorological Society, 147(737), Apr, Pt B, pp. 2448-2468. *https://doi.org/10.1002/qj.4033*

9. NCONGWANE, K.P., BOTAI, J.O., SIVAKUMAR, V. AND BOTAI, C.M. 2021. A Literature Review of the Impacts of Heat Stress on Human Health across Africa. Sustainability, 13(9), May, 5312, 27 pp. *https://dx.doi.org/10.3390/su13095312*

10. SEMELANE, S., NWULU, N., KAMBULE, N. AND TAZVINGA, H. 2021. Evaluating Economic Impacts of Utility Scale Solar Photovoltaic Localisation in South Africa. Energy Sources: Part B, 16(4), Apr, pp. 324-344. *https://doi.org/10.1080/15567249.2021.1894513*

During the second quarter, SAWS achieved a total of 11 scientific publications (10 in scientific journals, and one thesis) from a set target of 13:

Articles in scientific journals (10)

1. BOPAPE, M-J. M., CARDOSO, H., PLANT, R.S., PHADULI, E., CHIKOORE, H., NDARANA, T., KHALAU, L., AND RAKATE, E. 2021. Sensitivity of Tropical Cyclone Idai Simulations to Cumulus Parametrization Schemes. Atmosphere, 12(8), Aug, 932, 22 pp. *https://dx.doi.org/10.3390/atmos12080932*

2. CHIKOORE, H., BOPAPE, M-J.M., NDARANA, T., MUOFHE, T.P., GIJBEN, M., MUNYAI, R.B., MANYANA, T.C. AND MAISHA, R. 2021. Synoptic Structure of a Sub-Daily Extreme Precipitation and Flood Event in Thohoyandou, North-Eastern South Africa. Weather and Climate Extremes, 33, Sep, 100327, 17 pp. *https://doi.org/10.1016/j.wace.2021.100327*

3. GELDENHUYS, M., PREUSS, P., KRISCH, I., ZÜLICKE, C., UNGERMANN, J., ERN, M., FRIEDL-VALLON, F. AND RIESE, M. 2021. Orographically-Induced Spontaneous Imbalance within the Jet Causing a Large Scale Gravity Wave Event. Atmospheric Chemistry and Physics, 21(13), Jul, pp. 10393-10412. *https://doi.org/10.5194/acp-21-10393-2021*

4. KRUGER, A.C., McBRIDE, C., ROBJHON, M. AND THIAW, W.M. 2021. Southern Africa [in "State of the Climate in 2020: Regional Climates"]. Bulletin of the American Meteorological Society, 102(8), Aug, pp S398-S402. *https://doi.org/10.1175/2021BAMSStateoftheClimate_Chapter7.1*

5. MASEKO, B., FEIG, G. AND BURGER, R. 2021. Estimating Lightning NOx Production over South Africa. South African Journal of Science, 117(9/10), Sep/Oct, Art. #8035, 11 pp. *https://doi.org/10.17159/sajs.2021/8035*

6. MULOVHEDZI, P.T., RAMBUWANI, G.T., BOPAPE, M.-J., MAISHA, R AND MONAMA, N. Model Inter-Comparison for Short-Range Forecasts over the Southern African Domain. South African Journal of Science, 117(9/10), Sep/Oct, Art. #8581, 12 pp. *https://doi.org/10.17159/sajs.2021/8581*

7. NHAMO, L., RWIZI, L., MPANDELI, S., BOTAI, J., MAGIDI, J., TAZVINGA, H., SOBRATEE, N., LIPHADZI, S., NAIDOO, D., MODI, A.T., SLOTOW, R. AND MABHAUDHI, T. 2021. Urban Nexus and Transformative Pathways Towards a Resilient Gauteng City-Region, South Africa. Cities, 116, Sep, 103266, 10 pp. https://doi.org/10.1016/j.cities.2021.103266

8. SEMELANE, S., NWULU, N., KAMBULE, N. AND TAZVINGA, H. 2021. Evaluating Available Solar Photovoltaic Business Opportunities in Coal Phase-Out Regions: An Energy Transition Case of Steve Tshwete Local Municipality in South Africa. Energy Policy, 155, Aug, 112333, 8 pp. *https://doi.org/10.1016/j.enpol.2021.112333*

9. SHIKWAMBANA, L., NCIPHA, X., SANGEETHA, S.K., SIVAKUMAR, V. AND MHANGARA, P. 2021. Qualitative Study on the Observations of Emissions, Transport, and the Influence of Climatic Factors from Sugarcane Burning: A South African Perspective. International Journal of Environmental Research and Public Health, 18(14), Jul-2, 7672, 18 pp. *https://doi.org/10.3390/ijerph18147672*

10. THAPELO, T.S., NAMOSHE, M., MATSEBE, O., MOTSHEGWA, T. AND BOPAPE, M-J.M. 2021. SASSCAL WebSAPI: A Web Scraping Application Programming Interface to Support Access to SASSCAL's Weather Data. Data Science Journal, 20(24), Jul, pp. 1-13. *https://datascience.codata.org/articles/10.5334/dsj-2021-024/*

Thesis (1)

11. BARNES, M.A. 2021. The Dynamics of Cut-Off Lows and their Vertical Extension to the Surface. PhD Thesis, University of Pretoria, 180 pp. *http://hdl.handle.net/2263/80842*

During the third quarter, SAWS realised a total of five articles in scientific journals. Although this achievement fell short of the set target, the entity had nine articles and three theses which could not be referenced as they had not been allocated to a physical issue or electronic reference.

Articles in scientific journals (5)

1. ADEOLA, O.M., MASINDE, M. BOTAI, J.O., ADEOLA, A.M. AND BOTAI, C.M. 2021. An Analysis of Precipitation Extreme Events Based on the SPI and EDI Values in the Free State Province, South Africa. Water, 13(21), 3058, 23 pp. *https://doi.org/10.3390/w13213058*

2. ARCHER, E., DU TOIT, J., ENGELBRECHT, C., HOFFMAN, M.T., LANDMAN, W., MALHERBE, J. AND STERN, M. 2022. The 2015-19 Multi Year Drought in the Eastern Cape, South Africa: its Evolution and Impacts on Agriculture. Journal of Arid Environments, 196, Jan, 104630, 6 pp. *https://doi.org/10.1016/j.jaridenv.2021.104630*

3. BOTAI, C.M., BOTAI, J.O., DE WIT, J.P., NCONGWANE, K.P., MURAMBADORO, M., BARASA, P.M. AND ADEOLA, A.M. 2021. Hydrological Drought Assessment Based on the Standardized Streamflow Index: A Case Study of the Three Cape Provinces of South Africa. Water, 13(24), 3498, 23 pp. *https://doi.org/10.3390/w13243498*

4. MABASA, B., LYSKO, M.D. AND MOLOI, S.J. 2021. Validating Hourly Satellite Based and Reanalysis Based Global Horizontal Irradiance Datasets over South Africa. Geomatics, 1(4), pp. 429-449. *https://doi.org/10.3390/geomatics1040025*

5. NCONGWANE, K.P., BOTAI, J.O., SIVAKUMAR, V., BOTAI, C.M. AND ADEOLA, A.M. 2021. Characteristics and Long-Term Trends of Heat Stress for South Africa. Sustainability, 13(23), Dec, 13249, 20 pp. *https://doi.org/10.3390/su132313249*

During the fourth quarter, a total of 10 research outputs were achieved, consisting of eight articles in scientific journals and two theses.

Articles in Scientific Journals (8)

1. BOTAI, C.M., BOTAI, J.O., MURAMBADORO, M., ZWANE, N.N., ADEOLA, A.M., DE WIT, J.P. AND ADISA, O.M. 2022. Scope, Trends and Opportunities for Socio-Hydrology Research in Africa: A Bibliometric Analysis. South African Journal of Science, 118(1/2), Jan/Feb, 8742, 8 pp. *https://doi.org/10.17159/sajs.2022/8742*

2. CHRISTIAN, E., CERRUDO, C., VILJOEN, E., COOPER, N., JACKSON, R., GRAY, V. AND ROBERTSON-QUIMBY, A. 2022. Communicating for Lifesaving Action: Enhancing Messaging in Early Warnings Systems. WMO Bulletin, 71(1), pp. 38-45. *https://library.wmo.int/doc_num.php?explnum_id=11098*

3. DIOUF, I., ADEOLA, A.M., ABIODUN, G.J., LENNARD, C., SHIRINDE, J.M., YAKA, P., NDIONE, J A., GBOBANIYI, E.O. 2022. Impact of Future Climate Change on Malaria in West Africa. Theoretical and Applied Climatology, 147(3/4), Feb, pp. 853-865. *https://doi.org/10.1007/s00704-021-03807-6*

4. McBRIDE, C.M., KRUGER, A.C. AND DYSON, L. 2022. Trends in Probabilities of Temperature Records in the Non-Stationary Climate of South Africa. International Journal of Climatology, 42(3), Mar, pp. 1692-1705. *https://rmets.onlinelibrary.wiley.com/doi/10.1002/joc.7329*

5. NDARANA, T., RAMMOPO, T.S., REASON, C.J.C., BOPAPE, M-J., ENGELBRECHT, F. AND CHIKOORE, H. 2022. Two Types of Ridging South Atlantic Ocean Anticyclones Over South Africa and the Associated Dynamical Processes. Atmospheric Research, 265, 105897, 19 pp. *https://doi.org/10.1016/j.atmosres.2021.105897*

6. PATON-WALSH, C., EMMERSON, K.M., GARLAND, R.M., KEYWOOD, M., HOELZEMANN, J.J., HUNEEUS, N., BUCHHOLZ, R.R., HUMPHRIES, R.S., ALTIERI, K., SCHMALE, J., WILSON, S.R., LABUSCHAGNE, C., KALISA, E., FISHER, J.A., DEUTSCHER, N.M., VAN ZYL, P.G., BEUKES, J.P., JOUBERT, W., MARTIN, L., MKOLOLO, T., BARBOSA, C., DE FATIMA ANDRADE, M., SCHOFIELD, R., MALLET, M.D., HARVEY, M.J., FORMENTI, P., PIKETH, S.J., AND OLIVARES, G. 2022. Key Challenges for Tropospheric Chemistry in the Southern Hemisphere. Elementa: Science of the Anthropocene, 10(1), 00050, 35 pp. *https://doi.org/10.1525/elementa.2021.00050*

7. PETERSON, M.J., LANG, T.J., LOGAN, T., KIONG, C.W., GIJBEN, M., HOLLE, R., KOLMASOVA, I., MARISALDI, M., MONTANYA, J., PAWAR, S.D., ZHANG, D., BRUNET, M. AND CERVENY, R.S. 2022. New WMO Certified Megaflash Lightning Extremes for Flash Distance (768 km) and Duration (17.01 seconds) Recorded from Space. Bulletin of the American Meteorological Society, Early view, Feb, 10 pp. *https://doi.org/10.1175/BAMS-D-21-0254.18*

8. ROBERTS, A.J., FLETCHER, J.K., GROVES, J., MARSHAM, J.H., PARKER, D.J., BLYTH, A.M., ADEFISAN, E.A., AJAYI, V.O., BARRETTE, R., DE CONING, E., DIONE, C., DIOP, A., FOAMOUHOUE, A.K., GIJBEN,

M., HILL, P.G., LAWAL, K.A., MUTEMI, J., PADI, M., POPOOLA, T.I., RIPODAS, P., STEIN, T.H.M. AND WOODHAMS, B.J. 2021. Nowcasting for Africa: Advances, Potential and Value. Weather, Early view, 7 pp. *https://doi.org/10.1002/wea.3936*

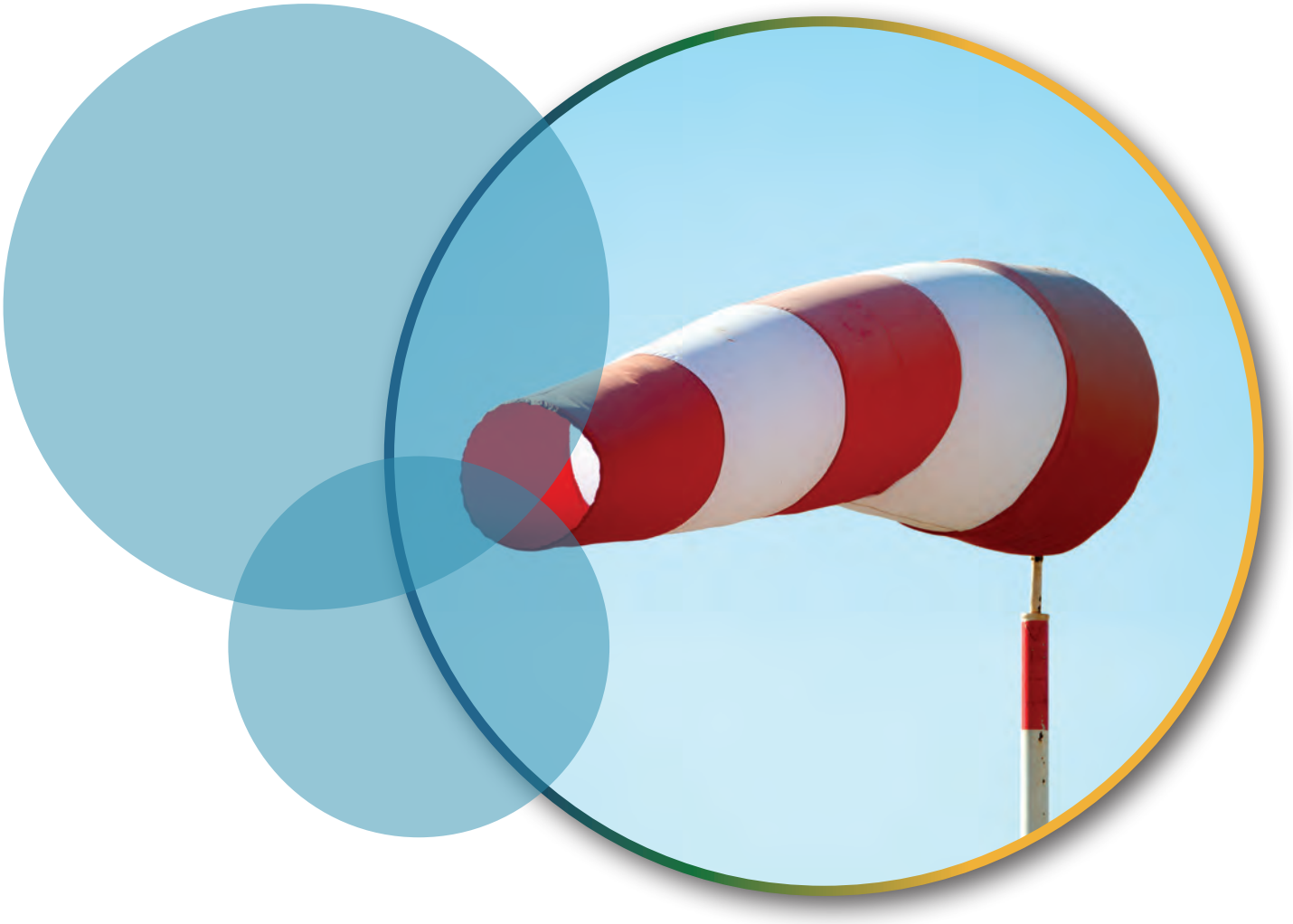
Theses (2)

1. MAKGOALE, T. 2021. The Sensitivity of Simulated Temperatures in Climate Models to Aerosols over Southern Africa. MSc Thesis, Northwest University, 98 pp. *http://hdl.handle.net/10394/38599*

2. MKOLOLO, T. 2021. Study of Stratospheric-Tropospheric Ozone and its Exchange, including Total Column- and Surface Ozone Variations Using Ground-Based and Satellite Observations in South African Sites. PhD Thesis, University of KwaZulu-Natal, 130 pp. *https://researchspace.ukzn.ac.za/handle/10413/20230*

3.2.2.2 Solution development

Products and services that provide accurate and reliable weather information are the results of a structured research drive that focuses on the generation of 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 one of the main activities conducted within the Research Department of SAWS.



Needs analyses conducted during the period under review revealed the following user-relevant and innovative products which were developed during the 2021/2022 financial year:

Table 7: Products developed during the 2021/2022 financial year

Product	Product description	Product status
Regional Climate Summary: South-Western Cape	The publication follows a series of regional climate publications, which commenced with a publication on Gauteng in the 2020/21 financial year. The Regional Climate Summary: South-Western Cape was compiled as scheduled.	Achieved
Future Malaria Projections	The early prediction of malaria outbreaks is key to the control of malaria morbidity and mortality, as well as reducing the risk of transmission of malaria in the community. It can assist policymakers, health providers, medical officers, the Ministry of Health and other health organisations to better target medical resources to areas of greatest need. The malaria projection product was developed utilising the Liverpool Malaria Model (LMM).	Achieved
Frost Risk Probability Atlas	Farmers consider frost as a major hazard that influences their year-to-year production. On an annual basis, across most frost-prone countries, the onset of frost in autumn and cessation of frost in spring, cause damage to late planted or long-season crops and early-planted crops during the early vegetative stage, respectively. The Risk Probability Atlas for frost was developed based on data and information collected by various institutions.	Achieved
Ventilation Scaling Product	The Ventilation Index (VI) is a common term used in air pollution. It is a numerical value related to dispersing potential for airborne pollutants in a certain local atmosphere. It is based on both the existing wind speed in the mixed layer and the mixing height. The Air Quality Index, or AQI, is the system used to warn the public when air pollution is dangerous. Following the VI applicative analysis and scaling characterisation given above, the observational-based VI system evaluation and tuning were completed.	Achieved
Sub-seasonal Forecasting Product	Sub-seasonal refers to timescales of two weeks to two months and covers the gap that exists between one to three months' forecasts. Experimental Sub-Seasonal forecasts were produced weekly since April 2021, with the focus on fine-tuning and validation of these forecasts before dissemination can be considered.	Achieved

3.2.2.3 Marine research and development

Two notable achievements for the Marine team for 2021/2022 are the implementation, in testing mode, of a rip-current forecasting tool and the involvement with the Endurance22 Cruise.

a. Rip-current forecasting tool

In collaboration with the Coastal Marine Applied Research group (CMAR) based at Plymouth University, a rip-current forecasting tool was developed for the Cape Peninsula coastline. Rip-currents were monitored over the summer period (2021/2022) with the assistance of the NSRI and the City of Cape Town lifeguard teams and these data will be used for validation. This rip-current forecasting tool will go a long way to warn beachgoers and lifeguards of impending rip-current conditions, with the primary aim of preventing beach drownings.

CMAR will be conducting fieldwork in October 2022: (1) to build relationships with the project partners and (2) to conduct in-situ measurement of rip-current dynamics to further calibrate and validate the rip forecast service. Further calibration of the rip forecast will determine whether tides pose an important control on beach rips in South Africa. Once the product is ready to be operationalised, there is an intention to extend the work along the entire coastline of South Africa.

Rip-current dye release at Kogel Bay study site together with NSRI and the City of Cape Town. The dye release was done to aid in making a film to create public awareness for the summer season 2021/2022.

b. Endurance22 cruise

The Endurance22 cruise took place onboard the SA Agulhas II in February and March 2022. The vessel was chartered by the Falklands Heritage Trust in the UK to find and survey the wreck of Sir Ernest Shackleton's lost ship, Endurance. The SAWS Marine team led the Metocean advisory component to the vessel's navigation and sub-sea survey teams. Additionally, sea ice and marine meteorological observations were made, and upper-air ascents conducted. The Endurance was successfully located and surveyed thanks to the assistance of our Marine team onboard. Furthermore, a number of ocean observing instruments were deployed to and from the site of the shipwreck, complementing the global ocean observing work undertaken by the Marine team.

Wreck of the Endurance, view of the Polar Star. Photo credit: Falklands Heritage Trust

Table 8: Linking performance with budgets: Programme 2

Programme/ activity/objective	2021/2022			2020/2021		
	Budget	Actual Expenditure	(Over)/ Under Expenditure	Budget	Actual	(Over)/ Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Research and Innovation	27 973	25 597	2 376	24 367	24 315	52

3.2.2.4 Strategy to overcome areas of under-performance

SAWS performed well in achieving its scientific output target in in the form of publications. SAWS achieved a total of 36 scientific publications, exceeding the set target of 35 for the 2021/2022 financial year.

3.2.2.5 Reporting on the institutional response to the COVID-19 pandemic

See part D, paragraph 2.5.

3.3 Programme 3: Infrastructure and information systems

PURPOSE: Upgrade, expand and optimise infrastructure

OUTPUT: Optimal core technological capability

3.3.1 Sub-programme, output indicators and targets

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

- Percentage availability of AWS infrastructure (78%)
- Percentage availability of ARS infrastructure (75%)
- Percentage availability of GAW infrastructure (85%)
- Percentage availability of RADAR infrastructure (70%)
- Percentage availability of LDN infrastructure (80%)
- Percentage availability of SAAQIS infrastructure (95%)

Quality data

Purpose: To provide quality data meeting minimum data requirements

- Percentage of Priority Areas Air Quality Stations available on SAAQIS meeting minimum data requirements (95%)
- Percentage of AWS and ARS climate data available on the National Climate Database meeting minimum data requirements (80%)

3.3.2 Achievements

3.3.2.1 Percentage availability of Automatic Weather Station (AWS) and Automatic Rainfall Station (ARS) infrastructure

The South African Weather Service surface observation technology comprises a network of Automatic Weather Stations (AWSs) and Automatic Rain Stations (ARSs). The AWS and ARS infrastructure availability for the 2021/2022 financial year was 83,23% and 81,39%, respectively, against the set targets of 78% and 75%. SAWS managed a surface observations infrastructure network comprising 241 AWSs and 176 ARSs across the country at the end of the reporting period.

The table below summarises the surface observations of infrastructure performance.

Table 9: AWS and ARS infrastructure availability

Quarter	% availability AWS	% availability ARS
1	84,90%	78,79%
2	87,06%	84,41%
3	82,37%	83,43%
4	78,24%	78,94%
Average	83,14%	81,39%

3.3.2.2 Percentage availability of Global Atmosphere Watch (GAW) infrastructure

The GAW programme of SAWS assists the South African government in fulfilling several international conventions which they are signatory to, including amongst others UNFCCC, IPCC, Montreal Protocol, and Minamata Convention. The programme supports the initiative of government through the monitoring of the changes in the earth's atmospheric composition, to inform policy direction.

The Cape Point GAW station forms part of an integrated global network of 33 similar stations spread across the globe under the WMO GAW Programme. Various trace gases, greenhouse gases, solar radiation, and other chemical constitutes are being monitored as background or reference levels to monitor the greenhouse gas loading in the atmosphere. Linked to this is a GAW Regional Monitoring network at stations across the country, measuring ozone and ultraviolet radiations. Balloon ozonesondes are conducted from Irene. Overall, these stations have been operating for 20 to 30 years, and the long-term datasets of various atmospheric parameters have matured into valuable data sets of the atmospheric environment. A good example of this is its use as part of the PhD project of Dr Thumeka Mkololo from the GAW laboratory at Cape Point, who graduated in December 2021.

During the financial year, the SAWS GAW programme consisting of the Cape Point GAW station and regional GAW stations, was adversely impacted by critical instrument failure and supplier logistics challenges due to international transport challenges. These included the complete failure of the instrument (gas chromatogram) which measure nitrous oxide. The ozonesondes, which are launched to monitor ozone concentrations throughout the atmosphere were unable to be delivered to South Africa by international suppliers. The latter was subsequently delivered during the last quarter of 2021/2022. No capital was available for large infrastructure such as replacing equipment. To remedy these challenges, capital expenditure was re-prioritised for the 2022/2023 financial year. As a result of the above, the initial 2021/2022 target of 85% data recovery could not be realised. Table 10 below summarises the performance in terms of the data availability for the GAW programme.

Table 10: Overall percentage of GAW data recovery

Overall Percentage of GAW Data Recovery	
Quarter 1	**88,9 %**
Quarter 2	**77,3 %**
Quarter 3	**80,1 %**
Quarter 4	**80,1 %**
Overall GAW Total (%)	**81,6 %**

3.3.2.3 Percentage availability of RADAR infrastructure

The overall annual radar availability was 73,9% against the APP target of 70%.

Table 11: Radar network performance

Radar	Q1	Q2	Q3	Q4	Average (%)
Irene	83,53	83,22	93,73	79,57	85,01
Polokwane	37,04	60,88	90,08	96,2	71,05
Ermelo	91,79	81,13	75,71	92,98	85,40
Ottosdal	78,33	82,45	78,33	93,15	83,07
Bethlehem	95,39	76,16	79,42	97,22	87,07
Bloemfontein	85,29	99,72	89,49	79,27	88,44
Durban	4,33	79,07	85,57	65,98	58,89
Mthatha	96,6	61,57	73,38	87,89	79,86
East London	0	14,50	44,85	62,56	30,60
Cape Town	60,89	91,27	87,28	17,78	64,61
De Aar	19,6	93,36	90,78	87,67	72,85
Skukuza	79,58	86,15	66,06	87,41	79,80
Monthly average	**61,03**	**75,79**	**79,56**	**78,97**	**73,83**

The main challenges experienced in the last financial year are summarised in the table below.

Table 12: Radar systems failures analysis

Radar network	
The infrastructure is subjected to the same challenges, regardless of age, and these are the challenges that affect the system performance metrics. The radar system is complex machinery with interdependent subsystems important for its operation such as the standby power systems in the form of UPSs and emergency diesel generators, the air-conditioner systems crucial for the lifetime extension of the electronic components, computational systems, complex electronics, and high voltage systems. A decline in functionality of any of these systems will directly affect the radar's availability to transmit the meteorological data it is designed for. Summarised below, are the main challenges experienced during the past four quarters of the previous financial year, which had an adverse effect on the infrastructure performance levels. However, having addressed some of these concerns, led to improved performance.	
Main challenges	
Radar and peripheral equipment challenges	The main contributing factor is the load-shedding and availability of standby or backup power systems. The availability of diesel or the ability to replenish the fuel tanks is still a challenge and so are UPS systems failures and challenges with battery exhaustion. The quality of power supply – poor Eskom supply affects the stability of the radar system and impacts the performance of peripheral auxiliary equipment. The ability to resolve faults in a shorter turn-around time due to the availability of spares. The availability of secondary or supporting infrastructure such as UPS power and air-conditioning impacted the performance of equipment adversely. The other biggest challenge was the inability of technical employees to attend to the maintenance of the equipment due to the national COVID-19 lockdown

3.3.2.4 Percentage availability of Lightning Detection Network (LDN) infrastructure

The annual average performance of the LDN network for the period (1 April 2021 to 31 March 2022) stands at 93,76% data availability against the APP target of 80%.

Table 13: LDN performance

Name of site	Q1	Q2	Q3	Q4	Average (%)
Pretoria/Irene	96,20	80,67	88,34	77,79	85,75
Richards Bay	97,27	97,89	95,02	91,84	95,51
Vernon Crookes	97,80	98,66	94,82	96,34	96,91
Mthatha	99,64	96,14	96,18	97,22	97,30
East London	99,90	98,44	99,07	99,82	99,17
Port Elizabeth (Gqeberha)	88,66	99,92	99,32	99,85	94,29
Bethlehem	99,46	83,71	97,82	99,50	95,12
Kimberley	99,84	99,90	99,70	99,34	99,70
Lephalale/Ellisras	96,33	99,14	96,99	97,14	97,40
Satara	93,32	99,21	79,78	72,18	86,12
Aliwal North	97,02	93,53	99,29	99,30	95,28
Kathu	98,29	99,89	95,86	98,09	98,03
Aberdeen	96,43	99,16	99,30	99,19	98,52
Cape Town	98,89	99,79	99,93	99,94	99,64
George	91,03	99,81	93,49	97,01	95,34
Upington	99,69	99,82	99,55	96,05	98,78
Calvinia	96,41	98,82	95,57	96,91	96,93
Mafikeng	62,32	74,34	77,96	79,25	73,47
Springbok	99,74	97,51	92,16	99,25	97,17
Vryheid	0,87	92,79	95,99	99,21	72,22
Lebowakgomo	87,58	96,69	93,18	71,83	87,32
Musina	98,14	98,66	89,10	96,89	95,70
Alkantpan	92,58	99,16	95,77	99,58	96,77
Wolwespruit	94,30	95,79	88,77	93,33	93,05
Average – data availability	**90,91**	**95,81**	**94,29**	**94,04**	**93,76**

The LDN challenges of the year under review are presented below.

Table 14: LDN failure analysis

LDN sensors	Main challenges	Mitigation
Overall LDN sensor failures and data losses	Power-related failures at Satara, Port Elizabeth (Gqeberha), Mafikeng and Lebowakgomo. System-related failures or concerns at Cape Town and Satara. Upgrade at George and Vryheid, as well as system and Total Lightning Processor (TLP) configuration concerns. Communication Network-related failures at Irene, Lephalale, Satara, Aliwal North, Aberdeen, Calvinia, Lebowakgomo, Alkantpan, Wolwespruit, Port Elizabeth (Gqeberha), Mafikeng, Vryheid and the lack of Telkom connection to Ngwazini (Swaziland).	*Backup system is being enhanced. *Satara is currently experiencing a receiver fault. The loss of critical personnel at the end of Q1 and capability is also affecting performance and turnaround time. *Improved ICT system and procured radio links to correct ICT communication failures. The loss of critical personnel at the end of Q1 and capability is also affecting performance and turnaround time.

3.3.2.5 Upper-air sounding network

SAWS operates a network of ten upper-air sounding stations, inclusive of the islands. Two hydrogen generators (Durban and Gough Island) are non-operational due to various reasons. Overall annual performance, with special emphasis on the hydrogen generator, was 72,76% inclusive of two islands, against the annual target of 65%.

Table 15: Hydrogen generators

Hydrogen generator	Q1	Q2	Q3	Q4	Average (%)
Springbok	100,00	100,00	100,00	100,0	100,00
De Aar	96,77	100,00	98,89	97,98	98,41
Upington	95,63	100,00	54,66	89,50	84,95
Port Elizabeth	63,58	0,00	100,00	0,00	40,90
Cape Town	100,00	100,00	100,00	100,00	100,00
Bloemfontein	40,00	87,96	5,38	95,08	57,11
Irene	76,67	88,89	100,00	89,38	88,74
Marion	0,00	0,00	0,00	0,00	0,00
Durban	70,29	100,00	0,00	100,00	67,57
Gough Island	100,00	100,00	88,17	100,00	97,04
Monthly average	**74,29**	**77,68**	**64,71**	**74,35**	**72,76**

The hydrogen generator challenges are presented below.

Table 16: Problems experienced with hydrogen generators

Station name	Status	Description of the problem	Action plan(s)	Timeline
1) Port Elizabeth	Non-operational	Electronic control board card was corrupted	New spares were received and dispatched to the regions	First week of April 2022
2) Marion Island	Non-operational	Electronic control board card was corrupted	New card has been dispatched to Cape Town	1 April 2022
3) De Aar	Non-operational	Electronic control board card was corrupted	New card has been dispatched to Cape Town	1 April 2022

Table 17: Surface Observation Network failure analysis

Surface Observation Network	Main challenges
AWS and ARS	Load-shedding was a challenge during this financial year, directly impacting the availability of the sensors. GSM communication has also been a challenge during this financial year, with coverage being weak in certain areas where either the MTN or Vodacom communication infrastructure did not exist.

3.3.2.6 Percentage availability of SAAQIS infrastructure

SAWS is the custodian of the South African Air Quality Information System (SAAQIS) and is responsible for the hosting, operation and maintenance of the SAAQIS, with the goal of ensuring access to air quality information for all users, i.e. the public, business, industry, government authorities, non-governmental organisations, etc. Stakeholders that make use of the information that is available on the SAAQIS, are dependent on the constant availability of the website as well as the accuracy and reliability of the information therein. The SAAQIS is a one-stop destination for all air quality information such as research papers, reports, air quality management plans, and legislative documentation, as well as a repository for air quality data from a number of government and privately-owned air monitoring stations.

The annual target for the 2021/2022 reporting period was 95% SAAQIS availability which was achieved with 98,96% SAAQIS availability. Table 18 highlights the SAAQIS availability statistics which were achieved during 2021/2022.

Table 18: SAAQIS availability

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Target	95%	95%	95%	95%	95%
Achieved	99,83%	98,27%	98,20%	99,54%	98,96%

3.3.2.7 National Air Quality Priority Areas monitoring stations

The SAWS is responsible for managing and reporting on data collection from ambient air quality monitoring networks in the National Air Quality Priority Areas. Stakeholders that make use of data that emanates from the SAWS air quality monitoring infrastructure are dependent on the effective performance of these networks. This infrastructure comprises the Vaal Triangle Airshed Priority Area network (six stations), the Highveld Priority Area network (five stations) and the Waterberg-Bojanala Priority Area network (four stations).

The annual performance target of 75% of priority areas' air quality stations available on SAAQIS, meeting the minimum data requirement, was partially achieved with 69,44% during 2021/2022 after applying the approved mid-year review. The reasons for the partial achievement of the target include theft and vandalism at the Three Rivers station, and a faulty transformer at the Sebokeng station, which resulted in stations having to be decommissioned and no longer being available on SAAQIS. In addition, instrument failure/faults which have presented at many stations, intermittent power failures (load-shedding and localised power supply issues) and power surges, have resulted in unexpected damage to aging and new instruments. Network recapitalisation is urgently required to address these challenges.

Table 19: Percentage of stations meeting minimum data requirements

Quarterly target	Achievement
Quarter 1: 75% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirement of 75%	Partially achieved 71,11% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirements Challenges: Instrument failure/faults; intermittent power failures and power surges resulted in damage to instruments Corrective measures: Network recapitalisation
Quarter 2: 75% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirement of 75%	Partially achieved 68,89% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirements Challenges: Instrument failure/faults; intermittent power failures and power surges resulted in damage to instruments Corrective measures: Network recapitalisation
Quarter 3: 75% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirement of 75%	Partially achieved 51,11% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirements Challenges: Theft and vandalism of Three Rivers station; power failures due to a damaged transformer at Sebokeng station; intermittent power failures and power surges resulting in damage to instruments Corrective measures: Ongoing network recapitalisation
Quarter 4: 75% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirement of 75%	Achieved 86,67% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirements
Annual target: 75% of priority areas air quality stations are available on SAAQIS, meeting minimum data requirements	Partially Achieved Annual Target 69,44% of priority areas' air quality stations are available on SAAQIS, meeting minimum data requirements

3.3.3 Information and Communications Technology (ICT)

SAWS acknowledged the increasing need for ICT to drive innovation through disruptive technologies, automating business processes and improving service delivery. Key strategic initiatives, seeking to improve the capacity of ICT, were undertaken during the year under review to take advantage of the identified opportunities and address some of the business challenges, including:

- The review and enhancement of the Cyber Security strategy;
- The appointment of a service provider to enhance and implement the firewall;
- The implementation of an integrated risk compliance tool to assist the Compliance Unit;
- The implementation of a Human Capital Management (HCM) Performance Management System to automate annual and semester employee performance agreements and assessments;
- The implementation of an HCM Recruitment System to automate vacancy application;
- The implementation of a new Automatic Rainfall Stations (ARS) portal;
- The development of a business case for the High-Performance Computer (HPC);
- The training of HCM unused modules of Sage Premier VIP;

- The implementation of real-time BIOMET online monitoring consisting of Automatic Weather Stations (AWSs);
- The implementation of a COVID-19 dashboard and monitoring for a PowerBI solution that serves as a monitoring tool for the development of the coronavirus disease at SAWS;
- The implementation of a Regional Specialist Meteorological Centre (RSMC) Portal for the dissemination of meteorological data for African countries;
- The implementation and redevelopment of a SharePoint Intranet portal for user-friendly security, efficiency and collaboration. Access to the SAWS intranet is anywhere and anytime without the need for the company's private network; and
- The implementation and redevelopment of the Safety, Health, Environment and Quality (SHEQ) integration portal to automate the integrated process-oriented platform to assist SHEQ office and business.

3.3.3.1 ICT systems availability

The target for the ICT system availability of 96% for the year, was achieved during the year. The ICT system availability is a combined index, considering the Wide Area Network, server administration and HPC availability.

The following initiatives were started and will be implemented during the next financial year:

- Replacement of the High-Performance Computer (HPC);
- The implementation of a multi-hazard early warning system;
- The implementation of a data management system for climate and research;
- The implementation of an aviation mobile application system;
- The implementation of a new Automated Weather Stations (AWS) system, phase one;
- The implementation of the new radiation portal and monitoring system;
- The implementation of the E-Board Pack Solution System;
- Upgrade of MPLS-hosted PABX;
- The implementation of a building move for SAWS;
- Upgrade of GPS timeservers and disaster recovery backup; and
- Upgrade of three regional servers.

Table 20: Linking performance with budgets

Programme/ activity/objective	2021/2022			2020/2021		
	Budget	Actual Expenditure	(Over)/ Under Expenditure	Budget	Actual	(Over)/ Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Infrastructure and Information systems	72 631	73 665	(1 033)	76 776	77 809	(1 032)

3.3.4 Strategy to overcome areas of underperformance

With reference to the partial achievement of the GAW network, the SAWS Infrastructure Turnaround Strategy will be implemented subject to capital investment. This is an area which was challenging over the past two years as SAWS had to convert a portion of its CAPEX budget into OPEX, thus delaying the investment in infrastructure.

A ring-fenced recapitalisation plan, funded by DFFE, will be implemented to turn around the performance of the Priority Areas Air Quality stations.

3.3.5 Reporting on the institutional response to the COVID-19 pandemic

See part D, paragraph 2.5

3.4 Programme 4: Administration

PURPOSE: Provide leadership, strategic, centralised administration, executive support and corporate services, and facilitate effective co-operative governance, international relations and environmental education and awareness

3.4.1 Sub-programme

3.4.1.1 Sound Corporate Governance

Purpose: To provide business management and leadership

- Percentage of local expenditure on affirmative procurement (Level 1 to 4) (65% of local procurement)
- Level of B-BEEE rating (level 6)
- Growth in unregulated commercial revenue (R28.6 million unregulated commercial revenue)
- External audit opinion rating (unqualified opinion)

3.4.1.2 Adequate, appropriately skilled, transformed and diverse workforce (full detail is contained in Part D of this report)

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

- Percentage attrition rate (less than 8%)
- Percentage of Workplace Skills Plan (WSP) targets met (75%)
- Percentage compliance to employment equity on women in management (36%)
- Percentage compliance to employment equity on persons living with disabilities (2%)
- Number of youths in internships and learnerships (10)
- Number of placements in work-integrated learning (5)

3.4.1.3 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 the engagement of stakeholders for mutually beneficial relationships

- Number of positioning programmes conducted (4)
- Number of public awareness programmes conducted (9)
- Number of collaborations through partnerships implemented (2)

3.4.2 Achievements

3.4.2.1 Percentage of local expenditure on affirmative procurement

The SCM Unit contributed to the overall strategic effectiveness of SAWS by exceeding its target to spend 65% of the procurement budget locally on affirmative procurement, by achieving 91%.

3.4.2.2 Level of B-BBEE rating

In spite of continuous efforts of the task team to prioritise SAWS' B-BBEE status to attain a level 6 B-BBEE status, this was not met. SAWS remained at level 8.

3.4.2.3 Growth in unregulated commercial revenue

SAWS achieved R26,8 million in non-regulated commercial revenue against the target of R28,6 million, following the severe impact on revenue in the initial stages of the COVID-19 lockdown in 2020, which saw the economy contract by 6,4%. The year started well with growth in South Africa's real gross domestic product (GDP), however, the civil unrest and stricter lockdown restrictions shook the economy in late 2021. Consumer demand recovered towards the end of the financial year, but the impact on SMMEs was severe, brought about by a rise in production and imports. In addition, the official unemployment rate reached a historic 35,3%, as indicated by the Quarterly Labour Force Survey, the highest rate since 2008 when the survey started.

The scope of the COVID-19-induced economic disruption on the South African economy has thus been far-reaching and continues to impact many SAWS clients.

As the weather patterns shifted into late summer, information fees for data products improved, but still lagged behind budget. Data sales are mostly from the insurance sector, whilst sales from certain sectors affected adversely by COVID-19, such as tourism and the construction industry, declined significantly. Certain clients are also reverting to freely available model data, instead of using actual data in their consulting engagements.

The renewal of maintenance contracts, as well as the ordering of air quality equipment for key equipment installations across the country, took time to finalise. New aviation automatic weather installations at Mthatha and Polokwane airports were fully functional by year-end.

In order to step up revenue generation, a Revenue Turnaround Strategy (RTS) was crafted in June 2021. In the short term, strategic quick wins, with the focus on high revenue returns with minimal effort, resulted in additional revenue of R2,64 million. High revenue, more complex ideas, as well as competitive advantage ideas, were also initiated during the second quarter. A Commercial Committee was implemented to assist with the implementation of the RTS and to grow the pipeline of revenue-generating solutions to support revenue growth targets.

3.4.2.4 External audit opinion rating

An unqualified audit opinion was achieved for the review of the 2021/2022 financial year which ended in March 2022.

3.4.2.5 Percentage of attrition rate

This element is discussed in further detail in Part D. The organisation achieved an overall annual attrition rate of 6,22%, which was within the desired rate of ≤8%.

3.4.2.6 Percentage of workplace skills plan (WSP) targets met

The target for the workplace skills plan of 75% was achieved as we ended the year at 87%.

3.4.3 Brand positioning and stakeholder network development

- Number of positioning programmes conducted (4)
- Number of public awareness programmes conducted (9)
- Number of collaborations through partnerships implemented (2)

3.4.3.1 Brand positioning programmes conducted

SAWS achieved its number of brand positioning targets for the financial year. In pursuit of positioning the SAWS brand, the South African Weather Service took part in several positioning programmes throughout the year. These mainly involved the SAWS forecasters being interviewed on various media platforms, and our researchers presenting at local and international events. Radio and TV were used to disperse information and position the organisation as a reputable and authoritative voice for issuing weather warnings. The information ranged from severe weather, rain and cold conditions brought by cold fronts, and cut-off low systems to tropical cyclones. The links to the videos are found below:

a) YouTube weather forecasts and interviews

Cold front about to hit Cape Town interview by Mbavhi Maliage with eNCA
https://youtu.be/FcHous3G5GI

Cold front about to hit Cape Town interview by Kumsa Masizana with eNCA
https://youtu.be/gePLU_kpGBc

Extreme cold weather and snow weather alert by Lehlohonolo Thobela with eNCA
https://youtu.be/aeFKGuc1tsE

Severe weather alerts for Reconciliation Day by Jacqueline Modika
https://youtu.be/pqoRZn6sryw

Severe weather alert for a cut-off low system by Bulo Bransby
https://youtu.be/waoduYo2-Yk

Severe weather alert for a cut-off low system by Jacqueline Modika
https://youtu.be/NOV45b-6peQ

Severe weather alert for a cut-off low system by Celeste Fourie
https://youtu.be/by3xUT3BzD4

Severe weather alert for a cut-off low system by Kumsa Masizana
https://youtu.be/WgcjP6wxS_w

Severe weather alert for a cut-off low system by Kumsa Masizana
https://youtu.be/jAWL5OkJuJ0

Severe weather alert for Reconciliation Day system by Kumsa Masizana
https://youtu.be/gaKdzqoHjhc

Severe weather alerts for Christmas Day by Lehlohonolo Thobela with eNCA
https://youtu.be/zAGLoOT4NB4

Severe weather alerts for Christmas Day by Lehlohonolo Thobela with Newsroom Afrika
https://youtu.be/HlogACx15Jk

Severe weather alert for Reconciliation Day system by Puseletso Mofokeng with Newsroom Afrika
https://youtu.be/-I-XQ6_IsLs

Severe weather alert for tropical cyclone Ana by Elizabeth Viljoen with Newsroom Afrika
https://youtu.be/DjtNEAiuTFU

Severe weather alert for tropical cyclone Batsirai by Mbavhi Maliage
https://youtu.be/0J208gZNXsQ

b) To further position the SAWS brand and promote science and women in leadership positions, an interview was conducted by the Senior Manager: Research, Ms Mary-Jane Bopape, on 16 August 2021 with Thobela FM. She further acted as keynote speaker at the National Research Data Workshop from 11 to 13 October 2021 and also delivered a talk at the 52nd Annual Conference on the National Association for Clean Air (NACA) on "The Role of SAWS on Air Quality Research" from 6 to 8 October 2021

c) The Research department launched the Citizen Science project, which saw SAWS partnering with the Viva Foundation and the project being launched at Refilwe township and Mamelodi, respectively, on 4 and 5 November 2021. The project was further successfully launched in Swayimani Village in KZN.

d) Aviation stakeholders were brought together by the Cape Town Weather Office personnel, together with the Aviation Weather Centre, for a workshop on 2 March 2022. The aim was to strengthen existing relationships with key stakeholders in the aviation sector and also to showcase products and services currently offered by SAWS.

e) Under the leadership of the Chief Executive Officer, Mr Ishaam Abader, SAWS celebrated World Meteorological Day on 23 March 2022 by hosting a virtual event under the theme: Early Warning and Early Action. The theme was informed by the weather, climate and water extremes which are becoming more frequent and intense in many parts of the world as a result of climate change. The Minister of Forestry, Fisheries and the Environment, Minister Barbara Creecy, delivered a keynote address which highlighted the implications of climate change, hazardous weather and the steps taken around the world and in South Africa to mitigate the effects of severe weather and impending disasters by means of early warning systems. Furthermore, the SAWS Board and the Permanent Representative (PR) of South Africa with WMO, Mr Abader, attended the World Meteorological Day event hosted by WMO. High-level speakers included the United Nations Secretary-General, H.E. Antonio Guterres, and the WMO Secretary-General, Prof Petteri Taalas, to highlight but a few. The SAWS was represented by its Board, the PR of South Africa with the WMO and the Executive Management.

f) A total of 33 media releases, both corporate and operational in nature, were published. The SAWS website and social media platforms were updated accordingly, while daily regional and travellers' forecasts were published on the SAWS Facebook and Twitter pages.

g) SAWS has embraced the need to expand its social media presence and continued to grow as more people become WeatherSMART. The organisation continued to grow the visibility of the SAWS brand on various media platforms, especially social media, through the development of infographics to communicate warnings. By the end of the financial year, a 22% growth in Facebook followers, from 117 090 to 144 000, and a 22% growth in Twitter followers, from 137 449 to 168 343, were observed.

h) Two WeatherSMART News publications, containing scientific articles that are of interest to weather enthusiasts and the public, were published and are available on the website at weathersa.co.za.

3.4.3.2 Public awareness programmes conducted

Despite COVID-19 regulations in place to limit the spread of the virus, the Communication and Stakeholder Relations department, partnering with various regional offices, took part in various awareness programmes and achieved more than the required nine engagements. Participation in these awareness programmes was aimed at creating disaster awareness and the promotion of careers in the environmental sciences field in schools.

Engagements included:

- Disaster Management School Competition in Polokwane, 11 May 2021: To promote disaster risk awareness in schools.
- Climate Change and Sustainable Development Summit in KwaZulu-Natal, 12 May 2021: A meeting of various stakeholders to discuss issues related to climate and sustainable development.
- International Day for Biodiversity held in Bloemfontein, 22 May 2021: An exhibition to celebrate careers in the environmental science field.
- The Umzimkhulu Career Exhibition in the KwaZulu-Natal townships of Nongidi, Nazareth and Clydesdale, 18 to 20 August 2021: Engaging the youth in KZN province and sharing information about careers in science, technology, engineering and mathematics.
- Two awareness campaigns in Orange Farm and Lenasia, 8 to 9 September: Working with the Gauteng Province Disaster Management Centre to inform communities about extreme weather conditions.
- Two community outreach events were conducted in partnership with the KwaZulu-Natal Provincial Disaster Management Committee. The events took place in Newcastle on 14 October 2021, as well as in Ixopo on 21 October 2021. These events were held under the theme “Provincial Summer Season Contingency Plan”.
- QwaQwa You Only Live Once Expo, 10 November 2021.
- Upington Career Day, 2 March 2022: SAWS worked together with the Department of Public Works and Infrastructure to present at their career expo.
- Lowveld Career Exhibition, 4 March 2022: SAWS partnered with the South African National Biodiversity Institute (SANBI) to showcase what the Environment Sector has to offer in careers.

3.4.3.3 Collaborations through partnerships implemented

- SAWS collaborated with the Department of Science and Innovation (DSI) and the South African Agency for Science and Technology Advancement (SAASTA) to launch the Cofimvaba Science Centre in the rural Eastern Cape. This partnership resulted in SAWS installing a Biometeorological Station at the Centre, increasing the network for data collection, and also teaching the visitors at the centre about solar radiation and other meteorological parameters that SAWS collect through the Research department.
- SAWS further strengthened its commitment to the Highbury Community in Mthatha by signing a renewed Memorandum of Understanding on 14 February 2022. This community serves as the custodian of the Mthatha radar which was installed in 2001.

3.4.4 International relations

During the financial year, the SAWS continued to fulfil its regional and international obligations. One of the most significant WMO-related processes was the finalisation of the designation of the Permanent Representative (PR) of South Africa with WMO, after the appointment of the SAWS Chief Executive Officer.

South Africa continued to play an active role in aviation-related global and regional platforms, which included the International Civil Aviation Organization (ICAO) MET Panel and operational meteorological work.

South Africa was represented in several regional and international engagements that were predominantly virtual in nature, due to the impacts of COVID-19.

3.4.4.1 WMO-related engagements

- The first session of the WMO Infrastructure Commission (INFCOM), held from 12 to 16 April 2021, deliberated on the implementation process of the approved WMO Reforms and its related structures within the Regional Associations (RAs). It also allowed engagements on issues of observational infrastructure and the information systems that underpin meteorological observations.
- The WMO Secretary-General (SG) Briefing for Permanent Representatives (PRs) in the Southern and Eastern Hemisphere, was held on 6 May 2021. The session aimed to brief the PRs on the implementation of the WMO Reforms and to inform the PRs on the WMO priority areas for the 2021/2022 financial year.
- As a means of enhancing the country's co-operation with the WMO, a virtual WMO-SAWS bilateral session was convened on 21 September 2021. This was a courtesy follow-up meeting between the WMO Secretary-General (SG) and the PR of South Africa with WMO. The meeting deliberations covered the country's position with regard to the WMO Unified Data policy. Additionally, South Africa requested that the WMO considers including WMO members from the developing world in the newly established WMO Systematic Observations Financing Facility (SOFF), to assist them in the implementation of the WMO Global Basic Observing Network (GBON). Finally, South Africa raised its challenges and limitations on the proper implementation of the WMO hydrological programmes in the SADC region.
- A bilateral session was convened on 5 October 2021 between the PR of South Africa with the WMO and his core executives, with the WMO Research Board Deputy Chairperson. The session aimed to discuss the newly adopted WMO Systematic Observations Financing Facility (SOFF) for the implementation of the WMO Global Basic Observing Network (GBON) that should be implemented by all WMO members and how the middle-income economies such as South Africa, may be considered for this initiative.
- An introductory meeting between the PR of South Africa and country focal points serving within the WMO echelons, was convened on 19 October 2021. This session attracted various experts from government departments and academic institutions who presented their areas of responsibility to enhance the country's preparations for the WMO Extra-ordinary Congress.
- South Africa was represented in the virtual WMO Extra-ordinary Congress scheduled from 11 to 22 October 2021. Of importance was the adoption of the WMO Unified Data Policy that promotes free data exchange as well as the WMO Systematic Observations Financing Facility (SOFF) aimed at assisting Least Developing Countries (LDCs) and Small Island and Developing States (SIDS) in implementing GBON. This meeting was followed by the 74th session of the WMO Executive Council (EC) convened from 25 to 29 October 2021, to discuss the implementation of the congress resolutions. As the country is not a member of the WMO EC it, however, obtained the observer's status in order to follow the proceedings of the session.

- South Africa also participated in the WMO Systematic Observations Financing Facility (SOFF) Peer Advisors kick-off meeting in March 2022, led by the PR of South Africa with WMO. This followed after the expression was made by the country to be considered for serving as the WMO SOFF Peer Advisers, for the implementation of the Global Basic Observing Network (GBON) programme in the Least Developed Countries (LDCs) and Small Island Developing States (SIDS). Through the SOFF Peer Advisors Programme, technical advisory support will be provided to the above-listed category of beneficiary States, on a cost-recovery basis, to implement GBON. This programme seeks to enhance basic meteorological observations, as well as data communication and the international exchange thereof, to ensure that the meteorological community better responds to and addresses the societal needs in this climate change era.

3.4.4.2 Aviation-related participation of experts at global and regional platforms

During the year under review, a significant role was played by SAWS aviation experts in various forums, both regionally and globally. SAWS occupies the vice-chair of the Standing Committee on Aviation (SC-AVI) under the World Meteorological Organization (WMO) Services Commission.

The SC-AVI is a subsidiary body of WMO's Commission for Weather, Climate, Water and Related Environmental Services and Applications (SERCOM) that delivered on its work plan since its establishment. Since March 2020, the work of the subsidiary body was undertaken through virtual platforms at awkward hours to try and accommodate all participating experts across the globe. The first-ever hybrid meeting was conducted at the end of March, where the SC-AVI Management Group engaged in a number of activities involving stronger reflection on the Global Air Navigation Plan (GANP) of the International Civil Aviation Organization (ICAO) in relation to the aeronautical meteorological long-term plan and the review thereof; inclusion of data policy, exchange and access considerations (both challenges and opportunities); addition of reference to impact-based forecast and warning services as well as the instrumental role of advances in science and technology in the service delivery value-cycle (i.e. 'research to operations' and 'science for services' activities that harness state-of-the-art innovations such as artificial intelligence and machine learning); inclusion of reference to the global weather enterprise, given both public and private sector entities are involved in the provision of aeronautical meteorological services; and the addition or improvement of references to 'enablers' to service delivery such as cost recovery and capacity development.

A note of caution was also offered in respect of how to appropriately reference initiatives such as ICAO's 'No Country Left Behind' (NCLB) campaign, given the prevailing need to transform how meteorological services for aviation are provided in the future and, potentially, by whom. The Aviation department remained at the forefront of providing aeronautical meteorological services of excellence to the industry and played a part in working with ICAO to conduct the Volcanic Ash Regional exercise with Toulouse and Cabo Verde.

3.4.4.3 International Civil Aviation Organization (ICAO) MET Panel and operational meteorological work

Migration of the provision of Aeronautical Meteorology into the System Wide Information Management (SWIM) environment is meant to address the increase in information exchange, both in terms of the number of exchanges and number of participants involved, in anticipation of the arrangements in support of the global Air Traffic Management (ATM) operational concept. This is one of the discussed topics in the global and regional arena as part of the effort to improve the availability and accessibility of Aeronautical Meteorology information in support of International Air Navigation. SAWS personnel are involved in global and regional aeronautical meteorological expert groups, such as the WMO Standing Committee on Aviation, ICAO Meteorology Panel (METP) working groups, African Indian Ocean Planning and Implementation Regional Group (APIRG), and African Project Co-ordination Committee (APCC), where a significant impact is made by ensuring that Operational Meteorology (OPMET) data within the African region improves to meet the desired level of safety.

SAWS, as the host of the African regional OPMET Data Bank (RODB), has been actively involved in meetings with the ICAO AFI region and some of the originating states to discuss the improvement of OPMET information within the AFI region. The AFI OPMET Availability Action Plan is one of the reflections of the contribution and the impact made by SAWS experts within the ICAO AFI region. This action plan is aimed at improving OPMET data within the AFI region and it came into being because of a recommendation (working paper) by SAWS.

3.4.4.4 Regional Association I (RA I) engagements

- South Africa participated in the Phase II technical session of the 18th session of the RA I Session held from 23 to 26 August 2021. The meeting deliberated and provided insight on how the existing weather, water and climate information strategies and programmes could be harnessed. South Africa expressed its views and concerns on the WMO Unified Data Policy which would be adopted during the WMO Extra-ordinary Congress of October 2021 and how it would negatively impact the sustainability of NMHSs in the developing countries, Least Developed Countries (LDCs), and Small Island and Developing States (SIDS), that are dependent on their generated data for their sustainability.
- South Africa also participated in the RA I Consultative Session on 2 September 2021, which was a follow-up meeting to the Phase II session of the 18th RA I session. This session aimed at providing a platform to have robust and in-depth discussions on the technical matters that would be adopted during the Extra-ordinary Congress of October 2021, for implementation by members. This session presented an opportunity to interrogate further, the WMO Unified Data Policy and its implications for the developing countries and LDCs. These deliberations provided insights to SAWS on the approach to use in the development of the country's response to the WMO Unified Data Policy.
- South Africa, through the SAWS, chaired the fourth session of the RA I Working Group (WG) on Disaster Risk Reduction (DRR) on 10 June 2021. The main objective of this working group, which comprises ten African countries, including South Africa, is to co-ordinate and implement the DRR-related activities throughout the continent until 2023. Another highlight of the meeting was the WMO's announcement of the successful election of South Africa to chair the RA I Committee on Services (CoS). The scope of work for the RA I CoS includes overseeing and providing guidance on the implementation of climate services, DRR, aviation, hydrological services and research by National Meteorological and Hydrological Services (NMHSs) on the African continent.
- From 16 to 19 November 2021, the SAWS hosted the RA I Committee on Services kick-off meeting, with the meeting adopting the work plans and terms of reference for the RA I CoS and the four working groups.

- The organisation also participated in both the technical and high-level segments of the 4th Ordinary Session of the Specialised Technical Committee on Agriculture, Rural Development, Water, and Environment (STC, ARDWE), held from 13 to 15 December 2021. The high-level session was chaired by the South African Minister of Agriculture, Land Reform and Rural Development, with the DFFE Minister presenting environmental issues, inclusive of the meteorological aspects.
- The country was requested by the WMO to assist with the implementation of the WMO Common Alert Programme (CAP). The CAP programme seeks to standardise the issuing of early warning messages in response to all weather hazards using technological means. In this regard, five countries, namely Angola, Eswatini, Liberia, Namibia and Nigeria have been attached to South Africa. A WMO-SAWS session was convened on 20 October 2021 to provide guidance on how the country should undertake the newly acquired WMO CAP responsibility. Subsequently, the SAWS-WMO agreement on the CAP implementation was signed off by the end of November 2021.

3.4.4.5 Southern African Development Community (SADC) engagements

- From a sub-regional perspective, South Africa participated in the SADC Harmonisation Workshop convened on 28 April 2021. The main objective of this session was to harmonise all regional meteorological efforts and programmes of the sub-region. Member States reflected on the status of their meteorological infrastructure, cost-recovery processes, and compliance with the Minamata Convention, to name but a few. The workshop also considered the ongoing meteorological programmes of the SADC region, as well as the status of MASA and its Rescue Plan progress. Additionally, in efforts to enhance service delivery in the region, the reports on the regional WMO designated institutions were considered. Finally, the WMO, along with the developmental partners, presented on the WMO priority programmes for the region, as well as raised regional awareness of available funding initiatives such as the Adaption and Green Climate Funds, to support the implementation of these programmes.
- South Africa was represented, both in political and technical segments, at the SADC Cluster Meeting for Ministers responsible for ICT, Information, Transport and Meteorology convened from 6 to 9 July 2021. The country's delegation was led by the DFFE Deputy Minister, Ms Makhotso Sotyu, while the SAWS technical delegation was led by the SAWS CEO. The SAWS Board also attended the Ministerial segment of this meeting.
- The Global Framework for Climate Services (GFCS) is one of the key WMO programmes that aim at ensuring that NMHSs across the globe are relevant in the provision of climate services during this adverse era of climate change. In this regard, a Consultation Workshop for the Intergovernmental Authority on Development (IGAD) and SADC member states was convened from 6 to 7 December 2021 in Zanzibar on the implementation of the National Framework for Climate Services (NFCS). The PR of South Africa with WMO attended this session and was accompanied by the Head of Climate Services division, responsible for the implementation of the NFCS at the national level.
- The SADC Secretariat convened a session in March for the post-implementation session on the Southern African Regional Climate Information Services for Disaster Resilience Development (SARCIS-DR) project which ended in April 2021. Through this project, SADC National Meteorological Services (NMSs) were provided with meteorological equipment as part of efforts at improving observations in the region. South Africa, in this accord, was provided with two Automatic Weather Stations (AWSs) which were installed and commissioned into the SAWS observational network.
- Bilateral sessions were also convened between the PRs of South Africa and Eswatini, Mozambique and

Namibia, to enhance regional co-operation in the SADC region and review organisational partnerships for enhanced collaboration. These bilateral sessions are platforms for the country to assist with the enhancement of meteorological development in the region, and endeavours to advance the country's interests.

3.4.4.6 Meteorological Association of Southern Africa (MASA)

- The Meteorological Association of Southern Africa (MASA) convened its Board session on 12 May 2021, with the main aim of deliberating on the current MASA Secretariat status, which South Africa was requested to co-jointly administer, along with Mozambique, for the interim period. During this meeting, South Africa was also tasked to be the MASA banking focal point, especially because both the Dollar and Rand MASA banking accounts are in South Africa.
- The MASA Management Board convened a follow-up Board session in January 2022. Key matters deliberated during this meeting included the implementation of decisions of the SADC Ministers' meeting held virtually from 6 to 9 July 2021; the transition period of MASA Secretariat; the election process of a new MASA Chairperson, Vice Chairperson and Board members. In this regard, the Board resolved to convene a MASA annual general meeting where these matters would be extensively deliberated and concluded.
- MASA held its 14th Annual General Meeting in March 2022. The primary objective was to elect the new MASA leadership since the 2-year term of the incumbents had lapsed. The outcomes of these elections saw Mozambique elected as the new Chairperson of the Association, with Lesotho re-elected as Deputy Chairperson. With regards to the Management Board of the Association, the MASA Constitution prescribes that five member states serve on the structure, comprising the Chairperson, Deputy Chairperson as well as three additional members. Accordingly, South Africa and Tanzania were re-elected as members, with Zambia elected as a new member.

3.4.4.7 WMO-designated regional institutions hosted by South Africa

a) Regional Training Centre

Official engagements were held between WMO and the Regional Training Centre (RTC) in Pretoria, to collaborate at a strategic level on how South Africa could respond to regional training needs as well as the financial limitations that are facing regional NMHSs, especially in consideration of the prevalent COVID-19 pandemic and its related paralysis of the South African economy.

During the 2021/2022 financial year, the RTC successfully trained ten meteorological graduates to become weather forecasters, and five Meteorological Observers. The RTC also evaluated Seychelles' aviation forecasters and observers to become competent forecasters and observers through online platforms.

The RTC, with the support of the WMO, agreed on a programme to train 20 weather forecasters from various African countries. This course officially started on 31 January 2022 and will end in September 2022.

b) Global Producing Centre (GPC) for long-range forecasting

From the point of view of the Global Producing Centre (GPC) for long-range forecasting, the country participated both as the SADC member and the GPC, in the virtual Southern Africa Regional Climate Outlook Forum 25 (SARCOF-25) held in August 2021, which aimed at producing the Southern African Regional Climate Outlook that would be crucial for strategic planning and decision-making processes in the SADC region.

c) Regional WIGOS Centre

For South Africa to enhance its service delivery and fulfil its responsibility as the Regional WIGOS Centre-Southern Africa (RWC-SA) on a pilot-project basis, it introduced French and Portuguese translations during workshops and training sessions to cater for non-English speaking members that are affiliated with South Africa.

Subsequently, to ensure the country's relevance for its aspirational endorsement as the Regional WIGOS Centre in 2023, SAWS hosted the First Co-ordination and Feedback Meeting of the Regional WIGOS Centre - Southern Africa on 8 December 2021. This was a feedback session for the SADC Directors of the NMHSs and their respective focal points, on the gaps in the implementation of WIGOS in the SADC region.

d) Global Information Systems Centre (GISC), Pretoria

South Africa participated in the WMO GISC meeting, convened on 2 June 2021, for both GISC-Pretoria and Casablanca. The main objective of this session was to assess the effectiveness and efficiency of the two centres and deliberate on challenges experienced in relation to meteorological data unavailability and transmission. This meeting was important for SAWS to enhance its service delivery.

e) Regional Specialised Meteorological Centre (RSMC) on Disaster Risk Reduction (DRR)

To enhance the role of the country as the Regional Specialised Meteorological Centre (RSMC) on Disaster Risk Reduction (DRR), the country was represented in the 24th session of the RA I Tropical Cyclone Committee for the South-West Indian Ocean held from 8 to 10 November 2021. One of the tangible outcomes of this committee session was the successful review of the RA I Tropical Cyclone Operational Plan for the South-West Indian Ocean. This plan provides guidance to the region on the over-arching process of issuing weather-related warnings and advisories. This meeting was also crucial for SAWS to enhance its operational relations with RSMC La Reunion, especially in consideration of the significant role that the two RSMCs play.

3.4.4.8 Bilateral relations

During this reporting period, the SAWS has been engaging its key strategic partners, including Germany, China and the USA, with the aim of finalising Memoranda of Understanding on agreed areas of co-operation. The organisation further held a bilateral session with the Eswatini Met Service on 27 May 2021 to establish a strategic partnership between the two NMHSs. This emanated from the fact that both organisations have had close operational relations over the years.

Table 21: Linking performance with budgets

Programme/ activity/ objective	2021/2022			2020/2021		
	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual	(Over)/ Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Administration	31 128	23 241	7 887	2 590	2 592	(2)

3.4.5 Strategy to overcome areas of underperformance

A concerted effort will be made to improve the B-BBEE rating to Level 6 during 2022/2023.

Commercial revenue is also expected to improve as South Africa's economy improves and steps to grow commercial revenue will continue. With more funding envisaged to be available during 2022/2023 it is expected that the number of placements in work integrated learning will be achieved.

3.4.6 Reporting on the institutional response to the COVID-19 pandemic

See part D, paragraph 2.5

Mammatus clouds
Photo credit: Lucky Mthombeni (SAWS)

4 REVENUE COLLECTION

Table 22: Revenue collection

Programme/ activity/ objective	2021/2022			2020/2021		
	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Aviation Revenue	69 236	77 718	8 482	31 115	32 511	1 396
Other Commercial Revenue	28 600	26 853	(1 747)	25 180	25 050	-130
Total	**97 836**	**104 572**	**6 735**	**56 295**	**57 561**	**1 266**

The entity exceeded its revenue collection target of R97,84 million for the year, despite the prevailing COVID-19 conditions which continue to impact on its commercial revenue.

Collections for other commercial revenue were lower than projected estimates as some of the clients are still experiencing financial difficulties due to stagnating economic growth.

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

Commercial partners were constantly engaged during the year as additional meetings were arranged on a regular basis to verify sales against forecasts, collections against sales and new opportunities against existing business with the intention to ensure revenue remains on track and new opportunities are found on increasing revenue under difficult circumstances.

SAWS has taken additional steps in collecting the outstanding payments from its clients by engaging collection attorneys who are assisting with the issuing of letters of demand and summonses, where applicable.

Under-collection of revenue puts a strain on the entity's working capital as it means that projects will have to be postponed. However, SAWS was in a better position during the year as it was able to meet its collection targets.

4.2 Reasons for exceeding the target for revenue collection, reporting on new measures instituted during the course of the year to raise additional revenue or to ensure more efficient/effective collection.

An improvement in aviation revenue was seen towards the end of Quarter 3 which was sustained up to the end of the financial year. Air-traffic volumes started to pick up as a result of the easing down of COVID-19 restrictions and opening up of airports.

Our large customers, honoured their contracts for maintenance of equipment, lightning and forecasting products. Air quality instrumentation revenue was limited due to budgetary constraints from customers.

The entity has implemented the Commercial Revenue Turnaround Strategy aimed at maximising its commercial revenue.

5 CAPITAL INVESTMENT

5.1 Progress made on implementing the Capital, Investment and Asset Management Plan

During the year under review, the Department of Forestry, Fisheries and the Environment approved the SAWS request to convert R124,9 million government infrastructure grant (original government infrastructure grant budget of R140,23 million) to an operational grant as a response to the decreased revenue from commercial activities and liquidity challenges.

Out of the total infrastructure budget of R70,25 million, which includes unutilised capital expenditure funds brought forward from previous financial years, the entity spent R18,21 million on capital investment projects for the year and R7,5 million on operating leases.

5.2 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 was able to make progress on the acquisition of infrastructure during the financial year, however, most of the government infrastructure grant was received late in the year. Liquidity challenges at the beginning of the year and the Constitutional Court judgement on Preferential Procurement Regulation, 2017, delayed procurement processes for the year.

By the end of the financial year, capital investment projects amounting to R13,48 million were committed.

5.3 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 2022/2023 financial year:

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

These projects will assist with the basic observations network enhancement and ensure that we get better data, that it processed more efficiently and speedily, and that will feed into the prediction models and that will ultimately improve forecasting services

5.4 Plans to close down or downgrade current facilities

During the current financial year, the entity had no plans to close down or downgrade any of the current facilities. Efforts are targeted at upgrading and improving the performance of the infrastructure. It must be noted that some of the infrastructure is starting to reach the end of its useful life and, subject to budget availability, these will be disposed of and replaced accordingly.

5.5 Progress made on the maintenance of infrastructure

Due to budget constraints, management implemented various strategies for the maintenance of its infrastructure during the current financial year, which include the following:

- The support and maintenance of the High-Performance Computing infrastructure were extended during the year, while the related hardware infrastructure warranties were being procured, utilising the extended contract, aligning the expiry of the existing HPC with the expected new acquisition.
- Four server upgrades were completed and three outdated servers are being replaced which will be delivered in July 2022.
- Personnel from the Technical Division responsible for maintenance of the SAWS technical infrastructure, were upskilled by the original equipment manufacturers, resulting in more effective maintenance execution.
- Additional training was provided to personnel on radar equipment, the Lightning Detection Network and system observation equipment. Efforts are being made in giving technical specialists professional recognition and registration.
- The Lightning Detection Network sensor upgrades will continue to address the current concerns and shortages of network spare parts by freeing up used parts for sustaining maintenance elsewhere in the network.
- On-the-bench repairs were effected to ensure the re-use of essential parts. Similar interventions were also performed across the other networks to address the shortage of spare parts.
- With the implementation of the computerised maintenance management system “FIIX”, more effective tracking of maintenance activities and backlogs could be performed across different types of infrastructure and regional offices. Planned preventative maintenance activities are rolled out timeously and the submission of maintenance reports is being monitored from the regions.
- Clear segregation on maintenance practices, per infrastructure, can be made using the FIXX system records and benchmarks against best practices will be conducted.

5.6 Developments relating to the above that are expected to impact 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 the budget limitations, some of the network performances had to be reduced in an attempt to align the probability of performance to the allocation of funding.

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

In the current financial year, the entity’s asset holding changed due to acquisition, disposals, and impairment losses/scrapping of assets.

As part of its physical asset verification, the entity identified assets that were no longer required for service. These assets were approved for disposal and have been derecognised from the fixed assets register. The entity was also able to identify assets that were obsolete or damaged which were subsequently impaired.

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

Table 23: Asset holding movement (carrying amounts as at 31 March 2022)

Accounting group	Additions	Disposals	Impairment/ scrapping losses and reversals	Gains due to sale
	R'000	R'000	R'000	R'000
Property, Plant and Equipment	18 205	784	181	463
Intangible assets	-	-	11	-
Total	**18 205**	**784**	**192**	**463**

5.8 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.

During this process, some of the assets of which the condition was identified to be bad, were scrapped for disposal.

5.9 The current state of 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 24: Condition grading of assets

Condition grading	Capital assets state in percentages	Carrying amount on 31 March 2022 R'000
Good	43%	R 260 128
Fair	40%	R 131 515
Poor/bad condition	17%	R 2 263
Total	**100%**	**R 393 906**

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

Despite budget reductions that were affected in the current financial year, as well as travel restrictions due to the COVID-19 lockdown, the entity was able to carry out the following repairs and maintenance on its major capital projects:

- The refurbishment of the radar infrastructure was conducted successfully.

- The assessment of ionising radiation at selected radar sites was conducted.
- The upgrade of security at the radar sites to 24-hour monitoring was implemented successfully.
- Standby power upgrade for the Ottosdal radar site was conducted.
- The Technical Services team initiated procurement of several infrastructure projects and implementation will be rolled over into the new financial year.

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

The major backlogs for repairs and maintenance were addressed during the current financial year through the implementation of the computerised maintenance management system "FIIX". This resulted in a significant decrease in the organisational repairs and maintenance backlog.

Despite these interventions by management, more effective efforts would have been possible through the timely provision of spare parts and other related resources which were affected by reduced funding. Repairs and maintenance activities are strongly reliant on human resources and funding availability.

Attention is given to the appointment of additional manpower to assist with the maintenance activities rollout. The capacity issues are being addressed and additional human resources will be sourced in the new financial year.

Table 25: Budget and acquisition of infrastructure for the year

Infrastructure projects	2021/2022			2020/2021		
	Budget	Actual Expenditure	(Over)/ Under Expenditure	Budget	Actual	(Over)/ Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Computer equipment and servers	33 400	5 434	27 966	1 500	1 830	(330)
Technical equipment	32 752	9 526	23 226	-	13 327	(13 327)
Furniture and fittings	1 350	927	423	-	169	(169)
Computer software	-	-	-	-	2 759	(2 759)
Operating leases	-	7 461	(7 461)	-	-	-
Other	2 744	2 318	426	-	1	(1)
Total	**70 246**	**25 766**	**44 480**	**1 500**	**18 086**	**(16 586)**

Technical equipment consists of infrastructure related to meteorological equipment, automatic weather stations, radar spares, Lightning Detection Network sensors and air-quality equipment.

Other relates to library books, office equipment and capital expenditure-related costs on land and buildings, such as fencing and leasehold improvements.

Details of the actual breakdown of additions for the current and previous financial years are included in the notes to the Annual Financial Statements.

6 ANNUAL PERFORMANCE AGAINST TARGETS

PROGRAMME 1: WEATHER AND CLIMATE SERVICES

SUB-PROGRAMME 1.1: WARNINGS, ALERTS AND ADVISORIES

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	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)	98%	99%	98% availability of National Weather (FPZA41)	Achieved 99% availability of National Weather (FPZA41) Average of quarterly performance (99,44% + 99,46% + 96,72% + 99,46%) ÷ 4 = 98,77%	Quicker product generation and dissemination
		Percentage accuracy of aerodrome warnings	97%	99%	95% accuracy of aerodrome warnings	Achieved 99% accuracy of aerodrome warnings Average of quarterly performance (99,61% + 99,37% + 98,05% + 97,89%) ÷ 4 = 98,73%	Good performance of Numerical Weather Prediction models contributed to high accuracies
		Percentage accuracy of Terminal Aerodrome Forecast (TAF)	94%	94%	85% accuracy of Terminal Aerodrome Forecast	Achieved 94% accuracy of Terminal Aerodrome Forecast Average of quarterly performance (96,23% + 94,68% + 92,66% + 93%) ÷ 4 = 94,14%	Good performance of Numerical Weather Prediction models contributed to high accuracies
		Percentage availability of Marine products (SOLAS - Safety of Life at Sea)	96%	98%	95% availability of Marine Products (SOLAS)	Achieved 99% availability of Marine Products (SOLAS) Average of quarterly performance (99,18% + 99,73% + 99,73% + 97,23%) ÷ 4 = 98,%	Quicker product generation and dissemination.

PROGRAMME 2: RESEARCH AND INNOVATION

SUB-PROGRAMME 2.1: RESEARCH

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Lives and property protected against meteorological-related risks	Enhanced meteorological-related body of knowledge	Number of research outputs (Publications, articles, conference papers, etc.)	52	49	35 research outputs	Achieved 37 research outputs Sum of quarterly performance (11 + 11 + 6 + 9) = 37	Due to several journals not published (hard copies) but rather online, the online publications process results in quicker processing

SUB-PROGRAMME 2.2: SOLUTION DEVELOPMENT

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Lives and property protected against meteorological-related risks	Enhanced meteorological-related body of knowledge	Number of new or enhanced Climate Solutions for Climate-Sensitive Sectors	N/A	1	1 new or enhanced Climate Solution for Climate-Sensitive Sectors	Achieved 1 new or enhanced Climate Solution for Climate-Sensitive Sectors	None
		Number of new or enhanced Non-Climate-Specific Solutions	5	6	4 new or enhanced Non-Climate-Specific Solutions	Achieved 4 new or enhanced Non-Climate-Specific Solutions	None

PROGRAMME 3: INFRASTRUCTURE AND INFORMATION SYSTEMS

SUB-PROGRAMME 3.1: OPTIMAL MANAGEMENT OF INFRASTRUCTURE

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Lives and property protected against meteorological-related risks	Optimal core technological capability	Percentage availability of Automatic Weather Stations (AWS) Infrastructure	87,4%	87,8%	78% availability of Automatic Weather Stations (AWS) Infrastructure	Achieved 83% availability of Automatic Weather Stations (AWS) Infrastructure Average of quarterly performance (84,9% + 87,06% + 82,37% + 78,24%) ÷ 4 = 83,14%	Adequate spares available for repairs and maintenance
		Percentage availability of Automatic Rainfall Stations (ARS) Infrastructure	82,7%	83,3%	75% availability of Automatic Rainfall Stations (ARS) Infrastructure	Achieved 81% availability of Automatic Rainfall Stations (ARS) Infrastructure Average of quarterly performance (78,79% + 84,41% + 83,43% + 78,94%) ÷ 4 = 81,39%	Adequate spares available for repairs and maintenance
		Percentage availability of Global Atmospheric Watch (GAW) Infrastructure	86%	83%	85% availability of Global Atmospheric Watch (GAW) Infrastructure	Partially achieved 82% availability of Global Atmospheric Watch (GAW) Infrastructure Average of quarterly performance (88,9% + 77,25% + 80,1% + 80,05%) ÷ 4 = 81,58%	Challenges: Ozone soundings and Nitrous Oxide instrument which suffered complete instrument failure Corrective measures: Ozone soundings on track since March 2022
		Percentage availability of Radar Infrastructure	92%	73%	70% availability of Radar Infrastructure	Achieved 74% availability of Radar Infrastructure Average of quarterly performance (61,03% +	Improved Electrical Power and communication network
		Percentage availability of Lightning Detection Network (LDN) Infrastructure	92%	94%	80% availability of Lightning Detection Network (LDN) Infrastructure	Achieved 94% availability of Lightning Detection Network (LDN) Infrastructure Average of quarterly performance (90,9% + 95,81% + 94,29% + 94,04%) ÷ 4 = 93,76%	Improved electrical power, communication network and availability of spares
		Percentage availability of South African Air Quality Information System (SAAQIS) Infrastructure	N/A	99%	95% availability of South African Air Quality Information System (SAAQIS) Infrastructure	Achieved 99% availability of South African Air Quality Information System (SAAQIS) Infrastructure Average of quarterly performance (99,83% + 98,27% + 98,20% + 99,54%) ÷ 4 = 98,96%	Minimal downtime of the South African Air Quality Information System (SAAQIS) website

SUB-PROGRAMME 3.2: QUALITY DATA

Applicable to Sub-Programme 3.2: Quality Data until 28 October 2021

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022 until 28 October 2021	Reasons for deviations	Reasons for revisions to the outputs/output indicators/annual targets
Lives and property protected against meteorological-related risks	Optimal core technological capability	Percentage of Priority Areas Air Quality Stations available on South African Air Quality Information System (SAAQIS) meeting minimum data requirements	N/A	67%	85% of Priority Areas Air Quality Stations available on South African Air Quality Information System (SAAQIS) meeting minimum data requirements	Partially achieved 69,44% of Priority Areas Air Quality Stations available on SAAQIS meeting minimum data requirements Average of quarter 1 and 2 performance (71,11% + 68,89%) ÷ 2 = 70%	The achievement is reflective of the implementation until end of the second quarter of the financial year, thus the deviation from planned target.	Due to the prevalent and persistent electrical power surges experienced at the ambient air quality monitoring stations, equipment functionality is adversely hampered, leading to equipment malfunction/ failure and ultimately reduced data availability from the stations. Furthermore, since the advent of COVID-19 and its impact on the operational environment, there are increased challenges with equipment repairs due to lengthy timeframes to affect such repairs. The above, coupled with the increased cost of repairs as well as increased cost of spares for instruments make it impossible to achieve the current performance target.

Applicable for 2021/2022 with revision applied to Sub-Programme 3.2: Quality Data

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Lives and property protected against meteorological-related risks	Optimal core technological capability	Percentage of Priority Areas Air Quality Stations available on South African Air Quality Information System (SAAQIS) meeting minimum data requirements	N/A	67%	75% of Priority Areas Air Quality Stations available on South African Air Quality Information System (SAAQIS) meeting minimum data requirements	Partially achieved 69% of Priority Areas Air Quality Stations available on SAAQIS meeting minimum data requirements Average of quarterly performance (71,11% + 68,89% + 51,11% + 86,67%) ÷ 4 = 69,44%	Challenges: Theft and vandalism of Three Rivers station and damaged transformer at Sebokeng station Corrective measures: Ongoing network recapitalisation process
		Percentage of Automatic Weather Stations (AWS) & Automatic Rainfall Stations (ARS) climate data available on National Climate Database meeting minimum data requirements	N/A	94%	80% of AWS & ARS climate data available on National Climate Database meeting minimum data requirements	Achieved 90% of AWS & ARS climate data available on National Climate Database meeting minimum data requirements Average of quarterly performance (90,23% + 92,02% + 89,57% + 87,4%) ÷ 4 = 89,81%	Stability of the network and swift responses to technical and quality control issues

PROGRAMME 4: ADMINISTRATION (including corporate and regulatory services)

SUB-PROGRAMME 4.1: SOUND CORPORATE GOVERNANCE

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Organisational sustainability	Internal excellence achieved within the organisation	Percentage of Local Expenditure on Affirmative Procurement (Level 1 to 4)	95%[1]	80%[2]	65% of Local Expenditure on Affirmative Procurement (Level 1 to 4)	Achieved 91% Local Expenditure on Affirmative Procurement (Level 1 to 4) Average of quarterly performance (88,38% + 95,85% + 91,47% + 89,32%) ÷ 4 = 91,26%	Targeting of suppliers for local affirmative procurement
		Level of B-BBEE Rating	Non-compliant	8	B-BBEE Level 6 Rating	Not achieved B-BBEE Level 8 Rating	Challenges: Low scoring under the Skills Development as well as Enterprise and Supplier Development pillars Corrective measures: Improve Skills Development Expenditure on Learning Programmes as well as Supplier Development initiatives
		Growth in Unregulated Commercial Revenue	R35 673 040	R25 049 591	R28.6 million unregulated commercial revenue	Partially achieved R26 800 578 Sum of quarterly performance (R5 717 302 + R6 201 344 + R7 291 005 + R7 590 927) = R26 800 578	Challenges: Lower revenue from advisory and consulting fees as well as air quality-related income; Lower revenue generated from information fees due to dry winter season Corrective measures: Successful implementation of the developed Revenue Turnaround Implementation Plan
		External Audit Opinion rating	Unqualified	Unqualified	Unqualified Audit Opinion	Achieved Unqualified Audit Opinion	None

[1] Procurement from B-BBEE Level 1 to 8
[2] Procurement from B-BBEE Level 1 to 8

SUB-PROGRAMME 4.2: ADEQUATE, APPROPRIATELY SKILLED, TRANSFORMED AND DIVERSE WORKFORCE

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Organisational sustainability	Internal excellence achieved within the organisation	Percentage of attrition rate	6%	11%	≤8% attrition rate	Achieved 6% Attrition Rate Total attrition 29 ÷ (471 + 462) ÷ 2) x 100) = 6,22%	None
		Percentage of Workplace Skills Plan (WSP) targets met	30%	60%	75% of Workplace Skills Plan (WSP) targets met	Achieved 87% of Workplace Skills Plan (WSP) targets met Total targets met (179 ÷ 206) x 100 = 86,89%	More employees received training interventions as per training plan
		Percentage Compliance to Employment Equity on Women in Management	36%	37%	36% Women in Management	Achieved 38.71% Women in Management Percentage of women in management at end of period (48 ÷ 124) x 100 = 38,71%	More women retained in occupied management positions
		Percentage Compliance to Employment Equity on Persons Living with Disabilities	2%	1.9%	2% Persons Living with Disabilities	Achieved 3% Persons Living with Disabilities Percentage of Persons Living with Disabilities at end of period (14 ÷ 462) x 100 = 3,03%	More employees disclosed their disabilities after workshops encouraged them to disclose such
		Number of Youths in Internships and Learnership	10	15	10 Youths in Internships and Learnership	Achieved 15 Youths in Internships and Learnership	Additional interns appointed due increased funding from TETA for internships
		Number of Placements in Work Integrated Learning	N/A	N/A	5 Placements in Work Integrated Learning; 3 being Persons Living with Disabilities	Partially achieved 4 Placements in Work Integrated Learning; 4 being Persons Living with Disabilities	Challenges: One (1) resignation of a WIL candidate Corrective measures: Recruitment of WIL candidates for the following financial year

SUB-PROGRAMME 4.3 BRAND POSITIONING AND STAKEHOLDER NETWORK DEVELOPMENT

Outcome	Output	Output indicators	Audited actual performance 2019/2020	Audited actual performance 2020/2021	Planned annual target 2021/2022	Actual achievement 2021/2022	Reasons for deviations
Organisational sustainability	Internal excellence achieved within the organisation	Number of Positioning Programmes conducted	N/A	N/A	4 Positioning Programmes conducted	Achieved 9 Positioning Programmes conducted Sum of quarterly performance (3 + 1 + 2 + 3) = 9	Increased media interest due to weather pattern changes into winter season as well as start of the rainy season
		Number of Public Awareness Programmes conducted	N/A	N/A	9 Public Awareness Programmes conducted	Achieved 16 Public Awareness Programmes conducted Sum of quarterly performance (3 + 6 + 3 + 4) = 16	The relaxing of National lockdown regulations allowed less restrictions on travel and gatherings
		Number of Collaborations through Partnerships implemented	N/A	N/A	2 Collaborations through Partnerships implemented	Achieved 2 Collaborations through Partnerships implemented Sum of quarterly performance (1 + 1) = 2	None

GOVERNANCE

PART C

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 with regard to public entities is applied through the precepts of the Public Finance Management Act, 1999 (Act No. 1 of 1999 and as amended) (PFMA) and run in tandem with the principles contained in the King Report on Corporate Governance. For the period under review the Board ensured that the organisation's corporate governance policies incorporated its corporate strategy, risk management, accountability, transparency and ethical business practices.

Parliament, the Executive and the Accounting Authority of the public entity are responsible for corporate governance.

2 PORTFOLIO COMMITTEE MEETINGS

The Environment, Forestry and Fisheries Portfolio Committee (the Portfolio Committee) is responsible for the oversight of the Department of Forestry, Fisheries and the Environment (DFFE) as well as the entities reporting to DFFE, inclusive of the SAWS. The SAWS attended the following Portfolio Committee's meetings in line with the programme for the 2021/2022 financial year:

5 May 2021:	**Briefing on the 2021/2022 Annual Performance Plan**
3 September 2021:	**Briefing on the Fourth Quarter Performance Report for 2020/2021**
17 November 2021:	**Briefing on the Annual Report and Financial Statements for 2020/2021**
11 March 2022:	**Briefing on the First and Second Quarter Performance Reports for 2021/2022**

The Portfolio Committee's exercise of oversight over the SAWS included raising pertinent questions in relation to organisational performance, governance and execution of the entity's mandate. The SAWS provided oral and concise responses during these Committee meetings. Numerous questions posed by the Portfolio Committee required extensive consideration and/or investigation and could not be responded to during the meetings. These questions were addressed through formal written responses to Parliamentary Questions circulated after meetings.

In the report of the Portfolio Committee on Environment, Forestry and Fisheries pertaining to the Strategic Plans, 2021/2022 Annual Performance Plans and the Budget Vote 32 of the DFFE, dated 11 May 2021, the following were recommended, amongst others:

- That the DFFE and entities should achieve all their set targets. It was stated that it is poor planning when budgets, which are directly linked to performance targets are exhausted, yet many targets remain either unachieved, are off-target or are partially achieved.
- There must be a clear roadmap for dealing with matters of irregular, fruitless and wasteful expenditure in the Department and entities, considering the prevailing fiscal constraints in the public sector.
- Accounting officers/authorities of entities should be made to understand that spending money outside of the guidelines of existing legislation for public finances, is criminal.

The SAWS responded to these recommendations of the Committee and continues to ensure that control measures are in place to prevent, detect and/or address such issues which may occur.

3 EXECUTIVE AUTHORITY

The Government of the Republic of South Africa is the sole shareholder and the Executive Authority of SAWS. The shareholder representative is the Minister of the Department of Forestry, Fisheries and the Environment. As such, SAWS engages the Minister on salient matters pertaining to the efficient and effective functioning of SAWS as well as progress on the implementation of plans and mandates.

To this end, SAWS periodically presented progress on the implementation of the 2021/2022 Annual Performance Plan to the Minister and Deputy Minister. Furthermore, the Minister and Deputy Minister provided guidance to the DFFE and its entities with regard to ensuring that the government's priorities are incorporated in the performance plans for the 2022/2023 financial year. The engagements with the Executive Authority took place on the dates below:

Table 26: Engagements with the Executive Authority

Date	Engagement
22 April 2021	Minister and Deputy Minister's Extended Executive Management Team – meeting to present the Fourth Quarter Performance of 2020/2021
3 June 2021	Minister and Deputy Minister's Extended Executive Management Team – meeting to report on key strategic areas that need to be brought to the Minister and Deputy Minister's attention
20 July 2021	Minister and Deputy Minister's Extended Executive Management Team – meeting to present the First Quarter Performance of 2021/2022
2 September 2021	Minister and Deputy Minister's Extended Executive Management Team – meeting to report on key strategic areas that need to be brought to the Minister and Deputy Minister's attention
5 October 2021	Minister and Deputy Minister's Extended Executive Management Team – Strategic Planning Session with DFFE and entities
9 December 2021	Minister and Deputy Minister's Extended Executive Management Team – meeting to report on key strategic areas that need to be brought to the Minister and Deputy Minister's attention
29 March 2022	Minister and Deputy Minister's Extended Executive Management Team – meeting to report on the 2021/2022 annual performance and priorities for 2022/2023

4 THE ACCOUNTING AUTHORITY / BOARD

The key purpose of the SAWS Board is to provide strategic direction, leadership and vision to SAWS, in a way that will enhance shareholder value and ensure the long-term sustainable development and growth of the SAWS, based on an ethical foundation. Section 2(2) of the South African Weather Service Act, 2001 (Act No. 8 of 2001) (SAWS Act), as amended, provides that SAWS acts through a Board appointed by the Minister in terms of Section 5 of the SAWS Act.

During the year under review, the Board, whose term ended on 31 December 2021, consisted of a maximum of eleven Board members, including the Chief Executive Officer and the senior official of the DFFE, designated by the Director-General and approved by the Minister. The Minister appointed the new Board with effect from 1 January 2022 to 31 December 2024. The new Board consists of ten Board members, including the Chief Executive Officer (who serves as an ex officio member) and a senior official of the DFFE designated by the Director-General and approved by the Minister.

The Board members have extensive experience across a diverse range of sectors which, accordingly, enables the Board to provide balanced and independent advice and judgment in the decision-making process.

The Board is the accounting authority of SAWS in terms of the PFMA deriving its mandate from the SAWS Act, Treasury regulations issued in terms of the PFMA, other relevant legislation and prevailing governance frameworks and guidelines.

The Board and Executive Management teams work closely together in determining the SAWS strategic approach. Through policies approved by the Board as well as the delegation of authority framework, the Chief Executive Officer continued to implement the entity's agreed-upon strategy and managed the daily operations of the organisation with the support of the Executive Management Team.

4.1 The role of the 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 Report on Corporate Governance.

4.2 In terms of the SAWS Act, the Board's functions are:

- To ensure the financial viability and development of the commercial services;
- To ensure an efficient, cost-effective and high-quality weather service;
- To set policy, 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 provide guidance in the appointment of senior managers;
- To ensure that SAWS has adequate systems of internal control, both operational and financial;
- To monitor the performance of SAWS and make adjustments to 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 SAWS;

- Approve the Annual Performance Plan for 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; and
- To perform any other function assigned to it by the Minister.

4.3 Board Charter

In line with best corporate governance practice, the Board reviewed and approved its 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 are aware of their duties and responsibilities derived from applicable legislation, regulations and governance frameworks affecting their conduct; and
- Ensure that the principles of good corporate governance are applied in all Board activities in respect and on behalf of the SAWS.

In addition, the Board approved its 2021/2022 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 an input for the development of 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 matters 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 provide a guide on key activities to be attended to by the Board during the financial year and were amended as and when required.

In addition to these governance instruments, the development of the Board resolution register was introduced. The Board resolution register is a standing agenda item since the fourth quarter reporting period of the 2021/2022 financial year.

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 Moipone Magomola	Board Chairperson	1 January 2019	Re-appointed [1]	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	9	4	5
Dr Philip Dexter	Deputy Chairperson	1 January 2019	31 December 2021	BA, MPhil, PhD (UCT)	Governance, Business management, Turnaround Specialist	None	None	6	3	3
Adv Derrick Block	Member	1 January 2019	31 December 2021	B.Iuris, LLB, H Dip Tax law	Law, governance and compliance	Small Enterprise Development Agency	None	4	3	1
Dr Thuli Khumalo	Dept Representative	31 August 2020	30 October 2021 [2]	PhD Air Quality Management	Air quality management	None	None	4	3	1
Mr David Lefutso	Member	1 January 2019	31 December 2021	B.Com, MBA, MPhil	Foresight and strategy development, Corporate Governance and Leadership	None	None	6	3	3

[1] Ms Magomola was re-appointed to the SAWS Board as a Board member from 1 January 2022
[2] Dr Khumalo resigned from the DFFE which led to her appointment as a shareholder representative falling away

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
Dr Mphekgo Maila	Member and Strategic Programmes Committee Chairperson	1 January 2019	31 December 2021	BSc, BSc Hon, PG Dip in Environmental Sciences; PhD	Environmental sciences, leadership and corporate governance	None	None	6	3	3
Ms Shirley Moroka – Mosia	Member	1 January 2019	31 December 2021	BSc Chemistry, BSc Medical Biochemistry, Masters of Applied Sciences, Global Executive Development Programme	Leadership, governance, risk management, strategy development	Engen Petroleum Limited	None	5	3	2
Ms Sally Muddly - Padayachie	Member	1 January 2019	31 December 2021	B Pharm, M MedSci	Human resources development	None	None	6	3	3
Ms Feziwe Renqe	Member	1 January 2019	1 January 2022 [3]	LLM, MAP, Post Graduate Diploma Corporate Law, B Proc	Law, regulatory and compliance	LIV Lukhanyiso NPO	None	7	4	3
Mr Itani Phaduli	Member and Audit and Risk Committee Chairperson	1 January 2019	Re-appointed [4]	Post Graduate Diploma in Accounting, CA (SA)	Finance, management and financial accounting, financial reporting, auditing and taxation	None	None	8	4	4

[3] Ms Feziwe Renqe was re-appointed to the SAWS Board as the Chairperson of the Board on 1 January 2022
[4] Mr Itani Phaduli was re-appointed to the SAWS Board as the Deputy Chairperson on 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
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	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 • Development Trust • Independent Trustee: Ga-Pila Community • Development Trust • South African Programme Board Member: United Nations Development Programme • Advisory Board Member: Disaster Management • Member: Human Settlements Sector War Room (May 2022 to April 2023)	None	2	0	2

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
Prof Sylvester Mpandeli	Member and Strategic Programmes Committee Chairperson	1 January 2022	Current	Doctor of Philosophy (PhD)	Climate change adaptation, water – energy – food nexus, agricultural water management, food security, etc.	International Commission on Irrigation and Drainage (ICID) Executive Council		3	1	2
Ms Sandika Daya	Member	1 January 2022	Current	Exec Master in Digital Transformation and Innovation Leadership BSc Computer Science and Applied Mathematics, CDPSE (Certified Data Privacy) ISAP (SA) (Audit Professional) CISA (Information Systems Audit), Certificate in Applied Project Management in an Information Technology Environment	Audit and Risk Corporate Governance Information Technology	-	SAIGA SAQA	3	1	2
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	Strategy & Policy Formulation, Business Development, Talent Management, Stakeholder Relations and Management, Project Management	None	None	3	1	2

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 Lesotho Highlands Development Agency Department of Transport Gauteng Department of Economic Development	None	3	1	2
Mr Peter Lukey	Department Representative	1 January 2022	Current	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 efficient and effective meeting of organisational objectives and service delivery, project development, project design, planning and monitoring methodologies, contract management, tendering	None	Board	2	1	1
Mr Ishaam Abader	Ex officio member	1 April 2021	Current	BA B.Iuris MBA	Legal Managerial	NNR CGS	None	9	4	5

Table 28: Board Committees

Committee	Number of meetings held	Number of members	Names of members	
Human Resources and Remuneration Committee (HRRC)	5	4	Ms Feziwe Renqe	Chairperson
			Ms Moipone Magomola	Member
			Ms Sherley Moroka-Mosia	Member
			Ms Sally Mudly-Padaychie[5]	Member
		4	Ms Mmapula Kgari[6]	Chairperson
			Ms Moipone Magomola	Member
			Ms Feziwe Renqe	Member
			Mr Grant Son[6]	Member
Audit and Risk Committee (ARC)	6	6	Mr Itani Phaduli	Chairperson
			Adv Derick Block	Independent Member
			Mr Gideon Labane	Independent Member
			Mr Suren Maharaj	Independent Member
			Mr Thamsanqa Ndadana	Independent Member
			Ms Sandika Daya[6]	Member
Special Programmes Committee (SPC)	4	4	Dr Mphekgo Maila[5]	Chairperson
			Dr Philip Dexter[5]	Member
			Dr Thuli Khumalo[5]	Member
			Mr David Lefutso[5]	Member
		4	Prof Sylvester Mpandeli[6]	Chairperson
			Dr Mmapaka Tau[6]	Member
			Ms Sandika Daya[6]	Member
			Mr Grant Son[6]	Member

4.4 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 is also applicable to SAWS as a Schedule 3A public entity. SAWS is classified further for that purpose as a Category A Sub-category A1 entity. The meeting attendance fees are shown below:

Table 29: Board remuneration schedule

Category A	Meeting Fee Per Day	Meeting Fee Per Hour
Sub-category A1		
Chairperson	R5 230	R654
Vice-Chairperson	R4 445	R556
Member	R3 888	R486

The schedule indicating remuneration paid to each Board member can be found under Note 33 on page **212** of the Annual Financial Statements

[5] Outgoing Committee members by virtue of the Board term which ended on 31 December 2021
[6] Incoming Committee members by virtue of the Board appointments effective 1 January 2022

5 RISK MANAGEMENT

5.1 Risk management policy and strategy

In compliance with the requirements of the PFMA, SAWS has reviewed and approved a risk management policy during the year under review. The ongoing review of the policy demonstrates the SAWS' commitment to managing risk events which might have a negative impact on the achievement of the objectives. The risk management strategy which details the SAWS' plan of action on how to effectively implement the risk management policy, was also approved.

Regular risk assessments are conducted to determine the effectiveness of the risk management strategy and to identify new and emerging risks. In executing the risk management policy, the annual risk assessment was conducted, and the risk register was compiled and approved. Furthermore, emerging risks were identified and documented in the risk profile. The risk response strategies to further mitigate the risks, which were rated higher than the set risk tolerance and risk appetite levels, were documented and monitored regularly to ensure that risk owners are effectively managing risks.

Furthermore, in an endeavour to manage business continuity risks, the organisation has assessed the ICT critical systems and conducted a business continuity management maturity assessment to assess the capability of SAWS' business continuity in the event of a disruptive incident.

There is a functional Risk Management Committee that advises management on the overall system of risk management, especially the mitigation of unacceptable levels of risk. The committee meetings were held quarterly, starting from the second quarter of the year under review, to evaluate the effectiveness of risk management activities. Furthermore, and in line with relevant legislation, the Board has established the Audit and Risk Committee as a subcommittee of the Board. The Audit and Risk Committee advises the organisation on risk management activities and independently monitors the effectiveness of the system of risk management. Risk management reports were tabled at the Audit and Risk Committee. The committee met quarterly, as scheduled, and carried out its oversight functions.

5.2 Progress on the management of risks

On a quarterly basis, the organisation conducts risk monitoring to track progress on the implementation of the risk mitigation plans developed to improve internal control systems, and there is an improvement with regard to the management of risks. However, there are still some financial and capacity constraint challenges that were experienced during the period under review. To address capacity constraints, the organisation is prioritising the filling of critical positions. To address issues of financial constraints, the organisation is embarking on a collaboration with other stakeholders, exploring new commercial products for different sectors and continuing to implement its revenue turnaround strategy.

6 INTERNAL CONTROL AUDIT

The entity does not have a specific Internal Control Unit. However, there are various assurance providers in the organisation such as:

- Governance, Risk and Compliance; and
- Internal Audit.

These departments prepare annual plans for the financial year and monitor the implementation thereof to avoid duplication of effort and ensure that the assurance units complement each other using a combined assurance approach. Thus, the combined assurance framework was reviewed and approved.

7 INTERNAL AUDIT COMMITTEE

The internal audit function was previously an outsourced function where internal audits were performed by an external service provider. With the appointment of a Chief Audit Executive in April 2021, the SAWS internal audit function follows a co-sourced model where internal audits are performed in-house and also by a co-sourced service provider. The internal audit function is governed by an internal audit charter approved by the Audit and Risk Committee and the document is reviewed annually. The internal audit charter defines the role, organisational status, responsibilities and scope of the internal audit activities. The internal audit function is accountable, administratively, to the SAWS CEO and functionally to the Audit and Risk Committee. This reporting structure ensures the effectiveness of the internal audit function by guaranteeing that its work is done objectively and independently. Internal audit is governed by the PFMA, Treasury regulations and the Standards for the Professional Practice of Internal Auditing. The objective of the internal auditing function is to provide independent, objective assurance services designed to add value and improve SAWS operations and evaluate the effectiveness of risk management, control and governance processes.

7.1 Key objectives of the internal audit function include:

- Reviewing the adequacy and effectiveness of internal controls, risk management and governance processes;
- Providing reasonable assurance on the integrity and reliability of financial and non-financial information;
- Reviewing compliance with applicable laws, regulations, policies and procedures; and
- Providing recommendations for improvement.

7.2 During the 2021/2022 financial year, the following internal audit reviews were conducted:

- Audit of Performance Information (Quarter 4 of the 2020/2021 financial year and Quarter 1, Quarter 2, Quarter 3 of the 2021/2022 financial year);
- Draft Annual Financial Statement Review (2020/2021 financial year);
- Leave Management Review;
- Supply Chain Management Review;
- Contracts Management Review;
- Surface Observation Infrastructure Review;
- Weather Information Dissemination Review; and
- Quarterly follow-up audits.

The internal audit function carried out its audit assignments during the year as per the approved Internal Audit Plan for 2021/2022.

7.3 Key activities and objectives of the 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:

- Reviewing and recommending, for Board approval, the SAWS budget for the financial year;
- Monitoring SAWS financial performance (management accounts) against the approved budget and Annual Performance Plan;
- Reviewing the appropriateness of and compliance with accounting policies;
- Approving the internal audit plan and monitoring adherence to the plan;
- Considering the work performed by internal audit and overseeing that recommendations are appropriately addressed;
- Reviewing the appropriateness of assumptions made by management in preparing the financial statements;
- Reviewing the significant accounting and reporting requirements and their impact on the financial statements;
- Reviewing the integrity of financial reporting, including the Management Report to the Committee on important decisions taken during the preparation of the financial statements;
- Reviewing the Annual Financial Statements for completeness and consistency with the prescribed accounting principles before recommending them for Board approval;
- Approving the external audit strategy and plan;
- Reviewing, together with management and the external auditors, the outcome of the external audit, including any significant issues identified;
- Monitoring the governance of risk;
- Monitoring the governance of Information and Communication Technology (ICT);
- Monitoring internal controls and compliance;
- Monitoring the management of performance information;
- Reviewing and approving the Internal Audit Plan budget, scope and any major changes to it, and ensuring that it covers the key risks and that there is appropriate co-ordination with the external auditors;
- Ensuring that the external auditors provide an assurance report on the contents of the summarised financial information;
- Regularly reporting to the Board about Committee activities, issues and related recommendations;
- Whistleblowing and reporting fraud; and
- Monitoring SAWS activities with regard to 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); and

- The Organisation for Economic Co-operation and Development (OECD)'s recommendations regarding anti-corruption.

Table 30: Attendance of Audit and Risk Committee meetings (where a "tick" is an indication of attendance and "0" is non-attendance)

Name	21 April 2021	24 May 2021	22 July 2021	26 July 2021	21 October 2021	21 January 2022
Mr Itani Phaduli	✓	✓	✓	✓	✓	✓
Adv Derick Block	✓	0	✓	✓	✓	N/A
Mr Gideon Labane	✓	✓	✓	✓	✓	✓
Mr Suren Maharaj	✓	✓	✓	✓	✓	✓
Mr Thamsanqa Ndadana	✓	✓	✓	✓	0	✓
Ms Sandika Daya	N/A	N/A	N/A	N/A	N/A	✓

Table 31: Relevant information on the Audit and Risk Committee members

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	Postgraduate Diploma in Accounting, CA (SA)	Board Member	N/A	1 January 2022	Current	6
Adv Derick Block	B.Iuris, LLB, H Dip Tax law	Board Member	N/A	1 January 2019	Term ended 31 December 2021	4
Mr Gideon Labane	BCom Honours (Accounting) CA (SA)	Independent ARC Member	N/A	26 February 2019	Term ended 31 March 2022	6
Ms Suren Maharaj	Honours BCompt Degree, CA (SA)	Independent ARC Member	N/A	26 February 2019	Term ended 31 March 2022 and reappointed for the second term, ending 31 December 2024	6
Mr Thamsanqa Ndadana	BCom Honours CA (SA)	Independent ARC Member	N/A	28 February 2019	Term ended 31 March 2022	5
Ms Sandika Daya	Exec Master in Digital Transformation and Innovation Leadership BSc Computer Science and Applied Mathematics CDPSE (Certified Data Privacy) ISAP (SA) (Audit Professional) CISA (Information Systems Audit) Certificate in Applied Project Management in an Information Technology Environment	Board Member	N/A	1 January 2022	Current	1

8 COMPLIANCE WITH LAWS AND REGULATIONS

In order to deliver on its mandate and achieve its strategic objectives, SAWS must ensure compliance with all the laws and prescripts which apply to its operations and activities. There are over 200 laws and regulations which apply to and regulate the SAWS' operations and activities. The SAWS Board, as per the King Report on Corporate Governance, 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 level of risk of the identified laws has been assessed, using the adopted SAWS risk assessment methodology. This ensures that the laws are prioritised according to their level of risk to the organisation.

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

The Board monitors compliance to ensure that these laws are followed and obeyed by the various executives, managers and employees, as well as any relevant stakeholders within the SAWS environment. Compliance reports are presented to the Board by management, on a quarterly basis, to give the Board assurance that SAWS complies with applicable laws and regulations. Where there are areas of non-compliance, these are closely monitored, and plans and control measures are put in place to mitigate against the non-compliance.

SAWS has an approved Combined Assurance Framework which outlines the five lines of defence for various assurance providers, who assist the Board in identifying any areas of non-compliance which are immediately attended to.

The various assurance providers, namely the Auditor-General, Internal Audit, Governance, Risk and Compliance, SHEQ, Security and Facilities, Legal Services and the Meteorological (MET) Authority, also assist the Board in identifying any areas of non-compliance, which are immediately attended to.

During the year under review, a service provider was appointed to assist with the development of further checklists and to provide access to a compliance tool in respect of legislation that has a significant and serious risk impact on the organisation. The organisation is currently monitoring compliance with eleven prescripts: namely, the Broad-Based Black Economic Empowerment Act (B-BBEE) checklist, Compensation for Occupational Injuries and Diseases Act (COIDA), Electronic Communications and Transactions Act (ECTA) checklist, Skills Development Act (SDA), Preferential Procurement Policy Framework Act (PPPF Act) checklist, Occupational Health and Safety Act (OHS Act) checklist, Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA), Protection of Personal Information Act, 2013 (Act No. 4 of 2013) (POPIA) checklist, South African Weather Service Act, 2001 (Act No.8 of 2001 as amended) (SAWS Act); Basic Conditions of Employment Act, 1997, (Act No. 75 of 1997) (BCEA) checklist, Employment Equity Act, 1998 (Act No. 55 of 1998) (EEA), utilising the tool. This will enable the organisation to provide assurance on a wide range of applicable legislation.

In order to improve SAWS B-BBEE status, the organisation appointed an internal B-BBEE Task Team and consultants to assess the entity's B-BBEE status. Furthermore, the verification service provider was appointed to conduct the verification process. The process has commenced and it is anticipated that the certificate will be issued imminently.

The PAIA manual was also amended to cater for the recent amendments to the PAIA regulations. The manual has been translated into two other languages, that is, Sotho and Zulu. Furthermore, measures have been put in place to ensure compliance with POPIA.

9 FRAUD AND CORRUPTION

To promote a zero-tolerance environment for fraudulent and corrupt activities, SAWS has an approved whistleblowing policy; a fraud policy and fraud prevention plan; and a fraud and ethics hotline, that is facilitated by an independent service provider.

The service provider was appointed to administer the fraud hotline on behalf of the organisation and provides reports every month. All reports were provided by the service provider as per their contractual obligation. However, there were no cases reported by whistle-blowers through the fraud hotline and/or other reporting channels. These reports were highlighted in the risk management reports tabled at the Audit and Risk Committee meetings.

The fraud and ethics awareness workshops were held for all employees to make employees 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 the Protected Disclosures Act, 2000 (Act No. 26 of 2000) in an endeavour to encourage employees to report fraud and any unethical behaviour that they may identify.

10 MINIMISING CONFLICT OF INTEREST

The prescribed Standard Bidding Document (SBD 4 referenced “Declaration of Interest” form) is applied to the procurement of goods and services whereby prospective suppliers/service providers are obliged to provide accurate information on their dealings with the State. The National Treasury’s Central Supplier Database is also utilised to verify that suppliers and service providers are tax compliant, in the service of the State and do not have a restricted supplier status before the awarding of price quotations and tenders to minimise conflict of interest in supply chain management.

The SAWS employees’ conflicts of interest are governed by the SAWS Conflict of Interest Policy. The Policy provides that all employees of the SAWS are obliged to act in the best interest of the SAWS and are not permitted to act in a manner which would amount to a conflict of interest with SAWS.

Employees involved in the SAWS’ procurement governance structures are required to comply with the Policy and disclose their interests at the executive committee, management committee, bid specification committee, bid evaluation committee and bid adjudication committee meetings held to approve any particular transactions, contract and/or appointment.

The chairperson ensures that a declaration of interests is included as part of every Board meeting agenda. A participant in the meeting has an obligation to inform the chairperson of the meeting of any conflict or potential conflict of interest he/she may have in relation to particular agenda items. The chairperson of the meeting then determines an appropriate course of action with the member, e.g. recusal of the member from the discussions of the relevant agenda item. In a case where the chairperson of the committee has a conflict of interest, the members of the committee are required to determine the appropriate course of action.

11 CODE OF CONDUCT

In pursuit of ethical business conduct and compliance with corporate governance practices, the SAWS considers effective ethics management as a critical element in the day-to-day activities of the entity. The SAWS Code of Conduct and Ethics applies to the Board, management, employees of the SAWS and any other person(s) or parties contractually rendering services and/or doing any business on behalf of SAWS and those specifically doing business with SAWS.

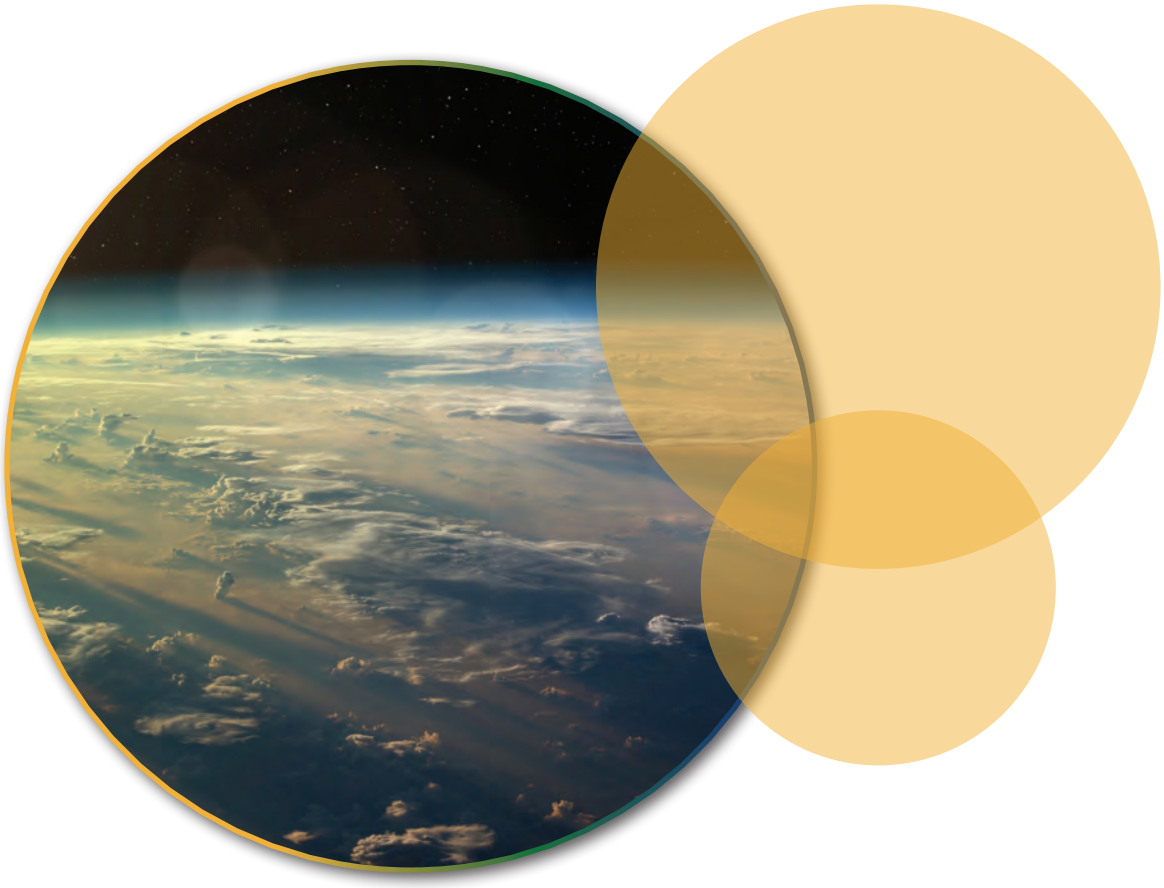
The awareness training on fraud, corruption and ethics was conducted for the SAWS employees during the year under review. Ongoing awareness training will be held with the SAWS employees and the Board members, as and when required. The SAWS regards the failure to comply, in whole or in part, with one or more provisions of the SAWS Code of Conduct and Ethics, to be a serious offence. Violations of the SAWS Code of Ethics are dealt with in accordance with the applicable provisions of the SAWS Disciplinary Policy, and/or any other applicable legislative and governance prescripts.

12 HEALTH, SAFETY AND ENVIRONMENTAL ISSUES

The COVID-19 pandemic continued to adversely impact organisations worldwide during the year under review. SAWS continued to respond accordingly, informed by the imperative to continue to provide a healthy and safe working environment for the employees, amidst the pandemic. The controls implemented during the last review, including the implementation of a hybrid model of working either from home or the office, were kept in place. The SAWS employees were encouraged to vaccinate and update their vaccination status on a secure online vaccination tracker platform developed internally, together with the ICT Department. The platform enabled us to monitor vaccination uptake within the SAWS employees for COVID-19 risk management purposes. In total, SAWS recorded 76 COVID-19 cases and, sadly, two COVID-19-related deaths. The number of cases corresponded with the third and fourth waves of infections around the country, which resulted in a significant increase during the period. These statistics show that the controls implemented by SAWS were effective.

On environmental issues, Climate Change is currently one of the biggest risks facing the world and as a result, SAWS is committed to contributing to the government efforts to reduce or minimise activities that have a negative impact on the environment. In addition to using smart lighting with sensors and use of teleconferencing tools instead of travelling, SAWS will be implementing waste recycling as another activity to minimise the impact of our activities on the environment, as well as reduce our Carbon Monoxide (CO) and Carbon Dioxide (CO_2) emissions.

SAWS continues to monitor changes in building environment legislation and regulations, such as the new energy performance certificate requirements, to ensure that we not only continue to comply with the same, but we provide a healthy and safe working environment.



13 COMPANY SECRETARY

SAWS is an entity of the Department of Forestry, Fisheries and the Environment, which is not incorporated in terms of the Companies Act. Therefore, SAWS is not obliged to file returns to the Companies and Intellectual Property Commission in line with the Companies Act regulations. However, in terms of the principles of good corporate governance, the appointment of the Company Secretary is in line with the guidelines that are espoused in the Companies Act and King Report on Corporate Governance.

The role of the SAWS Company Secretary includes, amongst others:

- Provide guidance and advice to the Board to discharge their fiduciary duties and responsibilities in the best interest of 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 SAWS;
- Facilitate compliance with PFMA, and alignment with corporate governance guidelines, as well as any other relevant legislation;
- Develop and review Board-related policies and monitor adherence to these and with the Delegation of Authority;
- Assist the Board Chairperson and of the Committees with the compilation of the annual Board and Board Committees calendar, work plans and ensure circulation of these to members;
- Give notice of Board meetings, preparing and circulating agendas, consolidation and dissemination of Board pack presentations, maintaining attendance registers and taking of minutes;
- Induct and orientate new Board members and experts serving on the Board Committees;
- Facilitate the evaluation of the Board, Board Committees and the Chairperson and Board members;
- Manage conflicts of interest in relation to Board and independent committee members and be the custodian of the Code of Conduct and Ethics approved by the Board; and
- Manage stakeholder relationships.

14 SOCIAL RESPONSIBILITY

SAWS continued to be a socially responsible organisation in the delivery of its weather warnings, forecasting and prediction services. During the period under review, physical social responsibility initiatives could not be done due to limited movement by citizens, as imposed by COVID-19-related lockdown measures.

15 AUDIT AND RISK COMMITTEE REPORT

We are pleased to present our report for the financial year ended 31 March 2022.

Audit and Risk Committee Responsibility

The 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, 27.1. The Committee also reports that it has adopted appropriate formal terms of reference as its Audit Committee Charter, has regulated its affairs in compliance with this charter and has discharged all its responsibilities as contained therein, except that we have not reviewed changes in accounting policies and practices.

The Effectiveness of Internal Control

Risk assessments are conducted to determine the effectiveness of the risk management strategy and to identify new and emerging risks. The implementation of adequate and effective internal controls is an ongoing process. During the year under review, the Committee guided the Internal Audit function in the preparation and implementation of the Annual Audit Plan and ensured that the Internal Audit Plan was risk-based, taking into account the risk profile of the SAWS.

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

SAWS has addressed some of the audit findings issued by the Auditor-General (AG) and internal audit from the 2019/2020 and 2020/2021 audits. There were some findings which were still not resolved. The Committee has implemented a dashboard that is presented at all Committee meetings to track progress on the resolution of findings. The implementation of some audit findings requires funds and with the current limited budget allocations, Management will prioritise as much as possible.

The following were areas of concern:

- Supply Chain Management – although Management has made progress in resolving prior-year audit findings, this is an area that requires improvement, particularly in relation to the prevention, detection and management of irregular expenditure. The Legal unit will prepare a consolidated contracts register.
- IT Controls and IT Security – there were shortcomings identified in this regard and the Committee is providing a continuous oversight, through the quarterly reporting on resolutions of audit findings in the ICT area.

In-year Management and Monthly/Quarterly Report

SAWS has submitted quarterly reports to the Executive Authority. With the oversight of the Committee, SAWS submitted quarterly performance reports as well as PFMA compliance reports to the Executive Authority and the Committee was satisfied with the content and quality thereof. Furthermore, the Committee reviewed the actual performance of SAWS against the targets set in the Annual Performance Plan for 2021/2022. The Committee ensured that the performance information included in the quarterly performance reports was reviewed by Internal Audit for accuracy, validity and completeness.

The Committee was 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.

Evaluation of Financial Statements

We have reviewed the annual financial statements prepared by the public entity. The Audit and Risk Committee has:

- 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 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 Committee met representatives from the Auditor-General of South Africa during the audit of the SAWS 2021/2022 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 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 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: 1 August 2022

16 B-BBEE COMPLIANCE PERFORMANCE INFORMATION

The following table has been completed in accordance with the compliance 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 32: Application of any relevant Code of Conduct of Good Practice

Has the Public Entity applied any relevant Code of Good Practice (B-BBEE Certificate Levels 1 – 8) with regards to 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	Pre-qualification criteria implemented for levels 1 to 4
Determining qualification criteria for the sale of state-owned enterprises?	No	N/A
Developing criteria for entering into partnerships with the private sector?	No	N/A
Determining criteria for the awarding of incentives, grants and investment schemes in support of Broad-Based Black Economic Empowerment?	No	N/A

HUMAN RESOURCE MANAGEMENT

PART D

1 INTRODUCTION

Employees of the South African Weather Service (SAWS) are key to making the organisation "A provider of world-class meteorological solutions for improved quality of life for all South Africans". The aim is therefore to have motivated, skilled and engaged employees that deliver innovative, value-creating solutions and services. Despite the financial difficulties that SAWS faced during the reporting period, every effort was made to deliver some of the key Human Capital deliverables. The achievement of 82,14% of the targets in the SAWS 2021/2022 Annual Performance Plan is a testament of the motivation and the dedication of our employees to operational excellence and to ensuring that SAWS delivered on its mandate. For the Human Capital Management department in particular, the exceeding of the target of women in management positions by 2% is an indication of the organisation's commitment to transformation and to the Department of Forestry, Fisheries and the Environment's Gender Mainstreaming agenda.

SAWS employees remained resilient and engaged and this period saw robust engagement with Organised Labour. The table below shows some of the highlights and key challenges that were faced in the year under review.

Table 33: Highlights and Lowlights of the financial year

Highlights	Lowlights
• Concluding of a salary agreement without the industrial action that was looming being implemented.	• SAWS could not offer more than the 1.5% salary increase and had to defer a portion of the 12-month once-off cash allowance to the following financial year. This was on the back of no salary increases for the previous year.
• Concluding the Minimum Service Agreement (MSA), not only for aviation-related services, but extending the agreement to the Disaster Risk Management and Marine Services.	• Loss of the Presidential Employment Stimulus grant despite having achieved all the previous year's targets.
• Development of the SAWS Talent Management Strategy.	• Employee turnover of 6%. It was concerning because it was also happening at senior management level.
• Exceeding the APP target on People with Disabilities.	• The death of four of our colleagues.
• Implementation of the newly approved organisational structure.	• Inability to reward and incentivise high-performing individuals.

1.1 Performance management

SAWS introduced a new performance management system that sought to ensure that the right things were measured, that would enable the organisation to deliver on its mandate and key objectives. The focus was on the following Key Performance Areas:

1. Products, service delivery/infrastructure maintenance
2. Innovation, process improvement and revenue generation

3. Administration, governance, risk and compliance
4. People, culture and values
5. Stakeholder management

The performance management cycle has a built-in personal development engagement process which ensured that employees' Personal Development Plans (PDPs) were aligned to the organisation's strategy and employees' career aspirations and growth.

1.2. Policy development

The following policies were developed in support of the SAWS' Employee Value Proposition (EVP):

1.2.1 Appointment to Acting Position Policy - this gives an opportunity to employees that have the skills, knowledge and experience to act in higher positions and manage more complex matters. It also ensures the rotation of employees who are given this opportunity and therefore strengthening the SAWS leadership pipeline.

1.2.2 Employee Assistance and Wellness Policy - which aims to address employee wellness challenges that may have an impact on the employee's job performance, morale and motivation.

1.2.3. Work from Home Policy - while this policy may have initially been necessitated by the prevailing COVID-19 pandemic and the need to practise social distancing, this opportunity was used to enhance the SAWS EVP and afforded employees the flexibility of working from home, thus saving on fuel costs, reducing time spent in traffic and therefore providing a better work-life balance.

SAWS employees participate at a weather awareness raising outreach
Photo credit: Segale Motseto (SAWS)

2 HUMAN RESOURCE OVERSIGHT STATISTICS

2.1 Personnel-related expenditure

The SAWS' headcount decreased by 5,6% compared with the previous year, while the salary bill remained almost the same. The reduction in headcount is attributed to the fact that, during the previous reporting period (2020/2021), SAWS employed employees that were funded by the Presidential Employment Stimulus (PES) grant. This enabled the organisation to recruit at least 35 unemployed youth for a period of twelve months. A total of six senior managers resigned, while one senior manager passed on. Some recruitment was concluded during the reporting period, but the employees only resumed duty afterwards. Furthermore, SAWS also granted a 1,5% salary increase to employees as per our wage agreement with Organised Labour. The tables below indicate various costs relating to our personnel-related expenditure.

Table 34: Personnel cost by programme

Programme	Total expenditure for the entity (R'000)	Personnel expenditure (R'000)	Personnel exp. as a % of total exp. (R'000)	No. of employees	Average personnel cost per employee (R'000)
Weather and Climate Services	459 693	73 946	15	137	539
Infrastructure and Information		144 860	32	257	564
Systems		20 728	5	33	628
Finance and Supply Chain		28 975	6	35	828
TOTAL	**462**				

Table 35: Personnel cost by occupational level

Level	Personnel expenditure (R'000)	% of personnel exp. to total personnel cost (R'000)	No. of employees	Average personnel cost per employee (R'000)
Top management*	8 189	3	4*	2 047
Senior management	25 732	9	14	1 838
Professional qualified	83 218	31	106	785
Skilled	93 998	35	198	475
Semi-skilled	49 944	19	115	434
Unskilled	7 428	3	25	297
TOTAL	**268 509**	**100**	**462**	**N/A**

Note*: We started the year with five employees at top management but ended the year with four.

Table 36: Training costs

Programme/activity/ objective	Personnel expenditure (R'000)	Training expenditure (R'000)	Training expenditure as a % of personnel cost.	No. of employees trained	Average training cost per employee
Learning and Development	268 509	3 088	1,15	283	R 12 975

In the previous financial year, SAWS missed the APP target of the Workplace Skills Plan by 15%. This year the organisation exceeded the target by 12%. While some strides were made despite the financial challenges, as a science-based organisation, SAWS needs to invest more in employee development for the organisation's sustainability and to achieve the SAWS' transformation agenda. This will be one of the main focuses for management in the new financial year. Activities of the Regional Training Centre are discussed under 3.5.7.1.

Table 37: Employment and vacancies per programme

Programme	2020/2021 No. of employees	2021/2022 Approved posts	2021/2022 No. of employees	2021/2022 Vacancies	% of Vacancies
Weather and Climate Services	144	14	137	5	4%
Infrastructure and Information Systems	261	19	257	8	3%
Finance & Supply Chain Management	31	14	33	2	6%
Corporate Services (including the office of the CEO)	34	13	35	7	20%
TOTAL	**470**	**60**	**462**	**22**	**N/A**

Table 38: Employment vacancies per level

Programme	2020/2021 No. of employees	2021/2022 Approved posts	2021/2022 No. of employees	2021/2022 Vacancies on 31 March 2022	% of Vacancies
Top Management	3	5	4	1	20%
Senior Management	15	19	14	5	26,3%
Professional qualified	113	115	106	9	7,8%
Skilled	200	205	198	7	3,4%
Semi-skilled	115	115	115	0	0%
Unskilled	24	25	25	0	0%
TOTAL	**470**	**484**	**462**	**22**	**4,5%**

Some of the vacancies were new as per the newly approved structure, while some were deferred and will be reviewed when the financial situation improves. It is anticipated that the financial circumstances would improve since the aviation-related revenue is showing signs of recovering.

Note: No youth or internships are included in table 38 above. The **TOTAL** row must be read horizontally only.

2.2 Employment changes

While the country faced an unprecedented COVID-19-related challenge during the year, SAWS was not spared from this. The reduction in aviation-related revenue and the government grant continued during the reporting period, which meant that management had to tighten the purse strings and reprioritise some of the planned Human Capital Management programmes. Learning and development programmes and the filling of some of the vacancies were affected by this reprioritisation. This also meant that SAWS could not give its employees market or inflation-related salary increases. These were the two main drivers behind the overall employee turnover rate of 6% (versus the target of not exceeding 8% on the Annual Performance Plan). While this was an improvement compared to the 11% of the previous year, it remained a great concern. The newly-developed Talent Management Strategy will focus on retention during the 2022/2023 reporting period.

Table 39: Employment changes per level

Occupational Levels	Employment at beginning of period (1 April 2021)	Appointments and promotions as from 1 April 2021	Terminations	Employment at end of the period
Top management	5	2	1	4
Senior management	19	4	5	14
Professional qualified	120	17	14	106
Skilled	208	17	10	198
Semi-skilled	118	0	3	115
Unskilled	24	1	0	25
TOTAL	**494**	**41**	**33**	**462**

Note: Terminations do not include temporary employees.

Table 40: Reasons for employees leaving

Reason	Number	% of Total no. of employees leaving
Death	4	12,12
Resignation	19	57,58
Dismissal	1	3,03
Retirement	3	9,09
Ill health	0	0,00
Expiry of contract	6	18,18
Other	0	0,00
TOTAL	**33**	**100**

Note: The figures above exclude the learnerships and internships, which ended on 31 March 2022.

Table 41: Labour relations: Misconduct and disciplinary action

Nature of disciplinary Action	Number
Written warning	3
Final written warning	2
Dismissal	1
TOTAL	**6**

2.3 Employee Relations

The year was challenging on the employee relations front. The salary negotiations took ten months to conclude on the back of the National Treasury guideline of a 0% salary increase for the year. The parties finally reached an agreement of a 1,5% salary increase (cost to company) across the board and a R565 per month once-off cash allowance, for a period of twelve months (1 April 2021 to 31 March 2022), for employees at salary level 12 and below. Employees at salary level 13 and above also received 1,5 % and a similar cash allowance of a R500 per month as described above.

Another milestone was the conclusion of the Minimum Service Agreement (MSA) between the employer and the three trade unions within the South African Weather Service. The Constitution of the Republic of South Africa and the Labour Relations Act provide for the employee's rights to strike, noting, however, that these rights may be limited as both Acts place limitations in cases where employees are involved in designated essential services. This means that if that service is interrupted, the lives and personal safety or health of the whole or any part of the population would be endangered, with the facilitation of the Essential Services Committee of the Commission for Conciliation, Mediation and Arbitration (CCMA). Following various consultations and national roadshows, the parties agreed that the following services fell under essential services:

- Aviation-related services
- Disaster risk management and
- Marine services

The MSA guarantees a minimum number of employees that render essential services in case of a strike or lockout. With the last-minute signing of the salary agreement, there was no need to invoke the terms and conditions of the MSA.

2.4 Employee wellness

The contract with the Employee Assistance Programme (EAP) service provider ended on 30 September 2021. The procuring of a new service provider started on time and the service provider was appointed on time. However, there was a disagreement on the scope and what was covered in the contract price after the appointment. This was a fundamental scope creep and the contract was subsequently terminated. Halfway through the sourcing of an alternative service provider, National Treasury issued a moratorium on all tenders, which made it impossible to continue with the EAP tender process.

Alternatives like collaborating with other entities to participate in contracts arranged by means of a competitive bidding process in terms of Treasury Regulation 16A6.6 were considered and, where possible, employees were referred to non-profit organisations that could handle the cases.

2.5 SAWS response to the COVID-19 pandemic

At the start of the reporting period, the country was at the Adjusted Alert Level 4 of the COVID-19 lockdown. With the assistance of our wellness service provider, we continued to run various COVID-19 awareness campaigns and sent regular communication to employees. The COVID-19 task team continued to monitor the environment and the risk to SAWS and adjusted the organisation's COVID-19 protocols with each national level adjustment. SAWS introduced a Work from Home Policy to enable a flexible workplace environment and this will serve the organisation beyond the COVID-19 pandemic.

There were 77 (16,7%) COVID-19 positive cases recorded in the year and two related fatalities. Despite numerous efforts to encourage employees to vaccinate, SAWS ended the reporting period with a 36% recorded vaccination uptake. SAWS continues to encourage employees to vaccinate and update the SAWS Vaccination Tracker.

2.6 SAWS transformation

The percentage of women in management was 2% above the APP target. The target of employees with disabilities was also achieved. As we strive to improve the SAWS' Broad-Based Black Economic Empowerment (BBBEE) rating, a focus will also be on the males in other occupational categories as well as African employees with disabilities to ensure that the numbers reflect the Economically Active Population (EAP) of the country. Also, with the improvement of SAWS' financial position, more money will be spent on skills development.

Tables 38 and 39 below indicate the percentage achievements of SAWS' transformation targets for males and females. For top management males, the target was reached and exceeded, while the targets of other levels were mostly reached. Regarding our female targets, our target for top management females was not achieved, while on the senior management level, room for improvement exists for Coloured and Indian females. Some of these figures were directly influenced by resignations, retirements, end of contract and death in service during the year.

Table 42: SAWS transformation - equity target and employment equity status (male) as on 31 March 2022

Levels	MALE							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top management	3	3	1	0	0	0	0	0
Senior management	3	6	0	0	2	1	1	0
Professional qualified	45	48	4	5	0	2	17	21
Skilled	81	76	7	7	4	4	21	18
Semi-skilled	44	42	9	7	0	1	7	6
Unskilled	15	5	5	5	0	0	0	0
TOTAL	**185**	**190**	**26**	**24**	**6**	**8**	**46**	**45**

Table 43: SAWS transformation - equity target and employment equity status (female) as on 31 March 2022

Levels	FEMALE							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top management	0	2	0	0	0	0	0	0
Senior management	6	5	0	1	0	1	2	2
Professional qualified	27	30	1	2	0	2	9	10
Skilled	63	68	8	8	3	3	11	12
Semi-skilled	45	39	6	6	0	2	4	4
Unskilled	5	5	0	0	0	0	0	0
TOTAL	**146**	**149**	**15**	**17**	**3**	**8**	**26**	**28**

Table 44: Disabled employees

Levels	DISABLED EMPLOYEES			
	Male		Female	
	Current	Target	Current	Target
Top management	0	0	0	0
Senior management	0	0	1	0
Professional qualified	1	0	1	1
Skilled	5	1	2	1
Semi-skilled	1	0	2	0
Unskilled	1	0	0	0
TOTAL	**8**	**1**	**6**	**2**

While the APP targets have been exceeded in terms of women in management positions and people with disabilities, SAWS still strives to improve its women representation at top management level. Furthermore, the number of African employees with disabilities need to meet the organisation's Broad-Based Black Economic Empowerment targets and ultimately improve the SAWS B-BBEE contribution level.

3 KEY FOCUS AREAS FOR THE 2022/2023 FINANCIAL YEAR

3.1 Cultural changes

A significant shift in the organisational culture needs to be made to enable the organisation to deliver on its purpose and strategy. SAWS needs to support its people and their career aspirations better and hold all managers accountable. This requires a change in our ways of working and ensuring that the organisation has high-performing and engaged employees. This will be underpinned by various strategies, such as the performance management system that includes the 360 degrees assessment, which will initially be introduced at senior management level. People management will carry significant weight in the line managers' performance agreements.

3.2 Talent management

The focus for the 2022/2023 financial year will be on the development and the implementation of the SAWS Talent Management Strategy. The strategy will aim to position SAWS as "A provider of world-class meteorological solutions for improved quality of life for all South Africans" and ensure that the requisite talent pipeline is built to support this. Amongst others, SAWS will review its remuneration philosophy and policy, re-evaluate and re-grade jobs, increase its investment in learning and development programmes, hold annual group-wide talent discussions and develop succession management plans.

3.3 Employee wellness

The procurement of the Employee Assistance Programme service provider will be finalised. With the relaxation of COVID-19 regulations and the reduction in the positive cases, the wellness campaigns and physical health assessments will be revived.

3.4 Employee engagements

In some of the exit interviews that were conducted, it became apparent that management was not communicating enough or engaging employees enough to be part of the organisation's solutions and decision making. Employees also indicated that SAWS did not share enough of their achievements and success stories. Plans have been developed in this regard and it is hoped that the organisation will see an improved employee sentiment and engagement when the planned employee survey is conducted towards the end of the next financial year.

FINANCIAL INFORMATION

PART E

1 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 South African Weather Service set out on pages **155** to **220** which comprise the statement of financial position as at 31 March 2022, statement of financial performance, statement of changes in net assets, cash flow statement and statement of comparison of the budget with actual amounts for the year then ended, as well as notes to the financial statements, including a summary of significant accounting policies.

2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the South African Weather Service as at 31 March 2022, 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 auditor-general's responsibilities for the audit of the financial statements section of my report.

4. I am independent of the public 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.

Responsibilities of the accounting authority for the financial statements

6. The accounting authority is responsible for the preparation and fair presentation of the financial statements in accordance with the SA Standard of GRAP and the requirements of the PFMA, and for such internal control as the accounting authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

7. In preparing the financial statements, the accounting authority is responsible for assessing the public entity's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless the appropriate governance structure either intends to liquidate the public entity or to cease operations, or has no realistic alternative but to do so.

Auditor-general's responsibilities for the audit of the financial statements

8. 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.

9. 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

Introduction and scope

10. In accordance with the Public Audit Act 25 of 2004 (PAA) and the general notice issued in terms thereof, I have a responsibility to report on the usefulness and reliability of the reported performance information against predetermined objectives for selected programmes presented in the annual performance report. I performed procedures to identify material findings but not to gather evidence to express assurance.

11. My procedures address the usefulness and reliability of the reported performance information, which must be based on the public entity's approved performance planning documents. I have not evaluated the completeness and appropriateness of the performance indicators included in the planning documents. My procedures do not examine whether the actions taken by the public entity enabled service delivery. My procedures do not extend to any disclosures or assertions relating to the extent of achievements in the current year or planned performance strategies and information in respect of future periods that may be included as part of the reported performance information. Accordingly, my findings do not extend to these matters.

12. I evaluated the usefulness and reliability of the reported performance information in accordance with the criteria developed from the performance management and reporting framework, as defined in the general notice, for the following selected programmes presented in the public entity's annual performance report for the year ended 31 March 2022:

Programme	Pages in the annual performance report
Programme 1 – Weather and Climate Services	47 – 67

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

14. I did not identify any material findings on the usefulness and reliability of the reported performance information for this programme:

    - Weather and Climate Services

Report on the audit of compliance with legislation

Introduction and scope

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

16. The material finding on compliance with specific matters in key legislation is as follows:

Expenditure management

17. Effective and appropriate steps were not taken to prevent irregular expenditure amounting to R353 503 as disclosed in note 37 to the financial statements, as required by section 51(1)(b)(ii) of the PFMA. The majority of the irregular expenditure was caused by payments made on expired contracts.

Other information

18. The accounting authority is responsible for the other information. The other information comprises the information included in the annual report, which includes the audit committee's report. The other information 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 in this auditor's report.

19. My opinion on the financial statements and findings on the reported performance information and compliance with legislation does not cover the other information and I do not express an audit opinion or any form of assurance conclusion on it.

20. In connection with my audit, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements and the selected programmes presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

21. I have nothing to report in this regard.

Internal control deficiencies

22. I considered internal control relevant to my audit of the financial statements, reported performance information and compliance with applicable legislation; however, my objective was not to express any form of assurance on it. The matters reported below are limited to the significant internal control deficiencies that resulted in the findings on compliance with legislation included in this report.

23. Although the compliance monitoring controls in place were effective in reducing the expenditure incurred in contravention of the PFMA, there were inadequate in eliminating the repetition of material non-compliance with legislative requirements.

Other reports

24. I draw attention to the following engagements conducted by various parties which had, or could have, an impact on the matters reported in the public entity's financial statements, reported performance information, compliance with applicable legislation and other related matters. These reports did not form part of my opinion on the financial statements or my findings on the reported performance information or compliance with legislation.

25. An independent consultant is investigating an allegation of a lack of implementation of segregation of duties at the request of the public entity, pertaining to an incident that occurred during the 2021/2022 financial year. The outcome of the investigation has not yet been determined.

Auditor General

Pretoria

Date: 30 July 2022

AUDITOR-GENERAL SOUTH AFRICA

Auditing to build public confidence

2 ANNEXURE – AUDITOR-GENERAL'S RESPONSIBILITY FOR THE AUDIT

1. 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 respect to the selected subject matters.

Financial statements

2. 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 public entity's internal control

- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the accounting authority

- conclude on the appropriateness of the accounting authority's 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 public entity 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 public entity 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

3. 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.

4. 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 are taken to eliminate threats or safeguards applied.

3 GENERAL INFORMATION

Country of incorporation and domicile	South Africa
Members of the Board	Ms. Feziwe Renqe (Chairperson) Mr. Itani Phaduli (Deputy Chairperson) Mr. Peter Lukey (DFFE Rep) Ms. Mmapula Kgari Ms. Sandika Daya Ms. Moipone Edith Magomola Dr. Mmaphaka Ephraim Tau Prof. Sylvester Mpandeli Mr. Ishaam Abader (CEO) Mr. Grant Son
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). 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.

FINANCIAL STATEMENTS

The reports and statements set out below comprise the Annual Financial Statements presented to Parliament:

STATEMENT OF FINANCIAL POSITION AS AT 31 MARCH 2022

Figures in Rand	Note(s)	2022	2021 Restated*
Assets			
Current Assets			
Inventories	3	5 190 908	3 709 052
Receivables from exchange transactions - other	4	4 214 062	4 499 803
Receivables from exchange transactions - statutory receivables	5	11 515 562	3 039 843
Prepayments	6	2 522 038	3 925 809
Cash and cash equivalents	7	69 998 635	41 935 498
		93 441 205	**57 110 005**
Non-Current Assets			
Investment property	8	83 991 957	71 779 121
Property, plant and equipment	9	303 720 193	308 427 824
Intangible assets	11	6 193 801	8 987 044
		393 905 951	**389 193 989**
Total Assets		**487 347 156**	**446 303 994**
Liabilities			
Current Liabilities			
Operating lease liability	12	730 228	1 505 274
Accounts payable from exchange transactions	13	13 378 084	12 289 334
Employee benefit obligation	14	9 751 196	10 887 780
Unspent conditional grants and receipts - other	15	30 772 828	43 801 541
Unspent government allocations – conditional grant	17	38 195 183	26 078 986
		92 827 519	**94 562 915**
Non-Current Liabilities			
Employee benefit obligation	14	2 164 000	3 095 000
Provisions	16	268 198	301 875
		2 432 198	**3 396 875**
Total Liabilities		**95 259 717**	**97 959 790**
Net Assets		**392 087 439**	**348 344 204**
Reserves			
Revaluation reserve		58 166 609	51 040 050
Accumulated surplus		333 920 830	297 304 154
Total Net Assets		**392 087 439**	**348 344 204**

* See Note 34

STATEMENT OF FINANCIAL PERFORMANCE

Figures in Rand	Note(s)	2022	2021 Restated*
Revenue			
Revenue from exchange transactions			
Commercial revenue	18	104 571 533	57 560 839
Other income	19	4 001 233	3 533 277
Interest received - investment	20	789 175	734 706
Total revenue from exchange transactions		**109 361 941**	**61 828 822**
Revenue from non-exchange transactions			
Transfer revenue			
Government grants and subsidies	21	350 241 173	361 125 139
Public contributions and donations	22	21 981 669	3 505 941
Total revenue from non-exchange transactions		**372 222 842**	**364 631 080**
Total revenue		**481 584 783**	**426 459 902**
Expenditure			
Employee-related costs	23	(268 509 222)	(264 531 106)
Administration	24	(6 988 276)	(8 243 880)
Depreciation and amortisation	25	(31 856 232)	(30 949 055)
Bad debts written off	27	(4 433 085)	(436 293)
General expenses	28	(147 906 587)	(129 467 267)
Total expenditure		**(459 693 402)**	**(433 627 601)**
Operating surplus (deficit)		**21 891 381**	**(7 167 699)**
Gain/(Loss) on disposal of assets		463 131	(128 225)
Gain/(Loss) on foreign exchange		819 924	(1 463 071)
Fair value adjustments	29	12 212 836	-
Actuarial gains/(losses)	14	1 422 000	(12 000)
Impairment of assets	26	(192 596)	(1 641 515)
Inventories write-back		-	33 850
		14 725 295	**(3 210 961)**
Surplus/(deficit) for the year		**36 616 676**	**(10 378 660)**

* See Note 34

STATEMENT OF CHANGES IN NET ASSETS

Figures in Rand	Revaluation reserve	Accumulated surplus	Total net assets
Balance at 1 April 2020	**51 040 050**	**307 682 813**	**358 722 863**
Deficit for the year		(16 578 568)	(16 578 568)
Correction of salary provision		4 171 682	4 171 682
Correction of property, plant and equipment		2 028 227	2 028 227
Restated deficit		(10 378 659)	(10 378 659)
Balance at 31 March 2021*	**51 040 050**	**297 304 154**	**348 344 204**
Changes in net assets			
Devaluation of building - Irene and Bethlehem	(515 120)		(515 120)
Revaluation of land - Irene and Garsfontein	7 641 679		7 641 679
Net gain recognised directly in net assets	7 126 559		7 126 559
Surplus for the year		36 616 676	36 616 676
Total recognised income and expenses for the year	7 126 559	36 616 676	43 743 235
Total changes	7 126 559	36 616 676	43 743 235
Balance as at 31 March 2022	**58 166 609**	**333 920 830**	**392 087 439**

* See Note 34

CASH FLOW STATEMENT

Figures in Rand	Note(s)	2022	2021 Restated*
Cash flows from operating activities			
Receipts			
Sale of goods and services		97 396 267	68 127 600
Grants		372 222 842	344 604 525
Interest income		789 175	734 706
		470 408 284	413 466 831
Payments			
Employee costs		(270 610 483)	(273 006 825)
Suppliers		(154 659 243)	(123 217 630)
		(425 269 726)	(396 224 455)
Net cash flows from operating activities	30	**45 138 558**	**17 242 376**
Cash flows from investing activities			
Purchase of property, plant and equipment	9	(18 205 173)	(17 138 569)
Proceeds from sale of property, plant and equipment	9	1 129 752	55 001
Purchase of other intangible assets	11	-	(2 759 217)
Net cash flows from investing activities		**(17 075 421)**	**(19 842 785)**
Net increase/(decrease) in cash and cash equivalents		28 063 137	**(2 600 409)**
Cash and cash equivalents at the beginning of the year		41 935 498	44 535 907
Cash and cash equivalents at the end of the year	7	**69 998 635**	**41 935 498**

* See Note 34

STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS

Budget on Accrual Basis

Figures in Rand	Approved budget	Adjustments	Final Budget	Actual Amounts	Difference between final budget and actual	Reference
Statement of Financial Performance						
Revenue						
Revenue from exchange transactions						
Commercial Revenue	74 283 000	23 553 176	97 836 176	104 571 533	6 735 357	Note 1 (2)
Other income	-	1 384 967	1 384 967	4 001 233	2 616 266	
Interest received - investment	-	200 000	200 000	789 175	589 175	
Total revenue from exchange transactions	**74 283 000**	**25 138 143**	**99 421 143**	**109 361 941**	**9 940 798**	
Revenue from non-exchange transactions						
Transfer revenue						
Government grant - operational expenditure	207 133 000	124 903 098	332 036 098	332 036 000	(98)	Note 1 (1)
Government grant - conditional grant	140 225 000	(109 903 098)	30 321 902	18 205 173	(12 116 729)	Note 1 (1)
Contributions and donations	-	20 600 000	20 600 000	21 981 669	1 381 669	Note 1 (8)
Total revenue from non-exchange transactions	**347 358 000**	**35 600 000**	**382 958 000**	**372 222 842**	**(10 735 158)**	
Total revenue	**421 641 000**	**60 738 143**	**482 379 143**	**481 584 783**	**(794 360)**	
Expenditure						
Employee cost	(287 700 000)	10 200 000	(277 500 000)	(268 509 222)	8 990 778	Note 1 (3)
Administrative and General expenses	(106 541 000)	(57 281 143)	(163 822 143)	(154 894 863)	8 927 280	Note 1 (4)
Depreciation and amortisation	(27 400 000)	1 343 000	(26 057 000)	(31 856 232)	(5 799 232)	Note 1 (5)
Bad debts written off	-	-	-	(4 433 085)	(4 433 085)	Note 1 (9)
Total expenditure	**(421 641 000)**	**(45 738 143)**	**(467 379 143)**	**(459 693 402)**	**7 685 741**	
Operating surplus	**-**	**15 000 000**	**15 000 000**	**21 891 381**	**6 891 381**	
Gain on disposal of assets	-	-	-	463 131	463 131	
Gain on foreign exchange	-	-	-	819 924	819 924	
Fair value adjustments	-	-	-	12 212 836	12 212 836	6
Actuarial gains	-	-	-	1 422 000	1 422 000	9
Impairment of assets	-	-	-	(192 596)	(192 596)	
		-	**-**	**14 725 295**	**14 725 295**	
Surplus before capital expenditure	**-**	**15 000 000**	**15 000 000**	**36 616 676**	**21 616 676**	
Capital expenditure	-	(15 000 000)	(15 000 000)	(18 205 173)	(3 205 173)	
Surplus after capital expenditure	**-**	**-**		**18 411 503**	**18 411 503**	

Material budget adjustments and differences between budget and actual amounts

The SAWS total revenue for the year was revised upwards by R60,74 million mainly due to improved air traffic volumes and external donor funds.

Explanation of Budget Adjustment

1. Government grant: During this financial year, the Department of Forestry, Fisheries and the Environment approved a request by SAWS to convert an amount of R124,9 million from its conditional grant allocation which was earmarked for infrastructure investment into operational grant in order to enable the entity to fulfill its day-to-day operations and employment commitments due to low economic growth and COVID-19 impact.

   Included in the revised total revenue amount of R482,38 million is an amount of R30,32 million which was allocated towards infrastructure investment.

2. Commercial Revenue: The upward adjustment of R23,55 million in commercial revenue was in the main attributed to improved air-traffic volumes during the year due to easing of lockdown regulations.

3. Employee Costs: The downward adjustment of R10,2 million on employee costs was effected as a result of delaying the filling of vacant posts as part of the broad cost-containment measures employed by the entity.

4. Administrative and General Expense: An upward adjustment of R57,28 million was effected. This adjustment was effected to cater for improved activities as the commercial revenue was improving especially the aviation revenue.

Explanation of Budget and Actual (Comparison)

1. Government grant – conditional grant: There was under-expenditure on infrastructure investments between budget and actual amounting to R12,12 million. The variance is mainly due to the entity having only received the infrastructure grant towards the end of the financial year and as a result of this, most of the projects could not be fulfilled by year-end.

2. Commercial revenue: The positive variance of R6,74 million is mainly attributed to improved air-traffic volumes during this financial year emanating from the easing of lockdown regulations which resulted in the increase in flight volumes

3. Employee costs: The entity realised a positive variance of R8,99 million which is attributed to vacant posts as a result of resignations experienced during the year and posts that were filled later in the financial year.

4. Administrative and General Expenses: A positive variance of R8,93 million was realised during the year and was mainly due to the implementation of cost containment measures applied by management during the year. Savings were realised by ensuring that the entity realised 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 meeting the annual performance plan objectives.

5. Depreciation and amortisation: The organisation utilised some of its unspent conditional grants from the previous financial year resulting in additions to assets which in turn led to a higher depreciation and amortization of assets during the year.

6. Impairment of accounts receivables: The amount incurred on impairment of accounts receivables for the year amounts to R2,77 million and relates to the provision of doubtful debts whose accounts are overdue.

7. Gain on Fair Value Adjustments: The entity realised a gain of R12,21 million on its investment property.

8. Contributions and donations: Actual exceeded budget by R1,38 million mainly due to projects that were realised and met the attached conditions of the grant.

9. Bad debts written off: These relate to debts that were uncollectible mainly due to liquidation of one of the major airlines.

10. Actuarial gains: The entity realised gains of R1,42 million for the year.

ACCOUNTING POLICIES

1. Presentation of Annual Financial Statements

The Annual Financial Statements have been prepared in accordance with the Standards of Generally Recognised Accounting Practice (GRAP), issued by the Accounting Standards Board in accordance with 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 and are in accordance with historical cost conventions as the basis of measurement, unless specified otherwise. 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 the preparation of these Annual Financial Statements, are disclosed below.

1.1 Presentation currency

These Annual Financial Statements are presented in South African Rand, which is the functional currency of the entity.

1.2 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.

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

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, management 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, which correlate with defaults on the portfolio. These annual loss ratios are applied to loan balances in the portfolio and are 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 that is available to the entity for similar financial instruments.

1.3 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 of 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, which may then impact our estimations and may then require a material adjustment to the carrying value of tangible assets.

Provisions

Provisions were raised and management determined an estimate based on the information available. Additional disclosure of these estimates of provisions are included in Note 16 - Provisions.

Post-retirement benefits

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

The entity determines the appropriate discount rate at the end of each year. This is the interest rate that 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 that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the terms of the related pension liability.

Other key assumptions for pension obligations are based on current market conditions. Additional information is disclosed in Note 14.

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 the recovery would cause undue hardship to the debtor or his or 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 and equipment and other assets. This estimate is based on industry norm. This estimate is based on the pattern in which an asset's future economic benefits or service potential is expected to be consumed by the entity.

1.4 Investment property

Investment property is property held to earn rentals or for capital appreciation or both and is 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 that are associated with the investment property will flow to the entity, and the cost or fair value of the investment property can be measured reliably.

1.4 Investment property (continued)

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 at the date of acquisition.

Costs include costs incurred initially and costs incurred subsequently to add to, or 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

Subsequent to initial measurement, investment property is measured at fair value.

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

1.5 Property, plant and equipment

Property, plant and equipment is initially measured at cost.

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

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

Where an item of property, plant and equipment is acquired in exchange for a non-monetary asset or monetary assets, 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, its 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.

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 definition of property, plant and equipment.

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.

1.5 Property, plant and equipment (continued)

Land, buildings and aircraft are carried at 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 which would be 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, as a result of 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, as a result of a revaluation, is recognised in 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 original cost of the asset.

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

Item	Depreciation method	Range of useful life
Aircraft - airframes	Straight-line	20 years
Aircraft - engines	Unit of production	5400 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

1.5 Property, plant and equipment (continued)

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 such indication exists, the entity revises the expected useful life and/or residual value accordingly. The change is accounted for as a change in an accounting estimate.

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 which the entity holds for rentals to others and subsequently routinely sell 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 expenditure to repair and maintain property, plant and equipment in the notes to the financial statements (see Note 28).

1.6 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 cost less any accumulated amortisation and any impairment losses.

1.6 Intangible assets (continued)

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

1.7 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 uncollectibility.

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.

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

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability (or group of financial assets or financial liabilities) and of allocating 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 for which 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.

1.7 Financial instruments (continued)

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 in meeting obligations associated with financial liabilities that are 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 category) 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 category) 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

Initial recognition

The entity recognises a financial asset or a financial liability in its statement of financial position when the entity 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 that are 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.

1.7 Financial instruments (continued)

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 uncolllectibility of financial assets

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

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 the use of an allowance account. The amount of the loss is recognised in surplus or deficit.

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

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 component that is a financial liability is recognised as revenue or expense in surplus or deficit.

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

1.8 Statutory receivables

Identification

Statutory receivables are receivables that 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 subsequent to initial recognition to reflect any:

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

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:

- 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 previous 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.

1.8 Statutory receivables (continued)

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 in surplus or deficit.

1.9 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)

1.10 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 - 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.

1.11 Inventories

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

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

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

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

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

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

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

The cost of inventories 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 having a similar nature and use to the entity.

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

1.12 Impairment of 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 cost of the asset.

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

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 expense.

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 costs of disposal.

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

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 its 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.

Value in use

Value in 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 from its disposal at the end of its useful life.

1.12 Impairment of cash-generating assets (continued)

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 from its ultimate disposal and the entity applies the appropriate discount rate to those future cash flows.

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 restructuring's or from improving or enhancing the asset's performance. Projections based on these budgets/forecasts covers a maximum period of five years, unless a longer period can be justified; and
- 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; and
- 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:

- cash inflows or outflows from financing activities; and
- 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 date of the value in use calculation.

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.

1.12 Impairment of cash-generating assets (continued)

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 to which it relates, the entity recognises a liability only to the extent that is a requirement in the Standard of GRAP.

After the recognition of an impairment loss, 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.

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 not possible 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; and
- the future cash outflows 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 the way the recoverable amount of the cash-generating unit is determined.

An impairment loss is recognised for a cash-generating unit if the recoverable amount of the unit is less than the carrying amount of the unit. 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); and
- zero.

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 non-cash-generating asset is allocated to the carrying amount of the cash-generating unit prior to estimation of 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 previous 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.

1.12 Impairment of cash-generating assets (continued)

An impairment loss recognised in previous 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 previous 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); and
- the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the asset in previous 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 assets of the unit.

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 occur when there is clear evidence that such a redesignation is appropriate.

1.13 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 cost of the asset.

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 whether there is 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 its 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.

1.13 Impairment of non-cash-generating assets (continued)

Value in use

Value in 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 a non-cash-generating asset 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 carrying amount of the asset is reduced to its recoverable service amount. This reduction is an impairment loss.

An impairment loss is recognised immediately in surplus or deficit.

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.

Reversal of an impairment loss

The entity assesses at each reporting date whether there is any indication that an impairment loss recognised in previous 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 previous 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 previous 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.

1.13 Impairment of non-cash-generating assets (continued)

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 occur when there is clear evidence that such a redesignation is appropriate.

1.14 Employee benefits

Other long-term employee benefits are employee benefits (other than post-employment benefits 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 are employee benefits (other than termination benefits) that 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 that the entity expects to pay as a result of the unused entitlement that has 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 as a result of 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.

Post-employment benefits

Post-employment benefits are employee benefits (other than termination benefits) 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 effects of differences between the previous actuarial assumptions and what has actually occurred) and the effects of changes in actuarial assumptions. In measuring its defined 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.

1.14 Employee benefits (continued)

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; and
- 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 which reflects the time value of money.

Any adjustments arising from the limit above is 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 on any reimbursement rights;
- actuarial gains and losses;
- past service cost;
- the effect of any curtailments or settlements; and
- 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 and 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 period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.

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 on an annual basis by independent actuaries separately for each plan. The results of the valuation are updated for any material transactions and other material 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; and
- any resulting change in the fair value of the plan assets.

Before determining the effect of a 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 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 in the same way as plan assets. In surplus or deficit, the expense relating to a defined benefit plan is presented as the net of the amount recognised for a reimbursement.

1.14 Employee benefits (continued)

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 (both funded and unfunded) reflect the time value of money. The currency and term of the financial instrument selected to reflect the time value of money is consistent with the currency and estimated term of the post-employment benefit obligations.

Post-employment benefit obligations are measured on a basis that reflects:

- 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; and
- 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
- past 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.

Assumptions about medical costs take account of estimated future changes in the cost of medical services, resulting from both inflation and specific changes in medical costs.

1.15 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; and
- a reliable estimate can be made of the obligation.

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

Where the effect of 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 32.

1.16 Commitments

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

1.16 Commitments (continued)

Disclosures are required in respect of 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 as well as future commitments relating to operating leases. Refer to Note 30 - Commitments.

1.17 Revenue from exchange transactions

Revenue is the gross inflow of economic benefits or service potential during the reporting period when those inflows result in an increase in net assets, other than increases relating to contributions from owners.

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

Fair value is the amount for which 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.

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;
- it is probable that the economic benefits or service potential associated with the transaction will flow to the entity; and
- 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 stage of completion of the transaction at the reporting date. The outcome of a transaction can be estimated reliably when all the following conditions are satisfied:

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

When services are performed by an indeterminate number of acts over a specified time frame, revenue is recognised on a straight-line basis over the specified time frame unless there is evidence that some other method better represents the stage of completion. When a specific act is much more significant than any other acts, the recognition of revenue 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 stage of completion of the transaction at the reporting date. Stage of completion is determined by services performed to date as a percentage of total services to be performed.

1.17 Revenue from exchange transactions (continued)

Interest

Revenue arising from the use by others of entity assets yielding interest, royalties and dividends or similar distributions is recognised when:

- It is probable that the economic benefits or service potential associated with the transaction will flow to the entity, and
- The amount of the revenue can be measured reliably.

Interest is recognised using the effective interest rate method for financial instruments and using the nominal interest rate method for statutory receivables. Interest levied on transactions arising from exchange or non-exchange transactions is classified based on the nature of the underlying transaction.

Service fees included in the price of the product are recognised as revenue over the period during which the service is performed.

1.18 Revenue from non-exchange transactions

Revenue comprises gross inflows of economic benefits or service potential received and receivable by an entity, which represents an increase in net assets, other than increases relating to contributions from owners.

Conditions on transferred assets are stipulations that specify that the future economic benefits or service potential embodied in the asset is required to be consumed by the recipient as specified or future economic benefits or service potential must be returned to the transferor.

Control of an asset arise when the entity can use or otherwise benefit from the asset in pursuit of 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 the form of cash, goods, services, or use of assets) to another entity in 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 directly giving approximately equal value in exchange, or gives 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 is required to be returned to the transferor if not deployed as specified.

Stipulations on transferred assets are terms in laws or regulation, 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 a 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.

1.18 Revenue from non-exchange transactions (continued)

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 at the date of acquisition.

Debt forgiveness and assumption of liabilities

The entity recognise revenue in respect of debt forgiveness when the former debt no longer meets the definition of a 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.

Revenue arising 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 recognise 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 and 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 criteria for recognition, the entity disclose the nature and type of services in-kind received during the reporting period.

1.19 Investment income

Investment income is recognised on a time-proportion basis using the effective interest method.

1.20 Translation of foreign currencies Foreign currency transactions

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

At each reporting date:

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

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

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.

1.20 Translation of foreign currencies Foreign currency transactions (continued)

Cash flows arising from transactions in a foreign currency are recorded in Rand by applying to the foreign currency amount the exchange rate between the Rand and the foreign currency at the date of the cash flow.

1.21 Comparative figures

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

1.22 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 in accordance with the nature of the expense, and where recovered, it is subsequently accounted for as revenue in the statement of financial performance.

1.23 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 that was 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 with the exception of 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 thereto remains against the relevant expenditure item and is updated as such in the irregular expenditure register.

1.24 Budget information

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 on an accrual basis and presented by economic classification linked to performance outcome objectives.

The approved budget covers the fiscal period from 2021/04/01 to 2022/03/31.

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 have been included in the statement of comparison of budget and actual amounts.

1.25 Related parties

The entity operates in an economic sector currently dominated by entities directly or indirectly owned by the South African government. As a consequence of the constitutional independence of the three spheres of the government in South Africa, only entities within the national sphere of government are considered to be related parties.

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

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

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

1.26 Events after reporting date

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

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

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

1.27 Prior-period error

When the presentation or classification of items in the financial statements 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 it is 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

Figures in Rand	Note(s)	2022	2021

2. New standards and interpretations

2.1 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 2022 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 that local issues and the local 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 Board's decisions to depart are explained in the basis for conclusions.

The amendments to GRAP 25 are extensive and mostly 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 based on the International Public Sector Accounting Standard on Employee Benefits (IPSAS 25) effective at that time. However, GRAP 25 was modified in some respects where the Board decided the requirements of the International Accounting Standard on Employee Benefits (IASR 19) were more appropriate. Specifically, the Board:

- Eliminated the corridor method and required recognition of actuarial gains and losses in full in the year that they arise.
- Required the recognition of past service costs in the year that a plan is amended, rather than on the basis of whether they are vested or unvested.

In developing GRAP 25, included was the guidance from the International Financial Reporting Standards (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.

It is unlikely that the revisions will have a material impact on the entity's Annual Financial Statements.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

2.1 Standards and interpretations issued, but not yet effective (continued)

GRAP 104 (amended): Financial Instruments

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

The most significant changes to the Standard affect:

- Financial guarantee contracts issued
- Loan commitments issued
- Classification of financial assets
- Amortised cost of financial assets
- Impairment of financial assets
- Disclosures

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

The entity expects to adopt the amendment for the first time when the Minister sets the effective date for the amendment.

It is unlikely that the standard will have a material impact on the entity's Annual Financial Statements.

3. Inventories

Components and finished goods*	4 654 682	3 130 028
Consumables (stationery)	56 914	67 021
Other commercial components	479 312	512 003
	5 190 908	**3 709 052**

*Inventory components for repairs and maintenance.

Inventories recognised as an expense during the year	1 099 396	394 812
Inventory write-back for the year	17 223	33 850

The write-back is due to inventory on hand (in storeroom) being greater than theoretical inventory (inventory in the accounting system) as identified during the year-end inventory count.

None of the carrying amounts of inventories have been pledged as security.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2022	2021

4. Receivables from exchange transactions - other

Trade accounts receivable	3 478 174	4 783 440
Sundry receivables	1 502 080	716 793
Impairment of accounts receivable	(766 192)	(1 000 430)
	4 214 062	**4 499 803**

Trade receivables are stated at amortised cost using effective interest rate method less impairment of receivables. Interest of 7,5% is charged on invoices over 60 days.

Provision for receivables from exchange transactions - other	Current	31 - 120 Days	Over 120 days	Total
Insurance clients	667	17 008	205 419	223 094
Contract clients	554	1 994	315 012	317 560
Others	890	2 503	222 145	225 538
	2 111	**21 505**	**742 576**	**766 192**

Receivables from exchange transactions - other past due but not impaired

Accounts receivable from exchange transactions which are less than 3 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 amounts that are overdue, R2 067 186 (2021: R1 742 684) were past due but not impaired. Trade accounts receivable amounting to R486 350 (2021: R2 040 333) are neither past due nor impaired. Management considers these debtors to be of good credit quality even though they do not have the external credit rating.

	31-90 days	Over 90 days	Total
Past due but not impaired	1 994 336	72 850	2 067 186

Reconciliation of provision for impairment and bad debts written off for accounts receivable from exchange transactions - other

Opening balance	1 000 430	1 342 984
Provision for impairment	1 816 606	1 000 430
Amounts written off as uncollectible	(150 393)	(122 656)
Unused amounts reversed	(1 900 451)	(1 220 328)
	766 192	1 000 430

Unused amounts of prior year provision are reversed as there is an improvement in 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.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

5. Receivables from exchange transactions - statutory receivables

Statutory receivable	23 015 322	17 074 334
Impairment of accounts receivable	(11 499 760)	(14 034 491)
	11 515 562	**3 039 843**

In terms of the SAWS Act, the entity provides meteorological services to the airline industry at a rate promulgated by the Minister of Forestry, Fisheries and Environment in the Government Gazette. The Regulating Committee on Meteorological Services facilitates the consultative process between the entity and the Aviation industry for the recommendation of the tariff to the Minister. The entity does not hold any collateral on receivables as security

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% and 7,5% (2021: 7% and 9,75%) on all overdue accounts. Statutory receivables amounting to R7 559 205 (2021: R1 612 858) are neither past due nor impaired and are considered to be fully recoverable.

Receivables from exchange transactions - statutory receivables past due but not impaired

Statutory receivables are assessed for impairment on a monthly basis individually. Management's judgement is used to impair amounts that are past due. Statutory receivables of R3 956 358 (2021: R1 400 151) 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	3 337 702	618 657	3 956 359

Accounts receivable from exchange transactions (statutory receivables) impaired

Other receivables from exchange transactions of R11 499 760 (2021: R14 034 491) were impaired and provided for. The bulk of this provision, R8 514 088 relates to SAA, Comair, Mango and Air Zimbabwe which are under business rescue or liquidations. Management takes into account the debtors that default, under administration and business rescue/liquidations when calculating the impairment.

Reconciliation of provision for impairment and bad debts written off for statutory accounts receivable

Opening balance	14 034 490	17 128 572
Provision for impairment	3 421 734	334 652
Amounts written off as uncollectible	(4 282 692)	(313 637)
Unused amounts reversed	(1 673 772)	(3 115 097)
	11 499 760	**14 034 490**

Unused amounts of prior year provision are reversed as there is an improvement in payments.

	31-90 days	Over 90 days	Total
Regulated/statutory commercial debtors	297 702	11 202 058	11 499 760

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2022	2021

6. Prepayments

Prepaid expenses	2 522 038	3 925 809

Prepaid expenses comprise of services paid in advance, license fees, subscription fees and employee travel advance payments.

7. Cash and cash equivalents

Cash and cash equivalents consist of:

Bank balances	69 979 146	41 853 703
Short-term deposits	19 489	81 795
	69 998 635	**41 935 498**

The entity does not have any cash and cash equivalents that have been pledged as security.

Figures in Rand

8. Investment property

	2022		2021	
	Cost/Valuation	Carrying value	Cost/Valuation	Carrying value
Investment property	83 991 957	83 991 957	71 779 121	71 779 121

Reconciliation of investment property - 2022

	Opening balance	Additions	Fair value adjustments	Total
Investment property	71 779 121	-	12 212 836	83 991 957

Reconciliation of investment property - 2021

	Opening balance	Additions	Total
Investment property	71 779 121	-	71 779 121

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 2022 by Chris B Real Estate Valuers and Projects (Pty) Ltd, Registration Number CK 2021/533413/07, a qualified independent professional valuer. Chris B Real Estate Valuers and Projects (Pty) Ltd is not connected to the entity and has experience in location and category of the investment property.

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.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand		

8. Investment property (continued)

If the property was 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 on the basis of open-market value. The property was brought to book in 2003. The valuation from independent valuers was accepted to reflect the fair value as on 31 March 2002 for comparative purposes.

The property is subject to a number of 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 6 meters wide and approximately 35 m2.
- There is a Telkom Mast measuring approximately 900 m2.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand

9. Property, plant and equipment

	2022			2021		
	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost/ Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Land - Garsfontein and Irene	14 958 044	-	14 958 044	7 316 265	-	7 316 265
Buildings - Irene and Bethlehem	5 786 052	(640 166)	5 145 886	6 296 208	(490 473)	5 805 735
Fence	3 901 785	(2 674 843)	1 226 942	3 623 985	(2 419 709)	1 204 276
Furniture and fixtures	11 388 885	(6 400 101)	4 988 784	11 710 150	(7 007 225)	4 702 925
Motor vehicles	236 220	(104 362)	131 857	600 817	(384 307)	216 510
Office equipment	4 162 086	(2 405 018)	1 757 068	4 711 188	(3 128 545)	1 582 642
Computer equipment & servers	154 131 901	(82 745 124)	71 386 777	158 577 287	(80 032 981)	78 544 306
Leasehold improvements	3 837 239	(798 396)	3 038 843	4 230 577	(2 612 571)	1 618 006
Aircraft - airframes	-	-	-	861 362	(844 510)	16 852
Radar - equipment	269 225 061	(115 342 431)	153 882 630	266 179 561	(106 756 142)	159 423 419
Aircraft - propellers	-	-	-	177 911	(174 430)	3 481
Aircraft - engines	-	-	-	1 771 965	(1 737 298)	34 667
Library books and equipment	51 483	(41 060)	10 423	56 882	(42 991)	13 891
Air quality equipment	49 318 706	(20 687 838)	28 630 868	46 090 572	(18 876 843)	27 213 729
Meteorological equipment	71 540 461	(56 681 137)	14 859 324	75 896 672	(59 007 411)	16 889 261
Tools and other equipment	6 639 257	(2 936 510)	3 702 747	7 135 344	(3 293 485)	3 841 859
Total	**595 177 180**	**(291 456 986)**	**303 720 193**	**595 236 746**	**(286 808 921)**	**308 427 824**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand

9. 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 & 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 & 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	3 825 863	403 922	(27 605)	-	(515 430)	-	3 686 750
Total	**308 427 824**	**18 205 174**	**(783 880)**	**7 126 660**	**(29 074 347)**	**(181 238)**	**303 720 193**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand

9. Property, plant and equipment (continued)

Reconciliation of property, plant and equipment - 2021

	Opening balance	Additions	Restatements	Disposals	Depreciation	Impairment loss	Impairment reversal	Total
Land - Garsfontein and Irene	7 316 265	-	-	-	-	-	-	7 316 265
Buildings - Irene and Bethlehem	5 950 465	-	-	-	(144 730)	-	-	5 805 735
Fence	1 440 675	-	-	-	(236 399)	-	-	1 204 276
Furniture and fixtures	5 307 673	168 793	-	(49 201)	(637 640)	(86 700)	-	4 702 925
Motor vehicles	231 805	-	-	-	(15 295)	-	-	216 510
Office equipment	1 978 283	-	-	(9 599)	(269 590)	(100 457)	-	1 598 637
Computer equipment & servers	88 720 450	1 830 472	-	(123 094)	(11 419 246)	(464 276)	-	78 544 306
Leasehold improvements	1 761 408	-	-	(635)	(139 568)	(3 199)	-	1 618 006
Aircraft - airframes	-	-	-	-	-	-	16 852	16 852
Radar - equipment	167 948 472	-	-	-	(8 525 053)	-	-	159 423 419
Aircraft - propellers	-	-	-	-	-	-	3 481	3 481
Aircraft - engines	-	-	-	-	-	-	34 669	34 669
Library books & equipment	16 194	1 062	-	-	(3 365)	-	-	13 891
Air quality equipment	19 297 453	9 354 494	1 541 504	-	(2 857 996)	(121 727)	-	27 213 728
Meteorological equipment	16 939 191	3 311 851	269 143	-	(3 241 720)	(389 204)	-	16 889 261
Tools and other equipment	3 777 518	661 250	-	(697)	(543 558)	(68 650)	-	3 825 863
Total	**320 685 852**	**15 327 922**	**1 810 647**	**(183 226)**	**(28 034 160)**	**(1 234 213)**	**55 002**	**308 427 824**

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.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

9. Property, plant and equipment (continued)

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	7 641 779	-
Building - Irene and Bethlehem	(515 120)	-
	7 126 660	**-**

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 was stated at historical cost basis, the amounts would be as follows:

Historical cost	600 000	600 000
Accumulated depreciation	(240 000)	(228 000)
	360 000	**372 000**

The Bethlehem property was revalued on 31 March 2022 by Chris B Real Estate Valuers and Projects (Pty) Ltd, an independent valuer, in terms of the provisions of the Property Valuations Professional Act, 2000 (Act No. 47 of 2000). Valuations were made on the basis of open-market value. The increase in the carrying amount of the property was credited to the revaluation surplus.

The property includes Erf 1997, valued at R1 210 000 and Erf 2064, valued at R1 280 000, 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 name of the entity at 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 fair valued at R8 950 000 for the land and R2 629 000 for the buildings on 31 March 2022. Improvements on the property consist of two interconnected offices, workshop, storage wings and some outbuildings and carports. In accordance with the registration of ownership the property may not be transferred to the entity. Valuations were made on the basis of open market value.

The property was valued on 31 March 2022 by Chris B Real Estate Valuers and Projects (Pty) Ltd, Registration Number CK 2021/533413/07, a qualified independent professional valuer. Chris B Real Estate Valuers and Projects (Pty) Ltd, is not connected to the entity and has experience in location and category of property valuation.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

9. Property, plant and equipment (continued)

Land - Garsfontein

The Land includes a portion of a portion of 412 and a portion of 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 west of the N1 National Freeway and immediately north of Rigel Avenue (South) in the Waterkloof Heights suburb of Pretoria.

The property was valued at R6 008 044 as at 31 March 2022 by Chris B Real Estate Valuers and Projects (Pty) Ltd, Registration Number CK 2021/533413/07, a qualified independent professional valuer. Chris B Real Estate Valuers and Projects (Pty) Ltd, is not connected to the entity and has experience in location and category of land valuation.

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.

10. Change in estimate

During the current financial year, there was a change in estimate with regards to depreciation, due to both changes in useful lives and residual values. Reassessments of useful lives were enacted due to discovering well-preserved assets still in use but nearing the end of their useful lives. For residual values a distinction was made between assets that the entity holds for their entire economic lives versus assets the entity holds for most of their economic lives. For assets held for most of their economic lives the entity reassessed their residual values.

Effects of changes in the statement of financial performance:	
Decrease in depreciation	(406 382)
Effects of changes in the statement of financial position:	
Decrease in accumulated depreciation	(406 382)

Figures in Rand

11. Intangible assets

	2022			2021		
	Cost	Accumulated amortisation and accumulated impairment	Carrying value	Cost	Accumulated amortisation and accumulated impairment	Carrying value
Computer software	23 846 508	(18 617 498)	5 229 010	38 303 726	(30 341 474)	7 962 252
Servitude	1 500 000	(535 209)	964 791	1 500 000	(475 208)	1 024 792
Total	**25 346 508**	**(19 152 707)**	**6 193 801**	**39 803 726**	**(30 816 682)**	**8 987 044**

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**

Reconciliation of intangible assets - 2021

	Opening balance	Additions	Amortisation	Impairment loss	Total
Computer software	8 520 230	2 759 217	(2 854 894)	(462 301)	7 962 252
Servitude	1 084 794	-	(60 002)	-	1 024 792
Total	**9 605 024**	**2 759 217**	**(2 914 896)**	**(462 301)**	**8 987 044**

Other information

Intangible assets comprise of computer software and a servitude. The servitude comprises the right of use of land for its meteorological equipment from AP Beckely in Bloemfontein. The servitude is amortised over the useful life of the meteorological equipment installed on the land. Impairment loss was recognised for software that was no longer in use.

SAWS does not have any intangible assets whose title is restricted and whose carrying amounts have been pledged as security.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

12. Operating lease liability

Current liabilities	730 228	1 505 274

The following lease payments are related to operating leases for the rental of premises, office equipment and motor vehicles:

The entity leases 10 premises (2021: 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. 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 SAWS incurs no levies and electricity costs on the property and no rental income accrues, thus no financial impact on the Annual Financial Statements.

SAWS entered into a lease agreement for the rental of the buildings with JR 209 Investment (Pty) Ltd. The lease was signed on 5 December 2017 and is effective from 1 May 2018 until 30 April 2023.

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 (4) years (13 November 2019 to 14 November 2023).

SAWS signed a contract for the rental of motor vehicles with Fleet Horizon Solutions for a total amount of R20,340,715 for three (3) years effective 1 October 2021.

The leases are renewed in terms of the lease agreements where applicable and the entity does not have an option to purchase these leased assets at the end of the lease term.

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**

2021	Furniture and Fittings	Premises	Motor vehicles	Total
Future minimum lease payments not later than one year	152 203	21 867 024	1 223 071	23 242 298
Later than one year and not later than five years	240 987	25 355 028	-	25 596 015
Later than five years	-	3 058 079	-	3 058 079
	393 190	**50 280 131**	**1 223 071**	**51 896 392**

Straight lining effect on operating lease liability:

Opening balance	1 505 274	1 336 230
Deferred rental	(775 046)	169 044
	730 228	**1 505 274**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2022	2021

13. Accounts payable from exchange transactions

Trade and Sundry Payables	12 994 501	11 783 152
Payroll Payables (PAYE and UIF)	354 779	147 974
Creditor bursary students	-	307 780
Staff subsistence and travel allowances	28 804	50 428
	13 378 084	**12 289 334**

Trade and other payables are subsequently carried at amortised cost.

Spot rates at period-end

GBP	19.0199	-
US Dollar	14.4848	14.8202
CHF	15.6446	15.7107

Unrealised foreign exchange gains and losses are calculated using the spot rate at year-end.

Included in trade and other payables are foreign creditors	Currency	2022 Foreign currency	2021 Foreign currency	2022	2021
Envitech	USD	6 160	13 920	89 226	206 297
Davos	CHF	-	9 750	-	153 179
Microsoft Ireland	USD	113 926	-	1 650 201	-
UK Met Office	GBP	99	-	1 881	-
World Meteorological Organization	CHF	45 823	-	716 884	-
		-	**-**	**2 458 192**	**359 476**

14. 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 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 2022 is R3,031 (2021: R3,031), irrespective of the number of dependents. The Rand cap is expected to increase with health care 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:

Current (In service) employees	17	17
Continuation members (Pensioners)	32	32
	49	**49**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

14. Employee benefit obligations (continued)

The actuarial valuation of the liability in respect of the post-employment medical aid benefit is performed on Statement of Financial Position date as summarised below. The 2022 valuation has been performed by an independent company of Actuaries, Alexander 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 subsidy payments expected. Assumption for net discount rate used for 2022 compared to the previous year is 3,24% (Previous year: 3,32%). The return on Plan Asset is 11,40% compared to 12,10% in the previous year. In conclusion, these rates have resulted in an increase in the liability.

Plan asset

Current service cost	1 774 000	1 780 000
Actuarial loss	133 000	335 000
	1 907 000	**2 115 000**

Accrued liability

Current service cost	119 000	106 000
Interest cost	2 146 000	2 117 000
Actuarial gains	(1 555 000)	-
	710 000	**2 223 000**

Movement in the defined benefit obligation

Balance 1 April	18 323 000	16 919 000
Current service cost	2 146 000	106 000
Interest cost	119 000	2 117 000
Actuarial gains	(1 555 000)	347 000
Benefit paid	(1 166 000)	(1 166 000)
	17 867 000	**18 323 000**

Changes in the fair value of plan assets are as follows:

Opening balance	15 228 000	14 279 000
Expected return	1 774 000	1 780 000
Actuarial gains (losses)	(133 000)	335 000
Benefits paid	(1 166 000)	(1 166 000)
	15 703 000	**15 228 000**

Summary of employee benefit obligation

Defined benefit obligation	17 867 000	18 323 000
Fair value of plan asset	(15 703 000)	(15 228 000)
	2 164 000	**3 095 000**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2022	2021

14. Employee benefit obligations (continued)

Amounts recognised in the statement of financial performance:

Current service costs	119 000	106 000
Interest costs	2 146 000	2 116 000
Expected return on plan assets	(1 774 000)	1 780 000
Actuarial (gain)/ loss	(1 422 000)	12 000
	(931 000)	**4 014 000**

The entity expects to contribute R1 161 000 to its defined benefit plans in the following financial year.

Key assumptions used

Assumptions used at the reporting date:

Discount rates used	11,40%	12,10%
Consumer price inflation	6,40%	7,10%
Medical cost trend rates	7,90%	8,65%
Expected increase in healthcare costs	**65%**	**65%**
Future changes in maximum state healthcare benefits	**90%**	**90%**

The expected return on plan asset 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	17 687 340	18 044 660
Employer's service cost	117 810	120 190
Employer's interest cost	2 124 540	2 167 460
Employer's plan asset	15 545 970	15 860 030

Amounts for the current and previous four years are as follows:

	2022	2021	2020	2019	2018
Defined benefit obligation	17 867 000	18 323 000	16 920 000	19 223 713	22 391 713
Plan asset	(15 703 000)	(15 228 000)	(14 279 000)	(15 100 685)	17 530 685
	2 164 000	**3 095 000**	**2 641 000**	**4 123 028**	**39 922 398**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

14. Employee benefit obligations (continued)

Defined contribution plan

It is the policy of the entity to provide retirement benefits to all its employees. A number of defined contribution provident funds, all of which are subject to the Pensions Fund Act, 1956 (Act No 24 of 1956) exist for this purpose.

The entity is under no obligation to cover any unfunded benefits.

Included in the defined contribution plan information, is a Defined Benefit Plan.

Short-term employee benefit

Opening balance	10 887 780	6 976 706
Leave raised	16 206 811	13 261 474
Leave utilised/ paid	(17 343 395)	(9 350 400)
	9 751 196	**10 887 780**

15. Unspent conditional grants and receipts - other

Unspent conditional grants and receipts comprise:

Unspent conditional grants and receipts

Unspent public contributions and donations	30 772 828	43 801 541

Movement during the year

Balance at the beginning of the year	43 801 541	26 709 292
Additions during the year	7 967 926	18 335 536
Income recognition during the year	(20 996 639)	(1 233 692)
Expenses not yet recognised as revenue	-	(9 595)
	30 772 828	**43 801 541**

Donor funds consist of funding received from various institutions. Memorandum of Understanding (MoUs) are entered into between the entity and the funders with the aim of utilising the entity's expertise in meteorology.

16. Provisions

Non-current liabilities	268 198	301 875

Reconciliation of provisions - 2022

	Opening Balance	Utilised during the year	Total
Capped leave provision: non-current	301 875	(33 677)	268 198

Capped leave is calculated based on the working days to each employee as at 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.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

17. Unspent government grant - conditional grant

Breakdown of unspent government grant - conditional grant

Opening balance	26 078 986	44 166 428
Government grant - capital expenditure	30 322 000	-
Income recognition during the year - capital expenditure	(18 205 173)	(18 087 139)
Other deferred income	(630)	(303)
	38 195 183	**26 078 986**

18. Revenue from exchange transactions

Commercial revenue

Aviation	77 718 055	32 511 248
Aviation instruments maintenance income*	1 099 840	1 198 481
Air quality revenue	985 498	911 893
Information fees	17 451 517	16 143 487
Regional Training Centre income	271 044	392 750
Lightning Detection Network Sales	4 812 106	4 803 755
Sale of instruments	2 233 473	1 599 225
	104 571 533	**57 560 839**

Rental income

SAWS entered into an operating lease agreement with the City of Tshwane Municipality for a period of three (3) years, effective from 1 September 2021. All repairs and maintenance for the equipment are borne by the SAWS. Upon termination of this contract, all equipment, hardware and meteorological instrumentation supplied and installed by SAWS shall be returned to SAWS.

Operating Lease Income

Future minimum lease income not later than one year	455 839
Later than one year and not later than three years	645 772
	1 101 611

19. Other income

Miscellaneous income	1 203 194	246 351
Interest on debt	28 989	343 594
Recovery of accounts receivable	2 769 050	2 943 333
	4 001 233	**3 533 278**

Included in other income is an amount of R2 769 050 (2021: R2 943 333) for the accounts receivable recovered. This amount has been reclassified from the expenses as it does not meet the definition of an expense. The reclassification did not affect the profit for the current and the previous year.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

20. Investment income

Interest income

Bank	789 175	734 706

21. Government grants and subsidies

Operating grants

Government grants	332 036 000	343 038 000

Conditional grants

Government grants	18 205 173	18 087 139
	350 241 173	**361 125 139**

22. Public contributions and donations

TETA SETA grants	985 030	332 833
Donor funds - other	20 996 639	3 173 108
	21 981 669	**3 505 941**

23. Employee related costs

Salaries and wages	221 475 454	211 471 960
Expedition salary	222 225	111 754
Medical aid contributions	15 997 074	16 486 334
Unemployment Insurance Fund	962 724	881 990
Occupational Health and Safety	400 486	545 301
Post-retirement medical aid	491 000	442 000
Overtime and shift allowance	14 842 435	14 351 070
Employee pension	14 444 504	15 882 880
Leave pay provision	516 902	4 357 817
Leave paid	**(843 582)**	**-**
	268 509 222	**264 531 106**

The amount of R111 754 for 2020/21 has been reclassified from the leave provision to expedition salary, as it is not leave pay provision but payments for being away from home.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

24. Administrative expenditure

Admin fees	1 119 977	1 322 009
Audit expenses (internal)	1 048 305	1 357 793
Public awareness	-	3 783
Board expenses	1 249 529	1 239 466
Conference costs	6 628	399 950
Refreshments	62 475	18 528
Entertainment	53 030	9 788
Legal fees	1 107 244	3 550 255
Printing and stationary	423 710	40 236
Training	1 411 924	69 082
Bank charges	505 454	232 990
	6 988 276	**8 243 880**

25. Depreciation and amortisation

Property, plant and equipment	29 074 347	28 034 160
Intangible assets	2 781 885	2 914 895
	31 856 232	**30 949 055**

26. Impairment of assets

Impairments		
Property, plant and equipment	181 238	**1 179 211**
Intangible assets	**11 358**	**462 301**
	192 596	**1 641 512**

27. Bad debts written off

Accounts receivable from exchange transactions - other	150 393	122 656
Statutory accounts receivable	4 282 692	313 637
	4 433 085	**436 293**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

28. General expenses

Figures in Rand	2022	2021
Aircraft expenses	264 194	356 815
Audit fees (External)	4 085 895	4 127 810
Cleaning	1 185 599	1 181 180
Communication costs	20 274 116	25 135 080
Computer and software licenses	27 931 636	18 047 157
Computer expenses	16 665	-
Conferences and seminars	109 718	40 873
Consultants	6 132 265	3 576 264
Consumables spares	13 830 024	10 797 664
Electricity	6 639 771	3 944 998
Fines and penalties	-	196 488
Insurance	2 087 628	1 890 652
Leases and rentals	30 645 562	28 965 914
Levies	3 913 142	401 478
Motor vehicle leases	2 265 347	1 591 982
Placement fees (employees)	565 263	2 100 272
Postage and courier	339 178	1 357 239
Promotions and sponsorships	2 441 406	2 044 128
Publications	229 846	467 349
Repairs and maintenance	8 905 141	12 987 969
Security	3 375 584	2 846 012
Subscriptions and membership fees	7 820 152	5 021 826
Training	-	578 681
Travel and accommodation	2 512 201	1 807 316
Venue expenses	2 336 254	2 120
	147 906 587	**129 467 267**

29. Fair value adjustments

Investment property	12 212 836	-

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

30. Cash generated from operations

Figures in Rand	2022	2021
(Deficit)/ Surplus	36 616 676	(10 378 660)
Adjustments for:		
Depreciation and amortisation	31 856 232	30 949 055
Loss/ (gain) on sale of assets and liabilities	(463 131)	128 225
Profit/ loss on foreign exchange	(819 924)	1 463 071
Fair value adjustments	(12 212 836)	-
Impairment deficit	192 596	1 641 515
Debt impairment	(2 769 050)	(2 943 333)
Bad debts written off	4 433 085	436 293
Movements in operating lease assets	(775 046)	(4 002 639)
Movements in employee benefit obligation	(2 067 584)	8 536 757
Movements in provisions	(33 677)	(61 038)
Accumulated impairment loss - reversal	-	1 014 080
Actuarial (gain)/ loss	(1 422 000)	12 000
Miscellaneous income	(1 129 988)	-
Other non-cash items	-	17 889
Changes in working capital:		
Inventories	(1 481 856)	(50 845)
Receivables from exchange transactions - other	285 741	2 402 646
Receivables from exchange transactions - Statutory receivables	(8 475 719)	7 917 764
Prepayments	1 403 771	2 358 298
Unspent government allocations - conditional grant	(12 116 197)	(18 087 442)
Accounts payable from exchange transactions	1 088 752	(21 203 509)
Unspent conditional grants and receipts - other	13 028 713	17 092 249
	45 138 558	**17 242 376**

31. Commitments

Capital expenditure

• Computer equipment	3 453 892	219 060
• Office furniture	47 881	48 200
• Meteorological and technical equipment	8 977 501	1 922 571
• Land and buildings	1 000 000	1 000 000
	13 479 274	**3 189 831**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

31. Commitments (continued)

Operational Expenditure

• Approved and contracted	67 944 258	73 871 192
• Approved but not yet contracted	-	11 745 316
	67 944 258	**85 616 508**

Commitments split per period

Up to 12 months	40 274 811	59 298 669
Longer than 12 months	41 148 721	29 507 670
	81 423 532	**88 806 339**

32. 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	835 886	3 413 060
Legal claims - CCMA	1 284 697	-
	2 120 583	**3 413 060**

Legal claims - Labour Court/ CCMA

The CCMA awarded an employee an amount of R1 284 697. SAWS is reviewing the award and has already obtained an urgent interdict at the Labour Court against the implementation of the award. The review process is ongoing.

Legal claims - Court

1. SAWS is disputing certain invoices for services rendered by a service provider. Despite several engagements between the parties to resolve the matter, no agreement has been reached yet. The matter has since been referred for adjudication, and the decision is still pending. The estimated costs amount to R332 301.

Legal claim - Service providers

1. Three service providers are suing SAWS for alleged failure to issue severe weather warnings. Notices of intention to defend are already filed and initial consultations to prepare for defence have also taken place. The litigation amount cannot be determined. The matter is ongoing.

2. The service provider is demanding that SAWS settles their full legal fees for legal services rendered on behalf of SAWS amounting to R503 585 and SAWS is disputing the amount.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

33. Related parties

Relationships

The entity is deemed to be under common control with all the entities in the national sphere of government and therefore these entities are considered to be related parties.

Entity structure

SAWS was established in terms of the national legislation as one of the government's essential scientific institutions providing information and services that have a direct impact on the lives of citizens and their properties and contributing greatly to sustainable development in South Africa. The entity reports functionally to the Department of Forestry, Fisheries and the Environment and therefore the Minister of Forestry, Fisheries and the 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. SAWS receive donor funds from the Department of Science and Innovation and The Water Research Council for the financing of some research projects.

SAWS provides weather and climate related services to various entities in national government. This includes provision of services and instruments to public entities.

SAWS further provides aviation services to the national carrier which is controlled by the National Government. 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 trade and other receivables from exchange transactions or in the respective notes.

Apart from transactions listed in the previous paragraph, 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 on a monthly basis;
- Basic services such as electricity, water and sanitation by local municipalities;
- Air travel as supplied by the national carrier which is controlled by National Government;
- Post-retirement benefits to former employees of the entity by the Government Pension Fund; and
- The collection of aviation and other related services revenue from entities controlled by 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 trade and other payables or the respective notes.

The following related party transactions occurred during the financial year:

Revenue related

Government grant and subsidies	332 036 000	343 038 000
Capital expenditure grant	18 205 173	18 087 139
	350 241 173	**361 125 139**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand

33. Related parties (continued)

Remuneration of management

Management class: Executive management

2022

Name	Designation	Basic salary	Other short-term employee benefits	Medical aid UIF & 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 N	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 & Information Systems	1 251 567	363 514	275 875	-	172 757	2 063 713
Buthelezi B*	Executive Corporate & Regulatory Services	584 340	259 500	50 376	-	78 000	972 216
Makongolo Z**	Acting Executive Corporate & Regulatory 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

Figures in Rand

33. Related parties (continued)

2021

Name	Designation	Basic salary	Other short-term employee benefits	Medical aid UIF & Pension	Acting Allowance	Other benefits received	Total
Mr Ndabambi MF	Acting Chief Executive Officer	1 167 296	379 152	160 133	364 206	127 356	2 198 143
Mr Mzizi N*	Chief Financial Officer	688 616	15 000	52 390	-	50 000	806 006
Ms Mphafudi J**	Executive Corporate and Regulatory Services	520 230	217 455	37 190	-	62 760	837 635
Dr Mphepya J	Executive Weather and Climate Services	1 790 874	36 000	109 222	-	50 000	1 986 096
Mr Ngobeni T	Acting Infrastructure and Information Systems	1 412 101	-	-	261 623	-	1 673 724
Ms Setlhako KS#	Acting Executive Corporate & Regulatory Services	541 667	-	-	108 004	-	649 671
Mr Gumenge L##	Acting Chief Financial Officer	822 869	-	-	152 614	-	975 483
Mr Kekana ###	Acting Executive Corporate & Regulatory Services	647 570	-	-	152 614	-	800 184
		7 591 223	**647 607**	**358 935**	**1 039 061**	**290 116**	**9 926 942**

* *Appointed on 1 November 2020*
** *Termination date was 25 August 2020*
\# *Acted as Executive for a period of 5 months during the current financial year*
Acted as CFO for a period of 10 months during the current financial year
Acted as an Executive for a period of 9 months following the resignation of Ms Mphafudi

Figures in Rand

33. Related parties (continued)

Management class: Non-executive management

2022

Name	Designation	Fees	Total
Ms Renqe F	Chairperson	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	-	-
Mr 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
Mrs 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
		992 283	**992 283**

* *The term of office ended on the 31 December 2021*
\# *Appointed on 1st January 2022*
^ *Board member works for government/ public entity and thus was not remunerated*
Requested not to be remunerated

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand

33. Related parties (continued)

2021

Name	Designation	Fees	Total
Ms Magomola N	Chairperson	326 407	326 407
Dr Dexter PD*	Deputy Chairperson	107 030	107 030
Adv Block D*	Non-Executive Member	86 508	86 508
Mr Lefutso D*	Non-Executive Member	106 677	106 677
Dr Maila M * ^	Non-Executive Member	-	-
Ms Mudly-Padayachie S*	Non-Executive Member	112 266	112 266
Mrs Moroka-Mosia KS ###	Non-Executive Member	-	-
Mr Phaduli I	Non-Executive Member	166 696	166 696
Ms Renqe F	Non-Executive Member	**165 969**	**165 969**
Dr Ngomane T*	Non-Executive Member	-	-
Dr Khumalo T* ^	Non-Executive Member	-	-
Mr Ndadana T*	Independent Member of the ARC	**43 497**	**43 497**
Mr Labane G*	Independent Member of the ARC	**68 769**	**68 769**
Mr Maharaj S*	Independent Member of the ARC	**55 647**	**55 647**
		1 239 466	**1 239 466**

 # Dr N Maila works for government and thus was not remunerated
Requested not to be remunerated
** Resigned on 31 August 2020*
*** Appointed on 31 August 2020*
Independent members of the ARC are not members of the Board.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

34. 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 2021	As previously reported	Adjustments	Restated
Property, plant and equipment cost	593 426 100	1 810 645	595 236 745
Accumulated depreciation	(287 026 503)	217 581	(286 808 922)
Accounts payables from exchange transactions	(16 461 018)	4 171 682	(12 289 336)
Accumulated surplus	291 104 245	6 199 908	297 304 153
	-	-	-

During the physical asset verification conducted in the year, it was discovered that Meteorological Equipment and Air Quality Equipment were erroneously understated by R1 810 646.

This was due to the omission of donated assets from Southern African Development Communities (SADC) and Biogeochemistry Research Infrastructure Platform (BIOGRIP).

The correction of error of R217 582 is related to the understatement of depreciation for the donated assets and the reassessment of useful lives for fully depreciated assets as assets were available for use in the 2020/21 financial year.

The correction of error for accounts payable from exchange transactions of R4 176 683 is due to the payroll control account that was erroneously overstated by R4 171 683 for the year ended 31 March 2021.

Risk Management 2021	As previously reported	Adjustments	Restated
Accounts receivable	11 465 455	(3 923 089)	7 542 366

Prepayment amount of R3 923 089 was taken out of accounts receivable under risk management, market risk.

Statement of financial position 2021	As previously reported	Adjustments	Restated
Donor funds - other	1 233 692	1 939 416	3 173 108
Depreciation	(28 251 741)	217 581	(28 034 160)
Consumables spares	(10 668 893)	(128 771)	(10 797 664)
Employee costs	(268 702 789)	4 171 682	(264 531 107)
Surplus for the year	**(306 389 731)**	**6 199 908**	**(300 189 823)**

Donor funds-other were understated by R 1 939 416 as a result of donated assets that were not recorded in the general ledger.

Consumables spares relate to spare parts that were donated which were not recorded in the general ledger.

The employee costs account was erroneously overstated by R4 171 683 for the year ended 31 March 2021.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

34. Prior-year error (continued)

Presented below are those items contained in the notes to Irregular Expenditure and Fruitless and Wasteful Expenditure that have been affected by prior-year adjustments

Irregular expenditure	As previously reported	Adjustments of irregular expenditure	Restated
Process used to appoint recruitment agents was not in line with procurement process.	1 850 645	(247 226)	1 603 419
Suiderkruis Security service at George Weather Office	6 574	(1 834)	4 740
	1 857 219	**(249 060)**	**1 608 159**

1. The amount of irregular expenditure incurred during 2017 to 2019 regarding the recruitment fees incurred was recorded incorrectly in the Annual Financial Statements as R1 850 645 instead of R 1 603 419.

2. The amount for the Suiderkruis Security Service matter was incorrectly recorded as R6 574 instead of R4 740.

Fruitless and wasteful expenditure	As previously reported	Adjustments of fruitless and wasteful expenditure	Restated
Amount paid for cancelled contract module	3 911 107	(1 624 839)	2 286 268

35. 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 through an ongoing review of future commitments and credit facilities.

Cash flow forecasts are prepared and adequate utilised borrowing facilities are monitored. Prudent liquidity risk management implies maintaining sufficient cash and obtaining the continued commitment from the risk management implies maintaining sufficient cash and obtaining the continued commitment from the Department of Forestry, Fisheries and the Environment for the government grant and the collection of 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
2022 Trade and other payables	13 378 085
2021 Trade and other payables	12 289 334

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

35. Risk management (continued)

Financial risk management

Credit risk

Financial assets, which potentially subject the entity to the 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 counterparty.

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 credit quality of the customer, taking into account its financial position, past experience and other factors. Individual risk limits are set based on internal or external ratings in accordance with limits set by the board. The utilisation of credit limits is regularly monitored. 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 were as follows:		
Cash and cash equivalents	69 998 635	41 935 498
Receivables from exchange transactions (excluding statutory receivables)	4 214 062	4 499 803

Market risk

Interest rate risk

The entity's exposure to market risk (in the form of interest rates risk) arises primarily form the entity's investment in cash and cash equivalents, accounts receivable and payable. The entity manages its interest rate risk by obtaining competitive rates from approved financial institutions on a monthly basis. The entity policy is to manage interest rate risk so that fluctuations in variable rates do not have a material impact on surplus/ (deficit).

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:

	2022 Effective interest rate	2021 Effective interest rate	2022	2021
Cash	4,50%	9,75%	69 998 635	41 935 498
Accounts receivable	7,50%	7,00%	15 729 624	7 539 646
	-	-	**85 728 259**	**49 475 144**
Financial assets	6,00%	8,38%	85 728 259	49 475 144
Financial liabilities			(13 378 085)	(12 289 334)
	-	-	**72 350 174**	**37 185 810**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

35. Risk management (continued)

Foreign Currency Risk

	2022 foreign currency	2021 foreign currency	2022	2021
CHF Payables	45 823	9 750	716 884	153 179
USD Payables	120 087	13 920	1 739 427	206 297
GBP Payables	99	-	1 881	-
	-	-	**2 458 192**	**359 476**

Sensitivity analysis

The entity is mainly exposed to CHF, GBP and US dollar currencies.

The 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 5% change in foreign currency rates. A positive number below indicates an increase in surplus where the Rand strengthens 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		CHF Impact	
	2022	2021	2022	2021
Figures in Rand	86 971	10 315	35 844	7 659

36. Fruitless and wasteful expenditure

Opening balance as previously reported	3 574 263	1 097 357
Opening balance	3 574 263	1 097 357
Less: Amount written-off	(1 287 995)	(5 850)
Current year - Amount paid for cancelled contract module*	-	2 286 268
Current year - Interest and penalty charges to SARS	-	196 488
Closing balance	**2 286 268**	**3 574 263**

* The settlement amount is being finalised with the service provider, see Note 35.

Amounts written-off

Amounts written-off after corrective actions were taken are as follows:

Interest and penalty charges	1 161 212	-
Cancellation fee - Travel	94 580	-
Cancellation fee for Travel to La Reunion	32 203	-
	1 287 995	**-**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

37. Irregular expenditure

Figures in Rand	2022	2021
Opening balance as previously reported	111 861 966	88 308 693
Correction of prior year irregular expenditure amount - refer to Note 34 for details	-	(247 226)
Opening balance as restated	**111 861 966**	**88 061 467**
Process followed to appoint employees deemed improper	-	766 345
Lease agreement for head office in contravention of procurement process	-	14 888 571
Connecting Africa - Satellite of Kencast broadcast license and internet bandwidth for 12 months	97 060	-
Skycare Maintenance - Outstanding parking fees at Lanseria Airport open parking	209 300	-
Airlines Association of Southern Africa - Annual subscription fees	31 499	-
Use of a company to screen employees without following procurement process	-	14 040
Renewal of lease in Springbok without following procurement process	-	35 826
Astron Security Service at De Aar Weather Office	-	5 320
Suiderkruis Security service at George Weather Office - Refer to Note 34 for details	-	4 740
ACSA - George Office	-	915 603
CSIR office accommodation - Stellenbosch office rental	-	46 042
Aircraft maintenance without following procurement process	-	7 124 012
Department of Transport and Public Works Western Cape - Leasing of AWS sites	15 644	-
Irregular expenditure condoned/ written-off	(69 530 367)	-
Closing balance	42 685 102	111 861 966

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

37. Irregular expenditure (continued)

Irregular expenditure condoned/ written-off

Details of the irregular expenditure condoned/ written-off are summarised below:

Innervation Rewards - Award of contract to procure gift cards for employee awards without following procurement process		29 411	-
Atlantis Travel - Hiring of mobile air conditioning unit without following procurement process		28 350	-
Sky Care Maintenance - Renewal of aircraft maintenance without following procurement process		7 124 012	-
Internet Solutions - Renewal of IT infrastructure contract without following procurement process		14 760 000	-
CSIR SANREN - Installation fibre line required for SANREN		2 400 577	-
Nama Khoi Municipality - Renewal of lease in Springbok without following procurement process		137 221	-
EOH Mthombo and Aptron IT - Incorrect criteria used to appoint a supplier		172 991	-
CSIR office accommodation - Stellenbosch office rental		1 599 599	-
ACSA- George Office - Office rental		915 603	-
JR Investment - Lease agreement for head office in contravention of procurement process		42 141 184	-
Suiderkruis Security service at George Weather Office		210 900	-
Bytes System Integration - Extension of contract for PABX and telephone system without following procurement process		5 779	-
Bytes System Integration - Purchase of IT equipment without necessary approval		**69 530 367**	**-**

Incidents/ cases identified in the current year include those listed below

	Disciplinary steps taken/ criminal proceedings		
Satellite of Kencast broadcast license and internet bandwidth for 12 months	Corrective measures to be finalised with submission for condonations	97 060	-
Outstanding parking fees at Lanseria Airport open parking	Corrective measures to be finalised with submission for condonations	209 300	-
AASA Annual Subscription fees	Corrective measures to be finalised with submission for condonations	31 499	-
Department of Transport and Public Works Western Cape - Leasing of AWS sites	Corrective measures to be finalised with submission for condonations	15 644	-
		353 503	**-**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	2022	2021

38. Events after the reporting date

No adjusting or significant non-adjusting events have occurred between 31 March 2022 and the date of authorisation.

39. Heritage assets

The entity has acknowledged a heritage asset in line with GRAP 103 based on the historical and significance of its scientific information, and the impact thereof on the environment. The entity is the only institution legislated by government in the country to provide an 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. SAWS management do not have old information so that they can be able to value the heritage assets.

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 is unable to measure reliably the cost of the heritage asset, such an asset should be disclosed in the Annual Financial Statements. SAWS cannot reliably provide an estimate of the cost of its heritage asset, therefore none has been recognised.

40. Going concern

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

41. Authorisation for issue

The Annual Financial Statements were prepared by Finance Management and authorised for issue on 28 July 2022 by the Board.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