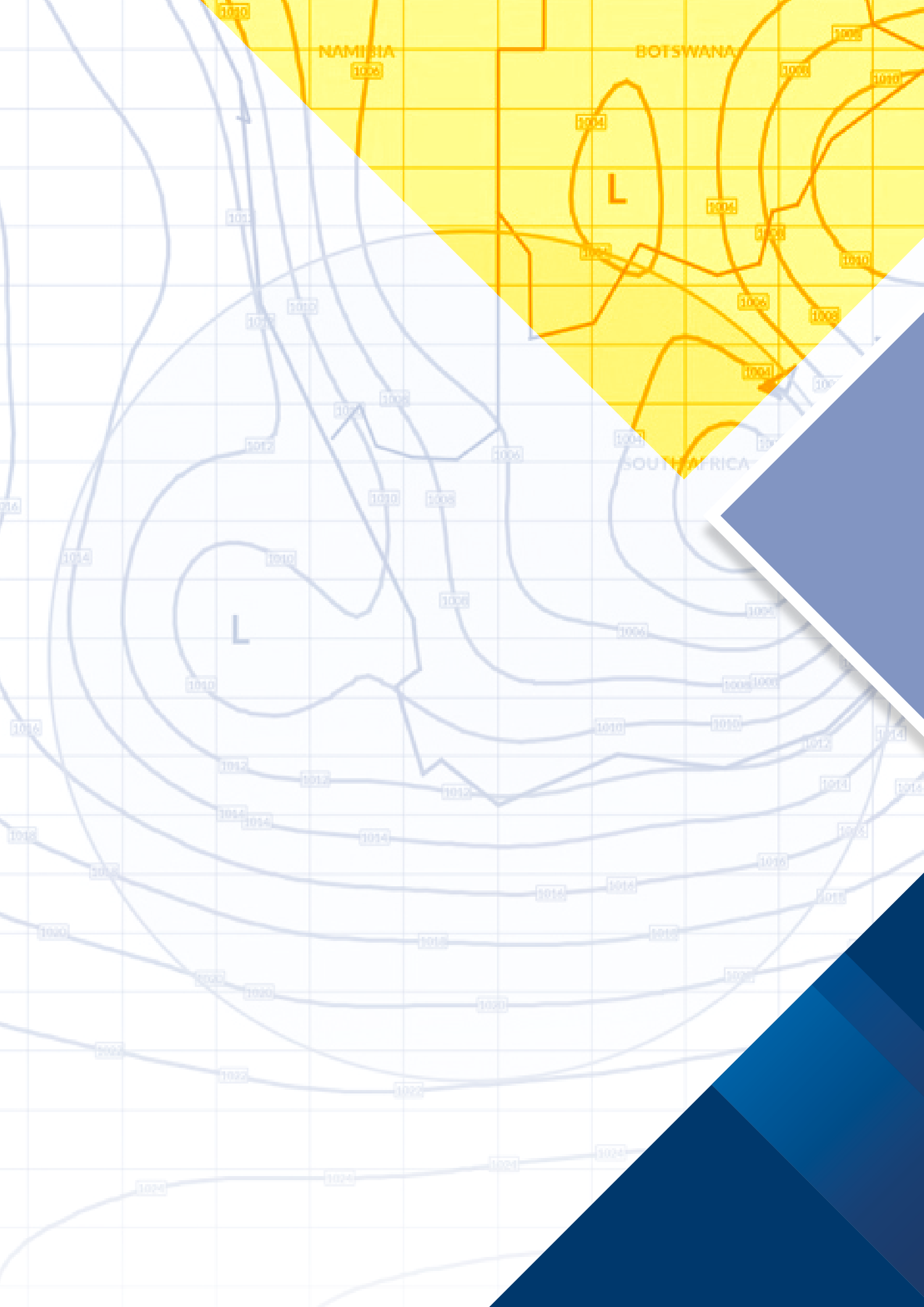




# ANNUAL REPORT 2020/21



**South African  
Weather Service**



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# GENERAL INFORMATION PART A



**South African  
Weather Service**



# GENERAL INFORMATION

## 1. PUBLIC ENTITY'S GENERAL INFORMATION

|                            |                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------|
| <b>REGISTERED NAME:</b>    | South African Weather Service                                                                 |
| <b>PHYSICAL ADDRESS:</b>   | Eco Glades Block 1b<br>Cnr Olievenhoutbosch and Ribbon Grass streets<br>Eco Park<br>Centurion |
| <b>POSTAL ADDRESS:</b>     | South African Weather Service<br>Private Bag X097<br>Pretoria<br>0001                         |
| <b>TELEPHONE NUMBER/S:</b> | 0027 12 367 6000                                                                              |
| <b>FAX NUMBER:</b>         | 0027 12 367 6003                                                                              |
| <b>EMAIL ADDRESS:</b>      | saws_ceo@weathersa.co.za                                                                      |
| <b>WEBSITE ADDRESS:</b>    | <a href="http://www.weathersa.co.za">www.weathersa.co.za</a>                                  |
| <b>EXTERNAL AUDITORS:</b>  | Auditor-General                                                                               |
| <b>BANKERS:</b>            | Standard Bank South Africa                                                                    |
| <b>COMPANY SECRETARY:</b>  | Ms Thandi Zide                                                                                |

RP185/2021

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## 2. LIST OF ABBREVIATIONS/ ACRONYMS

|                 |                                                            |
|-----------------|------------------------------------------------------------|
| ACAMS           | Advisory Committee on Aeronautical Meteorological Services |
| ACCESS          | Applied Centre for Climate and Earth System Studies        |
| A-CDM           | Airport Collaborative Decision Making                      |
| AGSA            | Auditor-General of South Africa                            |
| ALF             | Aerodrome Licensing Forum                                  |
| AMC             | Airport Management Centre                                  |
| AMDAR           | Aircraft Meteorological Data Relay                         |
| APIs            | Application Programming Interfaces                         |
| APP             | Annual Performance Plan                                    |
| ARC             | Agricultural Research Council                              |
| ARS             | Automatic Rainfall Station                                 |
| AST             | Argo Steering Team                                         |
| AWC             | Aviation Weather Centre                                    |
| AWS             | Automatic Weather Station                                  |
| B-BBEE          | Broad-Based Black Economic Empowerment                     |
| BCP             | Business Continuity Programme                              |
| CEO             | Chief Executive Officer                                    |
| CERG            | COVID-19 Environmental Reference Group                     |
| CFO             | Chief Financial Officer                                    |
| CO              | Carbon Monoxide                                            |
| CO <sub>2</sub> | Carbon Dioxide                                             |
| COGTA           | Co-operative Governance and Traditional Affairs            |
| CORDEX          | Co-ordinated Regional Climate Downscaling Experiment       |
| CSEPS           | Convection Permitting Ensemble Prediction System           |
| CTKs            | Cargo Tonne Kilometres                                     |
| DBCP            | Data Buoy Cooperation Panel                                |
| DDG             | Deputy Director-General                                    |
| DFFE            | Department of Forestry, Fisheries and the Environment      |
| DI              | Discomfort Index                                           |
| DIRCO           | Department of International Relations and Co-operation     |
| DMISA           | Disaster Management Institute of Southern Africa           |
| DRR             | Disaster Risk Reduction                                    |
| DSI             | Department of Science and Innovation                       |
| EC              | Executive Council                                          |
| ENE             | Estimates of National Expenditure                          |
| EVP             | Employee Value Proposition                                 |
| EXCO            | Executive Committee                                        |
| FEWS            | Forecast Early Warning System                              |

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| FFGS/GC          | Flash Flood Guidance System with Global Coverage            |
| GAW              | Global Atmosphere Watch                                     |
| GBON             | Global Basic Observing Network                              |
| GCMs             | Global Climate Models                                       |
| GEO              | Group on Earth Observations                                 |
| GOOS             | Global Ocean Observing System                               |
| GOS4M            | Global Observation System for Mercury                       |
| GRAP             | Generally Recognised Accounting Practice                    |
| HPC              | High-Performance Computer                                   |
| ICAO             | International Civil Aviation Organization                   |
| ICMHEWS          | Integrated Climate-driven Multi-Hazard Early Warning System |
| ICT              | Information and Communication Technology                    |
| IDDR             | International Day for Disaster Risk Reduction               |
| ImpB             | Impact-Based Warnings                                       |
| INFCOM           | Infrastructure Commission                                   |
| IOC              | Intergovernmental Oceanic Commission                        |
| IPCC             | Intergovernmental Panel on Climate Change                   |
| IRHR             | Integrated Relative Health Risk                             |
| ISS              | Integrated Services Strategy                                |
| JOC              | Joint Operation Centre                                      |
| LDN              | Lightning Detection Network                                 |
| M&E              | Monitoring and Evaluation                                   |
| MEC              | Member of Executive Council                                 |
| MHEWS            | Multi-Hazard Early Warning System                           |
| MOGREPS-G        | Meteorological Office Global Ensemble Prediction System     |
| MoU              | Memorandum of Understanding                                 |
| MRC              | Medical Research Council                                    |
| MTEF             | Medium Term Expenditure Framework                           |
| N <sub>2</sub> O | Nitrous Oxide                                               |
| NATJOC           | National Joint Operations Centre                            |
| NCCIS            | National Climate Change Information System                  |
| NDMC             | National Disaster Management Centre                         |
| NFC              | National Forecast Centre                                    |
| NFCS             | National Framework for Climate Services                     |
| NICD             | National Institute for Communicable Diseases                |
| NWP              | Numerical Weather Prediction                                |
| OECD             | Organisation for Economic Co-operation and Development      |
| PanSALB          | Pan South African Language Board                            |
| PCEFF            | Portfolio Committee on Environment, Forestry and Fisheries  |

|           |                                                       |
|-----------|-------------------------------------------------------|
| PESP      | Presidential Employment Stimulus Package              |
| PFMA      | Public Finance Management Act                         |
| POPIA     | Protection of Personal Information Act                |
| PPE       | Personal Protective Equipment                         |
| PRMA      | Post-Retirement Medical Aid                           |
| PWD       | People with Disability                                |
| RA I      | Regional Association I                                |
| RCM       | Regional Climate Model                                |
| RCMS      | Regulatory Committee for Meteorological Services      |
| RPKs      | Revenue Passenger Kilometres                          |
| RSMC      | Regional Specialised Meteorological Centre            |
| RTH       | Regional Telecommunications Hub                       |
| SAAQIS    | South African Air Quality Information System          |
| SACAA     | South African Civil Aviation Authority                |
| SADC-SCOM | SADC Sub-sectoral Committee for Meteorology           |
| SAEON     | South African Environment Observation Network         |
| SAPRI     | South African Polar Research Infrastructure           |
| SARFFGS   | Southern Africa Regional Flash Flood Guidance System  |
| SARIR     | South African Research Infrastructure Roadmap         |
| SASAS     | South African Society for Atmospheric Sciences        |
| SAWS      | South African Weather Service                         |
| SCM       | Supply Chain Management                               |
| SEB       | Socio-Economic Benefit                                |
| SG        | Statistician General                                  |
| SMME      | Small Medium and Micro Enterprises                    |
| SOFF      | Systematic Observations Financing Facility            |
| SOLAS     | Safety of Life at Sea                                 |
| SPEI      | Standardised Precipitation Evaporation Index          |
| SPI       | Standard Precipitation Index                          |
| STC       | Specialised Technical Committee                       |
| SWaSS     | SAWS Wave and Storm Surge model                       |
| SWFP      | Severe Weather Forecasting Programme                  |
| TAF       | Terminal Aerodrome Forecast                           |
| TNPA      | Transnet National Port Authority                      |
| TOR       | Terms of Reference                                    |
| TR        | Treasury Regulations                                  |
| UK        | United Kingdom                                        |
| UNFCCC    | United Nations Framework Convention on Climate Change |
| WIGOS     | WMO Integrated Global Observing System                |
| WSP       | Workplace Skills Plan                                 |

### 3. MESSAGE BY THE MINISTER



The 2020/21 financial year has presented entities such as 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 modelling and analysing potential patterns of exposure of the population to various forms of air pollution.

SAWS is one of the bodies that had to perform its duties on a reduced budget, as funds were redirected to address the challenges posed by the COVID-19 pandemic and income from the aviation industry was significantly reduced, as flights were limited. The loss of around R100 million in aviation revenue could be attributed to airlines' reduction in activities, a drastic reduction in passenger flights, with only selected cargo and special flights being permitted.

The implementation of the Disaster Management Act, 2002 (Act No. 57 of 2002) to address the COVID-19 pandemic impacted on SAWS' operations, as only essential personnel such as forecasters and meteorological technicians could work from the office, with the other employees having to work from home. As a result, information technology infrastructure was adjusted to support the personnel working from home, and in instances where officials contracted COVID-19, implementing the SAWS Business Continuity Plan (BCP) allowed operations to continue seamlessly.

SAWS contributed significantly to the management of the COVID-19 pandemic by government. To support both the national and provincial authorities in terms of COVID-19 containment efforts' response planning and decision-making processes, the SAWS atmospheric composition group developed the Integrated Relative Health Risk (IRHR) product during April 2020. While the health product indicates the population integrated risk level due to long-term exposure to various chemical and toxic variant particulates, its analysis of the risk factors of six different diseases assisted in predicting the spread of the pandemic. Because of this, the IRHR has been utilized as a long-term risk indicator of COVID-19 to monitor risk, assist in response planning and support in high risk areas targeted for screening as well as supporting decisions related to the deployment and efficient use of resources.

Because of the pandemic, certain services were realigned to accommodate anticipated revenue loss, challenges and risks to the SAWS operations. The Infrastructure and Information Systems programme, which is critical to the entity's value chain as it is responsible for the maintenance and upkeep of systems, was one of the areas that was hugely impacted by the budget cuts.

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. This information was disseminated to the public at an accuracy rate of 98%. A total of 532 warnings were issued of which 204 were for fire danger and 182 for severe thunderstorms.

SAWS also worked closely with the National Disaster Management Centre (NDMC) by alerting them in advance about Tropical Cyclone Eloise, which hit Mozambique on 23 January 2021 and proceeded to affect several parts of South Africa. The Impact-based warning system worked extremely well to keep the Joint Operation Centres (JOC) in affected provinces abreast of the movement of this storm. The Limpopo, Mpumalanga and KZN provinces were the worst affected by this cyclone, but the advanced warnings assisted in saving lives and livelihoods.

In addition to the obligation to provide severe weather warnings to the region, SAWS is also the Regional Specialised Meteorological Centre (RSMC), participating in the two World Meteorological Organization (WMO)-sanctioned programmes of Severe Weather Forecasting and the Southern Africa Regional Flash Flood Guiding System.

Excellent advances were also made in marine weather prediction at SAWS in a relatively short time. The high-resolution wave and storm surge model (SWaSS) was operationalised, with its design, calibration and validation endorsed by the academic community through a peer-reviewed publication.

As average temperatures continued to rise, the National Framework for Climate Service (NFCS) web portal was operationalised. The SAWS Research department further secured funding from the Government of Flanders to launch the Integrated Climate-driven Multi-Hazard Early Warning System (ICMHEWS) project.

An Atmospheric and Meteorological Terminology book was developed to assist in effective and impactful communication of weather and climate information to all citizens. This milestone was achieved in collaboration with the Department of Arts and Culture and the Pan-South African Language Board (PanSALB). This book contains complex meteorological terms that were translated into languages spoken by our communities, making complicated terminology understandable to all.

The strategic intent of the SAWS is to create a nation that is WeatherSMART and able to deal with the impacts of climate change and weather-related disasters. This is being done through the provision of relevant meteorological products and services that can be easily accessed, particularly via the broadcast media, the internet and Applications (Apps). The mobile WeatherSmart App has seen more than 38 000 downloads, whilst SAWS' Facebook following has grown to 11 709 and the Twitter following to 137 000.

The District Development Model saw SAWS working with Metropolitan and District Municipalities in rolling out the SAWS widget on their respective websites. Ten municipalities have thus far adopted the widget so that they can disseminate reliable information to their communities and other stakeholders.

I confirm that the 2020/21 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



The South African Weather Service (SAWS) has, during the 2020/21 financial year, managed to sustain its operations, despite the many challenges brought about by COVID-19 and especially the reduced revenue of over R100 million it usually receives as regulated commercial revenue brought in from the aviation sector.

The trend of severe weather events becoming more frequent and more brutal in the past decade has continued, largely as a result of global warming. Floods and strong winds are the most frequent weather-related disasters in our country. In 2020 we saw the highest number of flood-related events since 2009, with over 90 (ninety) such events being recorded. Damage to property, infrastructure and roads due to these extreme weather events come at a huge cost to the country.

Marine weather predictions have continued to grow with the high-resolution wave and storm surge model (SWaSS) operationalised to high acclaim from the scientific and academic communities. The model provides high resolution marine forecasting products for Southern Africa and is used especially by mariners and fishermen. Safety at sea remains paramount. To this end, SAWS has pursued research resulting in the publication of nine marine-related papers. The Marine Unit also produced two PhD graduates in the past year!

The Weather Service assists in monitoring ambient air quality and contributes to the South African Air Quality Information System (SAAQIS) in collaboration with the Department of Forestry, Fisheries and the Environment (DFFE). However, the annual performance target of 75% priority air quality monitoring was not met due to a number of challenges. Some of the challenges that were experienced included that stations were vandalised, while faulty instruments and intermittent power failures also contributed to the missed target.

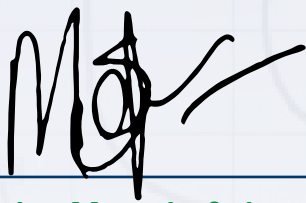
Though social distancing was one of the protocols to be observed to help curb COVID-19, SAWS continued to maintain sound stakeholder relations with communities during the different lockdown alert levels. The organisation managed to conduct four community awareness outreach programmes in the Free State, Limpopo and KZN provinces. Severe weather campaigns aimed at educating and raising awareness to help the public make informed decisions were moved to social media and other online platforms in instances where face-to-face interaction with the public was not possible. Over ten virtual events were held, including the Disaster Management Institute of Southern Africa (DMISA) conference and the celebration of World Meteorological Day on 23 March 2021, at which the Minister was the keynote speaker.

The 2020/21 financial year saw considerable effort from the Research department at SAWS in delivering several publications for the year. Despite the revised target because of the COVID-19 pandemic,

the department managed to exceed the initial aim, publishing 49 papers of which 45 were peer-reviewed articles in scientific journals. Two conference papers were delivered and two theses were published by doctoral candidates. SAWS also developed weather and climate products that were used to support government's planning, modelling and management of the COVID-19 pandemic.

On the international front, SAWS continued to participate in platforms provided by regulatory bodies such as the World Meteorological Organization (WMO) and the International Civil Aviation Organization (ICAO). Eleven virtual sessions were held, with the 72<sup>nd</sup> WMO Executive Council (EC) session taking place in September and the launch of the Regional Climate WMO Integrated Global Observing System (WIGOS) in Southern Africa taking centre stage. There was also the WMO launch of the State of Regional Climate in Africa aimed at encouraging WMO member states in Africa to contribute annually towards a programme on the State of World Climate.

Though the year has been unique and challenging and has required a paradigm shift, it gives me great pleasure to join the Minister of Forestry, Fisheries and the Environment, the SAWS Board and Management in presenting the 2020/21 SAWS Annual Report.



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



## 5. FOREWORD BY THE BOARD CHAIRPERSON



It is an honour for me to reflect on the work of the South African Weather Service (SAWS) and the role of the Board during the 2020/21 reporting period. The Board was responsible for overseeing the governance of the organisation and ensuring that the relevant legislative and regulatory prescripts were followed.

### High level overview of the entity's strategy and the performance of the entity in its respective sector

As an entity of the Department of Forestry, Fisheries and the Environment, SAWS is one of the key role players in ensuring that South Africans are enabled to deal with changing weather patterns as climate change takes hold. Through implementing its 2020-21 to 2024-25 strategic plan, the entity wants to improve the quality of life for all in South Africa. The attainment of the desired outputs in the core operations of the entity focused on an enhanced meteorological-related body of knowledge, the provision of meteorological-related solutions to meet user needs, an optimal technological capability and internal excellence. The Board is convinced that these outputs will lead to the desired impact.

Organisational efforts to realise the desired impact included, amongst others, an initiative to change the entity's forecasting methodology from deterministic forecasting to impact-based forecasting. This methodology brought about a shift from **"what will the weather be"** to **"what will the weather do"** while unpacking the impact of the weather on sensitive economic sectors. Much was done to ensure the availability and accuracy of products provided to the public and other sectors in support of the SAWS mandate. As a scientific and research institution, SAWS contributed to knowledge growth in meteorology and atmospheric sciences through numerous peer-reviewed articles that were submitted for publication.

Challenges with the SAWS observation network continued to persist during the year and were exacerbated by the impact of COVID-19, which also impacted on the financial situation of the entity. The much-needed capital expenditure budget was unavailable to support upgrades and refurbishment, which led to underperformance of the infrastructure network – a core component of the entity's operations.

Overall, 70% of the targets set in the 2020/21 annual performance plan were realised. I am satisfied with the efforts that the management and staff put in to execute the 2020/21 annual performance plan under *business unusual* conditions, brought about by the global COVID-19 pandemic.

### Strategic Relationships

With regard to our strategic relationships, SAWS' strong global and regional linkages - where best business practices and data are shared among members of the World Meteorological Organization (WMO), academia and other bodies - remained considerable strategic advantages.

SAWS continued to engage its various stakeholders both nationally and internationally. From a continental perspective SAWS hosted and chaired the 3<sup>rd</sup> session of the Regional Association I (RA I) Working Group on Disaster-Risk Reduction (DRR) on 9 March 2021. This group consisted of 10 African countries chaired by South Africa, tasked to coordinate and implement DRR-related projects throughout the continent until 2023.

A key highlight for SAWS was the Regional World Meteorological Organization Integrated Global Observing System (WIGOS) Centre - Southern Africa launch by WMO on 9 February 2021, which endorsed South Africa to act as Regional WIGOS Centre for a specified pilot period, until the WMO assesses South Africa's full capability to host the centre for the southern region.

### The strategic focus over the medium to long term

The entity's focus over the medium- to long-term is towards stabilising the financial situation for a sustainable SAWS. This is coupled with a rejuvenated drive towards the generation of much needed commercial revenue to offset the decline in government grant allocation. Furthermore, to adequately address uncertainties that affect the long-term viability and sustainability of the entity, efforts will be channelled towards an entity with 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.

I would like to take this opportunity to acknowledge the role of Minister Barbara Creecy and Deputy Minister Maggie Sotyu during the period under review and look forward to their continued guidance and support. I also want to specifically thank the Board's Audit and Risk Committee, its additional Committees, the SAWS acting CEO, the new CEO and all SAWS employees for their continued support and hard work. I accordingly proudly join the Minister and Deputy Minister in presenting the Annual Report.



**Ms Nana Magomola**

**Board Chairperson: South African Weather Service**

**30 July 2021**

## 6. CHIEF EXECUTIVE OFFICER'S OVERVIEW



### General financial review of the public entity

The South African Weather Service (SAWS) is an entity of the Department of Forestry, Fisheries and the Environment (DFFE) that provides services and solutions relating to weather, climate and air quality. The foundation of these services is provided by the wealth of research and innovation undertaken by the organisation, with all operational activities being highly dependent on fully functioning infrastructure and information systems.

Our operational services are supported by several crucial administrative services. The programmes executed during the 2020/21 reporting period included Programme 1: Weather and climate services; Programme 2: Research and innovation; Programme 3: Infrastructure and Information systems; and Programme 4: Administration.

### Annual performance against targets

In line with its mandate and commitment to its strategic intent, SAWS continued to provide life-saving weather information to the citizens of the Republic and various stakeholders in the form of daily weather forecasts, severe weather warnings and seasonal forecasts, to name but a few. SAWS ensured that forecasts were available and met required accuracy rates to enable proper decision-making by those dependent on weather information.

Our researchers continued to support the intention to develop user-specific solutions which meet the needs of users for public good consumption and generate commercial revenue, where applicable. Our target to develop one climate-specific solution and six non-climate specific solutions was met.

Our vast observation infrastructure is key to optimal service provision as mandated. The unavailability of a capital expenditure budget during the 2020/21 financial year posed serious challenges to our already ageing infrastructure, which could not be upgraded and refurbished during the year. Maintenance continued however and, although under severe financial constraints, SAWS managed to achieve most targets. The entity will utilise capital expenditure budget available in the next financial year towards the refurbishment and upgrade of its observations infrastructure.

SAWS continued to put effort into good corporate governance and administration throughout the year. Our intention to obtain a B-BBEE Level 7 rating did not materialise as our efforts resulted in a rating of Level 8. This is an area where a concerted effort will be needed, as attainment of a desirable B-BBEE rating is key for our commercial revenue generation.

In summarising our performance against the 2020/21 annual performance plan, the entity realised an achievement of 70% of its annual targets, it partially achieved 20% of those targets, while 10% of the targets were not achieved.

During the 2020/21 period, the Research and Innovation department contributed towards the overall strategic and operational effectiveness of SAWS. The Research and Innovation department's core function of weather and climate knowledge production arguably experienced many challenges in an uncertain environment, yet this propelled the team to produce performance results worth celebrating. Armed with a portfolio of strategic initiatives, the leadership and agility of the research team ensured that a) EXCO and the Board submissions were produced on time; b) SAWS' quarterly Estimates of National Expenditure (ENE) performance reporting to DFFE (this comprised the five community segmented products and services) was provided timeously; c) requirements and verification of the products and services (in collaboration with the Business Development department) were coordinated and developed; and d) it established and managed mutually beneficial strategic research partnerships.

Notwithstanding the challenges of data recovery in the research observational network (consisting of the Global Atmospheric Watch, the solar radiation and biometeorological stations), a 72% annual target in the Research and Innovation department was attained. In particular, the department managed a total of fifteen research projects, overachieved the research fund target as well the number of scientific publications targeted. Amidst challenging circumstances, the research team's intellectual capital continued to grow through personal development of some of our scientists and the department saw an increase in the number of postgraduate qualifications. Given the dynamic capabilities, leadership and organisational culture, the Research and Innovation department is well poised to embrace and take advantage of the digital transformation characteristic of the fourth industrial revolution in a bid to innovatively expand the weather and climate knowledge production for societal application.

### Spending trends of the public entity

For the reporting period 2020/21, SAWS spent within budget, while steps were taken to free up some funds for crucial expenditure to address some of the challenges elucidated below.

### 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 2020/21 recruitment efforts towards filling those vacancies evaluated as critical. As a result, the filling of 25 positions was deferred as the entity couldn't 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.

To counter financial challenges, SAWS converted its allocated capital expenditure budget to operational expenditure. This led to the deferment of infrastructure projects for the refurbishment and upgrading of the observations network. As the deferment of infrastructure projects is a short-term solution to address its liquidity challenges, SAWS engaged the DFFE for additional funding to address this backlog of infrastructure investment.

### Activities discontinued or new activities adopted

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

## Requests for roll over of funds

The entity did not request roll-over of funds for the year ending 31 March 2021 as it incurred a deficit of R16,58 million.

## 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, by achieving 72%.

## 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

SAWS experienced cash flow challenges during the year due to the COVID-19 pandemic, which resulted in aviation revenue declining by R95,98 million year-on-year from R128,49 million in 2019/ 20 to R32,51 million in the current year.

To sustain its operations, the entity was allowed by the DFFE and National Treasury to convert its government infrastructure grant 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 conversion of the government infrastructure grant to an operational expenditure grant is a short-term measure and will not be sustainable going forward, as SAWS needs to replace its ageing infrastructure and invest in new technology that would adequately support its business objectives as outlined in the business' strategic plan.

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 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 and fruitless 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' liquidity challenges will be addressed by converting the government conditional grant to a government operational expenditure grant in the short term. 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

Management continued to address irregular, fruitless and wasteful expenditure challenges. 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 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.



**Mr Ishaam Abader**  
Chief Executive Officer  
South African Weather Service  
Date: 30 July 2021

## 7. STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF ACCURACY FOR THE ANNUAL REPORT

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

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

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

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

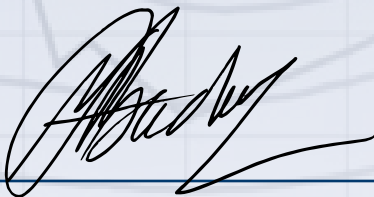
The Annual Financial Statements (Part E) have been prepared in accordance with the Generally Recognised Accounting Practice (GRAP) standards applicable to the public entity.

The Accounting Authority is responsible for the preparation of the annual financial statements and for the judgements made in this information.

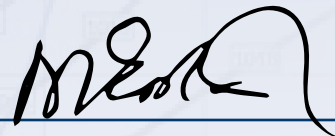
The Accounting Authority is responsible for establishing and implementing a system of internal control that has been designed to provide reasonable assurance as to the integrity and reliability of the performance information, the human resources information and the annual financial statements.

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 2021.

Yours faithfully



**Mr Ishaam Abader**  
30 July 2021



**Ms Nana Magomola**  
30 July 2021



## 8. MEMBERS OF THE BOARD



**Ms Nana Magomola**  
*Chairperson*



**Dr Philip Dexter**  
*Deputy Chairperson*



**Dr Thuli Khumalo**  
*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*



**Mr Ishaam Abader**  
*Chief Executive Officer*



**Mr Mnikeli Ndabambi**  
*Acting CEO*



**Ms Thandi Zide**  
*Company Secretary*

## 9. EXECUTIVE MANAGEMENT



**Mr Ishaam Abader**  
Chief Executive Officer



**Mr Mnikeli Ndabambi**  
Acting Chief Executive Officer  
1 April 2020 to 31 March 2021



**Mr Norman Mzizi**  
Chief Financial Officer  
from 1 November 2020



**Dr Jonas Mphepya**  
Executive: Weather and Climate  
Services (WCS)



**Mr Tshepho Ngobeni**  
Acting Executive: Information and  
Infrastructure Systems (IIS)  
1 April 2020 to 31 March 2021



**Mr Lulama Gumenge**  
Acting Chief Financial Officer  
1 April 2020 to 31 October 2020



**Mr Tebatso Kekana**  
Acting Executive: Corporate  
and Regulatory Services  
1 April 2020 to 31 October 2020



**Ms Kenosi Setlhako**  
Acting Executive: Corporate  
and Regulatory Services  
3 November 2020 to  
31 March 2021



## 10. 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); 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 2021 were compiled on the 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 information to the public at large as part of its public good mandate, for which a government grant is received to support this activity.

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

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

According to the 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.

#### Revenue

The Total Revenue decreased by 5,22% from R444,82 million to R421,58 million year-on-year as represented in Table 1 overleaf.

| Revenue                                                                 | 2020/21            | 2019/20            | Variance             |                |
|-------------------------------------------------------------------------|--------------------|--------------------|----------------------|----------------|
|                                                                         | R                  | R                  | R                    | %              |
| <b>Revenue from non-exchange transactions</b>                           |                    |                    |                      |                |
| <b>Revenue from non-exchange transactions - operational expenditure</b> | <b>361 125 139</b> | <b>270 945 597</b> | <b>90 179 542</b>    | <b>24,97%</b>  |
| • Government grant - operational and capital expenditure                | 342 344 139        | 253 143 597        | 89 200 542           | 35,24%         |
| • Government grant - SAAQIS                                             | 18 781 000         | 17 802 000         | 979 000              | 5,50%          |
| <b>Contributions and donations</b>                                      | <b>1 566 525</b>   | <b>4 790 479</b>   | <b>(3 223 954)</b>   | <b>-67,30%</b> |
| • TETA -SETA grant                                                      | 332 833            | 1 070 893          | (738 060)            | -68,92%        |
| • Donor funding - research projects                                     | 1 233 692          | 3 719 586          | (2 485 894)          | -66,83%        |
| <b>Revenue from non-exchange transactions</b>                           | <b>362 691 664</b> | <b>275 736 076</b> | <b>86 955 588</b>    | <b>31,54%</b>  |
| <b>Revenue from exchange transactions</b>                               |                    |                    |                      |                |
| <b>Regulated commercial revenue</b>                                     |                    |                    |                      |                |
| • Aviation                                                              | 32 511 248         | 128 494 477        | (95 983 229)         | -74,70%        |
| <b>Non regulated commercial revenue</b>                                 | <b>25 049 591</b>  | <b>35 673 040</b>  | <b>(10 623 449)</b>  | <b>-29,78%</b> |
| • Aviation instruments maintenance income                               | 1 198 481          | 1 084 680          | 113 801              | 10,49%         |
| • Air quality revenue                                                   | 16 143 487         | 21 706 314         | (5 562 827)          | -25,63%        |
| • Information fees                                                      | 911 893            | 844 055            | 67 838               | 8,04%          |
| • Training - Regional Training Centre                                   | 392 750            | 897 362            | (504 612)            | -56,23%        |
| • Lightning detection network sales                                     | 4 803 755          | 6 432 599          | (1 628 844)          | -25,32%        |
| • Sale of instruments                                                   | 1 599 225          | 4 708 030          | (3 108 805)          | -66,03%        |
| <b>Total commercial revenue</b>                                         | <b>57 560 839</b>  | <b>164 167 517</b> | <b>(106 606 678)</b> | <b>-64,94%</b> |
| <b>Other revenue</b>                                                    | <b>1 324 651</b>   | <b>4 912 184</b>   | <b>(3 587 533)</b>   | <b>-73,03%</b> |
| • Miscellaneous income                                                  | 246 351            | (126 217)          | 372 568              | -295,18%       |
| • Interest received from receivables                                    | 343 594            | 1 324 186          | (980 592)            | -74,05%        |
| • Income from investments                                               | 734 706            | 3 714 215          | (2 979 509)          | -80,22%        |
| <b>Revenue from exchange transactions</b>                               | <b>58 885 490</b>  | <b>169 079 701</b> | <b>(110 194 211)</b> | <b>-65,17%</b> |
| <b>Total revenue</b>                                                    | <b>421 577 154</b> | <b>444 815 777</b> | <b>(23 238 623)</b>  | <b>-5,22%</b>  |

**Table 1:** Movement in Revenue 2020/21 versus 2019/20 (year-on-year)

### Government Grant

The total grant income increased by 24,97% (R90,18million) from R270,95 million to R361,13 million year-on-year. Included under the Grant income is Capital Expenditure Grant of R18,09 million (2019/20: R66,87 million).

During the current financial year, an amount initially earmarked for infrastructure spending of R140,63 million was converted into operational grant. This was to ensure sustainability of the organisation due to the COVID-19 impact which resulted in significant revenue reduction in aviation revenue.

### Aviation Revenue

Aviation revenue decreased by 74,70% from R128,49 million to R32,51 million year-on-year. This reduction is attributed to the COVID-19 lockdown which resulted to lower air traffic volumes.

## Non-Regulated Commercial Income

Non-regulated commercial revenue decreased by 29,78% from R35,67 million to R25,05 million year-on-year. The decrease in non-regulated commercial revenue is also attributed to the imposed lockdown during the year as a result of the COVID-19 pandemic. Most of the commercial businesses during the lockdown either closed down or operated at reduced capacity.

## Other Income

Interest from investments decreased by 80,22% from R3,71 million to R0,734 million year-on-year. The interest income decrease is attributed mainly to the lower interest rate from the South African Reserve Bank and declining revenues.

The relation between externally and internally generated revenue is reflected in Table 2 below:

|                                        | 2021 | 2020 |
|----------------------------------------|------|------|
| Internal Revenue as % of Total Revenue | 86%  | 61%  |
| External Revenue as % of Total Revenue | 14%  | 39%  |

**Table 2:** Relation between Externally and Internally Generated Revenue

- Internal revenue comprises all Government Grant Revenue and TETA Grants; and
- External revenue comprises Aviation -; Non-regulated Commercial -; and Other Revenue.

## Expenditure

Total Expenditure decreased by 9,83% from R482,36 million to R434,94 million year-on-year.

| DESCRIPTION              | 2020/21            | 2019/20            | Variance            |               |
|--------------------------|--------------------|--------------------|---------------------|---------------|
|                          | R                  | R                  | R                   | %             |
| Administrative           | 8 243 880          | 9 572 132          | (1 328 252)         | -13,88%       |
| Employee costs           | 268 702 789        | 277 548 027        | (8 845 238)         | -3,19%        |
| Amortisation             | 2 914 895          | 2 835 629          | 79 266              | 2,80%         |
| Depreciation             | 28 251 741         | 25 810 053         | 2 441 688           | 9,46%         |
| Impairment loss          | (2 943 333)        | 10 186 006         | (13 129 339)        | -128,90%      |
| Bad debts written-off    | 436 293            | 1 807 484          | (1 371 191)         | -75,86%       |
| Other operating expenses | 129 338 496        | 154 600 817        | (25 262 321)        | -16,34%       |
| <b>TOTAL EXPENDITURE</b> | <b>434 944 761</b> | <b>482 360 148</b> | <b>(47 415 387)</b> | <b>-9,83%</b> |

**Table 3:** Total Expenditure

## Expenditure

**Expenditure** decreased by R47,42 million year-on-year from R482,94 million to R434,94 million mainly as a result of cost-cutting measures that were applied during the year as a response to lower revenue emanating from the impact of the COVID-19 pandemic.

## Employee Costs

**Compensation of Employees** decreased by 3,19% year-on-year to R268,70 million (2019/20: R277,55 million) as there were critical positions that were vacant at Senior Management level during the year, while some non-critical posts were deferred as part of managing costs.

### Operating Expenditure

**Other operating expenses** decreased by 16,34% (R25,26 million) from R154,60 million to R129,34 million year-on-year. The entity applied cost-cutting measures to manage operating expenses to ensure organisational sustainability and survival.

### 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 all staff employed before November 2008. This obligation has been funded by payments from the entity and its employees, taking into account the recommendations of the independent qualified actuaries.

Actuarial gains and losses are recognised in surplus or deficit in accordance with GRAP 25.

As at 31 March 2021, SAWS' liability on the Post-Retirement Medical Aid (PRMA) increased from R2,641 million to R3,095 million. The increase was due to a decrease in the net discount rate from 4,10% to 3,32% year-on-year, an increase of 8,65% in health cost inflation, while the return on Plan Asset declined from 12,95% to 12,10% year-on-year.

This *Non-current Liability* represents a total of 49 employees which is unchanged from the previous financial year, of which 32 of these employees are already on retirement/ pension while the remaining 17 are still in service.

### BUDGETED REVENUE AND EXPENDITURE COMPARED TO ACTUAL

During the year under review, SAWS realised a Deficit of R16,58 million (2019/20: R46,72 million). Total revenue for the year was above budget by R1,24 million amounting to R421,58 million (Budget: R420,33 million), while total expenditure was above budget by 1,62% (Actual: R434,94 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 the Annual 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 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 based on the Memorandum of Understanding entered between SAWS and the funders.

**Operational Capacity** - Global trends and developmental pressures have propelled organisations similar to ours to invest more heavily in capacity building, such as modern technology and human capital. 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. It is highly desirable that SAWS takes a leading role in this process. The success of these projects could be derailed by a lack of funds invested in advanced technology and human capital, a necessary resource to drive these processes.

During the 2020/21 financial year, SAWS was allocated R140,63 million towards capital expenditure and early warning systems. Due to the COVID-19 pandemic, the entire conditional infrastructure grant was converted to Operational Grant as a response to reduced aviation income. Without this conversion, SAWS would not have been able to meet its operational expenditure commitments and pay all salaries, which could have affected the entity's status as a going concern.

SAWS Management is aware that the organisation must invest in the ageing and old infrastructure to be sustainable and continue to deliver on its mandate. The conversion of conditional infrastructure funding to operational funding is a short-term solution as this will compromise its sustainability in the long run.

An amount of R18,08 million was spent on infrastructure during the year, mainly from the unspent conditional government grant from the previous financial year and additional revenue received from government for the Employment Stimulus Fund programme.

**Employees** - In as much as there has been marked progress in the attraction and retention of skills, as demonstrated by the steadily declining turnover figures in critical and scarce skills, there is also an equally demanding challenge to maintain these figures and provide such employees with a conducive environment within which to operate.

The impact of COVID-19 on SAWS' revenue has resulted in the entity having to prioritise the filling of vacancies for critical posts only. The situation will be revisited pending an improved financial position.

The entity also has a responsibility to create a larger pool of scientists and technologists with greater focus on Previously Disadvantaged Individuals. However, without the necessary financial resources, it is difficult to achieve these objectives. The award of bursaries was impacted during the year due to re-prioritisation of funds as part of the cost-containment measures. This has also impacted the organisation transformational focus.

SAWS continues to provide bursaries for external students who, at the end of their studies, are given opportunities to work at SAWS, either through internships and/ or full time employment. Some of the students on the scientific internships are subsequently employed on a full-time basis. To this end, the entity received additional funding from Government where interns were employed for a period of six months for the year as part of the Government Employment Stimulus Funding programme.

## CORPORATE GOVERNANCE ARRANGEMENTS

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

**Risk Management** is disclosed under Note 33 in the Annual Financial Statements, whereas *Related Party Transactions* are reflected in Note 31 in the Annual Financial Statements.

Disclosure of **Remuneration to Members of the Accounting Authority and Executive Management** is provided in Note 31 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 ensures that management adheres to internal controls, accounting policies and procedures. This Committee is chaired by an independent person and the majority of its members are non-executive Board members, which include two external members who are non-Board members.

SNG Grant Thornton were appointed in the 2017/18 financial year as the entity's internal auditors for a period of three years.

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 Report of the Audit and Risk Committee in the Annual Report).

## 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 set.

## 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 34 of the Annual Financial Statements.

## IRREGULAR EXPENDITURE

Irregular expenditure is disclosed under Note 35 of the Annual Financial Statements.

## DISCONTINUED ACTIVITIES / ACTIVITIES TO BE DISCONTINUED

There were no discontinued activities during the period under review and there is no plan to discontinue activities in the 2020/21 financial year.

## 11. METEOROLOGICAL AUTHORITY

### Overview

As the designated aeronautical meteorological authority for South Africa, the South African Weather Service (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. According to Article 38 of the Chicago Convention, the establishment of air navigation services and related facilities must be consistent with international standards set out in various Annexes to the Chicago Convention.

The meteorological authority unit is responsible for exercising regulatory oversight over aeronautical meteorological services and related facilities. The aim is to ensure adherence to national safety standards and those prescribed by the International Civil Aviation Organization (ICAO).

### 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. It 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 unit assessed the existence and effective implementation of the service level agreements relating to its equipment.

Table 4 below provides a summary of key findings identified per airport ownership:

| Type of finding<br>Ownership         | Lack of personnel<br>accredited | Non-compliant<br>Met equipment | Lack of service<br>level agreement<br>(SLA) |
|--------------------------------------|---------------------------------|--------------------------------|---------------------------------------------|
| Airports Company South Africa (ACSA) | 0                               | 0                              | 0                                           |
| Municipality                         | 4                               | 2                              | 4                                           |
| Provincial Government                | 3                               | 3                              | 3                                           |
| Private                              | 2                               | 3                              | 2                                           |
| TOTAL                                | 9                               | 8                              | 9                                           |

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

### Aerodrome Licensing Forum (ALF)

During the reporting period, the meteorological authority participated in all ALF meetings and made recommendations regarding whether certain aerodromes should be licensed, or their licences be withheld or withdrawn due to safety issues identified. The ALF is a forum within the South African Civil Aviation Authority (SACAA) responsible for issuance 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 such as inspections.

### Meteorological Authority transfer

SAWS has embarked on a process to transfer the meteorological authority function to the SACAA. Key role players are involved in this process, namely the Department of Forestry, Fisheries and the Environment (DFFE), the Department of Transport (DoT) and SACAA. The aim of this process is to ensure that the aeronautical meteorological service provision and regulatory oversight of such services are distinctively separated to eliminate perceived conflict of interest. It is also to align with international best practice and relevant provisions in the national aviation safety plan.



## 12. STRATEGIC OVERVIEW

### VISION

#### Vision

**“South African Weather-related Solutions for everyone, everyday”**

The vision articulates clearly 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.

#### 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.

### MISSION

### VALUES

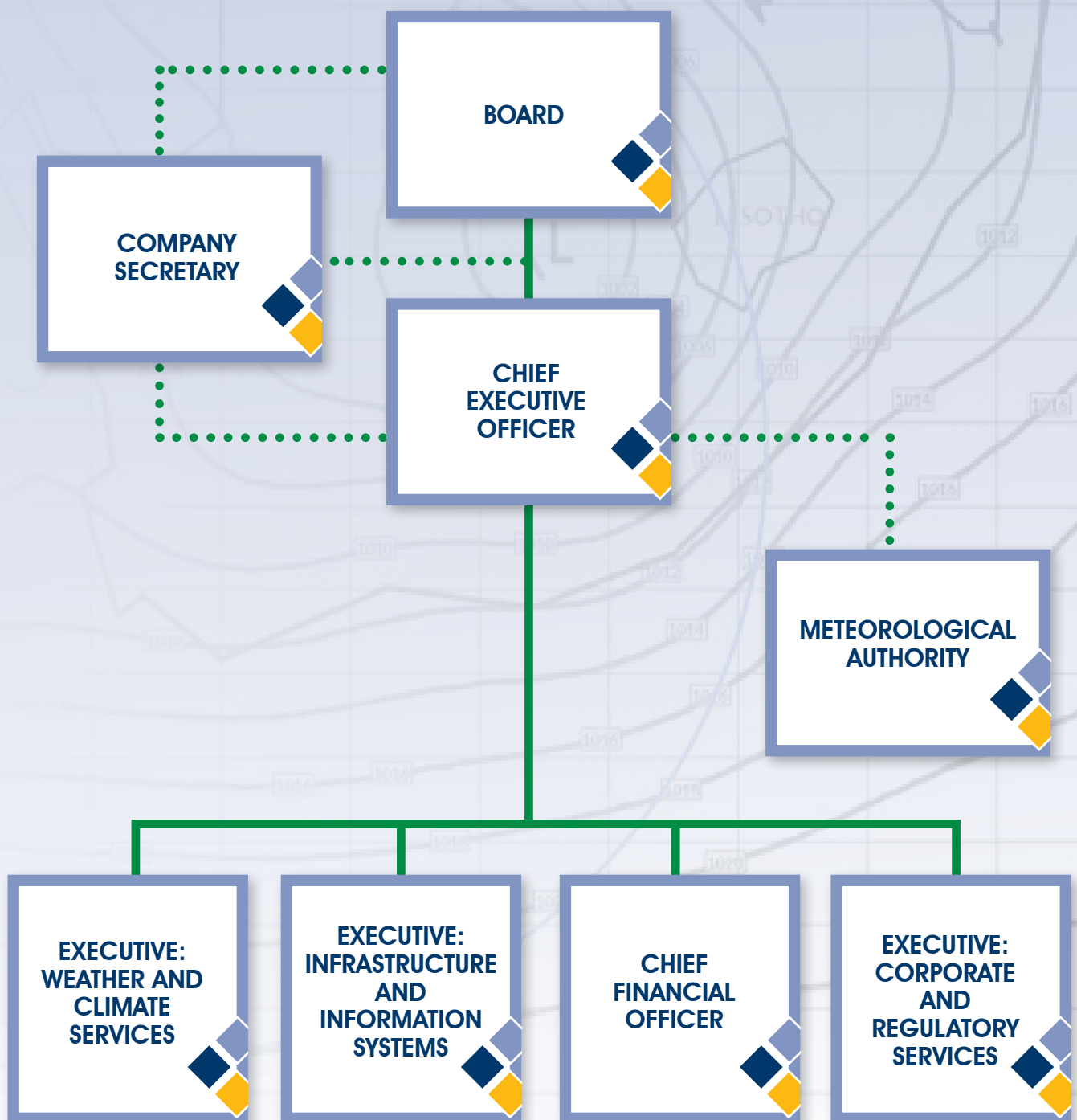
#### Values

**Integrity  
Collaboration  
Solution-oriented science  
Passion for service excellence**

### 13. LEGISLATIVE AND OTHER MANDATES

The South African Weather Service falls under schedule 3(a) in terms 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 period under review, no legislative changes were implemented.

### 14. ORGANISATIONAL STRUCTURE

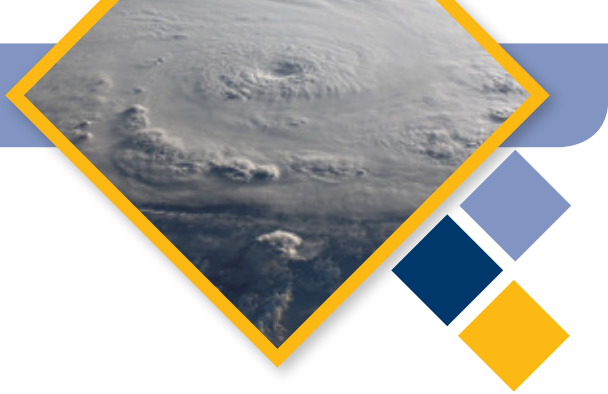




# PERFORMANCE INFORMATION PART B



**South African  
Weather Service**



# PERFORMANCE INFORMATION

## 1. AUDITOR'S REPORT: PREDETERMINED OBJECTIVES

The AGSA currently performs 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 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 136 and 137 of the Auditors Report, published as Part E: Financial Information.

## 2. SITUATIONAL ANALYSIS

### 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 of 57 million people that are 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 be easily 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

On 1 July 2020, the Protection of Personal Information Act, 2013 (Act No. 3 of 2013) (POPIA) came into effect. From that date, organisations had a year within which to implement measures to ensure compliance with the legislation. SAWS had to be compliant by the due date as there are serious consequences to non-compliance with the legislation. SAWS improved its systems by ensuring that personal information is better and more securely managed. It furthermore developed a POPI policy; trained SAWS personnel on the POPIA; did an impact assessment exercise; registered its Information Officer and Deputy Information Officer with the Information Regulator and developed various documents and forms to ensure compliance. Complying with the minimum requirements was done within the limits of our budget and measures will be enhanced when finances allow.

Due to the COVID-19 pandemic, the President declared a state of emergency, resulting in the Disaster Management Act, 2002 (Act No. 57 of 2002, as amended) having to be implemented. This impacted on SAWS' operations as, at some point, only the essential personnel such as forecasters and meteorological technicians could work from the office, with the other employees having to work from home. Subsequently, information technology infrastructure had to be adjusted and/ or additional equipment had to be procured to support the personnel working from home. In circumstances where positive COVID-19 cases occurred (specifically at the airport offices where they would shut down operations), the SAWS Business Continuity Plan (BCP) kicked in and operations continued seamlessly. The pandemic tested the effectiveness of the SAWS BCP - and it proved to be effective, as SAWS continued to provide weather information daily.

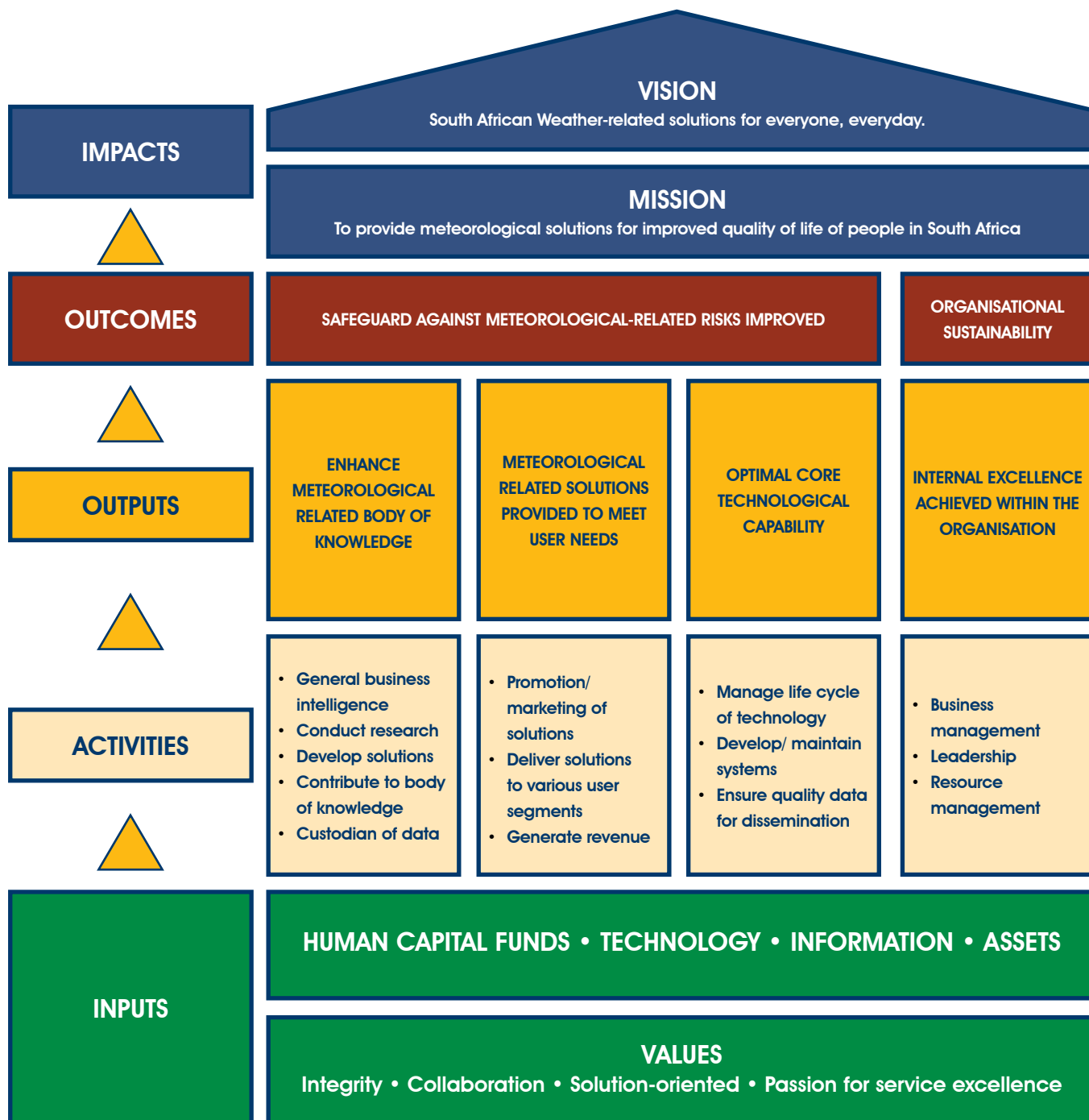
More information on the impact of the implementation of the Disaster Management Act during the COVID-19 pandemic is contained in paragraph 3.1 below.

## 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 a realisation of an improved quality of life for all in South Africa. The impact will be realised through the attainment of outcomes related to lives and property protected against meteorological-related risks as well as organisational sustainability.

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 2021/22 financial year.

The SAWS Strategic Framework indicated overleaf 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 2024/25 financial year.



**Infographic:** SAWS Strategic Framework

### 3. INSTITUTIONAL PROGRAMME PERFORMANCE INFORMATION

#### 3.1 Programme 1: Weather and Climate Services

##### 3.1.1 Purpose of the programme: Safeguard life and Property and Provide Meteorological Solutions to all South Africans

###### Output: Meteorological related solutions provided to meet user needs

SAWS has a mandate to provide reliable weather services to support public good and commercial ventures. Accurate and reliable weather information assists government and public decision-making and raises awareness about weather-related disasters. This information ultimately assists in preparing for disasters, finding ways of preventing them and mitigating their impact. The availability and accuracy of information about meteorological-related risks contributes to the protection of lives and property while achieving an improved quality of life for all in South Africa.

##### 3.1.2 Institutional outcomes that each programme contributes towards according to the Annual Performance Plan:

- Percentage of national weather (FPZA41) available (98%)
- Percentage of aerodrome warnings accuracy (98%)
- Percentage of Terminal Aerodrome Forecast (TAF) accuracy (90%)
- Percentage availability of marine forecasts (SOLAS) (95%)

##### 3.1.3 Outcomes, Outputs, Output Indicators, Targets and Actual Achievement

###### 3.1.3.1 Percentage of national weather (FPZA41) available

###### Warnings, alerts and advisories

SAWS continued to maintain and provide solutions and services as a critical function geared towards service delivery. Public weather forecasts, severe weather guidance maps, aviation and marine forecasts, historical weather and climate solutions, and seasonal climate outlooks are some of the critical services provided by SAWS.

###### Public Forecasts and Warnings

The SAWS public weather forecasts issued represent the core of the services being provided by the organisation as part of its public good mandate. These solutions are disseminated utilising media such as radio, television, newspapers, websites and smartphone applications to reach the people of South Africa.

###### Severe Weather Warnings

Severe Weather Warnings are issued to protect life and property, as severe weather conditions can endanger the safety of the public and infrastructure. For this purpose, SAWS utilised real-time observation infrastructure such as weather radar, satellite images, lightning data as well as model output from short range numerical weather prediction models. These were used by highly skilled weather forecasters to formulate and deliver relevant warnings.

SAWS issued warnings for a range of weather hazards, including severe thunderstorms, heavy rains that could cause flooding, extreme temperatures, strong winds, damaging waves and so forth.

The organisation operationalised its impact-based severe weather forecasting, which had been in pilot for several years. In impact-based forecasting, warnings are issued based on the impacts that the weather is expected to have on society. As such, warnings are only issued when weather is expected to have an impact. What the weather does on the ground will vary according to the vulnerability of a certain area to a particular hazard, which can further be heightened by variables such as the time that the said weather hazard is expected. Impact-based forecasting considers factors other than just the expected weather conditions.

During the year under review, SAWS issued 532 warnings, the majority of which were for high fire danger (204), followed by severe thunderstorms (182).

## FORECAST WARNING CATEGORIES

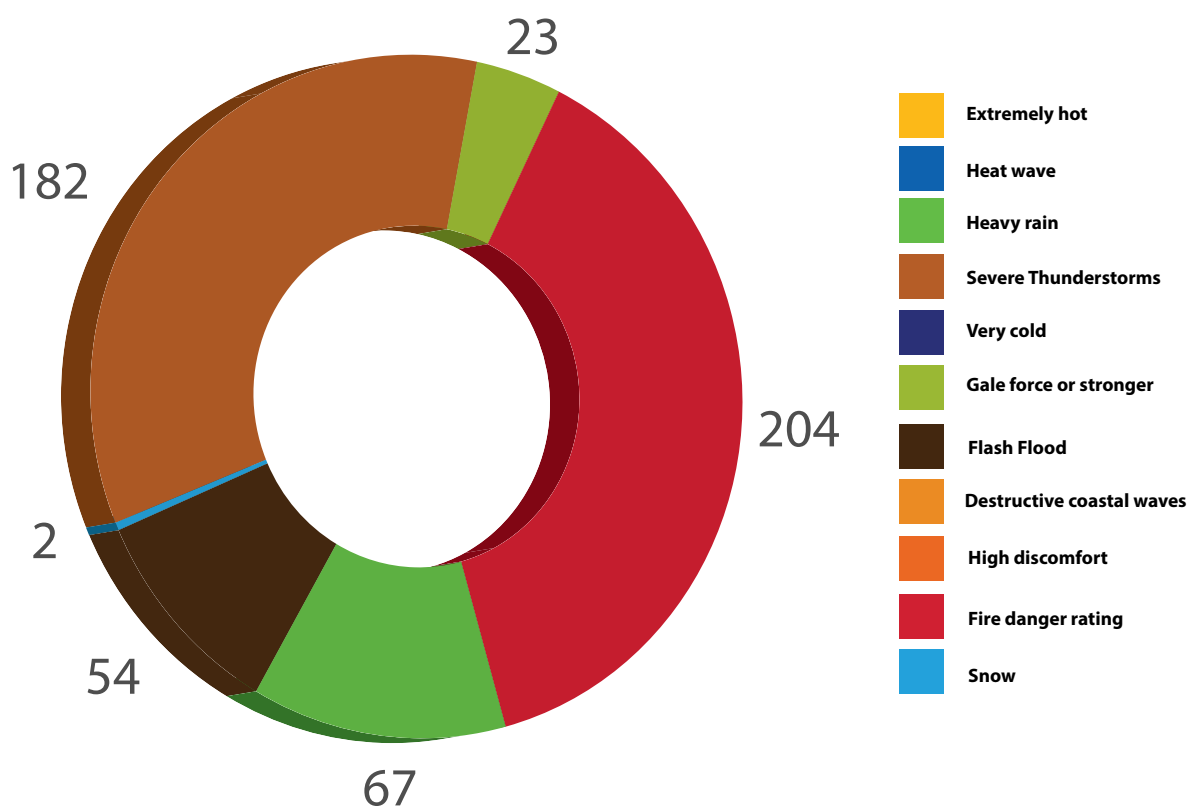


Figure 1: Categories of warnings issued.

## Notable Severe Weather events during the reporting period

### Winter weather events

During the winter of 2020, cold fronts that resulted in gale force winds (coastal as well as some parts of the interior), heavy rains, high seas, storm surges and snow over the high lying areas affected South Africa. During June 2020, many daytime and night-time temperature records, of which some were longstanding, were broken.

The first main cold front occurred from 24 to 26 May 2020, making landfall over the south-western parts of Western Cape on Sunday night (24 May) and progressed to the eastern parts and Northern Cape throughout Monday morning. Wet, windy and cold conditions occurred across the affected areas as the front moved through. The most significant weather conditions were reported in the south-west, along the Garden Route District. These included incidences of structural damage, uprooted trees, blocked roads and power outages. The City of Cape Town reported that a jetty broke away from the small harbour in Granger Bay which had to be retrieved by the Transnet National Port Authority (TNPA). Sixty families from the Langa township were affected by floods. Snow covered the high-lying areas of the Northern Cape as well as the Western Cape.

From 9 to 11 June 2020, another intense cold front, accompanied by a steep upper-air trough (a low pressure system at higher altitudes), moved through the Western Cape. Strong to gale force winds occurred along the coastal areas as well as over the interior, ahead of the front. The strong winds continued into the next evening.

Light to moderate rain fell across the province during the period, but several hours of heavy downpours occurred overnight on Tuesday (9 June) and into Wednesday morning (10 June), resulting in localised flooding in the informal settlements of the City of Cape Town. There were isolated incidents of power outages, roads that were flooded and uprooted trees across the area. The Gydo pass and Theronberg pass in the Ceres areas as well as the Bo Swaarmoed pass near Matroosberg Reserve were temporarily closed due to snowfall on Thursday morning (11 June).

From 27 to 28 June 2020, another intense cold front resulted in strong and gusty north-westerly winds across the Western Cape. Severe winds were observed in many places across the province's coast, with the maximum gust of over 92 km/h at times. Over the interior, the Worcester station reported maximum gusts of 140 km/h, while Swellendam registered a maximum of 104 km/h. As a result of these strong winds, impacts reported included the uprooting of large trees, power outages, dwellings destroyed, roofs blown off, walls blown down and trucks blown over. Informal settlements and roads were flooded in the City of Cape Town and the Cape Winelands due to heavy rain.

Numerous cold fronts affected the country in July 2020. Firstly, two well-developed cold fronts swept across the western parts of the country on Thursday, 9 and Friday, 10 June 2020. The intensity of the two weather systems resulted in widespread wind damage across the Western Cape province, where many large trees were uprooted, power outages reported and structural damage occurred, amongst others at the JR Conradie School in De Doorns. Widespread flooding occurred in the Matzikama municipality of the West Coast District, in the Cape Winelands as well as over the City of Cape Town.

The average high rainfall figures measured at 8 am on 10 July ranged between 40-50 mm, with Stellenbosch at 91.2 mm, Grabouw at 109 mm and Kirstenbosch reaching 125.4 mm. Due to the heavy rains around the Cape, the Eersterivier burst its banks and flooding occurred in Macassar and in the Sewendelaan informal settlement. The affected community members of the informal settlement were evacuated to a nearby hall. In the Zwelitsha informal settlement of Dunoon near the N7 road, the settlement was completely flooded as residents built their dwellings in a floodplain that was dry prior to the winter rains.

While mop-up operations from the effects of the previous cold fronts were still underway, another intense cold front hit the Western Cape on the evening of 12 July 2020. This cold front resulted in very strong winds and very rough seas. The strong winds caused damage at Nomzamo High School in Strand (Figure 2a), while the high seas resulted in foam being washed up onto the walkways (Figure 2b) and very rough seas (Figure 2c and d).



**Figure 2:** a. Nomzamo High School in Strand (Courtesy SABC News); b. Sea foam at Sea Point on 13 July 2020 (Courtesy SABC Western Cape); c. Very rough seas, view from Green Point side (Courtesy Justin Fox); d. swell as seen from Green Point side (courtesy Justin Fox)

### Summer weather events

On Friday, 15 January 2021, SAWS alerted the National Disaster Management Centre (NDMC) to the likelihood of a tropical disturbance that could possibly affect northern Madagascar and central Mozambique towards the end of the following week. The storm was then expected to continue along a path that would eventually lead to the north-eastern parts of South Africa.

The first media release was issued by SAWS on Monday, 18 January 2021, explaining the possible path of “Eloise”, which by now had intensified to “Moderate Tropical Storm” status. “Eloise” was expected to arrive over north-eastern Madagascar the following day, with the expectation that the storm system would make its way into the Mozambique Channel four to five days later.

On Wednesday, 20 January 2021, SAWS issued a follow-up media release, predicting that “Eloise” would enter the Mozambique Channel the following day, with a predicted landfall near Vilanculos, southern

Mozambique by Saturday evening, 23 January 2021 as an “Intense Tropical Cyclone” with sustained winds of 200 km/h. It was at this time that SAWS requested the urgent activation of the National Joint Operations Centre (NATJOC), with its first daily meeting and briefing session taking place three days prior to the expected landfall of “Eloise”.

SAWS issued the first Impact-Based (ImpB) warnings for disruptive rainfall, affecting the north-eastern parts of South Africa, on Thursday 21 January 2021, valid for the period 24 - 25 January 2021, with a lead-time of three full days (Figure 3). Friday, 22 January 2021, saw activities ramped up further, to include Joint Operation Centre (JOC) briefings with the Ehlanzeni (Mpumalanga), Vhembe (Limpopo) and Capricorn (Limpopo) districts. SAWS also issued another media release on Friday, 22 January 2021. A daily presentation at the National Joint Flood Committee meeting, hosted by the NDMC, was also started. The first of two Facebook Live interactive interviews and question and answer sessions were presented by the forecast team at the SAWS National Forecast Centre (NFC), enjoying more than 24 000 views.

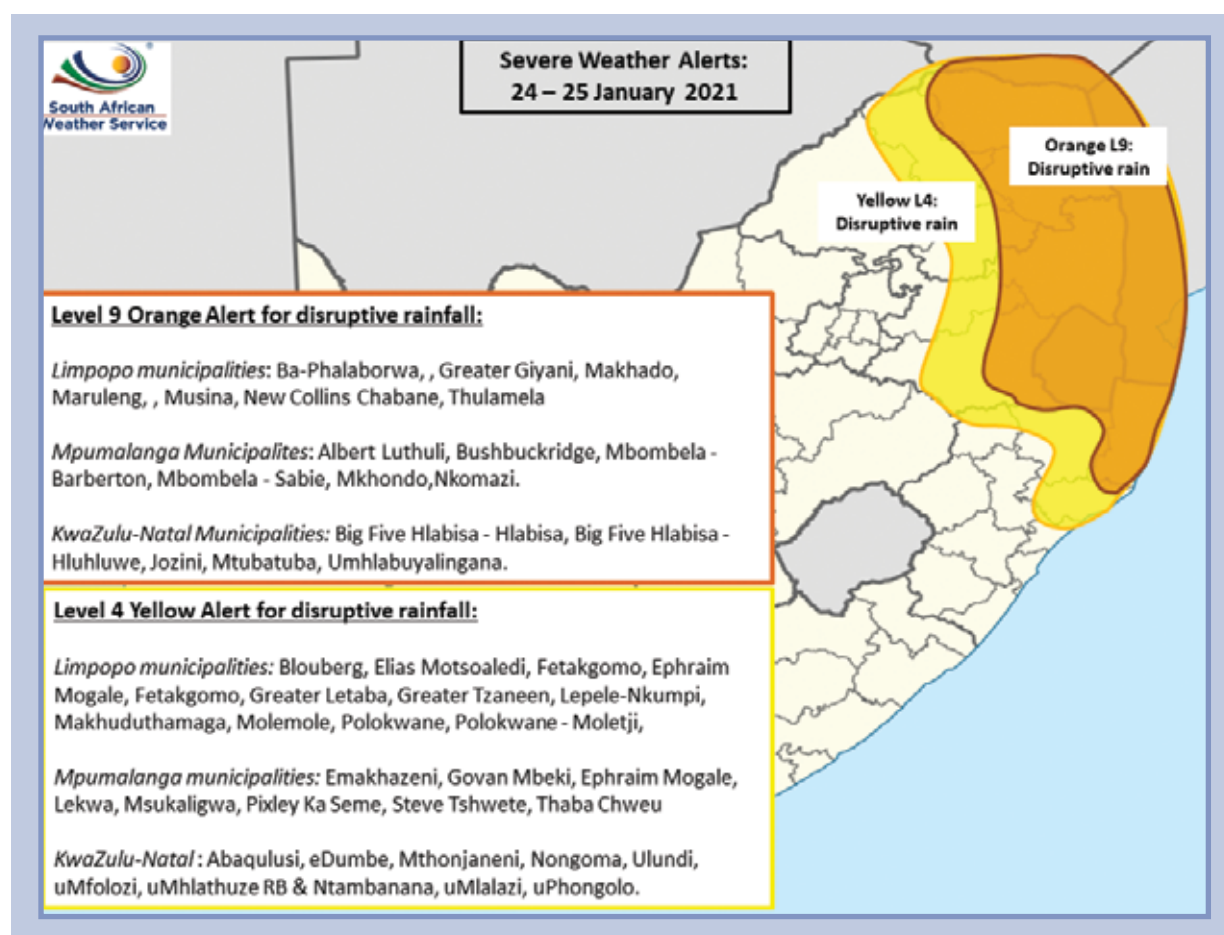


**Figure 3:** Impact-Based warnings for disruptive rainfall issued on Thursday 21 January, valid for 24 - 25 January 2021

On Saturday, 23 January 2021, as “Eloise” was nearing the central Mozambique coast near Beira (where it eventually made landfall), the first Intergovernmental Committee on Disaster Management meeting took place, where SAWS briefed the committee on the expected heavy rain, strong, damaging winds and resultant flooding for the coming days over the north-eastern provinces.

The warnings were monitored daily and on 24 January 2021 the first red warning for disruptive rainfall was issued (Figure 4). The impacts expected were large-scale flooding of roads and settlements, danger to life due to fast flowing streams, possible displacement of affected communities as well as many transport routes expected to be severely affected. On Monday, 25 January 2021, a second Facebook Live session was hosted by SAWS NFC, this time securing more than 8000 views.

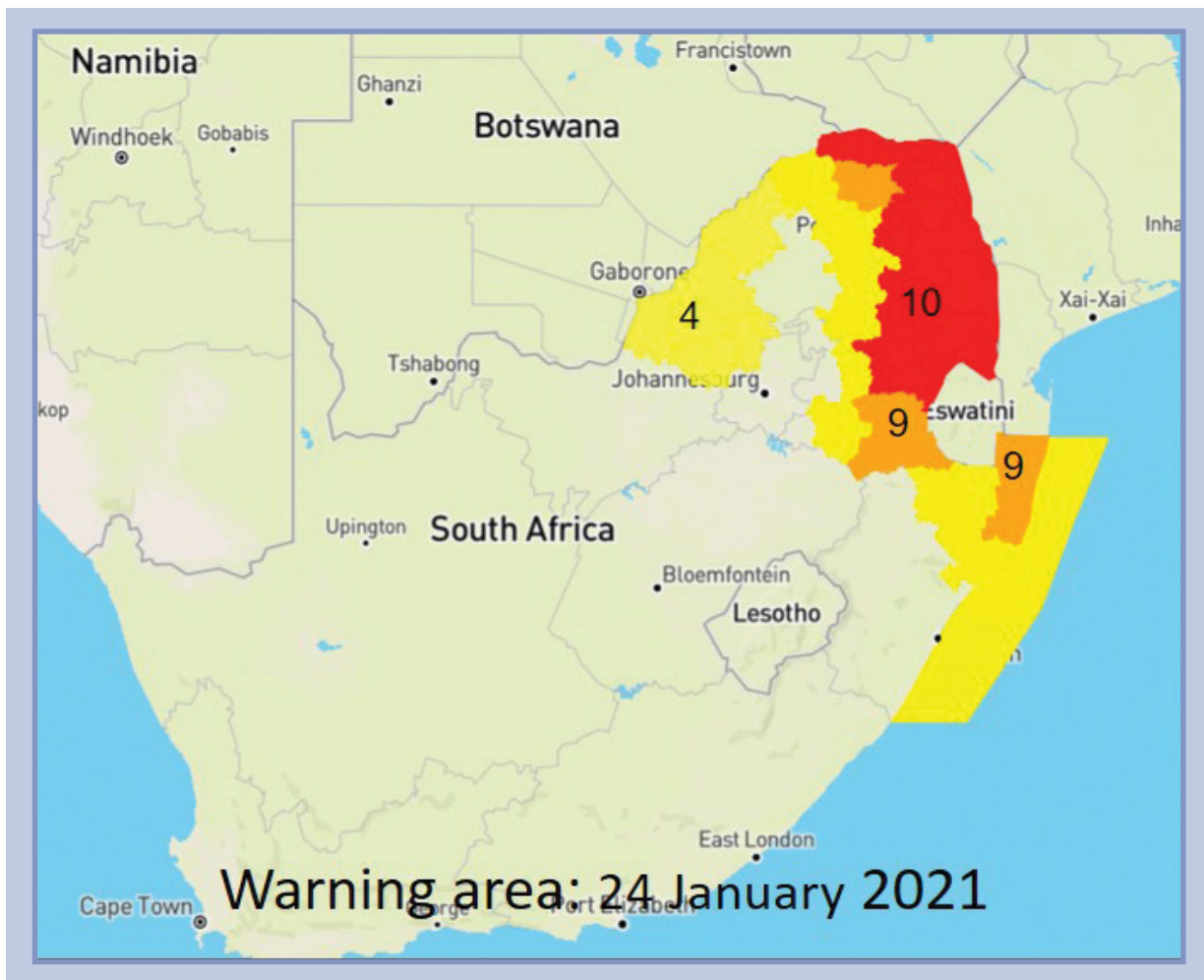


**Figure 4:** Impact-Based warnings for disruptive rainfall were upgraded to include a level 10 red warning. Issued on Thursday, 24 January, valid for 24-25 January 2021.

After making landfall, tropical cyclone Eloise weakened to a tropical low and tracked south-westwards across Southern Africa (Figure 5).

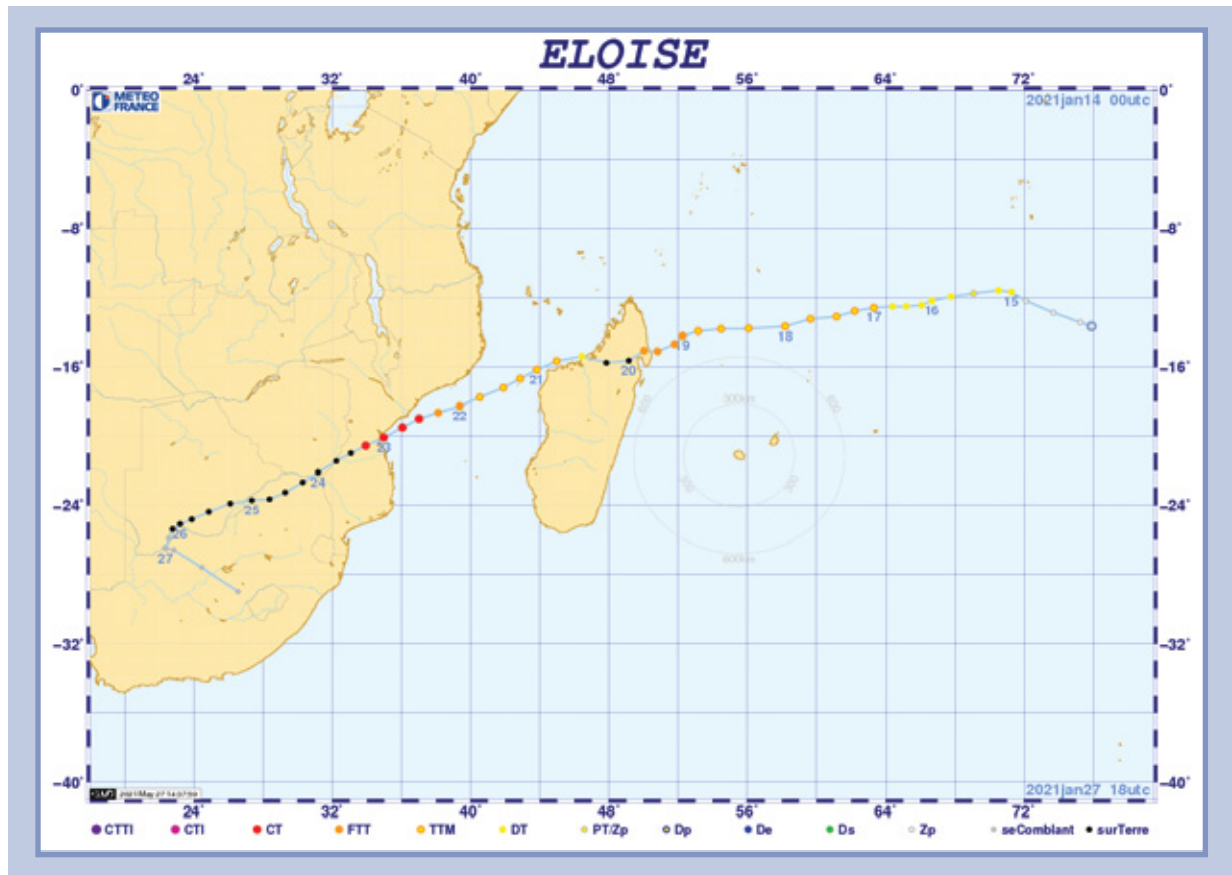


**Figure 5:** The complete track that Tropical Cyclone “Eloise” followed for the period 15 to 27 January 2021. (Image courtesy MeteoFrance)



Even though this low-pressure system had weakened, it continued to draw moisture from the tropics and resulted in heavy rainfall over the central interior of South Africa. The rainfall caused widespread flooding, which was exacerbated due to the ground already being saturated from a previous weather event that affected the area a few days prior. SAWS issued warnings for the central interior of the country (Figure 6).

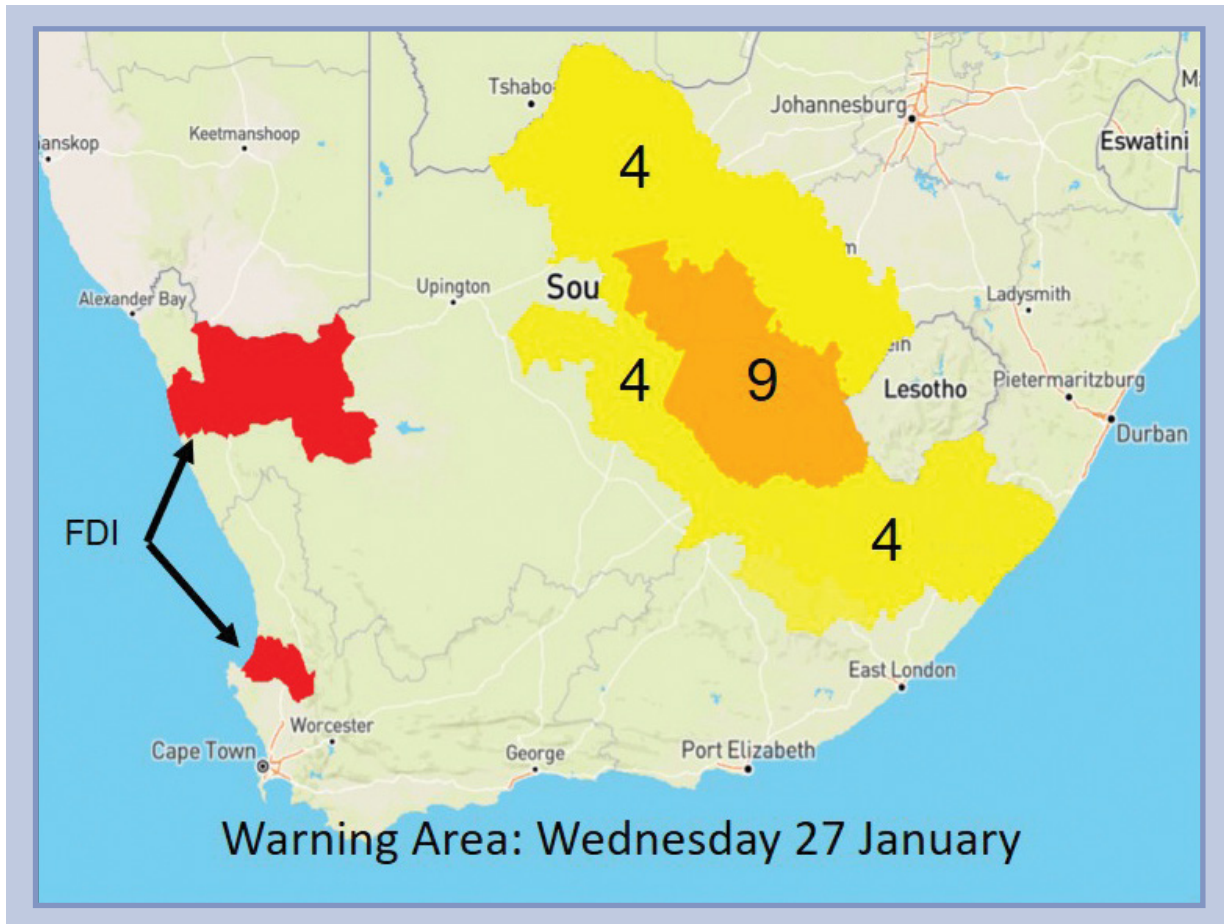


**Figure 6:** Impact-Based warnings for disruptive rainfall over the central interior of the country and red fire danger warnings over the western parts. Warnings valid for 27 January 2021.

SAWS continued to provide weather briefings at the National Joint Flood Operational Committee meetings, the Intergovernmental Committee Meetings as well as further presentations with the JOCs of affected districts. In summary, a total of six intergovernmental committee meetings were held from 23 January to 9 February 2021, where the acting CEO, Mr Mnikeli Ndabambi, presented the latest forecast and addressed all weather-related queries. For the period 18 January 2021 to 9 February 2021, nine National Joint Flood Operational Committee meetings were held. SAWS played an integral role in providing the latest updates and guidance on expected weather conditions. Two Facebook Live sessions were hosted, and numerous radio stations as well as television interviews were conducted throughout the period.

The rainfall measured (Figure 7) correlates very well with the warning areas that were forecasted. The main heavy rainfall areas were over the north-eastern parts of the country (Limpopo, Mpumalanga and northern KwaZulu-Natal) as well as a band over the central interior (eastern Northern Cape, western North-West and Free State provinces). Notable rainfall accumulation amounts were measured at Tshanowa Primary School (Limpopo province) where a total of 599.6 mm rainfall was measured for the period 23 January to 8 February 2021.

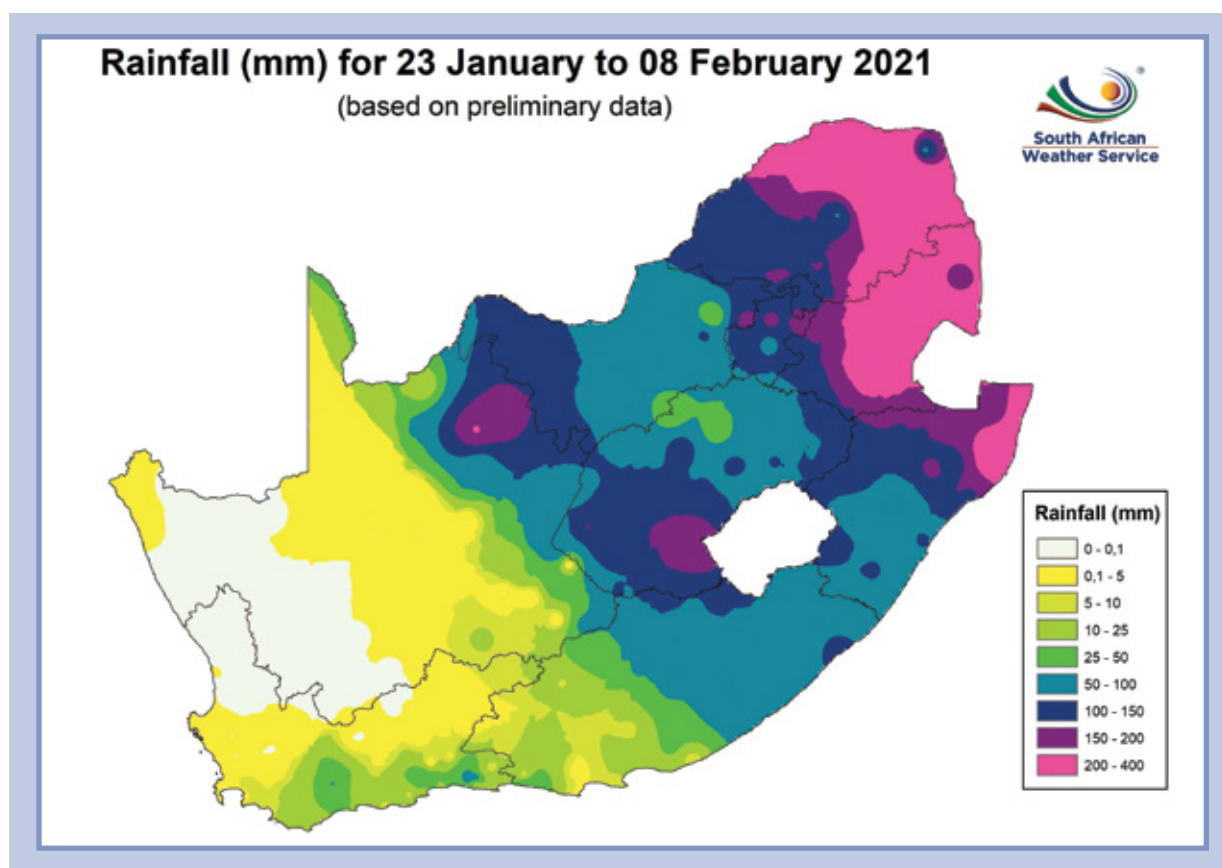


**Figure 7:** Preliminary rainfall measurements for the period 23 January - 8 February 2021

At the National Joint Flood Operational Committee meetings, each province affected by the rainfall was requested to submit reports on the impacts during this period. This information was captured by the NDMC and plotted on a map with the rainfall data from SAWS overlaid (Figure 8 overleaf). The bulk of the impacts coincided very well with the higher rainfall areas, with the main impacts occurring along the north-eastern escarpment and into the north-eastern parts of KwaZulu-Natal. Unfortunately, numerous deaths and missing persons were also reported during this time (Figure 9 overleaf).

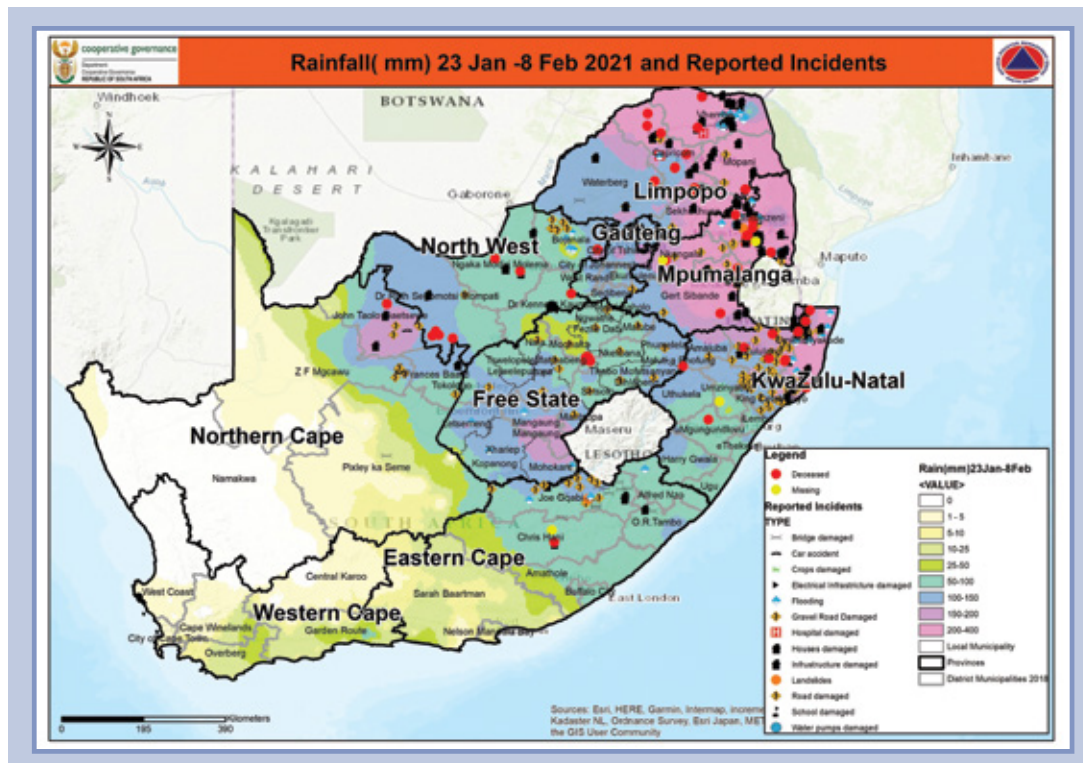


**Figure 8:** Impacts reported by each of the Provincial Disaster Management Centres affected. Impact data captured by the NDMC with rainfall data (shaded) supplied by SAWS.

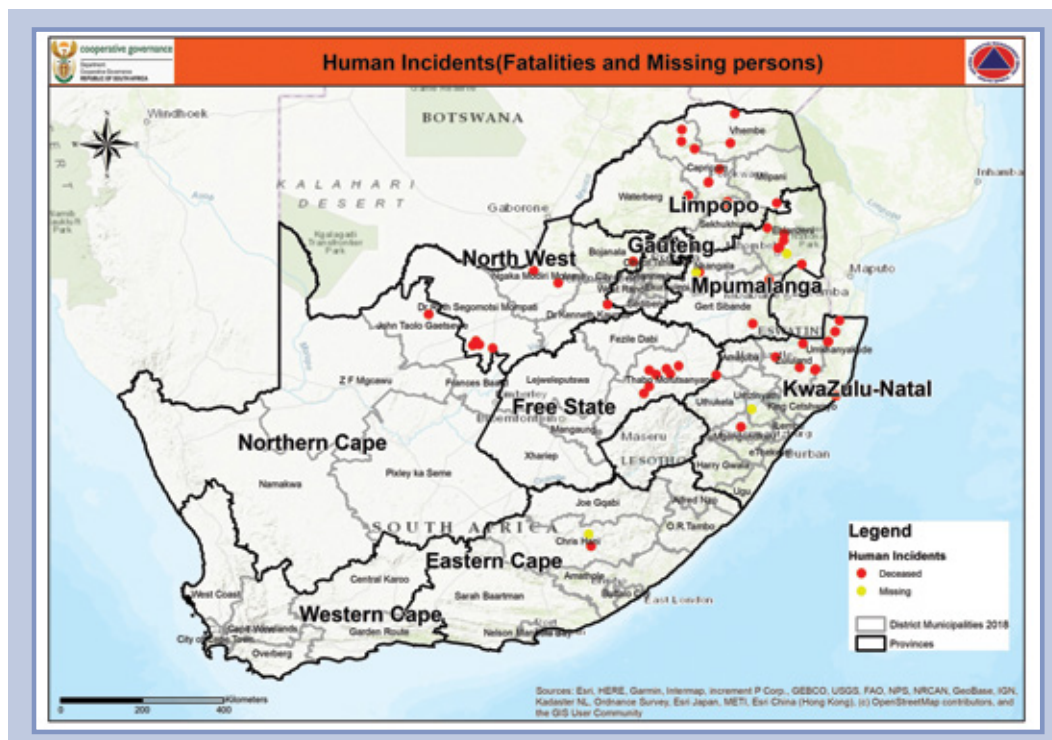


**Figure 9:** Distribution of reported deaths (red dots) and missing persons (yellow dots). Map created by the NDMC.

WhatsApp groups were established for each province to share information between the forecasting offices and disaster managers. Widespread flooding, damage to roads and infrastructure and loss of lives were reported. Images were shared by disaster managers, showing flooding, rockfalls and damage due to the rainfall and strong winds (Figure 10).



**Figure 10:** Impacts reported by the Disaster Managers in the Limpopo and Mpumalanga provinces.

In an attempt to establish the accuracy of our warnings for this period, a survey done amongst disaster managers showed that they understood SAWS' warnings and could take action ahead of the hazardous weather. Actions included the warning of communities; prioritized management of camps in the Kruger National Park; emergency teams placed on standby in designated hot spot areas and making farm dams safer to prevent a surge of water running off.

The consensus was that SAWS handled this event exceptionally well. Emergency personnel, media and the public were constantly kept up to date with the latest information. There was a clear shift in the way warnings are communicated, which is exactly what Impact-based warnings are trying to achieve. As there is always room for further improvement, SAWS is constantly aiming to ensure that the best weather warning service is provided across South Africa.

## Regional responsibilities on the Continent

SAWS plays a role in the severe weather warning activities in the Southern African sub-continent through its role as Regional Specialised Meteorological Centre (RSMC), designated by the World Meteorological Organization.

This is done through the Severe Weather Forecasting Programme (SWFP) and the Southern Africa Regional Flash Flood Guidance System (SARFFGS). As the Regional Specialised Meteorological Centre, SAWS issues, daily, 5-day severe weather guidance products to National Meteorological Services in the region. This is provided through a dedicated password-protected website. In addition, SAWS provides several numerical weather predictions as well as satellite-based now-casting products to the participating countries.

For the SARFFGS, SAWS runs a modelling that is required for the programme through its computing infrastructure. It also plays a crucial role in the ingestion of real-time observations required in the programme. This is linked to the role of SAWS as Regional Telecommunications Hub (RTH).

As a regional centre, SAWS is also expected to coordinate both these programmes. It is in this regard that the Regional Sub-programme Management Team meeting of the SWFP-SA was held virtually in August 2020 to address matters related to both the SWFP-SA and the SARFFGS. This meeting was attended by representatives from all member countries, participating global centres as well as WMO Secretariat staff.

SAWS also participated in the formulation of the Sustainability Strategy for the Flash Flood Guidance System with Global Coverage (FFGS/GC). The Sustainability Strategy recognises that a sustainable FFGS/GC will make an important contribution to the development of Multi-Hazard Early Warning Systems (MHEWS), in close conjunction with the SWFP.

### 3.1.3.2 Percentage of aerodrome warnings accuracy (98%) and Percentage of Terminal Aerodrome Forecast (TAF) accuracy (90%)

#### Aviation Services

The year did not start well for the aviation industry as all scheduled passenger aircraft were grounded due to the COVID-19 pandemic. Only emergency, cargo, and special flights for the repatriation of South African citizens and foreign nationals could take to the skies. Industry-wide Revenue Passenger Kilometres (RPKs) fell by approximately 99% year-on-year in Africa by April 2020, with Cargo Tonne Kilometres (CTKs) declining by 22%.

The impact of COVID-19 and the national lockdown imposed locally and internationally, lead to the demise of several airlines, which negatively affected the regulated commercial revenue of SAWS. During the year under review, SAWS lost over R100 million of commercial aviation revenue due to the decline in aviation activities within the South African air space.

The decline in aviation activities also affected the Aircraft Meteorological Data Relay (AMDAR) programme in a negative way, since very little data was coming through. AMDAR data covers a data sparse area, mainly over the African region, where the collection of upper-air data was almost nil. This data is ingested into numerical weather prediction models and contributes to the availability of real-time forecasting data required for improved, quality forecasting.

Although airports were gradually being opened as lockdown levels became less restricted, the impact of reduced flights was severely felt. This is demonstrated in the aviation income as depicted in the SAWS financials.

The lockdown also affected SAWS forecasters' participation at the Airport Management Centre.

Airport Collaborative Decision Making (A-CDM) activities are aimed at improving the efficiency and resilience of airport operations by optimising the use of resources and improving the movement predictability of air traffic. This is achieved by encouraging the airport partners (SAWS, aerodrome operators, aircraft operators, ground handlers and ATNS) to work closely together in a collaborative environment by exchanging relevant, accurate and timely information. Due to lockdown restrictions, these A-CDM activities at the Airport Management Centre (AMC), where SAWS advises on inclement weather affecting the airports around the country, remained suspended throughout the year. Aviation forecasters remained available to assist remotely and/ or from the office (as dictated by various lockdown levels) when the need arose.

Despite severe challenges brought about by the COVID-19 pandemic, SAWS carried out all its aviation duties as prescribed by the International Civil Aviation Organization (ICAO) (Annexure 3) and the South African Civil Aviation Authority (SACAA) (part 174). Of exception to the above was the Eastern Cape (Port Elizabeth Airport), where, after a thorough consultation with the local aviation role players, the midnight terminal aerodrome forecasts (TAFs) were suspended. Some of the shifts nationwide were worked from home and at the Business Continuity Centre's site, with the aim of ensuring compliance with the COVID-19 measures introduced by the government.

The SAWS Business Continuity Programme (BCP) proved to be effective since operational performance targets were achieved regardless of the impact of COVID-19 pandemic.

Annual statistics on aviation performance of meteorology-related solutions to the aviation industry show that 608 aerodrome warnings were issued nationally, with an accuracy rate of 98.8% achieved. As indicated in Figure 11 below, most of the aerodrome warnings issued were for thunderstorms, followed by strong winds/ gusts. Only one warning for frost and one for a dust storm were issued. The achieved percentage accuracy for the year was above the set target, which is significant considering the circumstances under which the organisation had to work. The national target of 90% accuracy for the scheduled Terminal Aerodrome Forecasts (TAFs) was achieved and surpassed by 3,8% as indicated in Figure 12 overleaf.

## AERODROME WARNING CATEGORIES

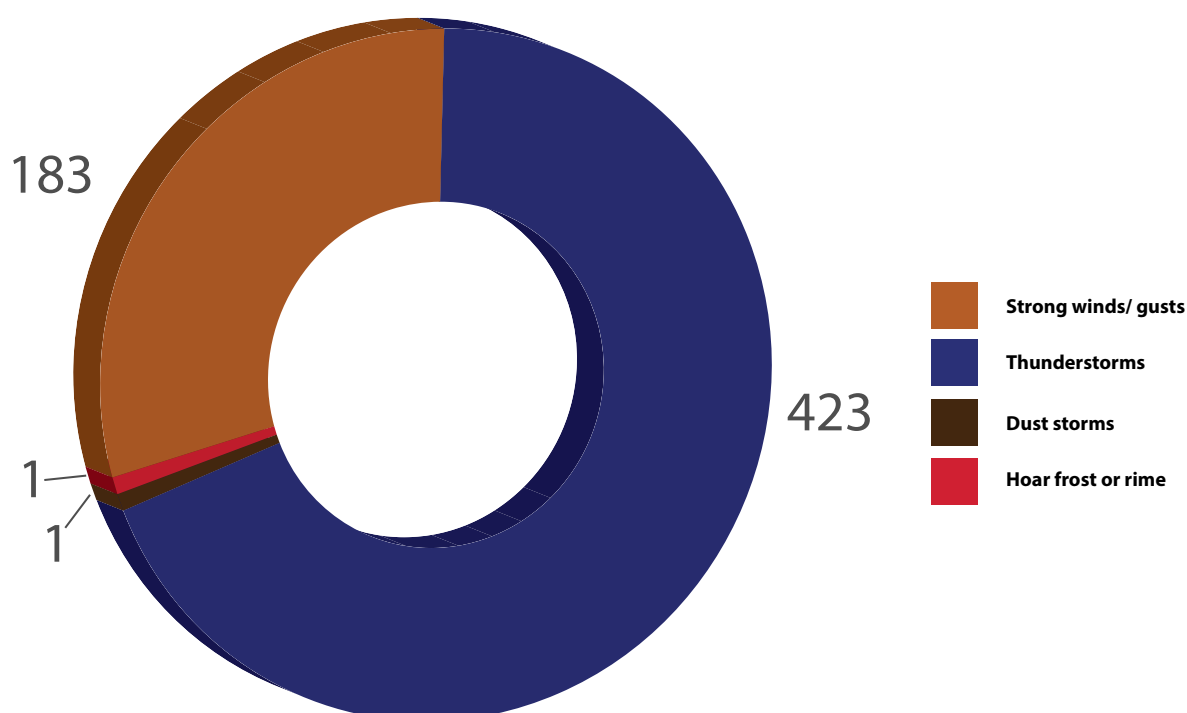


**Figure 11:** Aerodrome Warning Categories

## TOTAL TAF EVALUATIONS

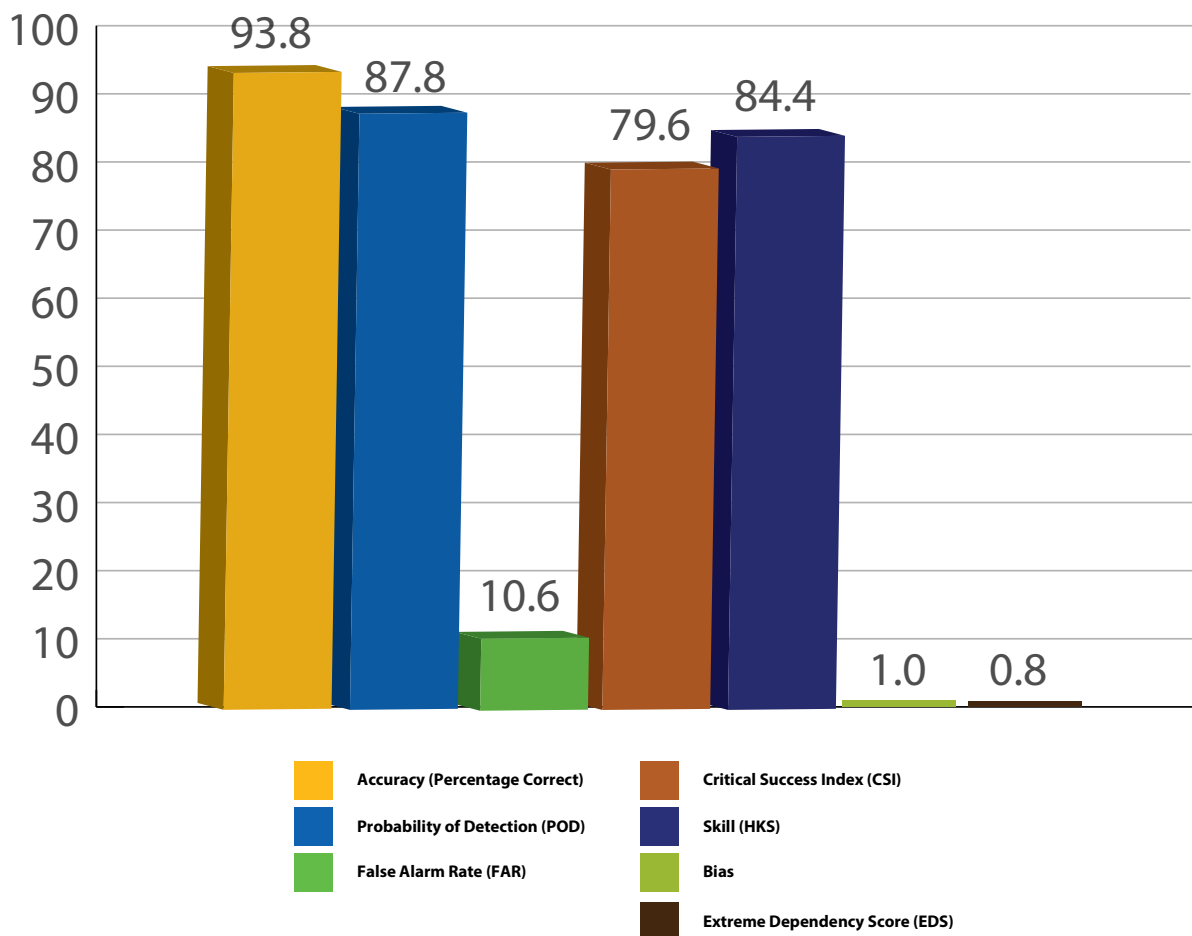


**Figure 12:** Total TAF Evaluations

### 3.1.3.3 Percentage availability of marine servicing the SOLAS Convention (95%)

#### Marine Services

Excellent advances were made in marine weather prediction at SAWS in a relatively short time. The high-resolution wave and storm surge model (SWaSS) was operationalised, with its design, calibration and validation endorsed by the academic community through a peer-reviewed publication.

The modelling system is continuously being improved through ongoing research and development. For example, the resolution of the boundary conditions (or input data) of the SWaSS wave forecast component was doubled in past year; an improvement made possible by upgrades of the NOAA global wave model. High resolution marine forecast products, tailored to Southern Africa, now include forecasts of regional and coastal waves, regional wave-current interactions, regional tide and storm-surge, regional and coastal maritime Beaufort Scale and a spring tide monitoring and notification tool. These products are available through the SAWS marine portal (<https://marine.weathersa.co.za/>). In addition to being available to the public in graphical form, they are used by the forecasters and Disaster Management to warn for marine weather phenomena and inform marine Impact-based forecasts. The inclusion of the Beaufort Scale forecast maps, depicting the anticipated ocean surface characteristics, is an example of the conversion of geophysical data into information which can be more intuitively understood by mariners and fishermen.

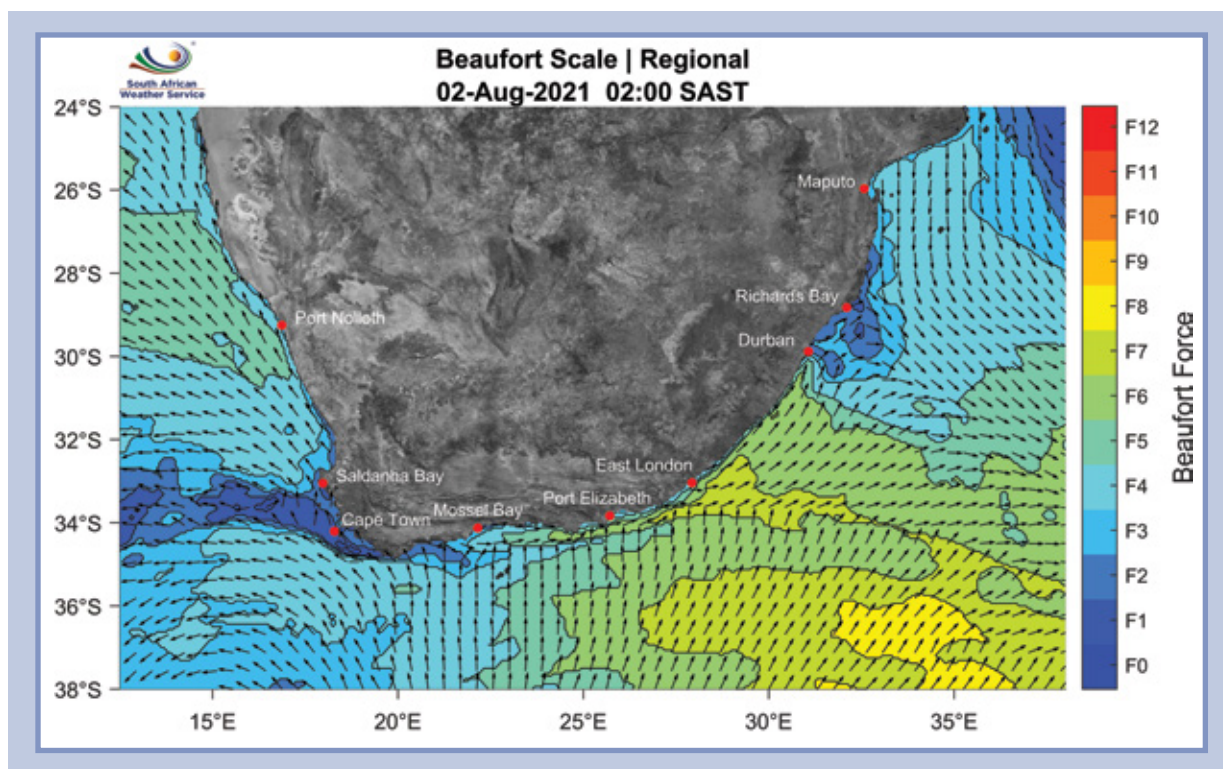


**Figure 13:** The Beaufort Scale forecast maps, depicting the anticipated ocean surface characteristics

The Marine unit was engaged in research in the fields of safety at sea, coastal safety, sea ice charting, high-resolution marine modelling, ocean observations (coastal, offshore and within the Southern Ocean) among others. Nine marine-related research papers were published in 2020, with further research papers in progress, in addition to manuscripts having been submitted to journals for review. Two staff members graduated with PhD degrees in 2020, with another Masters' study upgraded to PhD for graduation in 2021.

In-situ met-ocean data observations continued to improve our observations for the data-sparse regions of the southern hemisphere and improved numerical weather and climate prediction models. Ongoing association with platforms such as the newly renamed OceanOPS team (previously JCOMM-OPS) under the Global Ocean Observing System (GOOS), allowed SAWS access to ocean observing technologies to enhance its ocean observations at little to no cost. In the past year, 10 drifting weather buoys, 20 wave drifting buoys and 34 Argo floats were deployed to increase the number of ocean observations available in the data-sparse ocean areas of the southern hemisphere. The South African Polar Research Infrastructure (SAPRI) initiative, funded by Department of Science and Innovation (DSI), was accepted by the DSI SARIR (South African Research Infrastructure Roadmap) panel in March 2021 and recommended to the DSI Director-General for funding and implementation. SAWS is the key partner for atmospheric measurements, including the Global Atmosphere Watch (GAW) programme. Observing platforms include meteorological observing stations on the island bases, Antarctica, the South African research vessels, satellite tracked surface drifters, Argo floats as well as critical moored infrastructure.

The Marine unit maintained and further developed mutually beneficial local, regional and international stakeholder relationships. In addition, Marine experts served on several international panels for both the Intergovernmental Oceanographic Commission (IOC) and WMO, as well as serving as the METAREA VII Coordinator. The Marine unit continued to build its resources and stakeholder network by attending, among others, workshops and conferences of the Argo Steering Team (AST) for Argo float deployment strategies; the Data Buoy Cooperation Panel (DBCP); the International Ice Charting Working Group and



the Ships Observation Team panels. The unit also had close links with academia through supervision and teaching of students at the Universities of Pretoria and Cape Town.

Expanding and enhancing our stakeholder network raised the profile of the marine services and the related developments of the organisation amongst the domestic and international marine community.

### 3.1.3.4 Climate Services

#### State of the South African Climate

##### *Temperature*

South Africa experienced an abnormally hot year. The annual mean temperature anomalies for 2020, based on the data of 26 climate stations, was on average about 0.5 °C above the reference period (1981-2010), making it approximately the fifth hottest year on record since 1951 (see Figure 14 overleaf). 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 2020, presented in Figure 15 overleaf, was the persisting dry conditions in the west of South Africa, with a substantial area receiving less than 50% of the normal rainfall. The central interior also shows isolated areas which remained very dry. However, the areas of South Africa experiencing drought have decreased over the past year, where some regions received good rains in the early summer of 2020/21. The remainder of the country received close to normal rainfall and no significant area of South Africa received substantially more than the normal amount of rainfall except for the southern parts of the North-West province. Figure 16 presents the 12-month Standard Precipitation Index (SPI) ending December 2020, which shows that the western interior could be somewhat to moderately dry in places. However, the 24-month SPI, presented in Figure 17, shows that the long-term effects of the drought persisted, with extensive regions showing moderate to severely dry conditions over the last two years.

##### *Noteworthy climate and weather events*

In South Africa, dry conditions persisted over large parts of the west of the country. In some parts the dry conditions have continued now for approximately seven years, but it should be noted that some regions received good rains in the beginning of the 2020/21 summer rainfall season.

The year started off in January 2020 with these dry conditions persisting in most parts of the western interior, with warmer than usual conditions in the central parts. The Northern Cape was declared a disaster area after the drought that has crippled the province for the past couple of years. R200 million was set aside to help address this crisis. KwaZulu-Natal was also hit hard by a shorter-term drought, accompanied by very high temperatures that affected 256 towns and surrounding communities. The identified hotspot areas included the districts of Uthukela, Umzinyathi, Amajuba, Zululand, Uthungulu and Umgungundlovu. Good rains were received in the southern and north-eastern parts of the country, with some storms causing extensive damage to infrastructure.

By February 2020, above normal rainfall conditions spread to the central and south-eastern interior, but late-summer rainfall ended abruptly during the month, with drier conditions experienced in March. Again, heavy storms were reported with extensive damage, especially in the Gauteng and Eastern Cape provinces. However, April 2020 saw very good rains over the eastern half of South Africa, with some places receiving more than twice the normal amounts. Localised flooding was reported in several places.

The winter season (July to August 2020) was characterised by colder than normal conditions over most of South Africa and above normal rainfall over most of the south-western Cape.

The early summer, starting in October 2020, experienced above normal rainfall in the North-West province, extending south-eastwards over the central and eastern interior into southern KwaZulu-Natal. This was accompanied by heavy storms, with extensive damage, loss of life and damage to hundreds of residential dwellings.

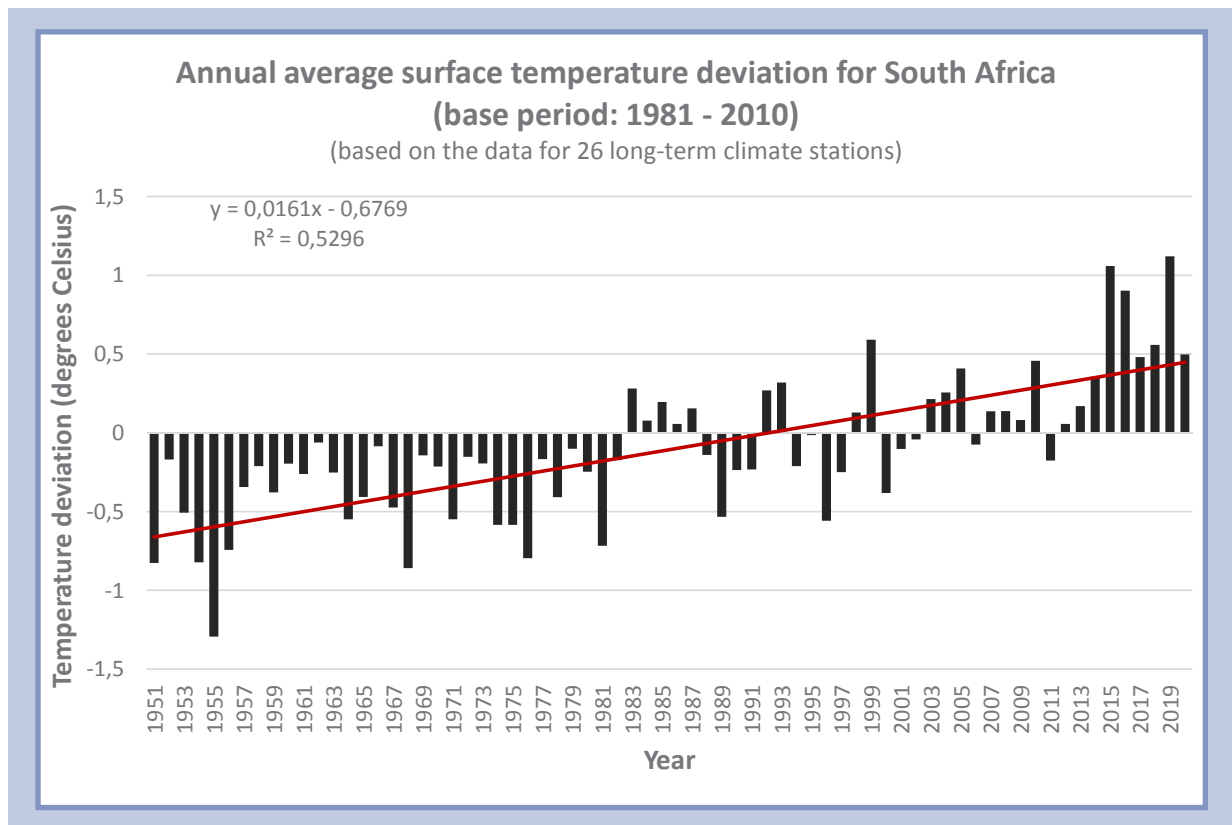


**Figure 14:** Average surface temperature deviation over South Africa based on 26 climate stations: 1951 - 2020 (base period: 1981 - 2010). The linear trend is indicated (Source: South African Weather Service).

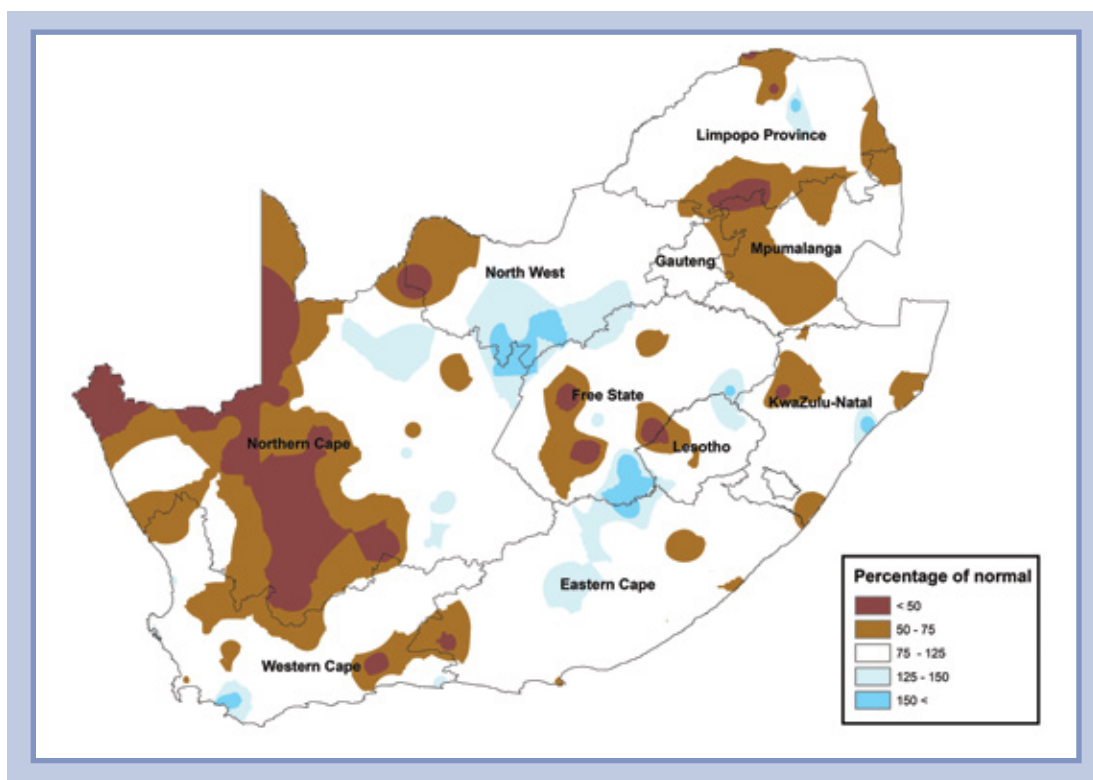


**Figure 15:** Rainfall anomalies (expressed as percentage of 1981-2010) for South Africa for 2020 (Source: South African Weather Service).

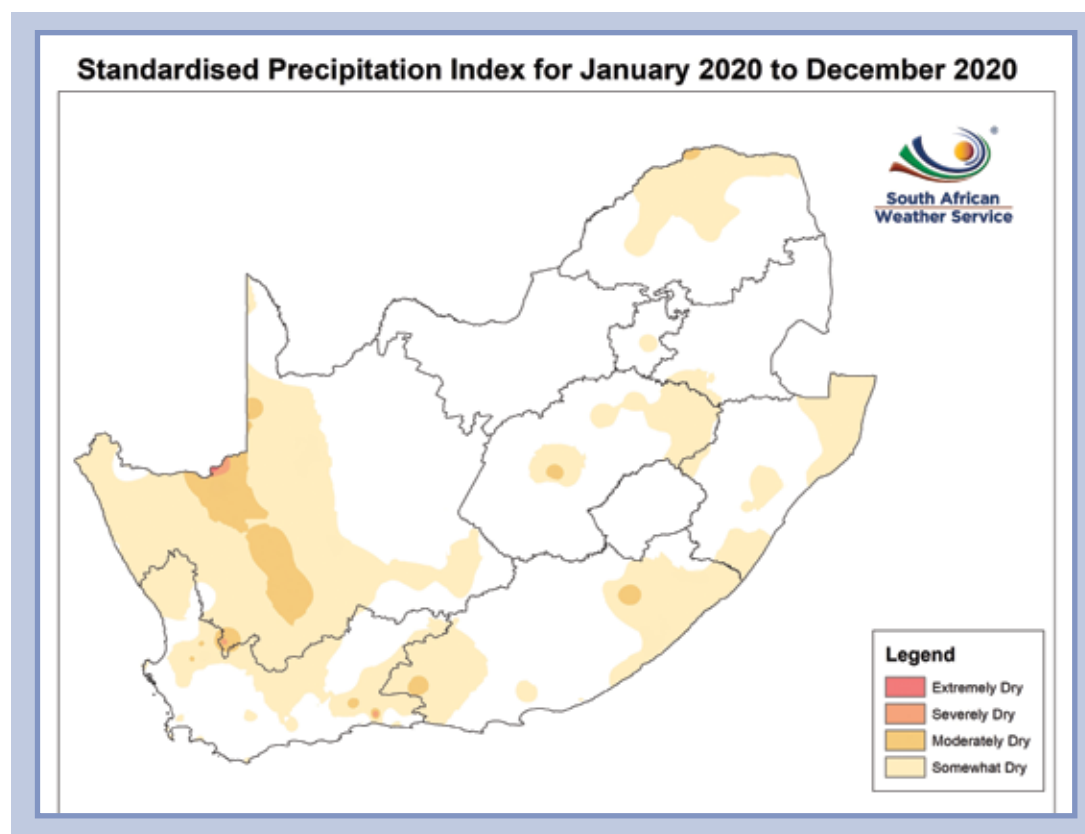


**Figure 16:** 12-month Standardised Precipitation Index map for South Africa ending December 2020 (Source: South African Weather Service).

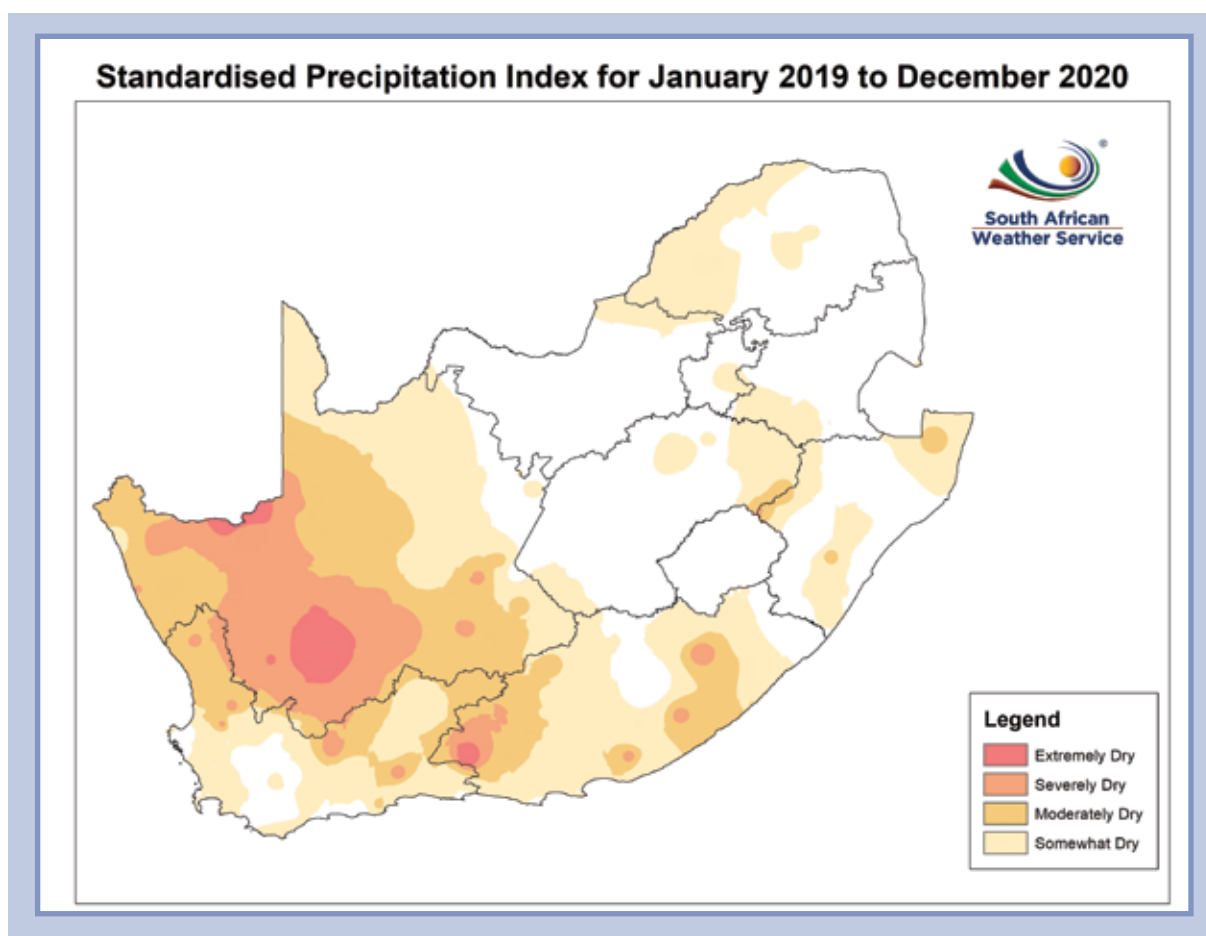


**Figure 17:** 24-month Standardised Precipitation Index map for South Africa ending December 2020 (Source: South African Weather Service).

### New and enhanced climate information products

SAWS intended to develop climate-specific solutions for climate sensitive sectors in general, with the observed and measured historical climate data as main inputs. The needs analyses, content development and authoring for two climate solutions, i.e., the first publication in a new regional weather and climate publication series as well as the improvement of the monthly drought bulletin, were completed. These new and revised products are available on the SAWS website as well as the National Framework for Climate Services (NFCS) web portal.

*The Regional Weather and Climate: Gauteng* publication consists of a comprehensive overview of the weather and climate of the province, comprising 52 pages, 53 figures and graphs and 15 statistical tables and covers a wide range of topics, including the prevailing wind, surface temperature, sunshine, radiation and precipitation conditions in the province as well as the evidence and impacts of climate change. Examples of useful maps in the publication are illustrated below:

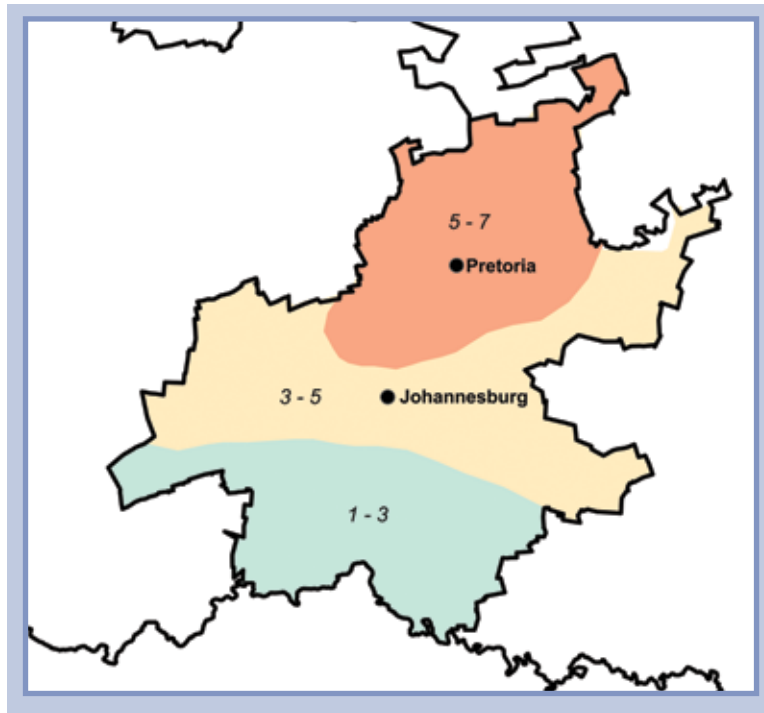


**Figure 18:** Mean winter (JJA) minimum temperature (°C) over Gauteng, based on topography and data over the period 1991 – 2020.

## MONTHLY AVERAGE NUMBER OF FINE DAYS IN GAUTENG

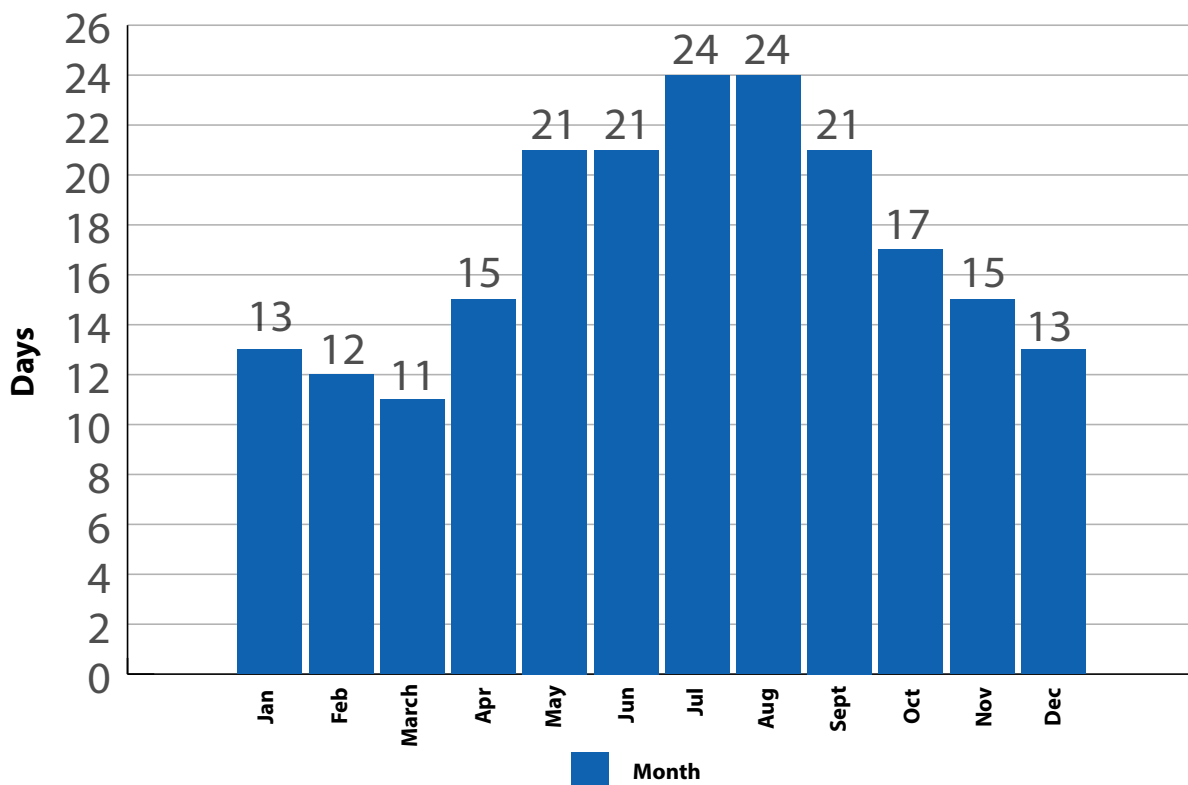


**Figure 19:** Average number of fine (sunny) days in Gauteng per month (1991 – 2020).

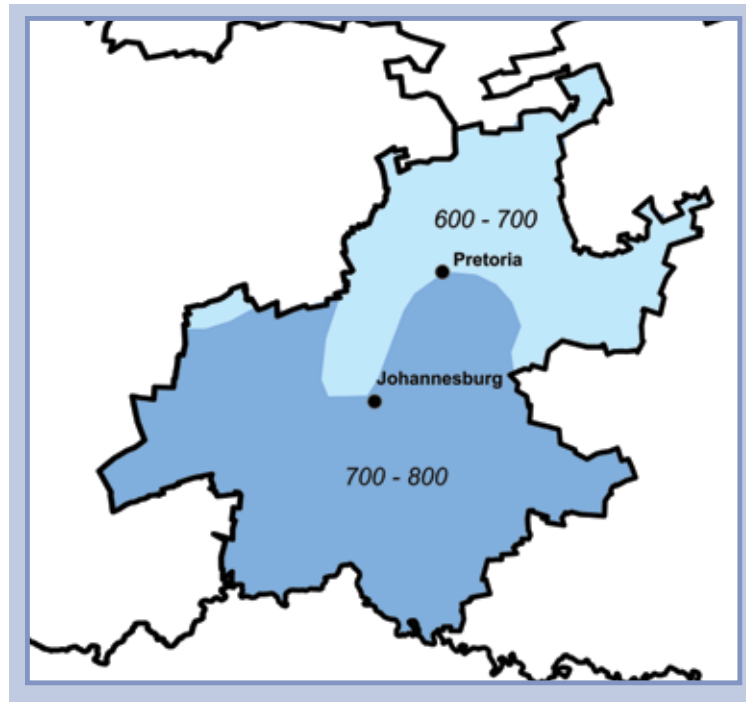


**Figure 20:** Mean annual rainfall (mm) based on topography and data over the period 1991 – 2020.

## IRENE: HOURLY PROBABILITY OF RAINFALL (%)

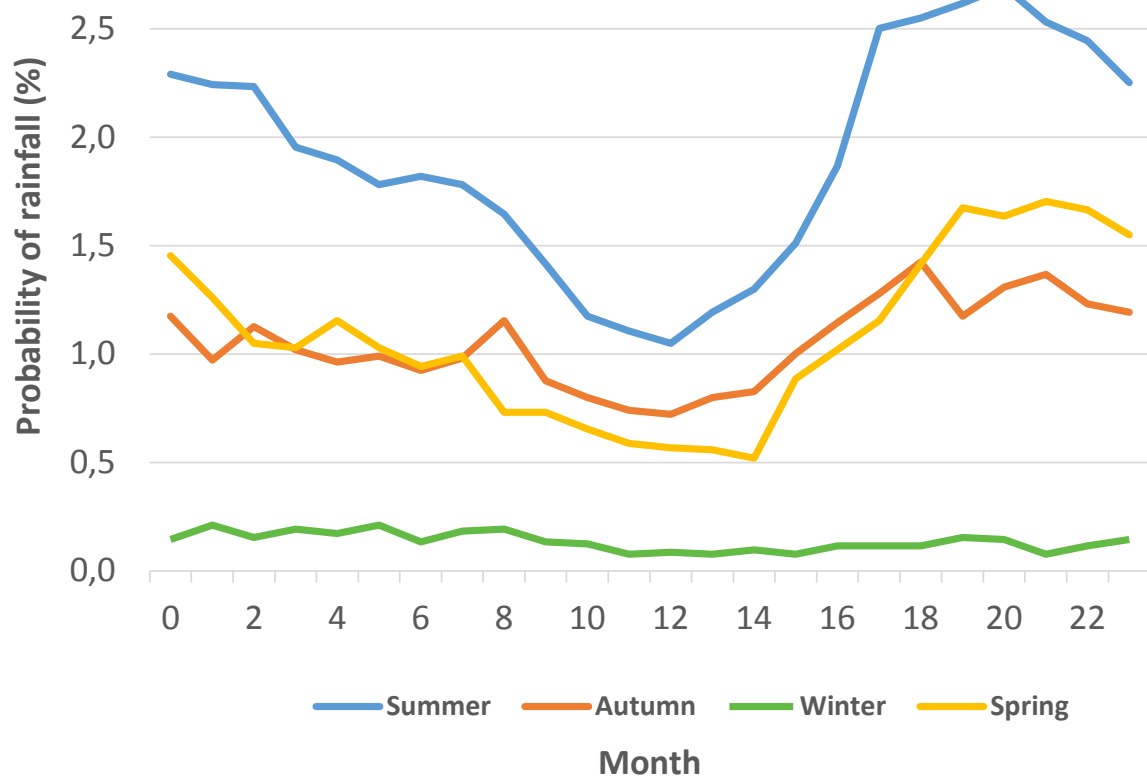


**Figure 21:** Probability of rainfall (%) during specific hours at the Irene weather office (1991 – 2020).

The revised monthly drought bulletin now includes long-term drought analyses of specific drought-stricken regions, hydrology information as well as vegetation conditions. The revised content includes -

- A broad overview of rainfall during the month and past three months
- SPI maps and analyses

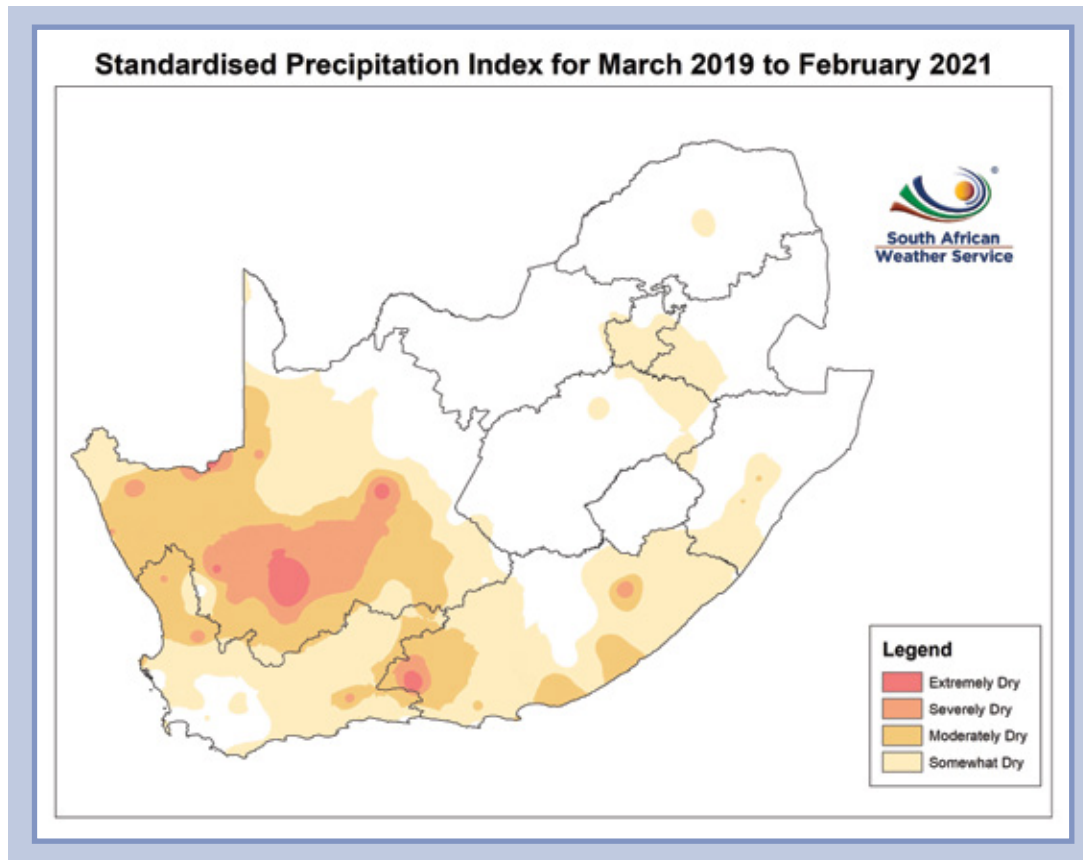


**Figure 22:** Long term 24-month SPI map (March 2019 to February 2021)

- Current vegetation conditions (compared to the long-term averages)

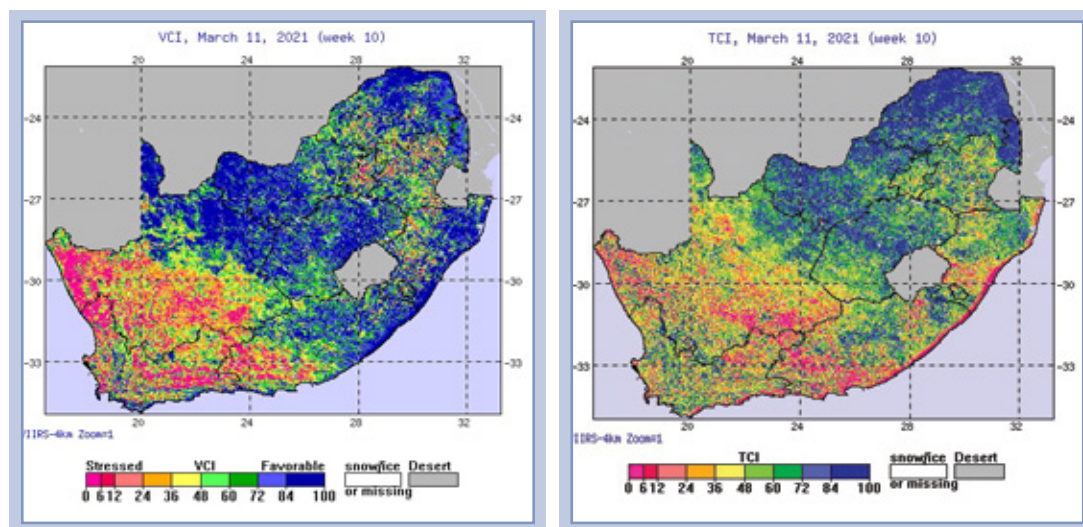


**Figure 23:** Vegetation Condition Index (left) and Temperature Condition Index (right)

- A more in-depth SPI and Standardised Precipitation Evaporation Index (SPEI) long-term analysis focused on drought-stricken regions

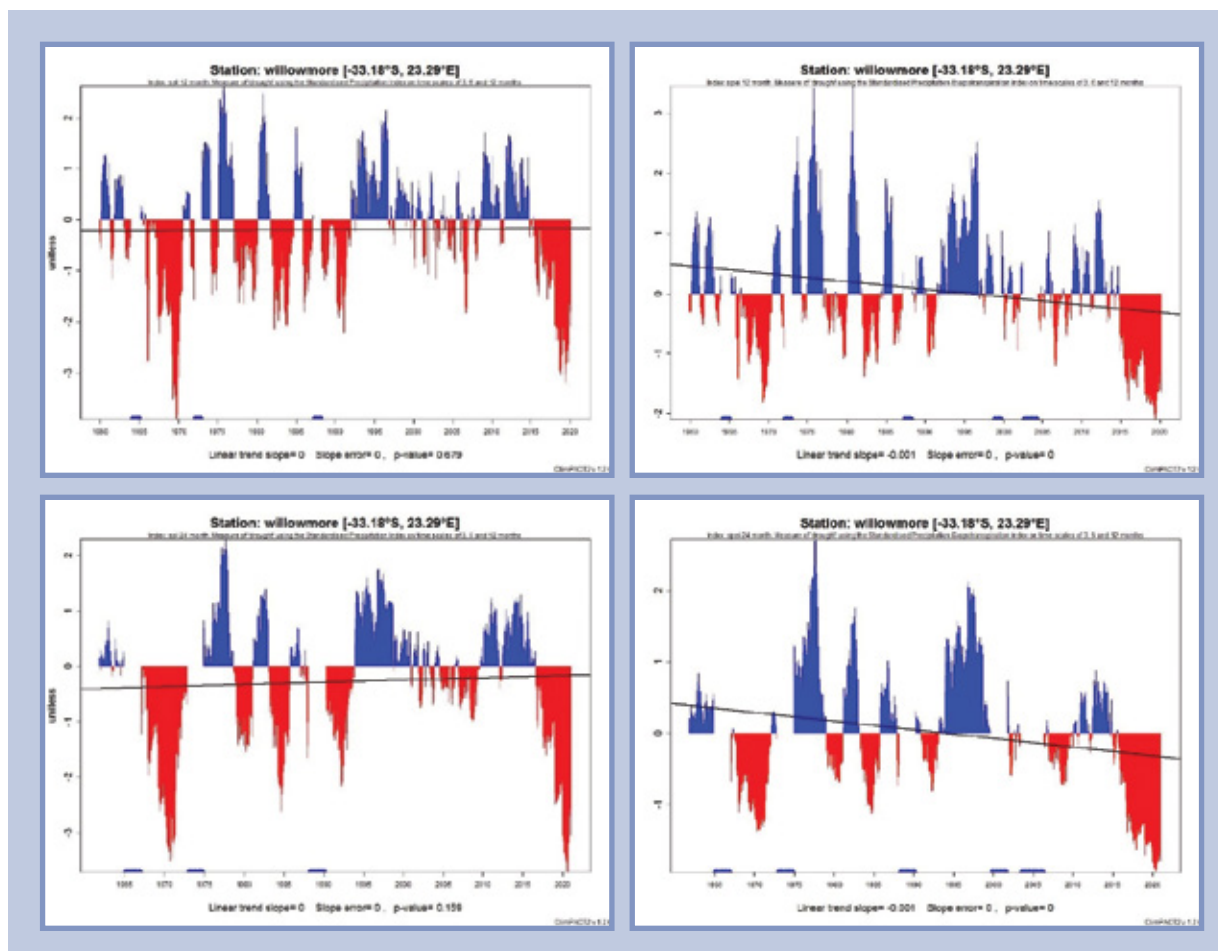


**Figure 24:** Time series plots for Willowmore weather station for 12- and 24-month SPI (top) and SPEI (bottom).

### Initiatives under the National Framework for Climate Services

A range of activities was undertaken to implement the National Framework for Climate Services (NFCS). The NFCS web portal is in operation, with new products added every year and stakeholders were invited to share their own climate information products for public consumption. SAWS participated in climate services workshops, policy briefs on engagement platforms for climate services and a podcast with the University of Cape Town and DFFE. A dialogue was also held between EU stakeholders, UNESCO and South African institutions to discuss policy aspects of the NFCS and partnership opportunities for the NFCS implementation. The development and operationalisation of an Integrated Climate-driven Multi-Hazard Early Warning System (ICMHEWS) project at SAWS, funded by the Government of Flanders, is also part of the roll-out of the NFCS.

The development and delivery of climate services through the NFCS will require climate observations of various types, of adequate quality and quantity and across locations. Bilateral meetings were held with relevant institutions owning Earth system observational infrastructure, with the aim to discuss a future national data-infrastructure model that would ensure sustainable management of Earth system monitoring infrastructure in South Africa. Most institutions argued for a free and open data policy to support science and research but recognised that a new funding model would be needed for this to be realised. A study to investigate funding model options for financing Earth system observational infrastructure in South Africa has recently been commissioned by DFFE to support the implementation of the NFCS.

## Atmospheric and Meteorological Terminology Book

Several years ago, a language barrier was identified to effective communication of weather and climate information in that it was only available in one official national language. To bridge the linguistic barrier, SAWS worked in collaboration with the Department of Arts and Culture and the Pan South African Language Board (PanSALB) to develop the Atmospheric and Meteorological Terminology Book – which translates atmospheric and meteorological terminology into all official languages of South Africa. The process was twofold: (i) the terms were developed into the local languages in conjunction with Department of Arts and Culture and (ii) verification and authentication of the terms developed were done by PanSALB, the organ of state mandated by an Act of Parliament to monitor language standards. The first list of 500 weather and climate terms was completed and an online version of the book was developed, which will be made available for use by the public soon.

## Analysis of severe weather-related events from historical database

There has been a global trend of extreme weather events becoming more frequent and severe in recent decades owing to the continuous warming climate. At SAWS, impacts of these extreme weather events are archived in a document called Caelum. Figure 24 indicates the distribution of significant weather-related disasters reported between 1900 and 2020 from Caelum. Floods and strong wind-related impacts have been the most frequent weather-related disasters in the country in recent decades as shown in Figures 25 and 26 respectively. There is a noticeable increasing trend since 2015 and 2018 for floods and strong winds respectively. Over 90 flood-related events were reported in 2020, which is the highest since 2009.

Impacts from strong winds and flood events include damage to property, roads and infrastructure which could cost billions to repair or replace. It is therefore important to constantly monitor and quantify both direct and indirect weather-related disasters and their resulting impacts in an efficient manner. This supports authorities to put necessary measures in place to mitigate and to support disaster risk reduction programmes. They also play a huge role in improving research on extreme weather events in the country.

## WEATHER-RELATED DISASTERS IN SOUTH AFRICA 1900 TO 2020

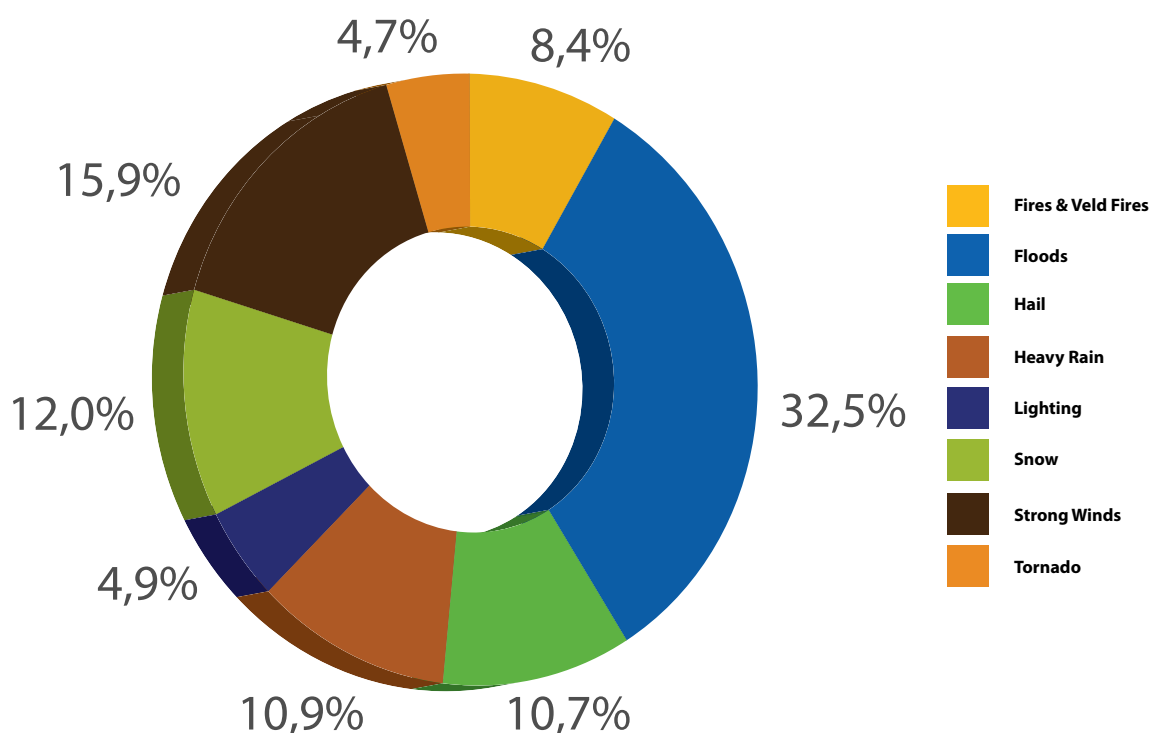


**Figure 24:** Weather-related disasters in South Africa (1900-2020) (Source: South African Weather Service).

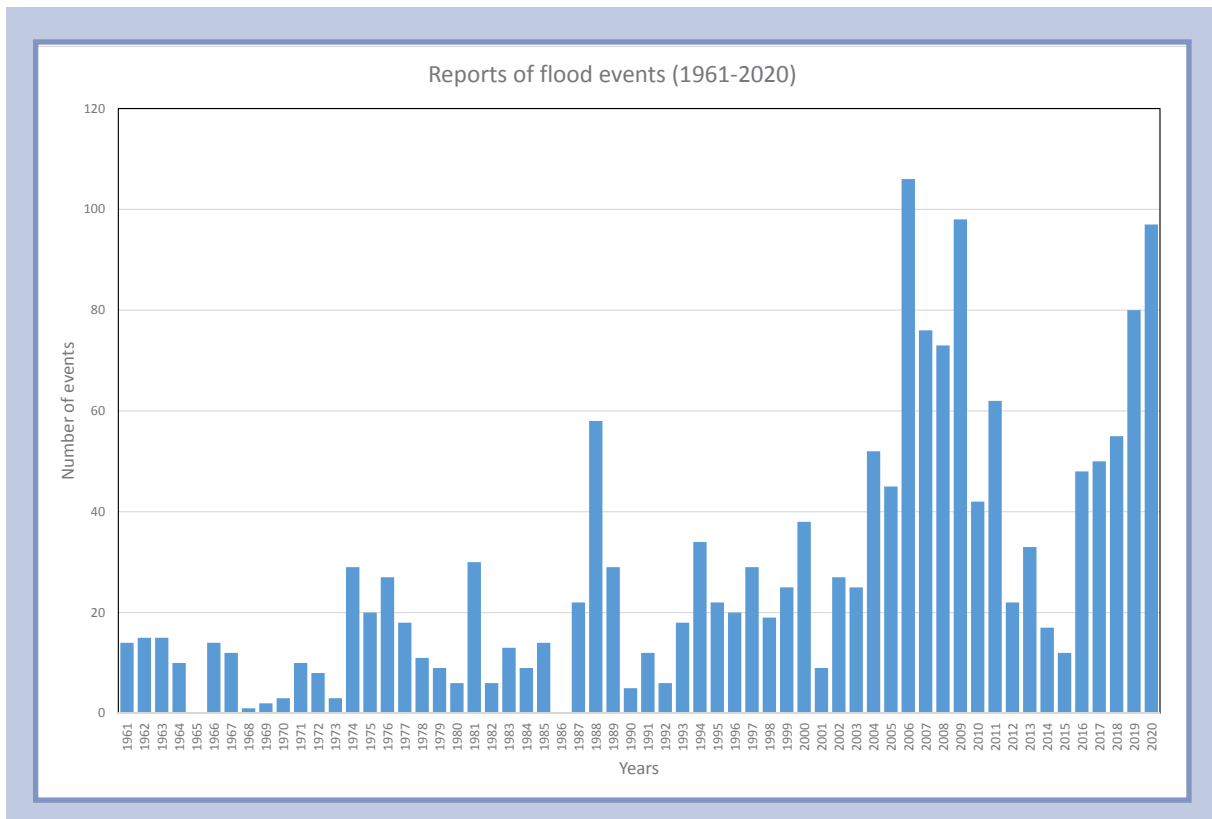


**Figure 25:** Trend of reported impacts of floods and heavy rainfall events in South Africa from 1961-2020 (Source: South African Weather Service).

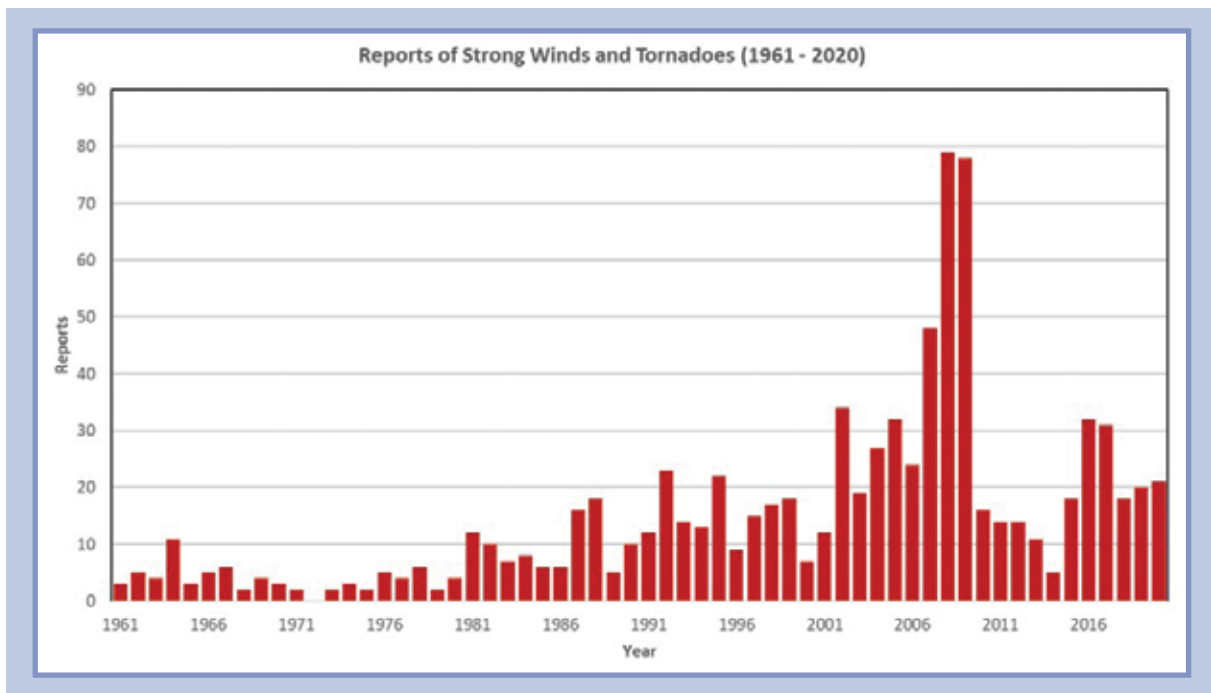


**Figure 26:** Trend of reported impacts of strong winds and tornadoes in South Africa from 1961 to 2020 (Source: South African Weather Service).

### 3.1.3.5 Channel Management

As the mandated authority on weather and climate forecasting, SAWS has an obligation to reach all South Africans with weather information daily. In support of the Integrated Service Strategy (ISS), SAWS uses multiple dissemination channels and strategic partnerships to increase its reach to different sections of the South African population, thereby providing critical information with the aim of saving property and life. Through the different dissemination channels and strategic partnerships, SAWS can reach the widest number of South Africans, including people living with disabilities and those in disadvantaged and rural communities.

The major dissemination channels that are currently utilised include community and commercial television 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. SAWS currently disseminates information through SABC TV and Radio, E-TV, ENCA and multiple community and commercial television and radio stations.

As at end of the 2020/21 financial year, SAWS was able to reach more than 4.3 million listeners (7.8% of the population), through the 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 also uses more than 20 SABC radio stations for disseminating weather and climate information. This gives SAWS the ability to reach the more than 32.8 million listeners (59% of the population) who tune in to various SABC radio stations daily.

As a response to 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 2020/21. The WeatherSMART App, which was upgraded and given a facelift during 2017/18, continued to grow in terms of downloads and visibility. A total of 12959 downloads of the WeatherSMART mobile App were achieved during 2020/21, bringing the total number of downloads to 38138. This was a 51% increase on the downloads of the previous year, 2019/20. The SAWS YouTube channel ended 2020/21 with a total of 132 subscribers and 4289 views.

| Programme/Sub-programme: Weather and Climate Services |                                      |                               |                                                      |                                                             |                        |
|-------------------------------------------------------|--------------------------------------|-------------------------------|------------------------------------------------------|-------------------------------------------------------------|------------------------|
| Audited Actual Performance 2018/2019                  | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | *Actual Achievement 2020/21 until date of re-tabling | Deviation from planned target to Actual Achievement 2020/21 | Reasons for deviations |
| 33 041 690                                            | 34 275 496                           | 33 598 862                    | 32 865 869                                           | 732 993                                                     | In line with budget    |

**Table 5:** Linking Performance with budgets: Programme 1

### Strategy to overcome areas of under-performance

No instances of under-performance occurred.

### Reporting on the Institutional Response to the COVID-19 Pandemic

All Aviation meteorological targets were met despite the challenging work arrangements. To comply with COVID-19 protocols, an arrangement was made through ICT to provide extra laptops for forecasting staff to continue carrying out their duties remotely.

At the beginning of the lockdown, all stakeholder engagements were cancelled. However, this was overcome as meetings were held virtually through Microsoft Teams or Zoom. These proved to be very successful, with improved attendance compared to face-to-face meetings.

One of the areas that was severely impacted was aircraft-based observations. These observations serve as input to numerical weather prediction models and contribute towards forecast accuracy with about 15% as per research. This programme dwindled as most of the flights were cancelled and South African airlines that provided most observations were grounded.



## 3.2 Programme 2: Research and Innovation

### 3.2.1 . Purpose: Develop Meteorological Solutions to inform wise socio-economic choices.

#### Enhanced meteorological related body of knowledge.

SAWS focusses on the generation of new scientific insights in atmospheric and related sciences, specifically as related to weather, climate and related environmental matters as well as developing relevant and innovative products and services to support socio-economic development and build resilience. The increase in research output as well as development of solutions enhances meteorological knowledge which greatly impacts on the protection of lives and property against meteorological risks.

#### Sub-programmes

- Number of research outputs (30)
- Number of new climate solutions for climate sensitive sectors (1)
- Number of solutions developed (6)

### 3.2.2 Institutional outcomes that each programme contributes towards according to the Annual Performance Plan - Outcomes, Outputs, Output Indicators, Targets and Actual Achievement

#### SAWS Research rating system

SAWS' Vision and Mission are underpinned by a set of values and goals that are geared towards building a world-class meteorological organisation that provides meteorological and climate services for all South Africans. SAWS is an organisation that is predominantly geared towards service delivery of operational forecasting services covering a variety of time frames. The organisation has a strong research drive to constantly improve on products and services and to conduct research on atmospheric processes and phenomena. SAWS, in its quest to strive for continuous improvement in its service delivery mandate, seeks to develop a rating and evaluation system of the scientific output delivered by the organisation as well as benchmarking against similar institutions in South Africa. The process for establishing such a rating system must comply with transparency principles and must be conducted by an independent evaluation body.

During the 2020/21 reporting period SAWS developed the terms of reference (TOR) for such an evaluation as well as identifying individuals to be approached to serve on the independent evaluation panel. The evaluation process will be continued in 2021/22 when it is envisaged that an initial evaluation will be conducted to establish a baseline that will form an integral part of the SAWS monitoring and evaluation (M&E) drive in the future.

#### 3.2.1.1 Number of research outputs: Peer reviewed publications

SAWS is a recognised scientific institution of government in the atmospheric sciences discipline. Scientific output through peer reviewed publications remains one of the key measures on which knowledge generation is measured within the organisation. Eligible publications being considered for inclusion in the publication database are those where a SAWS scientist is the main author or a co-author of peer reviewed publications as described below:

1. Peer reviewed articles published in recognised scientific journals local or international.
2. Peer reviewed conference papers appearing as part of the post conference proceedings.

3. Dissertations that were reviewed and formed part of obtaining post graduate qualifications e.g. MSc and PhD dissertations.
4. Contributions to other scientific publications such as book chapters which involve a peer review process.

At the beginning of the 2020/21 financial year SAWS planned to deliver 47 publications as a pre-COVID-19 target. As a result of the stringent lockdown measures instituted by government during the onset of the COVID-19 pandemic in South Africa, SAWS anticipated a negative impact on most of its activities. The research output of the organisation through publications was reviewed after the first quarter of 2020/21 and the publication target was amended to a reduced target of 35. The actual number of eligible publications achieved during the 2020/21 financial year totalled 49 which exceeded both the amended and original targets. The table below represents a summary of the type and number of publications:

| Publication -Type               | Number    |
|---------------------------------|-----------|
| Articles in Scientific Journals | 45        |
| Conference Papers               | 2         |
| Theses                          | 2         |
| Other                           | 0         |
| <b>TOTAL</b>                    | <b>49</b> |

**Table 6:** Number of Publications per Type

The publications realised during the reporting period under review are presented below:

### Articles in Scientific Journals: Quarter 1

1. ABIODUN, G.J., ADEBIYI, B.O., ABIODUN, R.O., OLADIMEJI, O., OLADIMEJI, K.E., **ADEOLA, A.M.**, MAKINDE, O.S., OKOSUN, K.O., DJIDJOU-DEMASSE, R., SEMEGNI, Y.J., NJABO, K.Y., WITBOOI, P.J. AND ACEVES, A. 2020. *Investigating the Resurgence of Malaria Prevalence in South Africa Between 2015 and 2018: A Scoping Review*. The Open Public Health Journal, 13, pp. 19-125. <http://dx.doi.org/10.2174/1874944502013010119>
2. DIRIBA, T.A., DEBUSHO, L.K. AND **BOTAI, J.O.** 2020. Modelling Dependence Structures of Extreme Wind Speed Using Bivariate Distribution: a Bayesian Approach. *Environmental and Ecological Statistics*, 27, pp. 319–362. <https://doi.org/10.1007/s10651-020-00448-2>
3. DJIDJOU-DEMASSE, R., ABIODUN, G.J., **ADEOLA, A.M.** AND **BOTAI, J.O.** 2020. Development and Analysis of a Malaria Transmission Mathematical Model with Seasonal Mosquito Life-history Traits. *Studies in Applied Mathematics*, 144(4), May, pp. 389-411. <https://dx.doi.org/10.1111/sapm.12296>
4. DU PREEZ, D.J., BENCHERIF, H., BÉGUE, N., CLARISSE, L., **HOFFMAN, R.F.** AND WRIGHT, C.Y. 2020. Investigating the Large-Scale Transport of a Volcanic Plume and the Impact on a Secondary Site. *Atmosphere*, 11(5), May, 548, 11 pp. <https://doi.org/10.3390/atmos11050548>

5. KIDD, C., SHIGE, S., VILA, D., TARNAVSKY, E., YAMAMOTO, M.K., MAGGIONI, V. AND **MASEKO, B.** 2020. The IPWG Satellite Precipitation Validation Effort, in Levizzani, V., Kidd, C., Kirschbaum, D., Kummerow, C., Nakamura, K., Turk F. (eds), *Satellite Precipitation Measurement*, 2, Advances in Global Change Research, 69, pp. 453-470. [https://doi.org/10.1007/978-3-030-35798-6\\_1](https://doi.org/10.1007/978-3-030-35798-6_1), ISBN 978-3-030-35797-9 (Print)
6. MAKONDO, L., **ADEOLA, A., MAKGOALE, T., BOTAI, J., ADISA, O. AND BOTAI, C.** 2020. Influence of Climate on the *Spatiotemporal* Distribution of Malaria in Thulamela Municipality, Limpopo Province, South Africa. *The Open Public Health Journal*, 13, pp. 246-256. <http://dx.doi.org/10.2174/1874944502013010246>
7. MKOLOLO, T., MBATHA, N., VENTAKARAM, S., BÈGUE, N., **COETZEE, G., AND LABUSCHAGNE, C.** 2020. Stratosphere–Troposphere Exchange and O3 Decline in the Lower Stratosphere over Irene SHADOZ Site, South Africa. *Atmosphere*, 11(6), 586. <https://dx.doi.org/10.3390/atmos11060586>
8. MULOVHEDZI, N.E., ARAYA, N.A., **MENGISTU, M.G.**, FESSEHAZION, M.K., DU PLOOY, C.P., ARAYA, H.T. AND VAN DER LAAN, M. 2020. Estimating Evapotranspiration and Determining Crop Coefficients of Irrigated Sweet Potato (*Ipomoea batatas*) Grown in a Semi-Arid Climate. *Agricultural Water Management*, 233, 30 Apr, 106099. <https://doi.org/10.1016/j.agwat.2020.106099>
9. **TAZVINGA, H.**, DZOBO, O. AND MAPAKO, M. 2020. Towards Sustainable Energy System Options for Improving Energy Access in Southern Africa. *Journal of Energy in Southern Africa*, 31(2), May, pp. 59- 72. <https://doi.org/10.17159/2413-3051/2020/v31i1a6504>

#### Peer-Reviewed Conference Papers

10. DZOBO, O. AND **TAZVINGA, H.** 2020. Impact of Weather Conditions on Line Ampacity of Overhead Transmission Lines, in 9th *International Conference on Power and Energy Systems (ICPES)*, 10-12 December 2019, Perth, Australia, 5 pp. <https://ieeexplore.ieee.org/document/9105637> ; <https://doi.org/10.1109/ICPES47639.2019.9105637>
11. **TAZVINGA, H.** AND DZOBO, O. Feasibility Study of a Solar Biogas System for Off-Grid Application , in 9th International Conference on Power and Energy Systems (ICPES), 10-12 December 2019, Perth, Australia, 5 pp. <https://ieeexplore.ieee.org/document/9105547> ; <http://dx.doi.org/10.1109/ICPES47639.2019.9105547>

#### Articles in Scientific Journals: Quarter 2

12. ADISA, O.M., MASINDE, M., **BOTAI, J.O.** AND BOTAI, C.M. 2020. Bibliometric Analysis of Methods and Tools for Drought Monitoring and Prediction in Africa. *Sustainability*, 12(16), 6516. <https://doi.org/10.3390/su12166516>
13. **BARNES, M.A.** AND RAUTENBACH, C. 2020. Towards Operational Wave–Current Interactions Over the Agulhas Current System. *Journal of Geophysical Research: Oceans*, 125(7), Jul, e2020JC016321, 21 pp. <https://dx.doi.org/10.1029/2020JC016321>
14. BIESER, J., ANGOT, H., SLEMR, F. AND **MARTIN, L.** 2020. Atmospheric Mercury in the Southern Hemisphere - Part 2: Source apportionment Analysis at Cape Point station, South Africa. *Atmospheric Chemistry and Physics*, 20(17), pp. 10427-10439. <https://doi.org/10.5194/acp-20-10427-2020>

15. **BOTAI, C.M., BOTAI, J.O., ADEOLA, A.M., DE WIT, J.P., NCONGWANE, K.P. AND ZWANE, N.N.** 2020. Drought Risk Analysis in the Eastern Cape Province of South Africa: The Copula Lens. *Water*, 12(7), 1938, 20 pp. <https://dx.doi.org/10.3390/w12071938>
16. COLLAUD COEN, M., ANDREWS, E., ALASTUEY, A., ARSOV, P. T., BACKMAN, J., BREM, B.T., BUKOWIECKI, N., COURET, C., ELEFTHERIADIS, K., FLENTJE, H., FIEBIG, M., GYSEL, BEER, M., HAND, J.L., HOFFER, A., HOODA, R., HEUGLIN, C., **JOUBERT, W.**, KEYWOOD, M., KIM, J.E., KIM, S-W., **LABUSCHAGNE, C.**, LIN, N-H., LIN, Y., LUND MYHRE, C., LUOMA, K., LYAMANI, H., MARINONI, A., MAYOL-BRACERO, O.L., MIHALOPOULOS, N., PANDOLFI, M., PRATS, N., PRENNI, A.J., PUTAUD, J-P., RIES, L., REISEN, F., SELLEGRI, K., SHARMA, S., SHERIDAN, P., SHERMAN, J.P., SUN, J., TITOS, G., TORRES, E., TUCH, T., WELLER, R., WIEDENSOHLER, A., ZIEGER, P. AND LAJ, P. 2020. Multidecadal Trend Analysis of In Situ Aerosol Radiative Properties Around the World. *Atmospheric Chemistry Physics*, 20(14), pp. 8867–8908. <https://doi.org/10.5194/acp-20-8867-2020>
17. DUNN, R.J.H., ALEXANDER, L.V., DONAT, M.G., ZHANG, X., BADOR, M., HEROLD, N., LIPPMAN, T., ALLAN, R., AGUILAR, E., BARRY, A.A., BRUNET, M., CAESAR, J., CHAGNAUD, G., CHENG, V., CINCO, T., DURRE, I., DE GUZMAN, R., HTAY, T.M., IBADULLAH, W.M.W., IBRAHIM, M.K.I.B., KHOSHKAM, M., **KRUGER, A.**, KUBOTA, H., LENG, T.W., LIM, G., LI-SHA, L., MARENO, J., **MBATHA, S.**, MCGREE, S., MENNE, M., SKANSI, M. de los M., **NGWENYA, S.**, NKRUMAH, F., OONARIYA, C., PABON-CAICEDO, J.D., PANTHOU, G., PHAM, C., RAHIMZADEH, F., RAMOS, A., SALGADO, E., SALINGER, J., SANE, Y., SOPAHELWAKAN, A., SRIVASTAVA, A., SUN, Y., TIMBAI, B., TRACHOW, N., TREWIN, B., VAN DER SCHRIER, G., VAZQUEZ-AGUIRRE, J., VASQUEZ, R., VILLARROEL, C., VINCENT, L., VISCHEL, T., VOSE, R. AND YUSSOF, M.N.A.B.H. 2020. Development of an Updated Global Land In-Situ-Based Dataset of Temperature and Precipitation Extremes: HadEX3. *Journal of Geophysical Research: Atmospheres*, 125(16), e2019JD032263, 28 pp. <https://doi.org/10.1029/2019JD032263>
18. **KRUGER, A.C. AND MCBRIDE, C.** 2020. South Africa [in “State of the Climate in 2019”]. Bulletin of the American *Meteorological Society*, 101(8), Aug. S357–S358. [https://dx.doi.org/10.1175/2020BAMSStateoftheClimate\\_Chapter7.1](https://dx.doi.org/10.1175/2020BAMSStateoftheClimate_Chapter7.1)
19. LAJ, P., BIGI, A., ROSE, C., ANDREWS, E., LUND MYHRE, C., COLLAUD COEN, M., LIN, Y., WIEDENSOHLER, A., I SCHULZ, M., OGREN, J.A., FIEBIG, M., GLIß, J., MORTIER, A., PANDOLFI, M., PETÄJA, KIM, T. S-W., AAS, W., PUTAUD, J-P., MAYOL-BRACERO, O., KEYWOOD, M., LABRADOR, L., Alto, P., AHLBERG, E., ARBOLEDAS, L.A., ALASTUEY, A., ANDRADE, M., ARTIÑANO, B., AUSMEEL, S., ARSOV, T., ASMI, E., BACKMAN, J., BALTENSPERGER, U., BASTIAN, S., BATH, O., BEUKES, J.P., BREM, B.T., BUKOWIECKI, N., CONIL, S., COURET, C., DAY, D., DAVANTOLIS, W., DEGORSKA, A., ELEFTHERIADAIS, K., FETFAZIS, P., FAVEZ, O., FLENTJE, H., GINI, M.I., GREGORIC, A., GYSEL-BEER, M., GANNET HALLER, A., HAND, J., HOFER, A., HUEGLIN, C., HOODA, R.K., HYYÄRINEN, KALAPOV, I., KALIVITIS, N., KASPER-GIEBL, A., KIM, J.E., KOUVARAKIS, G., KRANJC, I., KREJCI, R., KULMALA, M., **LABUSCHAGNE, C.**, LEE, H-J., LIHAVAINEN, H., LIN, N-H., LÖSCHAU, G., LUOMA, K., MARINONI, A., MARTINS DOS SANTOS, S., MEINHARDT, F., MERKEL, M., METZGER, J-M., MIHALOPOULOS, N., NGUYEN, N.A., ONRACEK, J., PÉREZ, N., PERRONE, M.R., PETIT, J-E., PICARD, D., PICHON, J-M., PONT, V., PRATS, N., PRENNI, A., REISEN, F., ROMANO, S., ELLEGRI, K., SHARMA, S., SCHAUER, G.,

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20. **MBOKODO, I., BOPAPE, M-J.,** CHIKOORE, H., ENGELBRECHT, F. AND NETHENGWE, N. 2020. Heatwaves in the Future Warmer Climate of South Africa. *Atmosphere*, **11**(7), 712, 18 pp. <http://dx.doi.org/10.3390/atmos11070712>
21. NDARANA, T., RAMMOPO, T.S., CHIKOORE, H., **BARNES, M.A., AND BOPAPE, M-J.,** 2020. A Quasi-Geostrophic Diagnosis of the Zonal Flow Associated with Cut Off Lows Over South Africa and Surrounding Oceans. *Climate Dynamics*, 55, pp. 2631–2644. <https://doi.org/10.1007/s00382-020-05401-4>
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### 3.2.1.2 Solution Development

SAWS is an operational organisation with the objective to provide weather and climate services that aim to minimise the weather risks to the people and vulnerable communities of South Africa. In order to provide these services, SAWS operates and maintains extensive observation networks that generate data which is transformed into information and decision-support systems that allow decision-makers to make informed decisions. The research department develops weather and climate products that are necessary to provide the forecasters and operators in weather sensitive sectors of the economy with relevant tools to conduct their activities and planning.

To this effect most of the research conducted at SAWS is aimed at developing solutions that can be applied operationally within SAWS as well as within the climate sensitive economic sectors of our country. The priority economic sectors that are serviced by SAWS include, but are not limited to the following: Agriculture, Water, Energy, Health, Disaster Risk Reduction (DRR), Aviation and Marine. Stakeholder needs were collated through national dialogues that were part of the DFFE National Climate Change Information System (NCCIS) training workshops, Socio-Economic Benefit (SEB) studies for the agriculture and water sectors as well as other sector-specific analyses. The needs identified represent a range of current and potential future users. The following general procedures are followed during the product development phase within SAWS:

- Conducting of a needs analysis and/or requests from users (as stated above).
- Filtering of priority products as part of the SAWS Integrated Service Strategy (ISS) and the establishment of product prototypes for the selected products.
- Further product development involving consultation with the end-user and integrating user feedback.
- Product refinement and conclusion with acceptance by the user.

During the 2020/21 financial year the following products and solutions were developed:

#### Multi-Sensor Storm Tracking product

A weather radar remains the most important tool for monitoring and nowcasting thunderstorms. Tracking algorithms are often applied to radar data which not only provides the current location polygons of a storm, but also forecasted locations of storms in the next hour. This type of information can also be derived from other remote-sensing sensors such as lightning detection networks and satellite systems, even though the accuracy or temporal resolution is generally lower compared to radar. The advantage of satellite storm tracking is the coverage over the entire SADC domain, while satellite and lightning storm tracks are also available over parts of South Africa not covered by radar. Additionally, it is also a reality that due to their complexity to operate, radar systems can go offline for a certain period, which can be detrimental



during thunderstorm activity. With the above in mind, a prototype multi-sensor storm tracking product was developed that combines the radar, lightning and satellite storm tracks into a single product, with the aim of providing a uniform tracking product for the entire SADC domain and with high availability statistics. Even when a radar goes offline, this product will still provide users with supplementary information from the satellite and/ or lightning sensors in the specific area, enabling users to still monitor the thunderstorms even if the accuracy is slightly lower.

### **Convective Scale Ensemble Prediction System**

Most Numerical Weather Prediction (NWP) systems provide a good representation of the predicted weather and can provide basic automated weather forecasts directly from the model output (although in general it is recommended that some post-processing should be used to calibrate automated forecasts). Any NWP process is dependent on the observations assimilated by the generation of the analysis. Due to this sensitivity to the initial conditions, any error can result in a large error in the forecast. Therefore, even with the best observations, a perfect analysis is not possible and consequently neither is a perfect forecast. For this reason, ensemble systems are required. The uncertainty in a weather forecast can vary widely from day-to-day according to the synoptic situation and the ensemble approach provides an estimate of this day-to-day uncertainty. The ensemble is designed to sample the spread/ distribution of the forecast and results in a probability forecast that will assess the probability that certain outcomes will occur. Convective instability adds a new scale of forecast uncertainty, which a convective permitting ensemble system also aims to address.

The SAWS Unified Model Convection Permitting Ensemble Prediction System (CSEPS) has a horizontal resolution of 4.5 km, covers the whole of South Africa and consists of 18 members. The system runs with initial and boundary conditions from the UK Met Office's Global Ensemble Prediction System (MOGREPS-G). The CSEPS runs twice daily at 12Z and 18Z, each with a lead time of 60-hours. This product is important for forecasters to understand the uncertainty associated with the model simulations they use.

### **COVID-19 Risk Product**

In order to support both the national and provincial authorities in terms of COVID-19 containment efforts, response planning and decision-making processes, the SAWS atmospheric composition group developed the Integrated Relative Health Risk (IRHR) product during April 2020. The IRHR is a health product which indicates the population integrated risk level due to long-term exposure to various chemical and toxic variant particulates. It is computed at census sub-places scale, through deploying a stochastic analysis which combines chemically mapped particulates, exposure-response function, toxicity coefficients, age and gender dependent risk factor distributions for different diseases. The product is known as integrated risk because the analysis deployed considers age and gender dependent risk factors of six different diseases, which are: respiratory infections, chronic obstructive pulmonary disease, bronchitis and lung cancer, ischemic heart disease, diabetes and stroke. Further, deploying spatial mapped statistical analysis which considers the actual COVID-19 cases reported in South Africa as a relative standard framework, the product was validated. The validation of the product illustrated that the COVID-19 cases reported so far in South Africa mimicked the IRHR distribution. Thus, the IRHR was utilized as a long-term risk indicator of COVID-19. Accordingly, the IRHR was used as a tool for the following three main applications: (1) For risk monitoring and supporting regulatory decisions at national, provincial, metropolitan municipalities, cities and census sub-places scales; (2) For response planning and supporting high risk areas targeted for mass screening, and (3) For supporting decisions related to the evaluation and efficient use of resources. Particularly, an integrative approach which associates the IRHR distribution with that of poverty was established. This was also significant for decision-makers, to ensure the availability and affordability of protective resources in advance for areas where people are living under poverty conditions.

## Discomfort Index

Heat stress from direct heat exposure mostly triggered by rising temperature in combination with other meteorological parameters is expected to increase in frequency and duration in light of climate change. One key measure to mitigate the effects of heat stress is through the development and issuing of heat stress warnings to the public. The Discomfort Index (DI) 72-hour forecast maps serve as a heat stress warning tool that shows what percentage of the population will be affected by heat stress, particularly during hot seasons. The DI forecast will form part of the wider heat health action plan for the country and will serve as an alert warning tool aimed at informing decision-makers and the public of dangerous heat situations.

## Climate projection of mid-summer dry spells

According to the Intergovernmental Panel on Climate Change (IPCC), the degree of expected climate change in Africa is relatively large in comparison with other parts of the world. The two most extensive land-based end-of-century projected decreases in rainfall on the planet will occur over Africa, specifically North Africa and Southern Africa.

The purpose of the Climate Atlas work will be to illustrate various plausible climate change scenarios for mid-summer dry spells, using Dynamically Downscaled Coordinated Regional Climate Downscaling Experiment (CORDEX) projections. Outputs from these regional climate models were specifically used to generate the atlas. Nine ensemble members, meaning that the regional climate models were forced by nine Global Climate Models (GCMs) across its lateral boundaries, were considered. The dry spell signals from historical simulations as well as projections of possible future anomalies in summer and mid-summer dry spell episodes, under the conditions of RCP4.5 and RCP8.5 greenhouse gas emission pathways, are to be generated and include:

- Consecutive dry days for the summer rainfall months (October to March)
- Consecutive dry days for the mid-summer rainfall months (December to January)
- Total 5-day episode (pentad) rainfall for December (pentads 68 – 73 in the year) and January (pentads 1- 6) for 2036-2065 and 2066-2095 under the mentioned emission pathways

## Drought Forecasting product

Drought prediction is an essential tool that can support drought early warning systems for drought risk and management, particularly in drought-prone areas. A drought prediction system is currently being developed for the water sector and associated stakeholders. The product is based on CORDEX model projections, starting from 2006 – 2035 as a baseline and thereafter focusing on the near (2036 – 2065) to distant (2070 – 2099) future. The product consists of a suite of drought projection information, such as the general maps of drought-projection at national level, the trends, drought characteristics, the projected drought duration, frequency, intensity and severity as well as the projected frequency of dry years, at national and provincial level.

## Climate Service new and enhanced products

In addition to the above solutions, the Climate Service department developed climate-specific solutions for climate sensitive sectors in general, with the observed and measured historical climate data as main inputs. With the SAWS AWS observation network reaching maturity in terms of high-resolution data sets, a better portrayal of the general climate can be provided through analysis of this data. Initially a needs analyses of general climate publications was conducted by scrutinising publications of this nature on a

global scale, with subsequent content development and authoring. The first publication in the Regional Weather and Climate Series, focusing on the Gauteng province, was published online on the SAWS website. The publication is also available through the National Framework for Climate Services (NFCS) web portal, after submission to the DFFE as part of reporting under the DFFE NFCS targets.

Due to the severe drought conditions experienced in various parts of the country in recent times, a need to enhance the monthly drought information published on the SAWS website was identified. The development of the improved monthly drought bulletin was completed during the year.

Information in addition to the Standardised Precipitation Index analysis at various time-scales, now includes long-term drought analyses of specific drought-stricken regions, enabling the comparison with current drought in a historical context. Hydrology information (dam levels) and vegetation conditions are also included.

| Programme/Sub-programme: Research and Innovation |                                      |                               |                             |                                                             |                        |
|--------------------------------------------------|--------------------------------------|-------------------------------|-----------------------------|-------------------------------------------------------------|------------------------|
| Audited Actual Performance 2018/2019             | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | *Actual Achievement 2020/21 | Deviation from planned target to Actual Achievement 2020/21 | Reasons for deviations |
| 23 383 920                                       | 28 351 032                           | 24 367 034                    | 24 315 403                  | 51 631                                                      | In line with budget    |

**Table 7:** Linking Performance with budgets: Programme 2

### Strategy to overcome areas of under-performance

Despite the lockdown procedures, SAWS performed exceptionally well in achieving its scientific output target in the forms of publications. The initial target was reduced from 47 publications to 35 but the actual achievement for 2020/21 was 49, above the original target.



### 3.3 Programme 3: Infrastructure and Information Systems

#### 3.3.1 Purpose of the programme: Upgrade, Expand and Optimise Infrastructure

**Optimal core technological capability**

**Sub-programme: Optimal management of infrastructure**

**Institutional outcomes that each programme contributes towards according to the Annual Performance Plan:**

- Percentage of surface observation infrastructure availability (AWS and ARS)
- Percentage of GAW infrastructure availability
- Percentage of remote sensing observation infrastructure availability (Radar)
- Percentage of remote sensing observation infrastructure availability (LDN)
- Percentage of air quality observation infrastructure availability (SAAQIS)
- Percentage of priority areas air quality stations available on SAAQIS meeting minimum data requirements
- Percentage of climate data available on the National Climate Database meeting minimum data requirements (AWS and ARS)

#### 3.3.2 Outcomes, Outputs, Output Indicators, Targets and Actual Achievement

##### 3.3.2.1 Percentage of surface observation infrastructure (AWS and ARS)

**Upper-Air Sounding network**

SAWS operates a network of 10 upper-air sounding sites inclusive of islands. Two hydrogen generators (in Durban and Gough Island) are non-operational due to various reasons. Overall annual performance, with special emphasis on the hydrogen generator was 60.50% against the annual target of 85% (Table 8).

| Period                | Availability (average) | APP Target | Comments                   |
|-----------------------|------------------------|------------|----------------------------|
| Quarter 1             | 55.79%                 | 85%        | Target not achieved        |
| Quarter 2             | 61.72%                 | 85%        | Target not achieved        |
| Quarter 3             | 64.71%                 | 85%        | Target not achieved        |
| Quarter 4             | 59.77%                 | 85%        | Target not achieved        |
| <b>Annual Average</b> | <b>60.50%</b>          | <b>85%</b> | <b>Target not achieved</b> |

**Table 8:** Availability of hydrogen generators across the country 2020/21

#### **Automatic Weather Station (AWS) and Automatic Rainfall Station (ARS) Performance**

The SAWS surface observation technology consists of a network of Automatic Weather Stations and Automatic Rainfall Stations. This section presents the Availability Performance Indices for quarter 1, 2, 3 and quarter 4 against the APP benchmarks for the above-mentioned systems:

| Period                | Availability (average) | APP Target (target) | Comments               |
|-----------------------|------------------------|---------------------|------------------------|
| Quarter 1             | 87.71%                 | 85%                 | Target achieved        |
| Quarter 2             | 90.20%                 | 85%                 | Target achieved        |
| Quarter 3             | 88.93%                 | 85%                 | Target achieved        |
| Quarter 4             | 84.5%                  | 85%                 | Target not achieved    |
| <b>Annual Average</b> | <b>87.84%</b>          | <b>85%</b>          | <b>Target achieved</b> |

**Table 9:** Automatic Weather Stations Availability

| Period                | Availability (average) | APP Target (target) | Comments                   |
|-----------------------|------------------------|---------------------|----------------------------|
| April                 | 80%                    | 85%                 | Target not achieved        |
| May                   | 83.40%                 | 85%                 | Target not achieved        |
| June                  | 84.60%                 | 85%                 | Target not achieved        |
| Quarter 1             | 82.67%                 | 85%                 | Target not achieved        |
| Quarter 2             | 85.57%                 | 85%                 | Target achieved            |
| Quarter 3             | 83.17%                 | 85%                 | Target not achieved        |
| Quarter 4             | 80.67%                 | 85%                 | Target not achieved        |
| <b>Annual Average</b> | <b>83.02%</b>          | <b>85%</b>          | <b>Target not achieved</b> |

**Table 10:** Automatic Rain Stations Availability

| Surface Observation Network Network | Main Challenges                                                                                                                                                                                                                                                              |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AWS and ARS                         | <ul style="list-style-type: none"> <li>The challenges with ARS network are shortage of spares and network communication failure.</li> <li>Most of the AWS sites are in locked areas due to COVID-19 that resulted in limited access for attending to these fault.</li> </ul> |

**Table 11:** Surface Observation Network Failure Analysis

## 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 the 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 constituents 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 radiation. Balloon ozone sondes are conducted from Irene. Overall, these stations have been operating for more than 20 to 30 years, and the long-term datasets of various atmospheric parameters have been matured into valuable data sets of the atmospheric environment.

During the reporting period, the SAWS GAW programme consisting of the Cape Point GAW station and regional GAW stations, was adversely impacted by the national lockdown due to COVID-19. This was especially true in the first quarter of the reporting period. Lockdown has caused the isolation of the Cape Point laboratory and some of the other regional stations and they were not as accessible as before, thus data recovery and availability was negatively impacted. Unfortunately, our capital expenditure for the first few months was suspended as a precautionary measure due to the unknown impact of the pandemic. No capital was spent on infrastructure needs that were already identified.

The data recovery at GAW, both at Irene and Cape Point, saw severe problems with the mercury instruments because of the inability to procure gas from suppliers, which were related to lockdown measures. Likewise, the ability to measure Nitrous Oxide was hampered by an inability to procure gas. This led to poor data recovery for the period under review.

As a result of the above, the initial 2020/21 target of 90% data recovery could not be realised. The targets were officially adjusted during the initial lockdown period to 85%. Table 12 below summarises the performance in terms of the data availability for the GAW programme during 2020/21.

| Overall Percentage of GAW Data Recovery 2020/21 |               |
|-------------------------------------------------|---------------|
| Cape Point GAW                                  | 77.4 %        |
| GAW Regional                                    | 88,9 %        |
| <b>Overall GAW Total (%)</b>                    | <b>83.2 %</b> |

**Table 12:** The Global Atmosphere Watch (GAW) Data Availability for 2020/21

### South African Mercury Network (SAMNET)

SAWS has embarked on an ambitious mercury monitoring network in South Africa. At present, government decision-makers and scientists in developing regions rely on limited information to understand and quantify the critical linkages between mercury emissions, environmental response and potential human health concerns. To this end, the SAMNET project, supported by the DSI Group of Earth Observations flagship programme, aims to develop a coordinated atmospheric mercury observation network in South Africa to provide temporal and spatial distributions of mercury concentrations in ambient air. This will enable a knowledge platform to assess the fate of mercury and improve the understanding of mercury in the environment.

The SAMNET project, led by SAWS, consists of several academic and research partners and allows engagement with the industrial partners as well as provincial and national government. The first phase of the project focussed on expanding the observational network, which was initially limited to the Cape Point GAW laboratory, to additional monitoring stations around the country. This included identification of suitable monitoring stations to cover a range of environments, the acquisition of additional instrumentation and ensuring standardised quality assurance and internal consistency of measurements within the network. In addition, a human capital development component is included to grow the next generation of atmospheric chemistry scientists in the country. The second phase of the project will include validation of local and regional numerical models and will contribute to the global effort in understanding mercury in the environment.

Specific objectives of the project include:

- Establish a national observation system for mercury able to provide ambient concentrations and deposition fluxes of mercury species in South Africa, by using observations from ground-based stations.
- Validate local and regional scale atmospheric mercury modelling systems able to predict temporal variations and spatial distributions of mercury entering into and re-emitted from terrestrial and aquatic receptors.

- Develop interoperable tools to allow the sharing of observational and model output data produced by SAMNET.
- Support the achievements of goals set by the Group on Earth Observations (GEO) flagship programme “the Global Observation System for Mercury (GOS4M)” to support the United Nations (UN) bodies and member states on the implementation of the Minamata Convention on Mercury.

### 3.3.2.2 Radar Infrastructure

The overall annual radar availability for 2020/21 was 72.94% against the Annual Performance Plan (APP) target of 85%.

Table 13 below presents the summarised Radar Systems Availability Performance indices for the reporting period and Table 14 contains an analysis of radar system failures:

| Period                | Availability (average) | APP Target (target) | Comments                   |
|-----------------------|------------------------|---------------------|----------------------------|
| Quarter 1             | 84.51%                 | 85%                 | Target not achieved        |
| Quarter 2             | 74.42%                 | 85%                 | Target not achieved        |
| Quarter 3             | 64.84%                 | 85%                 | Target not achieved        |
| Quarter 4             | 67.98%                 | 85%                 | Target not achieved        |
| <b>Annual Average</b> | <b>72.94%</b>          | <b>85%</b>          | <b>Target not achieved</b> |

**Table 13:** Radar Systems Performance

| Radar Network                             | Main Challenges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Radar and peripheral equipment challenges | <ul style="list-style-type: none"> <li>• The main contributing factor was load shedding and the availability of standby or backup power systems. The availability of diesel or the ability to replenish the fuel tanks is still a challenge. UPS system failures and challenges with the battery exhaustion.</li> <li>• Quality of power supply – Poor Eskom supply affects the stability of the radar system and impacts the performance of peripheral auxiliary equipment.</li> <li>• Ability to resolve faults in shorter turn-around time due to availability of spares.</li> <li>• The availability of secondary or supporting infrastructure such as UPS power and airconditioning impacted adversely on the performance of equipment.</li> <li>• Another challenge was the inability of technical staff to attend to maintenance of the equipment due to the national COVID-19 lockdown.</li> </ul> |

**Table 14:** Radar Systems Failure Analysis

### 3.3.2.3 Lightning Detection Network (LDN) Infrastructure

The annual average performance of the network for the period (1 April 2020 – 31 March 2021) stands at 94.44% data availability against the Annual Performance Plan (APP) target of 90%.

Table 15 below represents the LDN performance for the Financial Year 2020/21:

| Period                | Availability (average) | APP Target (target) | Comments               |
|-----------------------|------------------------|---------------------|------------------------|
| Quarter 1             | 92.59%                 | 90%                 | Target achieved        |
| Quarter 2             | 92.69%                 | 90%                 | Target achieved        |
| Quarter 3             | 96.89%                 | 90%                 | Target achieved        |
| Quarter 4             | 95.60%                 | 90%                 | Target achieved        |
| <b>Annual Average</b> | <b>94.44%</b>          | <b>90%</b>          | <b>Target achieved</b> |

**Table 15:** Lightning Detection Systems Performance

Table 16 presents the challenges with the Lightning Detection Network during the report period.

| LDN Sensors                                 | Main Challenges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall LDN Sensor failures and data losses | <ul style="list-style-type: none"> <li>Power failures contributed 52% of the system failures and data losses.</li> <li>Communication Network failure contributed 40% of the system failures.</li> <li>Data losses associated with Radio Links and WIFI Networks contributed 33%.</li> <li>The Telkom line and Computer LAN Network contributed 6% of the losses and VSAT contributed 1%.</li> <li>Robust standby power systems are required for this technology and will contribute positively to the performance of the systems.</li> </ul> |

**Table 16:** Lightning Detection Systems Failure Analysis

### 3.3.2.4 Air Quality Data

#### Priority Areas Air Quality Stations

The monitoring of ambient air quality in the Vaal, Highveld and Waterberg-Bojanala priority areas remains a national imperative, as the adverse effects of atmospheric pollution are felt across many segments of the population and the economy. SAWS continues to manage the South African Air Quality Information System (SAAQIS) and the national priority area networks in collaboration with the Department of Forestry Fisheries and the Environment (DFFE). For the period under review 14 of the 15 priority ambient air quality monitoring stations have been operational. The revised performance target of 75% priority areas air quality stations available on SAAQIS meeting minimum data requirements was not met. The Sharpeville station was vandalised and remained non-operational for most of the reporting period. In addition, all networks experienced low data recovery due to, amongst others, faulty instruments and intermittent power failures. The national lockdown due to COVID-19 has also limited and, in some instances, prevented adherence to routine and reactive maintenance schedules.

## Climate data available on National Climate Database

The objectives of SAWS as articulated in the South African Weather Service Act, include custodianship of a reliable national climate record. SAWS has ensured that the percentage of data on the national climate database, meeting minimum date requirements, was 94.2% for the period under review. The target was exceeded due to staff in Climate Services and the regional offices being allowed to return to the office on a rotational basis when the lockdown restrictions eased from level 5. They are now able to do the necessary quality control of the data coming into the database as well as re-running quality control checks.

### 3.3.2.5 Information and Communication Technology System availability

The Information and Communication Technology (ICT) department is guided by the SAWS Integrated Service Strategy (ISS) and ICT strategy execution plan to support, drive and enable the strategic objectives of SAWS across its value chain.

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 and capability 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 implementation of the Content Management System to enable businesses to upload content and disseminate information on the SAWS Web Portal.
- The implementation of the Connect (SharePoint) Intranet to enable easy communication and collaboration of employees.
- The implementation of the COVID-19 screening system and tracking dashboard.
- The implementation of the Common Alert Protocol (CAP) Management System to Disseminate South African Weather Alerts to WMO.
- The implementation of SHEQ phase 2 automation of Policies and ISO Standards.
- Upgrading of Regional network (WAN)/MPLS service.
- The implementation of the Active Directory (Single Sign On) at SAWS for Enterprise Resource Planning.
- The implementation of reports for daily rainfall and five-minute data, including hourly data for ClimAudit Phase 1.

The following initiatives were also started and will be implemented in the following financial year (2021/22):

- The implementation of the HCM Recruitment System.
- The implementation of the HCM Performance Management System.
- The implementation of the New ARS Portal.
- The implementation of the New Radiation Portal & Monitoring System.
- Replacement of the firewall .
- Replacement of the High-Performance Computer (HPC) and development of the business case.
- The implementation of a data management system for Climate and Research.
- Upgrading of Sage premium for HCM modules.
- Multi-hazard Early Warning System.

The ICT system availability was reported as part of the SAWS Annual Performance Plan as indicated in Table 17 overleaf:

| STRATEGIC OBJECTIVE 3.1 MANAGEMENT OF INFRASTRUCTURE -ENSURE OPTIMAL INFRASTRUCTURE AND SYSTEMS UPTIME OF OBSERVATIONS, INFORMATION DISSEMINATION AND EXCHANGE THAT ENABLES SAWS TO ACHIEVE ITS MANDATE |           |           |           |           |                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|---------------------------------------------------------------------------------------------------------------------------------|
| TARGET                                                                                                                                                                                                  | Q1 ACTUAL | Q2 ACTUAL | Q3 ACTUAL | Q4 ACTUAL | COMMENT                                                                                                                         |
| 96% ICT System Availability                                                                                                                                                                             | 98.85%    | 98.88%    | 98.94%    | 98.98%    | The ICT system availability is a combined index, considering the Wide Area Network, Server Administration and HPC availability. |

Table 17: ICT Systems Availability

| Programme / Sub-programme: Infrastructure and Information systems |                                      |                               |                             |                                                             |                                                                                              |
|-------------------------------------------------------------------|--------------------------------------|-------------------------------|-----------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Audited Actual Performance 2018/2019                              | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | *Actual Achievement 2020/21 | Deviation from planned target to Actual Achievement 2020/21 | Reasons for deviations                                                                       |
| 81 122 938                                                        | 84 152 140                           | 76 776 550                    | 77 808 879                  | -1 032 329                                                  | Due to exchange rate volatility for import of spare parts and foreign software license fees. |

Table 18: Linking Performance with budgets: Programme 3

### Strategy to overcome areas of under-performance

The data availability and recovery of the GAW monitoring effort of SAWS, which constitutes the station at Cape Point as well as the Regional GAW, conducting monitoring activities at Irene and De Aar, underperformed during the 2020/21 period. The Cape Point station is one in a network of 33 stations globally and fulfils an important role in securing South Africa's contribution to this global effort.

The announcement of the COVID-19 Level 5 lockdown rules, especially during the months of April to September 2020, impacted negatively on the capturing and recovery of the data collected by the instrumentation. Capturing the data required physical visits to the site which were not allowed during the lockdown. A contributing aspect in the under-recovery was the age of the instruments that need to be replaced by modern equipment.

The Research department, in response to the lockdown, revisited and revised its performance targets on the Annual Performance Plan and lowered them from 90% availability to 85%. Despite this intervention, the recovery and the interventions after the lockdown rules were eased during the latter part of the 2020/21 financial year, resulted in marked improvements in the GAW data recovery and an actual target of 83% was achieved. However, the performance was still affected by the inability to procure resources necessary to improve individual instrument performance. The Research department has since initiated a weekly update initiative with the SCM-department to address supply chain acquisitions.

## Reporting on the Institutional Response to the COVID-19 Pandemic

The Research department responded to the COVID-19 lockdown by performing a revision of its APP targets. However, some of the interventions were successful but on the issue of data retrieval from observation infrastructure such as the GAW network, the impacts were severe.

| Programme/<br>Sub<br>Programme                  | Output<br>Indicator                                     | Intervention                  | Geographic<br>location<br>(Province/<br>District/local<br>municipality)<br>(Where<br>Possible) | No. of<br>beneficiaries<br>(Where<br>Possible) | Disaggre-<br>gation of<br>Beneficiar-<br>ies (Where<br>Possible) | Total budget<br>allocation<br>per interven-<br>tion (R'000) | Budget<br>spent per<br>intervention                                        | Contribution<br>to the Out-<br>puts in the<br>APP (where<br>applicable)       | Immediate<br>outcomes                                |
|-------------------------------------------------|---------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------|
| Infrastructure<br>and<br>Information<br>Systems | Percentage<br>of GAW<br>infra-structure<br>availability | Revision of<br>Annual targets | Cape Point<br>-Western Cape                                                                    | NA                                             | NA                                                               | NA                                                          | <b>Internal<br/>SAWS budget<br/>(No rescue<br/>packages<br/>available)</b> | Activities<br>contributed<br>towards<br>SAWS<br>international<br>obligations. | Recovery<br>towards the<br>latter part of<br>the FY> |

**Table 19:** Progress on Institutional Response to the COVID-19 Pandemic



### 3.4 Programme 4: Administration (Including Corporate and Regulatory Services)

**3.4.1. Purpose of the programme:** Provide leadership, strategic and centralised administration, executive support, corporate services and facilitate effective cooperative governance, international relations and environmental education and awareness.

#### Sub-programmes

- Human Capital Management
- Communication, Integrated Marketing and Stakeholder & International Relations
- Regulatory Services

#### Institutional outcomes that each programme contributes towards according to the Annual Performance Plan

- Percentage of Local Expenditure on affirmative procurement
- Level of B-BBEE
- Growth in commercial revenue
- External audit opinion rating
- Percentage of attrition rate
- Percentage of workplace skills plan (WSP) targets met
- Brand positioning

#### 3.4.2. Outcomes, Outputs, Output Indicators, Targets and Actual Achievement

##### 3.4.2.1. Percentage of Local Expenditure on affirmative procurement

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, by achieving 72%.

##### 3.4.2.2. Level of BBBEE

A task team to prioritise SAWS' B-BBEE status was established to place more effort on elements where minimum thresholds to attain a level 7 B-BBEE status were not met. By the end of the financial year the minimum requirements for Skills Development, Supplier Development Contributions and Enterprise Development were not met.

##### 3.4.2.3. Growth in commercial revenue

An annual target of R25 022 262 non-regulated commercial revenue was achieved. This compares favourably to an amount of R20.3 million that was set as the target.

##### 3.4.2.4. External audit opinion rating

An unqualified audit opinion was achieved.

##### 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 11%, which was above 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 not met. The organisation achieved a cumulative target of 60% over the reporting period.

### 3.4.2.7. Brand positioning

#### Stakeholder engagement and development

The revision of the Annual Performance Plan which was approved by the Minister and tabled in Parliament, saw a significant change in the targets that were set earlier by the organisation. The implementation of plans to support the District Development Model was severely affected by the national lockdown imposed on the country because of the COVID-19 pandemic. Physical interactions with communities to engage them in educational and awareness-raising campaigns did not materialise as initially planned. In response to the restrictions on public gatherings, SAWS utilised social media platforms as means of reaching out to communities. Severe Weather Alerts in four languages (Sesotho, IsiZulu, Afrikaans and English) were posted on Facebook and YouTube, while a winter weather systems video (in English) was also produced and posted to social media. Links to the videos are as follows:

Winter weather systems by Kumsa Masizana

[https://www.youtube.com/watch?v=C12YGCH\\_4ul](https://www.youtube.com/watch?v=C12YGCH_4ul)

Severe weather alerts in English by Mbavhi Maliage

<https://www.youtube.com/watch?v=7DThwoHk1t4>

Severe weather alerts in IsiZulu by Mkhushulwa Msimanga

<https://www.youtube.com/watch?v=z5bVedH4oWc>

Severe weather alerts in Sesotho by Puseletso Mofokeng

<https://www.youtube.com/watch?v=LAQWkbmMeT4>

Severe weather alerts in Afrikaans by Jacqueline Modika

<https://www.youtube.com/watch?v=IL4-ZH-JqC8>

Other notable virtual engagements in the past year included:

- Dr Mary-Jane Bopape from the Research department engaging the ANCWL on climate change issues at Luthuli House on 3 September 2020.
- The Eastern Cape region conducted interviews on Algoa FM and SABC TV on weather conditions around the Port Elizabeth area.
- The Disaster Risk Reduction office continued issuance of the bi-weekly severe weather outlook to the National Disaster Management Centre.
- The KZN Forecasting office was invited to the launch of the eThekweni Metro Forecast Early Warning System (FEWS) on 6 November 2020.
- The Aviation Weather Centre (AWC) hosted two ACAMS meetings where the Aviation industry leaders were informed about the status of SAWS' Radar data availability and the challenges thereof.
- The National Disaster Management Centre (NDMC) hosted a conference on 26 and 27 November 2020, to commemorate the International Day for Disaster Risk Reduction (IDDR). The SAWS Acting CEO presented at this conference which was opened by the Minister of Cooperative Governance and Traditional Affairs (COGTA), Dr Nkosazana Dlamini Zuma.
- A key highlight for SAWS was the launch of the Regional WMO Integrated Global Observing System (WIGOS) Centre - Southern Africa by WMO on 9 February 2021, which endorsed South Africa to act as Regional WIGOS Centre for a specified pilot period, until WMO assesses South Africa's full capability to host the centre for the southern region.
- From a national perspective, the SAWS Acting Chief Executive Officer participated in the Intergovernmental Committee on Disaster Management on 24 January 2021. The Acting Chief

Executive Officer provided an executive briefing on tropical storm Eloise to various Ministers in a meeting that was chaired by the Minister of Cooperative Governance and Traditional Affairs (COGTA) Dr Nkosazana Dlamini-Zuma.

- The Disaster Management Institute of Southern Africa (DMISA) held its annual conference from 17-18 March 2021. The Executive of Weather and Climate Services, Dr Jonas Mphepya, presented on behalf of SAWS. The conference brought together disaster management practitioners and other stakeholders in the field to discuss disaster risk reduction and mitigating methods.

SAWS celebrated the annual World Meteorological Day on 23 March 2021. The keynote address was delivered by the Honourable Minister Barbara Creecy. Various stakeholders were invited to the event, including the head of the National Disaster Management Centre (NDMC), Dr Mmaphaka Tau and the media. The event highlighted the success of Impact-based forecasting during the period of Tropical Cyclone Eloise and the role of SAWS in the surrounding oceans.

As part of contributing to the District Development Model, SAWS initiated a Widget Project aimed at placing a weather widget displaying forecasted weather information of three areas in all municipalities. Over 15 district municipalities have since adopted the widget and it is displayed on their websites.

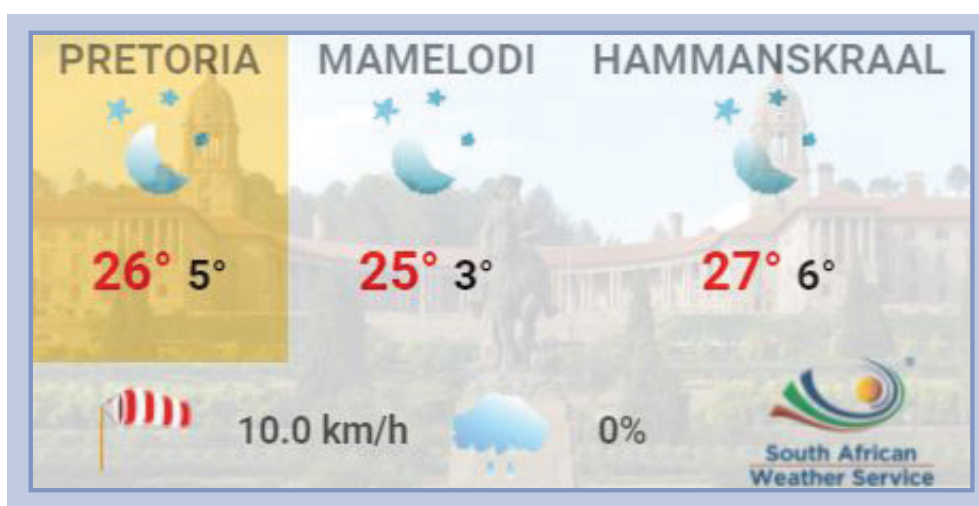


**Figure 27:** The SAWS Widget Project displays weather information of three areas in all municipalities

Despite the challenges brought about by strict lockdown regulations, public engagements did proceed with strict adherence to the COVID-19 rules. The following lists some areas of SAWS participation in the period under review:

- On 29 October 2020, the Bloemfontein weather office participated in the International Day for Disaster Reduction (IDDR) after receiving an invitation from the Thabo Mofutsanyana District Municipality.
- The KZN weather office together with the KZN Provincial Disaster Management conducted a Summer School Awareness campaign at Palmiet Primary School, Durban. The aim was to create awareness among learners about how to stay safe in hazardous weather.
- A Memorandum of Understanding (MoU) was signed with the Capricorn District Municipality on 30 October 2020 with the aim to explore opportunities for collaboration and cooperation for mutual benefit.
- The Polokwane weather office personnel exhibited at the Disaster Management Institute of Southern Africa (DMISA) Limpopo for the commemoration of the provincial IDDR which took place at Bolivia Lodge, Limpopo.

## Corporate Communications and Branding

As the COVID-19 pandemic continued to affect the Republic, SAWS like many institutions had to implement measures to reduce the number of persons working at its premises. Work-from-home meant that staff had to be constantly kept abreast of the happenings at SAWS and messages of encouragement were shared during these uncertain and trying times. The SAWS Communications and Marketing unit issued more than 100 communiques of which 29 were COVID-19 related CEO communiques to staff and 16 were *HOT OFF THE PRESS* communications. The publication of two WeatherSMART newsletters, containing scientific articles, continued and they were made available online on the SAWS website.

Throughout the imposed national lockdown SAWS continued to issue life-saving weather information to the citizens of the Republic. A total of 20 weather-related media releases were issued in the period under review. Vital information was shared with various stakeholders during tropical cyclone Eloise, which affected several provinces.

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. By the end of the financial year, we observed a growth in Facebook followers to 117 090, and 137 449 Twitter followers. Our Advertising Value Equivalent (AVE) for the year, which measures our free publicity against a scenario should SAWS have had to pay for this advertising, was R359 428 682.00 (Table 20).

| Month     | Media type | No of articles | AVE <sup>®</sup> |
|-----------|------------|----------------|------------------|
| April     | Online     | 165            | 5,487,396        |
|           | Print      | 6              | 185,643          |
|           | Broadcast  | 2343           | 121,504,649      |
| May       | Online     | 142            | 5,531,883        |
|           | Print      | 8              | 216,258          |
|           | Broadcast  | 369            | 17,495,176       |
| June      | Online     | 213            | 6,948,788        |
|           | Print      | 19             | 420,144          |
|           | Broadcast  | 245            | 6,724,728        |
| July      | Online     | 220            | 6,208,160        |
|           | Print      | 23             | 396,888          |
|           | Broadcast  | 298            | 9,128,413        |
| August    | Online     | 159            | 5,892,312        |
|           | Print      | 11             | 137,721          |
|           | Broadcast  | 491            | 6,547,355        |
| September | Online     | 167            | 6,129,026        |
|           | Print      | 37             | 4,527,791        |
|           | Broadcast  | 444            | 7,460,733        |
| October   | Online     | 238            | 8,126,309        |
|           | Print      | 55             | 8,956,596        |
|           | Broadcast  | 747            | 13,604,126       |

|                                                 |           |     |                     |
|-------------------------------------------------|-----------|-----|---------------------|
| November                                        | Online    | 297 | 10,403,668          |
|                                                 | Print     | 30  | 475,194             |
|                                                 | Broadcast | 655 | 11,823,494          |
| December                                        | Online    | 106 | 3,014,644           |
|                                                 | Print     | 12  | 534,227             |
|                                                 | Broadcast | 228 | 3,158,653           |
| January                                         | Online    | 438 | 14,564,559          |
|                                                 | Print     | 70  | 2,413,289           |
|                                                 | Broadcast | 832 | 19,616,489          |
| February                                        | Online    | 275 | 9,340,673           |
|                                                 | Print     | 67  | 7,076,728           |
|                                                 | Broadcast | 663 | 15,023,856          |
| March                                           | Online    | 151 | 5,173,105           |
|                                                 | Print     | 31  | 513,242             |
|                                                 | Broadcast | 407 | 14,862,777          |
| <b>Total Advertising Value Equivalent (AVE)</b> |           |     | <b>R359 428 682</b> |

**Table 20:** AVE spend for 2020/21 for mainstream media such as broadcast, print and online.

### International relations

On the WMO front, measures were implemented through the Department of International Relations and Cooperation (DIRCO) to ensure that the acting CEO represented the country in all WMO activities, which included the signing of official correspondence; the WMO election processes and representation of the country at WMO-related engagements. However, for the country to operate without a designated Permanent Representative of South Africa with WMO, the opportunity to be considered for election to the RA I Vice Presidency during the 18<sup>th</sup> RA I session of March 2021 was lost.

The outbreak of the COVID-19 pandemic prevented the hosting of international/ regional training sessions by the SAWS Regional Training Centre (RTC), but simultaneously brought an opportunity to use virtual meetings for all regional and international engagements, which will be utilised more extensively in future to save on traveling costs. Table 21 below depicts the various international relations engagements for the reporting period.

| INTERNATIONAL RELATIONS ENGAGEMENTS | DATE AND VENUE     | ACHIEVEMENTS                                                                                                                                                                                                       |
|-------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WMO MEETINGS                        |                    |                                                                                                                                                                                                                    |
| WMO RA I Management Group           | 10 to 12 June 2020 | The session provided a platform for African NMHSs to advocate for the plight of the continent and make recommendations on how to address these issues that hamstringing the service delivery of the African NMHSs. |

|                                                                                                          |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 72nd WMO Executive Council (EC) session                                                                  | 28 September 2020      | As South Africa is no longer an EC Member, the country was granted an observer status to the session; and the country and regional interests were advanced through channelling with Mozambique.                                                                                                                                                                                                                                                                                                                                                   |
| SAWS-WMO Directorate on Services Bilateral session                                                       | 9 September 2020       | SAWS met the WMO expectation on the work of marine for enhancing the SAWS marine service delivery and how to play a crucial role in the SADC region and the African continent regarding the marine space.                                                                                                                                                                                                                                                                                                                                         |
| WMO launch of the State of the Regional Climate in Africa                                                | 26 October 2020        | The launch aimed at encouraging WMO Member States in Africa to contribute on an annual basis towards the WMO programme on the State of World Climate for continued monitoring of the state of the climate at global level. The highlight of this session was that South Africa was one of the few countries in Africa that was mentioned in this session as contributors to this significant WMO programme. Additionally, this virtual launch was graced by the presence of Minister Barbara Creecy, who also made a statement during the launch. |
| WMO Infrastructure Commission (INFCOM) session                                                           | 9 to 13 November 2020  | This session provided guidance on the implementation of the WMO restructuring process endorsed by Congress in 2019.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| WMO DATA Conference                                                                                      | 16 to 19 November 2020 | Assisted SAWS in aligning itself with the WMO Resolutions on the sharing of meteorological data.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| WMO Regional Association (RA) I Training of International Advisors (INTADs) to Permanent Representatives | 7 to 8 December 2020   | The session was advisory to INTADs for their roles and responsibilities to their respective Permanent Representatives (PRs). Of note was that South Africa was one of the few African countries that presented its international relations roles and responsibilities to the session to benefit the rest of the African INTADs.                                                                                                                                                                                                                   |
| WMO launch of Regional WIGOS Centre- Southern Africa                                                     | 9 February 2021        | WMO launched South Africa to act as the Regional WIGOS Centre for the sub-region on a pilot-basis. South Africa would be endorsed and designated in the 2023 WMO Congress, provided that the conducted WMO assessments, inter-sessionally, are successful.                                                                                                                                                                                                                                                                                        |
| 1st session of the Commission for Weather, Climate, Water and Related Environmental Services             | 22 to 26 February 2021 | This session unpacked the recently approved WMO Reforms and its related structure. The session also allowed engagements on issues of Weather, Climate and Water, which are the backbone of the NMHSS.                                                                                                                                                                                                                                                                                                                                             |

|                                                                                                                             |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WMO workshop on strengthening collaboration among NMHSs and WMO Centres.                                                    | 10 to 12 March 2021.  | This session provided a platform for SAWS to advocate its challenges impacting on the organisation's service delivery through the WMO and ICAO designated Regional Institutions; and to solicit WMO's support.                                                                                                                                                                                                                                                             |
| 18th session of the Regional Association I (Africa)                                                                         | 18 to 19 March 2021   | Highlights of this meeting included South Africa expressing its interest in being considered as Chairpersons of the RA I Committees; and the subsequent nomination of the country as the Chairperson of the RA I Committee on Services.                                                                                                                                                                                                                                    |
| <b>AFRICA and SADC MEETINGS</b>                                                                                             |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SADC Harmonisation workshop of and the.                                                                                     | 4 June 2020           | This workshop deliberated on harmonizing the WMO, Africa and SADC frameworks that guide the SADC NMHSs and to enhance regional cooperation.                                                                                                                                                                                                                                                                                                                                |
| SADC Sub-sectoral Committee for Meteorology (SCOM) meeting, a platform for Directors of National Meteorological Services.   | 21 to 22 August 2020  | Enhancement of the Regional cooperation and review of sub-regional strategies and frameworks that guide meteorology in the sub-region.                                                                                                                                                                                                                                                                                                                                     |
| SADC Regional Validation Workshop for Integrated African Strategy of Meteorology.                                           | 24 November 2020      | The highlight of this session was the successful review of the older version of the African Integrated Strategy for Meteorology, so that the African continent would have an instrument to guide meteorological development on the continent.                                                                                                                                                                                                                              |
| African Union Specialised Technical Committee (STC) for Ministers on Agriculture, Rural Development, Water and Environment. | 9 to 11 November 2020 | This Special Ministerial Meeting aimed at considering the challenges and opportunities presented by the COVID-19 pandemic to the various sectors for their alignment, relevance and sustainability during the pandemic. The session was graced by the participation of Minister Barbara Creecy and during the Ministerial segment she presented a statement to the audience on how the South African environmental sector, including SAWS, manoeuvred during the pandemic. |
| MASA Board Session                                                                                                          | 5 February 2021       | The MASA Board deliberated on the financial status quo of MASA; the impacts of COVID-19 and its sustainability. The highlight of this session was the resolution to terminate the employment of MASA personnel due to the Association's financial constraints.                                                                                                                                                                                                             |

|                                                                                                                                                                            |                      |                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3rd session of the RA I Working Group on Disaster Risk Reduction                                                                                                           | 9 March 2021         | This session comprised 10 African countries to coordinate and implement Disaster Risk Reduction related projects throughout the continent until 2023. South Africa's chairing of this Working Group enhances the country's profile both on the continent and internationally |
| 5th session of the African Ministerial Conference on Meteorology                                                                                                           | 16 and 17 March 2021 | The highlight of this session was the successful adoption of the revised African Integrated Strategy on Meteorology, which is a guiding framework for meteorology on the African continent.                                                                                  |
| <b>BILATERAL MEETINGS</b>                                                                                                                                                  |                      |                                                                                                                                                                                                                                                                              |
| SAWS-DFFE high-level bilateral session between the acting SAWS CEO and DFFE Acting Deputy Director-General (DDG) for Climate Change, Air Quality & Sustainable Development | 25 August 2020       | SAWS obtained guidance and a way forward on the process to relinquish the MASA Secretariat and the Signing process of the AMCOMET Constitution by the country.                                                                                                               |
| SAWS-WMO Bilateral session on the Systematic Observations Financing Facility (SOFF) Concept                                                                                | 15 February 2021     | SAWS obtained clarity and guidance on the new WMO Concept that aims at assisting NMHSs at operational and financial levels, to enhance their service delivery through operational systems such as the Global Basic Observing Network (GBON).                                 |

**Table 21:** International and Regional Engagements

Programme 4 was performed in line with budget as indicated in Table 22 below.

| Programme / Sub-programme: Administration |                                      |                               |                             |                                                             |                        |
|-------------------------------------------|--------------------------------------|-------------------------------|-----------------------------|-------------------------------------------------------------|------------------------|
| Audited Actual Performance 2018/2019      | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | *Actual Achievement 2020/21 | Deviation from planned target to Actual Achievement 2020/21 | Reasons for deviations |
| 16 768 144                                | 17 394 281                           | 2 590 302                     | 2 592 225                   | -1 923                                                      | In line with budget    |

**Table 22:** Linking Performance with budgets: Programme 4

## 4. REVENUE COLLECTION

| Sources of revenue       | 2020/21       |                         |                         | 2019/2020      |                         |                         |
|--------------------------|---------------|-------------------------|-------------------------|----------------|-------------------------|-------------------------|
|                          | Estimate      | Actual Amount Collected | (Over)/Under Collection | Estimate       | Actual Amount Collected | (Over)/Under Collection |
|                          | R'000         | R'000                   | R'000                   | R'000          | R'000                   | R'000                   |
| Aviation Revenue         | 31 115        | 32 511                  | 1 396                   | 130 006        | 128 494                 | -1 512                  |
| Other Commercial Revenue | 25 180        | 25 050                  | -130                    | 36 190         | 35 674                  | -516                    |
| <b>Total</b>             | <b>56 295</b> | <b>57 561</b>           | <b>1 266</b>            | <b>166 196</b> | <b>164 168</b>          | <b>-2 028</b>           |

**Table 23:** Revenue Collection

The organisation was able to meet its revenue target for the year ending 31 March 2021 as total commercial revenue exceeded the budget by R1,27 million. Both revenue stream sources were negatively impacted by the events of COVID-19 during the financial year resulting in revised targets.

An improvement in aviation revenue was seen towards the end of Quarter 3 which was sustained up to the end of the year. Air-traffic volumes started to pick up due to the easing of COVID-19 restrictions and opening up of airports. Year-on-year aviation revenue declined by R95,98 million from R128,49 million to R32,51 million.

Similar to aviation revenue, other commercial revenue started to pick up towards the end of Quarter 3 which was sustained until the end of the financial year, slightly missing the annual target by R130 000. Year-on-year, the other commercial revenue declined by R10,62 million, mainly attributed to COVID-19 pandemic and the imposed lockdown.

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

The entity was able to engage with its commercial partners by setting up additional meetings on a regular basis to verify sales against forecasts, collections against sales and new opportunities against existing business with the intention to ensure that the revenue remains on track and new opportunities are found to increase revenue under difficult circumstances. The partners also showed a willingness to upgrade their processes such as allocating additional resources to revenue collections. With a decline in commercial revenue, the entity was unable to invest in infrastructure and most of the infrastructure projects were deferred.

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

New ways of doing business were sought during the period, such as on-line aeronautical meteorological personnel competency assessments for forecasters of the Seychelles Meteorological Authority. In addition, our large customers, ACSA and Eskom Holdings honoured their contracts for maintenance of equipment and lightning and forecasting products. Sales of instrumentation did not materialise, except for Air Quality instrumentation for Mpumalanga, due to budgetary constraints and cost implications related to the importation of parts.

## 5. CAPITAL INVESTMENT

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

During the year ending 31 March 2021, SAWS requested that its infrastructure budget of R140 million be converted to operational expenditure as a response to decreased revenue from commercial activities. As a result of this conversion and liquidity management, the entity was only able to spend R18 million on capital investment projects which emanated from unspent government conditional grants brought forward from the 2019/20 financial year.

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

Most of the infrastructure projects that were earmarked for the 2019/20 financial were deferred due to the unavailability of funding.

### **Infrastructure projects that are currently in progress and when are they expected to be completed**

The entity does not have any infrastructure projects that are currently in progress, the projects that had initially been included in the 2020/21 Procurement Plan were deferred. These projects will be implemented upon the availability of budget.

### **Plans to close down or down-grade any current facilities**

Based on strategic business decisions taken by management, the following plans to close down or down-grade the current facilities were implemented:

- The High-Performance Computer (HPC) infrastructure used for numerical weather predictions has reached the end of its useful life and needs to be replaced, and will thus be downgraded and used for testing models by Research should the need arise.
- The Video Conference facility project which was earmarked for this financial year has since been removed and the entity has opted to utilise Microsoft Teams for virtual meetings and training which is a much cheaper option.
- The JDE financial system has been decommissioned and replaced by the NetSuite ERP system.
- The ClimAudit upgrade project which is utilised by the Climate Services Division has been completed and is currently being tested. Once testing has been completed and approved by management, the old ClimAudit system will be decommissioned.
- There is a possible decommissioning of three regional network servers upon replacement by new ones, subject to budget availability.
- Although there was no need to close down or downgrade any of the infrastructure network for technical equipment, the sustainability of the infrastructure network was severely affected. The impact resulted in extended down-time due to the unavailability of the peripheral equipment, such as Stand-by Generators, Uninterrupted Power Supplies and Air-conditioners.

### **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 HPC infrastructure was extended for 12 months, effective from December 2020. Hardware infrastructure warranties are being procured for 12 months to ensure expiry happens when the new HPC is in production.

- Four server upgrades were completed and three outstanding, outdated servers will be replaced in the 2021/22 financial year.
- 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.
- The Lightning Detection Network sensor upgrades will continue to address the current network spares concerns and shortage by freeing up used parts for sustaining maintenance elsewhere in the network. On-the-bench repairs were also 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.
- Clear segregation on maintenance practices per infrastructure can be made using the FIIX system records and benchmarks against best practices will be conducted.

#### **Developments relating to the above that are expected to impact on the public entity’s current expenditure**

Due to budget reductions as mentioned above, the entity is constantly looking for alternative ways of maintaining infrastructure within the available budget.

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

#### **Details as to how asset holdings have changed over the period under review, including information on 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 entity’s records. Other assets identified during the financial year were obsolete or damaged, and they were accordingly disposed of.

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

| Accounting Group             | Additions     | Disposals  | Impairment/scrapping losses and reversals | Losses due to sale/ theft |
|------------------------------|---------------|------------|-------------------------------------------|---------------------------|
|                              | R'000         | R'000      | R'000                                     | R'000                     |
| Property Plant and Equipment | 15 328        | 183        | 1 234                                     | 128                       |
| Intangible assets            | 2 759         | -          | 462                                       | -                         |
| <b>Total</b>                 | <b>18 087</b> | <b>183</b> | <b>1 696</b>                              | <b>128</b>                |

**Table 24:** Asset Holding Movement (Carrying Amounts as at 31 March 2021)

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

During the current financial year, the entity carried out a physical asset verification process. Assets that were identified to not be in a good condition were scrapped and submitted to management through the Asset Disposal Committee for disposal.

The physical asset verification was impacted by the travel restrictions due to COVID-19 and operational budgets were reduced due to lower revenue. However, alternative measures to verify assets in the regions were implemented by utilising staff in those regions to assist with the physical asset verification processes.

### The current state of SAWS' capital assets

During the current financial year, the entity carried out an asset verification process for all its assets at the regional offices and head office. The table below indicates results emanating from the physical verification process which specify the current state of the entity's capital assets condition grading.

| Condition Grading  | Capital assets state in percentages |
|--------------------|-------------------------------------|
| Good               | 63%                                 |
| Fair               | 35%                                 |
| Poor/bad condition | 2%                                  |
| <b>Total</b>       | <b>100%</b>                         |

**Table 25:** Current State of SAWS' Capital Assets

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

Despite budget reductions that were effected 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.
- The upgrade of the Radiosondes through the inter-comparison method was implemented successfully.

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

The entity was able to address its repairs and maintenance backlog 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 from management, more effective efforts would have been possible through timely provision of spares and other related resources which were affected by reduced funding. Repairs and maintenance activities are strongly reliant on the availability of human resources and funding. Table 26 overleaf reflects budget and acquisition of infrastructure for the year.

| Infrastructure projects        | 2020/21      |                    |                          | 2019/2020     |                    |                          |
|--------------------------------|--------------|--------------------|--------------------------|---------------|--------------------|--------------------------|
|                                | Estimate     | Actual Expenditure | (Over)/Under Expenditure | Budget        | Actual Expenditure | (Over)/Under Expenditure |
|                                | R'000        | R'000              | R'000                    | R'000         | R'000              | R'000                    |
| Computer Equipment and Servers | 1 500        | 1 830              | (330)                    | 22 695        | 18 700             | 3 995                    |
| Technical Equipment            | -            | 13 327             | (13 327)                 | 6 830         | 25 686             | (18 855)                 |
| Furniture and Fittings         | -            | 169                | (169)                    | 1 489         | 4 000              | (2 511)                  |
| Computer Software              | -            | 2 759              | (2 759)                  | 3 683         | 11 000             | (7 317)                  |
| Other                          | -            | 1                  | (1)                      | 2 065         | 7 704              | (5 640)                  |
| <b>Total</b>                   | <b>1 500</b> | <b>18 086</b>      | <b>(16 586)</b>          | <b>36 762</b> | <b>67 090</b>      | <b>(30 328)</b>          |

**Table 26:** Budget and Acquisition of Infrastructure 2020/21

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, 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.

During the year ending 31 March 2021, infrastructure budget was converted to operational expenditure to allow the entity to meet its operating expenditure requirements due to decreased revenue because of the COVID-19 pandemic.

## 6. ANNUAL PERFORMANCE REPORT AGAINST TARGETS

### 6.1. Programme 1: Weather and Climate Services

Applicable for 2020/21 to Programme 1: Weather and Climate Services

| PROGRAMME 1: WEATHER AND CLIMATE SERVICES                                                       |                                                               |                                                                             |                                      |                                      |                                                          |                                                                                                                                                         |                                                                                                              |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------|--------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Purpose: Safeguard life and Property and Provide Meteorological Solutions to all South Africans |                                                               |                                                                             |                                      |                                      |                                                          |                                                                                                                                                         |                                                                                                              |
| Outcome                                                                                         | Output                                                        | Output Indicator                                                            | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                            | *Actual Achievement 2020/21                                                                                                                             | Reasons for deviations                                                                                       |
| Lives and property protected against meteorological-related risks.                              | Meteorological related solutions provided to meet user needs. | Percentage of national weather (FPZA41) available.                          | 98.3%                                | 98%                                  | 98% national weather (FPZA41) availability.              | Achieved<br>• 99% FPZA41 available.<br><br>Average of quarterly performance<br>(98.9% + 98.33% + 97.26% + 99.46%) ÷ 4                                   | Longer periods of less active weather led to more instances of quicker product generation and dissemination. |
|                                                                                                 |                                                               | Percentage of aerodrome warnings accuracy.                                  | 98.24%                               | 97%                                  | 98% aerodrome warnings accuracy.                         | Achieved<br>• 99% Aerodrome warning accuracy.<br><br>Average of quarterly performance<br>(99.43% + 99.46% + 98.16% + 98.1%) ÷ 4                         | High accuracies achieved during the dry, winter months.                                                      |
|                                                                                                 |                                                               | Percentage of Terminal Aerodrome Forecast (TAF) accuracy.                   | 91.5%                                | 94%                                  | 90% Terminal Aerodrome Forecast (TAF) accuracy.          | Achieved<br>• 94% TAF accuracy.<br><br>Average of quarterly performance<br>(94.67% + 95% + 92.9% + 93.4%) ÷ 4                                           | High accuracies achieved during the dry, winter months and improvement in upper air soundings.               |
|                                                                                                 |                                                               | Percentage availability of Marine (Safety of Life at Sea - SOLAS products). | 96.4%                                | 96%                                  | 95% Safety of Life at Sea (SOLAS products) availability. | Achieved<br>• 98% Safety of Life at Sea (SOLAS products) availability.<br><br>Average of quarterly performance<br>(96.77% + 100% + 96.72% + 98.36%) ÷ 4 | Longer periods of less active weather led to more instances of quicker product generation and dissemination. |

## 6.2. Programme 2: Research and Innovation

Applicable to Programme 2: Research and Innovation until 22 July 2020

| PROGRAMME 2: RESEARCH AND INNOVATION                                            |                                                    |                              |                                      |                                      |                               |                                                             |                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------|----------------------------------------------------|------------------------------|--------------------------------------|--------------------------------------|-------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Develop Meteorological Solutions to inform wise socio-economic choices |                                                    |                              |                                      |                                      |                               |                                                             |                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                |
| Outcome                                                                         | Output                                             | Output Indicators            | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | Actual achievement 2020/21 until 22 <sup>nd</sup> July 2020 | Reasons for deviations                                                                                            | Reasons for revisions to the Outputs/ Output indicators/Annual Targets                                                                                                                                                                                                                                                                         |
| Lives and property protected against meteorological-related risks.              | Enhanced meteorological related body of knowledge. | Number of research outputs . | 70                                   | 52                                   | 47 research outputs.          | 11                                                          | The achievement is reflective of the first quarter of the financial year, thus the deviation from planned target. | A significant portion of Research outputs is attributed to Peer-Reviewed Conference Papers presented at platforms such as the South African Society for Atmospheric Sciences (SASAS).<br><br>Envisaged conferences have been cancelled and deferred to next year due to COVID-19, leaving only Publications and Theses to target for the year. |

Applicable for 2020/2021 with amendments applied to Programme 2: Research and Innovation

| PROGRAMME 2: RESEARCH AND INNOVATION                                            |                                                    |                                                                |                                      |                                      |                               |                                                                                                                                                                                                                                                                                                                                             |                                                                                             |
|---------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------|--------------------------------------|--------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Purpose: Develop Meteorological Solutions to inform wise socio-economic choices |                                                    |                                                                |                                      |                                      |                               |                                                                                                                                                                                                                                                                                                                                             |                                                                                             |
| Outcome                                                                         | Output                                             | Output Indicator                                               | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | Actual achievement 2020/21                                                                                                                                                                                                                                                                                                                  | Reasons for deviations                                                                      |
| Lives and property protected against meteorological-related risks.              | Enhanced meteorological related body of knowledge. | Number of research outputs.                                    | 70                                   | 52                                   | 30 research outputs.          | Achieved<br>• 49 research outputs.<br><br>45 Journal Articles<br>2 Conference papers<br>2 Theses.                                                                                                                                                                                                                                           | Anticipated negative impact on the peer review process due to COVID-19 did not materialise. |
|                                                                                 |                                                    | Number of new climate solutions for climate sensitive sectors. | N/A                                  | New                                  | 1 new climate solution.       | Achieved<br>• 1 new climate solution.<br><br>New climate solution: Regional Weather and Climate of South Africa: Gauteng publication.                                                                                                                                                                                                       | None.<br>Target achieved.                                                                   |
|                                                                                 |                                                    | Number of solutions developed.                                 | 6                                    | 5                                    | 6 solutions developed.        | Achieved<br>• 6 solutions developed.<br><br>Solutions developed:<br>i. Multi Sensor Storm Tracking<br>ii. Convective Scale Ensemble Prediction System<br>iii. Integrated Relative Health Risk (IRHR) (COVID-19 Risk Indicator Tool)<br>iv. Mid-Summer Dry spell projection<br>v. Discomfort Index, and<br>vi. Drought Prediction solutions. | None.<br>Target achieved.                                                                   |

### 6.3. Programme 3: Infrastructure and Information Systems

Applicable to Programme 3: Infrastructure and Information Systems until 22 July 2020

| PROGRAMME 3: INFRASTRUCTURE AND INFORMATION SYSTEMS                |                                        |                                                                                                          |                                      |                                      |                                                                                          |                                                             |                                                                                                                                                                                                         |                                                                                                                                   |
|--------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Upgrade, Expand and Optimise Infrastructure               |                                        |                                                                                                          |                                      |                                      |                                                                                          |                                                             |                                                                                                                                                                                                         |                                                                                                                                   |
| Outcome                                                            | Output                                 | Output Indicators                                                                                        | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                                                            | Actual achievement 2020/21 until 22 <sup>nd</sup> July 2020 | 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 Global Atmospheric Watch infrastructure availability.                                      | 90%                                  | 86%                                  | 90% Global Atmospheric Watch infrastructure availability.                                | 75%                                                         | The achievement is reflective of the first quarter of the financial year, thus the deviation from planned target. COVID-19 national lockdown impacted access to the laboratory at Cape Point.           | The 90% target is unachievable in the prevailing COVID-19 conditions and effects thereof.                                         |
|                                                                    |                                        | Percentage of Priority Areas air quality stations available on SAAQIS meeting minimum data requirements. | 89%                                  | N/A                                  | 85% Priority Air quality stations available on SAAQIS meeting minimum data requirements. | 71%                                                         | The achievement is reflective of the first quarter of the financial year, thus the deviation from planned target. Faulty instruments, intermittent power failures and vandalism at Sharpeville station. | SAWS inability to effect equipment / instrument repair or replacement during the lockdown has led to extremely low data recovery. |

**Applicable for 2020/21 with amendments applied to Programme 3: Infrastructure and Information Systems**

| PROGRAMME 3: INFRASTRUCTURE AND INFORMATION SYSTEMS                |                                        |                                                                                                                            |                                      |                                      |                                                                              |                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Upgrade, Expand and Optimise Infrastructure               |                                        |                                                                                                                            |                                      |                                      |                                                                              |                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                        |
| Outcome                                                            | Output                                 | Output Indicator                                                                                                           | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                                                | Actual achievement 2020/21                                                                                                                                                                                                | Reasons for deviations                                                                                                                                                                                                                                                 |
| Lives and property protected against meteorological-related risks. | Optimal core technological capability. | Percentage of surface observation infrastructure availability (Automatic Weather Station and Automatic Rainfall Stations). | New                                  | 85%                                  | 85% Automatic Weather Stations and Automatic Rainfall Stations availability. | <p>Achieved</p> <ul style="list-style-type: none"> <li>86% Automatic Weather Stations and Automatic Rainfall Stations availability.</li> </ul> <p>Average of quarterly performance (85.5% + 87.75% + 86% + 82.6%) ÷ 4</p> | <p>None.</p> <p>Target achieved.</p>                                                                                                                                                                                                                                   |
|                                                                    |                                        | Percentage of Global Atmospheric Watch infrastructure availability.                                                        | 90%                                  | 86%                                  | 85% Global Atmospheric Watch infrastructure availability.                    | <ul style="list-style-type: none"> <li>Partially Achieved</li> <li>83% Global Atmospheric Watch infrastructure availability.</li> </ul> <p>Average of quarterly performance (74.45% + 84.8% + 86.7% + 86.08%) ÷ 4</p>     | <p>Challenges: Procurement of Nitrous Oxide (N<sub>2</sub>O) gasses during quarters 1 to quarter 3 and subsequent failure of instrument. Corrective measures: Utilise CAPEX for the refurbishment of Global Atmospheric Watch infrastructure over the medium-term.</p> |

| PROGRAMME 3: INFRASTRUCTURE AND INFORMATION SYSTEMS                |                                        |                                                                                                                   |                                      |                                      |                                                                |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Upgrade, Expand and Optimise Infrastructure               |                                        |                                                                                                                   |                                      |                                      |                                                                |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                           |
| Outcome                                                            | Output                                 | Output Indicator                                                                                                  | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                                  | Actual achievement 2020/21                                                                                                                                   | Reasons for deviations                                                                                                                                                                                                                                                                                    |
| Lives and property protected against meteorological-related risks. | Optimal core technological capability. | Percentage of remote sensing observation infrastructure availability (Radar).                                     | 77% <sup>1</sup>                     | 92%                                  | 85% radar infrastructure availability.                         | Partially Achieved<br>• 73% radar infrastructure availability.<br><br>Average of quarterly performance (84.5% + 74.42% + 64.85% + 67.98%) ÷ 4                | Challenges: Unable to address issues relating to uninterruptible power supply (UPS), standby generator and inadequate air-conditioners at radar sites due to unavailability of budget, load shedding and power failures. Corrective measures: Infrastructure refurbishment with CAPEX budget for 2021/22. |
|                                                                    |                                        | Percentage of remote sensing observation infrastructure availability (Lightning Detection Network).               | 91%                                  | 92%                                  | 90% Lightning Detection Network infrastructure availability.   | Achieved<br>• 94% Lightning Detection Network infrastructure availability.<br><br>Average of quarterly performance (92.59% + 92.69% + 96.89% + 95.6%) ÷ 4    | The LDN LS-7002 upgrade program as implementation of the Lightning Detection Network Business Case contributed to overachievement.                                                                                                                                                                        |
|                                                                    |                                        | Percentage of air quality observation infrastructure availability (South African Air Quality Information System). | 98%                                  | N/A                                  | 95% South African Air Quality Information System availability. | Achieved<br>• 99% South African Air Quality Information System availability.<br><br>Average of quarterly performance (99.86% + 98.39% + 99.74% + 99.92%) ÷ 4 | Minimal downtime experienced during the financial year.                                                                                                                                                                                                                                                   |

<sup>1</sup>Performance of Tier 1 Radars

### PROGRAMME 3: INFRASTRUCTURE AND INFORMATION SYSTEMS

#### Purpose: Upgrade, Expand and Optimise Infrastructure

| Outcome                                                            | Output                                 | Output Indicator                                                                                                                                                  | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                                                                                                                           | Actual achievement 2020/21                                                                                                                                                                                                                                                                      | 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.           | 89%                                  | N/A                                  | 75% priority areas air quality stations available on South African Air Quality Information System (SAAQIS) meeting minimum data requirements.           | Partially achieved <ul style="list-style-type: none"> <li>67% priority areas air quality stations available on South African Air Quality Information System (SAAQIS) meeting minimum data requirements.</li> </ul> Average of quarterly performance $71.11\% + 62.23\% + 69\% + 66.67\% \div 4$ | Challenges: Instrument failure, intermittent power failures and vandalism of Sharpeville station contributed to underachievement.<br><br>Corrective measures: Continue with network recapitalisation process in the short and medium-term. Investigate alternative monitoring technology and feasibility of renting equipment during period of equipment failure and repair. |
|                                                                    |                                        | Percentage of climate data available on National Climate Database meeting minimum data requirements (Automatic Weather Stations and Automatic Rainfall Stations). | New                                  | New                                  | 82% climate data available on National Climate Database meeting minimum data requirements (Automatic Weather Stations and Automatic Rainfall Stations). | Achieved <ul style="list-style-type: none"> <li>94% climate data available on National Climate Database meeting minimum data requirements.</li> </ul> Average of quarterly performance $(94.2\% + 95.88\% + 93.6\% + 91.4\%) \div 4$                                                            | Effectiveness in addressing quality control issues with Regional Offices as well as continued maintenance by Met Technicians.                                                                                                                                                                                                                                                |

## 6.4. Programme 4: Administration (including Corporate and Regulatory Services)

**Applicable to Programme 4: Administration (including Corporate and Regulatory Services) until 22 July 2020**

| PROGRAMME 4: ADMINISTRATION (INCLUDING CORPORATE AND REGULATORY SERVICES)                                                                                                                                                      |                                                       |                               |                                      |                                      |                                               |                                                             |                                                                                                                                                                                                                                        |                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------|--------------------------------------|--------------------------------------|-----------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Provide leadership, strategic, centralised administration, executive support, corporate services and, facilitate effective cooperative governance, international relations and environmental education and awareness. |                                                       |                               |                                      |                                      |                                               |                                                             |                                                                                                                                                                                                                                        |                                                                                                                                                                                               |
| Outcome                                                                                                                                                                                                                        | Output                                                | Output Indicators             | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                 | Actual achievement 2020/21 until 22 <sup>nd</sup> July 2020 | Reasons for deviations                                                                                                                                                                                                                 | Reasons for revisions to the Outputs/ Output indicators/Annual Targets                                                                                                                        |
| Organisational sustainability.                                                                                                                                                                                                 | Internal excellence achieved within the organisation. | Current ratio for Liquidity.  | 1.1                                  | 0.75                                 | 1.5 Liquidity Ratio.                          | 0.49                                                        | The achievement is reflective of the first quarter of the financial year, thus the deviation from planned target. Declining debtors' book because of increased provision for doubtful debts and lower revenue sales.                   | Regulated and non-regulated commercial revenue for 2020/21 is negatively impacted due to COVID-19 effects to industries such as aviation which contributes significantly to the SAWS Revenue. |
|                                                                                                                                                                                                                                |                                                       | Level of B-BBEE.              | New                                  | Non-compliant.                       | B-BBEE Level 6 achieved.                      | Not applicable. Target set for the fourth quarter.          | Not applicable. Target set for the fourth quarter.                                                                                                                                                                                     | Expenditure on bursaries and training spend has been reduced as a response to constraints brought about by COVID-19.                                                                          |
|                                                                                                                                                                                                                                |                                                       | Growth in Commercial revenue. | R32.4 mil.                           | R35.55 mil.                          | R39.18 mil commercial revenue (un-regulated). | R4.84 mil.                                                  | The achievement is reflective of the first quarter of the financial year, thus the deviation from planned target. Commercial Partners' revenue below budget, and other sales of products and services negatively impacted by COVID-19. | A reduction in non-regulated revenue generation is anticipated due to COVID-19.                                                                                                               |

#### PROGRAMME 4: ADMINISTRATION (INCLUDING CORPORATE AND REGULATORY SERVICES)

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

| Outcome                        | Output                                                | Output Indicators                                      | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21      | Actual achievement 2020/21 until 22 <sup>nd</sup> July 2020                                                  | Reasons for deviations                                                                                            | Reasons for revisions to the Outputs/ Output indicators/Annual Targets        |
|--------------------------------|-------------------------------------------------------|--------------------------------------------------------|--------------------------------------|--------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Organisational sustainability. | Internal excellence achieved within the organisation. | Percentage of Workplace Skills Plan (WSP) targets met. | New                                  | 30%                                  | 95% WSP targets met.               | The compliance Workplace Skills Plan (WSP) and Annual Training Report (ATR) finalised and submitted to TETA. | The achievement is reflective of the first quarter of the financial year, thus the deviation from planned target. | Expenditure on training initiatives is being reduced in response to COVID-19. |
|                                |                                                       | Percentage rating of External stakeholder perception.  | 86%                                  | 89%                                  | 85% stakeholder perception rating. | Not applicable.<br>Target set for the third quarter.                                                         | Not applicable.<br>Target set for the third quarter.                                                              | Deferred to following year due to budget constraints.                         |



**Applicable to Programme 4: Administration (including Corporate and Regulatory Services) until 10 November 2020**

| PROGRAMME 4: ADMINISTRATION (INCLUDING CORPORATE AND REGULATORY SERVICES)                                                                                                                                                      |                                                       |                              |                                      |                                      |                               |                                                     |                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------|--------------------------------------|--------------------------------------|-------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Provide leadership, strategic, centralised administration, executive support, corporate services and, facilitate effective cooperative governance, international relations and environmental education and awareness. |                                                       |                              |                                      |                                      |                               |                                                     |                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Outcome                                                                                                                                                                                                                        | Output                                                | Output Indicators            | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21 | Actual achievement 2020/21 until 10th November 2020 | Reasons for deviations                                                                                                                                                                                                                                         | Reasons for revisions to the Outputs/ Output indicators/Annual Targets                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Organisational sustainability.                                                                                                                                                                                                 | Internal excellence achieved within the organisation. | Current ratio for Liquidity. | 1.1                                  | 0.75%                                | 0.6 Liquidity Ratio.          | 0.33                                                | The achievement is reflective of the implementation until end of the second quarter of the financial year, thus the deviation from planned target. Further decline in debtors' book because of increased provision for doubtful debts and lower revenue sales. | Under the current economic conditions, it has become challenging to predict the economic recovery and thus impacting negatively on the SAWS cashflow position. At this stage, SAWS is only able to maintain current operations and receives less than the normal 90% revenue from commercial clients. It is for this reason that SAWS requests that the liquidity ratio be removed as this is something that is beyond managements control and is influenced by external circumstances under the current environment. |

**Applicable for 2020/21 with amendments applied to Programme 4: Administration (including Corporate and Regulatory Services)**

| PROGRAMME 4: ADMINISTRATION (INCLUDING CORPORATE AND REGULATORY SERVICES)                                                                                                                                                      |                                                       |                                                             |                                      |                                      |                                                   |                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Provide leadership, strategic, centralised administration, executive support, corporate services and, facilitate effective cooperative governance, international relations and environmental education and awareness. |                                                       |                                                             |                                      |                                      |                                                   |                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                            |
| Outcome                                                                                                                                                                                                                        | Output                                                | Output Indicator                                            | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                     | Actual achievement 2020/21                                                                                                                                                                        | Reasons for deviations                                                                                                                                                                                                                                                                                     |
| Organisational sustainability.                                                                                                                                                                                                 | Internal excellence achieved within the organisation. | Percentage of local expenditure on affirmative procurement. | New                                  | 95%                                  | 65% local expenditure on affirmative procurement. | Achieved<br>• 80% local expenditure on affirmative procurement.<br><br>Procurement from B-BBEE Level 1 to 8 as percentage of procurement from all suppliers.<br>(R38 698 777.98 ÷ R48 322 842.96) | Market allowed sourcing from BEE listed service providers. Unavailability of CAPEX for procurement of high-value items from overseas-based service providers.                                                                                                                                              |
|                                                                                                                                                                                                                                |                                                       | Level of BBBEE.                                             | New                                  | Non-compliant.                       | BBBEE Level 7.                                    | Not Achieved<br>• Level 8 BBBEE achieved.                                                                                                                                                         | Challenges: Did not meet minimum requirements for Skills Development, Supplier Development Contributions and Enterprise Development. Corrective measures: Task Team to prioritise the B-BBEE status for the organisation. Place more effort on elements where minimum threshold requirements were not met. |
|                                                                                                                                                                                                                                |                                                       | Growth in commercial revenue.                               | R32.4 mil.                           | R35.55 mil.                          | R19.1 mil commercial revenue (unregulated).       | Achieved<br>• R25 022 262 mil commercial revenue.                                                                                                                                                 | Close collaboration with commercial partners and customers to manage the initial negative impact of COVID-19 on sales.                                                                                                                                                                                     |

| PROGRAMME 4: ADMINISTRATION (INCLUDING CORPORATE AND REGULATORY SERVICES)                                                                                                                                                      |                                                       |                                                        |                                      |                                      |                                              |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------|--------------------------------------|--------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose: Provide leadership, strategic, centralised administration, executive support, corporate services and, facilitate effective cooperative governance, international relations and environmental education and awareness. |                                                       |                                                        |                                      |                                      |                                              |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                |
| Outcome                                                                                                                                                                                                                        | Output                                                | Output Indicators                                      | Audited Actual Performance 2018/2019 | Audited Actual Performance 2019/2020 | Planned Annual Target 2020/21                | Actual achievement 2020/21                                                                                                                                                                         | Reasons for deviations                                                                                                                                                                                                                                         |
| Organisational sustainability.                                                                                                                                                                                                 | Internal excellence achieved within the organisation. | External audit opinion rating.                         | Qualified.                           | Unqualified.                         | Unqualified audit opinion achieved.          | Achieved<br>• Unqualified audit opinion achieved.                                                                                                                                                  | None.<br>Target achieved.                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                |                                                       | Percentage of attrition rate.                          | 1%                                   | 6%                                   | ≤8% attrition rate.                          | Not achieved<br>• 11% attrition rate.<br><br>Terminations ÷ average number of employees over the period 54 ÷ ((524 + 493) ÷ 2)                                                                     | Challenges: limited budget available to keep interns beyond contract termination date.<br><br>Corrective measures: Review the Employee Value Proposition (EVP) with the aim of retaining employees and making SAWS an employer of choice.                      |
|                                                                                                                                                                                                                                |                                                       | Percentage of workplace skills plan (WSP) targets met. | New                                  | 30%                                  | 75% workplace skills plan (WSP) targets met. | Partially Achieved<br>• 60% workplace skills plan (WSP) targets met.<br><br>Number of training interventions executed from the workplace skills plan (6 interventions ÷ 10 planned interventions). | Challenges: Reduced training budget due to financial constraints brought about by COVID-19.<br><br>Corrective measures: Prioritise deferred training interventions in 2021/22 Training plan. Avail training budget to respond to training needs of the Entity. |

| Programme/<br>Sub<br>Programme                                                        | Intervention                                                                                                                | Geographic<br>location<br>(Province/<br>District/local<br>municipality)<br>(Where<br>Possible)   | No. of<br>beneficiaries<br>(Where<br>Possible)                 | Disaggregation<br>of Beneficiaries<br>(Where<br>Possible)                                           | Total budget<br>allocation<br>per interven-<br>tion (R'000) | Budget<br>spent per<br>intervention | Contribution<br>to the Outputs<br>in the APP<br>(where<br>applicable) | Immediate<br>outcomes                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Programme 4:<br>Administration<br>(Incl.<br>Corporate and<br>Regulatory<br>Services). | Presidential<br>Employment<br>Stimulus<br>package<br>a) Temporary<br>Employment<br>b) Refurbishing<br>of training<br>rooms. | a) Gauteng<br>mostly and<br>other regional<br>offices.<br><br>b) Gauteng<br>2 training<br>rooms. | 39 Interns,<br>Work<br>Integrated<br>Learners and<br>Learners. | Youth = 39<br>out of 39<br>Women = 25<br>out of 39<br>Persons with<br>Disabilities = 4<br>out of 39 | R1.3 mil.<br><br>R1.7 mil.                                  | R1.28 mil.<br><br>R1.68 mil.        | Building<br>capacity.                                                 | a) All the<br>Interns and<br>Learners<br>were<br>trained and<br>graduated<br>and were<br>given<br>experimental<br>experience<br>for 4 months<br>after training<br>b) New<br>computers<br>were bought<br>for the 2<br>designated<br>lecture<br>rooms. |

**Table 27:** Progress on Institutional Response to the COVID-19 Pandemic

To create employment opportunities for the unemployed youth, the government introduced a Presidential Employment Stimulus Package (PESP) for a specific working realm in specific departments. The South African Weather Service was allocated R3 million for the implementation of this project. The appointment of the beneficiaries was centred on Internships and Work Integrated Learners focusing on meteorological and related services to build a talent pool for the South African Weather Service. The target was to employ 24 unemployed youth but 39 were employed, most of them for a minimum duration of 12 months.

A total of 64% of the beneficiaries were females and 10% were people with disabilities. This programme was successful, and we aim to continue to participate in the new fiscal, depending on the allocation of further grants to SAWS, which currently has 69 grants.

# GOVERNANCE

## PART C



**South African**  
**Weather Service**

## 1. INTRODUCTION

Corporate governance embodies processes and systems by which 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 (PFMA) and run in tandem with the principles contained in the King Report on Corporate Governance.

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

## 2. PORTFOLIO COMMITTEE MEETINGS

Meetings of the Portfolio Committee on Environment, Forestry and Fisheries (PCEFF) were held on the dates below as per the programme provided to the entities the committee exercised oversight over:

|                 |   |                                                                                                               |
|-----------------|---|---------------------------------------------------------------------------------------------------------------|
| 7 May 2020      | : | Briefing on the Strategic Plans and Annual Performance Plan for 2020/21                                       |
| 26 August 2020  | : | Briefing on the 4th Quarter Performance Report for 2019/20 and the 1st Quarter Performance Report for 2020/21 |
| 26 January 2021 | : | Briefing on the Annual Report and Financial Statements for 2019/20                                            |
| 9 March 2021    | : | Briefing on the Second and Third Quarter Performance Reports for 2020/21                                      |

The PCEFF raised questions for SAWS to formally respond to during committee meetings. These questions were responded to accordingly within the timeframes afforded to SAWS.

Key issues raised in the briefings of the PCEFF related to, amongst others, understanding how SAWS would contribute towards studies to understand the sensitivity of COVID-19 to seasonality.

In response, SAWS articulated that previous studies and experience indicate that there is a relationship between influenza and climate. By using influenza data collected between May and August in South Africa, the National Centre for Communicable Diseases (NICD) showed that the mean onset of influenza in the country occurs in the first week of June, while the mean peak occurs in the first week of July. Influenza is linked to low temperatures and humidity in the winter season. Furthermore, the air quality is compromised during this time of the year due to the prevailing atmospheric systems. If COVID-19 behaves in a similar manner to influenza, then the expectation is that it may also have seasonality. As part of SAWS' participation in the COVID-19 data work stream led by Statistician General (SG), SAWS, in collaboration with the Medical Research Council (MRC) developed an air pollution health risk map across communities, based on long-term exposure to particulate matter, that has a diameter of less than 2.5 micrometres (PM2.5), and pre-existing respiratory conditions.

Additional contributions to understanding the sensitivity of COVID-19 to seasonality included SAWS' use of state-of-the-art models, observations and computational resources to produce 5-day Severe Weather Alert forecasts to help government plan its mass screening and testing as well as other activities that may be hindered by extreme events. The organisation also formed part of the COVID-19 Environmental Reference Group (CERG), whose main objective was to assess confidence regarding the environmental influences, confounders and drivers of the COVID-19 pandemic. The members of the consortium included the Applied Centre for Climate and Earth System Studies (ACCESS), the Council for Scientific and Industrial Research (CSIR), the South African Environment Observation Network (SAEON), Wits University, the Universities of the Western Cape, Cape Town, Stellenbosch and Pretoria as well as the Agricultural Research Council (ARC). The team provided climatological data to the National Institute for Communicable Diseases (NICD) which was used as input to the epidemiological models.

### 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 Forestry, Fisheries and the Environment. Although SAWS is not required in terms of Treasury Regulations to conclude a Shareholders' Agreement, such was concluded and submitted to the Minister in 2019/20 and is valid for the duration of the current Board's tenure. This was in line with a recommendation made in the Environmental Sector Micro-Governance Review Report and the agreement ensures that oversight, strategic and governance arrangements between the Shareholder and the entity are clearly defined.

### 4. THE ACCOUNTING AUTHORITY/ BOARD

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 Act. During the reporting period, the Board consisted of a maximum of 10 Board members, including the Chief Executive Officer, who serves as an ex officio Board member.

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 Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA). Deriving 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 work closely together in determining the SAWS strategic approach. Through policies approved by the Board as well as the delegation of authority framework, the Acting Chief Executive Officer continued to implement strategy and managed the daily operations of the organisation with the support of the Executive Management Team. Board members were apprised of the implementation progress through reporting at Board committee and Board meetings as well as regular communications with executive management, through the acting CEO.

#### Board Charter

The Board Charter sets out clear direction with regard to the roles and responsibilities of the Board, the composition and requirements for Board meetings. These responsibilities include:

- a. Ensuring the financial viability and development of the South African Weather Service's commercial services;
- b. Ensuring an efficient, cost-effective and high-quality weather service;
- c. Setting policies, standards and objectives within the framework issued by the Minister and ensuring that executive management implements these policies, standards and objectives;
- d. Facilitating succession and providing guidance in the appointment of senior managers;
- e. Ensuring that the South African Weather Service has adequate systems of internal control, both operational and financial;
- f. Monitoring the performance of the South African Weather Service and adjusting the conditions of service of the personnel with due regard to the applicable labour legislation;
- g. Recommending any necessary budget proposals or adjustments and submitting them to the Minister;
- h. Setting policies for recruitment and training and for the transformation of the South African Weather Service;
- i. Approving a business plan for the South African Weather Service annually for the next three years and submitting it to the Minister for final approval;
- j. Ensuring that the majority of the South African population benefits from the public good services of the South African Weather Service; and
- k. Performing any other function assigned to it by the Minister.

| Name                               | Designation<br>(in terms of<br>the Public<br>Entity Board<br>structure) | Date<br>appointed                  | Date resigned | Qualifications                                                                                                                                                                                                                                                 | Area of<br>Expertise                                                                                      | Board<br>Directorships<br>(List the enti-<br>ties)                                                             | Other<br>Committees<br>or Task<br>Teams<br>(e.g: Audit<br>committee/<br>Ministerial<br>task team)                     | No. of<br>Meetings<br>attended |
|------------------------------------|-------------------------------------------------------------------------|------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Ms Nana<br>Magomola                | Chairperson                                                             | 1 June 2018 <sup>[1]</sup>         | Current       | BSc; LLB;<br>Executive<br>Development<br>Programme<br>(GIBS);<br>Executive<br>Development<br>Programme<br>(Wharton<br>Business<br>School,<br>University of<br>Pennsylvania)<br>USA<br>Directors<br>Development<br>Programme<br>(University of<br>Western Cape) | Corporate<br>Governance<br>General<br>Management<br>& Law                                                 | GIBB (Pty) Ltd<br>Nelson<br>Mandela<br>Children's<br>Fund<br>Nelson<br>Mandela<br>Children's<br>Hospital (NPC) | HRRC                                                                                                                  | 9                              |
| Dr Philip<br>Dexter                | Deputy<br>Chairperson                                                   | 1 June 2018 <sup>[2]</sup>         | Current       | BA, MPhil,<br>PhD (UCT)                                                                                                                                                                                                                                        | Governance,<br>Business<br>management,<br>Turnaround<br>Specialist                                        | ARMSCOR                                                                                                        | SPC                                                                                                                   | 8                              |
| Adv Derick<br>Block                | Member                                                                  | 1 September<br>2015 <sup>[3]</sup> | Current       | B.Iuris, LLB, H<br>Dip Tax law                                                                                                                                                                                                                                 | Law,<br>Governance<br>and<br>Compliance                                                                   | Small<br>Enterprise<br>Development<br>Agency                                                                   | ARC                                                                                                                   | 7                              |
| Dr Thuli<br>Khumalo                | Member                                                                  | 31 August<br>2020                  | Current       | PhD<br>(Environmental<br>Sciences)                                                                                                                                                                                                                             | Air quality<br>management,<br>Strategy, policy<br>and legislative<br>formulation<br>and<br>implementation | Council for<br>Geosciences                                                                                     | SPC                                                                                                                   | 5                              |
| Mr David<br>Lefutso                | Member                                                                  | 1 September<br>2015 <sup>[4]</sup> | Current       | B.Com, MBA,<br>MPhil                                                                                                                                                                                                                                           |                                                                                                           |                                                                                                                | SPC                                                                                                                   | 8                              |
| Dr Mpheko<br>Maila                 | SPC<br>Chairperson                                                      | 10 May<br>2018 <sup>[5]</sup>      | Current       | BSc, BSc Hon,<br>PG Dip in<br>Environmental<br>Sciences; PhD                                                                                                                                                                                                   |                                                                                                           | AfricaBio;<br>ARC Corporate<br>ICT Comm;<br>ARC Corporate<br>International<br>Relations<br>Comm                | SPC                                                                                                                   | 9                              |
| Ms Shirley<br>Moroka –<br>Mosia    | Member                                                                  | 1 January<br>2019                  | Current       | B.Sc, B.Sc<br>(Hon), Global<br>Executive<br>Development<br>Programme                                                                                                                                                                                           | Leadership,<br>Governance,<br>Risk<br>Management,<br>Strategy<br>Development                              | Engen<br>Petroleum<br>Limited                                                                                  | HRRC<br>Engen Limited<br>SEC<br>Engen<br>Petroleum<br>Management<br>Assurance,<br>Risk and<br>Compliance<br>Committee | 7                              |
| Ms Sally<br>Muddly -<br>Padayachie | Member                                                                  | 1 September<br>2015 <sup>[6]</sup> | Current       | B Pharm, M<br>MedScience                                                                                                                                                                                                                                       | Human capital<br>strategy &<br>development                                                                |                                                                                                                | HRRC                                                                                                                  | 9                              |

[1] Re-appointed in 2019 • [2] Re-appointed in 2019

[3] re-appointed in 2019 • [4] Re-appointed in 2019

[5] Re-appointed in 2019 • [6] Re-appointed 2019

| Name               | Designation<br>(in terms of<br>the Public<br>Entity Board<br>structure) | Date<br>appointed | Date resigned  | Qualifications                                          | Area of<br>Expertise                                                                                                                                                                                                                            | Board<br>Directorships<br>(List the enti-<br>ties) | Other<br>Committees<br>or Task<br>Teams<br>(e.g: Audit<br>committee/<br>Ministerial<br>task team) | No. of<br>Meetings<br>attended |
|--------------------|-------------------------------------------------------------------------|-------------------|----------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------|
| Dr Tsakani Ngomane | Member (DFFE Rep)                                                       | 1 January 2019    | 31 August 2020 | PhD (cum laude) in Agricultural Extension and Education | Extensive managerial and academic experiences in the disciplines of sustainable development, rural economy, agriculture and food security, education planning and youth civic engagement based on her work in South Africa, and internationally | Stellenbosch University<br>SAWS                    | SPC                                                                                               | -                              |
| Mr Itani Phaduli   | ARC Chairperson                                                         | January 2019      | Current        | Post Graduate Diploma in Accounting,                    | Finance, Management and Financial Accounting, Financial Reporting, Auditing and Taxation                                                                                                                                                        |                                                    | ARC                                                                                               | 9                              |
| Ms Feziwe Renqe    | HRRC Chairperson                                                        | 1 January 2019    | Current        | LLM, MAP, PostGrad Diploma in Corporate Law, B Proc     | Law                                                                                                                                                                                                                                             | LIV Lukhanyiso                                     | HRRC                                                                                              | 8                              |

**Table 28:** SAWS Board

The current Board's term comes to an end on 31 December 2021, having served for three years, from 1 January 2019.

| Committee                                  | No. of meetings held | No. of members | Name of members                 |
|--------------------------------------------|----------------------|----------------|---------------------------------|
| Audit and Risk Committee                   | 8                    | 5              | Mr Itani Phaduli (Chairperson)  |
|                                            |                      |                | Adv Derick Block                |
|                                            |                      |                | Mr Gideon Labane                |
|                                            |                      |                | Mr Suren Maharaj                |
|                                            |                      |                | Mr Thamsanqa Ndadana            |
| Human Resources and Remuneration Committee | 6                    | 4              | Ms Feziwe Renqe (Chairperson)   |
|                                            |                      |                | Ms Nana Magomola                |
|                                            |                      |                | Ms Shirley Moroka - Mosia       |
|                                            |                      |                | Ms Sally Mudly - Padayachie     |
| Strategic Programmes Committee             | 4                    | 4              | Dr Mphekgo Maila (Chairperson)  |
|                                            |                      |                | Dr Phillip Dexter               |
|                                            |                      |                | Mr David Lefutso                |
|                                            |                      |                | Dr Thuli Khumalo                |
|                                            |                      |                | <sup>1</sup> Dr Tsakani Ngomane |

**Table 29:** Board Committees

[1] Dr Ngomane resigned on 31 August 2020

## Remuneration of Board members

Section 9 of the SAWS Act states that any Member of the Board, other than the Chief Executive Officer and the Senior Official of the Department designated by the Director General, with the approval of the Minister to serve on the SAWS Board, must be paid such remuneration and allowances as the Minister, with the concurrence of the Minister of Finance, may determine.

The Director General of 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:

| Category A              | Meeting Fee per Day | Meeting Fee per hour |
|-------------------------|---------------------|----------------------|
| <b>Sub-category A1</b>  |                     |                      |
| <b>Chairperson</b>      | R5 230              | R654                 |
| <b>Vice-Chairperson</b> | R4 445              | R556                 |
| <b>Member</b>           | R3 888              | R486                 |

**Table 30:** Meeting Attendance Fees

The Schedule indicating remuneration paid to each Board member can be found on page 206 of the Annual Financial Statements.

## 5. RISK MANAGEMENT

- ***Risk management policy and strategy.***

In compliance with the requirements of the Public Finance Management Act, 1999 (Act No.1 of 1999) Section 51.1 (a)(i) SAWS has an approved risk management policy which outlines its commitment to managing risks events, which might impact on the achievement of its objectives. Furthermore, embedded in the risk management policy is the risk management philosophy and approach which details SAWS' plan of action on how to effectively implement the risk management policy day-to-day activities.

- ***SAWS conducts regular risk assessments to determine the effectiveness of its 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 accordingly. Further, emerging risks resulting from the impact of COVID-19 were considered during the risk assessment process and these are reflected in the risk profile. The risk response strategies to further mitigate the risks which are rated higher than the set risk tolerance and risk appetite were documented and monitored regularly to ensure that risk owners are effectively managing risks. However, some risk management activities were affected during the change in working conditions resulting from COVID-19.

- ***Whether there is a Risk Management Committee that advises management on the overall system of risk management, especially the mitigation of unacceptable levels of risk.***

The Risk Management Committee has been appointed and is chaired by the delegated Executive. However, the committee meetings have not been taking place as scheduled.

The Audit and Risk Committee advises the public entity on risk management and independently monitors the effectiveness of the system of risk management.

Risk management reports were tabled at the Audit and Risk Committee which is chaired by an independent person. The committee have met on quarterly basis as scheduled.

- **Progress in the management of risks.**

To promote a zero-tolerance environment for fraudulent and corrupt activities SAWS has an approved whistleblowing policy, fraud policy and fraud prevention plan as well as a fraud and ethics hotline that is facilitated by an independent service provider. All the reported cases were communicated to SAWS through the outsourced internal auditor, SNG Grant Thornton.

## 6. INTERNAL CONTROL UNIT

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

- Compliance;
- Risk Management; and
- Internal Audit.

These departments prepare annual plans for the financial year and monitor implementation thereof in order to avoid duplication of efforts and ensure that the assurance units complement each using a combined assurance approach.

## 7. INTERNAL AUDIT AND RISK COMMITTEE

### Key activities and objectives of the internal audit

During the period under review, the SAWS Internal Audit Function was outsourced to SNG Grant Thornton. The Internal Audit Function was accountable to the SAWS CEO and the Board through the SAWS Audit and Risk Committee (ARC). This reporting ensured the effectiveness of the internal audit 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 internal auditing is to provide independent, objective assurance services designed to add value and improve SAWS' operations and to evaluate the effectiveness of risk management, control and the governance processes.

The Internal Audit activities are detailed in the annual Internal Audit Plan that was approved by the Audit and Risk Committee. They include:

- Considering the scope of work of the external auditors to ensure optimal audit coverage;
- Assessing the adequacy and effectiveness of internal control and risk management systems;
- Analysing and evaluating business processes and associated controls; and
- Recommending appropriate corrective actions.

All audit issues identified are reported to the Board Audit and Risk Committee and are tracked until resolved by Management.

### Summary of audit work done

During the 2020/21 financial year, the following internal audit reviews were conducted:

- Supply Chain Management Review;
- Financial Sustainability Review;
- IT Security Review;
- Audit of Performance Information (Q1, Q2 & Q3); and
- Follow-up Audits.

## Key activities and objectives of the audit 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 include the following:

- 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;
- 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 preparing the Financial Statements;
- Reviewing the Annual Financial Statements for completeness and consistency with the prescribed accounting principles prior to recommending them for Board approval;
- Reviewing, together with Management and the external auditors, the outcome of the external audit, including any significant issues identified;
- Governance of risk;
- Governance of Information and Communication Technology (ICT);
- Monitoring internal controls and compliance;
- Managing 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 coordination with the external auditor;
- Ensuring that the external auditors provide an assurance report on the contents of summarised financial information;
- Regularly reporting to the Board about Committee activities, issues and related recommendations;
- Whistle blowing and reporting fraud; and
- Monitor 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 10 (ten) principles of the United Nations Global Compact that are relevant to its mandate (working against corruption in all its forms, including extortion and bribery);
  - the Organisation for Economic Co-operation Development (OECD) recommendations regarding anti-corruption.

### Attendance of Audit and Risk Committee meetings by committee members

The table below discloses relevant information on the audit committee members.

| Name                 | Qualifications                                                                                                                                                                                                               | Internal or external | If internal, position in the public entity | Date appointed   | Date Resigned | No. of Meetings attended |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------|------------------|---------------|--------------------------|
| Mr Itani Phaduli     | CA(SA), MCom – Development Finance, Post Graduate Diploma in Accounting, Bcom Financial Accounting                                                                                                                           | External             | -                                          | 1 January 2019   | Current       | 8                        |
| Adv Derick Block     | B. Juris, LLB, H Dip Tax                                                                                                                                                                                                     | External             | -                                          | 1 September 2016 | Current       | 6                        |
| Mr Gideon Labane     | CA(SA), Public Practice Examination, Advanced certificate in Auditing, BCom Honours (Accounting) and Certificate in Theory of Accounting (CTA), Intermediate Certificate in Accountancy and ND- Cost & Management Accounting | External             | -                                          | 26 February 2019 | Current       | 8                        |
| Mr Suren Maharaj     | CA(SA), Hons BCompt Degree, BCom Degree, Executive Municipal Finance Management                                                                                                                                              | External             | -                                          | 26 February 2019 | Current       | 7                        |
| Mr Thamsanqa Ndadana | CA(SA), BCom Honours, BCom                                                                                                                                                                                                   | External             | -                                          | 1 November 2019  | Current       | 7                        |

**Table 31:** Audit Committee Members

## 8. COMPLIANCE WITH LAWS AND REGULATIONS

In order to deliver on its mandate and to achieve its strategic objectives, SAWS, as a law-abiding entity, must ensure that all the laws which apply to its operations and activities are complied with.

There are over 200 laws and regulations, which apply to and regulate the SAWS' operations and activities.

The SAWS Board, as per King IV, 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.

Due to the fact that there are constant developments in the laws, 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 in order to inform SAWS employees on the new developments in 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.

The various assurance providers i.e. the Auditor-General, internal auditors, risk officer and compliance manager also assist the Board in identifying any areas of non-compliance, which are immediately attended to.

During the year under review, the organisation focused a lot of attention on putting all the necessary measures in place to ensure compliance with the Protection of Personal Information Act (POPIA), which officially came into effect on 1 July 2020, giving organisations a full year within which to put all the necessary measures in place to ensure compliance. These measures included developing a SAWS POPIA policy, workshoping the legislation and policy with the SAWS employees, conducting an impact analysis assessment, appointing champions, and drafting the relevant documents aimed at ensuring compliance. As at the end of the financial year under review, the organisation is comfortable that by 1 July 2021, which is the compulsory date for compliance, the necessary compliance measure will be in place.

## 9. FRAUD AND CORRUPTION

To promote a zero tolerance environment for fraudulent and corrupt activities SAWS has an approved whistleblowing policy; fraud policy and fraud prevention plan; and a fraud and ethics hotline that is facilitated by an independent service provider. All the reported cases were communicated to SAWS through the outsourced internal audit (SNG) and for the reporting period no cases were reported through the fraud channels.

There were cases that were investigated, however, they were not related to incidents that occurred in the 2020/21 financial year and it is not certain as to whether they can be classified as fraud or not.

## 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 restricts supplier status prior to the awarding of price quotations and tenders to minimise conflict of interest in supply chain management.

Conflicts of interest are also declared at meetings of the executive committee, management committee, bid specification committee and bid adjudication committee.

## 11. CODE OF CONDUCT

SAWS complies to all relevant legislation and regulations in its daily code of conduct towards the public and its employees. See paragraph 8 above for more detail.

## 12. HEALTH, SAFETY AND ENVIRONMENTAL ISSUES

During the year under review the country and the entire world was hit by the COVID-19 pandemic. The pandemic impacted organisations adversely and SAWS had to respond accordingly. This response was informed by the imperative to continue to provide a healthy and safe working environment for employees amidst the pandemic. SAWS implemented several controls, such as a hybrid model of working either from home or at the office, in order to ensure that the required safe social distancing could be achieved. The organisation also provided personal protective equipment (PPE) to personnel at all its offices, as well as disinfectant materials at strategic places within all SAWS offices. An online COVID-19 screening tool was developed internally by our ICT department with information made readily available for monitoring and reporting. The procedures and plans were continually assessed throughout the year, and where appropriate, amended to best respond to various challenges. In total, SAWS recorded 31 COVID-19 cases and sadly, one COVID-19 related death. Of the 31 cases, only two were suspected to have been arising from the SAWS offices. These statistics indicate that the health and safety measures implemented in all the SAWS offices were very effective.

SAWS continuously strives to create a conducive working environment for its employees and therefore ensures that environmental and social impact is part of its strategy, as opposed to just being a risk that needs to be mitigated. To further strengthen its contribution to the government's policies on climate and environmental issues, the organisation will be developing an environmental framework aimed at guiding various activities to be undertaken by SAWS, to ensure valuable contribution.

Climate change is currently one of the biggest risks facing the world and as a result, SAWS is increasing its efforts to minimise activities that cause environmental damage. One simple way is switching to smart lighting with sensors to minimise the use of energy and using tele-conference tools instead of travelling to different locations for meetings, thereby reducing its Carbon Monoxide (CO) and Carbon Dioxide (CO<sub>2</sub>) emissions. These are just some of the activities that were identified and implemented. However, the finalisation of the environmental framework will result in enhanced activities, for even better results and contributions.

## 13. COMPANY SECRETARY

SAWS is an entity of the Department of Forestry, Fisheries and the Environment (DFFE), which is not incorporated in terms of the Companies Act. As such, to comply with 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 IV Code on Corporate Governance and the Companies Act.

The role of the Company Secretary is to:

- Provide the Board members of the entity with guidance as to their duties, responsibilities and powers;
- Make the Board members aware of any law relevant to or affecting the entity;
- Report to the Board any failure on the part of the company or a Board member to comply with the provisions of the SAWS Act and the Board Charter;
- Ensure that minutes of all shareholders meetings, Board meetings and the meetings of any committees of the Board are properly recorded;

The Company Secretary should assist in the proper induction, orientation, ongoing training and education of members, including assessing the specific training needs of Board members and executive management in their fiduciary and other governance responsibilities;

The Company Secretary should be available to provide comprehensive practical support and guidance to Board members, with particular emphasis on supporting the non-executive members, the chairperson of the Board and the chairpersons of Board committees;

The Company Secretary should ensure that the Board and Board committee charters and terms of reference are kept up to date;

The Company Secretary should be responsible for ensuring the proper compilation and timely circulation of Board papers and for assisting the Chairperson of the Board and Committees with drafting of yearly work plans.

The Company Secretary should have the duty to obtain appropriate responses and feedback to specific agenda items and matters arising from earlier meetings in Board and Board committee deliberations.

The Company Secretary's role should also be to raise matters that may warrant the attention of the Board. The Company Secretary should ensure that the proceedings of Board and committee meetings are properly recorded and that minutes of meetings are circulated to the members in a timely manner, after the approval by the Chairperson of the Board or relevant Board committee.

The Company Secretary should assist the Board with the yearly evaluation of the Board, its individual directors and its committees.

## 14. SOCIAL RESPONSIBILITY

SAWS continued to be a socially responsible organisation in the delivering of its weather warning, 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

### 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) (PFMA), Treasury Regulations 1.1.13, 27.1 and its adopted Charter that regulates the Committee's mandate and the execution thereof.

### The Effectiveness of Internal Control

The implementation of effective and efficient internal controls and procedures 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 the risk profile of the SAWS into consideration.

The Committee's review of the findings of the Internal and External Audit work, which was based on the risk assessments conducted at the SAWS, revealed certain weaknesses, which 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.

To a large extent, SAWS addressed the audit findings issued by the Auditor-General (AG) and internal audit from the 2018/19 and 2019/20 audits and 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 resolution of findings. The implementation of some audit findings requires funds and with the current limited budget allocations, Management will prioritize 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 more improvement, particularly in relation to the prevention, detection and management of irregular, fruitless and wasteful expenditure.
- Business Continuity and IT Security – numerous shortcomings were identified in this regard and the Committee is providing and continuous oversight, through the quarterly reporting on resolution of audit findings in the ICT area.
- Follow-up audits – specific focus continues on the resolution of prior years' findings which were not resolved in the 2020/21 financial year and these are also monitored by the Committee through the audit implementation plan which is provided and presented to the Committee on a quarterly basis.

### Other Audits

During the 2019/20 financial year, allegations of fraud, corruption and mismanagement were reported to the Accounting Authority. These allegations were investigated internally with the Audit and Risk Committee exercising its mandated oversight role. The investigations continued and were concluded in the current review period. The Accounting Officer is currently implementing recommendations and consequence management arising from the reports.

### In-Year Management Quarterly Reports

With the oversight of the Committee, SAWS submitted quarterly reports to the Executive Authority and was satisfied with the content and quality thereof.

Furthermore, the Committee reviewed the actual performance of SAWS against the strategic objectives and targets set in the Annual Performance Plan for 2020/21. The Committee ensured that the performance

information included in the quarterly performance reports was reviewed by Internal Audit for accuracy and validity

### Evaluation of Financial Statements

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 significant adjustments resulting from the audit; and
- Reviewed the information on predetermined objectives to be included in the annual report

### Auditor-General of South Africa

The Committee ensured that the Auditor-General of South Africa 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 throughout the audit of the SAWS 2020/21 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 public entity's implementation plan for audit issues raised in the prior year and is satisfied that the matters have been adequately resolved. In relation to expenditure management, prior year findings related to irregular expenditure were adequately addressed, however spending above the budgeted expenditure in certain areas was identified as an issue that needs to be addressed.

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

### Going concern status

SAWS' viability to continue operating as a going concern is dependent on the conversion of the Capex grants to Opex grants amongst other things. The reprioritisation of the budget for both 2020/21 and 2021/22 financial years, has a negative impact on the overall achievement of some of the entity's strategic objectives.



**Itani Phaduli**  
Chairperson of the Audit and Risk Committee  
**SOUTH AFRICAN WEATHER SERVICE**  
**30 JULY 2021**

## 16. B-BBEE COMPLIANCE PERFORMANCE INFORMATION

The following table has been completed in accordance with the compliance to the B-BBEE requirements of the Broad-Based Black Economic Empowerment Act, 2013 (Act No. 53 of 2013) and as determined by the Department of Trade and Industry.

SAWS received a verification certificate valid from 29 January 2021 until 28 January 2022. The B-BBEE score rating is at Level 8 which is one level below the target of Level 7. SAWS did not meet the minimum requirements for Skills Development, Supplier Development Contributions and Enterprise Development. Management has since established a Task Team that seeks to prioritise the B-BBEE status for the organisation. This has resulted in an improvement compared to the prior year, where the organisation did not have a valid B-BBEE Certificate due to non-compliance.

SAWS will place more emphasis on the elements where the minimum threshold requirements, as mentioned above, were not met. Focused efforts to improve will include a targeted recruitment and selection process; appointment of unemployed learners; work integrated learners with a specific focus on People with Disability (PWD); making use of the Presidential Employment Stimulus Package to create work opportunities for unemployed graduates in various streams; and executing various training interventions for SAWS employees from designated groups.

| Criteria                                                                                                                                                 | Response<br>Yes / No | Discussion<br>(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                                                                                                        |

**Table 32:** Application of Code of Good Practice (B-BBEE Certificate Levels 1-8)



# HUMAN RESOURCE MANAGEMENT PART D



**South African  
Weather Service**

# HUMAN RESOURCE MANAGEMENT

## 1. INTRODUCTION

### 1.1 Key Strategic Projects

The beginning of the year coincided with the escalation of COVID-19 pandemic related cases, which saw the country going through a variety of lockdown regulations. These regulations resulted in loss of revenue for SAWS and, at the same time, necessitated that the organisation introduce alternative ways of working, including shift rosters and, where applicable, working from home. This loss of revenue came with a suspension of many human resources programmes that were planned for the year, especially those that required funding, for example, the delivery of the Workplace Skills Plan (WSP). The focus was redirected to prioritise some developmental work that did not need a lot of capital injection to ensure that processes and procedures were in place for when SAWS moved to normal operations, while at the same time trying to deliver on the approved Annual Performance Plan (APP).

Table 33 below provides a summary of what was achieved in relation to the APP.

| Output                                               | Output Indicators                                                  | Annual Target      | Comments                                                                                                                                                          |
|------------------------------------------------------|--------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal excellence achieved within the organisation | Percentage of Attrition rate                                       | ≤8% attrition rate | Target not achieved<br>Attrition rate is at 11%                                                                                                                   |
|                                                      | Percentage of Workplace skills plan (WSP) targets met              | 75%                | Only 60% was achieved due to budget cuts                                                                                                                          |
|                                                      | % Compliance to Employment Equity on Women in Management           | 36%                | Target exceeded<br>There is 43% of women in management positions                                                                                                  |
|                                                      | % Compliance to Employment Equity on People Living with Disability | 2%                 | Target not achieved<br>People with disabilities form 1%<br>Most positions where we could have reasonable accommodation were deferred due to financial constraints |
|                                                      | Number of Youths in Internships and Learnerships                   | 10                 | Target Met<br>10 unemployed youths placed on an internship programme                                                                                              |
|                                                      | Number of Placements in Work Integrated Learnings                  | 5                  | Five learners with disabilities are on an 18-month work integrated programme                                                                                      |

**Table 33:** Achievements in relation to the APP

For reasons cited above, SAWS was not able to give employees salary increases this year, however, we made sure that policies that supported programmes aimed at enhancing the SAWS Employee Value Proposition (EVP) were developed. The EVP seeks to attract and retain the best talent, thus ensuring a skilled and capable workforce.

## 1.2 Policy Development

The following policies were developed as part of the SAWS EVP:

- The Exchange and Research Fellowship Policy, which provides guidelines for exchange programmes of scientists and researchers with other local and international research organisations.
- The Sabbatical Leave Policy, as part of the employee value proposition, enables employees to take time off work for an extended period in pursuit of their personal and professional growth.
- The Studentship Policy, which enables Master's and PhD studentships based on the research work done at SAWS.
- The Career Ladders Framework, as one of our efforts in strengthening our talent pipeline, seeks to clearly articulate employees' career growth paths and forms part of SAWS' succession planning.

## 1.3 Employee Wellness Programme

COVID-19 continued to have an impact on employees' general wellbeing, be it due to illness, financial strain, taking care of loved ones, and/ or balancing family and work-life, etc. To this effect, we saw a necessity to relaunch the Employee Assistance and Wellness Programme (EAP) under a new service provider. There was a significant uptake in the use of the EAP as well as employee attendance of the wellness programmes that were run online, with encouraging feedback from attendees who attended.

## 1.4 Women Advancement Programme

Despite financial constraints, SAWS continued to introduce programmes to ensure that we have an adequate, appropriately skilled, transformed and diverse workforce, amongst others the Women Advancement Programme. This is a programme extending over twelve months, aimed at building a talent pool of female employees that will be readily available to take up senior positions whenever there are vacancies within SAWS, as part of driving gender diversity and equality.

A total of fifteen employees were nominated to participate in the programme. The programme is in collaboration with an external service provider and participants attended classes, with some being online. The programme is scheduled to end in March 2022, with the graduation in May 2022.

## 1.5 Government Employment Stimulation Project

To create employment opportunities for unemployed youth, Government introduced the Presidential Employment Stimulus Package (PESP) for specific working realms in specific departments. SAWS was allocated R3 million for the implementation of this project. The appointment of beneficiaries was centred on Internships and Work Integrated Learners, focusing on meteorological and related services. The target was to employ twenty-four unemployed youth but a total of thirty-nine were employed, most of them for a minimum duration of twelve months. A total of 64% of the beneficiaries were females and 10% were persons with disabilities. This successful programme will continue in the new fiscal, depending on SAWS being allocated funds for the 69 grants that have been applied for.

### 1.5.1 Work Integrated and Learnerships

The following categories of learners are employed at various departments of SAWS (Table 34):

| Category                                                                    | No. of Participants | Expenditure on Salaries | Duration of the Programme |
|-----------------------------------------------------------------------------|---------------------|-------------------------|---------------------------|
| F Category A/B Bursaries/HET *<br>Internship - Unemployed Learners          | 10                  | R1 200 000,00           | 12 months                 |
| Category C/D *<br>Learnerships Unemployed                                   | 5                   | R300 000,00             | 12 months                 |
| Category C<br>Employed Learner<br>(Generic Management)                      | 15                  | R495 000,00             | 12 months                 |
| Category E*<br>Work Integrated Learners Unemployed People with Disabilities | 5                   | R460 000,00             | 18 months                 |
| <b>Total Budget</b>                                                         |                     | <b>R2 455 000,00</b>    |                           |

**Table 34:** Learner categories at SAWS

*\*Every effort will be made to retain these employees*

## 2. HUMAN RESOURCE OVERSIGHT STATISTICS

### 2.1 Personnel-related expenditure

Table 35 below provides information regarding personnel expenditure by programme and Table 36 depicts personnel cost by salary band.

| Programme/activity/objective           | 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           | 435 045                                  | 77 318                        | 17,77%                                      | 121              | 639                                         |
| Infrastructure and Information Systems |                                          | 147 137                       | 33,82%                                      | 347              | 424                                         |
| Finance and Supply Chain               |                                          | 18 630                        | 4,28%                                       | 43               | 433                                         |
| Corporate and Regulatory Services      |                                          | 25 619                        | 5,89%                                       | 60               | 427                                         |

**Table 35:** Personnel Cost by programme

*\*The employee numbers above include foreign nationals and interns who are not included in the Equity tables below*

| 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         | 5 831                         | 2                                                   | 4                | 1 458                                       |
| Senior Management      | 23 682                        | 9                                                   | 17               | 1 393                                       |
| Professional qualified | 92 202                        | 34                                                  | 128              | 720                                         |
| Skilled                | 90 451                        | 34                                                  | 205              | 441                                         |
| Semi-skilled           | 48 615                        | 18                                                  | 140              | 347                                         |
| Unskilled              | 7 921                         | 3                                                   | 77               | 610                                         |
| <b>TOTAL</b>           | <b>268 703</b>                | <b>100</b>                                          | <b>571</b>       | <b>471</b>                                  |

**Table 36:** Personnel cost by salary band

*\*The numbers above reflect employees during the reporting year and not necessarily the employees as of 31 March 2021*

### 2.1.1 Performance Rewards

No performance bonuses were paid out in the current year.

### 2.1.2 Training Costs

The implementation of the Workplace Skills Plan was a challenge, given the financial constraints faced by SAWS. There was a loss of revenue due to the COVID-19 pandemic and the reduction in the government grant which resulted in the reduction of the training budget. Only key and strategic training was approved and all employee bursaries were suspended for the year.

Table 37 below provides the training costs relating to skills development in the organisation.

| Programme/ activity/objective | Personnel Expenditure (R'000) | Training Expenditure (R'000) | Training Expenditure as a % of Personnel Cost. | No. of employees trained | Avg training cost per employee |
|-------------------------------|-------------------------------|------------------------------|------------------------------------------------|--------------------------|--------------------------------|
| Skills Development            | R 268 702 789                 | R 578 681                    | 0,22%                                          | 215                      | R 2 691.54                     |

**Table 37:** Training costs

## 2.2 Vacancies

Where possible, every effort was made to fill the vacancies internally. Some vacancies were deferred to the next financial year due to financial constraints, and in some cases, vacancies took longer to fill as the country experienced various levels of lockdown which came with uncertainty. This was also coupled with the fact that SAWS was undergoing restructuring, aimed at developing a fit-for-purpose structure that will encourage collaboration amongst various functions and support the Integrated Service Strategy. Table 38 overleaf provides employee vacancies per division, while Table 39 indicates vacancies per occupational level.

| Programme/activity/objective           | 2019/20<br>No. of<br>Employees | 2020/21<br>Approved<br>Posts | 2020/21<br>No. of<br>Employees | 2020/21<br>Vacancies | % of Vacancies |
|----------------------------------------|--------------------------------|------------------------------|--------------------------------|----------------------|----------------|
| Weather and Climate Services           | 142                            | 14                           | 144                            | 14                   | 10%            |
| Infrastructure and Information Systems | 273                            | 20                           | 261                            | 19                   | 7%             |
| Finance & Supply Chain Management      | 30                             | 10                           | 31                             | 6                    | 19%            |
| Corporate Services                     | 43                             | 14                           | 34                             | 9                    | 26%            |

**Table 38:** Employment vacancies per division

| Programme/activity/objective | 2019/20<br>No. of<br>Employees | 2020/21<br>Approved<br>Posts | 2020/21<br>No. of<br>Employees | 2020/21<br>Vacancies | % of Vacancies |
|------------------------------|--------------------------------|------------------------------|--------------------------------|----------------------|----------------|
| Top Management               | 3                              | 3                            | 3                              | 2                    | 67%            |
| Senior Management            | 14                             | 7                            | 15                             | 4                    | 27%            |
| Professionally qualified     | 121                            | 24                           | 113                            | 22                   | 19%            |
| Skilled                      | 205                            | 21                           | 200                            | 17                   | 9%             |
| Semi-skilled                 | 119                            | 1                            | 115                            | 1                    | 1%             |
| Unskilled                    | 26                             | 2                            | 24                             | 2                    | 8%             |
| <b>TOTAL</b>                 | <b>488</b>                     | <b>57</b>                    | <b>470</b>                     | <b>48</b>            |                |

**Table 39:** Employment vacancies per occupational level

## 2.3 Employment changes

There was minimal employment movement due to the COVID-19 pandemic. Recruitment was only reserved for critical vacancies, while the rest of the vacancies were deferred to the next financial year.

SAWS' turnover rate was at 6%, which is 2% below the target of 8%. It was relatively low considering that the organisation was not able to give salary increases for the financial year and all indications are that there would be no increases in the next fiscal.

As mentioned above, a couple of programmes have been introduced to enhance SAWS' Employee Value Proposition, especially with regards to career growth prospects, development opportunities and employee wellness. The job evaluation and salary parity exercises were deferred to when the organisation's financial circumstances improve.

Table 40 overleaf depicts employment changes, while Table 41 indicates reasons for staff leaving the organisation.

| Salary Band            | Employment at beginning of period | Appointments | Terminations | Employment at end of the period |
|------------------------|-----------------------------------|--------------|--------------|---------------------------------|
| Top Management         | 3                                 | 1            | 1            | 3                               |
| Senior Management      | 14                                | 4            | 2            | 15                              |
| Professional qualified | 121                               | 1            | 9            | 113                             |
| Skilled                | 205                               | 3            | 11           | 200                             |
| Semi-skilled           | 119                               | 1            | 3            | 115                             |
| Unskilled              | 26                                | 0            | 2            | 24                              |
| <b>Total</b>           | <b>488</b>                        | <b>10</b>    | <b>28</b>    | <b>470</b>                      |

**Table 40:** Employment changes

| Reason             | Number    | % of total no. of staff leaving |
|--------------------|-----------|---------------------------------|
| Death              | 2         | 7%                              |
| Resignation        | 17        | 61%                             |
| Dismissal          | 0         | 0%                              |
| Retirement         | 3         | 11%                             |
| Ill health         | 0         | 0%                              |
| Expiry of contract | 5         | 18%                             |
| Other              | 1         | 3%                              |
| <b>Total</b>       | <b>28</b> | <b>100%</b>                     |

**Table 41:** Reasons for staff leaving the organisation.

It should be noted that 39% of the organisation's terminations were involuntary (retirements, discharged, end of contracts) and 61% were voluntary terminations such as resignations. The reasons for leaving included relocating overseas, career advancement and career change. The organisation did not achieve its 98% staff retention target.

SAWS had to manage very few misconduct and disciplinary actions during the reporting period as indicated in Table 42 below:

| Nature of disciplinary Action | Number |
|-------------------------------|--------|
| Verbal Warning                | 0      |
| Written Warning               | 2      |
| Final Written Warning         | 1      |
| Dismissal                     | 0      |

**Table 42:** Labour relations: Misconduct and disciplinary action

## 2.4 Equity Target and Employment Equity Status

Not much recruitment happened in the 2020/21 financial year, due to financial constraints. As a result, most vacancies were deferred to the next financial year. However, where applicable, every effort was made to fill vacancies with employees from targeted groups. The employee profile will change significantly in the next report period as transformation efforts were targeted at Top and Senior Management level. Table 43 indicates the employment equity target and employment equity status.

| Levels                 | MALE       |            |           |           |          |          |           |           |
|------------------------|------------|------------|-----------|-----------|----------|----------|-----------|-----------|
|                        | African    |            | Coloured  |           | Indian   |          | White     |           |
|                        | Current    | Target     | Current   | Target    | Current  | Target   | Current   | Target    |
| Top Management         | 3          | 3          | 0         | 0         | 0        | 0        | 0         | 0         |
| Senior Management      | 3          | 6          | 0         | 0         | 1        | 1        | 0         | 1         |
| Professional qualified | 41         | 47         | 4         | 4         | 1        | 1        | 20        | 26        |
| Skilled                | 81         | 75         | 7         | 6         | 4        | 4        | 22        | 21        |
| Semi-skilled           | 43         | 42         | 8         | 8         | 0        | 0        | 7         | 7         |
| Unskilled              | 14         | 15         | 5         | 5         | 0        | 0        | 0         | 0         |
| <b>TOTAL</b>           | <b>185</b> | <b>188</b> | <b>24</b> | <b>23</b> | <b>6</b> | <b>6</b> | <b>56</b> | <b>55</b> |

| 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         | 0         | 1        | 1        | 2         | 2         |
| Professional qualified | 28         | 28         | 1         | 1         | 0        | 0        | 9         | 10        |
| Skilled                | 61         | 65         | 8         | 8         | 3        | 3        | 13        | 14        |
| Semi-skilled           | 45         | 39         | 7         | 7         | 0        | 0        | 4         | 4         |
| Unskilled              | 5          | 5          | 0         | 0         | 0        | 0        | 0         | 0         |
| <b>TOTAL</b>           | <b>145</b> | <b>144</b> | <b>16</b> | <b>16</b> | <b>4</b> | <b>4</b> | <b>28</b> | <b>30</b> |

**Table 43:** Equity Target and Employment Equity Status

Table 44 reflects the disabled staff in the employ of SAWS at various levels. The efforts that were made by SAWS to increase employment of this group of employees.

| Levels                 | DISABLED STAFF |          |          |          |
|------------------------|----------------|----------|----------|----------|
|                        | Male           |          | Female   |          |
|                        | Current        | Target   | Current  | Target   |
| Top Management         | 0              | 0        | 0        | 0        |
| Senior Management      | 0              | 0        | 0        | 0        |
| Professional qualified | 0              | 0        | 0        | 1        |
| Skilled                | 3              | 1        | 1        | 1        |
| Semi-skilled           | 1              | 0        | 2        | 0        |
| Unskilled              | 1              | 0        | 0        | 0        |
| <b>TOTAL</b>           | <b>4</b>       | <b>1</b> | <b>3</b> | <b>2</b> |

**Table 44:** Disabled Staff

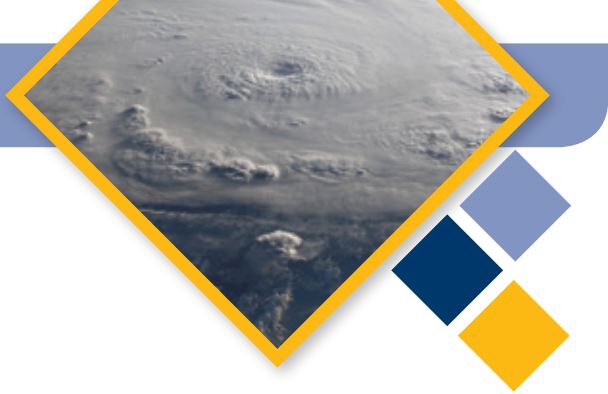
# FINANCIAL INFORMATION PART E



**South African  
Weather Service**

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## 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 as set out on pages 141 to 214, which comprise the statement of financial position as at 31 March 2021, the statement of financial performance, statement of changes in net assets, and cash flow statement and statement of comparison of budget information with actual information 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 Services as at 31 March 2021, and its financial performance and cash flows for the year then ended in accordance with the 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.

#### Emphasis of matters

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

#### Restatement of corresponding figures

7. As disclosed in note 32 to the financial statements, the corresponding figures for 31 March 2020 were restated as a result of an error in the financial statements of the public entity at, and for the year ended, 31 March 2021.

### Material deficit for the year

8. As disclosed in the statement of financial performance, a material deficit of R 16 578 568 was incurred for the 2020/21 financial year as a result of a significant reduction of the public entity's regulated revenue streams that depend on the aviation industry. This was due to travel restrictions and lockdown regulations imposed by government throughout the year.

### Responsibilities of the accounting authority for the financial statements

9. The board of directors, which constitutes the accounting authority is responsible for the preparation and fair presentation of the financial statements in accordance with the Standards of GRAP and 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.
10. 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

11. 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.
12. 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

13. 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 programme presented in the annual performance report. I performed procedures to identify material findings but not to gather evidence to express assurance.
14. 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.

15. 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 2021:

| Programmes                                          | Pages in the annual performance report |
|-----------------------------------------------------|----------------------------------------|
| Programme 3: infrastructure and information systems | 99-102                                 |

16. I performed procedures to determine whether the reported performance information properly presented and whether 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.
17. I did not identify any material findings on the usefulness and reliability of the reported performance information for programme 3 – infrastructure and information systems.

#### Other matter

18. I draw attention to the matter below.

#### Achievement of planned targets

19. Refer to the annual performance report on pages 96 to 107 for information on the achievement of planned targets for the year and management's explanations provided for the under achievement of targets.

### Report on the audit of compliance with legislation

#### Introduction and scope

20. 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.
21. The material findings on compliance with specific matters in key legislation are as follows:

#### Expenditure management

22. Effective and appropriate steps were not taken to prevent irregular expenditure amounting to R23 802 332 as disclosed in note 35 to the annual financial statements, as required by section 51(1) (b)(ii) of the PFMA. The majority of the irregular expenditure resulted from procurement processes not being followed, which was identified in the current year.

#### Other information

23. 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.

24. My opinion on the financial statements and findings on the reported performance information and compliance with legislation do not cover the other information and I do not express an audit opinion or any form of assurance conclusion on it.
25. 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. If, based on the work I have performed, I conclude that there is a material misstatement in this other information, I am required to report that fact. I have nothing to report in this regard.

### Internal control deficiencies

26. 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 the the findings on compliance with legislation:
27. Management did not effectively and timeously review compliance assurance controls to effectively prevent transgression of laws and regulations in relation to the public entity's supply chain and contract management practices and expenditure against the approved budget.
28. Inadequate design and implementation of IT governance processes were noted and could result in breakdown in controls and oversight, as well as IT not being strategically aligned to business. IT controls pertaining to security management, program change management, IT service continuity, user access management, and physical and environmental controls were not effectively designed and implemented by the responsible management.

*Auditor - General*

Pretoria  
31 July 2021



AUDITOR - GENERAL  
SOUTH AFRICA

*Auditing to build public confidence*

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

# ANNUAL FINANCIAL STATEMENTS

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

## GENERAL INFORMATION

### Country of incorporation and domicile

South Africa

### Members of the Board

Ms. Magomola Nana (Chairperson)  
Dr. Dexter Phillip (Deputy Chairperson)  
Adv. Block Derrick  
Mr. Lefutso David  
Dr. Maila Mphokgo  
Ms. Moroka-Mosia Kelebogile  
Ms. Mudly-Padayachie Sally  
Ms. Renqe Feziwe  
Mr. Phaduli Itani  
Dr. Khumalo Thuli

### 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.

## STATEMENT OF FINANCIAL POSITION

### as at 31 March 2021

| Figures are in Rands                                                   | Note(s) | 2021               | 2020<br>Restated*  |
|------------------------------------------------------------------------|---------|--------------------|--------------------|
| <b>Assets</b>                                                          |         |                    |                    |
| <b>Current Assets</b>                                                  |         |                    |                    |
| Inventories                                                            | 3       | 3 709 052          | 3 658 207          |
| Accounts receivable from exchange transactions - other                 | 4       | 4 499 803          | 6 902 449          |
| Accounts receivable from exchange transactions - Statutory receivables | 5       | 3 039 843          | 10 957 607         |
| Prepayments                                                            | 6       | 3 925 809          | 6 284 107          |
| Cash and cash equivalents                                              | 7       | 41 935 498         | 44 535 907         |
|                                                                        |         | <b>57 110 005</b>  | <b>72 338 277</b>  |
| <b>Non-Current Assets</b>                                              |         |                    |                    |
| Investment property                                                    | 8       | 71 779 121         | 71 779 121         |
| Property, plant and equipment                                          | 9       | 306 399 597        | 320 685 853        |
| Intangible assets                                                      | 10      | 8 987 044          | 9 605 024          |
|                                                                        |         | <b>387 165 762</b> | <b>402 069 998</b> |
| <b>Total Assets</b>                                                    |         | <b>444 275 767</b> | <b>474 408 275</b> |
| <b>Liabilities</b>                                                     |         |                    |                    |
| <b>Current Liabilities</b>                                             |         |                    |                    |
| Operating lease liability                                              | 11      | 1 505 274          | 1 336 230          |
| Accounts payable from exchange transactions                            | 12      | 16 461 016         | 33 492 844         |
| Employee benefit obligation                                            | 13      | 10 887 780         | 6 976 706          |
| Unspent conditional grants and receipts - other                        | 14      | 43 801 541         | 26 709 292         |
| Unspent Government allocations – conditional grant                     | 16      | 26 078 986         | 44 166 428         |
|                                                                        |         | <b>98 734 597</b>  | <b>112 681 500</b> |
| <b>Non-Current Liabilities</b>                                         |         |                    |                    |
| Employee benefit obligation                                            | 13      | 3 095 000          | 2 641 000          |
| Provisions                                                             | 15      | 301 875            | 362 913            |
|                                                                        |         | <b>3 396 875</b>   | <b>3 003 913</b>   |
| <b>Total Liabilities</b>                                               |         | <b>102 131 472</b> | <b>115 685 413</b> |
| <b>Net Assets</b>                                                      |         | <b>342 144 295</b> | <b>358 722 862</b> |
| Reserves                                                               |         |                    |                    |
| Revaluation reserve                                                    |         | 51 040 050         | 51 040 050         |
| Accumulated surplus                                                    |         | 291 104 245        | 307 682 812        |
| <b>Total Net Assets</b>                                                |         | <b>342 144 295</b> | <b>358 722 862</b> |

\* See Note 32

## STATEMENT OF FINANCIAL PERFORMANCE

| Figures are in Rands                                | Note(s) | 2021                 | 2020<br>Restated*    |
|-----------------------------------------------------|---------|----------------------|----------------------|
| <b>Revenue</b>                                      |         |                      |                      |
| <b>Revenue from exchange transactions</b>           |         |                      |                      |
| Commercial revenue                                  | 17      | 57 560 839           | 164 167 517          |
| Other income                                        | 17      | 589 945              | 1 197 969            |
| Interest received - investment                      | 18      | 734 706              | 3 714 215            |
| <b>Total revenue from exchange transactions</b>     |         | <b>58 885 490</b>    | <b>169 079 701</b>   |
| <b>Revenue from non-exchange transactions</b>       |         |                      |                      |
| <b>Transfer revenue</b>                             |         |                      |                      |
| Government grants and subsidies                     | 19      | 361 125 139          | 270 945 597          |
| Public contributions and donations                  | 20      | 1 566 525            | 4 790 479            |
| <b>Total revenue from non-exchange transactions</b> |         | <b>362 691 664</b>   | <b>275 736 076</b>   |
| <b>Total revenue</b>                                |         | <b>421 577 154</b>   | <b>444 815 777</b>   |
| <b>Expenditure</b>                                  |         |                      |                      |
| Employee related costs                              | 21      | (268 702 789)        | (277 548 027)        |
| Administration                                      | 22      | (8 243 880)          | (9 572 132)          |
| Depreciation and amortisation                       | 23      | (31 166 636)         | (28 645 682)         |
| Recovery (Impairment) of accounts receivable        | 24      | 2 943 333            | (10 186 006)         |
| Bad debts written off                               |         | (436 293)            | (1 807 484)          |
| General expenses                                    | 25      | (129 338 496)        | (154 600 817)        |
| <b>Total expenditure</b>                            |         | <b>(434 944 761)</b> | <b>(482 360 148)</b> |
| <b>Operating deficit</b>                            |         | <b>(13 367 607)</b>  | <b>(37 544 371)</b>  |
| Loss on disposal of assets                          |         | (128 225)            | -                    |
| Loss on foreign exchange                            |         | (1 463 071)          | (1 249 169)          |
| Fair value adjustments                              | 26      | -                    | 2 501 933            |
| Actuarial (losses)/gains                            | 13      | (12 000)             | 1 607 964            |
| Impairment of assets                                | 27      | (1 641 515)          | (12 040 488)         |
| Inventories write-back                              | 3       | 33 850               | 8 332                |
|                                                     |         | <b>(3 210 961)</b>   | <b>(9 171 428)</b>   |
| <b>Deficit for the year</b>                         |         | <b>(16 578 568)</b>  | <b>(46 715 799)</b>  |

\* See Note 32

## STATEMENT OF CHANGES IN NET ASSETS

| Figures are in Rands                              | Revaluation reserve | Accumulated surplus | Total net assets   |
|---------------------------------------------------|---------------------|---------------------|--------------------|
| <b>Balance at 01 April 2019</b>                   | <b>57 050 448</b>   | <b>354 398 611</b>  | <b>411 449 059</b> |
| Revaluation Land                                  | (5 105 647)         | -                   | (5 105 647)        |
| Revaluation of Buildings                          | 1 514 571           | -                   | 1 514 571          |
| Impairment losses on revalued Aircraft Airframe   | (726 887)           | -                   | (726 887)          |
| Impairment losses on revalued Aircraft Propeller  | (7 088)             | -                   | (7 088)            |
| Impairment losses on revalued Aircraft Engine     | (1 685 347)         | -                   | (1 685 347)        |
| Loss recognised directly in net assets            | (6 010 398)         | -                   | (6 010 398)        |
| Deficit for the year                              | -                   | (46 715 799)        | (46 715 799)       |
| Total recognised income and expenses for the year | (6 010 398)         | (46 715 799)        | (52 726 197)       |
| Total changes                                     | (6 010 398)         | (46 715 799)        | (52 726 197)       |
| <b>Balance at 31 March, 2020</b>                  | <b>51 040 050</b>   | <b>307 682 813</b>  | <b>358 722 863</b> |
| Changes in net assets                             |                     |                     |                    |
| Deficit for the year                              | -                   | (16 578 568)        | (16 578 568)       |
| Total changes                                     | -                   | (16 578 568)        | (16 578 568)       |
| <b>Balance at 31 March 2021</b>                   | <b>51 040 050</b>   | <b>291 104 245</b>  | <b>342 144 295</b> |

\* See Note 32

## CASH FLOW STATEMENT

| Figures are in Rands                                    | Note(s) | 2021                | 2020<br>Restated*   |
|---------------------------------------------------------|---------|---------------------|---------------------|
| <b>Cash flows from operating activities</b>             |         |                     |                     |
| <b>Receipts</b>                                         |         |                     |                     |
| Commercial and other income                             |         | 68 127 600          | 165 988 856         |
| Grants and subsidies                                    |         | 344 604 525         | 297 589 000         |
| Interest income                                         |         | 734 706             | 3 714 215           |
|                                                         |         | 413 466 831         | 467 292 071         |
| <b>Payments</b>                                         |         |                     |                     |
| Employee costs                                          |         | (273 006 825)       | (277 038 420)       |
| Suppliers                                               |         | (125 028 276)       | (169 646 802)       |
|                                                         |         | (398 035 101)       | (446 685 222)       |
| <b>Net cash flows from operating activities</b>         | 28      | <b>15 431 730</b>   | <b>20 606 849</b>   |
| <b>Cash flows from investing activities</b>             |         |                     |                     |
| Purchase of property, plant and equipment               | 9       | (15 327 922)        | (33 078 885)        |
| Proceeds from sale of property, plant and equipment     | 9       | 55 000              | -                   |
| Purchase of intangible assets                           | 10      | (2 759 217)         | (3 683 278)         |
| <b>Net cash flows from investing activities</b>         |         | <b>(18 032 139)</b> | <b>(36 762 163)</b> |
| <b>Net decrease in cash and cash equivalents</b>        |         | <b>(2 600 409)</b>  | <b>(16 155 314)</b> |
| Cash and cash equivalents at the beginning of the year  |         | 44 535 907          | 60 691 221          |
| <b>Cash and cash equivalents at the end of the year</b> | 7       | <b>41 935 498</b>   | <b>44 535 907</b>   |

\* See Note 32

## STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS

### Budget on Accrual Basis

| Figures are in Rands                                                                                 | Original budget      | Adjustments          | Final Budget         | Actual amounts       | Difference between final budget and actual | Reference |
|------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|--------------------------------------------|-----------|
| <b>Statement of financial performance</b>                                                            |                      |                      |                      |                      |                                            |           |
| <b>Revenue</b>                                                                                       |                      |                      |                      |                      |                                            |           |
| <b>Revenue from exchange transactions</b>                                                            |                      |                      |                      |                      |                                            |           |
| Commercial Revenue                                                                                   | 182 828 000          | (126 533 252)        | <b>56 294 748</b>    | 57 560 839           | <b>1 266 091</b>                           | 2         |
| Other income                                                                                         | 500 000              | 1 750 000            | <b>2 250 000</b>     | 589 945              | <b>(1 660 055)</b>                         | 7         |
| Interest received - investment                                                                       | 250 000              | 2 750 000            | <b>3 000 000</b>     | 734 706              | <b>(2 265 294)</b>                         | 6         |
| <b>Total revenue from exchange transactions</b>                                                      | <b>183 578 000</b>   | <b>(122 033 252)</b> | <b>61 544 748</b>    | <b>58 885 490</b>    | <b>(2 659 258)</b>                         |           |
| <b>Revenue from non-exchange transactions</b>                                                        |                      |                      |                      |                      |                                            |           |
| <b>Transfer revenue</b>                                                                              |                      |                      |                      |                      |                                            |           |
| Government grant - operational expenditure                                                           | 215 298 000          | 127 740 000          | <b>343 038 000</b>   | 343 038 000          | -                                          | 1         |
| Government grant - conditional grant                                                                 | 140 633 000          | (139 133 000)        | <b>1 500 000</b>     | 18 087 139           | <b>16 587 139</b>                          | 1         |
| Contributions and donations                                                                          | 14 250 000           | -                    | <b>14 250 000</b>    | 1 566 525            | <b>(12 683 475)</b>                        | 8         |
| <b>Total revenue from non-exchange transactions</b>                                                  | <b>370 181 000</b>   | <b>(11 393 000)</b>  | <b>358 788 000</b>   | <b>362 691 664</b>   | <b>3 903 664</b>                           |           |
| <b>Total revenue</b>                                                                                 | <b>553 759 000</b>   | <b>(133 426 252)</b> | <b>420 332 748</b>   | <b>421 577 154</b>   | <b>1 244 406</b>                           |           |
| <b>Expenditure</b>                                                                                   |                      |                      |                      |                      |                                            |           |
| Employee cost                                                                                        | (297 452 000)        | 29 452 000           | <b>(268 000 000)</b> | (268 702 789)        | <b>(702 789)</b>                           | 3         |
| Administrative Costs                                                                                 | (12 293 467)         | 2 757 013            | <b>(9 536 454)</b>   | (8 243 880)          | <b>1 292 574</b>                           | 4         |
| Depreciation and amortisation                                                                        | (38 638 000)         | 15 979 758           | <b>(22 658 242)</b>  | (31 166 636)         | <b>(8 508 394)</b>                         | 5         |
| Impairment of accounts receivable                                                                    | -                    | -                    | -                    | 2 943 333            | <b>2 943 333</b>                           | 9         |
| Bad debts written off                                                                                | -                    | -                    | -                    | (436 293)            | <b>(436 293)</b>                           |           |
| Operating expenses                                                                                   | (164 742 533)        | 36 946 239           | <b>(127 796 294)</b> | (129 338 496)        | <b>(1 542 202)</b>                         | 4         |
| <b>Total expenditure</b>                                                                             | <b>(513 126 000)</b> | <b>85 135 010</b>    | <b>(427 990 990)</b> | <b>(434 944 761)</b> | <b>(6 953 771)</b>                         |           |
| <b>Operating surplus (deficit)</b>                                                                   | <b>40 633 000</b>    | <b>(48 291 242)</b>  | <b>(7 658 242)</b>   | <b>(13 367 607)</b>  | <b>(5 709 365)</b>                         |           |
| Loss on disposal of assets                                                                           | -                    | -                    | -                    | (128 225)            | <b>(128 225)</b>                           |           |
| Loss on foreign exchange                                                                             | -                    | 4 158 242            | <b>4 158 242</b>     | (1 463 071)          | <b>(5 621 313)</b>                         | 10        |
| Actuarial gains/(losses)                                                                             | -                    | 3 500 000            | <b>3 500 000</b>     | (12 000)             | <b>(3 512 000)</b>                         | 11        |
| Impairment of assets                                                                                 | -                    | -                    | -                    | (1 641 515)          | <b>(1 641 515)</b>                         |           |
| Inventories gain                                                                                     | -                    | -                    | -                    | 33 850               | <b>33 850</b>                              |           |
|                                                                                                      | -                    | 7 658 242            | <b>7 658 242</b>     | (3 210 961)          | <b>(10 869 203)</b>                        |           |
| <b>Surplus/ (Deficit)</b>                                                                            | <b>40 633 000</b>    | <b>(40 633 000)</b>  | -                    | <b>(16 578 568)</b>  | <b>(16 578 568)</b>                        |           |
| <b>Actual amount on comparable basis as presented in the budget and actual comparative statement</b> | <b>40 633 000</b>    | <b>(40 633 000)</b>  | -                    | <b>(16 578 568)</b>  | <b>(16 578 568)</b>                        |           |

## STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS

### Material Budget adjustments and differences between budget and actual amounts

#### Explanation of Budget Adjustment

1. Government grant: During the financial year, the Department of Forestry, Fisheries and Environment (DFFE) approved the request by SAWS to convert all its conditional grant of R140,63 million into an operational grant.

The adjustment of R127,74 million consists of the conversion of the conditional grant of R140,63 million and the reduction of R12,9 million in the Operational Government grant. The conversion of the grant was done to ensure that the entity's operations were uninterrupted during the year and job losses were avoided due to reduced revenue from Aviation as a result of the impact of the COVID-19 pandemic and the national economic challenges which led to the reduced operational grant allocation.

An additional amount of R1,5 million was added to Government grant – conditional grant during the year and it relates to the Presidential Stimulus Programme for the purchase of Computer Equipment at SAWS in accordance with the approved SAWS plan by the Department of Forestry, Fisheries and the Environment.

2. Commercial Revenue: The adjustment was as a result of reduced activity in Aviation impacted by the COVID-19 pandemic which led to a national and international lockdown from March 2020, subsequently resulting in lower air-traffic volume and consequently lower revenue for SAWS.
3. Employee Cost: The adjustment was due to a delay in filling some of the vacant positions, deferring non-critical vacancies, postponement of salary increases and performance bonuses.
4. Administrative and Operating Expenses: Operational expenditure was affected by the reduction in revenue and budget cuts. The entity has implemented cost-containment measures as contained in the SAWS Economic Recovery Plan resulting in significant savings in total expenditure for the year.
5. Depreciation and Amortisation: The adjustment was made in line with the Government grant – conditional grant conversion into operational grant with the expectation that no assets will be purchased during the financial year.
6. Interest: The adjustment was due to a planned delay in spending on the conditional Government grant while investing the funds in an interest-bearing account.

#### Explanation of Budget and Actual Comparison

1. Government Grant – conditional grant: The variance of R16,59 million is as a result of revenue recognised from the unspent conditional grant allocation. The budget of R1,5 million was received during the third quarter of the financial year and was used to purchase computer equipment in line with the conditions stipulated.

Infrastructure (Capex) acquisition: Revenue recognised on Government grant - conditional grant for an amount of R18 million relates to the acquisition of infrastructure.

2. Commercial revenue: The variance of R1,27 million is a result of SAWS working very closely with its commercial partners and customers to manage the impact of COVID-19 and alleviate the initial negative impact on sales at the start of the lockdown.

There was also improvement in aviation revenue towards the end of the third quarter to the end of the financial year, due to easing of lock-down restrictions resulting in increased aviation revenue.

3. Employee cost: The negative variance is attributed to the leave provision which increased by R3,91 million during the year. Management, however, implemented cost-containment measures on salary costs and deferred filling some of the vacancies during the year which resulted in savings on employee costs.
4. Administrative and Operating Expenditure: The positive variance of R1,29 million realised from Administrative expenses is mainly attributed to the implementation of the cost-containment measures applied by management during the year.

The Operating expenditure negative variance of R1,74 million is mainly attributed to information communication costs, due largely to increased data costs as a result of the lockdown and the majority of the staff members working from home.

5. Depreciation and Amortisation: The budget was initially reduced as there was no expectation to spend on infrastructure during the year as a result of converting the conditional grant into operational grant, however, as revenue started to pick up from aviation later in the year, this afforded the organisation the opportunity to utilise 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 amortisation of assets during the year.
6. Interest: The reduced interest rates on interest bearing accounts by the South African Reserve Bank led to a decrease in funds that were kept on Call Accounts. The variance was also due to lower funds being invested in interest bearing accounts due to lower revenue from commercial clients.
7. Other Income: This consists mainly of TETA-SETA Grants which are claimed upon completion of training by staff. Due to lower spending as a result of budget re-prioritisation, there was lower spending on training resulting in reduced income claimed from training.
8. Contributions and donations: The variance is due to projects not yet completed. The Integrated Climate-driven Multi- Hazard Early-Warning System project with an amount of R13,49 million was received towards the end of the financial year and the spending on this project is expected to commence during the next financial year.
9. Impairment of accounts receivables: The positive amount relates to recovery of debtors who were previously provided for but have since paid their accounts. During the period of lock-down, the entity experienced lower sales which resulted in a lower provision in the current financial year when compared to the reversed amount previously provided.
10. Loss on foreign exchange is as a result of a time lag between placing an order and receiving the goods. The volatility of the exchange rate makes it difficult to pay the same exchange rate at the date of placing the order versus delivery of the goods, which is the invoice date.
11. Actuarial gain: The valuation for Post-Retirement Medical Aid is performed by the independent actuaries and the outcome of the gains or losses is unknown as this is based on the mortality data, economic data and methodology used by the actuaries which is outside the control of SAWS management.



## 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 convention as the basis of measurement, unless specified otherwise.

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, the entity 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 an individual and groups basis, based on historical loss ratios, adjusted for national and industry-specific economic conditions and other indicators present at the reporting date that correlate with defaults on the portfolio. These annual loss ratios are applied to loan balances in the portfolio and scaled to the estimated loss emergence period.

### 1.3 Significant judgements and sources of estimation uncertainty (continued)

#### 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.

#### 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 goodwill and 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 15 - Provisions.

#### Post-retirement benefits

The present value of the post retirement obligation depends on a number of factors that are determined on an actuarial basis using a number of 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 13.

#### 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 affect a settlement or waive the claim.

### 1.3 Significant judgements and sources of estimation uncertainty (continued)

#### 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 the 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 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.

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 are 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

### 1.5 Property, plant, and equipment (continued)

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.

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.

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.

### 1.5 Property, plant, and equipment (continued)

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 or deficit 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 the straight-line basis over their expected useful lives to their estimated residual value.

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

| Item                        | Depreciation method | Range of useful life |
|-----------------------------|---------------------|----------------------|
| Aircraft - Airframes        | Straight-line       | 20 years             |
| Aircraft - Engines          | Unit of measure     | 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       | 4-21 years           |
| Computer equipment          | Straight-line       | 2-25 years           |
| Leasehold assets            | Straight-line       | 5-50 years           |
| Library books and equipment | Straight-line       | 10-20 years          |
| Meteorological equipment    | Straight-line       | 10-30 years          |
| Motor vehicles              | Straight-line       | 5-20 years           |
| Office equipment            | Straight-line       | 2-21 years           |
| Radar equipment             | Straight-line       | 10-30 years          |
| Tools and equipment         | Straight-line       | 2-30 years           |

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

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

The entity assesses at each reporting date whether there is any indication that the entity's expectations about the residual value and the useful life of an asset have changed since the preceding reporting date. If any 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.

### 1.5 Property, plant, and equipment (continued)

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 revenue. 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 annual financial statements (see note 25).

The entity discloses relevant information relating to assets under construction or development, in the notes to the annual financial statements (see note 9 and note 10).

### 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; and
- 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              | Depreciation method | Range of useful life |
|-------------------|---------------------|----------------------|
| Computer software | Straight-line       | 2-25 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 an intangible asset 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 collectability.

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.

## 1.7 Financial instruments (continued)

A financial asset is:

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

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

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

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

Liquidity risk is the risk encountered by an entity in the event of difficulty 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 grant                            | Financial liability measured at amortised cost |

## 1.7 Financial instruments (continued)

### 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.

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 uncollectibility 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

## 1.7 Financial instruments (continued)

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, expires, 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.

## 1.8 Statutory receivables Identification (continued)

### Accrued interest

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

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

### Other charges

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

### Impairment losses

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

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

- 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); and
- adverse changes in international, national or local economic conditions, such as a decline in growth, an increase in debt levels and unemployment, or changes in migration rates and patterns.

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

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

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

### 1.11 Inventories (continued)

recognised as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realisable value or current replacement cost, is recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs.

### 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.

## 1.12 Impairment of cash-generating assets (continued)

### 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.

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 cover 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.

## 1.12 Impairment of cash-generating assets (continued)

### Discount rate

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

### Recognition and measurement (individual asset)

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

An impairment loss is recognised immediately in surplus or deficit.

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

When the amount estimated for an impairment loss is greater than the carrying amount of the cash-generating asset 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 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 uses management's best estimate of the 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.

### 1.12 Impairment of cash-generating assets (continued)

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 prior periods for a cash-generating asset may no longer exist or may have decreased. If any such indication exists, the entity estimates the recoverable amount of that asset.

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

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

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

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

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

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

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

## 1.12 Impairment of 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.

## 1.13 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.

### 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 assets is determined using the following approach:

### Service units approach

The present value of the remaining service potential of the asset is determined by reducing the current cost of the remaining service potential of the asset before impairment, to conform to the reduced number of service units expected from the asset in its impaired state. The current cost of replacing the remaining service potential of the asset before impairment is determined as the depreciated reproduction or replacement cost of the asset before impairment, whichever is lower.

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

#### 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 prior periods for a non-cash-generating asset may no longer exist or may have decreased. If any such indication exists, the entity estimates the recoverable service amount of that asset.

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

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

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

#### Redesignation

The redesignation of assets from a cash-generating asset to a non-cash-generating asset or from a non-cash-generating asset to a cash-generating asset only 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 12 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 the 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

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

### 1.14 Employee benefits (continued)

- 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 (if any) 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, the entity attributes 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, the entity attributes 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-measures the obligation (and the related plan assets, if any) using current actuarial assumptions (including current market interest rates and other current market prices).

### 1.14 Employee benefits (continued)

When it is virtually certain that another party will reimburse some or all of the expenditure required to settle a defined benefit obligation, the right to reimbursement is recognised as a separate asset. The asset is measured at fair value. In all other respects, the asset is treated 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.

#### 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 the time value of money is material, the amount of a provision is the present value of the expenditures expected to be required to settle the obligation.

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

### 1.15 Provisions and contingencies (continued)

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 (deficits).

### 1.16 Commitments

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

Disclosures are required in respect of unrecognised contractual commitments which include future capital commitments 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 29 - 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.

## 1.17 Revenue from exchange transactions (continued)

### 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.

### Interest

Revenue arising from the use by others of entity assets yielding interest 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, in surplus or deficit, using the effective interest rate method.

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 the 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.

### 1.18 Revenue from non-exchange transactions (continued)

Control of an asset arises 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 party without directly giving approximately equal value in exchange or gives value to another party 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.

#### 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 recognises 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.

### 1.18 Revenue from non-exchange transactions (continued)

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 recognises services in-kind that are significant to its operations and/or service delivery objectives as assets and recognise the related revenue when it is probable that the future economic benefits or service potential will flow to the entity 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 Rands, by applying to the foreign currency amount the spot exchange rate between the functional currency and the foreign currency at the date of the transaction.

At each reporting date:

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

Cash flows arising from transactions in a foreign currency are recorded in Rands by applying to the foreign currency amount the exchange rate between the Rand and the foreign currency at the 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 and wasteful 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

The Entity is typically subject to budgetary limits in the form of appropriations or budget authorisations (or equivalent), which is given effect through authorising legislation, appropriation or similar.

General purpose financial reporting by the entity provides information on whether resources were obtained and used in accordance with the legally adopted budget.

The approved budget covers the fiscal period from 2020/04/01 to 2021/03/31.

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

### 1.25 Related parties (continued)

of 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 adjusts the amount recognised in the financial statements to reflect adjusting events after the reporting date once the event occurred.

The entity discloses 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 (see note 36).

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### 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 01 April 2021 or later periods:

##### GRAP 104 (amended): Financial instruments

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

The most significant changes to the Standard affect:

- financial guarantee contracts issued;
- loan commitments issued;
- classification of financial assets;
- amortised cost of financial assets;
- impairment of financial assets; and
- disclosures.

The 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. It is unlikely that the standard will have a material impact on the entity's annual financial statements.

### 3. Inventories

Components and finished goods\*  
Consumables (stationery)  
Other commercial components

|                  |                  |
|------------------|------------------|
| 3 130 028        | 3 099 478        |
| 67 021           | 39 620           |
| 512 003          | 519 109          |
| <b>3 709 052</b> | <b>3 658 207</b> |
|                  |                  |
| 394 812          | 1 892 892        |
| 33 850           | 8 332            |

\*Stock components for repairs and maintenance.

Inventories recognised as an expense during the year

Inventory write-back for the year

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 for liabilities.

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 4. Accounts receivable from exchange transactions - other

|                                   |                  |                  |
|-----------------------------------|------------------|------------------|
| Trade accounts receivable         | 4 783 440        | 5 363 774        |
| Sundry receivables                | 716 793          | 2 881 659        |
| Impairment of accounts receivable | (1 000 430)      | (1 342 984)      |
|                                   | <b>4 499 803</b> | <b>6 902 449</b> |

7% interest is charged on invoices over 60 days outstanding in the accounts receivable age analysis. Trade accounts receivable are stated at amortised cost using effective interest rate method less impairment of receivables.

| Provision for non-regulated accounts receivable | Current      | 31-120 Days   | Over 120Days   | Total            |
|-------------------------------------------------|--------------|---------------|----------------|------------------|
| Insurance clients                               | 958          | 22 794        | 212 714        | 236 466          |
| Contracts clients                               | 2 428        | 18 085        | 143 488        | 164 001          |
| Others                                          | 3 805        | 34 398        | 561 760        | 599 963          |
|                                                 | <b>7 191</b> | <b>75 277</b> | <b>917 962</b> | <b>1 000 430</b> |

### Trade and other receivables transactions 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 as at 31 March 2021, R1 742 684 (2020: R 2 684 588) were past due but not impaired. Trade accounts receivable amounting to R2 040 333 (2020: R1 312 562) 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.

### Accounts receivable (Non-regulated) impaired

As of 31 March 2021, trade, and other receivables of R1 000 430 (2020: R 1 342 984) were impaired and provided for. SAWS therefore recognises impairment of receivables from regulated and non-regulated transactions on individual and collective assessment as follows

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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

|                                      |                  |                  |
|--------------------------------------|------------------|------------------|
| Opening balance                      | 1 342 984        | 2 277 483        |
| Provision for impairment             | 1 000 430        | 1 342 984        |
| Amounts written off as uncollectible | (122 656)        | (961 336)        |
| Unused amounts reversed              | (1 220 328)      | (1 316 147)      |
|                                      | <b>1 000 430</b> | <b>1 342 984</b> |

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 as security. Trade accounts receivable are individually and collectively assessed for impairment, whether significant or not, and are included within the group of trade accounts receivable with similar credit risk characteristics.

### 5. Accounts receivable from exchange transactions (Statutory accounts receivable)

|                                   |                  |                   |
|-----------------------------------|------------------|-------------------|
| Statutory receivable              | 17 074 334       | 28 086 180        |
| Impairment of accounts receivable | (14 034 491)     | (17 128 573)      |
|                                   | <b>3 039 843</b> | <b>10 957 607</b> |

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.

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 9,75% (2020: 9.75% and 10.25%) on all overdue accounts. Statutory receivables amounting to R1 612 858 (2020: R4 037 908) are neither past due nor impaired and are considered to be fully recoverable.

Statutory receivables are assessed for impairment on a monthly basis individually. Management's judgement is used to impair amounts that are past due. At 31 March 2021, statutory receivables of R1 400 151 (2020: R5 236 506) were past due but not impaired.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 5. Accounts receivable from exchange transactions (Statutory accounts receivable) (continued)

#### Accounts receivable from exchange transactions (Statutory receivables) impaired

As of 31 March 2021, receivables from exchange transactions of R14 034 491 (2020: R17 128 573) were impaired and provided for. The bulk of this provision, R8 860 927 relates to SAA, Comair and South African Express which are under business rescue. Management takes into account the debtors that default, under administration and business rescue when calculating the impairment.

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

|                                      |                   |                   |
|--------------------------------------|-------------------|-------------------|
| Opening balance                      | 17 128 572        | 6 013 108         |
| Provision for impairment             | 334 652           | 17 128 573        |
| Amounts written off as uncollectible | (313 637)         | (836 250)         |
| Unused amounts reversed              | (3 115 097)       | (5 176 859)       |
|                                      | <b>14 034 490</b> | <b>17 128 572</b> |

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

| Provision for non-regulated accounts receivable | Current | 31-120 Days | Over 120Days | Total      |
|-------------------------------------------------|---------|-------------|--------------|------------|
| Regulated/Statutory Commercial Debtors          | 29 940  | 213 575     | 13 790 975   | 14 034 490 |

### 6. Prepayments

|                  |           |           |
|------------------|-----------|-----------|
| Prepaid expenses | 3 925 809 | 6 284 107 |
|------------------|-----------|-----------|

Prepaid expenses comprise services paid in advance, license fees, subscription fees and staff travel advance payments.

### 7. Cash and cash equivalents

Cash and cash equivalents consist of:

|                     |                   |                   |
|---------------------|-------------------|-------------------|
| Bank balances       | 41 853 703        | 32 086 790        |
| Short-term deposits | 81 795            | 12 449 117        |
|                     | <b>41 935 498</b> | <b>44 535 907</b> |

Refer to note 33 for Risk Management analysis.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures are in Rands

### 8. Investment property

|                     | 2021                |                                                              |                | 2020                |                                                              |                |
|---------------------|---------------------|--------------------------------------------------------------|----------------|---------------------|--------------------------------------------------------------|----------------|
|                     | Cost /<br>Valuation | Accumulated<br>depreciation<br>and accumulated<br>impairment | Carrying value | Cost /<br>Valuation | Accumulated<br>depreciation<br>and accumulated<br>impairment | Carrying value |
| Investment property | 71 779 121          | -                                                            | 71 779 121     | 71 779 121          | -                                                            | 71 779 121     |

#### Reconciliation of investment property - 2021

Investment property

| Opening balance | Fair value<br>adjustments | Total      |
|-----------------|---------------------------|------------|
| 71 779 121      | -                         | 71 779 121 |

#### Reconciliation of investment property - 2020

Investment property

| Opening balance | Fair value<br>adjustments | Total      |
|-----------------|---------------------------|------------|
| 69 277 188      | 2 501 933                 | 71 779 121 |

## Figures are in Rands

The investment property (Land) includes portion 411, portion of 412, portion 423 and portion 424 (which are portions of the remaining extent of portion 407) of the farm Garsfontein 374, Registration Division JR, Gauteng. The property is 37,1116 ha, 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 May 2020 by The Property Partnership CC (Chartered Surveyors & Valuers) Registration Number CK 1987/025962/23, a qualified independent professional valuer. The Property Partnership CC is not connected to the entity and has recent 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. The Independent Valuator have reviewed the valuation of the Investment property as at 31 May 2020 and concluded that albeit nominal they have not noted any material change in land values. Covid-19 pandemic has been in existence in SA for over a year. The office property market has been hard hit by the impact of Covid-19 pandemic and the economy; the latter has been in a poorer state for some time.

The valuation on 31 May 2020 had factored in some risk of Covid-19 and based on the rates applied, the location and size of the property, they are of the opinion that there has been no material change in the value of the property from May 2020 to May 2021.

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 at 31 March 2002 for comparative purposes.

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures are in Rands

## 9. Property, plant and equipment

|                                 | 2021                |                                                              |                    | 2020                |                                                              |                    |
|---------------------------------|---------------------|--------------------------------------------------------------|--------------------|---------------------|--------------------------------------------------------------|--------------------|
|                                 | Cost /<br>Valuation | Accumulated<br>depreciation<br>and accumulated<br>impairment | Carrying value     | Cost /<br>Valuation | Accumulated<br>depreciation<br>and accumulated<br>impairment | Carrying value     |
| Aircraft –airframes             | 861 362             | (844 510)                                                    | 16 852             | 861 362             | (861 362)                                                    | -                  |
| Aircraft – engines              | 1 771 965           | (1 737 298)                                                  | 34 667             | 1 771 965           | (1 771 965)                                                  | -                  |
| Aircraft – propellers           | 177 911             | (174 430)                                                    | 3 481              | 177 911             | (177 911)                                                    | -                  |
| Air quality equipment           | 44 549 068          | (18 847 703)                                                 | 25 701 365         | 35 222 761          | (15 925 307)                                                 | 19 297 454         |
| Buildings - Irene and Bethlehem | 6 296 208           | (490 473)                                                    | 5 805 735          | 6 285 402           | (334 937)                                                    | 5 950 465          |
| Computer Equipment & Servers    | 158 577 287         | (80 259 352)                                                 | 78 317 935         | 158 563 173         | (69 842 723)                                                 | 88 720 450         |
| Fence                           | 3 623 985           | (2 419 709)                                                  | 1 204 276          | 3 623 985           | (2 183 310)                                                  | 1 440 675          |
| Furniture and fixtures          | 11 710 150          | (7 007 967)                                                  | 4 702 183          | 11 829 778          | (6 522 105)                                                  | 5 307 673          |
| Land - Garfontein and Irene     | 7 316 265           | -                                                            | 7 316 265          | 7 316 265           | -                                                            | 7 316 265          |
| Leasehold improvements          | 4 230 577           | (2 612 571)                                                  | 1 618 006          | 4 243 759           | (2 482 351)                                                  | 1 761 408          |
| Library books and equipment     | 56 882              | (42 991)                                                     | 13 891             | 55 820              | (39 626)                                                     | 16 194             |
| Meteorological equipment        | 75 627 530          | (59 026 988)                                                 | 16 600 542         | 72 322 941          | (55 383 750)                                                 | 16 939 191         |
| Motor vehicles                  | 600 817             | (384 307)                                                    | 216 510            | 600 817             | (369 012)                                                    | 231 805            |
| Office equipment                | 4 711 188           | (3 128 577)                                                  | 1 582 611          | 4 798 745           | (2 820 462)                                                  | 1 978 283          |
| Radar – equipment               | 266 179 561         | (106 756 142)                                                | 159 423 419        | 266 179 561         | (98 231 089)                                                 | 167 948 472        |
| Tools and other equipment       | 7 135 344           | (3 293 485)                                                  | 3 841 859          | 6 494 131           | (2 716 613)                                                  | 3 777 518          |
| <b>Total</b>                    | <b>593 426 100</b>  | <b>(287 026 503)</b>                                         | <b>306 399 597</b> | <b>580 348 376</b>  | <b>(259 662 523)</b>                                         | <b>320 685 853</b> |

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures are in Rands

### 9. Property, plant and equipment (continued)

#### Reconciliation of property, plant and equipment - 2021

|                                 | Opening balance    | Additions         | Disposals        | Depreciation        | Impairment loss    | Impairment reversal | Total              |
|---------------------------------|--------------------|-------------------|------------------|---------------------|--------------------|---------------------|--------------------|
| Aircraft - airframes            | -                  | -                 | -                | -                   | -                  | 16 852              | 16 852             |
| Aircraft - engines              | -                  | -                 | -                | -                   | -                  | 34 669              | 34 669             |
| Aircraft - propellers           | -                  | -                 | -                | -                   | -                  | 3 481               | 3 481              |
| Air quality equipment           | 19 297 453         | 9 354 494         | -                | (2 828 855)         | (121 727)          | -                   | 25 701 365         |
| Buildings - Irene and Bethlehem | 5 950 465          | -                 | -                | (144 730)           | -                  | -                   | 5 805 735          |
| Computer Equipment & Servers    | 88 720 450         | 1 830 472         | (123 094)        | (11 645 617)        | (464 276)          | -                   | 78 317 935         |
| Fence                           | 1 440 675          | -                 | -                | (236 399)           | -                  | -                   | 1 204 276          |
| Furniture and fixtures          | 5 307 673          | 168 793           | (49 200)         | (638 383)           | (86 700)           | -                   | 4 702 183          |
| Land - Garsfontein and Irene    | 7 316 265          | -                 | -                | -                   | -                  | -                   | 7 316 265          |
| Leasehold improvements          | 1 761 408          | -                 | (635)            | (139 568)           | (3 199)            | -                   | 1 618 006          |
| Library books and equipment     | 16 194             | 1 062             | -                | (3 365)             | -                  | -                   | 13 891             |
| Motor vehicles                  | 231 805            | -                 | -                | (15 295)            | -                  | -                   | 216 510            |
| Meteorological equipment        | 16 939 191         | 3 311 851         | -                | (3 261 296)         | (389 204)          | -                   | 16 600 542         |
| Office equipment                | 1 978 283          | -                 | (9 599)          | (269 622)           | (100 457)          | -                   | 1 598 605          |
| Radar - equipment               | 167 948 472        | -                 | -                | (8 525 053)         | -                  | -                   | 159 423 419        |
| Tools and other equipment       | 3 777 518          | 661 250           | (697)            | (543 558)           | (68 650)           | -                   | 3 825 863          |
| <b>Total</b>                    | <b>320 685 852</b> | <b>15 327 922</b> | <b>(183 225)</b> | <b>(28 251 741)</b> | <b>(1 234 213)</b> | <b>55 002</b>       | <b>306 399 597</b> |

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures are in Rands

### 9. Property, plant and equipment (continued)

#### Reconciliation of property, plant and equipment - 2020

|                                 | Opening balance    | Additions         | Revaluations       | Depreciation        | Impairment loss    | Total reversal     |
|---------------------------------|--------------------|-------------------|--------------------|---------------------|--------------------|--------------------|
| Aircraft - airframes            | 726 887            | -                 | -                  | -                   | (726 887)          | -                  |
| Aircraft - engines              | 1 771 965          | -                 | -                  | -                   | (1 771 965)        | -                  |
| Aircraft - propellers           | 7 088              | -                 | -                  | -                   | (7 088)            | -                  |
| Air quality equipment           | 17 974 535         | 3 369 162         | -                  | (2 046 243)         | -                  | 19 297 454         |
| Buildings - Irene and Bethlehem | 4 548 428          | -                 | 1 514 571          | (112 534)           | -                  | 5 950 465          |
| Computer Equipment & Servers    | 76 401 053         | 22 694 817        | -                  | (10 375 420)        | -                  | 88 720 450         |
| Fence                           | 810 029            | 838 992           | -                  | (208 346)           | -                  | 1 440 675          |
| Furniture and fixtures          | 4 375 662          | 1 489 285         | -                  | (557 274)           | -                  | 5 307 673          |
| Land - Garsfontein and Irene    | 12 421 912         | -                 | (5 105 647)        | -                   | -                  | 7 316 265          |
| Leasehold improvements          | 852 133            | 1 008 235         | -                  | (98 960)            | -                  | 1 761 408          |
| Library Books & Equipment       | 14 463             | 4 671             | -                  | (2 940)             | -                  | 16 194             |
| Motor vehicles                  | 247 101            | -                 | -                  | (15 296)            | -                  | 231 805            |
| Meteorological equipment        | 16 666 324         | 3 386 069         | -                  | (3 113 202)         | -                  | 16 939 191         |
| Office equipment                | 2 033 536          | 212 525           | -                  | (267 778)           | -                  | 1 978 283          |
| Radar - equipment               | 176 473 526        | -                 | -                  | (8 525 054)         | -                  | 167 948 472        |
| Tools and other equipment       | 4 189 395          | 75 129            | -                  | (487 006)           | -                  | 3 777 518          |
| <b>Total</b>                    | <b>319 514 037</b> | <b>33 078 885</b> | <b>(3 591 076)</b> | <b>(25 810 053)</b> | <b>(2 505 940)</b> | <b>320 685 853</b> |

#### 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.

Impairment losses on aircrafts have been recognised as the aircraft is not in use.

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### 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

Building - Irene and Bethlehem

Aircraft Propellers

Aircraft Airframe

Aircraft Engine

| 2021 | 2020               |
|------|--------------------|
| -    | (5 105 647)        |
| -    | 1 514 571          |
| -    | (7 088)            |
| -    | (726 887)          |
| -    | (1 685 347)        |
| -    | <b>(6 010 398)</b> |

#### 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.

The entity's aircraft were valued on 31 May 2020. Valuation is done once every two years.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 9. Property, plant and equipment (continued)

#### 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 | (228 000)      | (216 000)      |
|                          | <b>372 000</b> | <b>384 000</b> |

The Bethlehem property was revalued at 31 May 2020 by an independent valuer in terms of the provisions of the Property Valuations Professional Act, 2000 (No. 47 of 2000). Valuations were made on the basis of open-market value. The revaluation surplus was credit to the non-distributable reserve.

The property includes Erf 1997, valued at R1,144,000, and Erf 2064, valued at R1,008,000, in the town of Bethlehem in the Free State province. Erf 1997, also known as 8 Dr Clark Street, Bethlehem, has an area of 1,997 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 SAWS Act, 2001 (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 R2,181,820 for the land and R3,882,000 for the buildings on 31 March 2020. 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 at 31 May 2020 by The Property Partnership CC (Chartered Surveyors & Valuers) Registration Number CK 1987/025962/23, a qualified independent professional valuer. The Property Partnership CC is not connected to the entity and has recent experience in location and category of the investment property.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 9. Property, plant and equipment (continued)

#### Details of properties (continued)

##### Land - Garsfontein

The Land includes portion 412 and portion 423 (which are portions of the remaining extent of portion 407) of the farm Garsfontein 374, Registration Division JR, Gauteng. The property is 11.4759 ha, 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 R5,134,445 as at 31 May 2020 by The Property Partnership CC (Chartered Surveyors & Valuers) Registration Number CK 1987/025962/23, a qualified independent professional valuer. The Property Partnership CC is not connected to the entity and has recent 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.

The Independent Valuator have reviewed the valuation of the land properties as at 31 May 2020 and concluded that albeit nominal they have not noted any material change in land values. Covid-19 pandemic has been in existence in SA for over a year. The office property market has been hard hit by the impact of Covid-19 pandemic and the economy; the latter has been in a poorer state for some time.

The valuation on 31 May 2020 had factored in some risk of Covid-19 and based on the rates applied, the location and size of the property, they are of the opinion that there has been no material change in the value of the property from May 2020 to May 2021.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 10. Intangible assets

|                   | 2021                |                                                              |                  | 2020                |                                                              |                  |
|-------------------|---------------------|--------------------------------------------------------------|------------------|---------------------|--------------------------------------------------------------|------------------|
|                   | Cost /<br>Valuation | Accumulated<br>depreciation<br>and accumulated<br>impairment | Carrying value   | Cost /<br>Valuation | Accumulated<br>depreciation<br>and accumulated<br>impairment | Carrying value   |
| Computer software | 38 303 726          | (30 341 474)                                                 | 7 962 252        | 36 006 810          | (27 486 580)                                                 | 8 520 230        |
| Servitude         | 1 500 000           | (475 208)                                                    | 1 024 792        | 1 500 000           | (415 206)                                                    | 1 084 794        |
| <b>Total</b>      | <b>39 803 726</b>   | <b>(30 816 682)</b>                                          | <b>8 987 044</b> | <b>37 506 810</b>   | <b>(27 901 786)</b>                                          | <b>9 605 024</b> |

### Reconciliation of intangible assets - 2021

|                   | Opening<br>balance | Additions        | Amortisation       | Impairment<br>loss | Total<br>reversal |
|-------------------|--------------------|------------------|--------------------|--------------------|-------------------|
| 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         |
| <b>Total</b>      | <b>9 605 024</b>   | <b>2 759 217</b> | <b>(2 914 896)</b> | <b>(462 301)</b>   | <b>8 987 044</b>  |

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### 10. Intangible assets (continued)

#### Reconciliation of intangible assets - 2021

|                                      | Opening balance   | Additions        | Transfers   | Amortisation       | Impairment loss     | Total            |
|--------------------------------------|-------------------|------------------|-------------|--------------------|---------------------|------------------|
| Computer software                    | 17 067 297        | 3 683 278        | 2 499 154   | (2 775 629)        | (11 953 870)        | 8 520 230        |
| Servitude                            | 1 144 794         | -                | -           | (60 000)           | -                   | 1 084 794        |
| Work-in-progress - Computer Software | 2 499 154         | -                | (2 499 154) | -                  | -                   | -                |
| <b>Total</b>                         | <b>20 711 245</b> | <b>3 683 278</b> | <b>-</b>    | <b>(2 835 629)</b> | <b>(11 953 870)</b> | <b>9 605 024</b> |

#### Other information

Intangible assets comprise computer software and a servitude. The servitude comprises the right of use of land for its meteorological equipment for an indefinite period of time 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.

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### 11. Operating lease liability

Current liabilities

(1 505 274)

(1 336 230)

The following lease payments are related to operating leases for the rental of premises, office equipment and motor vehicles:

The entity leases 10 premises (2019: 10 premises) from various lessors. The rental agreements for the premises include escalation clauses between 5.5% and 10% per year in rental payments. The duration of the rentals varies between two and ten years. The entity 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 entity incurs no levies and electricity cost 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 the 5th December 2017 and is effective from 1st 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 810.00 for four (4) years (13 November 2019 to 14 November 2023).

SAWS signed a contract for the rental of motor vehicles with Kempston Trading (Pty) Ltd for a total amount of R22,015,278 for three (3) years effective 1 June 2018.

#### Operating lease commitments:

| 2021                                                | Furniture and Fittings | Premises          | Motor vehicles   | Total             |
|-----------------------------------------------------|------------------------|-------------------|------------------|-------------------|
| Future minimum lease payments not later than 1 year | 152 203                | 21 867 024        | 1 223 071        | 23 242 298        |
| Later than 1 year and not later than 5 years        | 240 987                | 25 355 028        | -                | 25 596 015        |
| Later than 5 years                                  | -                      | 3 058 079         | -                | 3 058 079         |
|                                                     | <b>393 190</b>         | <b>50 280 131</b> | <b>1 223 071</b> | <b>51 896 392</b> |

| 2021                                                | Furniture and Fittings | Premises          | Motor vehicles   | Total             |
|-----------------------------------------------------|------------------------|-------------------|------------------|-------------------|
| Future minimum lease payments not later than 1 year | 152 203                | 20 214 971        | 7 338 426        | 27 705 600        |
| Later than 1 year and not later than 5 years        | 393 190                | 44 765 826        | 1 223 071        | 46 382 087        |
| Later than 5 years                                  | -                      | 4 214 233         | -                | 4 214 233         |
|                                                     | <b>545 393</b>         | <b>69 195 030</b> | <b>8 561 497</b> | <b>78 301 920</b> |

#### Straight lining effect on operating lease liability:

Opening balance

1 336 230      2 759 322

Deferred rental

169 044      (1 423 092)

**1 505 274**

**1 336 230**

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 12. Accounts payable from exchange transactions

|                                 |                   |                   |
|---------------------------------|-------------------|-------------------|
| Trade and Sundry Payables       | 11 783 150        | 21 350 244        |
| Payroll Payables (PAYE and UIF) | 4 319 658         | 11 359 835        |
| Creditor bursary students       | 307 780           | 552 675           |
| Staff subsidies and travel      | 50 428            | 230 090           |
|                                 | <b>16 461 016</b> | <b>33 492 844</b> |

Trade and other payables are subsequently carried at amortised cost.

#### Spot rates at period-end

|     |         |         |
|-----|---------|---------|
| USD | 14.8202 | 17.8752 |
| EUR |         | 19.6951 |
| GBP |         | 22.1169 |
| CHF | 15.7107 | 18.7069 |
|     | -       | -       |

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 | 2021 Foreign currency | 2020 Foreign currency | 2021 R         | 2020 R           |
|------------------------------------------------------------|----------|-----------------------|-----------------------|----------------|------------------|
| Envitech                                                   | USD      | 13 920                | -                     | 206 297        | -                |
| Davos                                                      | CHF      | 9 750                 | -                     | 153 179        | -                |
| UK Met Office                                              | GBP      |                       | 607                   | -              | 53 700           |
| World Meteorological Organisation                          | CHF      |                       | 45 823                | -              | 857 209          |
| Microsoft Ireland Operations                               | USD      |                       | 75 900                | -              | 1 356 721        |
| World Meteorological Organisation                          | USD      |                       | 7 233                 | -              | 129 487          |
|                                                            | -        | -                     | -                     | <b>359 476</b> | <b>2 397 117</b> |

\* See Note 32

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### 13. 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 2020 is R3 030.60 (2019: R3 030.60), irrespective of the number of dependants. 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:

|                                   | 2021      | 2020      |
|-----------------------------------|-----------|-----------|
| Current (In service) employees    | 17        | 17        |
| Continuation members (Pensioners) | 32        | 32        |
|                                   | <b>49</b> | <b>49</b> |

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 2020 valuation has been performed by an independent company of Actuaries, Momentum Consultants and Actuaries, registration number 2002/027693/07.

This is an actuarial valuation based on economic assumptions as performed by Momentum. 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 219/20 compared to prior is 3.32% (Prior year: 4.10%). The return on Plan Asset is 12.10% compared to 12.95% in the prior year. In conclusion, these rates have resulted in an increase in the liability.

\* See Note 32

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### 13. Employee benefit obligations (continued)

#### Plan asset

|                      |                  |                |
|----------------------|------------------|----------------|
| Current service cost | 1 780 000        | 1 429 000      |
| Past service cost    | -                | 549 000        |
| Actuarial gains      | 335 000          | (1 655 000)    |
|                      | <b>2 115 000</b> | <b>323 000</b> |

#### Accrued liability

|                      |                  |                    |
|----------------------|------------------|--------------------|
| Current service cost | 106 000          | 284 000            |
| Interest cost        | 2 117 000        | 1 814 000          |
| Actuarial gains      | -                | (3 470 000)        |
|                      | <b>2 223 000</b> | <b>(1 372 000)</b> |

#### Movement in the defined benefit obligation

|                      |                   |                   |
|----------------------|-------------------|-------------------|
| Balance 01 April     | 16 919 000        | 19 303 000        |
| Current service cost | 106 000           | 284 000           |
| Interest cost        | 2 117 000         | 1 814 000         |
| Actuarial gains      | 347 000           | (3 470 000)       |
| Benefit paid         | (1 166 000)       | (1 012 000)       |
|                      | <b>18 323 000</b> | <b>16 919 000</b> |

#### Changes in the fair value of plan assets are as follows:

|                           |                   |                   |
|---------------------------|-------------------|-------------------|
| Opening balance           | 14 279 000        | 15 100 685        |
| Expected return           | 1 780 000         | 1 429 000         |
| Actuarial gains (losses)  | 335 000           | (1 655 000)       |
| Contributions by employer | -                 | 549 000           |
| Benefits paid             | (1 166 000)       | (1 145 685)       |
|                           | <b>15 228 000</b> | <b>14 278 000</b> |

#### Summary of employee benefit obligation

|                            |                  |                  |
|----------------------------|------------------|------------------|
| Defined benefit obligation | 18 323 000       | 16 919 000       |
| Fair value of plan asset   | (15 228 000)     | (1 427 800)      |
|                            | <b>3 095 000</b> | <b>2 641 000</b> |

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 13. Employee benefit obligations (continued)

#### Amounts recognised in the statement of financial performance:

|                                |                  |                  |
|--------------------------------|------------------|------------------|
| Current service costs          | 106 000          | 284 000          |
| Interest costs                 | 2 116 000        | 1 814 000        |
| Expected return on plan assets | 1 780 000        | 1 429 000        |
| Actuarial (gain) / loss        | 12 000           | (1 607 964)      |
|                                | <b>4 014 000</b> | <b>1 919 036</b> |

The entity expects to contribute R4 039 000 to its defined benefit plans in the following financial year.

#### Key assumptions used

Assumptions used at the reporting date:

|                                                     |         |          |
|-----------------------------------------------------|---------|----------|
| Discount rates used                                 | 12,10 % | 12,95 %  |
| Expected rate of return on assets                   | 7,10 %  | 7,00 %   |
| Medical cost trend rates                            | 8,65 %  | 8,50 %   |
| Expected increase in salaries                       | - %     | 100,00 % |
| Expected increase in healthcare costs               | 65      | 65       |
| Future changes in maximum state healthcare benefits | 90,00 % | 90,00 %  |

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<br>percentage<br>point increase | One<br>percentage<br>point increase |
|---------------------------------------------------------------|-------------------------------------|-------------------------------------|
| Effect on the aggregate of the service cost and interest cost | -                                   | -                                   |
| Employer's accrued liability                                  | 16 577 000                          | 20 399 000                          |
| Employer's service cost                                       | 98 000                              | 144 000                             |
| Employer's interest cost                                      | 2 095 000                           | 2 200 000                           |
| Employer's accrued liability                                  | 20 399 000                          | 16 592 000                          |
| Employer's service cost                                       | 119 000                             | 97 000                              |
| Employer's interest cost                                      | 2 398 000                           | 1 937 000                           |

\* See Note 32

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### 13. Employee benefit obligations (continued)

Amounts for the current and previous four years are as follows:

|                            | 2021             | 2020             | 2019             | 2018             | 2017              |
|----------------------------|------------------|------------------|------------------|------------------|-------------------|
| Defined benefit obligation | 18 323 000       | 16 920 000       | 19 223 713       | 22 391 713       | 28 822 000        |
| Plan asset                 | (15 228 000)     | (14 279 000)     | (15 100 685)     | (17 530 685)     | (17 501 685)      |
|                            | <b>3 095 000</b> | <b>2 641 000</b> | <b>4 123 028</b> | <b>4 861 028</b> | <b>11 320 315</b> |

#### Defined contribution plan

It is the policy of SAWS to provide retirement benefits to all its employees. A defined contribution provident fund exists, which is subject to the Pensions Fund Act.

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

##### Leave pay accrual

|                       |                   |                  |
|-----------------------|-------------------|------------------|
| Opening balance       | 6 976 706         | 5 334 974        |
| Leave raised          | 13 261 474        | 5 453 953        |
| Leave utilised / paid | (9 350 400)       | (3 812 221)      |
|                       | <b>10 887 780</b> | <b>6 976 706</b> |

### 14. Unspent conditional grants and receipts - other

Unspent conditional grants and receipts comprises of:

#### Unspent conditional grants and receipts

|                                            |            |            |
|--------------------------------------------|------------|------------|
| Unspent public contributions and donations | 43 801 541 | 26 709 292 |
|--------------------------------------------|------------|------------|

#### Movement during the year

|                                                            |                   |                   |
|------------------------------------------------------------|-------------------|-------------------|
| Balance at the beginning of the year                       | 26 709 292        | 15 955 833        |
| Additions during the year                                  | 18 335 536        | 4 470 645         |
| Income recognition during the year                         | (1 233 692)       | (3 719 586)       |
| Transfer from unspent Government grant - conditional grant | -                 | 10 000 000        |
| Expenses not yet recognised as revenue                     | (9 595)           | 2 400             |
|                                                            | <b>43 801 541</b> | <b>26 709 292</b> |

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.

\* See Note 32

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### 15. Provisions

Non-current liabilities

301 875

362 913

#### Reconciliation of provisions - 2021

|                                     | Opening Balance | Utilised during the year | Total   |
|-------------------------------------|-----------------|--------------------------|---------|
| Capped leave provision: non-current | 362 913         | (61 038)                 | 301 875 |

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.

### 16. Unspent Government grant - conditional grant

#### Breakdown of Unspent Government Grant - Conditional Grant

|                                                          |                   |                   |
|----------------------------------------------------------|-------------------|-------------------|
| Opening Balance                                          | 44 166 428        | 27 516 777        |
| Government grant - capital expenditure                   | -                 | 93 515 000        |
| Income recognition during the year - capital expenditure | (18 087 139)      | (36 762 163)      |
| Income recognition during the year - conditional grant   | -                 | (40 103 186)      |
| Other deferred income                                    | (303)             | -                 |
|                                                          | <b>26 078 986</b> | <b>44 166 428</b> |

Due to the impact of Covid-19 which resulted in lower revenue and collection of debtors, the cash of R26,08 million which should have been ring-fenced for Conditional Grant on Capital Expenditure was utilised for operational purposes.

\* See Note 32

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### 17. Revenue from exchange transactions

#### Commercial revenue

|                                         |                   |                    |
|-----------------------------------------|-------------------|--------------------|
| Aviation                                | 32 511 248        | 128 494 477        |
| Aviation instruments maintenance income | 1 198 481         | 1 084 680          |
| Air quality revenue                     | 911 893           | 844 055            |
| Information fees                        | 16 143 487        | 21 706 314         |
| Training: Regional Training Centre      | 392 750           | 897 361            |
| Lightning Detection Network Sales       | 4 803 755         | 6 432 599          |
| Selling of instruments                  | 1 599 225         | 4 708 030          |
|                                         | <b>57 560 839</b> | <b>164 167 516</b> |

#### Other income

|                      |                |                  |
|----------------------|----------------|------------------|
| Miscellaneous income | 246 351        | (126 917)        |
| Interest on debt     | 343 594        | 1 324 186        |
|                      | <b>589 945</b> | <b>1 197 269</b> |

### 18. Investment revenue

#### Interest revenue

|      |         |           |
|------|---------|-----------|
| Bank | 734 706 | 3 714 215 |
|------|---------|-----------|

### 19. Government grants and subsidies

#### Operating grants

|                   |             |             |
|-------------------|-------------|-------------|
| Government grants | 343 038 000 | 204 074 000 |
|-------------------|-------------|-------------|

#### Conditional grants

|                             |                    |                    |
|-----------------------------|--------------------|--------------------|
| Government grants           | 18 087 139         | 55 281 163         |
| Early Warning Capital Grant | -                  | 11 590 434         |
|                             | <b>18 087 139</b>  | <b>66 871 597</b>  |
|                             | <b>361 125 139</b> | <b>270 945 597</b> |

### 20. Public contributions and donations

|                     |                  |                  |
|---------------------|------------------|------------------|
| TETA SETA Grants    | 332 833          | 1 070 893        |
| Donor funds - Other | 1 233 692        | 3 719 586        |
|                     | <b>1 566 525</b> | <b>4 790 479</b> |

\* See Note 32

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### 21. Employee related costs

|                                |                    |                    |
|--------------------------------|--------------------|--------------------|
| Salaries and wages             | 215 643 644        | 225 613 126        |
| Leave pay                      | 4 469 570          | 3 933 386          |
| Medical aid contributions      | 16 486 334         | 16 157 531         |
| Unemployment Insurance Fund    | 881 990            | 868 279            |
| Occupational Health and Safety | 545 301            | 444 011            |
| Post-retirement medical aid    | 442 000            | 472 043            |
| Overtime and shift allowance   | 14 351 070         | 15 384 730         |
| Employee pension               | 15 882 880         | 14 674 921         |
|                                | <b>268 702 789</b> | <b>277 548 027</b> |

### 22. Administrative expenditure

|                           |                  |                  |
|---------------------------|------------------|------------------|
| Admin fees                | 1 322 009        | 1 111 657        |
| Audit Expenses (Internal) | 1 357 793        | 1 137 629        |
| Public awareness          | 3 783            | 13 619           |
| Commission paid           | -                | 15 685           |
| Board expenses            | 1 239 466        | 1 718 700        |
| Conference Costs          | 399 950          | 625 233          |
| Refreshments              | 18 528           | 166 412          |
| Entertainment             | 9 788            | 365 045          |
| Entrance Fees             | -                | 2 933            |
| Legal Fees                | 3 550 255        | 2 200 619        |
| Printing and stationary   | 40 236           | 602 063          |
| Training                  | 69 082           | 1 355 351        |
| Bank Charges              | 232 990          | 257 186          |
|                           | <b>8 243 880</b> | <b>9 572 132</b> |

### 23. Depreciation and amortisation

|                               |                   |                   |
|-------------------------------|-------------------|-------------------|
| Property, plant and equipment | 28 251 741        | 25 810 053        |
| Intangible assets             | 2 914 895         | 2 835 629         |
|                               | <b>31 166 636</b> | <b>28 645 682</b> |

### 24. Impairment of Accounts Receivable

|                            |             |            |
|----------------------------|-------------|------------|
| Debt (recovery) impairment | (2 943 333) | 10 186 006 |
|----------------------------|-------------|------------|

The reversal of prior year provision is due to the improvement in debt recovery and debt reduction.

\* See Note 32

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### 25. General expenses

|                                   |                    |                    |
|-----------------------------------|--------------------|--------------------|
| Cleaning                          | 1 181 180          | 1 199 331          |
| Conferences and seminars          | 40 873             | 282 397            |
| Consultants                       | 3 576 264          | 7 108 972          |
| Consumables spares                | 10 668 893         | 21 485 515         |
| Electricity                       | 3 944 998          | 5 905 359          |
| Aircraft expenses                 | 356 815            | 434 931            |
| Leases and rentals                | 28 965 914         | 30 178 858         |
| Repairs and maintenance           | 12 987 969         | 13 885 297         |
| Audit fees (External)             | 4 127 810          | 4 971 708          |
| Fines and penalties               | 196 488            | -                  |
| Computer and software licenses    | 18 047 157         | 23 942 069         |
| Insurance                         | 1 890 652          | 2 248 033          |
| Levies                            | 401 478            | 2 453 986          |
| Motor vehicle leases              | 1 591 982          | 2 216 065          |
| Provision Adjustment              | -                  | (8 058 746)        |
| Placement fees (employees)        | 2 100 272          | 3 993 212          |
| Postage and courier               | 1 357 239          | 1 131 902          |
| Publications                      | 467 349            | 523 753            |
| Promotions and sponsorships       | 2 044 128          | 2 531 567          |
| Security                          | 2 846 012          | 3 087 091          |
| Subscriptions and membership fees | 5 021 826          | 1 233 322          |
| Communication costs               | 25 135 080         | 18 771 524         |
| Training                          | 578 681            | 130 955            |
| Travel and Accommodation          | 1 807 316          | 14 862 643         |
| Venue expenses                    | 2 120              | 81 073             |
|                                   | <b>129 338 496</b> | <b>154 600 817</b> |

### 26. Fair value adjustments

|                     |   |           |
|---------------------|---|-----------|
| Investment property | - | 2 501 933 |
|---------------------|---|-----------|

### 27. Impairment of assets

#### Impairments

|                                                     |           |            |
|-----------------------------------------------------|-----------|------------|
| Property, plant and equipment and Intangible Assets | 1 641 515 | 12 040 488 |
|-----------------------------------------------------|-----------|------------|

\* See Note 32

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### 28. Cash generated from operations

|                                                                |                   |                   |
|----------------------------------------------------------------|-------------------|-------------------|
| (Deficit)/Surplus                                              | (16 578 568)      | (46 715 799)      |
| <b>Adjustments for:</b>                                        |                   |                   |
| Depreciation and amortisation                                  | 31 166 636        | 28 645 682        |
| Loss on sale of assets and liabilities                         | 128 225           | -                 |
| Profit/loss on foreign exchange                                | 1 463 071         | 1 249 169         |
| Fair value adjustments                                         | -                 | (2 501 933)       |
| Impairment deficit                                             | 1 641 515         | 12 040 488        |
| Debt impairment                                                | (2 943 333)       | 4 157 960         |
| Bad debts written off                                          | 436 293           | 1 807 484         |
| Movements in operating lease assets and accruals               | 169 044           | (1 423 092)       |
| Movements in retirement benefit assets and liabilities         | 4 365 074         | (7 061 867)       |
| Movements in provisions                                        | (61 038)          | (8 185 067)       |
| Accumulated impairment loss - reversal                         | 1 014 080         | -                 |
| Actuarial loss                                                 | 12 000            | -                 |
| Other non-cash items                                           | 17 888            | -                 |
| <b>Changes in working capital:</b>                             |                   |                   |
| Inventories                                                    | (50 845)          | 1 966 199         |
| Accounts receivable from exchange transactions - other         | 2 402 646         | 4 251 432         |
| Receivables from exchange transactions - Statutory receivables | 7 917 764         | 1 245 506         |
| Prepayments                                                    | 2 358 298         | 1 449 453         |
| Unspent government allocations - conditional grant             | (18 087 442)      | 16 649 651        |
| Accounts payable from exchange transactions                    | (17 031 827)      | 2 278 124         |
| Unspent conditional grants and receipts - other                | 17 092 249        | 10 753 459        |
|                                                                | <b>15 431 730</b> | <b>20 606 849</b> |

\* See Note 32

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### 29. Commitments

This committed expenditure relates to various contracts and outstanding purchase orders that the entity entered into and will be financed by available bank facilities and retained surpluses.

#### Commitments

##### Capital Expenditure

|                    |                  |          |
|--------------------|------------------|----------|
| Computer equipment | 219 060          | -        |
| Office furniture   | 48 200           | -        |
| Equipment          | 1 922 571        | -        |
| Land and Buildings | 1 000 000        | -        |
|                    | <b>3 189 831</b> | <b>-</b> |

##### Operational Expenditure

|                                 |                   |                    |
|---------------------------------|-------------------|--------------------|
| Approved and contracted         | 73 871 192        | 115 453 836        |
| Approved but not yet contracted | 11 745 316        | -                  |
|                                 | <b>85 616 508</b> | <b>115 453 836</b> |

##### Commitments split per period

|                       |                   |                    |
|-----------------------|-------------------|--------------------|
| Up to 12 months       | 59 298 669        | 84 744 457         |
| Longer than 12 months | 29 507 670        | 30 709 379         |
|                       | <b>88 806 339</b> | <b>115 453 836</b> |

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 30. 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

|                  |                  |
|------------------|------------------|
| 3 413 060        | 3 413 060        |
| <b>3 413 060</b> | <b>3 413 060</b> |

#### Legal claims - Labour Court / CCMA

Employees have taken SAWS to the CCMA and Labour Court in relation to unfair dismissal. SAWS cannot determine the amount of liability should the CCMA and the Labour Court rule in their favour.

#### Legal claims - Court

The plaintiff, a former SAWS employee is suing SAWS for unfair dismissal and breach of contract for an amount of R3,413,060.

#### Legal claim - Service providers

1. A service provider took SAWS to Court where they are challenging the entity's procurement process on an awarded bid and the estimated cost is unknown at this stage.
2. 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.

\* See Note 32

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### 31. 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 Environment Affairs and therefore the Minister of Forestry, Fisheries and Environment is the Executive Authority. The entity is governed by the Board as appointed by the Minister. The details of the Board members are disclosed below. SAWS receives 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  
Capital expenditure grant

|                    |                    |
|--------------------|--------------------|
| 343 038 000        | 222 593 000        |
| 18 087 139         | 93 515 000         |
| <b>361 125 139</b> | <b>316 108 000</b> |

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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## 31. Related parties (continued)

## Remuneration of management

## Management class: Executive management

2021

| Name            | Designation                                   | Basic salary | Other short-term employee benefits | Medical aid UIF & Pension | Acting Allowance | Other benefits received (Motor Allowance) | Total     |
|-----------------|-----------------------------------------------|--------------|------------------------------------|---------------------------|------------------|-------------------------------------------|-----------|
| Mr Ndabambi MF  | Acting Chief Executive Officer                | 1 167 296    | 379 152                            | 160 133                   | 364 206          | 127 35                                    | 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 Sethako KS#  | Acting Executive Corporate and Regulatory     | 541 667      | -                                  | -                         | 108 004          | -                                         | 649 671   |
| Mr Gumenge L##  | Acting Chief Financial Officer                | 822 869      | -                                  | -                         | 152 614          | -                                         | 975 483   |
| Mr Kekana T###  | Executive Corporate and 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.

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 31. Related parties (continued)

#### Remuneration of management

##### Management class: Executive management

| 2020                |  | Designation                                             | Basic salary | Other short-term employee benefits | Medical aid UIF & Pension | Acting Allowance | Cellphone Allowance | Other benefits received (Motor Allowance) | Total      |
|---------------------|--|---------------------------------------------------------|--------------|------------------------------------|---------------------------|------------------|---------------------|-------------------------------------------|------------|
| Name                |  |                                                         |              |                                    |                           |                  |                     |                                           |            |
| Mr Lengoasa J*      |  | Chief Executive Officer                                 | 1 121 400    | 663 495                            | 85 443                    | -                | 21 000              | -                                         | 1 891 338  |
| Ms Shongwe B**      |  | Chief Financial Officer                                 | 1 174 844    | 471 352                            | 84 897                    | -                | 27 000              | 97 102                                    | 1 855 195  |
| Ms Mphafudi J       |  | Executive Corporate and Regulatory Services             | 1 048 199    | 473 425                            | 83 849                    | -                | 36 000              | 146 760                                   | 1 788 233  |
| Mr Ndabambi MF      |  | Executive Infrastructure and Information Systems        | 1 135 704    | 334 346                            | 155 459                   | 169 147          | 36 000              | 124 087                                   | 1 954 743  |
| Dr Mphepya***       |  | Acting Chief Executive Officer                          | 1 140 000    | 508 919                            | 87 285                    | 176 415          | 36 000              | 120 000                                   | 2 068 619  |
| Mr Ngobeni T ##     |  | Acting Executive Weather and Climate Services           | 588 375      | -                                  | -                         | 153 463          | -                   | -                                         | 741 838    |
| Dr Terblanche D**** |  | Acting Executive Infrastructure and Information Systems | 334 100      | -                                  | -                         | 61 127           | -                   | -                                         | 395 227    |
| Mr Gumenge L#       |  | Acting Chief Financial Officer                          | 411 435      | -                                  | -                         | 75 749           | -                   | -                                         | 487 184    |
| Mr Kekana T ###     |  | Acting Executive Corporate and Regulatory Services      | 92 510       | -                                  | -                         | 33 875           | -                   | -                                         | 126 385    |
|                     |  | -                                                       | 7 046 567    | 2 451 537                          | 496 933                   | 669 776          | 156 000             | 487 949                                   | 11 308 762 |

\* Resigned in September 2019.

\*\* Resigned in December 2019.

\*\*\* Each acted for a period of six (6) months during the current financial year following the resignation of Mr. J Lengoasa.

\*\*\*\* Resigned on 30 June 2019.

# Acted as CFO for a period of three and half (3.5) months following the resignation of Ms Shongwe. ## Acted as an Executive for a period of five (5) months during the current financial year.

### Acted as an Executive for CRS for one (1) month during the current financial year.

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 31. Related parties (continued)

#### Remuneration of management

##### Management class: non-executive management

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          | 1                | 1                |
| Ms Mudly-Padayachie S | Non-Executive Member          | 112 266          | 112 266          |
| Mrs Moroka-Mosia KS## | Non-Executive Member          | 1                | 1                |
| 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          | 1                | 1                |
| Dr Khumalo T**        | Non-Executive Member          | 1                | 1                |
| 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           |
|                       |                               | <b>1 239 470</b> | <b>1 239 470</b> |

# 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 are in Rands

### 31. Related parties (continued)

#### Remuneration of management

##### Management class: Executive management

| 2020 |                       | Designation                   | Fees             | Travel         | Other benefits received (Motor Allowance) | Total            |
|------|-----------------------|-------------------------------|------------------|----------------|-------------------------------------------|------------------|
|      | <b>Name</b>           |                               |                  |                |                                           |                  |
|      | Ms Magomola N         | Chairperson                   | 322 965          | 29 056         | 47 072                                    | 399 093          |
|      | Dr Dexter PD          | Deputy Chairperson            | 133 365          | 64 675         | -                                         | 198 040          |
|      | Adv Block D           | Non-Executive Member          | 116 640          | 19 158         | -                                         | 135 798          |
|      | Mr Lefutso D          | Non-Executive Member          | 128 304          | 21 312         | -                                         | 149 616          |
|      | Dr Maila M#           | Non-Executive Member          | -                | -              | -                                         | -                |
|      | Ms Mudly-Padayachie S | Non-Executive Member          | 97 686           | 16 038         | -                                         | 113 724          |
|      | Mrs Moroka-Mosia KS** | Non-Executive Member          | 144 828          | 29 609         | -                                         | 174 437          |
|      | Mr Phaduli I          | Non-Executive Member          | 242 028          | 4 068          | -                                         | 246 096          |
|      | Ms Renqe F            | Non-Executive Member          | 117 612          | 608            | 3 888                                     | 122 108          |
|      | Dr Ngomane            | Non-Executive Member          | 1                | -              | -                                         | 1                |
|      | Mr Ndadana T*         | Independent Member of the ARC | 23 328           | -              | -                                         | 23 328           |
|      | Mr Labane G**         | Independent Member of the ARC | 86 476           | 7 776          | -                                         | 94 252           |
|      | Mr Maharaj S***       | Independent Member of the ARC | 54 432           | 7 776          | -                                         | 62 208           |
|      |                       | -                             | <b>1 467 665</b> | <b>200 076</b> | <b>50 960</b>                             | <b>1 718 701</b> |

\* Appointed on 1 December 2019

\*\* Appointed in May 2019

\*\*\* Appointed in July 2019.

# Dr N Maila works for Government and thus, was not remunerated. Independent members of the ARC are not members of the Board.

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 32. Prior-year adjustments

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

##### 2020

| Note                                                           | As previously reported | Correction of error | Restated    |
|----------------------------------------------------------------|------------------------|---------------------|-------------|
| Aircraft - Engine cost                                         | -                      | 1 771 965           | 1 771 965   |
| Accumulated depreciation and impairment loss - Aircraft engine | -                      | (1 771 965)         | (1 771 965) |
| Unspent conditional grants and receipts                        | 16 706 892             | 10 002 400          | 26 709 292  |
| Unspent Government allocations - conditional grant             | 54 166 428             | (10 000 000)        | 44 166 428  |

Adjustment to PPE relates to aircraft engine that was incorrectly credited with an impairment amount of R1 771 965 which resulted in a zero balance in the aircraft engine cost.

The prior year adjustment of R10 million relates to the project funds that were incorrectly classified as Unspent Government allocations - conditional grant during 2019/20 financial year, and have been reclassified to Unspent conditional grants and

An amount of R2 400 which relates to expenses not yet recognised as revenue was erroneously omitted from the disclosure

#### Cash flow statement

##### 2020

| Note                                     | As previously reported | Correction of error | Restated      |
|------------------------------------------|------------------------|---------------------|---------------|
| Cash flow from operating activities      |                        |                     |               |
| Net cash flows from operating activities | (6 042 802)            | 26 649 651          | 20 606 849    |
| Suppliers                                | (196 296 453)          | 26 649 961          | (169 646 802) |

Suppliers amount was overstated by R26 649 651. The net cash flows from operating activities as previously reported has been adjusted from -R6 042 802 to R20 606 849.

Cash flow from financing activities

|                                                                |            |              |   |
|----------------------------------------------------------------|------------|--------------|---|
| Movement in unspent government allocations - conditional grant | 26 649 651 | (26 649 651) | - |
|----------------------------------------------------------------|------------|--------------|---|

Unspent Government Grant movement of R26 649 651 was incorrectly classified under Cash flows from financing activities in the Cash Flow Statement instead of being included in the Cash from operating activities which has consequentially been corrected.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 32. Prior-year adjustments (continued)

#### Notes to the Annual Financial Statements

##### Related parties

| Note                       | As previously reported | Correction of error | Restated   |
|----------------------------|------------------------|---------------------|------------|
| Remuneration of management | 9 882 342              | 1 426 420           | 11 308 762 |
| Mr Ngobeni T               |                        | 588 375             |            |
| Dr Terblanche D            |                        | 334 100             |            |
| Mr Gumenge L               |                        | 411 435             |            |
| Mr Kekana T                |                        | 92 510              |            |

Salary costs for individuals in the acting capacity were insufficiently disclosed. The total balance as previously reported has been adjusted from R9 882 342 to R11 308 762. Refer to note 31.

### 33. Risk management Financial risk management

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

#### Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash and call account investment. 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 Department of Forestry, Fisheries and 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 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<br>1 year |
|-------------------------------|---------------------|
| 2021 Trade and other payables | 16 461 016          |
| 2020 Trade and other payables | 33 492 844          |

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 33. Risk management (continued)

#### Credit risk

Financial assets, which potentially subject the entity to the risk

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

Trade receivables comprise a widespread customer base. Management 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                                                | 41 935 498 | 44 535 907 |
| Receivables from exchange transactions (excluding statutory receivables) | 4 499 803  | 6 902 449  |

#### Market risk

#### Interest rate risk

The entity's exposure to market risk (in the form of interest rates risk) arises primarily from the entity's investment in cash and cash equivalents, accounts receivable and payable. The entity manages its interest rate risk by obtaining 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:

|                     | 2021 Effective<br>interest rate | 2020 Effective<br>interest rate | 2021              | 2020              |
|---------------------|---------------------------------|---------------------------------|-------------------|-------------------|
| Cash                | 9,75 %                          | 6,50 %                          | 41 935 498        | 44 535 907        |
| Accounts receivable | 7,00 %                          | 10,00 %                         | 11 465 455        | 24 144 163        |
|                     | - %                             |                                 | <b>53 400 953</b> | <b>68 680 070</b> |

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 33. Risk management (continued)

|                       | 2021 Effective<br>interest rate | 2020 Effective<br>interest rate | 2021              | 2020              |
|-----------------------|---------------------------------|---------------------------------|-------------------|-------------------|
| Financial assets      | 8,38 %                          | 8,25 %                          | 53 400 953        | 68 680 070        |
| Financial liabilities | - %                             | - %                             | (16 461 016)      | (33 492 843)      |
|                       |                                 | - %                             | <b>36 939 937</b> | <b>35 187 227</b> |

#### Foreign Currency Risk

The entity does not operate internationally but undertakes certain transactions denominated in foreign currencies and is exposed to foreign exchange risk arising from fluctuations in foreign currencies. The entity does not hedge against its exposure to foreign exchange risk. Exposure to foreign currency exposure at financial year-end relates to trade payables and is disclosed under Note 13. The entity settles the foreign currency when the rates are favourable

|              | 2021 foreign<br>currency | 2020 foreign<br>currency | 2021           | 2020             |
|--------------|--------------------------|--------------------------|----------------|------------------|
| CHF Payables | 9 750                    | 45 823                   | 153 179        | 857 209          |
| GBP Payables | -                        | 607                      | -              | 53 700           |
| USD Payables | 13 920                   | 83 131                   | 206 297        | 1 486 208        |
|              | -                        | -                        | <b>359 476</b> | <b>2 397 117</b> |

#### Sensitivity analysis

The entity is mainly exposed to CHF, British Pound and US dollar currencies.

The following table details the entity's sensitivity to a 5% increase and decrease in Rand against the relevant foreign currencies.

The sensitivity analysis includes only outstanding foreign currency denominated monetary items and adjusts their translation at financial year-end for 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.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 33. Risk management (continued)

| Figures are in Rands | USD Impact |        | CHF Impact |        |
|----------------------|------------|--------|------------|--------|
|                      | 2021       | 2020   | 2021       | 2020   |
|                      | 10 315     | 74 310 | 7 659      | 42 860 |
|                      | 10 315     | 74 310 | 7 659      | 42 860 |

#### Covid-19 pandemic

The World Health Organisation declared Covid-19 as a health emergency on 30 January 2020 and a global pandemic on 11 March 2020.

Management has performed an assessment of the impact of COVID-19 and determined that the COVID-19 global pandemic has worsened the already struggling Aviation industry. This is the sector that has been heavily impacted by COVID-19. Before COVID-19, approximately 35% of revenue came from Aviation and currently the revenue has dropped significantly as most of the flights are grounded. This revenue is mainly driven by air-traffic volumes. During the year under review the Aviation industry was faced with many challenges such as Comair LTD (Commercial Airways), South African Airways, SA Express (Pty) Ltd, Air Zimbabwe and SA Express (Pty) Ltd under business rescue. This has impacted the entity's cash flow negatively resulting in exposure to the credit risk. This is a unique event throughout the world and there are no past events to use to simulate an outcome expected.

Provision for doubtful debts is recognised and monitored at the end of each reporting period. Bad debts are written off when there is no reasonable expectation of recovery, for example when the debtor has been placed under liquidation.

### 34. Fruitless and wasteful expenditure

Opening balance as previously reported

#### Opening balance

Add: Expenditure identified - Travel

(Less)/Add: Expenditure identified - Car Storage Fees

Current year - Amount paid for cancelled contract module

Current year - Interest and penalty charges to SARS

#### Closing balance

|                  |                  |
|------------------|------------------|
| 1 097 357        | 1 059 304        |
| <b>1 097 357</b> | <b>1 059 304</b> |
| -                | 32 203           |
| (5 850)          | 5 850            |
| 3 911 107        | -                |
| 196 488          | -                |
| <b>5 199 102</b> | <b>1 097 357</b> |

The interest and penalty on late payment of tax to the South African Revenue Service, the amount is being investigated.

SAWS has terminated one of the modules of the service provider. Investigations are being finalised so that the corrective actions can be taken.

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 35. Irregular expenditure

|                                                                                                               |                   |                   |
|---------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| Opening balance as previously reported                                                                        | 88 308 693        | 42 394 171        |
| <b>Opening balance as restated</b>                                                                            | <b>88 308 693</b> | <b>42 394 171</b> |
| Expenditure incurred in excess of the budget                                                                  | -                 | 12 791 976        |
| Process used to appoint recruitment agents was not in line with procurement process                           | -                 | 1 850 645         |
| Process followed to appoint employees deemed improper                                                         | 766 345           | 1 284 697         |
| Renewal of IT infrastructure contract without following procurement processes                                 | -                 | 14 760 000        |
| Lease agreement for Head Office in contravention of procurement process                                       | 14 888 571        | 14 638 908        |
| Extension of contract for PABX and telephone system without following the procurement process                 | 210 900           | -                 |
| Use of a company to screen employees without following procurement process                                    | 14 040            | 38 797            |
| Renewal of lease in Springbok without following procurement process                                           | 35 826            | 101 395           |
| Renewal of security services contract in East London at the Radar sites without following procurement process | -                 | 30 000            |
| Purchase of IT equipment without necessary approval                                                           | -                 | 5 779             |
| Renewal of lease contract in Cape Town without necessary approval                                             | -                 | 97 094            |
| Approval not made in terms of the delegation of authority (Helium gas and rental cylinders)                   | -                 | 46 570            |
| Award of contract to procure gift cards for employee awards without following procurement process             | -                 | 29 411            |
| Hiring of mobile air-conditioning unit without following procurement process                                  | -                 | 28 350            |
| Astron Security Service at De Aar Weather Office                                                              | 5 320             | -                 |
| Suidekruis Security service at George Weather Office                                                          | 6 573             | -                 |
| ACSA - George Office                                                                                          | 915 603           | -                 |
| CSIR Office accommodation - Stellenbosch office rental                                                        | 46 042            | -                 |
| Aircraft Maintenance without following procurement process                                                    | 7 124 012         | -                 |
| Closing balance                                                                                               | 112 111 025       | 88 308 693        |

Requests for condonations were submitted for completed cases. Evidence of consequence management are being compiled for submission to National Treasury.

Investigations were carried out where element of fraud and criminal activities were identified. Consequence management were conducted and being finalised. See below for details:

\* See Note 32

## NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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### 35. Irregular expenditure (continued)

Incidents/cases identified in the current year include those listed below:

| Process followed to appoint employees deemed improper                                        | <b>Disciplinary steps taken/criminal proceedings</b><br>This consists of two matters, where the first matter was investigated and actioned. The second matter is part of court proceedings at the High Court and will be updated upon its finalisation. | 766 345           |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Lease agreement for Head Office in contravention of procurement process                      | Investigation was completed and management is in the process of compiling evidence of corrective action taken.                                                                                                                                          | 14 888 571        |
| Use of a company to screen new employees without following procurement process               | Implicated employee resigned. However, there was no loss and there was value for money for this service.                                                                                                                                                | 14 040            |
| Renewal of lease in Springbok without following procurement process                          | Note 1                                                                                                                                                                                                                                                  | 35 826            |
| Aircraft Maintenance without following procurement process                                   | Corrective actions are being finalised.                                                                                                                                                                                                                 | 7 124 012         |
| Astron Security Service at De Aar weather Office without following procurement process       | Note 1                                                                                                                                                                                                                                                  | 5 320             |
| Suiderkruis security service at George weather Office without following procurement process  | Note 1                                                                                                                                                                                                                                                  | 6 573             |
| ACSA George - office rental without following procurement process                            | Note 1                                                                                                                                                                                                                                                  | 915 603           |
| CSIR Office accommodation - Stellenbosch office rental without following procurement process | Corrective actions are being finalised.                                                                                                                                                                                                                 | 46 042            |
|                                                                                              |                                                                                                                                                                                                                                                         | <b>23 802 332</b> |

Note 1: These incidents were identified after an individual went on retirement. They were administrative errors for not renewing contracts on time before they expire. There was no loss for the organisation and there was value for money as these services or goods were utilised.

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### 36. Events after the reporting date

No adjusting or significant non-adjusting events have occurred between the 31 March 2021 and the date of authorisation.

### 37. 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 to 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.

### 38. 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

### 39. Authorisation for issue

The Annual Financial statements were prepared by Finance Management and authorised for issue on the 31 July 2021 by the Board of Directors.

\* See Note 32



[illegible]



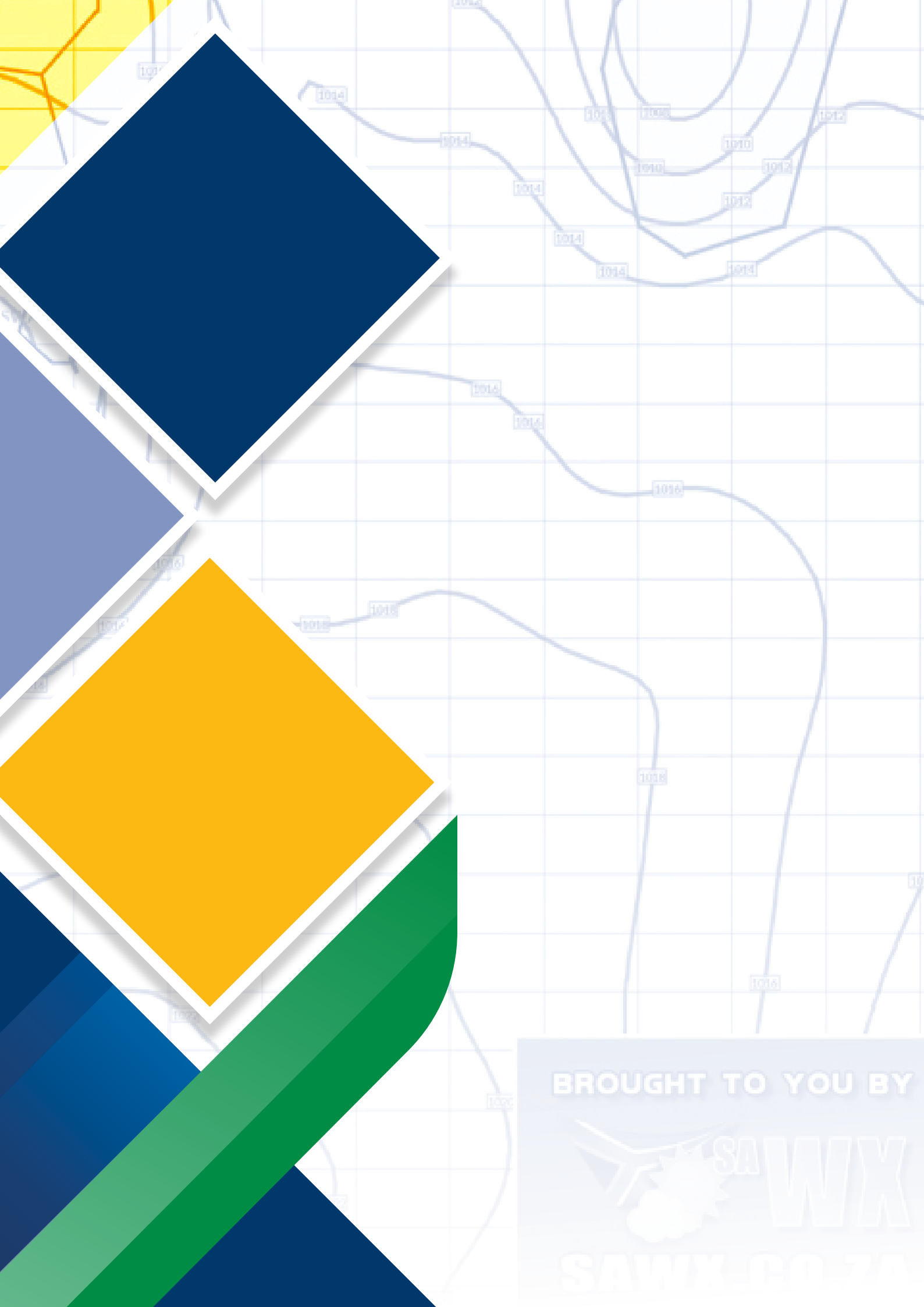
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## **South African Weather Service**

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