South African Weather Service

A WeatherSMART Nation

Annual Report

2018|19

CONTENTS

General Information

PART A

GENERAL INFORMATION

Registered name	South African Weather Service
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Website address	www.weathersa.co.za
External auditors	Auditor-General of South Africa
Bankers	Standard Bank
Company Secretary	Ms Thandi Zide

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ABBREVIATIONS AND ACRONYMS

AASA	Airlines Association of Southern Africa
ACAMS	Advisory Committee for Aeronautical Meteorological Services
ACCESS	Applied Centre for Climate & Earth System Science
ACMA	African Conference on Meteorology for Aviation
ACMAD	African Centre of Meteorological Applications for Development
ACSA	Airports Company South Africa
AFI	Africa-Indian Ocean
AGA	Annual General Assembly
AGSA	Auditor-General South Africa
AIRMET	Airmen's Meteorological Information
AMC	Aerodrome Management Centre
AMCOMET	African Ministerial Conference on Meteorology
API	Application Programming Interface
APIRG	Africa Planning and Implementation Regional Group
AQMS	Air Quality Modelling and Forecasting System
ARC	Audit and Risk Committee
ARS	Automatic Rainfall Station
AT	Apparent Temperature
ATM	Air Traffic Management
ATNS	Aeronautical Traffic Navigation Services
AWS	Automatic Weather Station
BSI	British Standards Institution
CCMA	Commission for Conciliation, Mediation and Arbitration
CCRA	Climate Change Reference Atlas
CDM	Collaborative Decision Meeting
CoComm	Coordinating Committee
CSIR	Council for Scientific and Industrial Research
CSP	Concentrated Solar Power
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DMISA	Disaster Management Institute of South Africa
DMS	Data Management System
DRR	Disaster Risk Reduction
DWD	Deutsche Wetterdienst
EC	Executive Council
ECMWF	European Centre for Medium-Range Weather Forecasts
ERP	Enterprise Resource Planning

ET	Education and Training
ETC	Education and Training of Executive Committee for WMO
ETTCDI	Expert Team on Climate Change Detection and Indices
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EXCO	Executive Committee
GAW	Global Atmosphere Watch
GFCS	Global Framework on Climate Services
GPC-LRF	Global Producing Centre for Long Range Forecasts
GRAP	Generally Recognised Accounting Practice
HCM	Human Capital Management
HIRA	Hazard Identification and Risk Assessment
HPC	High Performance Computing
ICAD	International Civil Aviation Day
ICAO	International Civil Aviation Organization
INAM	Mozambique National Meteorology Institute
ICT	Information and Communication Technology
IESBA	International Ethics Standards Board for Accountants
ISA	International Standards on Accounting
ISO	International Organization for Standardization
ISS	Integrated Service Strategy
IMTT	Inter-Ministerial Task Team
LDC	Least Developed Countries
LDN	Lightning Detection Network
LRF	Long Range Forecasting
MASA	Meteorological Association of Southern Africa
MET	Meteorological
METAR	Meteorological Aviation Report
MoU	Memorandum of Understanding
MRC	Medical Research Council
MSG	METEOSAT Second Generation
NAAQMN	National Ambient Air Quality Monitoring Network
NDMC	National Disaster Management Centre
NFCS	National Framework for Climate Services
NJDCC	National Joint Drought Coordinating Committee
NMS	National Meteorological Service
NOAA	National Ocean and Atmosphere Administration
NRF	National Research Foundation

ABBREVIATIONS AND ACRONYMS (CONTINUED)

NWP	Numerical Weather Prediction
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
OCIMS	Oceans and Coastal Information Management System
PFMA	Public Finance Management Act
QCTO	Quality Council for Trades & Occupations
QMS	Quality Management System
RA I	Regional Association I
R4A	Rain for Africa
RTC	Regional Training Centre
SAAF	South African Airforce
SAAQIS	South African Air Quality Information System
SACAA	South African Civil Aviation Authority
SADC	Southern African Development Community
SAEON	South African Environmental Observation Network
SASAS	South African Society for Atmospheric Sciences
SAWS	South African Weather Service
SAWS Act	South African Weather Service Act, 2001 (No. 8 of 2001 as amended)
SCHOTI	Standing Conference of Heads of Training Institutions
SCOM	Sectoral Committee on Meteorology
SCOPA	Standing Committee on Public Accounts
SEB	Socio-Economic Benefit
SHEQ	Safety, Health, Environment and Quality
SIGMET	Significant Meteorological Phenomena
SIP	Strategic Implementation Plan
SMART	Safe, More informed, Alert, Resilient, Timeous
SMS	Short Message System
SOLAS	Safety of Life at Sea Convention
SPC	Strategic Programmes Committee
TAF	Terminal Aerodrome Forecast
TUT	Tshwane University of Technology
UKMO	United Kingdom Meteorological Office
UKZN	University of KwaZulu-Natal
WIS	Weather Intelligence Systems
WMO	World Meteorological Organization
WRC	Water Research Commission
WRR	World Radiometric Reference

MESSAGE FROM THE MINISTER OF ENVIRONMENT, FORESTRY AND FISHERIES

It gives me great pleasure to present the 2018/19 Annual Report of the South African Weather Service (SAWS), a public entity of the Department of Environment, Forestry and Fisheries. My appreciation is extended to the late Hon. Minister BEE Molewa and the Hon. Minister N. Mokonyane, who tirelessly set up the requirements for a well-functioning Weather Service and the foundation for climate change adaptation.

The SAWS derives its mandate from the South African Weather Service Act, 2001 (No. 8 of 2001 as amended). The organisation's strategic planning and operations are aligned with important national imperatives and strategies such as Vision 2030 of the National Development Plan (NDP), the National Climate Change Response Policy and the Nine Point Plan of 2015. By aligning its strategy with national priorities, the organisation maintains relevance in addressing the needs of the country and plays a role in the socio-economic development thereof.

As climate change strengthens its foothold on the lives of our people, the work of SAWS becomes even more important, especially in ensuring the safety of the citizenry. The prolonged drought, which continued to affect large parts of the country, as well as severe weather events that led to extreme forms of property loss and loss of life during the year under review, once again emphasised the importance of early warning systems, adequate planning and impact-based weather forecasting. Today, South Africans need to be even more prepared to take action in the wake of inclement weather affecting their lives, crops, dwellings and livelihoods.

In the year under review, SAWS was able to further position itself strategically within the international network of climate services organisations functioning under the umbrella of the Global Framework for Climate Services (GFCS). The organisation was able to provide high quality data from national and international databases as well as access to maps, risk and vulnerability analyses and assessments and long-term projections.

With the preservation of environmental assets underpinning the National Development Plan, expert human capital and sophisticated technology are required to support programmes that grow the economy without increasing the country's emission's profile. One of the greatest assets of SAWS is its highly-trained, knowledgeable and dedicated staff working together to ensure quality research; disaster risk reduction services; maintenance of equipment and systems; as well as the development and maintenance of a reputable source of weather, climate and air quality

knowledge. They also drive the development of weather-related knowledge and products to serve the organisation's numerous stakeholders.

Through its goal to create a WeatherSMART nation, SAWS increased its investment in agricultural technologies and research and the development of adaptation strategies aimed at protecting rural livelihoods and expanding commercial agriculture. All these strategies respond to the challenge of climate change.

The organisation reached over forty million South Africans through various media platforms and personal contact. The aviation, agriculture, insurance industries and other sectors stood to benefit from many relevant services. I would like to congratulate the organisation for attaining an 86% satisfaction rate for its services during its Stakeholder Perception Survey.

Given that a large proportion of the work done by SAWS is science and research-based, the organisation places a high priority on the publication of its research findings as a means of sharing innovation and setting the benchmark in knowledge generation. The publishing of a large number of research articles on recognised platforms contributed to the wealth of scientific knowledge on meteorology, climatology and air quality and emphasised the value of the national meteorological library as one of our knowledge management structures.

I am excited that the objectives of SAWS speak to five of the seven identified government priorities, namely economic transformation and job creation; education, skills and health; spatial integration, human settlements and local government; social cohesion and safe communities as well as a better Africa and better world. I am aware that more investment would be required to upgrade, expand and optimize its aging infrastructure to achieve its mandate of safeguarding lives and property through the provision of meteorological solutions to all South Africans. I am hopeful that the organisation, through guidance of its new Board and management team, will be able to meet the many demands and expectations of the future.

The 2018/19 Annual Report of the South African Weather Service complies with the statutory requirements of the Public Finance Management Act, 1999 (No. 1 of 1999) and National Treasury Regulations. It gives me great pleasure to present this report for your perusal.

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

MESSAGE FROM THE DEPUTY MINISTER OF ENVIRONMENT, FORESTRY AND FISHERIES

The South African Weather Service has, in the 2018/19 financial year, increased its international profile as an international competitor in the in-house modelling of weather and climate projection.

The effects of weather and climate variability are not without their challenges. It is, therefore, incumbent upon the South African Weather Service to effectively and efficiently serve South Africans in this domain.

Paying attention to the immediate needs of stakeholders, particularly the public and communities most affected by severe weather, SAWS made great strides in ensuring stakeholders were informed and prepared for the extremes of weather events that affected the country and its people in the past year.

Communities were kept abreast of the latest developments either via the conventional media, or through the use of social media – a communications tool that is gaining popularity because of its wide use and immediacy in being able to warn communities of impending natural disasters so that they are able to institute coping mechanisms timeously. These communication mechanisms are augmented by the SAWS website which is used increasingly by particularly community radio stations and social media to obtain regular updates on weather patterns.

The weather has come to play a greater role in everyday lives as the effects of climate change are felt most often by weather-sensitive sectors and vulnerable communities. Existing products were enhanced, and new ones have been developed. This resulted in no less than six new products being added to the offering in key sectors supported by SAWS in the past year.

In the interests of accuracy, SAWS has been working towards the implementation of a National Education Plan aimed at developing the meteorological and climate-related skills that are critical for the achievement of its mandate.

Another key imperative has been community outreach and exposing young people to career opportunities in the fields of meteorology and climatology – areas that are characterised by a dearth of skills. The SAWS has, in the past year, continued to encourage young people to join its ranks with continued education and awareness efforts.

Globally, SAWS participated in World Meteorological Organization (WMO) and International Civil Aviation Organization (ICAO) events during the year under review, and contributed to the WMO's Global Production Centre for Long Range Forecasts.

A feather in the SAWS cap is the fact that it had continued to run the WMO's Severe Weather Forecast Demonstration Projects for all Southern African Development Community (SADC) members, and ensured that severe weather forecasts in the SADC region are developed and shared timeously with all national meteorological services in the sub-region.

This is an example of how SAWS continues to play a pivotal role in Africa and in severe weather prediction and training in the SADC region.

It gives me great pleasure to join the Minister of Environment, Forestry and Fisheries, and the SAWS Board and Management in presenting the 2018/2019 SAWS Annual Report.

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

FOREWORD BY THE BOARD CHAIRPERSON

It is an honour for me to reflect on the work of the South African Weather Service and the role of the Board during the reporting period of 2018/19.

The Board was responsible for overseeing the governance of the organisation, ensuring that the relevant prescripts pertaining to legislation and regulatory frameworks were followed. One of the immediate tasks the new Board had to deal with was the legislative mandate review of the entity. Chief amongst the mandate issues relate to the function of the Aviation Meteorological Authority which is at the final stages of being moved to the South African Civil Aviation Authority, and should no longer be included as an objective of the Weather Service. This is as per the requirements of the International Civil Aviation Organization (ICAO) which correctly believes that National Meteorological Services should not be a player and referee at the same time.

Be that as it may, the Meteorological (MET) Authority continued to develop and implement the safety oversight system for aeronautical meteorology based on the eight critical elements of the safety oversight system. One of the key achievements in this process was the successful development and promulgation of regulations governing aeronautical meteorological service provision under the Civil Aviation Act, 2009 (No. 13 of 2009).

The Board also provided strategic direction and leadership in terms of the relationship of SAWS with the Shareholder (Department of Environment, Forestry and Fisheries), stakeholders and the general public. To that effect, a shareholder compact was developed and submitted to the Department.

As the Board Chairperson, I am pleased that our interaction with the World Meteorological Organization (WMO) member states from the African region has seen us secure the right to host the first World Meteorological Organisation (WMO) supported Leadership Conference for African Meteorological Services. The conference is significant as it would allow these African leaders to join hands and deal with challenges facing their organisations. These challenges include supplying free climate and general meteorological data which is repackaged by emerging private players then sold at a profit. To remain sustainable, the National Meteorological Services (NMSs) need to earn an income through commercializing such data which, according WMO resolutions, should be free.

On the international front, SAWS received recognition as a leader in Africa when it was elected as an acting member of the WMO Executive Council in June 2018. This recognition enabled the organisation to advance its interests and advocate for the regional rights and plight.

The SAWS needs to be commended for its excellent service to its stakeholders. This was confirmed by obtaining an 86% satisfaction rate during its recent stakeholder relations perception survey. This rating is well above industry standards. Furthermore, our engagements with aviation, measured by a separate survey, rated our aviation meteorological products as of a very high and reliable standard.

Our other notable engagements with the public were further supported by a number of important stakeholder interventions undertaken which included our role in the Disaster Management and Disaster Risk Reduction arena; Civil Aviation as well as outreach approaches to vulnerable communities.

Regarding product development, the organisation developed five relevant products to protect and minimise weather related risks to vulnerable communities whilst also providing sector specific products on weather and climate to assist targeted business sectors.

The SAWS is committed to developing capacity to support the organisation's strategic objectives and to grow the talent pool for the country. As the SAWS capacity building wing, the Regional Training Centre (RTC) was established to identify the skills needs of SAWS and the SADC region and to make the relevant training available to public entities, NGOs, private organisations and corporates. There was an additional focus on Engineering and Technology specialisations to address the ever-increasing strategic challenges of domestic resources. The RTC was furthermore involved with the setting of the outcome-based assessments for the qualification Quality Council for Trades & Occupations (QCTO) for the Meteorological Technician Course.

At a time when the challenges of climate change are increasing in frequency and impact, this Annual Report is testament to the determination with which the Board, the executive team and all staff members continued to deliver on the SAWS mandate.

The recently acquired ISO 9001:2015 certification is a confirmation that the South African Weather Service, as a provider of weather and climate services, is characterised by quality. Its expertise as a reliable source of weather and climate information, with research and technical abilities supporting and enhancing South Africa's mitigation and adaptation strategies, is widely recognised.

The year under review was particularly a demanding one, as the organisation was faced with the unfortunate incident of having to deal with the leave of absence of its Chief Executive Officer.

During September 2018, we received the sad news of the untimely passing away of late Honourable Minister Dr. Edna Molewa. We can say without any doubt that our leader has impacted this world in a big way. Her legacies are felt in Africa and indeed in various parts of the world where she left a huge foot print. We recognize the unique leadership role she played in the matters of climate change and her critical leadership during the Paris Agreement negotiations is legendary.

We also reminisce in South Africa's success in 2011, when we successfully hosted the United Nations Framework Convention on Climate Change (COP-17) under the leadership of Minister Molewa, and where the South African Weather Service and the World Meteorological Organization played a huge and pivotal role. The Minister's leadership prowess was instrumental to prevent the Durban discussions from collapsing and it is these discussions that ensured the preservation of the Kyoto Protocol, when South Africa took the decision to adopt the second commitment period, capturing legally binding commitments of developed countries, beyond the expiration date of the first commitment period in 2012.

As we mourn her untimely passing away, we will continue to honour and preserve her memory. May her soul rest in peace.

The South African Weather Service is continuously challenged by underfunding with a government grant that is decreasing in real terms. This places the organisation in an unenviable position and impacts directly on its service delivery. In order to ensure optimum service delivery, the Board and the Shareholder will continue to engage the State to prioritise funding of our service in the light of increasing impacts of climate change.

I would like to take this opportunity acknowledge the role of our former Minister Nomvula Mokonyane and Deputy Minister Barbara Thomson. I also wish to express the Board's excitement to be able to work with our new Minister, Honourable Minister Barbara Creecy and Honourable Deputy Minister Maggie Sotyu and look forward to their guidance and support.

I thank the previous Board and the Chairperson for the work they have done, which made our role easier when we took over the baton. I am proud to join the Minister, Deputy Minister and the Executive team in presenting the Annual Report.

Ms Nana Magomola
Board Chairperson

OVERVIEW BY THE ACTING CHIEF EXECUTIVE OFFICER

The South African Weather Service (SAWS), as the mandated national meteorological service, has a vision of "A WeatherSMART" where citizens and institutions are able to use quality and reliable weather and climate data provided by the organisation to enhance the quality of their lives and build resilience to extreme weather events and mitigate the impacts of climate change.

The SAWS is designated in terms of Section 3 of the South African Weather Service Act, 2001 (No. 8 of 2001 as amended) as the authority responsible for fulfilling the obligation of the State under the Convention on International Civil Aviation, commonly known as the Chicago Convention.

Extreme weather and service provision

The strategic and economic role of the organisation was highlighted during the report period when South Africa again experienced several weather hazards affecting the lives and property of many citizens, particularly the poor and vulnerable. The most notable events of the year, as discussed in this report, show the level of severe weather hazards South Africa is faced with, as well as our role in disaster risk reduction and forecasting the impacts of expected weather on citizens.

While severe weather occurred frequently, some areas experienced continued drought conditions, with a number of municipalities reporting severe water shortages, and agriculture reporting crop failures. It was clear that South Africa was not out of the prevalent drought period.

Our aviation meteorological services continued to provide a sterling service to the aviation community, with reports on accuracy at 91.5%, the probability of detection at 84.9% and a false alarm rate of 11.3%. In terms of Marine meteorological services, we developed a 10-year Marine Master Plan to increase our service offering to the marine sector, which was launched in March 2018.

Our monthly seasonal predictions and interactions continued to support provincial planning and decision making in Government and other sectors and maintained a theme of the possible recurrence of an El Nino event throughout the year.

Our service delivery was supported by the maintenance of our infrastructure network, consisting of radars, a lightning detection network, an upper-air sounding network and a surface observation network. While shortfalls to our network were addressed, we were nevertheless able to repair and recommission the Bethlehem radar on 20 August 2018, thereby adding valuable input to our early warning capacity. Our full network was continuously maintained, repaired and improved.

One of our observation responsibilities is the WMO Global Atmospheric Watch (GAW) programme. The SAWS is responsible for the Cape Point GAW station which forms part of a global network of 30 similar stations spread across the globe under the WMO GAW programme. The network was upheld and valuable data provided to a wide array of stakeholders.

As custodian of the South African Air Quality Information System (SAAQIS), we ensured the smooth operation of the system as a one stop shop for all air quality information requests. The availability of SAAQIS was at acceptable 98%.

The SAWS hosted its 2nd Annual WeatherSMART Science Symposium on 18 and 19 March 2019 which brought together scientists in weather, climate, air quality, aviation and marine research to share their latest findings among the community and with the public and relevant stakeholders.

During the symposium, the SAWS Impact-Based Severe Weather Warning System was launched with the aim to move from “What the weather will be” to “What the weather will do”. The system was envisaged for full roll-out during the next financial year.

We remain at the forefront of meteorological insights through hosting and attending local and international events with a wide base of relevant stakeholders including the South African Civil Aviation Authority (SACAA), Aeronautical Traffic Navigation Services (ATNS), South African Air Force (SAAF) and the Airports Company South Africa (ACSA). One such engagement was in Melbourne with the management Group of WMO Commission of Aeronautical Meteorology looking ahead to 2020-2023.

We are committed to ensuring purpose-driven human resource development. This includes initiatives to build expertise both internally and in the national atmospheric and related sciences talent pool.

While the organisation in the past received unqualified audits, it received a qualified audit for the period under review. In order to prevent a recurrence, more emphasis will be placed in future on the management of assets, conducting a skills audit and other matters highlighted in the audit report and the gaps identified by the Board.

I commend the dedicated team, guided by the Board and the Executive who performed their duties during the report period. I am confident that key aspects of the strategic roll-out will support the organisation's continued and critical role in responding to the outcomes identified by Government and contribute to an environmentally sustainable climate change-resilient low-carbon economy.

Mr Mnikeli Ndabambi
Acting Chief Executive Officer

STATEMENT OF RESPONSIBILITY

Statement of Responsibility and Confirmation of Accuracy for the Annual Report

The Chief Executive Officer (CEO) is responsible for the preparation of the public entity's performance information and for the judgements made in terms of this information.

The CEO is responsible for establishing and implementing a system of internal controls designed to provide reasonable assurance as to the integrity and reliability of performance information.

In our opinion, the performance information contained in this report is a fair reflection of the actual achievements against planned objectives, indicators and targets as per the Strategic and Annual Performance Plans of the public entity for the financial year ended 31 March 2019.

All information and amounts disclosed in the annual report are consistent with the annual financial statements audited by the Auditor-General. 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 performance information of the entity, as attached hereto, was approved by the Board at its meeting on 21 August 2019.

Mr Mnikeli Ndabambi
Acting Chief Executive Officer

Ms Nana Magomola
Board Chairperson

MEMBERS OF THE BOARD 2018/2019

Ms Ntsoaki Mngomezulu
Board Chairperson
until May 2018

Ms Judy Beaumont
(DEA representative)
until December 2018

Ms Nandipha Madiba
until May 2018

Prof Elizabeth Mokotong
until December 2018

Mr Rowan Nicholls
until May 2018

Mr Jerry Lengoasa
(Chief Executive Officer)
leave of absence since September 2018

Adv Portia Matsane
Company Secretary
until October 2018

MEMBERS OF THE BOARD 2018/2019

Ms Nana Magomola
Board Chairperson since May 2018
reappointed January 2019

Dr Phillip Dexter
Deputy Chairperson since May 2018
reappointed January 2019

Adv Derick Block
reappointed January 2019

Mr David Lefutso
reappointed January 2019

Dr Mphekgo Maila
appointed May 2018
reappointed January 2019

Ms Kelebogile Moroka-Mosia
appointed January 2019

MEMBERS OF THE BOARD 2018/2019

Ms Sally Mudly-Padayachie
reappointed January 2019

Dr Tsakani Ngomane
(DEA representative)
appointed January 2019

Mr Itani Phaduli
appointed January 2019

Ms Feziwe Renque
appointed January 2019

Mr Mnikeli Ndabambi
Acting Chief Executive Officer
from September 2018

Action without vision is only passing time, vision without action is merely day dreaming, but vision with action can change the world.

- Nelson Mandela -

Mr Jerry Lengoasa
Chief Executive Officer
(leave of absence since September 2018)

Mr Mnikeli Ndabambi
Acting Chief Executive Officer

Ms Julia Mphafudi
Executive: Corporate and
Regulatory Services

Ms Busisiwe Shongwe
Chief Financial Officer

Mr Tshepho Ngobeni
Acting Executive Weather
and Climate Services
October 2018 – March 2019

Dr Deon Terblanche
Acting Executive: Infrastructure
and Information Systems
1 September 2018 onwards

Mr Jongikaya Witi
Acting Executive: Weather
and Climate Services
April – September 2018

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 have been 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 (PFMA), 1999 (No.1 of 1999); Treasury Regulations; the Companies Act; 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 2019 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 (No 8 of 2001 as amended) – also referred to as "SAWS Act". It supplies weather-related information to the public at large as part of its public good mandate of 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 Environmental Affairs 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 also 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 5,77% from R 407,33 million to R 383,83 million year-on-year.

Table 1: Movement in Revenue 201

Revenue	2018/19	2017/18	Variance	
	R	R	R	%
Revenue from non-exchange transactions				
Revenue from non-exchange transactions - operational expenditure	**209 488 223**	**240 482 000**	**(30 993 777)**	**-14,79%**
- Government grant - operational and capital expenditure	192 371 223	223 490 000	(31 118 777)	-13,92%
- Government grant - SAAQIS	17 117 000	16 992 000	125 000	0,74%
Contributions and donations	**6 844 361**	**4 048 344**	**2 796 017**	**69,07%**
- TETA -SETA grant	1 511 125	885 609	625 516	70,63%
- Donor funding - research projects	5 333 236	3 162 735	2 170 501	68,63%
Revenue from non-exchange transactions	**216 332 584**	**244 530 344**	**(28 197 760)**	**-11,53%**
Revenue from exchange transactions				
Regulated commercial revenue				
- Aviation	**128 234 129**	**129 300 614**	**(1 066 485)**	**-0,82%**
Non regulated commercial revenue	**32 374 551**	**25 655 469**	**6 719 082**	**26,19%**
- Aviation instruments maintenance income	797 307	915 434	(118 127)	-12,90%
- Air quality revenue	5 891 089	6 584 065	(692 976)	-10,53%
- Information fees	17 647 285	13 638 158	4 009 127	29,40%
- Training - Regional Training Centre	880 653	377 064	503 589	133,56%
- Lightning detection network sales	5 751 552	3 911 606	1 839 946	47,04%
- Sale of instruments	1 406 665	229 142	1 177 523	513,88%
Total commercial revenue	**160 608 680**	**154 956 083**	**5 652 597**	**3,65%**
Other revenue	**5 822 722**	**7 839 810**	**(2 017 088)**	**-25,73%**
- Miscellaneous income	1 175 813	964 163	211 650	21,95%
- Interest received from receivables	53 943	145 643	(91 700)	-62,96%
- Income from investments	4 592 966	6 730 004	(2 137 038)	-31,75%
Revenue from exchange transactions	**166 431 402**	**162 795 893**	**3 635 509**	**2,23%**
Total revenue	**382 763 986**	**407 326 237**	**(24 562 251)**	**-6,03%**

Government Grant

The total Grant income decreased by 14,79% (R30,99 million) from R240,48 million to R209,49 million year-on-year. Included under the Grant income is a Capital Expenditure Grant of R9,51 million (2017/18: R35 million).

Aviation Income

Aviation income decreased by 0,89% from R129,30 million to R128,23 million year-on-year. This result is mainly due to lower air traffic volumes.

Non-Regulated Commercial Income

Non-regulated commercial revenue increased by 26,19% from R25,66 million to R32,37 million year-on-year, mainly due to increase sales of Meteorological Instruments, Lightning Detection Network, Information Fees and improved revenue from the Regional Training Centre which contributed to a combined revenue increase of 41% year-on-year.

Other Income

Interest from investments decreased by 31,75% from R6,73 million to R4,59 million year-on-year. Interest income arose as a result of increased expenditure during the financial year.

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

Table 2: Relation between Externally and Internally Generated Revenue

	2019	2018
Internal Revenue as % of Total Revenue	55%	59%
External Revenue as % of Total Revenue	45%	41%

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

Expenditure

Total Expenditure has increased by 14,89% from R398,69 million to R453,48 million year-on-year.

Table 3: Total Expenditure consisted of the following:

DESCRIPTION	2018/19	2017/18	Variance	
	R	R	R	%
Administrative	16 436 159	9 315 862	7 120 297	76,43%
Employee costs	261 335 504	222 481 103	38 854 401	17,46%
Amortisation	3 214 128	3 169 667	44 461	1,40%
Depreciation	29 541 486	27 098 712	2 442 774	9,01%
Impairment loss	169 114	4 574 712	169 114	3,70%
Finance costs	953 196	-	953 196	-100,00%
Other operating expenses	141 827 101	132 044 949	9 782 152	7,41%
TOTAL EXPENDITURE	**453 476 688**	**398 685 005**	**59 366 395**	**14,89%**

Administrative Expenditure

Administrative Expenditure has increased by R7,12 million year-on-year from R9,32 million to R16,43 million mainly as a result of increased provision for doubtful debts which amounted to R5,21 million for the year.

Employee Costs

Compensation of Employees increased by 17,46% year-on-year to R261,34 million (2017/18: R222,48 million) and make up 57,63% (2017/18: 55,80%) of the **Total Expenditure** of SAWS.
During the year under review all qualifying employees received an across the board salary increase of 6,8%.

Operating Expenditure

Other operating expenses increased by 7,41% (R9,78 million) from R132,05 million to R141,83 million year-on-year. The increase in operating expenditure even though higher than the average CPI over the year, is attributed to the volatility in the Rand exchange rate when compared to other foreign currencies, regulatory price increases such as electricity and diesel costs and other contractual agreements whose increase is higher than the average CPI.

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 (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 a form of a Post-Retirement Medical Aid Benefit Plan (PRMA) 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 2019, SAWS' liability on the Post-Retirement Medical Aid (PRMA) decreased from R4,87 million to R4,12 million. The decrease was due to a decline in the number of employees entitled to the PRMA both in service and in continuation and the increase in the net discount rate from 1,09% to 2,32% year-on-year.

This Non-current Liability represents a total of 50 employees (2017/18: 51 employees), of which 31 of these employees (2017/18: 31) are already on retirement/pension while the remaining 19 (2017/18: 20) are still in service.

BUDGETED REVENUE AND EXPENDITURE COMPARED TO ACTUAL

During the year under review, SAWS realised a Deficit of R68,96 million (2017/18: R17,46 million).
Total revenue for the year was below budget by R27,86 million amounting to R382,76 million (Budget: R410,62 million), while total expenditure was above the budget by 3,60% (Actual: R453,48 million).

SERVICES RENDERED BY THE SOUTH AFRICAN WEATHER SERVICE

A list of 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.

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 the South African Weather Service takes a leading role in this process. The success of these projects could be derailed by lack of funds to invest in advanced technology and human capital, a necessary resource to drive these processes.

During the 2018/19 financial year, SAWS was allocated R37 million towards capital expenditure and was also allowed to retain an amount of R12,10 million from surplus funds which have been used to enhance and upgrade the capital infrastructure.

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.

Part of that responsibility is to respond to creating a greater pool of scientists and technologists with greater focus on the Previously Disadvantaged Individuals. However, without the necessary financial resources it is a tall order to achieve these objectives, more so because these are part of the SAWS mandate, as per the SAWS Act.

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. Most of the students on the scientific internships are subsequently employed on a full time basis.

During the 2016/17 financial year, the SAWS Board approved the implementation of the salary parity which is aimed at addressing salary disparities in core staff. Phase I of addressing this imbalance was implemented between December 2017 and March 2018. Phase II was delayed for implementation in 2019 due to further consultation with staff.

SAWS has also adopted the salary scales as recommended by the Department of Environmental Affairs which seeks to have a standard salary scale for all its entities which became effective in the current financial year.

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 30 in the Annual Financial Statements, whereas Related Party Transactions are reflected in Note 33 in the Annual Financial Statements.

Disclosure of R**emuneration to Members of the Accounting Authority and Executive Management** is disclosed in Note 33 in the Annual Financial Statements.

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

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.

SizweNtsalubaGobodo 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 term 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 the South African Weather Service and submitted to the Department of Environment, Forestry and Fisheries 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 has been disclosed under Note 36 of the Annual Financial Statements.

IRREGULAR EXPENDITURE

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

DISCONTINUED ACTIVITIES / ACTIVITIES TO BE DISCONTINUED

There were no discontinued activities during the period under review and there is no plan to discontinue activities in the 2019/20 financial year.

METEOROLOGICAL AUTHORITY

Safety Oversight

The South African Weather Service (SAWS) is designated in terms of Section 3 of the South African Weather Service Act, 2001 (No 8 of 2001 as amended) as the aeronautical meteorological authority to fulfill the obligation of the State under the Convention of International Civil Aviation (ICAO), commonly known as the Chicago Convention. The Meteorological (MET) Authority is mandated to fulfill the safety oversight obligations of SAWS and the State. In doing so, the MET Authority is enabled by the memorandum of agreement between SAWS and the South African Civil Aviation Authority (SACAA).

During the period under review, the MET Authority fulfilled its safety oversight responsibilities by successfully planning and implementing 22 airport inspections. A team of highly trained and competent inspectors assessed the technical characteristics of meteorological equipment installed at airports for compliance with existing requirements. Inspected aerodromes included the OR Tambo, King Shaka, Pietermaritzburg, Mthatha, Cape Town, Mahikeng, Pilanesberg, Polokwane, Kruger Mpumalanga, Grand Central, Bram Fischer, Kimberley, Upington, Rand, Lanseria, Wonderboom, Richards Bay, East London, Port Elizabeth, Virginia, Phalaborwa and George airports. Airports with findings were requested to provide the MET Authority with corrective action plans. Furthermore, the industry was informed accordingly through the issuance of NOTAMs (which is a form of notification message for flight operators) about the unserviceability of meteorological equipment.

The outcome of these inspections was used as input into the aerodrome licensing process, coordinated by the aerodrome licensing forum on behalf of the Director of Civil Aviation. The MET Authority recommended 14 aerodromes for licensing, while seven were not recommended.

The MET Authority, in collaboration with key stakeholders such as the South African Civil Aviation Authority (SACAA), the Department of Transport (DoT) and the aviation industry, continued to develop a comprehensive and effective safety oversight system for aeronautical meteorological activities in South Africa. ICAO requires that the safety oversight system must be based on the eight critical elements of the State Safety Oversight system, which form the foundation for the effectiveness of the State's capability for safety oversight. See chart below.

Chart 1: Critical elements of the State Safety Oversight system

During the report period, two staff members (one inspector and one administrator) were appointed. The MET Authority successfully implemented its training plan for the 2018/19 report period, which resulted in the training of three employees in ISO 9001: 2015 requirements and ISO 9001:2015 lead auditing. This training will enhance the capability and capacity within the MET Authority to effectively assess service provider activities for compliance with minimum safety standard governing the provision of meteorological services for aviation.

The role of the MET Authority will be key in the medium and long-term to build capacity needed for effective safety oversight, particularly in the SADC region. It is therefore critical to support the function of the MET Authority by providing the necessary resources to enhance its capacity and capability.

STRATEGIC OVERVIEW

Vision

The South African Weather Service (SAWS), as the mandated national meteorological service, has a vision of "A WeatherSMART Nation" where citizens and institutions are able to use quality and reliable weather and climate related data provided by the organisation to enhance the quality of their lives and build resilience to extreme weather events and mitigate the impacts of climate change.

Mission

The South African Weather Service (SAWS) will achieve this vision by evolving into a Weather and Climate Centre of Excellence that provides innovative solutions to ensure a WeatherSMART region, sustainable development and economic growth through thought leadership in meteorological, climatological and other related sciences; the development of relevant and innovative applications and products for cutting edge technology; and establishing and leveraging collaborative partnerships.

Values

The South African Weather Service (SAWS) is conscious of the responsibility it has to fulfil its mandate to support the policies of the government – its Shareholder concomitantly upholds the following values:

- **Scientific Excellence**

  We consistently demonstrate our commitment to innovation through, human capital development, knowledge generation, and dissemination of quality, reliable data and information as well as continuous learning.

- **Collaboration**

  We are willing to work with, share and gain knowledge from various stakeholders, and leverage our collective and diverse strengths and abilities to achieve our goals.

- **Community Consciousness**

  We strive to develop and sustain compassion and attentiveness to the needs of the communities we serve whilst building a sense of community within the organisation.

- **Safety**

  Given our authoritative role in ensuring public-safety, we are committed to ensuring high-levels of safety standards at all times for our employees and the communities we serve.

Brand promise

Making you WeatherSMART

Safe
More informed
Alert
Resilient/Ready
Timeous

This is the promise that will permeate all SAWS products, services, associated marketing and brand promotion.

Operating principles

These operating principles form the bedrock of SAWS operations:

- Responsible governance
- Innovation and continuous improvement
- Simplicity - Making weather data understandable, relevant and applicable and engaging stakeholders in an understandable way
- Ensuring the availability of relevant expertise
- Quality consciousness
- Customer centricity
- Team work and collaboration

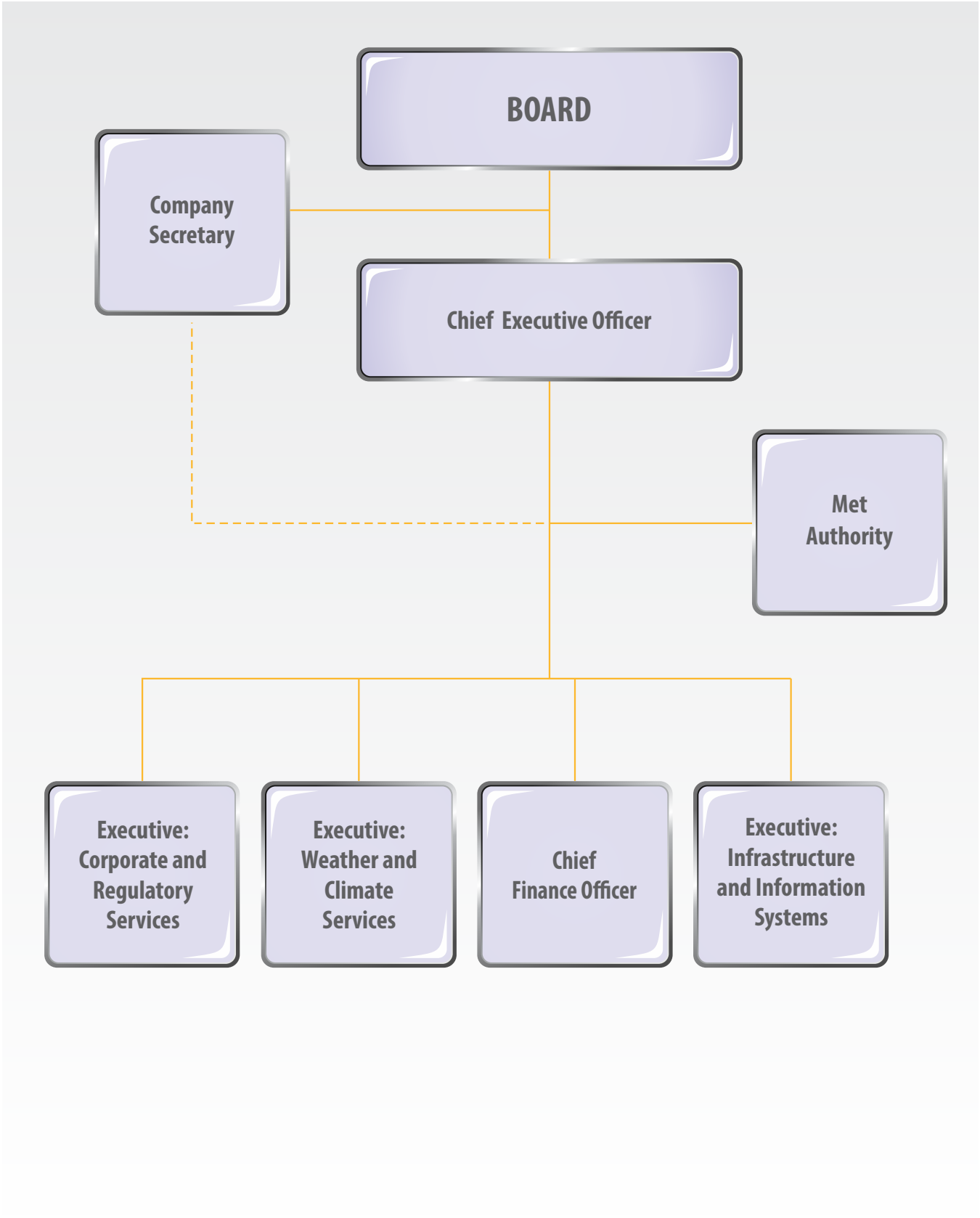
LEGISLATIVE AND OTHER MANDATES

The South African Weather Service (SAWS) is a Schedule 3A entity in terms of the Public Finance Management Act (PFMA), 1999 (No. 1 of 1999) and relevant Treasury regulations and derives its mandate from the South African Weather Service Act, 2001 (No. 8 of 2001) as amended by the South African Weather Service Amendment Act, 2013 (No. 48 of 2013).

The objectives of SAWS are to:

- Maintain, extend and improve the quality of meteorological services for the benefit of all South Africans
- Provide public good services and commercial services to all South Africans
- Ensure the ongoing collection of meteorological and ambient air quality data over South Africa and the surrounding southern oceans for use by current and future generations
- Be the long-term custodian of a reliable national climatological and ambient air quality record
- As the national meteorological service of the Republic of South Africa, fulfil the international obligations of Government under the Convention of the World Meteorological Organization
- As the Aviation Meteorological Authority, fulfil the international obligations of Government under the Convention on International Civil Aviation
- Provide services that are sensitive to the demographic realities of the country
- Fulfil such other weather-related or ambient air quality information and international obligations as the Minister may direct
- Be the custodian of the South African Air Quality Information System (SAAQIS)

ORGANISATIONAL STRUCTURE



Performance Information

PART B

Strategic Goal 1:

Provision of Products and Services

1.1 Develop and provide meteorological and related products and services for targeted communities nationally

1.1.1 Develop and provide meteorological and related products and services for targeted communities nationally

The vision of the South African Weather Service (SAWS) includes reaching 57 million South Africans with weather information on a daily basis, and for this reason the organisation embarked on a drive to increase its reach via multiple dissemination channels aimed at different sections of the population. A special emphasis was placed on ensuring that the disseminated information reaches people living with disabilities as well as disadvantaged and rural communities. Some of the channels identified included television, radio, mobile applications, social media, web portals, Application Programming Interfaces (APIs) and others.

The three main channels that were prioritised during the report period were community radio stations, community television stations and the WeatherSMART mobile application. Five community television stations were engaged and expressed interest in partnering with SAWS for the dissemination of weather information and severe weather warnings for the benefit of the public.

By the end of 2018/19, two of the six television stations had been activated to start receiving information from SAWS. A further three stations will be activated during 2019/20. In terms of community radio stations, the target for 2018/19 was to activate 40 stations, so that they can start receiving daily forecasts from SAWS. A total of 51 community stations were activated, increasing the total number of community radio stations receiving information from SAWS to 139. Through its partnership with these community radio stations SAWS is able to reach a total audience of more than 4 million listeners daily.

In terms of the upgraded WeatherSMART mobile app, SAWS managed to increase the total number of downloads, from the baseline of 7 300 before the upgrade, to 12 871 at the end of 2018/19. Of these, 5 571 were achieved in 2018/19. Although the initial uptake of the App was slow, due to aesthetics, it was well received in the market due to the quality of the scientific content and unique features.

1.2. Meteorological and related community segmented products and services maintained and developed

1.2.1 Severe weather events during the report period

In a world where many and varied impacts of climate change are becoming more and more common, southern Africa has similarly been affected by a variety of severe and extreme weather-related phenomena. In recent years, the frequency and intensity of many weather-related phenomena appear to be on the increase and the 2018/19 year was no exception.

Globally as well as in South Africa, the population continues to increase, swelling and expanding city and urban areas. On the urban fringe, the poor are often the most vulnerable to weather-related impacts, with settlements often springing up in or alongside river floodplains and/or fragile, unstable terrains which would otherwise be deemed to be unsuitable for human habitation. The population therefore is increasingly exposed to personal risk and potential material loss in relation to severe and extreme weather. There is an elevated need and requirement for a weather prediction approach (such as impact-based weather forecasts) that enables vulnerable communities to take appropriate, timely action in the face of impending severe weather.

A few noteworthy severe weather-related incidents, which highlight and elevate the utility of impact-based forecasts as well as the key, central role which SAWS plays in terms of communicating weather-related warnings to the public as well as disaster practitioners, include the following:

Cut-off Low: 14 to 16 May 2018

A cut-off low developed over the western parts of the country on 14 May, moving over the central parts of the country by the evening. It weakened into an upper trough as it moved over the eastern interior of the country, resulting in rainfall over the north eastern parts of the country as it preceded eastwards. On 15 May, the upper trough was over the KwaZulu-Natal as well as the southern parts of Mpumalanga, resulting in heavy rainfall along the coast. The north coast experienced the most significant amounts of rainfall, resulting in flooding in uMlalazi, uMfolozi and uMhlatuze local municipalities. On 11 May 2018, SAWS provided early sight of potential flooding by issuing a media release about the expected severe weather. The expected weather as well as the warnings issued by SAWS, was well communicated on all social media platforms and through the media. These accurate forecasts and warnings ahead of the severe weather enabled the majority of the public to avoid the worst of its impacts.

Table 1: Rainfall total in mm from 15 and 16 May 2018 for selected stations in KwaZulu-Natal

Station Name	Rainfall (mm) 15 and 16 May
Richard's Bay Airport	121,8
Univ. of Zululand	214,2
Mtunzini	189,4
Riberview	167,6
Mandini	150,6
Ulundi	118,4
Charter's creek	74,8

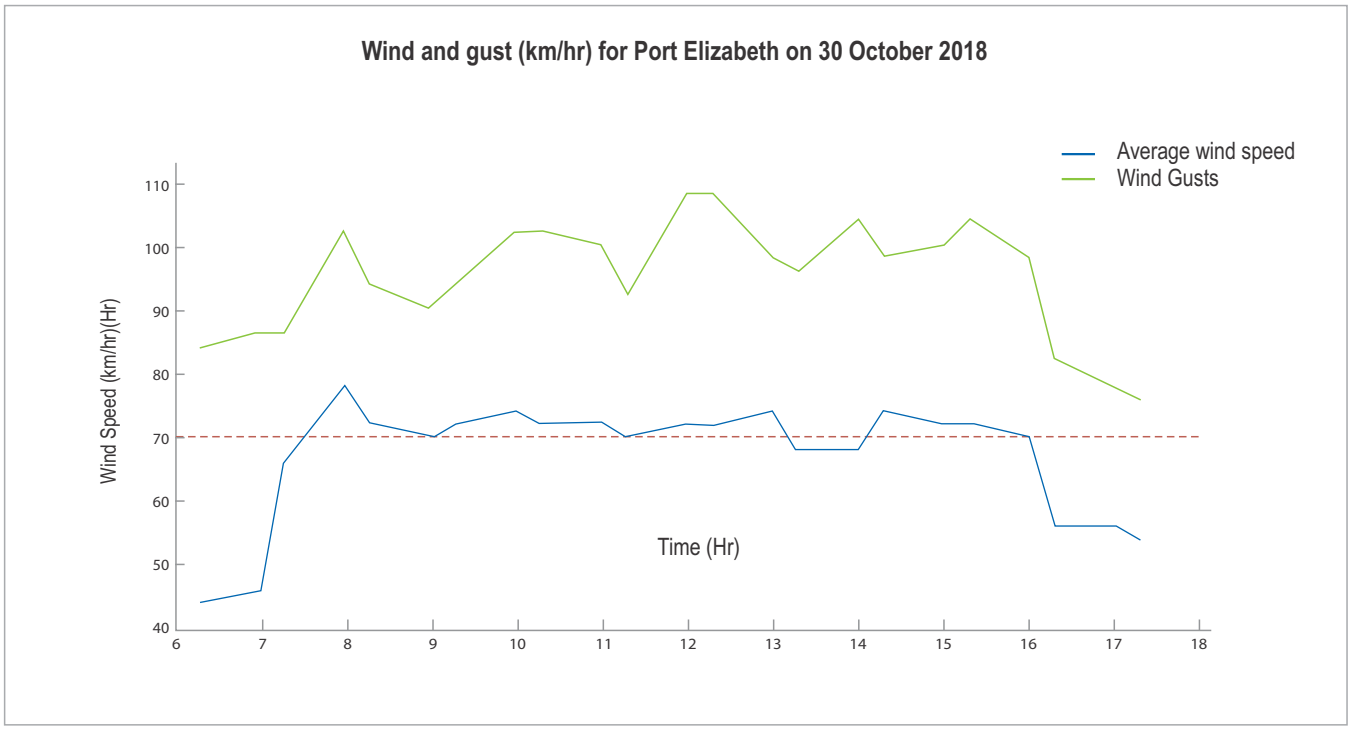
The above-mentioned cut-off low weather system exited the country in the evening of 16 May, leaving behind flooded informal settlements, extremely wet roads and overflowing rivers and estuaries. It was reported that the heavy rains claimed the lives of three high school pupils who drowned while trying to cross a river in Umlalazi, northern KwaZulu-Natal on their way back from school.

Flooding of an informal settlement in Empangeni, KwaZulu-Natal (Twitter: ReënvalSA)

Heat Conditions and Veldfires: October 2018

In October 2018, a dry spell affected the country, with heat-wave conditions affecting parts of the three Cape provinces. October is squarely within the 'fire season' for the south-western parts of the country, therefore, fires along the mountainous areas of the Western Cape, particularly in the Garden Route district municipality as well as the coastal regions of the Eastern Cape are common. Non-threatening fires began in the Outeniqua mountains near George on 25 October, but quickly spread eastwards as winds became stronger along the coast and adjacent interior with each passing day. By 29 October, the fires had spread to Karatara, a settlement 50 km east of George, where four children were killed and 200 residents had to be evacuated. The N12 Outeniqua Pass was later closed and the George municipality evacuated residents in Blanco Golden Valley and Step-Aside as a precautionary measure.

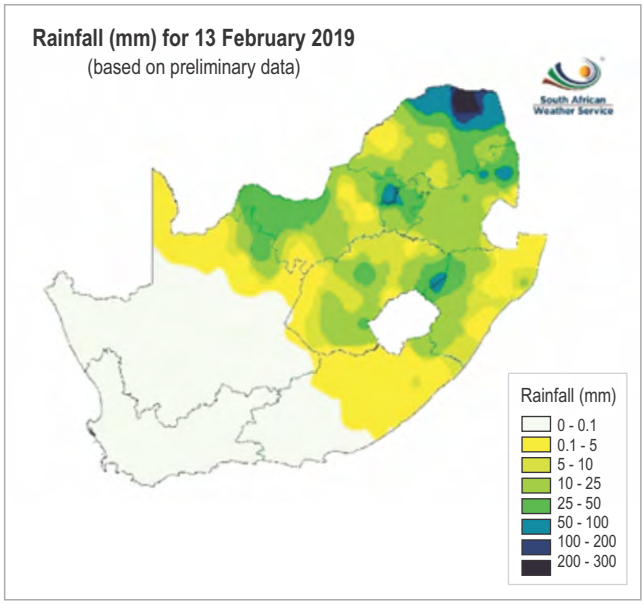
Winds along the coastal regions continued to strengthen, with George averaging 60 to 70 km/h gusting at 80 to 100 km/h on 30 October. Under such extreme-wind conditions, firefighters found it particularly difficult to effectively control the blaze. The strong winds also caused damage along the coastal regions (a crane was blown over in the Port Elizabeth harbour). Regretfully eight people lost their lives while over 1 500 people were evacuated. Furthermore, over 15 500 hectares of land were destroyed in the fire.



Graph 1:Wind and gust (km/hr) for Port Elizabeth on 30 October 2018

Fires on the Outeniqua Mountains (News24) (left) and an image of the collapsed crane that fell because of strong winds in the Port Elizabeth harbour (SABC News)

Persisting heavy rain and flooding (Continental tropical low) 11 – 16 February 2019



Rainfall map (SAWS) of 13 February 2019, indicating more than 200 mm in the extreme northern parts of the Limpopo Province (top), flooding in Thavhani Mall in Thohoyandou (top right), and Bloemfontein on 15 February 2019 (ENCA)

A continental low developed over northern Botswana on 12 February 2019, with a weak upper-air trough over the central parts of the country. A combination of these two systems drew in a significant amount of moisture over the eastern half of the country, resulting in widespread heavy rainfall. As the continental low moved eastwards, the heavy rain was concentrated over the Limpopo Province, where some stations recorded more than 200 mm of rainfall in 24 hours on 13 February 2019.

On 14 and 15 February, flooding also occurred in Bloemfontein, Free State. Several main roads were badly affected, including Fort Street, where a woman was rescued after being trapped under a bridge. A bakkie crashed into a tree as a result of the slippery roads, while another got stuck in dense mud in Langenhovenpark. Fortunately, no fatalities were reported.

1.2.2 Forecasting Lead Times

In terms of lead-time (advising stakeholders such as Disaster Management and/or the general public) ahead of impending severe and/or intense systems, two particular events need to be highlighted. Firstly, the cold-front system of mid-June 2018, which brought heavy rain as well as strong, damaging winds to the Western Cape from 14 June 2018 onwards, was anticipated by deterministic numeric weather prediction (NWP) models a full seven days ahead of time. Representatives of SAWS had the opportunity to brief and inform National Disaster Management (NDMC) and Western Cape Provincial Disaster Management (PDMC) members at a National Disaster Management Advisory Forum (NDMAF) meeting on 7 June 2018. The general public were alerted via a SAWS Media release issued on 12 June 2018, allowing the public a two-day lead-time to prepare ahead of this event. Similarly, ahead of the development and intensification of Tropical Cyclone Idai in the Mozambique Channel on 11 March 2019, the South African public were made aware of the system, as well as its likely impact on the region in and around Beira, central Mozambique, a full 2,5 days ahead of its landfall on the evening of 14 March 2019. It is also noteworthy to reflect that SAWS forecasters were already closely monitoring and discussing the possible development of Idai with the NDMC as early at 6 March, a full five days ahead of the formation of Idai and eight days ahead of landfall near Beira.

In recent years, deterministic (as well as ensemble-based) NWP models have increasingly become a critical tool to identify tropical and extra-tropical systems, usually a few days ahead in time. Naturally the uncertainty surrounding such predictions increases dramatically as the lead-time (i.e. the time preceding realisation of the event) increases, therefore the general public will typically be informed by SAWS only when confidence levels surrounding accuracy of the forecast are sufficiently high. Typically, the lead-time on such largescale synoptic systems is about two to three days. However, Disaster Management practitioners are often included in preliminary discussions and information-sharing with SAWS Disaster Risk Reduction (DRR) forecasters at a much earlier stage (as in the above two cases), to ensure early awareness and preparedness ahead of potential weather-related disasters.

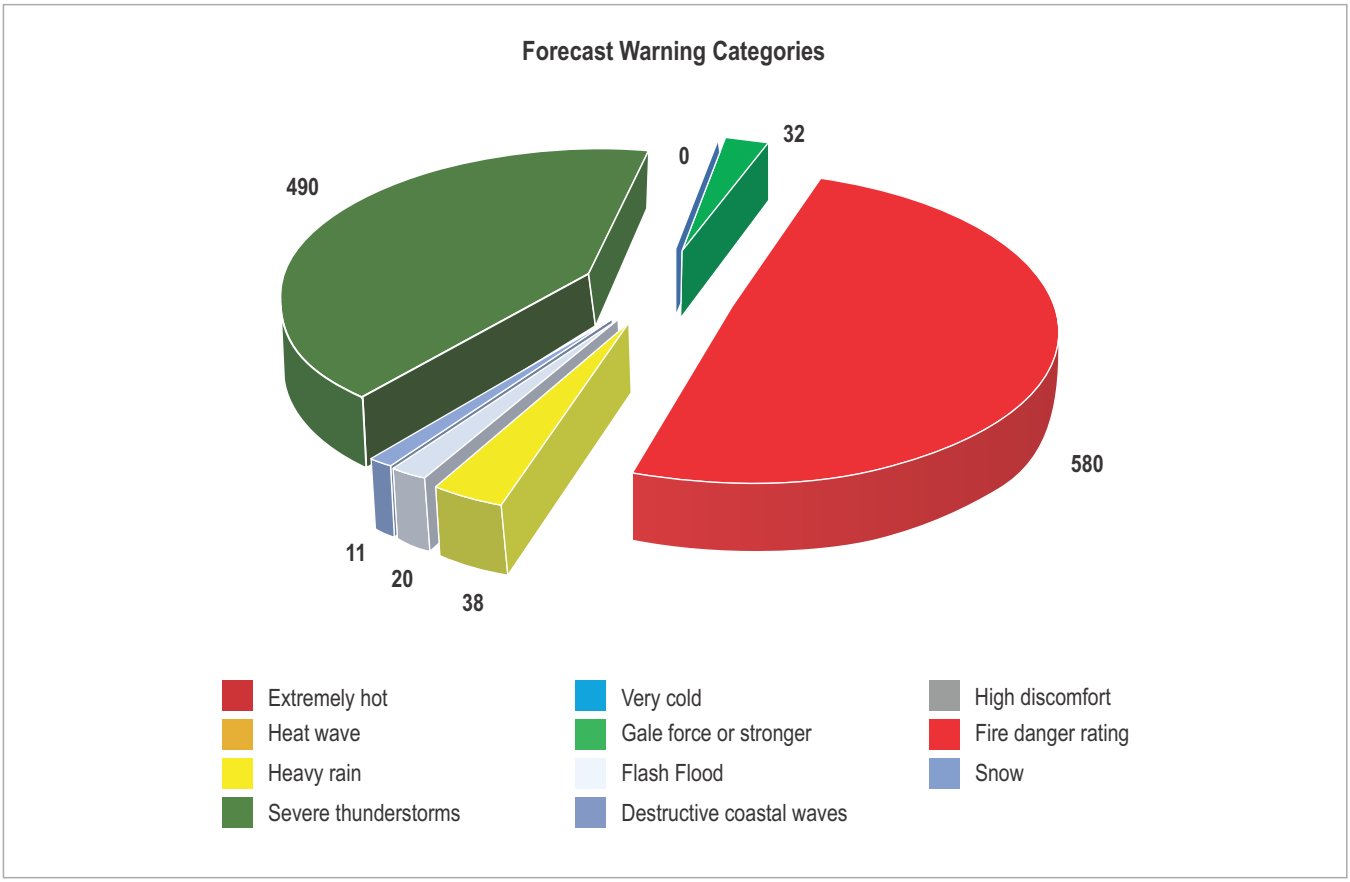
At national and provincial level, there continues to be a significant level of collaboration and cooperation between SAWS forecasters tasked with DRR responsibilities and their counterparts in Disaster Management, both at national and provincial level. Similarly there is also a high level of information exchange via weather briefings and regular meeting attendance between SAWS DRR and the NATJOINT (National Joint Operations) and PROVJOINT (Provincial Joint Operations) led and coordinated by the South African Police Service (SAPS) and attended by government sector departments.

Weather (and extreme-weather) guidance and support by SAWS to the abovementioned structures can take a variety of forms, such as the daily NATJOINT weather briefings provided during March 2019 in support of humanitarian relief by South Africa to Malawi after devastating flooding. It was followed by a similar humanitarian relief operation conducted in Mozambique due to the flooding and devastation caused by Tropical Cyclone Idai. Over the past three years, SAWS regularly contributed to and presented at the National Joint Drought and Flood Coordination Committee (NJDFCC), hosted at NDMC on a weekly and quarterly basis. The advice and guidance through these forums, extending from short-term to seasonal forecasts, played a critical role in guiding early and appropriate response and mitigation measures by the Western Cape as well as the City of Cape Town to the “Day Zero” drought episode.

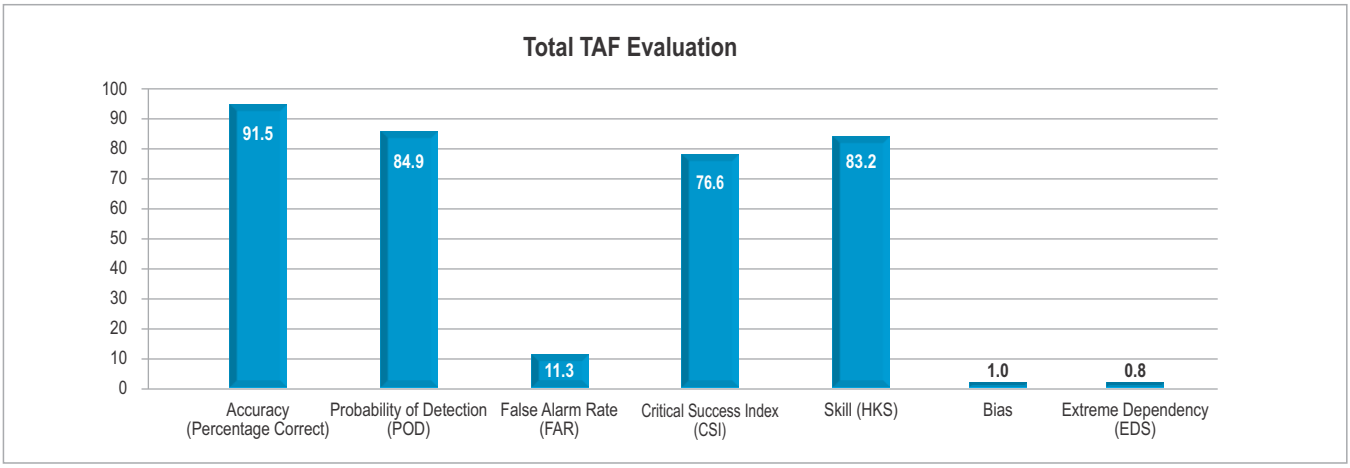
Moreover, through the NATJOINT and PROVJOINT structures, SAWS regularly provided weather guidance ahead of critical and significant national events, such as the regional and national election activities conducted by the Independent Electoral Commission (IEC), the 7 February 2019 State of the Nation Address at Parliament and the BRICS Summit, held during July 2018.

1.2.3 Severe Weather Warnings

During the year under review, SAWS issued 1171 severe-weather warnings of which the major part was for high fire-danger ratings and severe storms. These were sent with an accuracy of 98.24% against the targets of 95%; probability of detection of 88.9% against a target of 80%; and a false alarm rate of only 8.8% against a target of <20%.



Graph 2: Forecast Warning Categories



Graph 3: Total TAF evaluations

1.2.4 Impact-based forecasting

Since 2015/16, SAWS in close collaboration with the National Disaster Management Centre (NDMC), had been working on the process of developing and implementing an Impact-Based (ImpB) Severe Weather-Warning System (SWWS) for South Africa. In line with international trends in meteorology and weather forecasting, the impact-based severe weather-warning approach sees a departure from the traditional threshold-based approach and focusses strongly on the socio-economic and physical impact that a severe or extreme-weather system will have on the human population as well as on the environment, including the built environment. In other words, the purpose of the project is to move from "what the weather will be" to "what the weather will do".

During the 2018/19 financial year, the Impact-Based Severe Weather Warning System pilot phases continued across the country. These were run in collaboration with the disaster managers in all the provinces and were used to test the new warnings.

1.2.5 SAWS Disaster Risk Reduction (DRR) Regional responsibilities

The SAWS was designated by the World Meteorological Organization (WMO) to be a Regional Specialised Meteorological Centre (RSMC) since 2006. The two main projects under this umbrella are the Severe Weather Forecasting Demonstration Project (SWFDP) as well as the Southern African Regional Flash Flood Guidance System (SARFFGS). In context of the former, SAWS issues on a daily basis a five-day guidance of severe weather expected over the southern African sub-continent.

1.3 Products developed

The SAWS provides products and services that assist decision makers in weather sensitive sectors. During the reporting period, six new products were developed, aimed at protecting and minimising weather risks to vulnerable communities as well as the provision of sector specific decision-making products on weather and climate. The priority economic sectors targeted were the agriculture, water, energy, health, aviation, marine and Disaster Risk Reduction (DRR) sectors. These sectors and products were determined following market requirements gathered during sessions related to the SAWS Integrated Service Strategy (ISS) and are as follows:

a. Health sector: national burden of disease product

Determining how various pollutants impact human health requires information from a range of disciplines, such as modelling the exposure with better accuracy, toxicological factors, epidemiological data and so forth. Ground-level photo-chemical species (such as Ozone: O_3) can cause a number of health problems, such as affect in the human cardiac and respiratory systems, irritating the eyes, nose, throat, lungs and pulmonary congestion. It also aggravates asthma, reduces lung capacity and increases susceptibility to respiratory diseases like pneumonia and bronchitis. Similarly, ambient fine Particulate Matter ($PM_{2.5}$) can affect the respiratory system and is indicted in heart disease. This may result morbidity and premature mortality. People with chronic lung disease, influenza or asthma are very sensitive to $PM_{2.5}$. The high resolution $PM_{2.5}$ and O_3 exposure estimates that are computed by the SAWS atmospheric composition modelling group, will serve as a crucial input for the South African Medical Research Council (SA-MRC) to determine and analyse ambient air pollutant exposure contributions to the national burden of disease, such as in causing premature mortality in South Africa.

b. Agriculture sector: frost product

Frost-related damage can be reduced by accurate frost forecasting since it provides the opportunity for frost-sensitive agricultural business to be pre-warned and prepare for the events. Damage from frost may occur at any stage of the crop's development but is most damaging at or around the flowering stage of its growing cycle. The newly developed frost product indicates areas in South Africa where frost is forecasted up to 10 days in advance. The product is based on the forecast output from the ECMWF model. The intensity (severity)

of the frost is indicated using severity categories, such as the occurrence of white to black frost. The product is updated twice a day and is intended for internal utilisation by the SAWS forecasters.

c. Community and Disaster Risk Reduction (DRR) sector: lightning product

The lightning warning system makes use of the real-time lightning observations from the SAWS lightning detection network, whereby lightning locations are plotted on an interactive map and where three buffer zones at a distance of 5, 10 and 15 km around a specified location is drawn. Each of the buffer zones represent the risk of lightning based on the proximity to the location of interest and turns either green (lightning 10-15km away), orange (lightning 5 – 10 km away) or red (lightning within 5 km) as soon as lightning is observed within these buffer zones. This product will be able to assist sectors such as schools, airports, sporting events and golf courses to monitor lightning activity during thunderstorms and to get warnings on the proximity of lightning from the client.

d. Water sector: stream flow forecast product

The streamflow forecast was developed as a water sector product and is useful to water management agencies, farmers and municipalities. In particular, streamflow forecasts can be used in the operationalisation and management of water reservoirs for hydropower, agricultural planning and urban water scheduling, supply and scheduling. In addition, the product can be embedded into early warning systems for drought and flood monitoring vital for preparedness and mitigation measures of natural hazards. The derived streamflow forecasts cover different timescales, from a one month forecast delay up to two years. The current streamflow forecasts were based on statistical methods. The product will be enhanced, where other methods such as hydrological modelling will be considered. Once fully-functional, the product will become operational and be accessed through a streamflow gage dashboard.

e. Aviation sector: roll-out of the AvRDP product to all major airports

Airports frequently experience adverse weather conditions which lead to rate reductions, diversions and cancellations of air traffic and leads to reduced efficiency as well as increased costs. In order to assist airports, a product was developed at SAWS that uses radar data from the SAWS radar network to produce thunderstorm risk tables for the next two hours based on the direction of movement of storms, the likelihood of a storm reaching the airport and the time period for when the warning is valid. The product provides all the major airports in South Africa with an easy to understand colour-coded table to assess the thunderstorm risk and duration without the need to analyse cluttered images, and is used operationally by Airport Management Centres to assist in their daily activities in order to increase arrival/departure rates, increased refuelling slots, and lower diversion rates during thunderstorms.

f. Community sector: Updated Climate Change Reference Atlas (CCRA)

This product serves as an update to the current SAWS Climate Change Reference Atlas. The current atlas only provides annual and seasonal projections for the near-surface (2 m) temperature and rainfall. This updated version provides climate change information on the annual and seasonal projections of daily maximum and minimum temperature under the RCP4.5 and 8.5 concentration path way. It also provides extremes indices for near-surface temperatures as developed by the Expert Team on Climate Change Detection and Indices (ETCCDI). With increased risks posed by global warming and climate change to various climate sensitive sectors, this product further provides climate change information that is ideal for planning and climate change adaptation purposes for the South African region. This product contributes to the efforts of the National Framework for Climate Services.

1.4 Providing sector specific decision-making products on weather and climate

1.4.1 Develop and market meteorological and related products and services for specific economic sectors

The SAWS provides products and services that assist users to make decisions especially in the weather sensitive sectors of the South African economy. For the 2018/19 financial year the organisation set itself the challenge to develop relevant products that were inspired by user needs. The priority economic sectors targeted were the agriculture, water and energy sectors, although requests for products within other sectors could also be addressed according to their requirements.

Analysis and marketing plans were developed for the targeted sectors, with various documents and stakeholder consultation events utilised in the drafting of the marketing plans and needs analysis. The implementation of these marketing plans is well underway.

1.4.2 Provision of Meteorological Service to National and International Air Navigation

The SAWS is designated as the aviation meteorological authority to fulfil international obligations of the Republic. It is SAWS responsibility to ensure compliance with International Civil Aviation Organization (ICAO) standards and recommended practices with regards to the provision of aeronautical meteorological services to international Air Navigation. Furthermore, SAWS responsibilities include ensuring that aeronautical meteorological services provided to the domestic aviation industry are compliant with national and international requirements, including those of the South African Civil Aviation Authority (SACAA).

In fulfilling its responsibilities during the report period, SAWS provided services such as Meteorological Aeronautical Reports (METARs), Terminal Aerodrome Forecasts (TAFs), Trend forecasts, Warnings for Aerodromes and Wind Shear, Area Forecasts and Take Off data, which contributed in promoting safety and efficiency.

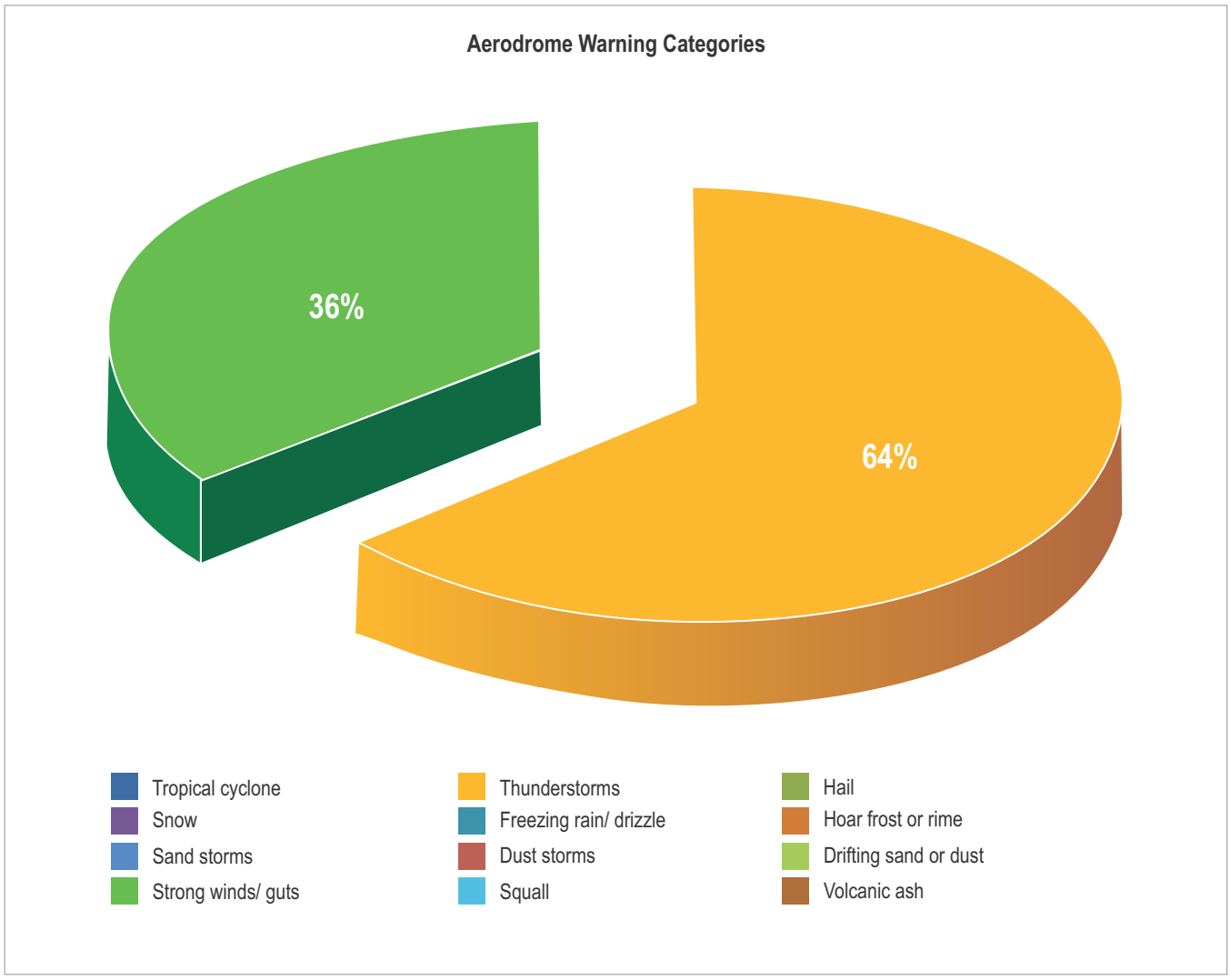
Percentage accuracy for Terminal Aerodrome Forecast (TAF)

The Terminal Aerodrome Forecast (TAF) provides information on any **significant** weather elements which are likely to affect the aerodrome during the period of interest. This type of a forecast is mainly used by airlines and airport operators in planning their operations.
During the year under review, SAWS achieved an accuracy of 91.5%, which exceeds the 80% operational desirable accuracy of the terminal aerodrome forecast set by the International Civil Aviation Organization (ICAO). This achievement places SAWS amongst the best National Meteorological Services (NMSs) in terms of the quality of its Aeronautical Meteorological products. The graph below shows the evaluated percentage accuracy for terminal Aerodrome Forecast.

Percentage of Aerodrome warnings

Aerodrome warnings provide concise information of meteorological conditions that could affect aircraft adversely, including parked aircraft. During the year under review, 11 793 aerodrome warnings were issued, covering all the major airports in the country. An accuracy of 98.24% was achieved against the Annual Performance Plan (APP) target of 98%.

The SAWS issued aerodrome warnings for various weather phenomena affecting airport operations as indicated on the pie chart below. Most of the aerodrome warnings (64%) were for thunderstorms, 36% for strong winds which impacted on operations at the various airports, while other weather phenomena were not experienced.



Graph 4: Aerodrome warning categories

1.4.3 Climate Data Services

SAWS is mandated in its Act to be the long-term custodian of a reliable national climatological record. Activities within SAWS supporting this mandate include coordination of the maintenance of weather stations, **quality assurance and quality control of all data recorded from the SAWS surface-observation network** and providing climate data and services to clients and customers. During 2018/19 financial year, the availability of quality-controlled Automatic Weather Station (AWS) data and Automatic Rainfall Station (ARS) data was 92% and 90% respectively.

Data services are divided into commercial and public good services. Commercial services are incorporated under the Strategic Goal 5: Growth and Sustainability section of this report. In terms of public good services, 1 152 requests for climate data were received, which is an increase of 22% from the previous financial year's requests. About 97% of the 1 152 requests were from university students for educational and research purposes. Climate information is also freely available on the SAWS website including daily rainfall and daily maximum and minimum temperature data, daily rainfall and temperature extremes, new climate records, rainfall maps, synoptic weather maps, monthly Drought Monitoring and the Climate Change Reference Atlas.

Specialised climate services were also provided on request.

Data rescue activities were ongoing and included capturing data off hardcopy returns onto the main climate database. This will extend the climate record of a selected number of priority stations. Data rescue efforts are vital to preserve valuable historical records of climate information and ensure its use for current and future generations. During the year under review, 2 288 821 values were captured on the main climate database, exceeding the annual target of capturing two million values.

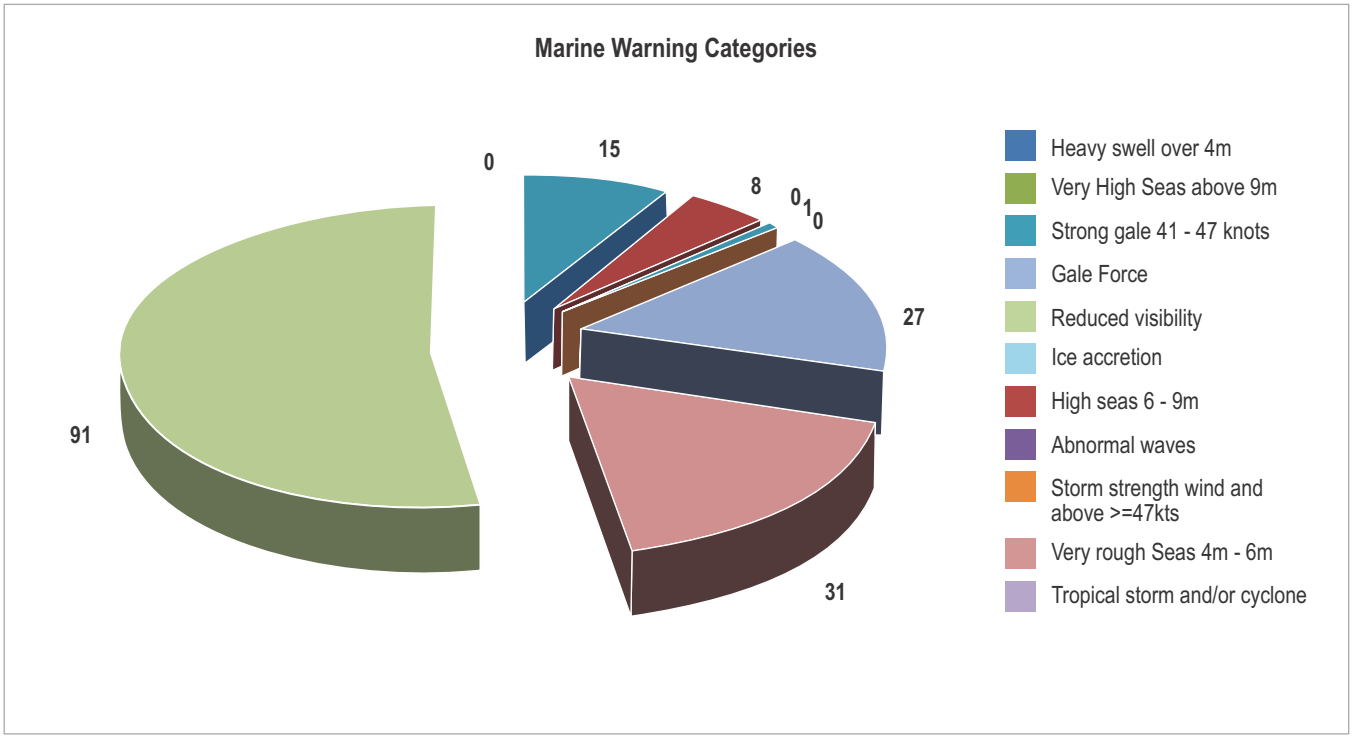
There are also international obligations related to the exchange of observational data among WMO Member States. As with previous years, SAWS met its international commitments in relation to the exchange of real-time meteorological data and related data to WMO. The SAWS co-chairs the WMO Commission for Climatology, Focus Area 4: Capacity Development for Climate Services Group, which enables it to have first-hand knowledge on current climate matters such as the operationalisation of the climate services toolkit. Implementation of the National Framework for Climate Services (NFCS) in South Africa will solidify the need for maintaining and enhancing national data infrastructure for climate services.

1.4.4 Marine Services

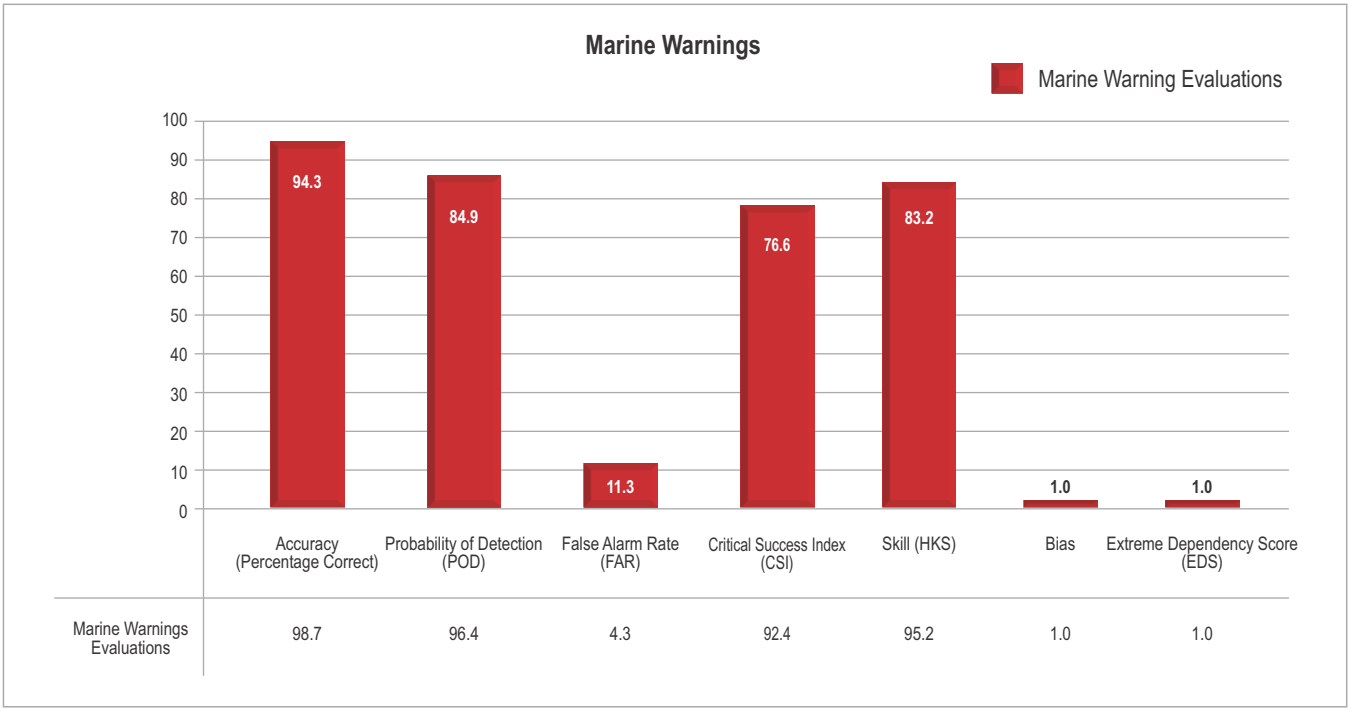
The SAWS is mandated to implement the Safety of Life at Sea (SOLAS) Convention on behalf of the government of South Africa. As a signatory to the SOLAS Convention, South Africa is expected to provide marine and safety services for the second largest marine area in the world (METAREA VII). In fulfilling its mandate, SAWS provided the following marine services:

Marine warnings

During the year under review, different categories of marine warnings were issued with very high seas above 9 m, rough seas and gale-force winds being the most prevalent. Furthermore, SAWS managed to issue marine warnings with an accuracy of 98,7% against the annual target of 90%.



Graph 5: Marine warning categories



Graph 6 : Marine Warning Evaluations

The Storm-surge forecast

Most notably, SAWS successfully developed an operational storm-surge forecasting system and its disseminating website platform, a first in South Africa. The highlight of this achievement is that this system is solely based on South African models, fully developed within SAWS. With the assistance of the above-mentioned system SAWS was able to provide high-resolution wave and storm-surge forecasts. These forecasts are disseminated through the SAWS marine website not only benefitting the marine community, but also contributing to the ocean economy objectives.

Strategic Goal 2:

Capability and Capacity Development

2.1 Observations Infrastructure Network

The South African Weather Service operates an observational infrastructure consisting of a radar network, a lightning-detection network (LDN), an upper-air sounding network and a surface-observation network.

2.1.1 Infrastructure performance

The infrastructure performance for 2018/19 is reflected in the table below:

Table 2: Infrastructure performance

Infrastructure	2018/19 Availability Target	2018/19 Performance
Radar (Tier 1)	85%	64%
LDN	90%	91%

The SAWS continued to maintain its network of Automatic Weather Stations (AWS's), Automatic Rainfall Stations (ARS's) and its hydrogen generators (for upper-air soundings).

During the year under review, various critical projects were undertaken in line with the approved SAWS Integrated Service Strategy (ISS) - not only to support strategic objectives, but also to initiate the implementation of an infrastructure lifecycle management system. The following projects were initiated:

- **Infrastructure Condition assessment** - project completed during the financial year;
- **Infrastructure valuations** - valuation of infrastructure and updating the asset register completed;
- **Radar Relocation** - the Port Elizabeth radar was successfully relocated to Skukuza; the relocation of the George radar to Port Elizabeth is progressing well and is planned to be commissioned in 2019/20;
- **Lightning Detection Network Business case** - the project proposal to upgrade the lightning sensors was approved and will be implemented in 2019/20;
- **Modernization of Infrastructure** - the project proposal to upgrade manual weather stations to automatic weather stations was approved and will commence in 2019/20.

The Port Elizabeth radar was repaired and relocated to Skukuza

Lightning detectors form part of the SAWS Lightning Detection Network (LDN)

The upgraded SAWS Lightning Detection Network

2.1.2 Observation Infrastructure Challenges

The following were identified as challenges that had a negative impact on the performance of the different infrastructure networks:

- Power interruptions;
- Failure of communication infrastructure and related disruptions;
- Contract management and long turnaround times to obtain spares;
- Poor/slow response due to long travelling distance to affected infrastructure;
- Site security and vandalism.

Several action plans were developed and implemented to reduce the impact of these challenges on the observational infrastructure, including the following:

- Installation of additional diesel storage tanks on radar sites and dual redundancy Uninterrupted Power Supplies (UPS's) to improve the back-up power systems;
- Replacement of VSAT communication technology with Microwave technology, and increasing the bandwidth between the various sites and respective weather offices;
- Improvement of contract management and improved planning to expedite procurement processes;
- Placement of maintenance personnel close to infrastructure to reduce travelling time, and training workshops for equipment owners;
- Security upgrading at various infrastructure sites including the deployment of electric fencing, monitoring cameras and on-site security-guard services.

2.1.3 Achievements and highlights

The highlight for the year was the demonstration of capabilities and competencies by SAWS technologists when they repaired the Bethlehem radar and commissioned it on 20 August 2018, without any assistance from outside service providers.

The completion of the radar maintenance and training programme of technologists by an Original Equipment Manufacturer (OEM) was also a big achievement and SAWS has already started seeing the benefits.

2.1.4 Opportunities

The completion of a number of critical projects established a good foundation to continue building sustainable infrastructure for SAWS. The creation of a long-term infrastructure management plan was critical and will not only improve the management of current as well as future infrastructure, but will also assist with the following:

- Creating a pipeline to produce trained technologists and engineers;
- Creating a centre of excellence for technology management in SAWS;
- Establishing SAWS as an organisation that effectively meets the international standard of asset management (ISO 55000)

2.1.5 Planned future upgrades

- A 3-to-5-year radar-upgrading programme has been developed to extend the lifespan of radars and other infrastructure.
- The Durban S-band radar was identified as the first to be upgraded as part of the phased approach of extending the radar lifespan by an additional 25 years. It will be upgraded to the latest version of the system, including the dual-polarization capability.
- The LDN will have a 3-to-5-year phased upgrade programme to extend its lifespan to more than 10 years.
- A programme to modernize and automate existing manual weather stations is under development and will be phased in over the next five years.

2.2 Information and Communication Technology (ICT)

The approved SAWS Integrated Service Strategy (ISS) highlighted the growing demand for cutting-edge Information and Communication Technology (ICT) solutions to support, drive and enable the strategic objectives of SAWS across its value chain.

The ISS identified several technically-related opportunities and challenges that SAWS needed to address, including:

- Ageing infrastructure characterised by reactive maintenance and the lack of well-defined asset lifecycle management processes and supporting systems;
- Legacy data-management system unable to support and take advantage of the various data sets generated from SAWS activities;
- Limited channels for the dissemination of weather- and climate-related data and information to the various stakeholders of SAWS;
- Lack of an integrated monitoring system resulting in delayed detection of failures;
- Insufficient internal skills and capability to support the business objectives of SAWS;
- Lack of an Enterprise Resource Planning (ERP) solution to support various functions across the organisation including SCM, HCM, Finance, CRM, Asset Lifecycle Management and optimising the supporting processes;
- Poor regional communication networks to facilitate optimal data transfers due to low speeds;
- An outdated Master System Plan (MSP) and the lack of an ICT Strategy aligned to the SAWS objectives.

The SAWS acknowledged the increasing need for ICT to drive innovation through disruptive technologies, automating business processes and improving service delivery. Following a period of limited budget allocation towards enhancing ICT infrastructure, SAWS has since invested significant resources during both the 2017/18 and 2018/19 financial years towards developing the capacity and capability of ICT within the organisation.

The 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 challenges, including:

- The re-alignment of the ICT team structure was completed, key positions filled and the upskilling of resources is underway for a fit-for-purpose work-force;
- An ICT governance framework was developed and approved by the board, including supporting ICT policies, also taking into consideration cybersecurity-related matters;
- The High-Performance Computer (HPC) used primarily for numeric weather prediction was upgraded at a cost of R25 million as part of the short-medium term HPC Business Case;
- The new SAWS web portal and application programming interface (API) was launched to improve the dissemination of weather and climate data and information;
- As part of the long-term strategy to adopt cloud computing, the Microsoft applications were migrated to Office 365 to improve collaboration, productivity and reduce the total cost of ownership, including using SharePoint online as a document management solution. The SAWS was also in the process of implementing a cloud-based Enterprise Resource Planning (ERP) solution to optimise and support business processes.
- A gap analysis of the current Business Continuity Plan (BCP) was conducted and Disaster Recovery (DR) test completed which further highlighted areas for improvement in the future.

During the period under review, SAWS also developed a new ICT Strategy including reviewing the outdated Master Systems Plan (MSP) and establishing a Strategic Implementation Plan (SIP) aligned to the strategic direction of SAWS. The strategy focuses on ensuring that ICT serves as a strategic business partner to SAWS through the creation and operation of ICT-enabled business solutions. The three main pillars of the strategy are:

- A strategic and operational ICT aligned to the strategic business direction;
- ICT capability and technology architectures based on best practice and industry standards;
- Solution delivery complimented by best of breed sourcing, where it makes strategic sense.

The ICT Strategy will thus be implemented over a period of five years in alignment with the SAWS 5-year Strategy (2019/20 – 2023/24) and some of the key initiatives identified include:

- The implementation of a modern Data Management System (DMS);
- New Forecaster Workstation Software;
- Infrastructure Refresh Project (including communication network upgrades, a hosted PABX solution, and the implementation of the long-term HPC Business Case);
- Unified Communications and the review of the Enterprise Architecture and ICT Operating Model.

The performance of the strategy will be monitored and the progress reported quarterly to the SAWS EXCO, SPC Board Committee and to the DEA according the annual performance-plan targets.

2.3 Air Quality

The SAWS is the custodian of the South African Air Quality Information System (SAAQIS) and as such is responsible for the hosting, operation and maintenance of the SAAQIS to ensure access to air-quality information for all users i.e. the public, business, industry, government authorities, non-government organisations etc. Stakeholders that make use of the information available on the SAAQIS are dependent on the constant availability of the website as well as the accuracy and reliability of the information therein.
The SAAQIS is currently being managed by a service provider on behalf of SAWS and is a one-stop shop for all air-quality information such as research papers, reports and legislation documents, as well as a repository for air-quality data from a number of government and privately-owned air-monitoring stations.

The system availability target of 95% was met in all quarters and the annual average was 98%, which was an overachievement.

An Air Quality monitoring station

Air Quality monitoring equipment

2.3.1 Percentage quarterly data capture for Air Quality priority area monitoring networks

Stakeholders that make use of data that emanates from the SAWS air-quality monitoring-infrastructure network are dependent on the effective performance of these networks. The networks are the following:

- Vaal Triangle Airshed Priority Area network (6 stations);
- Highveld Priority Area network (5 stations);
- Waterberg Priority Area network (4 stations).

The data throughput targets of 80% from all the above networks were met in all the quarters and the annual average is 90%, which was an overachievement.

The network experienced the following challenges:

- Power outages;
- Vandalism;
- Security.

The following actions were identified in order to address challenges affecting the network performance:

- Upgraded the circuit breaker to cater for the load fluctuations;
- Engaging schools hosting the infrastructure in order to address and provide additional onsite security;
- A plan to upgrade the security was developed and will be implemented in the next financial period.

2.3.2 The following projects were undertaken:

- The upgrading of the monitoring network with new analysers, shelters and logging system to improve data collection, reliability and operational efficiency of the network;
- Hosting training for end users for a new SAAQIS system to capacitate them on the functionality and operation of the system.

2.4 GAW Trace Gas Data availability (Greenhouse Gases)

The Global Atmosphere Watch (GAW) programme of SAWS assists the South African government in fulfilling a number of international conventions which they are signatory to, including amongst other 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, in order to inform policy direction. Stakeholders that make use of data that emanates from the SAWS observation infrastructure are dependent on the effective performance of these observation systems.

The Cape Point GAW station forms part of an integrated global network of 30 similar stations spread across the globe under the WMO GAW PROGRAM. Trace gases and greenhouse gases are being monitored as background or reference levels to monitor the greenhouse gas loading in the atmosphere.

Strategic Goal 3:

Engaged Stakeholders

3.1 Position SAWS as a relevant meteorological institution

3.1.1 Corporate Communications Strategy, Increased Digital Traffic and Advertising Value Equivalent

During the report period the Communications plan and programmes were 94% implemented. This included the development of a new communications strategy, the issuing of internal newsletters and two WeatherSMART newsletters as well as several media releases and one media training event.

The SAWS digital media footprint increased overall by 58.6%, with Facebook and Twitter maintaining their positive growth. These platforms were used successfully to disseminate severe weather warnings to the public and assisted in creating a weather aware nation.

Media monitoring was conducted throughout the year and the organisation managed to obtain a calculated amount of R160.2 million for its presence in the mainstream media, thereby promoting the programmes and brand of the organisation.

The SAWS donated to the Nceduluntu Daycare centre. (Eastern Cape) in November 2018

3.2 Manage and leverage strategic relationships

3.2.1 Stakeholder Engagement Strategy

The SAWS Perception Survey

A Perception Survey was conducted for the 2018/19 financial year. The objectives were to create an understanding of client needs and wants and their satisfaction with specific services; evaluate the nature and quality of the relationship between SAWS and its stakeholders and identify areas of improvement; establish noteworthy differences in perceptions that may exist between the different sections; assess the overall performance of the organisation; and determine whether stakeholders recommend the SAWS goods and services to others. A sample of 286 interviews randomly selected revealed an overall satisfaction of 86% with services. This was regarded as an excellent score.

Stakeholder Engagement

Managing strategic relationships forms an integral part of successfully conducting atmospheric research. Scientists from SAWS interact with a variety of institutions both nationally and internationally to conduct research and develop relevant products.

The SAWS co-hosted the 35th Disaster Management Institute of Southern Africa (DMISA) conference held in Benoni from 19 - 20 September. The conference brought together a diverse range of disaster management practitioners to share skills, knowledge and information-related mitigation strategies on disaster impact on vulnerable communities. The SAWS exhibition stand was named as winner at the close of the conference.

The SAWS participated in the International Day for Disaster Reduction (IDDR 2018) which was organised by the National Disaster Management Centre (NDMC) on 15 and 16 November 2018. The event attracted 750 participants and was held at Upington.

The International Civil Aviation Day (ICAD 2018) airshow took place in December 2018 at the Nelspruit airfield and was attended by over 1500 people from the local community and other aviation stakeholders. The SAWS had an exhibition stand where it dealt with careers and the role of forecasting in aviation.

Two WeatherSMART community awareness outreaches were conducted at the Lefiso and Ndwedwe communities in February 2019. Attendance figures of 350 and 500 were recorded respectively at these events. The aim was to create awareness in terms of the SAWS brand and weather disasters. The organisation further partnered with the Capricorn municipality and hosted a Disaster Management School Competition on 26 February 2019 to promote knowledge of disaster risk reduction in schools.

The SAWS participted in the International Day for Disaster Reduction in Upington

Aviation Stakeholder engagements

In January 2019 a Collaborative Decision Meeting (CDM) between SAWS, ACSA and ATNS was held to improve information capture/sharing between role players at the OR Tambo International airport. It was agreed that there would be future joint sessions with the airport community prior to the new season, where SAWS will be giving advisories on expected weather events.

The SAWS hosted the quarterly Advisory Committee on Aeronautical Meteorological Services (ACAMS). The meeting took place on 8 February 2019 and issues relating to the provision of aeronautical meteorological services to both domestic and international air navigation were discussed. The committee comprised stakeholders representing airlines, SACAA, ATNS, SAAF, ACSA and recreational aviation.

The organisation attended an ACSA-hosted Local Runway Safety Team meeting. This is where safety issues relating to safety of aircraft are discussed amongst the airport community. Greatest safety issues involve the landing of aircraft, where experiences like wind-shear and weather-related diversions are discussed.

The Airlines Association of Southern Africa (AASA) business meeting was held in March 2019, focusing on understanding the user requirements and where SAWS aviation can focus better to meet the client's needs.

The SAWS attended an inaugural National Aviation Conference during March 2019, hosted by the South African Civil Aviation Authority (SACAA). The idea behind the event was to engage stakeholders on strategic and impactful engagements on current and emerging issues affecting the aviation sector across the board. The meeting comprised plenary sessions on aviation security, safety and economics.

Further engagements took place in Melbourne with the Management Group of the WMO Commission of Aeronautical Meteorology discussing and developing the expert team and expert networks' respective draft work plans to cover the remaining period of 2019 plus a look-ahead for 2020-2023. The work took into consideration the formal responsibility of WMO to respond specifically to the ICAO Annex 3, Chapter 2, 2.1.5 prescriptive regulatory requirement, and one that is, for the most part, flexible enough to respond to the emerging requirements of ICAO whenever and wherever these may impact WMO members with aeronautical meteorological service responsibilities.

Aviation perception survey

The Aviation Weather Centre was in frequent contact with all stakeholders through ACAMS and SACAA-organised safety campaigns, as well as on ad-hoc bases. This is a basic requirement as aeronautical meteorological services continued to evolve to meet customer requirements.

During the year under review, stakeholders were requested to post their responses to a perception survey page on the aviation website and customer satisfaction was gauged from there.

Out of the 150 participants who took part in the survey, 62.6% worked in the general aviation sector, 24.6% worked in the commercial aviation sector and 12.6% worked in other associated sectors.

Asked to rate the quality of the products they made use of, 54.6% felt the product quality offered by SAWS was good, while 36.6% felt the quality was excellent. A small percentage (8.6%) rated the quality as poor.

Asked to rate the professionalism of telephonic briefings provided, more than half of respondents declined to answer, 30.6% of respondents rated the professionalism as good, while 53% rated the professionalism as excellent. Respondents who rated the professionalism as poor were in the lowest percentile (0.2%).

3.2.2 Establish partnerships for products and services

The organisation follows a structured process in the development of products and services. Strategic value-adding partnerships were further investigated, such as the collaboration with the North West University which could assist SAWS in various scientific disciplines such as air quality monitoring, radar meteorology and training.

An MoU between SAWS and the National Department of Health was drafted and shared with the department for review and inputs. Work is also in progress to establish a partnership between SAWS, Deutsche Wetterdienst and the Max Planck Institute for Meteorology. The objective of this partnership is to improve seasonal forecasting services at SAWS with the upgrading of the ECHAM system.

The organisation signed a consortium collaborative agreement and entered the extended Atmosphere Research in Southern Africa and Indian Ocean Project (GDRI-ARSAIO) co-funded by the CNRS France and the NRF South Africa. Collaboration will continue as a conversion into an IAL (International Associated Laboratory) for the years 2019 - 2022. Other South African collaborators are the atmospheric research groups from the North West University and the University of KwaZulu Natal (UKZN), as well as the South African Medical Research Council (MRC).

The organisation hosted its 2nd Annual Weather-SMART Science Symposium on 18 and 19 March 2019 which brought together scientists in weather, climate, air quality, aviation and marine research to share their latest findings with the community and with the public and relevant stakeholders. The intended aim of the symposium was achieved with the promotion of the SAWS vision through the theme "South African Weather-related Solutions for Everyone, Everyday".

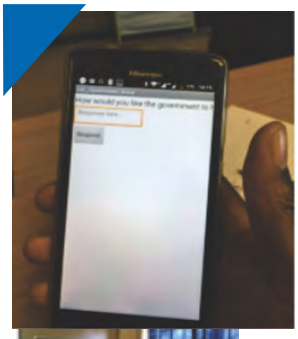
The symposium formed part of South Africa's way of commemorating the World Meteorological Day (23 March 2019), with the theme "The Sun, The Earth and The Weather". To address this theme, the 2019 symposium focused on the communication of the impact of research in aviation, air quality, marine and forecasting on everyday South Africans.

During the symposium, the SAWS Impact-Based Severe Weather Warning System was launched. The purpose of the project is to move from "What the weather will be" to "What the weather will do".

Air Quality Monitoring relationship building

Open Data SA hosted their second annual Air Quality Hackathon in association with the Department of Environmental Affairs (DEA) at the Tshwane University of Technology (TUT) Emalahleni Campus in June 2018. The main objective of the meeting was to get stakeholders to come up with new innovative ideas that will enable users and the public to easily access air quality data using technology which is cost effective and does not use data bundles to access information. This hackathon enabled residents of Emalahleni to better understand and monitor air quality in their area. Technicians from SAWS Air Quality Services, in partnership with DEA, gave a presentation on air quality monitoring and management to inform and educate the participants on the latest developments in the field.

Functional mobile application created during the event



The winning team in the mobile application design competition

The SAWS air quality department conducted a community awareness/environmental education outreach at the Irene office in August 2018. This was done through the hosting of pupils from the Pretoria Chinese School at the air quality laboratory in Irene to educate them on Air Quality Management.

Pupils from the Pretoria Chinese School

Pupils in the Air Quality laboratory

3.2.3 International Relations

South Africa was elected as an acting Member of the World Meteorological Organization (WMO) Executive Council during its 70th sitting in June 2018, until the 18th WMO Congress. This was a platform for South Africa to advance its interest and advocate the regional plight. Additionally, the organisation participated, in its capacity as the aviation service provider, in the 16th WMO Commission for Aeronautical Meteorology held in July 2018 in the United Kingdom. The main objectives of this Commission were to deliberate on future aeronautical meteorological requirements and associated challenges to National Meteorological Services (NMS's) around the world. Key outcomes included the identification of the need for NMS's, especially in the developing and Least Developed Countries (LDC's), to keep abreast with aviation requirements to improve service delivery, thereby enhancing their relevance.

The organisation, represented by the SAWS Board Chairperson and the acting CEO, participated in the African Conference on Meteorology for Aviation (ACMA-2018). Discussions included the futuristic Air Traffic Management system and emerging aviation issues such as the impacts of climate change on aviation.

In South Africa's efforts to enhance the country's cooperation with WMO, SAWS hosted the Permanent Representatives of Burundi and Nigeria for a familiarisation tour. The purpose was to empower the newly appointed Permanent Representatives and Directors on governance processes and strategic operations for the benefit of efficiently running the organisations they are heading.

South Africa participated in the 4th AMCOMET and 17th Regional Association I (RA I) sessions. During the AMCOMET Ministerial segment, the South African delegation was headed by the SAWS Board Chairperson, in her capacity as the Ministerial proxy, as delegated by the Minister of Environmental Affairs. The RA I Africa session was a preparatory session for the continent to engage on key strategic issues and emerging global trends that impact the implementation of meteorological programmes in Africa, thereby ensuring that the continent has a solidified position on meteorological issues during the WMO Congress of June 2019.

South Africa, through SAWS, hosted the Sudanese delegation from the Water Research Centre and University of Khartoum. The visit was graced by the Sudanese Deputy Ambassador to South Africa, the Honourable Abuzied Mohamed. The main purpose of the visit was to deliberate on SAWS research priorities; key cutting-edge projects with the Water Research

Commission (WRC) and possible areas of collaboration. The Sudanese delegation presented their research work and university priorities and expressed their interest to collaborate with South African research organisations such as SAWS.

The organisation hosted the African Centre of Meteorological Applications for Development (ACMAD) delegation. The purpose was to acquaint themselves with the SAWS High Performance Computer System, which is envisaged for the project framework of the African Development Bank-funded Satellite and Weather Information for Disaster Resilience in Africa (SAWIDRA) project that is aimed at enhancing weather and climate information for all African NMS's.

From a regional perspective, South Africa actively participated in the key prioritised SADC – MASA Harmonisation workshop, which aimed at harmonising the strategies and programmes of SADC SCOM and MASA. This followed the 2017 and 2018 clarion call of SADC Ministers responsible for Meteorology, that the SADC SCOM and MASA should enhance their collaboration and cooperation, for the advancement of meteorology in the region.

In efforts to advance meteorology in the region and to improve the relevance of NMS's during the climate change era, South Africa entered into a tri-lateral relation with the UK and Mozambique, with the main aim to resuscitate the INAM Radar network for Mozambique's improved early warning systems. This project is critical for SAWS, since operational INAM meteorological radars will assist in the nowcasting and analyses of severe thunderstorms, including those which are generated by tropical cyclones. Additionally, the sharing of data from these radar systems is envisaged to improve the SAWS early warning systems. The organisation signed an MoU with United Kingdom Met Office (UKMO) which harnessed governmental cooperation between the two countries and resulted in the establishment of a Newton Fund programme.

The signing of an MoU with the University of Reading in the UK enhanced research collaboration in atmospheric sciences. It is also an international platform for SAWS scientists to obtain international training and empowerment in research, especially in the field of Numerical Weather Prediction (NWP) model forecasts for the benefit of the country and the region.

South Africa and Mozambique signed their MoU during the 17th RA I session held in Egypt. This renewal of the existing MoU suits the latest meteorological developments and emerging needs of the two countries. The SAWS Regional Training Centre (RTC)-Pretoria hosted a WMO/UKMO Aviation Seminar, which focused on aviation weather hazards, warning products and aviation forecaster competencies. Additionally, the organisation hosted an aviation forecasting training session specifically for Mozambique forecasters to improve their forecasting skills.

Another key training programme of note was the EUMETSAT satellite workshop, which was aimed at training SADC forecasters in the interpretation of Meteosat Second Generation (MSG) Satellite imagery, to enhance their ability to recognise severe weather incidents, thus improving the forecasting skills and relevance of NMS's in saving lives and property.

3.3 Compliance with designated national and international standards

3.3.1 Regulatory Compliance: Retention of ISO 9001:2015 certification

The SAWS has a robust and mature Quality Management System which is ISO 9001:2015 certified as of September 2017. The British Standards Institution (BSI), our Quality Management System certification body, conducted the annual ISO 9001:2015 surveillance audit from 3 – 5 September 2018. The objective of the assessment was to conduct a surveillance assessment and look for positive evidence to verify that elements of the scope of certification and the requirements of the management standard are effectively addressed by the organisation's management system.

The SAWS developed an action plan to respond to the surveillance audit findings and acted upon these successfully to retain its ISO 9001:2015 certification.

Considerable efforts to promote and maintain a credible Quality Management System yielded positive results as our annual November Quality Month became a success under the theme "Quality our Priority".

The SAWS certified Quality Management System meets requirements of the ISO 9001:2015 standard, and through this certification we have met the expectations of our key stakeholders such as WMO and ICAO.

3.3.2 Organisational Risk Management

See Governance Report: Part C, page 79.

SAWS exhibited its disaster risk reduction and air quality capabilities at the annual DMISA exhibition Disaster Management Institute of South Africa (DMISA) in September 2018 at the Kopanong conference centre

Strategic Goal 4:

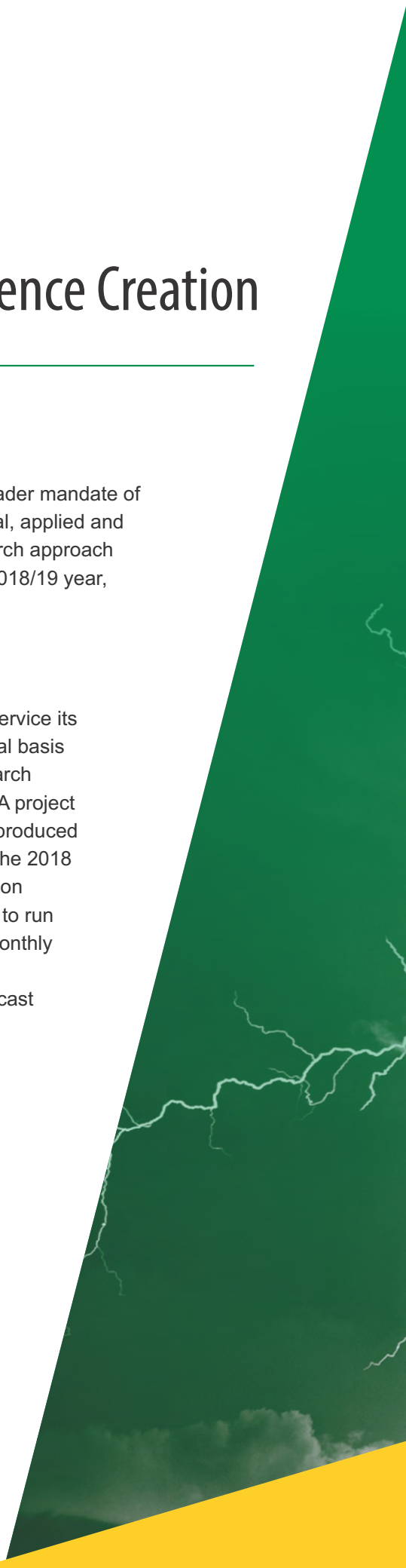
Research and Knowledge/ Intelligence Creation

4.1 Earth System Science

The nature and intent of Research and Innovation's contribution to the broader mandate of the organisation manifest in the knowledge generation through fundamental, applied and social sciences research. This is underpinned by a multi-disciplinary research approach which is supported by the earth system modelling framework. During the 2018/19 year, the following were the key highlights of the Earth system sciences:

Numerical weather and climate modelling

The SAWS relies on the use of numerical weather and climate models to service its mandate. The organisation continued to run these models on an operational basis using the CRAY High Performance Computing (HPC) system and for research purposes on the Centre for High Performance Computing (CHPC) cluster. A project was initiated to compare numerical weather prediction (NWP) simulations produced by three different NWP models. Results from the study were presented at the 2018 CHPC National meeting, and going forward such results will inform SAWS on which model to use for its operational activities. The SAWS also continued to run a coupled ocean-atmosphere model to produce seasonal forecasts on a monthly basis to maintain its WMO Global Producing Centre (GPC) of Long-range forecasts status. In particular, the seasonal forecast contributed to the forecast lead times which served as a guidance for disaster risk mitigation and planning purposes.



Atmospheric composition modelling

During the year under review, the SAWS conducted sensitivity analyses on its recently developed coupled climate-chemistry modelling system by modifying the physics schemes and regional parameterisations. To increase the model accuracy, the coupled model system alterations were conducted utilising atmospheric composition properties that are determined from atmospheric chamber analysis and field observations. This is crucial in reducing the uncertainties associated with modelling atmospheric composition and properties. This system is deployed to conduct a higher resolution national scale simulation of air pollutant exposure with a higher accuracy. This is important to determine ambient air pollutant exposure contributions to the national burden of disease. Furthermore, this optimized coupled system was deployed to provide a service in the quality management and planning programme of the Mpumalanga province. This included provision of: (1) A threshold of criteria and photochemical pollutants spatio-temporal distributions and deposition rates; (2) Climatological information that governs the emission, transportation, chemistry and deposition of air pollutants; and (3) Quantile regression based on downscaled high resolution spatio-temporal profiles of natural and anthropogenic emissions. This information is very important for the development of an effective and equitable air quality management programme and its implementation.

Agro-hydro-meteorological modelling

The Mesoscale Hydrological Model (MHM) was successfully installed at SAWS for hydro-meteorological applications research. The model was tested using the model developer's prepared datasets as well the in-house basic datasets, without considering full data set requirements. Once fully operational, the MHM will be utilized for hydrological forecasting, including streamflow and runoff; drought monitoring and forecasting; and catchment studies to understand the impacts of hydrological processes within each phase of hydrological cycle to the environment. Furthermore, the following agrometeorological models were implemented during this reporting period: the EXSMET (HYLARSMET) and AquaCrop models. These models are important tools used for, amongst other, crop yield simulation studies.

It is important to note that all the numerical weather and climate models currently in use in South Africa were developed outside of the African continent. The SAWS started engaging with other research institutions and higher learning institutions in 2017 to develop a model framework. The aim of the framework is to build capacity in the country so that South Africa can develop its own home-grown numerical weather and climate models. Home-grown models will result in earth system processes over southern Africa being better represented in models with a potential benefit of improving weather and climate simulations, which will in turn result in improved early warnings. The framework was presented at the 2018 Annual Conference of the South African Society for Atmospheric Sciences (SASAS) to engage other weather and climate scientists in general.

4.2. Key projects

Rain for Africa Project (R4A)

The Rain for Africa project (R4A) forms part of the Netherlands Government Geo-data for Agriculture and Water initiative, with the objective to contribute towards the empowerment of the most important actors in the food-production chain. The project is specifically targeting small-scale farmers (SSF's) who will receive information for free. Information from in-situ and earth-observation satellites as well as numerical weather prediction models is translated into agricultural advice. This advisory service is accessible via various platforms, including the web and mobile technologies (cell phones, tablets and computers). The project also addressed the needs of various other users such as National Meteo-rological Services and commercial and small-holder farmers with specific products tailored for these groups. The project aimed to reach 125 000 SSF's in order to assist them with farming advice. Sustainability of the services is ensured through an innovative business model to ensure that the services continue beyond the end of the project. The project was envisaged to come to an end on 31 May 2019.

Transforming Weather, Water data into value-added Information services for sustainable Growth in Africa (TWIGA)

TWIGA, a multidisciplinary Horizon 2020 Project funded by the European Union, started in February 2018 and will continue until 2021. The objective of TWIGA is to integrate geo-information on weather, water and climate for Sub-Saharan Africa by integrating satellite-based geo-data with in-situ sensors and developing related services that address the needs of sectoral stakeholders and the GEOSS community in Africa. The SAWS collaborates with multiple international partners from Africa and Europe to develop services for multiple sectors, including amongst others agriculture, energy, water, disaster risk reduction (DRR), and insurance. In addition, new and low-cost in-situ observation systems will be developed to enhance the measurements and monitoring required to address the need for improved early-warning, weather-prediction and climate-monitoring services.

Weather and Climate Science for Services Partnership

The Weather and Climate Science for Services Partnership (WCSSP) project is a collaborative initiative between the UK Met Office and SAWS. The WCSSP project in South Africa, launched during July 2014, continues building on the strong existing partnership between the UK Met Office and SAWS, and is underpinned by the use of the Unified Model (UM) for weather forecasting. The overarching aims of project are as follow:

a) underpin science development by evaluating high-resolution models to improve the prediction of high-impact weather;
b) strengthen institutional capability by developing data services and analytical skills to use model output effectively; and
c) develop the capacity to support the development of user-led weather services and enhance impact-based forecasting.

In collaboration with the UK Met Office and the University of Reading, verification of the UM at convective scale improved our understanding of how the UM represents high-impact weather and the physical processes which lead to high-impact weather events. The project resulted in two peer-reviewed articles which were published early in 2019. Through this project, the UM has been used to improve our daily weather forecast.

The WCSSP project partners collaborated with energy suppliers to build capacity to ensure the delivery of renewable energy forecasts and user-led weather services. This was done through creating a demand-led model for renewable energy, minimising waste in electricity generation, and using improved forecasts from the SAWS convective-scale unified model. The development of a demand-led renewable energy model with ESKOM supported better resource management for resilient power provision in South Africa, which is vital as fluctuation in energy supplies is a major challenge in the region.

Water Research Commission (WRC) projects

For the year 2018/19 SAWS researchers successfully delivered on the following projects:

1) **An investigation of the historical and projected occurrence of the South African mid-summer drought and its implications for the agro-water budget**

The project proposal was approved for a sum R 620 000 for a period of three years starting from 2018/19. The project is being conducted by SAWS researchers and is led by a Lead Scientist in Research and Development Department. The project has nine deliverables wherein three deliverables were achieved during 2018/19. The project objectives are as follow:

a) to investigate the characteristics of the mid-summer drought in South Africa;
b) to investigate the ability of climate models to capture the mid-summer drought in historical simulations;
c) to determine the impact of planting dates before the mid-summer drought on maize yields in South Africa using an advanced crop model; and

d) to develop an early-warning system, which gives advice on the most suitable planting dates in order to avoid damage by the mid-summer drought.

2) **Hydrological impact of forecast uncertainty associated with Continental Tropical Low-pressure Systems**

The SAWS collaborated with the University of Pretoria in this WRC project, and contributed through deliverable no 5. The project assessed the impact of precipitation uncertainty in streamflow forecasting, based on the evaluation of streamflow simulations derived from 10 ECHAM4.5-MOM3 model-ensemble members. This project highlighted the need for a holistic consideration of hydro-meteorological model parameterization, catchment initial conditions, meteorological inputs, as well as the coupling of both climatic and non-climatic drivers. The project also contributed to the development of multi-model rainfall-runoff streamflow-forecasting applications, a useful service for water resources management and planning.

South 32 Project

A project titled **Optimizing performance through climate sensitive operations** was awarded to SAWS by South32, a mining and metals company with its headquarters in Perth, Western Australia. The company is a producer of Aluminium, Manganese, Silver, Zink, Lead, Nickel, Coking coal and Thermal coal. South32 has coal assets in the Highveld region (Emalahleni (formerly Witbank), Ogies and Middelburg), manganese assets in the Kalahari (Wessels mine at Hotazel) and aluminium assets in Richards Bay. Water for these assets are obtained from the Olifants River Catchment (Highveld area), Vaal Gamagara River Catchment and the Mhlatuze River Catchment. South32 sought to determine the effects of climate change and variability within short, medium and long future time on their operations. The project proposal was approved for a sum R 501 504.00. The project was conducted by SAWS Researchers from both the Research and Development and Climate Services Departments. The project is essential for climate change adaptation purposes for the specific industry.

Aviation Research Demonstration Project (AvRDP)

The SAWS is participating in the WMO AvRDP project which aims to demonstrate the capability of nowcasting and mesoscale modelling techniques in support of the development of the next generation aviation initiative, namely, the Aviation System Block Upgrade under the new Global Aviation Navigation Plan, which was endorsed by the International Civil Aviation Organization (ICAO) in 2013. The project consists of two phases where phase 1 deals with the meteorological capability research, and phase 2 deals with translating meteorological information into Air Traffic Management impact. The project commenced in 2015, and the O.R. Tambo International Airport (represented by SAWS) was selected as one of 11 international airports participating in the project. During the report period, SAWS completed phase 1 of the project whereby radar-based thunderstorm products were developed. Phase 2 of the project will continue in the new financial year.

Human-Biometeorological Network

In addressing Programme 3 (Infrastructure and Information Systems) of the SAWS five-year strategic plan for the period 2019/20 – 2023/24, human-biometeorological stations were procured for deployment in Gauteng (Mamelodi), the Northern Cape (Keimoes), North West (Kagisano) and the Limpopo Province (Tshaulu). In addition, SAWS has also procured a mobile human–biometeorological system that will be used in field campaigns that are geared for community-based research aimed at creating knowledge about health effects of climate change. The data will be used in the development of user-inspired health and weather/climate solutions and tools that will ensure public resilience in the changing climate.

4.3 Scientific Publications

Central to our work at SAWS, as a recognised scientific institution of Government, the 2018/19 financial year saw us publishing 70 scientific publications, which were authored or co-authored by SAWS scientists. Our scientists use three types of publications which are eligible for monitoring, ensuring that high-quality scientific research outputs are carried out to expand the existing knowledge base and intelligence related to weather and climate change within the country. These types of publications include peer-reviewed articles in scientific journals, where SAWS scientists are either the leading or a co-author, conference papers that are peer-reviewed and traceable in the conference proceedings and MSc and PhD theses (dissertations which were reviewed by study leaders and scientists). As per the SAWS mandate, scientific publications are aimed at creating public records of original contributions to knowledge areas, providing intellectual capacity and strengthening both the public and private sectors to strengthen decision-making through evidence-based scientific research.

These scientific publications are outputs from SAWS key projects emanating from the memoranda of agreements with strategic partners, while other publications are emanating from initiatives and collaborations where SAWS scientists are involved in covering a wide range of research themes in the climate and atmospheric research within prediction research, climate and environment research and monitoring. Publications within the prediction research included nowcasting and very-short range, short-range and medium-range forecasting while the climate and environment research and monitoring publications covered research on long-range forecasting, climate change and variability, air quality, applications research and Global Atmosphere Watch (GAW) research.

The following types and number of publications were produced:

- Peer-reviewed articles in scientific journals: 39
- Conference papers: 27
- Theses: 4

LIST OF PEER-REVIEWED JOURNALS, CONFERENCE PAPERS AND THESES

2019

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Strategic Goal 5:

Growth and Sustainability

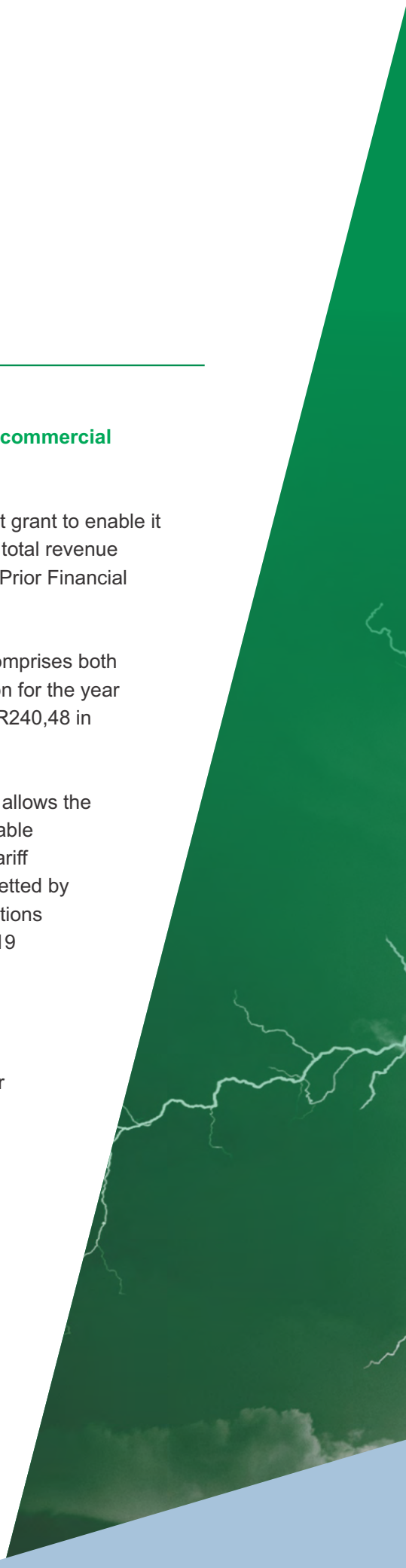
5.1 Grow Revenue Streams (parliamentary grant, aviation revenue commercial revenue, implement revenue and pricing models)

The South African Weather Service (SAWS) is dependent on a government grant to enable it to deliver on its mandate. For the 2018/19 financial year the organisation's total revenue amounted to R382,76 million which was a decline of 6.03% year-on-year. (Prior Financial Year: R407,33 million).

The allocation from Parliament in the form of a government grant, which comprises both the operational and capital expenditure grants, amounted to R209,49 million for the year under review, which was a decline of R30,01 million from the allocation of R240,48 in the previous financial year.

The South African Weather Service Act, 2001 (No 8 of 2001 as amended), allows the organisation to raise revenue from the aviation industry, in line with acceptable international standards, as part of its cost-recovery operations, through a tariff charge. The tariff is effective on 1 April each year and is approved and gazetted by the Minister of Environment, Forestry and Fisheries following recommendations from the Regulating Committee on Meteorological Services. For the 2018/19 financial year, revenue did not grow as expected due to lower air traffic volumes. A total of R128,23 million was earned from aviation, which was slightly below the target of R130,21 million by R1,98 million.

The mentioned Act also allows the organisation to raise revenue from other commercial activities. During the year under review, non-regulated commercial revenue grew by R6,72 million year-on-year from R25,66 million to R32,37 million, which was 1.59% below budget.



In line with its Integrated Services Strategy (ISS), SAWS produced products and services that enabled users to make informed decisions to reduce risks associated with weather-related outcomes. Attention was focussed on the increased need to understand and address the potential future impacts of climate change through collaboration between scientists, industry experts and partners to deliver on customised products and services for the priority economic sectors of agriculture, water and energy. Given that South Africa is a water-stressed and climate vulnerable region as well as the current impacts of the constrained electricity supply, SAWS was well-positioned to build on the meteorological and climate interface while addressing specific needs in the national and regional and local environments.

The products and initiatives highlighted in the ISS will enable the organisation to grow its non-regulated commercial revenue, which will enable the entity to supplement its other sources of revenue which are continuing to decline, specifically the parliamentary grant, where government has to prioritise the country's needs accordingly.

The aviation revenue will always be a volatile source of revenue for the entity and is largely dependent on external factors such as traffic volumes and other macro-economic conditions affecting this industry.

It has become critical for the entity's sustainability to grow its non-regulated commercial revenue at a higher rate than it currently is growing, to meet its obligations in light of rising expenditure, external economic factors and regulated pricing such as electricity tariffs and foreign exchange fluctuations.

The finalisation of the Revenue Models and Pricing Strategy for SAWS, which were delayed in the year under review due to internal processes, will assist the organisation with an improved pricing of its products and potential revenue increases.

Performance Information

The SAWS performance information for the 2018/19 financial year is aligned to the performance indicators and targets in the organisation's Annual Performance Plan 2018/19

ANNUAL PERFORMANCE REPORT

STRATEGIC GOAL 1: PROVISION OF PRODUCTS AND SERVICES

STRATEGIC OBJECTIVE 1.1 : DEVELOP AND PROVIDE METEOROLOGICAL AND RELATED PRODUCTS AND SERVICES FOR TARGETED COMMUNITIES NATIONALLY					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
1.1.1 Community weather-smart needs analysis for targeted communities	Provision of innovative meteorological and related products and services will serve targeted communities to empower them to become weather-smart (weather resilient) through the development and implementation of a community weather-smart products and service plan (2017-2020).	Number of community radio stations receiving services/products (n)	40 Community Radio Stations	Achieved Radio Stations = 51	Community radio stations over-achieved by 11 stations due to increased interest in products from SAWS.
		Number of Community TV Stations receiving services/products (n)	3 Community TV Stations	Partially achieved TV Stations = 2	Letters sent to 5 community TV stations. All agreed to partner with SAWS. Two stations already active, and 3 more to be activated in Q1 2019/20.
		Mobile App downloads (n)	7300 Mobile App downloads	Partially achieved App downloads = 5571	The target for the mobile app was not achieved due to the slow takeoff in downloads possibly related to aesthetics despite the quality of the scientific content.
1.1.2 Develop and provide meteorological and related community segmented products and services	Provide targeted community segments with products and services to minimise weather risks on a day-to-day.	Number of products maintained and developed (n)	5 Products developed	Overachieved 6 products developed are: 1. AvRDP 2. Frost Product 3. Lightning product 4. Burden of Disease 5. Climate Change Reference Atlas 6. Stream Flow	Target exceeded due to planning for other products which commenced in previous financial year.

STRATEGIC GOAL 1: PROVISION OF PRODUCTS AND SERVICES

STRATEGIC OBJECTIVE 1.2 :
DEVELOP AND MARKET METEOROLOGICAL AND RELATED PRODUCTS AND SERVICES FOR SPECIFIC ECONOMIC SECTORS

Measurable Objective	Objective Statement	Key Performance Indicator	Annual Target 2018/19	Annual Result	Comment on Deviation
1.2.1 Provide sector specific decision making products on weather and climate	Provide sector specific decision making products on weather and climate which will assist targeted business sectors in decision-making to minimize weather risks on day-to-day business operations.	Annual milestones as stated in the Integrated Services Strategy	Implement the Integrated Services Strategy	Not applicable was changed to Target absorbed in 1.1.2	Merged with Measurable Objective 1.1.2 during the mid-term review.
1.2.2 Develop and implement sector specific 5-year marketing plans	Develop and implement 5- year sector specific marketing plans for sector specific products on weather and climate aimed at minimising weather risks on day-to-day business operations.	% Implementation of annual milestones as stated in the Sector specific implementation plan	Implementation of 5-year sector specific marketing plans	Achieved • Plans for Agriculture, Energy and Water Sectors implemented	Activities for the 5-year marketing plans defined for the Agriculture, Energy and Water sectors implemented.
1.2.3 Develop and market meteorological and related products and services for specific economic sectors	Maintain watch of hazardous meteorological conditions affecting flight operations (safety and efficiency) within the Flight Information Region.	% of aerodrome warning achieved	Maintain watch of hazardous meteorological conditions affecting flight operations (safety and efficiency) within the Flight Information Region	Overachieved • 98.24% accuracy of Aerodrome Warnings	Achieved as the forecasters were able to predict the warnings more accurately than the set standard or norm.
		% of Terminal Aerodrome Forecast accuracy achieved		Overachieved • 91.5% TAF accuracy	Achieved as the forecasters were able to forecast the events more accurately than the anticipated target.

STRATEGIC GOAL 2: CAPABILITY AND CAPACITY DEVELOPMENT

STRATEGIC OBJECTIVE 2.1 : UPGRADE, EXPAND AND OPTIMISE INFRASTRUCTURE					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
2.1.1 Weather observation and ICT infrastructure	Provide optimal infrastructure and systems support in the development of advanced technologies for observations, information dissemination and exchange that enables SAWS to achieve its mandate.	% availability of radar data	Tier 1: 85% availability	Partially achieved • Tier 1 Radar availability = 64%	Port Elizabeth radar, though operational at time, was decommissioned for relocation to Sukuza. This decision was approved as a result of the Radar Business Case. Underperformance due to ageing infrastructure challenges, inclusive of: • Centralised Radar systems maintenance which has since been de-centralised.
2.1.2 Weather observation and ICT infrastructure	Provide optimal infrastructure and systems support in the development of advanced technologies for observations, information dissemination and exchange that enables SAWS to achieve its mandate.	% Lightning Detection Network (LDN) data availability	90% of LDN data available	Overachieved • 91% LDN data availability	Power interruptions which were the major concerns were improved by installation of backup systems (UPS) and services were done as needed which improved availability.
2.1.3 Weather observation and ICT infrastructure	Provide optimal infrastructure and systems support in the development of advanced technologies for observations, information dissemination and exchange that enables SAWS to achieve its mandate.	% SAAQIS availability (refers to the availability of the system)	95% of SAAQIS data available	Overachieved • 98% SAAQIS availability	SAAQIS is currently hosted externally and this has ensured that system availabilty is not affected by unstable electricity supply. System support and maintenance by service provider ensured timeous resolve of system issues and limited downtime.
2.1.4 Weather observation and ICT infrastructure	Provide optimal infrastructure and systems support in the development of advanced technologies for observations, information dissemination and exchange that enables SAWS to achieve its mandate.	Percentage quarterly valid data capture for priority area air quality monitoring networks	80% (Vaal, HPA, WPA)	Overachieved • 89% valid data captured for priority areas	While striving for continual improvement, Air Quality Services has been striving to achieve the SANAS Data Capture requirement of 90% hence the exceeding of target.
2.1.5 Weather observation and ICT infrastructure	Provide optimal infrastructure and systems support in the development of advanced technologies for observations, information dissemination and exchange that enables SAWS to achieve its mandate.	Percentage of GAW Trace Gas data availability (greenhouse gases)	90% of data available	Achieved • 90% average for the year	Target was achieved.
2.1.6 Weather observation and ICT infrastructure	Provide optimal infrastructure and systems support in the development of advanced technologies for observations, information dissemination and exchange that enables SAWS to achieve its mandate.	Milestones as stated in the ICT Master Systems Plan	Develop and implement ICT MSP	Achieved • ICT MSP and implementation plan finalized and implemented	Target was achieved.

STRATEGIC GOAL 2: CAPABILITY AND CAPACITY DEVELOPMENT

STRATEGIC OBJECTIVE 2.2 : POSITION SAWS AS EMPLOYER OF CHOICE					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
2.2.1 Talent management programme	Develop programmes which create a supportive environment for high performance, employee wellness, career development, attraction and retention.	Career pathing implemented for the core business (n)	12 Career paths approved	Achieved • 13 Career paths approved	Career paths for core jobs as well as supportive jobs revealed 13 paths instead of the envisaged 12.
2.2.2 Talent management programme	Develop and implement a talent management programme which creates a supportive environment for high performance, employee wellness, career development, attraction and retention.	Percentage employee retention rate for core skills	93% employee retention rate for core skills	Achieved • Average of 99% core skills retention rate	A number of interventions such as salarity parity and Women Accelerated Development programme were put in place.
2.2.3 Integrated Talent Framework	Develop and implement an integrated Talent Framework that is aligned to leading practice that will foster a highperforming culture. This will include elements such as Succession Planning, Leadership Development, Process Automation etc.	Talent Management Framework developed and programmes implemented (n)	Integrated Talent Framework approved	Achieved • Integrated Talent Framework approved	Target was achieved.
2.2.4 Transformed organisation	Develop programmes which create a supportive environment for high performance, employee wellness, career development, attraction and retention of core competencies in line with the transformation agenda.	Percentage achievement of Employment Equity (EE) targets as per the organisational EE plan	70% Black People	• 82% Black People	
			1,5% People with Disabilities	• 2.1% People with Disabilities	
			40% Women in core	• 37% Women in Core	The science field is challenged with realities of deficient numbers of women in the industry. Programmes such as Accelerated Development Programme have been put in place.
			42% Women in management	• 40% Women in management	

STRATEGIC GOAL 2: CAPABILITY AND CAPACITY DEVELOPMENT

STRATEGIC OBJECTIVE 2.3 : BUILD A TALENT POOL FOR ATMOSPHERIC SCIENCES AS A NATIONAL IMPERATIVE					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
2.3.1 National talent pool	Build the talent pipeline for atmospheric and related sciences to address the national priorities of the country related to weather and climate.	Stakeholder engagements for funding and implementation	Engage required number of potential partners for funding the NEP. Start to implement phase 3 with required funding	Achieved • 2 potential funders engaged resulting in one contract entered into. • Phase 3 implementation commenced with engagements with Universities to introduce Climatological course in curriculum funding which will contribute to funding the NEP.	Target was achieved.
2.3.2 National talent pool	Build the talent pipeline for atmospheric and related sciences to address the national priorities of the country related to weather and climate.	Percentage annual milestones as per the Regional Training Centre (RTC) strategy	80% of the RTC targets achieved	Overachieved • 88% RTC strategy achieved	The last year of the ending 5-year RTC strategy produced an increased effort to complete the main targets related to competency and training so that the RTC can start with the new strategy.
2.3.3 Learnerships	Build the talent pipeline for atmospheric and related sciences to address the national priorities of the country related to weather and climate.	Percentage of bursars completed absorbed by SAWS	62% of bursars completed absorbed	Overachieved • 94% bursars absorbed	Increased efforts to increase the scarce and critical skills in organisations realized.

STRATEGIC OBJECTIVE 2.4 : DESIGN A FIT-FOR-PURPOSE WORKSPACE					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
2.4.1 Design a fit-for-purpose workspace	Establish easily accessible, fit-for-purpose workspace(s) across all SAWS offices.	Easily accessible, egornomically sound, fit-for-purpose workspace(s)	Establishment of Head Office	• Head Office established	New facilities for Cape Town Regional Office to improve accessibility secured.
			Establish 2 easily accessible Regional Offices	• Cape Town Regional Office	
2.4.2 Design a fit-for-purpose workspace	Design a fit-for-purpose workspace comprising a new SAWS Head Office building.	Establishment of new SAWS Head Office Building Waterkloof Land Development	Feasibility study for a Public-Private Partnership (PPP)	Not achieved	Lack of funds to procure services of PPP Transactional Advisor hampered the achievement of target.

STRATEGIC GOAL 3: ENGAGED STAKEHOLDERS

STRATEGIC OBJECTIVE 3.1 : POSITION SAWS AS A RELEVANT METEOROLOGICAL INSTITUTION					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
3.1.1 Corporate communications strategy	Development and maintenance of various platforms for engagement with stakeholders to extend the reach and increase awareness of the SAWS brand.	Percentage completion of annual targets as set out in the corporate communications plan	Implementation of 85% of Communications programme as per the communications strategy for 2018/19	Overachieved • 94% Communications programmes implemented	An increased need to execute most programmes such as the celebration of World Meteorological Day arose.
3.1.2 A corporate Communications Strategy (Media visibility traffic volumes)	Evaluation of the use of communication platforms used to promote SAWS programmes and brand.	Percentage (increase) in traffic volumes on digital media platforms	40% increase in traffic volumes across digital media platforms on the 2017/18 benchmark	Overachieved • Increase across digital media platforms = 59%	Facebook growth was larger than expected (86.3% from benchmark). Average of the two platforms produced achievement of above target.
3.1.3 Corporate communications strategy (Media visibility – Advertising Value Equivalent)	Evaluation of the use of communication platforms used to promote SAWS programmes and brand.	Rand value of Advertising Value Equivalent (AVE) (cumulative target)	Advertising Value Equivalent (AVE) R150m	Overachieved • R160.2mil AVE	Media coverage due to many severe weather events ensured more than the anticipated AVE.

STRATEGIC OBJECTIVE 3.2 : MANAGE AND LEVERAGE STRATEGIC RELATIONSHIPS					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
3.2.1 Stakeholder engagement strategy	Engagement of stakeholders for mutual benefit.	Percentage overall stakeholder satisfaction rating	Overall stakeholder satisfaction rating – 84%	Achieved • 86% satisfaction rating	Target was achieved.
3.2.2 Establish partnerships for products and services	Establish a number of strategic partnerships with relevant capabilities and expertise.	Number of strategic alliances established (n)	Development of Strategic Partnership Framework	Partially achieved • Four (4) Strategic Partners	Focus geared towards entering into partnerships to improve on commercial revenue rather than development of a Framework.

STRATEGIC OBJECTIVE 3.3 : COMPLIANCE WITH DESIGNATED NATIONAL AND INTERNATIONAL STANDARDS					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
3.3.1 Regulatory Compliance	Compliance to WMO and ISO standards.	Retention of ISO Certificate	ISO 9001:2015 Certification retained	Achieved • ISO 9001:2015 certification retained	Target was achieved.
3.3.2 Organisational Risk Management	Ensuring effective and efficient risk management practices across SAWS.	Strategic risk management plan developed and implemented (%) (accumulative)	Implementation of the Risk Management Plan	Achieved • Risk management plan implemented as per targets set	Target was achieved.

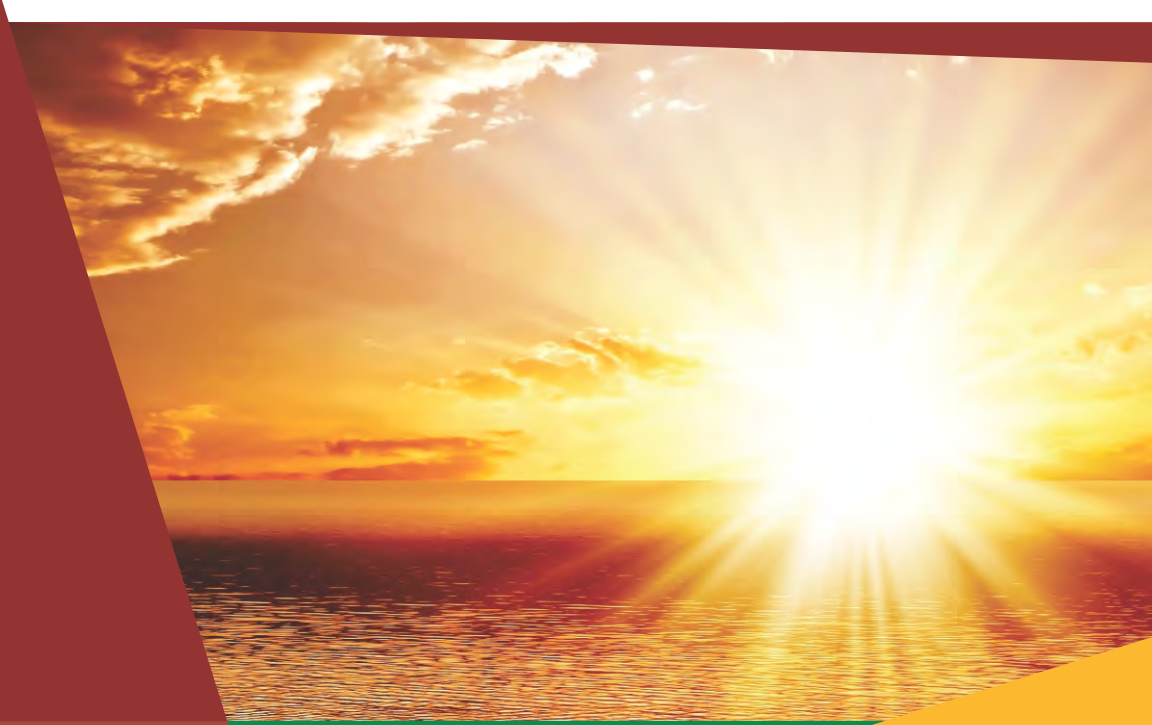
STRATEGIC GOAL 4: RESEARCH AND KNOWLEDGE / INTELLIGENCE CREATION

STRATEGIC OBJECTIVE 4.1 : GROW WEATHER AND CLIMATE KNOWLEDGE BASE					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
4.1.1 National Weather Service Socio-Economic Benefit study	Generate new scientific insights in atmospheric and related sciences in collaboration with relevant stakeholders. Expand the existing knowledge base and intelligence related to climate change. Identify tangible socioeconomic benefits to key sectors and society of a National Weather Service.	Socio-economic benefit analysis report	Value (cost benefit) of weather and climate products and services for identified economic sector(s)	Achieved • Value of WCS to agricultural sector determined	Target was achieved.
		% SEB funding secured	50% SEB funding (as per proposal) secured	Achieved • 50% Funding secured	
4.1.2 Strategic partnerships research agreements	Generate new scientific insights in atmospheric and related sciences in collaboration with relevant stakeholders. Expand the existing knowledge base and intelligence related to climate change.	National Framework for Climate Services (NFCS) implementation per key sector (NFCS Coordinating structure established)	NFCS Coordinating structure established	Achieved • NFCS structure is established and approved	Target was achieved.
4.1.3 Scientific Publications	Generate new scientific insights in atmospheric and related sciences in collaboration with relevant stakeholders. Expand the existing knowledge base and intelligence related to climate change.	Number of peer-reviewed articles published in accredited national or international scientific journals where SAWS scientists are the leading author or co-author (cumulative target)	30 publications	Overachieved • Total publications for the year = 70	Many peer-reviewed articles initiated in 2017/18 were finalised and published during 2018/19 and contributed to over-achievement.

STRATEGIC GOAL 5: GROWTH AND SUSTAINABILITY

STRATEGIC OBJECTIVE 5.1 : GROW REVENUE STREAMS					
Measurable Objective	**Objective Statement**	**Key Performance Indicator**	**Annual Target 2018/19**	**Annual Result**	**Comment on Deviation**
5.1.1 Parliamentary funding	Receive parliamentary grant funding for the execution of public good services as per the SAWS mandate.	Parliamentary grant funding excluding SAAQIS	R188,49m	Partially achieved • R182.86m	Annual Grant Allocation was reduced to R182.86m. Budget was reduced after the APP was approved.
5.1.2 Aviation revenue	Secure regulated commercial income from the aviation industry on a cost recovery basis as regulated by the Regulatory Committee on Meteorological Services.	Growth in year-on-year aviation revenue	R148,18m	Partially achieved • R128.4m	Target not met due to lower Air-Traffic volumes.
5.1.3 Growth in Commercial Revenue	Increase on nonregulated income.	Growth in commercial revenue as per set target (Annual Total Revenue)	R32.9m	Partially achieved • R32.4m	Target not met due to the national macro-economic situation.
5.1.4 Growth in Commercial Revenue	Develop and implement revenue models and pricing strategies.	Implementation of revenue and pricing models	Revenue model and pricing strategy developed	Not achieved	The finalisation of the Revenue Models and Pricing Strategies for SAWS was delayed due to non-responsive proposals received.

Governance



PART C

1. INTRODUCTION

The Board regards corporate governance as an essential tool that forms the basis of an organisation that is governed effectively and within the prescripts of relevant legislative and regulatory frameworks. The SAWS ensures that its processes and practices are regularly reviewed to ensure compliance with legal provisions, the use of funds in an economic, efficient and effective manner and adherence to good corporate governance practices. The Board is established in terms of section 5 of the South African Weather Service Act, 2001 (No. 8 of 2001) as amended; and its mandate is derived from section 6 of the Act.

The Board provides strategic direction, leadership and vision to SAWS in a way that enhances the Shareholder value and ensures the long-term sustainable development and growth of the organisation.

2. SHAREHOLDING

The Government of the Republic of South Africa is the sole shareholder of SAWS and the shareholder representative is the Minister of Environmental Affairs. As a Schedule 3A PFMA entity, SAWS is not legally required to complete a shareholder compact with the shareholder, however, one of the recommendations of the Environmental Sector Micro-Governance Review Report (2015) was that an agreement should be in place to ensure that oversight, strategic and governance arrangements between the Shareholder and the entity are clearly defined. To this end, the year under review ended with SAWS working on the conclusion of such a Shareholder Agreement with the view to finalise it in the first quarter of 2019/20.

3. LEGISLATIVE FRAMEWORK

The SAWS legislative foundation is the South African Weather Service Act, 2001 (No. 8 of 2001) as amended (also referred to as the SAWS Act) and its mandate is derived from section 6 of the Act. The Public Finance Management Act, 1999 (No 1 of 1999) (PFMA) and National Treasury Regulations published in terms thereof serve as the authority for the organisation's financial reporting requirements. Policies have been put in place to ensure that there is compliance with all relevant legislation.

4. PORTFOLIO COMMITTEES

The Board respects the supremacy of the letter and spirit of the Constitution of the Republic of South Africa and continues to abide by the rules, guidance and directives of Parliament, more specifically those of the Parliamentary Portfolio Committee of DEA and of the Standing Committee on Public Accounts (SCOPA).

The Annual Report for the 2017/18 financial year was tabled before the Portfolio Committee within the timelines prescribed by the provisions of the PFMA and Treasury Regulations. The Quarterly Performance Reports for the first three quarters of the 2018/19 financial year were also tabled before and discussed by the Portfolio Committee during this reporting period. The Annual Financial Statements for the 2017/18 financial year were also duly submitted.

The Board attended four meetings of the Portfolio Committee during the reporting period to, among other things, discuss the quarterly performance of the entity as well as to provide progress on governance and human capital matters related thereto:

- 18 April 2018
- 07 June 2018
- 16 August 2018
- 05 March 2019

5. BOARD OF DIRECTORS

5.1 Composition of the Board

Section 2(2) of the SAWS Act, provides that SAWS acts through a Board of Directors appointed by the Minister in terms of Section 5 of the Act. During the reporting period, the Board consisted of a maximum of 10 Directors including the Chief Executive Officer who serves as an Executive Director ex officio until the expiry of term and/or resignation of five directors during 2018.

The current Board consists of 10 non-executive directors and the Chief Executive Officer and was appointed with effect from January 2019, for a five-year term. The Directors 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.

5.2 Role and function of the Board

The Board is the accounting authority of SAWS in terms of the PFMA. In conjunction with the SAWS Act and the Treasury Regulations issued in terms of the PFMA, the Board charter sets out clear direction with regards to the role and responsibilities of the Board, composition and requirements for Board meetings. These responsibilities include:

a. Ensuring the financial viability and development of SAWS 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 executive managers;

e. Ensuring that the Weather Service has adequate systems of internal control, both operational and financial;

f. Monitoring the performance of the 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 Weather Service;

i. Approving a business plan for the 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 goods services of the Weather Service; and

k. Performing any other function assigned to it by the Minister.

The Board and Executive Management work closely together in determining SAWS strategic approach. The organisation's Delegation of Authority was reviewed to formalise the delegation of authority to the Chief Executive Officer for the implementation of strategy and the ongoing management of the organisation. The Directors are apprised of implementation progress through reporting at Board meetings and regular communications with Executive Management, through the CEO.

During the reporting period the Board consisted of the following members:

Table 1: Board Members

No.	Name	Designation
1	Ms Ntsoaki Mngomezulu[1]	Chairperson of the Board (non-executive director)
2	Ms Judy Beaumont[2]	Non-executive director (DEA representative)
3	Ms Nandipha Madiba	Non-executive director

No.	Name	Designation
4	Prof Elizabeth Mokotong	Non-executive director
5	Mr Rowan Nicholls	Non-executive director
6	Ms Nana Magomola[3]	Chairperson of the Board (non-executive director)
7	Dr Phillip Dexter	Deputy Chairperson of the Board (non-executive director)
8	Adv Derick Block[4]	Non-executive director
9	Mr David Lefutso	Non-executive director
10	Dr Mphekgo Maila	Non-executive director
11	Ms Kelebogile Moroka-Mosia[5]	Non-executive director
12	Ms Sally Mudly-Padayachie	Non-executive director
13	Dr Tsakani Ngomane	Non-executive director (DEA representative)
14	Mr Itani Phaduli	Non-executive director
15	Ms Feziwe Renqe	Non-executive director
16	Mr Jerry Lengoasa[6]	Executive director (ex officio)
17	Mr Mnikeli Ndabambi[7]	Executive director (ex officio)

[1] Term expired in May 2018 for directors 1, 3 and 5.
[2] Term expired in December 2018 for directors 2 and 4.
[3] Directors 6, 7 and 10 were appointed in May 2018 and re-appointed in January 2019.
[4] Directors 8, 9 and 12 served in the previous Board and were re-appointed in January 2019.
[5] Directors 11, 13, 14 and 15 were appointed in January 2019.
[6] On leave of absence with effect from September 2018.
[7] Appointed as Acting Chief Executive Officer with effect from September 2018.

5.3 Attendance: Board Meetings

The Act stipulates that meetings of the Board must be held at least four times a year at such times and places as the Board may determine. The Board is also permitted in terms of the Act to hold special meetings. Meetings of the Board are scheduled in advance, as per the annual Board plan and special meetings are convened as specific circumstances dictate. During the year under review, the attendance record of the respective Directors was as follows:

Table 2: Attendance of meetings by board members

Board Members	21/04/18	28/05/18	18 & 19 /07/18 (Strategy Session)	30 & 31 /07/18	29/08/18 (Special)	04/09/18 (Special)	10/09/18 (Special)	29 & 30 /10/18	12/11/18	31/01/19	13/03/19 (Special)
Ms Ntsoaki Mngomezulu (Chairperson)	✔	✔	-	-	-	-	-	-	-	-	-
Ms Judy Beaumont	✔	✔	✔ - 1 day	✔ - 1 day	✘	✔	✔	✔	✔	-	-

Board Members	21/04/18	28/05/18	18 & 19 /07/18 (Strategy Session)	30 & 31 /07/18	29/08/18 (Special)	04/09/18 (Special)	10/09/18 (Special)	29 & 30 /10/18	12/11/18	31/01/19	13/03/19 (Special)
Ms Nandipha Madiba	✔	✔	-	-	-	-	-	-	-	-	-
Prof. Elizabeth Mokotong	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-
Mr Rowan Nicholls	✔	✔	-	-	-	-	-	-	-	-	-
Mrs Nana Magomola Chairperson)	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔
Dr Phillip Dexter (Deputy Chairperson)	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔
Mr Jerry Lengoasa (Chief Executive Officer – ex officio)	✔	✔	✔	✔	✔	-	-	-	-	-	-
Mr Mnikeli Ndabambi (Acting Chief Executive Officer – ex officio)	-	-	-	-	-	-	-	✔	✘	✔	✔
Adv Derick Block	✔	✔	-	✔	✘	✔	✔	✔	✘	✘	✘
Mr David Lefutso	✔	✔	✔	✔	✔	✔	✔	✔	✔	✘	✘
Dr Mphekgo Maila	-	-	✔	✔	✔	✔	✘	✔	✔	✘	✔
Ms Kelebogile Moroka-Mosia	-	-	-	-	-	-	-	-	-	✔	✔
Ms Sally Mudly-Padayachie	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔
Mr Itani Phaduli	-	-	-	-	-	-	-	-	-	✔	✔
Ms Feziwe Renqe	-	-	-	-	-	-	-	-	-	✘	✔
Dr Tsakani Ngomane	-	-	-	-	-	-	-	-	-	✘	✔

6. BOARD COMMITTEES

During the year under review, the Board continued with the following established Committees:

a. Audit and Risk Committee;
b. Human Resources and Remuneration Committee; and
c. Strategic Programmes Committee.

6.1 Audit and Risk Committee

The Audit and Risk Committee is a statutory committee of the Board, established in terms of section 77 of the PFMA, read with Treasury Regulation 27.1 published in terms of the PFMA. The Committee is accountable to the Board for the discharge of its responsibilities which include the following:

a. Reviewing and recommending for Board approval the SAWS budget for the financial year;
b. Monitoring SAWS financial performance (Management Accounts) against the approved Budget and Annual Performance Plan;
c. Reviewing the appropriateness of and compliance with accounting policies;
d. Reviewing the appropriateness of assumptions made by Management in preparing the Financial Statements;
e. Reviewing the significant accounting and reporting requirements and their impact on the Financial Statements;
f. Reviewing the integrity of financial reporting, including the Management Report to the Committee on important decisions taken during preparing the Financial Statements;
g. Reviewing the Annual Financial Statements for completeness and consistency with the prescribed accounting principles prior to recommending them for Board approval;
h. Reviewing, together with Management and the external auditors, the outcome of the external audit, including any significant issues identified;
i. Governance of risk;
j. Governance of Information and Communication Technology (ICT);
k. Monitoring internal controls and compliance;
l. Managing performance information;
m. 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;
n. Ensuring that the external auditors provide an assurance report on the contents of summarised financial information;
o. Regularly reporting to the Board about Committee activities, issues and related recommendations; and
p. Whistle blowing and reporting fraud.

During the 2018/19 financial year, the membership of the Audit and Risk Committee changed in line with changes in the Board as well as rotation of re-appointed directors to other Board Committees. The Committee held 5 meetings as follows:

Table 3: Meetings held by the Audit and Risk Committee

Board Members	20/04/18	21/05/18	26/07/18	22/10/18	21/01/19
Mr Rowan Nicholls (Chairperson)	✔	✔	-	-	-
Dr Phillip Dexter (Chairperson)	-	-	✔	✔	✔
Ms Nandipha Madiba	✔	✔	-	-	-
Mr Jerry Lengoasa (Chief Executive Officer – ex officio)	✔	✔	✔	-	-

Board Members	20/04/18	21/05/18	26/07/18	22/10/18	21/01/19
Mr Mnikeli Ndabambi (Acting Chief Executive Officer – ex officio)	-	-	-	✔	✔
Adv Derick Block	✔	✔	✔	✔	✔
Ms Nana Magomola[8]	-	-	✔	✔	✔
Dr Mphekgo Maila	-	-	✔	✔	-
Mr Itani Phaduli	-	-	-	-	✔

[8] Chairperson of the Board attended the meetings by invitation during the transitionary period.

6.2 Human Resources and Remuneration Committee

The Committee is accountable to the Board for the discharge of its responsibilities which include the following:

a. Fulfilling all of its responsibilities related to governance and strategic leadership matters within its scope;

b. Overseeing the quality, integrity and reliability of SAWS Human Capital Management processes and strategy;

c. Assisting the Board in discharging its duties, thereby ensuring that SAWS has an approved Human Resource Strategy and that adequate human resource related policies and systems are in place in compliance with all applicable legislation, regulations and governance frameworks;

d. Ensuring that the SAWS Human Capital Strategy is aligned with SAWS business objectives;

e. Reviewing Human Capital Management policies and processes, including the adequacy of organisational staffing plans and compliance with occupational health and safety regulations;

f. Considering and making recommendations to the Board on remuneration policies for all levels of personnel; setting remuneration policies in line with responsibilities; and making recommendations to the Shareholder on the Board's Remuneration Framework should it be deemed necessary;

g. Scrutinising all benefits including pensions, benefits in kind and other financial arrangements to ensure that they are justified, correctly valued and suitably disclosed;

h. Overseeing performance management processes;

i. Facilitating succession planning for the position of Chief Executive Officer;

j. Facilitating the annual performance assessment of the Chief Executive Officer and the Board;

k. Reviewing and approving any Divisional Business Plans and Frameworks that fall within its scope and monitoring the implementation thereof;

l. Ensuring that SAWS fulfils its human rights and labour-related responsibilities emanating from the ten Principles of the United Nations Global Compact and the OECD recommendations regarding anti-corruption; and

m. Overseeing Management's implementation of key strategic programmes within the scope of the Committee.

The membership of the Committee during the reporting period is reflected below and 5 meetings were convened for the execution of its responsibilities as follows:

Table 4: Meetings of the Human Resources and Remuneration Committee

Board Members	20/04/18	21/05/18	26/07/18	22/10/18	21/01/19
Adv Derick Block (Chairperson)	✔	✔	✔	✔	-
Ms Ntsoaki Mngomezulu	✔	✔	-	-	-
Mr Jerry Lengoasa (Chief Executive Officer – ex officio)	✔	✔	✔	-	-
Mr Mnikeli Ndabambi (Acting Chief Executive Officer – ex officio)	-	-	-	✔	✔
Mr David Lefutso	✔	✔	✔	✔	-
Ms Nana Magomola[9]	-	-	-	-	✔
Ms Kelebogile Moroka-Mosia	-	-	-	-	✔
Ms Sally Mudly-Padayachie	-	-	✔	✔	✔
Ms Feziwe Renqe (Chairperson)	-	-	-	-	✔

[9] Chairperson of the Board attended the meetings by invitation during the transitionary period.

6.3 Strategic Programmes Committee

The Committee is accountable to the Board for the discharge of its responsibilities which include the following:

a. Fulfilling all its responsibilities related to governance and strategic leadership matters within its scope;

b. Assisting the Board in discharging its duties by ensuring that appropriate research, scientific and commercial programmes are undertaken by SAWS;

c. Reviewing strategies/business plans related to key scientific and technical programmes, including but not limited to:

   i. Public good and commercial initiatives, including research;

   ii. Air quality and climate change; and

   iii. Any other strategic programmes and projects as may be identified from time to time.

d. Reviewing and monitoring the implementation of the Infrastructure Recapitalisation Programme;

e. Providing input on SAWS Strategic Plan, Annual Performance Plan and budget processes; and making approval recommendations to the Board, including approval in terms of the utilisation of capital budget;

f. Considering and making recommendations to the Board on any capital projects or procurement of any capital items that fall within its scope;

g. Monitoring the implementation of the Total Quality Management System;

h. Reviewing and approving any Divisional Business Plans and Frameworks that fall within its scope, in line with the Delegation of Authority, and monitoring the implementation thereof;

i. Encouraging SAWS to invest in operations that protect and enhance the well-being of the economy, society and the natural environment within which it operates, in line with the environment related Principles of the United Nations Global Compact and including the development and implementation of environmentally friendly technologies;

j. Assisting the Board in its oversight of environmental sustainability aspects of the integrated reporting; and

k. Overseeing the implementation of any key strategic programme(s) within the scope of the Committee; and

l. Performing any other activities as may be requested by the Board from time to time.

Below are the membership and meetings held by the Committee during the reporting period:

Table 5: Meetings of the Strategic Programmes Committee

Board Members	17/04/18	24/07/18	17/10/18	17/01/19
Mr David Lefutso (Chairperson)	✔	✔	✔	✔
Prof Elizabeth Mokotong	✔	✔	✔	-
Ms Judy Beaumont	✔	✔	✘	-
Mr Jerry Lengoasa (Chief Executive Officer – ex officio)	✔	✔	-	-
Mr Mnikeli Ndabambi (Acting Chief Executive Officer – ex officio)	-	-	✔	✔
Ms Nana Magomola	-	-	-	✔
Dr Mphekgo Maila	-	-	-	✔
Ms Sally Mudly-Padayachie	✔	✔	✔	-
Dr Tsakani Ngomane	-	-	-	✔

7. REMUNERATION OF BOARD MEMBERS

Section 9 of the Act provides 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. The SAWS is classified further for that purpose as a Category A Sub-category A1 entity.

The Minister of Finance approved a 5.5% cost of living adjustment for the 2018/19 financial year, which was implemented with effect from October 2018. The meeting attendance fees are shown below:

Table 6: Board Committee Meetings Attendance Fees

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

The Schedule indicating remuneration paid to each Board Member can be found on page 162 of the Annual Financial Statement Report.

8. RISK MANAGEMENT

In compliance with the requirements of the PFMA, the Board approved an Enterprise Risk Management Policy for the organisation. A complete risk identification and ranking exercise was conducted for 2018/2019 financial year in order to determine the risks facing the organisation. The strategic risks were reviewed and a revised register was considered and approved by the Board.

The ranking of the risks, based on the impact that the occurrence of the risk would have on an organisation as well as the likelihood of the risk actually occurring, is done taking into account all current strategies to mitigate against the occurrence of the identified risks.

The SAWS has a process in place to ensure monitoring of and reporting on the implementation of the risk mitigation strategies.

9. INTERNAL AUDIT CONTROL

During the period under review, SAWS conducted a co-sourced internal audit (IA). The Internal Control Unit utilises a co-sourcing strategy in order to ensure that skills and competencies are available for the internal auditing of complex areas. The section is headed by a Chief Audit Executive from SizweNtsalubaGobodo Grant Thornton Advisory Services (SNG-GT) who is accountable to the SAWS CEO and the Board, through the SAWS Audit and Risk Committee (ARC). This reporting ensures the effectiveness of the internal audit by guaranteeing that its work is done objectively and independently.

The audit is governed by the PFMA, Treasury regulations, and the Standards for the Professional Practice of Internal Auditing.

The purpose of the internal audit is to provide an independent, objective assurance and consulting service that is designed to add value and improve the organisation's operations. The activity will help SAWS accomplish its objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness of governance, risk management and control 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;
- Evaluating the effectiveness of controls over the reliability and integrity of management information;
- Ascertaining the level of compliance with relevant policies, plans, procedures, laws and regulations; 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

The following audit reviews were conducted in the period under review:

- Cybersecurity and Data Quality;
- Audit of Performance Information;
- Critical Skills Attraction and Retention;
- Contracting and Management of Suppliers;
- Research Innovation and Knowledge Management;
- Financial Statements Review;
- Infrastructure Performance;
- Follow-up audits; and
- Ad hoc reviews.

Human Resource Management

SAWS hosting Library Week March 2019

PART D

1. RAISING THE BAR ON TALENT MANAGEMENT AND BUILDING KEY CAPABILITIES

1.1 Key Leadership Pipeline

The South African Weather Service (SAWS) has created a leadership and innovation-driven environment to support the implementation of its mandate based on the constant need to adopt best practice talent management strategies. The organisation needs masterful leadership that engages people and nurtures an understanding of both strategy and implementation processes. Developing competencies at all levels from junior to executive is therefore an integral part of the SAWS Competency Development Strategy.

The focus of the SAWS management development programme is on building leadership competencies in line with SAWS strategic goals. These competencies include, amongst others, strategic thinking; the creation of synergies through collaborations; inspirational leadership; business and financial acumen; and strategic project management.

The Regional Training Centre (RTC) team represented SAWS internationally, firstly as a member of the Executive Committee for Education and Training for the World Meteorological Organization (WMO) and secondly as a core member of the Expert Team for Education, Training and Competencies for Education and Training (ET) and Education and Training of Executive Committee (ETC) for the WMO.

The RTC also hosted the annual international meeting of the Coordinating Committee (CoComm) for the Standing Conference of Heads of Training Institutions (SCHOTI) and was represented at the EUMETSAT User Forum meeting held in Abidjan, Cote d'Ivoire. The Head of the RTC, who is the co-chair of the WMO panel for the review of the Basic Instruction Package for Meteorologists and Meteorological Technicians, attended the Virtual Laboratory Management Group meeting in Fort Collins.

The RTC was reviewed by the WMO in September and received positive comments from the review team; indicating that the RTC is still in very good standing with WMO requirements. The final report for this review is expected during 2019/20 financial year.

The SAWS was requested during this period to train forecasters in Turkey on the use of the flash flood guidance system, and this was undertaken by one of the RTC's forecasting meteorological trainers, highlighting the important role that the SAWS RTC plays on the continent.

1.2 Retention of Scarce and Critical Skills

The organisation remained committed to the development and implementation of key retention strategies to ensure talent growth and the availability of strategy-driven human capital.

The Learning and Development programme yielded relatively good results in terms of building the leadership pipeline and organisational bench strength. Candidates who participated in the programme experienced growth in meeting their development needs and some had the opportunity to move into other roles that will provide growth opportunities.

1.3 Talent Management Framework

During the fiscal year, the organisation made headway in putting together an integrated Talent Management Framework. The framework aims to set direction and establish the means for SAWS to attract, identify, develop and retain talent and leadership capability of the highest quality and capability. The framework will be implemented in the next fiscal year to ensure all projects are actualised through the approved Talent Management Framework.

1.4 Career Pathing

The SAWS revived its Career Pathing exercise which had been attempted in previous years. The project seeks to create clear progression of jobs in the organisation. It allows employees to move vertically, horizontally, laterally or cross functionally to a different type of job or outside the organisation altogether. Due to

the size of the project, the project will be rolled out in phases. Phase 1 was completed and approved during the report period, with the completion of 13 career paths. Phase 2 will see completion of career paths for the entire organisation, creation of job profiles, and development of management and employee toolkits for implementation.

1.5 Salary Parity

The organisation embarked on a salary parity exercise aimed at ensuring that employees are paid within a managed pay scale that is competitive within the labour market and implemented fairly and consistently for all employees.

Historically there has been a considerable salary gap between employees within the organisation due to, among other things, historical factors pre-dating SAWS agentisation, limited annual salary progression (excluding annual inflationary adjustments) and significant differences between SAWS pay scales and the market in the remuneration of certain positions, especially in the core competencies.

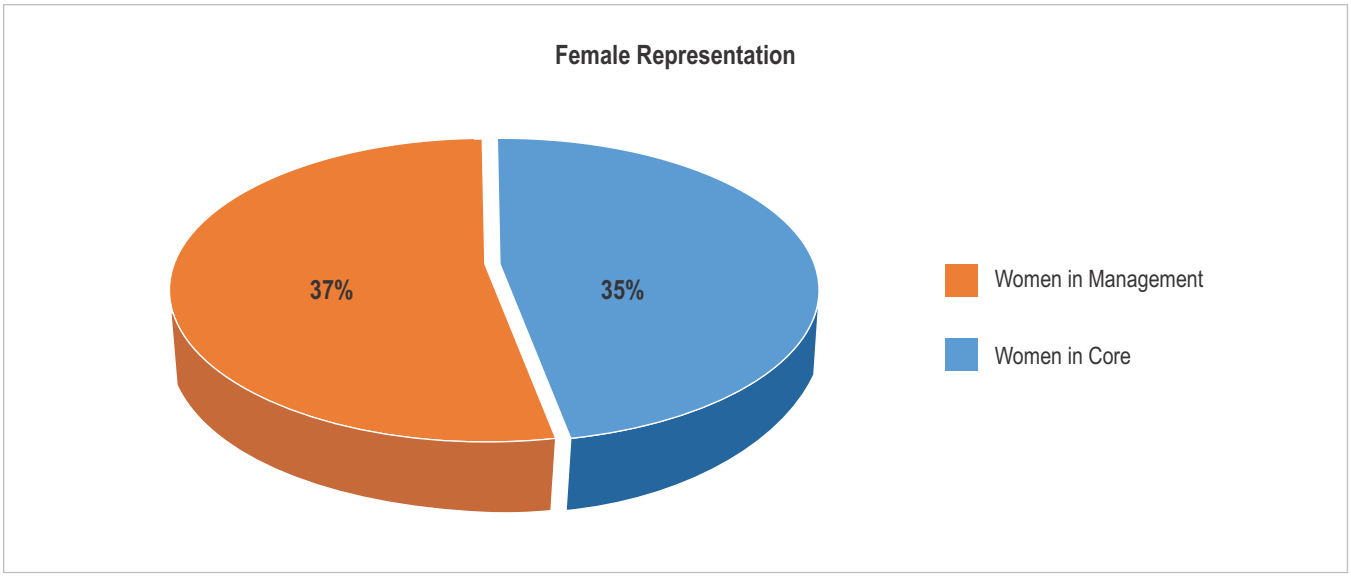
The exercise was approved for implementation over three years starting in the 2017/18 financial year and with implementation taking place in three phases.
Phase 1 took place in the 2017/18 financial year, phase 2 resumed during 2018/19 and is expected to be concluded in 2019/20.

1.6 Employment Equity

The SAWS has done fairly well within its available means to ensure the availability of the requisite skills to drive the mandate of the organisation. This was done taking into consideration the country's demographics with the aim to achieve the required level of representation of designated groups in the workforce of SAWS.

The appointment of women in key positions is a priority of the organisation, notwithstanding budget constraints. Succession planning and management development programmes remained key to bridge the gap and develop women for managerial positions within the organisation.

Further, with the assistance of recruitment agencies that specialise in placement of people with disabilities, the organisation made provision for people with disabilities. The representation of women in management, as shown in the pie chart below, was at 37% and women in core areas at 35%.



Graph 1: Female representation

Table 1: Employment equity

Occupational Levels	Gender								Total		
	Male				Female				Foreign Nationals		
	A	C	I	W	A	C	I	W	Male	Female	
Top management	2				2						4
Senior management	7		1	1	4			2			15
Professionally, mid-management	42	4	1	26	27	1		10	5	1	117
Skilled technical, junior management	68	6	3	23	56	8	2	14	1		181
Semi-skilled	49	8		7	47	7	1	4	1		124
Unskilled	15	4			5						24
TOTAL PERMANENT	**183**	**22**	**5**	**57**	**141**	**16**	**3**	**30**	**7**	**1**	**465**
Temporary employees	8				10	1					19
GRAND TOTAL	**191**	**22**	**5**	**57**	**151**	**17**	**3**	**30**	**7**	**1**	**484**

Table 2: Comparison of SAWS and national demographic profiles

Race	National Demographics	Baseline as at 31/03/2017	SAWS Target as at31/03/2019	SAWS Performance	Deviation from Targets
Africans	81%	67%	74%	72%	-1.7%
Whites	8%	20%	15%	17%	2.6%
Coloureds	9%	8%	9%	8%	-0.9%
Indians	3%	2%	3%	2%	-1%
Foreigners	0%	2%	0%	2%	2%
Total	100%	100%	100%	100%	-
Persons with Disabilities	2%	2%	3%	2%	-1%

1.7 People with Disabilities

As at 31 March 2019, there were 10 people with known disabilities within the organisation.
The SAWS aims to increase the intake of employees with disabilities through recruitment and its learnership/ internship programmes over the next three financial years as part of its three-year Employment Equity Plan.

2. GRADUATE PROGRAMME

The organisation sees graduates as crucial to growing the talent pipeline in order to meet future core capability needs and to drive the organisation forward. SAWS Graduate Programme seeks to:

- Build a healthy 'home-grown' talent pool for business sustainability and growth (both technical and non-technical in line with each division's future skills requirements);
- Identify, attract, recruit, develop and promote graduates who possess scarce and/or critical skills or have potential as part of broader succession planning;
- Fast-track the development of graduates by preparing them for more demanding roles through 'fit for purpose' programmes aimed at strengthening both the technical and leadership skills bench in the organisation;
- Actively participate in addressing the socioeconomic challenges associated with the high youth unemployment rate in Africa.

2.1 Bursary Scheme

To promote life-long learning and to develop a talent pool that can meet the SAWS mandate and national imperatives, SAWS extends educational assistance to full-time students and to its employees for part-time studies.

In the year under review, 15 full-time bursars were absorbed and appointed within the organisation.

The SAWS takes pride in the fact that by employing young people, it contributes to the alleviation of poverty in the country and improving the status and quality of education.

Table 3: Bursary Statistics as at 31 March 2019

Item	Full-time	Part-time	Total
Number of bursars for 2018	39	36	75
Number of bursars absorbed	15	0	15

**The bursaries awarded in February 2019 are not reflected.*

Graduation Day for SAWS bursars and Learning & Developement personnel in November 2018

2.2 Internship Programme

The SAWS is helping to address youth unemployment and the skills shortage through its Learnership programme. Internships offer graduates an opportunity to extend their academic qualifications through structured workplace exposure and specialised training. The programme focuses on the marketing, finance, legal, business administration, human resources management, commercial and core business fields, offering both a learning and work experience component over a period of 24 months. Thereafter learners are either considered for vacant positions in the organisation or made available to the market.

In the 2018/19 financial year, 12 graduates participated in the SAWS Internship programme.

Table 4: Internship Statistics at 31 March 2019

Female	Male	Total	Support	Core
5	7	12	5	7
42%	58%	100%	42%	58%

3. SKILLS DEVELOPMENT

The SAWS offers training and development programmes across all levels in the organisation, which include mentorships, partnerships with accredited institutions and various online courses. In the year under review, the focus was on developing the leadership capabilities, commercially-related skills and other core business skills needed for the organisation to deliver on its mandate. These programmes are structured to ensure brand differentiation, offer premium customer experience, improve performance and retain employees. During the report period, over 350 employees received training in various interventions.

Table 5: Training interventions as at 31 March 2019 (2018-2019 Interventions male vs female)

Training Programme	Gender		Functions		Totals
	Male	Female	Support	Core	
Accounts Receiveable	1	4	5	0	5
Aviation Met Observer (AMO) Assessor Training	11	2	0	13	13
Andriod Mobile Development Training	16	6	1	21	22
Assessor Training	17	1	0	18	18
Basic Electronics Course	9	1	0	10	10
Certificate in Occupational Health 1	0	1	0	1	1
Conflict management & Emotional Intelligence	2	9	4	7	11
Effective Stakeholder Management	1	0	1	0	1
ENVITECH TRAINING	6	1	0	7	7
Fire Awareness	17	6	5	18	23
First Aid level 1	13	8	4	17	21
Integrated Management System	7	4	3	8	11
GRP SARA	0	1	1	0	1

Training Programme (continued)	Gender		Functions		Totals
	Male	Female	Support	Core	
Legal Liability Course	10	8	6	12	18
ICT: Developing ASP.NET MVC4 Web Applications	1	0	0	1	1
ICT: Planning & Administering SharePoint	1	0	0	1	1
ICT: Programming HTML5 with JavaScript and CSS3	1	0	0	1	1
ICT: Planning & Administering SharePoint	1	0	0	1	1
SQL Training	0	2	0	2	2
Talent Management	0	5	5	0	5
Risk Ethics Integrated Public Sector Governance Workshop	0	1	0	1	1
Supervisory Management	0	1	0	1	1
VWWare Sphere	1	0	0	1	1
HR Directors Conference	1	0	1	0	1
PFMA SM/M	11	12	14	9	23
SHEQ Champion Office 365 Training	15	14	9	20	29
Advanced Operation Management Online	9	1	0	10	10
Defensive Gravel & 4x4 Training	8	0	1	7	8
Machine Learning and Data Analytical Short Course	9	8	0	17	17
Microsoft Excel and Word	7	3	4	6	10
Project Management	3	3	1	5	6
Working at Height Training	21	3	0	24	24
Hazard Identification and Risk Assessment	8	2	3	7	10
SHE REP	9	14	5	18	23
Individual Voice Programme	0	3	3	0	3
Medical Testing	5	0	0	5	5
Relationship Management Training	0	13	4	9	13
Women Leadership Training Course	0	13	4	9	13
Hands on Supply Chain Training	8	6	14	0	14
Total	**229**	**156**	**98**	**287**	**385**
Learnerships: Forecasting	6	5	0	11	11
Learnerships: Met Techs	7	9	0	16	16
Internship	7	5	5	7	12
Bursaries - Full Time	11	11	0	22	22
Bursaries - Part-Time	28	19	13	34	47

Total courses	Male	Female	Total
	229	156	385
	Support	Core	Total
	98	287	385

Table 6: Training Statistics as at 31 March 2019 (Male vs Female and Core vs Support)

Female	Male	Total	Support	Core
156	229	385	98	287
41%	59%	100%	25%	75%

3.1 Regional Training Centre (RTC)

The organisation is committed to developing capacity to support the organisation's strategic objectives and to grow the talent pool for the country. As the SAWS capacity building wing, the RTC was established to identify the skills needs of SAWS and the SADC region and to make the relevant training available to public entities, NGOs, private organisations and corporates.

In line with WMO requirements, the RTC offers longer formal courses, short courses or workshops and technical distance learning, amongst other international activities. The training programmes are structured around existing human capital training demands and anticipated future needs in the meteorological arena.

During the 2018/19 financial year, the RTC did well within its means to build the skills required for an effective organisation. In terms of long-term courses, five Forecasting students successfully completed the Postgraduate Weather Forecasting Certificate. Ten (out of a total 12) Meteorological Technicians (including one private candidate) completed the Weather Observer Certificate delivered by the RTC. The 2019 intake included 12 Forecasters (five of whom are women) and seven Meteorological Technicians (five women, one private student and two men).

Fruitful engagements with numerous stakeholders resulted in further international collaborations which contributed to SAWS global exposure and positioning. During the year under review, four international workshops were held in the RTC: The annual METEOSAT Second Generation (MSG) interpretation workshop for forecasting; a climate satellite interpretation course (with 16 participations from Africa and four from South Africa); an operational marine surface analyses course (including one participant from Argentina) and an international aviation workshop for forecasters involved in competency assessments. Via the Newton Fund, other training initiatives were acted on like the SIGMET simulator training (facilitated by Helen Caughey from UKMO) for the forecasting students and the marine sharing meeting by Chris Almond.

Commercial training was given to Mozambique forecasters with a three-week training of satellite interpretation and a four-week training on aviation forecasting competencies.

Training was also provided to 11 assessors on how to assess the Aviation Meteorological Observer Competencies.

The RTC was also involved with the setting of the outcomes-based assessments for the qualification Quality Council for Trades and Occupations (QCTO) for the Meteorological Technician Course.

4. EMBEDDING A SAFETY CULTURE

The SAWS continued to strive to create a conducive working environment. The organisation embarked on a project to integrate the TQM and OHS into Safety Health Environment and Quality (SHEQ) Management System, which will set the tone for additional certification in ISO 45001:2008 (OHS) as well as ISO 14001:2015 (Environmental Management) in subsequent financial years. A Hazard Identification and Risk Assessment (HIRA) Project was embarked on, to identify occupational hazards that employees are exposed to in their line of operations.

4.1. Integrated TQM and OHS Framework implemented

The project for the integration of TQM and OHS into SHEQ was successfully finalised, and the SHEQ Management System on SharePoint was launched on 28 March 2019. All SHEQ champions in all business units were capacitated/trained on the new system.

4.2 Hazards Identification and Risk Assessment Project

The SAWS acquired the services of Alviwize to assist with identifying occupational hazards that employees are exposed to in their daily line operations.

The following offices were sampled:

- Bloemfontein
- Bethlehem
- OR Tambo
- Irene
- GAW
- Head office

The HIRA project was completed in these selected offices and a report was presented to EXCO. Action plans for implementation of the recommendations will be developed.

Table 7: Incidents

Fatalities	0
Major incidents	1
Minor incidents	4
Near-miss incidents	None reported
Environmental incidents	None reported
Total	5

5. EMPLOYEE WELLNESS

5.1 Wellness and Financial day

The SAWS hosted its annual employee wellness day at all its offices across the country in partnership with a few external stakeholders.

Several medical aid schemes supported their members by providing blood tests, glucose and HIV/Aids tests and other essential services to check and verify their health.

Investment, insurance and financial advice company, Old Mutual and banks were in attendance to advise members on how to be financially healthy in the current economy.

Virgin Active provided fitness services and signed up some employees for gym membership to aid in keeping fit and healthy.

Fitness session with Virgin Active

Old Mutual and banks advising members

SAWS recognised a former employee for long service during its Annual Awards function in November 2018

6. CULTURE AND CHANGE MANAGEMENT

6.1 Culture Change

The SAWS seeks to activate and reinvigorate a winning mentality and drive for innovation, to ensure accountability and to inculcate SAWS behaviours of a customer-centric focus, agility, collaboration and trust throughout the organisation.

The organisation recognises that, for an organisational culture to remain vibrant, strong governance needs to be in place. It therefore invested in time and resources to review key policies as a vehicle for change. A total of six policies were reviewed and approved during the year in review. These policies will drive culture change in the organisation.

6.2 Improving Human Capital Management (HCM)

Visibility

A total of 15 roadshows were conducted during 2018/19 across SAWS regional offices, affording employees an opportunity to engage directly with HCM leadership and business partners and obtain quick and direct responses to people-related queries on matters such as the salary parity exercise, performance management and career growth at SAWS.

The Remuneration and Benefits team and service providers also held sessions across the country to showcase some of SAWS benefits, including medical aid and pension funds. The HCM understands the need and value of continuous employee engagement and visibility and therefore planned further nationwide engagements to provide updates and information on strategic projects.

6.3 Building a Lean and Effective Organisation through

Organisational Design

To ensure sustainability and maintain SAWS competitive edge, it is imperative that the organisation is supported by technologically advanced infrastructure; efficient processes and systems; competent human capital with the right set of skills, attitude and behaviour; and a supportive organisational structure.

The SAWS embarked on the Phase 2: Realignment and Restructuring exercise aimed at achieving business optimisation, efficiency and effectiveness. The exercise included a review of the regional structure, specifically at management level, to ensure that it supports SAWS integrated strategic plan and direction.

The realignment was accompanied by a job evaluation process to ensure appropriate placement in the structure and appropriate responsibility allocation and remuneration. A total of 60 jobs were evaluated in 2018/19, with the remainder to be evaluated as the project progresses. The SAWS also reviewed and changed its operating model by introducing centres of excellence (COEs) in various specialist areas as part of enhancing service delivery across the organisation.

7. RECOGNITION PROGRAMMES

7.1 Employee Excellence and Long Service Awards

As part of SAWS winning formula, the organisation takes pride in its people and continually recognises internal role models who embody the organisation's values in everything they do.

Celebrating successes together is an important way in which these individuals are motivated and rewarded for their contribution to the business, and the SAWS Employee Excellence Awards are a fitting way to acknowledge and honour achievements without which the organisation's strategic goals and sustainability cannot be assured.

At the Awards ceremony held in November 2018, SAWS recognised employees who have completed 10, 15, 20, 25, 30 and 35 years of service, as well as employees who provided exceptional service and went the extra mile.
Through these awards SAWS aims to continuously salute and applaud employees with years of dedicated service to the organisation and encourage a culture of high innovation and performance.

8. DISCIPLINARY PROCESSES

Three cases of employee misconduct were reported in the period under review. The employees were suspended and the disciplinary hearings are underway. Three grievances were reported and two have been finalised. Two CCMA cases were referred by former employees and they are at arbitration stage.

Financial Information

PART E

AUDIT AND RISK COMMITTEE REPORT

The Audit and Risk Committee (Committee) is pleased to present its annual report for the financial year ending 31 March 2019.

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) and Treasury Regulation 27.1.8, including the review and adoption of the Charter that regulates the Committee's mandate and the execution thereof.

1. Audit and Risk Committee Membership and Attendance of Meetings

The Committee is constituted as a statuary committee and has an independent role with accountability to the Board. The composition of the Committee and the attendance of meetings during the period under review are listed under the Governance Section of the Annual Report, page 81 paragraph 5.3.

2. Committee's Responsibilities

The main responsibilities of the Committee, as outlined in the Committee's Charter include, amongst others:

- Review of the financial management processes and the adequacy of internal controls;
- Review of the Annual Financial Statements, the Annual Report and related regulatory filings before these are released, in order to consider the validity, accuracy and completeness of the information;
- Governance of risk and Information Communication Technology (ICT);
- Overseeing the internal and external audit functions and related audit processes;
- Review of SAWS' compliance with the performance management and reporting systems;
- Review of the risk profile and management action plants at the SAWS to address the identified risks; adequacy of adopted risk responses and progress made; and
- Ensuring that all the disclosures and/or reporting requirements to the Board, the Shareholder, the National Treasury and the Auditor-General are adhered to.

3. The Effectiveness of Internal Controls

The implementation of effective and efficient internal controls and procedures is an ongoing process. During the current 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 SAWS into consideration.

The Committee reviewed the reports from both internal and external auditors and based on these reviews, it 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.

The audit findings issued by the Auditor-General (AGSA) from the 2017/18 audits were to the extent possible addressed by SAWS; and some findings either partially resolved or not resolved. The Committee has implemented a dashboard that is presented at all Committee meetings to track progress on resolution of findings.

4. The quality on in-year management and quarterly reports submitted in terms of the PFMA

The Committee was satisfied with the content and quality of quarterly reports prepared and issued by SAWS during the year under review. Furthermore, the Committee reviewed the actual performance of SAWS against the strategic objectives and targets set in the Annual Performance Plan for 2018/19. Where required, the Committee made recommendations for enhancements of the reports.

5. Evaluation of the Annual Financial Statements and Annual Report

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 the SAWS' compliance with legal and regulatory provisions;
- Reviewed significant adjustments resulting from the audit; and
- Reviewed of the information on predetermined objectives to be included in the annual report.

6. Summary of Main Activities undertaken by the Committee during the Financial Year under Review

The Committee attended to the following matters:

- The quarterly review of performance (financial and non-financial) against the 2018/19 budget and the Annual Performance Plan (APP);
- Review of the annual budget for the 2019/20 financial year for the Board's consideration and approval;
- A review of the Annual Financial Statements for the year ended 31 March 2019;
- The review of governance frameworks, such as the SAWS Risk Profile (Strategic Risk Register), the determination of SAWS' risk appetite; and monitoring the implementation thereof;
- Monitoring the implementation of the Risk Management, Information Communication Techno-logy Strategy and Legal activities, with reports on these submitted as standing items at all Committee meetings; and
- Keeping the Board informed of key issues within the Committee's scope; with Committee Reports submitted and presented at all Board meetings.

7. Internal Audit

At the end of the 2018/19 financial year, the internal auditors reported that they had executed all the activities expected of them in terms of the Internal Audit Plan for the reporting period and concluded that the controls environment within SAWS was partially adequate and partially effective. The internal auditors made recommendations in relation to the weaknesses identified and it is anticipated that a tightening of controls across the board will significantly improve the internal controls environment.

8. Auditor-General of South Africa

The Committee has met with the Auditor-General of South Africa to ensure that there are no unresolved issues, and it concurs with the conclusions of the Auditor-General of South Africa for the 2018/19 financial period.

9. Other Audits

Several allegations of fraud, corruption and mismanagement were reported (some anonymously) to the Executive Authority, National Council of Provinces and the Office of the Public Protector of South Africa (PPSA). Based on the veracity of the allegations, some were investigated internally and others by the Ministry of Environment, Forestry and Fisheries and the Office of the Public Protector. As at the end of the reporting period, two investigations had been finalized and implementation of remedial actions is underway.

Dr Phillip Dexter
Chairperson of the Audit and Risk Committee

Date: 21/08/2019

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

REPORT ON THE AUDIT OF THE FINANCIAL STATEMENTS

Qualified opinion

1. I have audited the financial statements of the South African Weather Service set out on pages 107 to 168, which comprise the statement of financial position as at 31 March 2019, the statement of financial performance, statement of changes in net assets, and cash flow statement and the statement of comparison of budget and actual amounts for the year then ended, as well as the notes to the financial statements, including a summary of significant accounting policies.

2. In my opinion, except for the effects of the matter described in the basis for qualified opinion section of this auditor's report, the financial statements present fairly, in all material respects, the financial position of the South African Weather Service as at 31 March 2019 and its financial performance and separate cash flows for the year then ended, in accordance with the South African Standards of Generally Recognised Accounting Practice (SA Standards of GRAP) and the requirements of the Public Finance Management Act of South Africa, 1999 (Act No.1 of 1999) (PFMA).

Basis for qualified opinion

Property, plant and equipment

3. The public entity did not correctly apply the accounting treatment for a change in accounting estimates to property, plant and equipment, as required by GRAP 3, Accounting policies, estimates and errors. A prior period error adjustment, as disclosed in note 34 to the financial statements, was processed based on a review that was performed during the current financial year of the useful lives of items of property, plant and equipment. The public entity incorrectly effected accounting adjustments retrospectively instead of prospectively. Consequently, the property, plant and equipment, the depreciation charge as well as the accumulated surplus were misstated by the adjustments processed to the opening balances of the comparative figures presented. I was unable to determine the impact on the net carrying amount of the property, plant and equipment, depreciation charge, deficit for the year and accumulated surplus as it was impracticable to do so. In addition, the public entity did not record adjustments for all indications of impairment relating to property, plant and equipment in accordance with GRAP 21, Impairment of non-cash-generating assets. This resulted in an overstatement of property, plant and equipment by R 9 840 209 as disclosed in note 9 to the financial statements.

Intangible assets

4. The public entity did not correctly apply the accounting treatment for a change in accounting estimates to the intangible assets, as required by GRAP 3, Accounting policies, estimates and errors. A prior period error adjustment, as disclosed in note 34 to the financial statements, was processed based on a review that was performed during the current financial year of the useful lives of items of intangible assets. The public entity incorrectly effected accounting adjustments retrospectively instead of prospectively. Consequently, the intangible assets, amortisation charge as well as the accumulated surplus were misstated by the adjustments processed to the opening balances of the comparative figures presented. I was unable to determine the impact on the net carrying amount of intangible assets, amortisation charge, deficit for the year and accumulated surplus as it was impracticable to do so. In addition, the public entity did not record adjustments for all indications of impairment relating to intangible assets in accordance with GRAP 21, Impairment of non-cash-generating assets which resulted in an overstatement of intangible assets by R 6 835 481 as disclosed in note 10 to the financial statements.

Commitments

5. The public entity did not disclose commitments in accordance with GRAP 1, Presentation of financial statements. Processes to determine the remaining amounts on contractual commitments mainly did not take into account all contractual commitments entered into by the public entity during the year and did not adequately adjust for foreign denominated contracts. As a result, the disclosure for commitments in note 31 to the financial statements, was understated by R 6 449 633.

Context for the opinion

6. 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 this auditor's report.

7. I am independent of the public entity in accordance with sections 290 and 291 of the International Ethics Standards Board for Accountants' Code of ethics for professional accountants (IESBA code), parts 1 and 3 of the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) and the 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 codes.

8. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my qualified opinion.

Emphasis of matters

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

Restatement of corresponding figures

10. As disclosed in note 34 to the financial statements, the corresponding figures for 31 March 2018 were restated as a result of an error in the financial statements of the public entity at, and for the year ended, 31 March 2019.

Material deficit for the year

11. As disclosed in the statement of financial performance, a material deficit of R 68 962 361 was incurred for the 2018-19 financial year as a combined result of the entity failing to meet the conditions of conditional grants received and budgeting for an overall deficit during the annual budgeting process.

Responsibilities of the accounting authority for the financial statements

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

13. In preparing the financial statements, the accounting authority is responsible for assessing the South African Weather Service'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

14. 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.

15. 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

16. In accordance with the Public Audit Act of South Africa, 2004 (Act No. 25 of 2004) (PAA) and the general notice issued in terms thereof, I have a responsibility to report material findings on the reported performance information against predetermined objectives for selected objectives

18. 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 objectives presented in the annual performance report of the public entity for the year ended 31 March 2019:

Objectives	Pages in the annual performance report
Strategic objective 1.1 – develop and provide meteorological and related products and services for targeted communities nationally	71
Strategic objective 1.2 – develop and market meteorological and related products and services for specific economic sectors	72
Strategic objective 2.1 – upgrade, expand and optimise Infrastructure	73
Strategic objective 3.1 – position SAWS as a relevant meteorological institution	76
Strategic objective 3.3 – compliance with designated national and international standards.	76

19. I performed procedures to determine whether the reported performance information was 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.

20. The material findings in respect of the usefulness and reliability of the selected strategic objectives are as follows:

Strategic objective 1.2 – develop and market meteorological and related products and services for specific economic sectors

Various indicators

21. The planned target for the following indicators were not specific in clearly identifying the nature and required level of performance:

Indicator number	Indicator description	Target
Indicator 1.2.3 – part 1	% of aerodrome warning achieved.	Maintain watch of hazardous meteorological conditions affecting flight operations (safety and efficiency) within the flight information region.
Indicator 1.2.3 – part 2	% of terminal aerodrome forecast accuracy achieved.	

22. I did not raise any material findings on the usefulness and reliability of the reported performance information for these strategic objectives:

- Strategic objective 1.1 – develop and provide meteo-rological and related products and services for targeted communities nationally
- Strategic objective 2.1 – upgrade, expand and optimise Infrastructure
- Strategic objective 3.1 – position SAWS as a relevant meteorological institution
- Strategic objective 3.3 – compliance with designated national and international standards.

Other matters

23. I draw attention to the matters below.

Achievement of planned targets

24. Refer to the annual performance report on page 71 to 77 for information on the achievement of planned targets for the year and explanations provided for the achievement of a significant number of targets. This information should be considered in the context of the material findings on the usefulness and reliability of the reported performance information in paragraph 21 of this report.

Adjustment of material misstatements

25. I identified material misstatements in the annual performance report submitted for auditing. These material misstatements were on the reported

performance information of strategic objective 1.2, strategic objective 2.1, and strategic objective 3.1. As management subsequently corrected only some of the misstatements, I raised material findings on the usefulness and reliability of the reported performance information. Those that were not corrected are reported above.

REPORT ON THE AUDIT OF COMPLIANCE WITH LEGISLATION

Introduction and scope

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

27. The material findings on compliance with specific matters in key legislations are as follows:

Financial statements, performance and annual reports

28. The financial statements submitted for auditing were not prepared in accordance with the prescribed financial reporting framework, as required by section 55(1)(a) and (b) of the PFMA.

29. Material misstatements of current assets, current liabilities, revenue, employee cost, cash flow- and disclosure items identified by the auditors in the submitted financial statements were corrected and the supporting records were provided subsequently, but the uncorrected material misstatements resulted in the financial statements receiving a qualified opinion.

Expenditure management

30. Effective and appropriate steps were not taken to prevent irregular expenditure amounting to R 37 607 987 as disclosed in note 37 to the annual financial statements as required by section 51(1)(b)(ii) of the PFMA. Most of the irregular expenditure disclosed in the financial statements was caused by the public entity's actual expenditure exceeding its budgeted expenditure and procurement processes not being followed in the acquisition of office accommodation.

31. Effective steps were not taken to prevent fruitless and wasteful expenditure amounting to R 953 196, as disclosed in note 36 to the annual financial statements, as required by section 51(1)(b)(ii) of the PFMA. The majority of the fruitless and wasteful expenditure was caused by late employee tax payments being made to the South African Revenue Service.

32. Expenditure was incurred in excess of the approved budget, in contravention of section 53(4) of the PFMA.

Consequence management

33. I was unable to obtain sufficient appropriate audit evidence that disciplinary steps were taken against some of the officials who had incurred irregular, fruitless and wasteful expenditure as required by section 51(1)(e)(iii) of the PFMA. This was due to proper and complete records that were not maintained as evidence to support the investigations into irregular, fruitless and wasteful expenditure.

Revenue management

34. Effective and appropriate steps were not taken to collect all revenue due, as required by section 51(1)(b)(i) of the PFMA.

Procurement and contract management

35. Some of the goods and services with a transaction value below R500 000 were procured without obtaining the required price quotations, as required by treasury regulation 16A6.1.

OTHER INFORMATION

36. The accounting authority is responsible for the other information. The other information does not include the financial statements, the auditor's report and those selected objectives presented in the annual performance report that have been specifically reported in this auditor's report.

37. 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 thereon.

38. 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 objectives presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

39. 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

40. 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 basis for the qualified opinion, the findings on the annual performance report and the findings on compliance with legislation included in this report.

41. As indicated in paragraphs 28 and 29, the financial statements contained numerous misstatements, only some of which could be corrected. In some instances, this was due to staff not fully understanding the requirements of the financial reporting framework.

42. Review controls within the entity were not adequately implemented as numerous findings were raised on errors in the submitted financial statements and annual performance report that should have been detected and corrected timeously. The findings were mainly due to inadequate application of the requirements of the financial reporting framework and the performance manage-ment and reporting framework.

43. Compliance monitoring controls in place were not effective in reducing repeat compliance findings, which has resulted in the audit outcomes not improving over the recent years.

44. Non-compliance with legislation could have been prevented had compliance been properly reviewed and monitored.

OTHER REPORTS

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

46. An independent consultant investigated an allegation of possible financial misconduct at the request of the accounting authority, which covered the period December 2017 to April 2019. The investigation was concluded in April 2019 and resulted in a recommendation of criminal proceedings against the official. These proceedings were in progress at the date of this auditor's report.

47. An investigation was performed by the public protector into a possible irregular appointment of an official. The investigation was concluded in April 2019 and resulted in a conclusion that the appointment was irregular with remedial action prescribed by the report. The implementation of the remedial action was in progress at the date of this auditor's report.

Auditor General

Pretoria
20 August 2019

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 related to events or conditions that may cast significant doubt on the South African Weather Service's ability 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 the 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 continuing as a going concern

- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and 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 confirm to the accounting authority that I have complied with relevant ethical requirements regarding independence, and communicate all relationships and other matters that may reasonably be thought to have a bearing on my independence and, where applicable, related safeguards.

STATEMENT OF FINANCIAL POSITION
as at 31 March 2019

	Note(s)	2019	2018 Restated*
Assets			
Current Assets			
Inventories	3	5 624 406	3 475 093
Receivables from exchange transactions	4	10 897 279	9 131 700
Statutory receivables	5	12 203 113	17 820 168
Prepayments	6	7 733 560	9 233 433
Cash and cash equivalents	7	60 691 221	100 626 617
		97 149 579	**140 287 011**
Non-Current Assets			
Investment property	8	69 277 188	67 487 940
Property, plant and equipment	9	361 293 969	365 138 863
Intangible assets	10	28 897 515	26 829 212
		459 468 672	**459 456 015**
Total Assets		**556 618 251**	**599 743 026**
Liabilities			
Current Liabilities			
Operating lease liability	11	2 759 322	3 834 076
Payables from exchange transactions	12	30 119 532	30 774 534
Short term employee benefits	16	5 334 974	4 717 707
Unspent conditional grants and receipts	13	15 955 833	12 019 918
Provisions	14	8 058 746	15 500 000
Unspent government grant - CAPEX	15	27 516 777	-
		89 745 184	**66 846 235**
Non-Current Liabilities			
Employee benefit obligation	16	4 123 025	4 861 028
Provisions	14	489 234	457 491
		4 612 259	**5 318 519**
Total Liabilities		**94 357 443**	**72 164 754**
Net Assets		**462 260 808**	**527 578 272**
Reserves			
Revaluation reserve		56 863 786	53 218 890
Accumulated surplus		405 397 022	474 359 382
Total Net Assets		**462 260 808**	**527 578 272**

* See Note 34

STATEMENT OF FINANCIAL PERFORMANCE
as at 31 March 2019

	Note(s)	2019	2018 Restated*
Revenue			
Revenue from exchange transactions			
Commercial revenue	18	160 608 681	154 956 083
Other revenue	18	1 229 755	1 109 806
Interest received - investment	19	4 592 966	6 730 004
Total revenue from exchange transactions		**166 431 402**	**162 795 893**
Revenue from non-exchange transactions			
Transfer revenue			
Government grants & subsidies	20	209 488 223	240 482 000
Public contributions and donations	21	6 844 361	4 048 344
Total revenue from non-exchange transactions		**216 332 584**	**244 530 344**
Total revenue	17	**382 763 986**	**407 326 237**
Expenditure			
Employee related costs	22	(261 335 504)	(222 481 103)
Administration	23	(16 436 159)	(9 315 862)
Depreciation and amortisation	24	(32 755 614)	(30 268 379)
Impairment loss	25	(169 114)	(4 574 712)
Finance costs	26	(953 196)	-
Operating Expenses	27	(141 827 101)	(132 044 949)
Total expenditure		**(453 476 688)**	**(398 685 005)**
Operating (deficit) surplus		**(70 712 702)**	**8 641 232**
Loss on disposal of assets and liabilities		(360 933)	(759 077)
Loss on foreign exchange	28	(1 256 634)	(126 577)
Fair value adjustments	29	1 789 247	1 874 738
Actuarial gains/losses	16	1 330 000	7 834 000
Inventories losses/write-downs		248 661	-
		1 750 341	**8 823 084**
(Deficit) surplus for the year		**(68 962 361)**	**17 464 316**

* See Note 34

STATEMENT OF CHANGES IN ASSETS
as at 31 March 2019

	Revaluation reserve	Accumulated surplus	Total net assets
Opening balance as previously reported	51 710 858	406 406 636	458 117 494
Adjustments			
Prior year adjustments	-	50 590 220	50 590 220
Balance at 01 April 2017 as restated*	**51 710 858**	**456 996 856**	**508 707 714**
Changes in net assets			
Revaluation of land	1 285 410	-	1 285 410
Revaluation of building	800 009	-	800 009
Aircraft Propeller	20 673	-	20 673
Aircraft Airframes	(131 684)	-	(131 684)
Aircraft Engine	(466 376)	-	(466 376)
Net income (losses) recognised directly in net assets	1 508 032	-	1 508 032
Surplus / (Deficit) for the year	-	12 180 659	12 180 659
Total recognised income and expenses for the year	1 508 032	12 180 659	13 688 691
Total changes	1 508 032	12 180 659	13 688 691
Opening balance as previously reported	53 218 890	469 177 515	522 396 405
Adjustments			
Prior year adjustments	-	5 181 867	5 181 867
Restated* Balance at 01 April 2018 as restated*	**53 218 890**	**474 359 382**	**527 578 272**
Changes in net assets			
Land - Irene and Garsfontein	2 722 132	-	2 722 132
Building - Irene and Bethlehem	922 764	-	922 764
Net income (losses) recognised directly in net assets	3 644 896	-	3 644 896
Surplus / (Deficit) for the year	-	(68 962 360)	(68 962 360)
Total recognised income and expenses for the year	3 644 896	(68 962 360)	(65 317 464)
Total changes	3 644 896	(68 962 360)	(65 317 464)
Balance at 31 March 2019	**56 863 786**	**405 397 022**	**462 260 808**

CASH FLOW STATEMENT
as at 31 March 2019

	Note(s)	2019	2018 Restated*
Cash flows from operating activities			
Receipts			
Commercial and other income		169 272 930	154 555 091
Grants		209 488 222	240 482 000
Interest income		4 592 966	6 730 004
		383 354 118	401 767 095
Payments			
Employee costs		(268 687 765)	(218 647 958)
Suppliers		(151 586 853)	(127 191 584)
Finance costs		(953 196)	-
Other cash item		-	(133 676)
		(421 227 814)	(345 973 218)
Net cash flows from operating activities	30	**(37 873 696)**	**55 793 877**
Cash flows from investing activities			
Purchase of property, plant and equipment	9	(24 296 046)	(42 233 566)
Purchase of intangible assets	10	(5 282 431)	(3 157 992)
Net cash flows from investing activities		**(29 578 477)**	**(45 391 558)**
Cash flows from financing activities			
Changes in unspent government grant - CAPEX		27 516 777	-
Net increase/(decrease) in cash and cash equivalents		**(39 935 396)**	**10 402 319**
Cash and cash equivalents at the beginning of the year		100 626 617	90 224 298
Cash and cash equivalents at the end of the year	7	**60 691 221**	**100 626 617**

* See Note 34

STATEMENT OF COMPARASON OF BUDGET AND ACTUAL AMOUNTS as at 31 March 2019

Budget on Accrual Basis

	Approved budget	Adjustments	Final Budget	Actual amounts on comparable basis	Difference between final budget and actual	Reference
Statement of Financial Performance						
Revenue						
Revenue from exchange transactions						
Commercial revenue	174 079 000	(10 962 144)	163 116 856	160 608 681	(2 508 175)	1
Other revenue	-	-	-	1 229 755	1 229 755	
Interest received - investment	2 499 996	-	2 499 996	4 592 966	2 092 970	3
Total revenue from exchange transactions	**176 578 996**	**(10 962 144)**	**165 616 852**	**166 431 402**	**814 550**	
Revenue from non-exchange transactions						
Transfer revenue						
Government grants	243 081 996	(6 076 997)	237 004 999	209 488 223	(27 516 776)	2
Contributions and donations	8 000 004	-	8 000 004	6 844 361	(1 155 643)	4
Total revenue from non-exchange transactions	**251 082 000**	**(6 076 997)**	**245 005 003**	**216 332 584**	**(28 672 419)**	
Total revenue	**427 660 996**	**(17 039 141)**	**410 621 855**	**382 763 986**	**(27 857 869)**	
Expenditure						
Employee cost	(255 040 000)	-	(255 040 000)	(261 335 504)	(6 295 504)	6
Administration	(16 544 141)	-	(16 544 141)	(16 436 159)	107 982	
Depreciation and amortisation	(37 200 000)	-	(37 200 000)	(32 755 614)	4 444 386	7
Impairment loss	-	-	-	(169 114)	(169 114)	
Finance costs	-	-	-	(953 196)	(953 196)	
Operating Expenses	(151 797 000)	22 877 210	(128 919 790)	(141 827 101)	(12 907 311)	5
Total expenditure	**(460 581 141)**	**22 877 210**	**(437 703 931)**	**(453 476 688)**	**(15 772 757)**	
Operating deficit	**(32 920 145)**	**5 838 069**	**(27 082 076)**	**(70 712 702)**	**(43 630 626)**	
Loss on disposal of assets and liabilities	-	-	-	(360 933)	(360 933)	
Loss on foreign exchange	-	-	-	(1 256 634)	(1 256 634)	
Fair value adjustments	-	-	-	1 789 248	1 789 248	8
Actuarial gains/losses	-	-	-	1 330 000	1 330 000	
Inventories losses/write-downs	-	-	-	248 661	248 661	
	-	**-**	**-**	**1 750 342**	**1 750 342**	
Deficit before taxation	**(32 920 145)**	**5 838 069**	**(27 082 076)**	**(68 962 360)**	**(41 880 284)**	
Actual Amount on Comparable Basis as Presented in the Budget and Actual Comparative Statement	**(32 920 145)**	**5 838 069**	**(27 082 076)**	**(68 962 360)**	**(41 880 284)**	

STATEMENT OF COMPARASON OF BUDGET AND ACTUAL AMOUNTS as at 31 March 2019

Budget on Cash Basis

Budget differences

The budget is approved on an accrual basis by nature classification. The approved budget covers the period 1 April 2018 to 31 March 2019.

The annual financial statements are prepared using a classification on the nature of expenses in the Statement of Financial Performance.

Explanation of material differences between final budget and actual amounts

.

1. Commercial Revenue

The adjustment under revenue relates to Aviation Revenue (Regulated Commercial Revenue) which was reduced to R148 million as the original budget was prepared before the promulgation of the final tariff as approved by the Regulated Committee on Meteorological Services. This resulted in an overall reduction of the Total Revenue by R17,04 million from R427,66 million to R410,62 million.

The reduction in revenue by R17,04 million had a similar effect on total expenditure, as this was reduced in line with the R22,88 million from R460,58 million to R437,70 million.

Non-Regulated Commercial Revenue for the year was slightly below the budget of R32,90 million by R525,981 amounting to R32,37 million (refer to note 19 for actuals).

Regulated Commercial Revenue, which is based on air traffic volumes charged at an approved Tariff rate (Promulgated in the Government Gazette) by the Minister of Environmental Affairs, was slightly below the budget of R130,21 million by R1,98 million (Actual: R128,23 million). The decline is mainly due to lower service units when compared to the approved budget. Service units amounted to R2,516,084 when compared to the budget of R2,602,647, resulting in a variance of R86,563. The service units are made up of number of flights, average distance flown and the Maximum Take Off Weight of the aircraft.

2. Government Grant

Capital Expenditure

The approved Capital Expenditure Grant (Capex Grant) budget was R37,03 million while the actual amount recognised in line with GRAP 23, Revenue from Non-exchange transactions amounted to R9,51 million resulting in a negative variance of R27,52 million. The amount of R27,52 million has been recorded as a liability under unspent government grant - capex and will be recognised when the conditions of the grant are met.

Operational Expenditure

The original letter of allocation for the Operational Government Grant indicated a receipt of R243,08 million while the final letter of allocation indicated an Operational Grant revenue of R237 million and hence the adjustment of R6,077 million.

3. Investment Income

Investment income to the value of R4,59 million was realised during the financial year due to a positive bank balance and exceeded budget by R2,09 million

STATEMENT OF COMPARASON OF BUDGET AND ACTUAL AMOUNTS as at 31 March 2019

Budget on Cash Basis

4. Contributions and donations

During the year under review, SAWS realised project income to the value of R5,33 million (refer to note 14). Actual receipts for project income received during the year amounted to R9,27 million, these were for various projects and the grants have been spent in accordance with the conditions attached to them.

Expenditure

Total expenditure was above budget by R15,78 million amounting to R453,48 million (Final Approved Budget: R437,70 million).

Major variances between Budget an Actual are as follows:

5. Operating Expenses

Operating expenses were above budget by R12,9 million amounting to R141,83 million (Budget: R128,92 million). Areas of over-spending include purchases of spare parts, repairs and maintenance as well as radiosondes and upper air ballons that are affected by exchange rate fluctuations.

6. Employee Costs

Employee costs were above budget by R6,30 million amounting to R261,34 million against the budget of R255,04 million. A previous contigent liability amount that was a matter of dispute between the Government Employee Pension Fund became due in the current financial year and was recognised as a liability and was not previously budgeted for.

7. Depreciation and Amortisation

Total depreciation and amortisation for the year amounted to R32,76 million which was below budget by R4,44 million, largely due to delays in the acquisition of infrastructure, which was mostly purchased in the second half of the financial year.

8. Fair Value Adjustments

SAWS owns a piece of land which is currently undeveloped in Garsfontein, Pretoria. The land was valuated by Independent Valuators as at 31 March 2019 and the value of the portion earmarked for commercial investment increased by R1,80 million from R67,89 million to R69,28 million.

SAWS realised an actuarial gain of R1,33 million on the Post-retirement medical aid obligation, which is a defined benefit plan. The obligation of SAWS towards this benefit plan on pensioned members and members currently in-service (employed by SAWS) has decreased from R4,86 million in 2017/18 to R4,13 million in the current financial year.

ACCOUNTING POLICIES
as at 31 March 2019

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 (Act 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. They are presented in South African Rand.

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

A summary of the significant accounting policies, which have been consistently applied in the preparation of these annual financial statements, is disclosed below.

These accounting policies are consistent with the previous period.

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

Fair value estimation

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

Impairment testing

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 14 - Provisions.

1.3 Significant judgements and sources of estimation uncertainty (continued)

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 16.

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 State to effect a settlement or waive the claim.

Revaluations

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

Useful lives of property, plant and equipment

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

1.4 Investment property

Investment property is property (land or a building - or part of a building - or both) held to earn rentals or for capital appreciation or both, rather than for:

- use in the production or supply of goods or services; or
- administrative purposes; or
- sale in the ordinary course of operations.

Owner-occupied property is property held for use in the production or supply of goods or services or for administrative purposes.

Investment property is recognised as an asset when, it is probable that the future economic benefits or service potential associated with the investment property will flow to the entity, 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.

1.4 Investment property (continued)

Fair value

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

The fair value of investment property reflects market conditions at the reporting date.

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.

If the entity determines that the fair value of an investment property under construction is not reliably determinable but expects the fair value of the property to be reliably measurable when construction is complete, it measures that investment property under construction at cost until either its fair value becomes reliably determinable or construction is completed (whichever is earlier). If the entity determines that the fair value of an investment property (other than an investment property under construction) is not reliably determinable on a continuing basis, the entity measures that investment property using the cost model (as per the accounting policy on Property, plant and equipment). The residual value of the investment property is then assumed to be zero. The entity applies the cost model (as per the accounting policy on Property, plant and equipment) until disposal of the investment property.

Once the entity becomes able to measure reliably the fair value of an investment property under construction that has previously been measured at cost, it measures that property at its fair value. Once construction of that property is complete, it is presumed that fair value can be measured reliably. If this is not the case, the property is accounted for using the cost model in accordance with the accounting policy on Property, plant and equipment.

1.5 Property, plant and equipment

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

The cost of an item of property, plant and equipment is recognised as an asset when:
- it is probable that future economic benefits or service potential associated with the item will flow to the entity; and
- the cost of the item can be measured reliably.

Property, plant and equipment is initially measured at cost.

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

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

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

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

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

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

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

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

ACCOUNTING POLICIES
as at 31 March 2019

1.5 Property, plant and equipment (continued)

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 is carried at cost less accumulated depreciation and any impairment losses except for Land and Buildings and Aircraft which is carried at revalued amount being the fair value at the date of revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses.

Property, plant and equipment (Land and Buildings and Aircraft) is 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 I restated proportionately with the change in the gross carrying amount of the asset so that the carrying amount of the asset after revaluation equals its revalued amount.

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

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

Any decrease in an asset's carrying amount, as a result of a revaluation, is recognised in surplus or deficit in the current period.

The decrease is debited directly to a revaluation surplus to the extent of any credit balance existing in the revaluation surplus in respect of that asset.

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

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

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

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

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

Item	Depreciation method	Years
Buildings	Straight line	40-50
Fence	Straight line	10-20
Furniture and fittings	Straight line	10-20
Motor vehicles	Straight line	5-20
Office equipment	Straight line	15-20
IT equipment	Straight line	5-20
Library books and equipment	Straight line	10-20
Leasehold improvements	Straight line	10-20

ACCOUNTING POLICIES
as at 31 March 2019

1.5 Property, plant and equipment (continued)

Item	Depreciation method	Years
Aircraft - Airframes	Straight line	20
Aircraft - Engines	Straight line	5400 hours
Aircraft - Propellers	Straight line	5-20
Meteorological equipment	Straight line	10-30
Radar equipment	Straight line	10-30
Air quality equipment	Straight line	10-20
Tools and equipment	Straight line	10-20

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 depreciation method used reflects the pattern in which the asset's future economic benefits or service potential are expected to be consumed by the entity. The depreciation method applied to an asset is reviewed at least at each reporting date and, if there has been a significant change in the expected pattern of consumption of the future economic benefits or service potential embodied in the asset, the method is changed to reflect the changed pattern. Such a change is accounted for as a change in an accounting estimate.

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

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 financial statements (see note 27).

The entity discloses relevant information relating to assets under construction or development, in the notes to the financial statements.

1.6 Intangible assets

An asset is identifiable if it either:

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

A binding arrangement describes an arrangement that confers similar rights and obligations on the parties to it as if it were in the form of a contract.

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.

The entity assesses the probability of expected future economic benefits or service potential using reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the useful life of the asset.

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.

Expenditure on research (or on the research phase of an internal project) is recognised as an expense when it is incurred.

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

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

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

An intangible asset is regarded as having an indefinite useful life when, based on all relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows or service potential. Amortisation is not provided for these intangible assets, but they are tested for impairment annually and whenever there is an indication that the asset may be impaired. For all other intangible assets amortisation is provided on a straight line basis over their useful life.

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

Reassessing the useful life of an intangible asset with a finite useful life after it was classified as indefinite is an indicator that the asset may be impaired. As a result the asset is tested for impairment and the remaining carrying amount is amortised over its useful life.

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

Internally generated goodwill is not recognised as an intangible asset.

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

Item	Depreciation method	Years
Computer software, other	Straight line	5-10
Servitude	Straight line	25

1.6 Intangible assets (continued)

Intangible assets are derecognised:

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

The gain or loss arising from the derecognition of intangible assets is included in surplus or deficit when the asset is derecognised (unless the Standard of GRAP on leases requires otherwise on a sale and leaseback).

1.7 Heritage assets

SAWS 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. SAWS is the only institution legislated by Government in the country to provide early warning, climate and air-quality information to the public as legislated by Parliament through the SAWS Act. The intellectual and scientific information at SAWS' disposal is over 150 years old and will benefit future generations and as such needs to be protected and preserved. For an asset to fulfil the requirements of being classified as a heritage asset, it has to meet the recognition criteria as set out in GRAP 103 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, the statement requires that such an asset should be disclosed in the annual financial statements. SAWS cannot reliably provide an estimate of the cost of its heritage assets.

1.8 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 uncollectability.

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.

A derivative is a financial instrument or other contract with all three of the following characteristics:

- Its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying').
- It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.
- It is settled at a future date.

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

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

A financial asset is:

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

1.8 Financial instruments (continued)

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payment when due in accordance with the original or modified terms of a debt instrument.

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.

Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting all similar financial instruments traded in the market.

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

A residual interest is any contract that manifests an interest in the assets of an entity after deducting all of its liabilities. A residual interest includes contributions from owners, which may be shown as:
- equity instruments or similar forms of unitised capital;
- a formal designation of a transfer of resources (or a class of such transfers) by the parties to the transaction as forming part of an entity's net assets, either before the contribution occurs or at the time of the contribution; or
- a formal agreement, in relation to the contribution, establishing or increasing an existing financial interest in the net assets of an entity.

Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability. An incremental cost is one that would not have been incurred if the entity had not acquired, issued or disposed of the financial instrument.

Financial instruments at amortised cost are non-derivative financial assets or non-derivative financial liabilities that have fixed or determinable payments, excluding those instruments that:
- the entity designates at fair value at initial recognition; or
- are held for trading.

Financial instruments at cost are investments in residual interests that do not have a quoted market price in an active market, and whose fair value cannot be reliably measured.

Financial instruments at fair value comprise financial assets or financial liabilities that are:
- derivatives;
- combined instruments that are designated at fair value;
- instruments held for trading. A financial instrument is held for trading if:
  - it is acquired or incurred principally for the purpose of selling or repurchasing it in the near-term; or
  - on initial recognition it is part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short term profit-taking;
  - non-derivative financial assets or financial liabilities with fixed or determinable payments that are designated at fair value at initial recognition; and
  - financial instruments that do not meet the definition of financial instruments at amortised cost or financial instruments at cost.

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:

1.8 Financial instruments (continued)

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

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.

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 fair value.
- Financial instruments at amortised cost.
- Financial instruments at cost.

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

Fair value measurement considerations

The best evidence of fair value is quoted prices in an active market. If the market for a financial instrument is not active, the entity establishes fair value by using a valuation technique. The objective of using a valuation technique is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal operating considerations. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models. If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the entity uses that technique. The chosen valuation technique makes maximum use of market inputs and relies as little as possible on entity-specific inputs. It incorporates all factors that market participants would consider in setting a price and is consistent with accepted economic methodologies for pricing financial instruments. Periodically, an entity calibrates the valuation technique and tests it for validity using prices from any observable current market transactions in the same instrument (i.e. without modification or repackaging) or based on any available observable market data.

The fair value of a financial liability with a demand feature (e.g. a demand deposit) is not less than the amount payable on demand, discounted from the first date that the amount could be required to be paid.

1.8 Financial instruments (continued)

Reclassification

The entity does not reclassify a financial instrument while it is issued or held unless it is:

- a combined instrument that is required to be measured at fair value; or
- an investment in a residual interest that meets the requirements for reclassification.

Where the entity cannot reliably measure the fair value of an embedded derivative that has been separated from a host contract that is a financial instrument at a subsequent reporting date, it measures the combined instrument at fair value. This requires a reclassification of the instrument from amortised cost or cost to fair value.

If fair value can no longer be measured reliably for an investment in a residual interest measured at fair value, the entity reclassifies the investment from fair value to cost. The carrying amount at the date that fair value is no longer available becomes the cost.

If a reliable measure becomes available for an investment in a residual interest for which a measure was previously not available, and the instrument would have been required to be measured at fair value, the entity reclassifies the instrument from cost to fair value.

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

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

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 a 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.

1.8 Financial instruments (continued)

The entity derecognises a financial asset only when:

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

The carrying amounts of the transferred asset are allocated between the rights or obligations retained and those transferred on the basis of their relative fair values at the transfer date. Newly created rights and obligations are measured at their fair values at that date. Any difference between the consideration received and the amounts recognised and derecognised is recognised in surplus or deficit in the period of the transfer.

If the entity transfers a financial asset in a transfer that qualifies for derecognition in its entirety and retains the right to service the financial asset for a fee, it recognises either a servicing asset or a servicing liability for that servicing contract. If the fee to be received is not expected to compensate the entity adequately for performing the servicing, a servicing liability for the servicing obligation is recognised at its fair value. If the fee to be received is expected to be more than adequate compensation for the servicing, a servicing asset is recognised for the servicing right at an amount determined on the basis of an allocation of the carrying amount of the larger financial asset.

If, as a result of a transfer, a financial asset is derecognised in its entirety but the transfer results in the entity obtaining a new financial asset or assuming a new financial liability or a servicing liability, the entity recognises the new financial asset, financial liability or servicing liability at fair value.

On derecognition of a financial asset in its entirety, the difference between the carrying amount and the sum of the consideration received is recognised in surplus or deficit.

If the transferred asset is part of a larger financial asset and the part transferred qualifies for derecognition in its entirety, the previous carrying amount of the larger financial asset is allocated between the part that continues to be recognised and the part that is derecognised, based on the relative fair values of those parts, on the date of the transfer. For this purpose, a retained servicing asset is treated as a part that continues to be recognised. The difference between the carrying amount allocated to the part derecognised and the sum of the consideration received for the part derecognised is recognised in surplus or deficit.

If a transfer does not result in derecognition because the entity has retained substantially all the risks and rewards of ownership of the transferred asset, the entity continues to recognise the transferred asset in its entirety and recognises a financial liability for the consideration received. In subsequent periods, the entity recognises any revenue on the transferred asset and any expense incurred on the financial liability. Neither the asset, and the associated liability nor the revenue, and the associated expenses are offset.

Financial liabilities

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

An exchange between an existing borrower and lender of debt instruments with substantially different terms is accounted for as having extinguished the original financial liability and a new financial liability is recognised. Similarly, a substantial modification of the terms of an existing financial liability or a part of it is accounted for as having extinguished the original financial liability and having recognised a new financial liability.

The difference between the carrying amount of a financial liability (or part of a financial liability) extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in surplus or deficit. Any liabilities that are waived, forgiven or assumed by another entity by way of a non-exchange transaction are accounted for in accordance with the Standard of GRAP on Revenue from Non-exchange Transactions (Taxes and Transfers).

1.8 Financial instruments (continued)

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 are recognised as revenue or expense in surplus or deficit.

A financial asset and a financial liability are only offset and the net amount presented in the statement of financial position when the entity currently has a legally enforceable right to set off the recognised amounts and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

In accounting for a transfer of a financial asset that does not qualify for derecognition, the entity does not offset the transferred asset and the associated liability.

1.9 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.

Carrying amount is the amount at which an asset is recognised in the statement of financial position.

The cost method is the method used to account for statutory receivables that requires such receivables to be measured at their transaction amount, plus any accrued interest or other charges (where applicable) and, less any accumulated impairment losses and any amounts derecognised.

Nominal interest rate is the interest rate and/or basis specified in legislation, supporting regulations or similar means.

The transaction amount (for purposes of this Standard) for a statutory receivable means the amount specified in, or calculated, levied or charged in accordance with, legislation, supporting regulations, or similar means.

Recognition

The entity recognises statutory receivables as follows:

- if the transaction is an exchange transaction, using the policy on Revenue from exchange transactions;
- if the transaction is a non-exchange transaction, using the policy on Revenue from non-exchange transactions (Taxes and transfers); or
- if the transaction is not within the scope of the policies listed in the above or another Standard of GRAP, the receivable is recognised when the definition of an asset is met and, when it is probable that the future economic benefits or service potential associated with the asset will flow to the entity and the transaction amount can be measured reliably.

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
- mounts derecognised.

1.9 Statutory receivables (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).
- Adverse changes in international, national or local economic conditions, such as a decline in growth, an increase I debt levels and unemployment, or changes in migration rates and patterns.

If there is an indication that a statutory receivable, or a group of statutory receivables, may be impaired, the entity measures the impairment loss as the difference between the estimated future cash flows and the carrying amount. Where the carrying amount is higher than the estimated future cash flows, the carrying amount of the statutory receivable, or group of statutory receivables, is reduced, either directly or through the use of an allowance account. The amount of the losses are recognised in surplus or deficit.

In estimating the future cash flows, an entity considers both the amount and timing of the cash flows that it will receive in future.

Consequently, where the effect of the time value of money is material, the entity discounts the estimated future cash flows using a rate that reflects the current risk free rate and, if applicable, any risks specific to the statutory receivable, or group of statutory receivables, for which the future cash flow estimates have not been adjusted.

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.

Derecognition

The entity derecognises a statutory receivable, or a part thereof, when:

- the rights to the cash flows from the receivable are settled, expire or are waived;
- the entity transfers to another party substantially all of the risks and rewards of ownership of the receivable; or
- the entity, despite having retained some significant risks and rewards of ownership of the receivable, has transferred control of the receivable to another party and the other party has the practical ability to sell the receivable in its entirety to an unrelated third party, and is able to exercise that ability unilaterally and without needing to impose additional restrictions on the transfer. In this case, the entity:
  - derecognises the receivable; and
  - recognises separately any rights and obligations created or retained in the transfer.

1.9 Statutory receivables (continued)

The carrying amounts of any statutory receivables transferred are allocated between the rights or obligations retained and those transferred on the basis of their relative fair values at the transfer date. The entity considers whether any newly created rights and obligations are within the scope of the Standard of GRAP on Financial Instruments or another Standard of GRAP.
Any difference between the consideration received and the amounts derecognised and, those amounts recognised, is recognised in surplus or deficit in the period of the transfer.

1.10 Tax

Tax expenses

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

1.11 Leases

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

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

Operating leases - lessor

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

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

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

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

Income for leases is disclosed under revenue in the statement of financial performance.

Operating leases - lessee

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

1.12 Inventories

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

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

Inventories are measured at the lower of cost and current replacement cost where they are held for:
- distribution at no charge or for a nominal charge; or
- consumption in the production process of goods to be distributed at no charge or for a nominal charge.

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

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

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

1.12 Inventories (continued)

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

1.13 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.

1.13 Impairment of cash-generating assets (continued)

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 cashgenerating unit to which the asset belongs (the asset's cash-generating unit).

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

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

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

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

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

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

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

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

Where a non-cash-generating asset contributes to a cash-generating unit, a proportion of the carrying amount of that noncash-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.

1.13 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 covers a maximum period of five years, unless a longer period can be justified; and
- estimates cash flow projections beyond the period covered by the most recent budgets/forecasts by extrapolating the projections based on the budgets/forecasts using a steady or declining growth rate for subsequent years, unless an increasing rate can be justified. This growth rate does not exceed the long-term average growth rate for the products, industries, or country or countries in which the entity operates, or for the market in which the asset is used, unless a higher rate can be justified.

Composition of estimates of future cash flows

Estimates of future cash flows include:

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

Estimates of future cash flows exclude:

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

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

Foreign currency future cash flows

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

Discount rate

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

1.13 Impairment of cash-generating assets (continued)

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 has been 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.

Redesignation

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

1.14 Impairment of non-cash-generating assets

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

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

Identification

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

The entity assesses at each reporting date whether there is any indication that a non-cash-generating asset may be impaired.

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

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

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

Value in use

Value in use of non-cash-generating assets is the present value of the non-cash-generating assets remaining service potential.

The present value of the remaining service potential of a non-cash-generating assets is determined using the following approach:

Service units approach

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

Recognition and measurement

If the recoverable service amount of a non-cash-generating asset is less than its carrying amount, the 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 occurs when there is clear evidence that such a redesignation is appropriate.

1.15 Share capital / contributed capital

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities.

Employee benefits are all forms of consideration given by an entity in exchange for service rendered by employees.

1.16 Employee benefits

A qualifying insurance policy is an insurance policy issued by an insurer that is not a related party (as defined in the Standard of GRAP on Related Party Disclosures) of the reporting entity, if the proceeds of the policy can be used only to pay or fund employee benefits under a defined benefit plan and are not available to the reporting entity's own creditors (even in liquidation) and cannot be paid to the reporting entity, unless either:

- the proceeds represent surplus assets that are not needed for the policy to meet all the related employee benefit obligations; or
- the proceeds are returned to the reporting entity to reimburse it for employee benefits already paid.

Termination benefits are employee benefits payable as a result of either:

- an entity's decision to terminate an employee's employment before the normal retirement date; or
- an employee's decision to accept voluntary redundancy in exchange for those 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.

Composite social security programmes are established by legislation and operate as multi-employer plans to provide postemployment benefits as well as to provide benefits that are not considered in exchange for service rendered by employees.

A constructive obligation is an obligation that derives from an entity's actions where by an established pattern of past practice, published policies or a sufficiently specific current statement, the entity has indicated to other parties that it will accept certain responsibilities and as a result, the entity has created a valid expectation on the part of those other parties that it will discharge those responsibilities.

Short-term employee benefits

Short-term employee benefits are employee benefits (other than termination benefits) that are due to be settled within twelve months after the end of the period in which the employees render the related service.

Short-term employee benefits include items such as:

- wages, salaries and social security contributions;
- short-term compensated absences (such as paid annual leave and paid sick leave) where the compensation for the absences is due to be settled within twelve months after the end of the reporting period in which the employees render the related employee service;
- bonus, incentive and performance related payments payable within twelve months after the end of the reporting period in which the employees render the related service; and
- non-monetary benefits (for example medical care, and free or subsidised goods or services such as housing, cars and cellphones) for current employees.

When an employee has rendered service to the entity during a reporting period, the entity recognises the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service:

- as a liability (accrued expense), after deducting any amount already paid. If the amount already paid exceeds the undiscounted amount of the benefits, the entity recognises that excess as an asset (prepaid expense) to the extent that the prepayment will lead to, for example, a reduction in future payments or a cash refund; and
- as an expense, unless another Standard requires or permits the inclusion of the benefits in the cost of an asset.

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.

1.16 Employee benefits (continued)

Post-employment benefits: Defined benefit plans

Defined benefit plans are post-employment benefit plans other than defined contribution 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.

Assets held by a long-term employee benefit fund are assets (other than non-transferable financial instruments issued by the reporting entity) that are held by an entity (a fund) that is legally separate from the reporting entity and exists solely to pay or fund employee benefits and are available to be used only to pay or fund employee benefits, are not available to the reporting entity's own creditors (even in liquidation), and cannot be returned to the reporting entity, unless either:

- the remaining assets of the fund are sufficient to meet all the related employee benefit obligations of the plan or the reporting entity; or
- the assets are returned to the reporting entity to reimburse it for employee benefits already paid.

Current service cost is the increase in the present value of the defined benefit obligation resulting from employee service in the current period.

Interest cost is the increase during a period in the present value of a defined benefit obligation which arises because the benefits are one period closer to settlement.

Past service cost is the change in the present value of the defined benefit obligation for employee service in prior periods, resulting in the current period from the introduction of, or changes to, post-employment benefits or other long-term employee benefits. Past service cost may be either positive (when benefits are introduced or changed so that the present value of the defined benefit obligation increases) or negative (when existing benefits are changed so that the present value of the defined benefit obligation decreases). In measuring its defined benefit liability the entity recognises past service cost as an expense in the reporting period in which the plan is amended.

Plan assets comprise assets held by a long-term employee benefit fund and qualifying insurance policies.

The present value of a defined benefit obligation is the present value, without deducting any plan assets, of expected future payments required to settle the obligation resulting from employee service in the current and prior periods.

The return on plan assets is interest, dividends or similar distributions and other revenue derived from the plan assets, together with realised and unrealised gains or losses on the plan assets, less any costs of administering the plan (other than those included in the actuarial assumptions used to measure the defined benefit obligation) and less any tax payable by the plan itself.

The entity accounts not only for its legal obligation under the formal terms of a defined benefit plan, but also for any constructive obligation that arises from the entity's informal practices. Informal practices give rise to a constructive obligation where the entity has no realistic alternative but to pay employee benefits. An example of a constructive obligation is where a change in the entity's informal practices would cause unacceptable damage to its relationship with employees.

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
- the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. The present value of these economic benefits is determined using a discount rate which reflects the time value of money.

Any adjustments arising from the limit above is recognised in surplus or deficit.

The entity determines the present value of defined benefit obligations and the fair value of any plan assets with sufficient regularity such that the amounts recognised in the annual financial statements do not differ materially from the amounts that would be determined at the reporting date.

1.16 Employee benefits (continued)

The entity recognises the net total of the following amounts in surplus or deficit, except to the extent that another Standard requires or permits their inclusion in the cost of an asset:

- current service cost;
- interest cost;
- the expected return on any plan assets and on any reimbursement rights;
- actuarial gains and losses;
- past service cost;
- the effect of any curtailments or settlements; and
- the effect of applying the limit on a defined benefit asset (negative defined benefit liability).

The entity uses the Projected Unit Credit Method to determine the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost. The Projected Unit Credit Method (sometimes known as the accrued benefit method pro-rated on service or as the benefit/years of service method) sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.

In determining the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost, an entity shall attribute benefit to periods of service under the plan's benefit formula. However, if an employee's service in later years will lead to a materially higher level of benefit than in earlier years, an entity shall attribute benefit on a straight-line basis from:

- the date when service by the employee first leads to benefits under the plan (whether or not the benefits are conditional on further service); until
- the date when further service by the employee will lead to no material amount of further benefits under the plan, other than from further salary increases.

Actuarial valuations are conducted on an annual basis by independent actuaries separately for each plan. The results of the valuation are updated for any material transactions and other material changes in circumstances (including changes in market prices and interest rates) up to the reporting date.

The entity recognises gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on a curtailment or settlement comprises:

- any resulting change in the present value of the defined benefit obligation; and
- any resulting change in the fair value of the plan assets.

Before determining the effect of a curtailment or settlement, the entity re-measures the obligation (and the related plan assets, if any) using current actuarial assumptions (including current market interest rates and other current market prices).

When it is virtually certain that another party will reimburse some or all of the expenditure required to settle a defined benefit obligation, the right to reimbursement is recognised as a separate asset. The asset is measured at fair value. In all other respects, the asset is treated in the same way as plan assets. In surplus or deficit, the expense relating to a defined benefit plan is presented as the net of the amount recognised for a reimbursement.

1.16 Employee benefits (continued)

Actuarial assumptions

Actuarial assumptions are unbiased and mutually compatible.

Financial assumptions are based on market expectations, at the reporting date, for the period over which the obligations are to be settled.

The rate used to discount post-employment benefit obligations (both funded and unfunded) reflects 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 stated 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.

1.17 Provisions and contingencies

Provisions are recognised when:

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

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

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

The discount rate is a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

Where some or all of the expenditure required to settle a provision is expected to be reimbursed by another party, the reimbursement is recognised when, and only when, it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement is treated as a separate asset. The amount recognised for the reimbursement does not exceed the amount of the provision.

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

Where discounting is used, the carrying amount of a provision increases in each period to reflect the passage of time. This increase is recognised as an interest expense.

A provision is used only for expenditures for which the provision was originally recognised.

Provisions are not recognised for future operating surplus (deficit).

1.17 Provisions and contingencies (continued)

If an entity has a contract that is onerous, the present obligation (net of recoveries) under the contract is recognised and measured as a provision.

A constructive obligation to restructure arises only when an entity:

- has a detailed formal plan for the restructuring, identifying at least:
  - the activity/operating unit or part of an activity/operating unit concerned;
  - the principal locations affected;
  - the location, function, and approximate number of employees who will be compensated for services being terminated;
  - the expenditures that will be undertaken; and
  - when the plan will be implemented; and
- has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement that plan or announcing its main features to those affected by it.

A restructuring provision includes only the direct expenditures arising from the restructuring, which are those that are both:

- necessarily entailed by the restructuring; and
- not associated with the ongoing activities of the entity

No obligation arises as a consequence of the sale or transfer of an operation until the entity is committed to the sale or transfer, that is, there is a binding arrangement.

After their initial recognition, contingent liabilities recognised in entity combinations that are recognised separately are subsequently measured at the higher of:

- the amount that would be recognised as a provision; and
- the amount initially recognised less cumulative amortisation.

Contingent assets and contingent liabilities are not recognised. Contingencies are disclosed in note 32.

1.18 Commitments

Items are classified as commitments when an 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.

Commitments for which disclosure is necessary to achieve a fair presentation should be disclosed in a note to the financial statements, if both the following criteria are met:

- Contracts should be non-cancellable or only cancellable at significant cost (for example, contracts for computer or building maintenance services); and
- Contracts should relate to something other than the routine, steady, state business of the entity – therefore salary commitments relating to employment contracts or social security benefit commitments are excluded.

1.19 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.

1.19 Revenue from exchange transactions (continued)

Sale of goods

Revenue from the sale of goods is recognised when all the following conditions have been satisfied:

- the entity has transferred to the purchaser the significant risks and rewards of ownership of the goods;
- the entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- the amount of revenue can be measured reliably;
- it is probable that the economic benefits or service potential associated with the transaction will flow to the entity; and
- the costs incurred or to be incurred in respect of the transaction can be measured reliably.

Rendering of services

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

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

When services are performed by an indeterminate number of acts over a specified time frame, revenue is recognised on a straight line basis over the specified time frame unless there is evidence that some other method better represents the stage of completion. When a specific act is much more significant than any other acts, the recognition of revenue is postponed until the significant act is executed.

When the outcome of the transaction involving the rendering of services cannot be estimated reliably, revenue is recognised only to the extent of the expenses recognised that are recoverable.

Service revenue is recognised by reference to the stage of completion of the transaction at the reporting date. Stage of completion is determined by services performed to date as a percentage of total services to be performed.

Interest

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

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

Interest is recognised, 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.

1.20 Revenue from non-exchange transactions

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

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

Control of an asset arises when the entity can use or otherwise benefits 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.

1.20 Revenue from non-exchange transactions (continued)

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

Restrictions on transferred assets are stipulations that limit or direct the purposes for which a transferred asset may be used, but do not specify that future economic benefits or service potential is required to be returned to the transferor if not deployed as specified.

Stipulations on transferred assets are terms in laws or regulation, or a binding arrangement, imposed upon the use of a transferred asset by entities external to the reporting entity.

Transfers are inflows of future economic benefits or service potential from non-exchange transactions, other than taxes.

Recognition

An inflow of resources from a non-exchange transaction recognised as an asset is recognised as revenue, except to the extent that a liability is also recognised in respect of the same inflow.

As the entity satisfies a present obligation recognised as a liability in respect of an inflow of resources from a non-exchange transaction recognised as an asset, it reduces the carrying amount of the liability recognised and recognises an amount of revenue equal to that reduction.

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.

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 recognises 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 discloses the nature and type of services in-kind received during the reporting period.

1.21 Investment income

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

1.22 Borrowing costs

Borrowing costs are interest and other expenses incurred by an entity in connection with the borrowing of funds.

Borrowing costs are recognised as an expense in the period in which they are incurred.

1.23 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.

1.24 Comparative figures

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

1.25 Fruitless and wasteful expenditure

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

All expenditure relating to fruitless and wasteful expenditure is recognised as an expense in the statement of financial performance in the year that the expenditure was incurred. The expenditure is classified in accordance with the nature of the expense, and where recovered, it is subsequently accounted for as revenue in the statement of financial performance.

1.26 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.

National Treasury Practice Note no. 4 of 2008/2009 which was issued in terms of sections 76(1) to 76(4) of the PFMA requires the following (effective from 1 April 2008):

Irregular expenditure that was incurred and identified during the current financial year and which was condoned before year end and/or before finalisation of the financial statements must also be recorded appropriately in the irregular expenditure register. In such an instance, no further action is also required with the exception of updating the note to the financial statements.

ACCOUNTING POLICIES
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1.26 Irregular expenditure (continued)

Irregular expenditure that was incurred and identified during the current financial year and for which condonement is being awaited at year-end must be recorded in the irregular expenditure register. No further action is required with the exception of updating the note to the financial statements.

Where irregular expenditure was incurred in the previous financial year and is only condoned in the following financial year, the register and the disclosure note to the financial statements must be updated with the amount condoned.

Irregular expenditure that was incurred and identified during the current financial year and which was not condoned by the National Treasury or the relevant authority must be recorded appropriately in the irregular expenditure register. If liability for the irregular expenditure can be attributed to a person, a debt account must be created if such a person is liable in law. Immediate steps must thereafter be taken to recover the amount from the person concerned. If recovery is not possible, the accounting officer or accounting authority may write off the amount as debt impairment and disclose such in the relevant note to the financial statements. The irregular expenditure register must also be updated accordingly. If the irregular expenditure has not been condoned and no person is liable in law, the expenditure related thereto must remain against the relevant programme/expenditure item, be disclosed as such in the note to the financial statements and updated accordingly in the irregular expenditure register.

1.27 Research and development expenditure

Expenditure on research is recognised as an expense when it is incurred.

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

1.28 Budget information

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

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

The approved budget is prepared on a cash basis and presented by economic classification linked to performance outcome objectives.

The approved budget covers the fiscal period from 2018/04/01 to 2019/03/31.

The annual financial statements and the budget are not 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.

1.29 Related parties

The entity operates in an economic sector currently dominated by entities directly or indirectly owned by the South African Government. As a consequence of the constitutional independence of the three spheres of 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 with no 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 considered to be those family members who may be expected to influence, or be influenced by, that management in their dealings with the entity.

1.30 Events after reporting date

There were no events after reporting date.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

2. New standards and interpretations

2.1 Standards and interpretations effective and adopted in the current year

In the current year, the entity has adopted the following standards and interpretations that are effective for the current financial year and that are relevant to its operations:

GRAP 12 (as amended 2016): Inventories

Amendments to the Standard of GRAP on Inventories resulted from inconsistencies in measurement requirements in GRAP 23 and other asset-related Standards of GRAP in relation to the treatment of transaction costs. Other changes resulted from changes made to IPSAS 12 on Inventories (IPSAS 12) as a result of the IPSASB's Improvements to IPSASs 2015 issued in March 2016.

The most significant changes to the Standard are:

- General improvements: To clarify the treatment of transaction costs and other costs incurred on assets acquired in non-exchange transactions to be in line with the principle in GRAP 23 (paragraph .12)
- IPSASB amendments: To align terminology in GRAP 12 with that in IPSAS 12. The term "ammunition" in IPSAS 12 was repla-ced with the term "military inventories" and provides a description of what it comprises in accordance with Government Finance Statistics terminology

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

GRAP 16 (as amended 2016): Investment Property

Amendments to the Standard of GRAP on Investment Property resulted from editorial changes to the original text and inconsistencies in measurement requirements in GRAP 23 and other asset-related Standards of GRAP in relation to the treatment of transaction costs. Other changes resulted from changes made to IAS 40 on Investment Property (IAS 40) as a result of the IASB's amendments on Annual Improvements to IFRSs 2011 – 2013 Cycle issued in December 2013.

The most significant changes to the Standard are:

- General improvements: To clarify the treatment of transaction costs and other costs incurred on assets acquired in non-exchange transactions to be in line with the principle in GRAP 23 (paragraph .12); and to clarify the measurement principle when assets may be acquired in exchange for a non-monetary asset or assets, or a combination of monetary and non-monetary assets.
- IASB amendments: To clarify the interrelationship between the Standards of GRAP on Transfer of Functions Between Entities Not Under Common Control and Investment Property when classifying investment property or owner-occupied property.

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

GRAP 17 (as amended 2016): Property, Plant and Equipment

Amendments to the Standard of GRAP on Property, Plant and Equipment resulted from editorial changes to the original text and inconsistencies in measurement requirements in GRAP 23 and other asset-related Standards of GRAP in relation to the treatment of transaction costs. Other changes resulted from changes made to IPSAS 17 on Property, Plant and Equipment (IPSAS 17) as a result of the IPSASB's Improvements to IPSASs 2014 issued in January 2015 and Improvements to IPSASs 2015 issued in March 2016.

The most significant changes to the Standard are:

- General improvements: To clarify the treatment of transaction costs and other costs incurred on assets acquired in non-exchange transactions to be in line with the principle in GRAP 23 (paragraph .12); and to clarify the measurement principle when assets may be acquired in exchange for a non-monetary asset or assets, or a combination of monetary and non-monetary assets.

2. New standards and interpretations (continued)

- IPSASB amendments: To clarify the revaluation methodology of the carrying amount and accumulated depreciation when an item of property, plant, and equipment is revalued; To clarify acceptable methods of depreciating assets; To align terminology in GRAP 17 with that in IPSAS 17. The term "specialist military equipment" in IPSAS 17 was replaced with the term "weapon systems" and provides a description of what it comprises in accordance with Government Finance Statistics terminology; and to define a bearer plant and include bearer plants within the scope of GRAP 17, while the produce growing on bearer plants will remain within the scope of GRAP 27.

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

GRAP 21 (as amended 2016): Impairment of non-cash-generating assets

Amendments to the Standard of GRAP on Impairment of Non-cash Generating Assets resulted from changes made to IPSAS 21 on Impairment of Non-Cash-Generating Assets (IPSAS 21) as a result of the IPSASB's Impairment of Revalued Assets issued in March 2016.

The most significant changes to the Standard are:

- IPSASB amendments: To update the Basis of conclusions and Comparison with IPSASs to reflect the IPSASB'srecent decision on the impairment of revalued assets.

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

GRAP 26 (as amended 2016): Impairment of cash-generating assets

Amendments Changes to the Standard of GRAP on Impairment of Cash Generating Assets resulted from changes made to IPSAS 26 on Impairment of Cash-Generating Assets (IPSAS 26) as a result of the IPSASB's Impairment of Revalued Assets issued in March 2016.

The most significant changes to the Standard are:

- IPSASB amendments: To update the Basis of conclusions and Comparison with IPSASs to reflect the IPSASB's recent decision on the impairment of revalued assets.

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

GRAP 31 (as amended 2016): Intangible Assets

Amendments to the Standard of GRAP on Intangible Assets resulted from inconsistencies in measurement requirements in GRAP 23 and other asset-related Standards of GRAP in relation to the treatment of transaction costs. Other changes resulted from changes made to IPSAS 31 on Intangible Assets (IPSAS 31) as a result of the IPSASB's Improvements to IPSASs 2014 issued in January 2015.

The most significant changes to the Standard are:

- General improvements: To add the treatment of transaction costs and other costs incurred on assets acquired in non-exchange transactions to be in line with the principle in GRAP 23 (paragraph .12); and to clarify the measurement principle when assets may be acquired in exchange for a non-monetary asset or assets, or a combination of monetary and non-monetary assets.
- IPSASB amendments: To clarify the revaluation methodology of the carrying amount and accumulated depreciation when an item of intangible assets is revalued; and to clarify acceptable methods of depreciating assets.

2. New standards and interpretations (continued)

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

GRAP 103 (as amended 2016): Heritage Assets

Amendments to the Standard of GRAP on Heritage Assets resulted from inconsistencies in measurement requirements in GRAP 23 and other asset-related Standards of GRAP in relation to the treatment of transaction costs. Other changes resulted from editorial changes to the original text.

The most significant changes to the Standard are:

- General improvements: To clarify the treatment of transaction costs and other costs incurred on assets acquired in non-exchange transactions to be in line with the principle in GRAP 23 (paragraph .12); and to clarify the measurement principle when assets may be acquired in exchange for a non-monetary asset or assets, or a combination of monetary and non-monetary assets.

The effective date of the amendment is for years beginning on or after 01 April 2018.

The entity has adopted the amendment for the first time in the 2019 annual financial statements.

Directive 12: The Selection of an Appropriate Reporting Framework by Public Entities

Historically, public entities have prepared financial statements in accordance with generally recognised accounting practice, unless the Accounting Standards Board (the Board) approved the application of generally accepted accounting practice for that entity. "Generally accepted accounting practice" has been taken to mean Statements of Generally Accepted Accounting Practice (Statements of GAAP), or for certain entities, International Financial Reporting Standards (IFRSs) issued by the International Accounting Standards Board. Since Statements of GAAP have been withdrawn from 1 December 2012, public entities will be required to apply another reporting framework in the future.

The purpose of this directive is to prescribe the criteria to be applied by public entities in selecting and applying an appropriate reporting framework.

The effective date of the directive is for years beginning on or after 01 April 2018.

The entity has adopted the directive for the first time in the 2019 annual financial statements.

2.2 Standards and Interpretations early adopted

The entity has chosen to early adopt the following standards and interpretations:

GRAP 108: Statutory Receivables

The objective of this Standard is: to prescribe accounting requirements for the recognition, measurement, presentation and disclosure of statutory receivables.

It furthermore covers: Definitions, recognition, derecognition, measurement, presentation and disclosure, transitional provisions, as well as the effective date.

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

The entity has early adopted the standard for the first time when the Minister sets the effective date for the standard.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

3. Inventories

Raw materials and finished goods*	4 710 077	2 648 024
Consumable**	70 160	86 802
Other - Commercial***	844 169	740 267
	5 624 406	**3 475 093**

During the current financial year inventory amounting to R689 649 (2018: R103 455) was expensed.

*stock components for repair and maintenance.

**Consumables stationery

***Commercial component

4. Receivables from exchange transactions

Trade receivables	6 979 381	4 163 962
Sundry receivables	6 195 381	6 010 182
Impairment of receivables	(2 277 483)	(1 042 444)
	10 897 279	**9 131 700**

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

Current assets	10 897 279	9 131 700

SAWS therefore recognises impairment of trade receivables based on individual and collective assessment as follows:

	Current - 90 Days	91-120 Days	Over 120 Days	Total
Regulated commercial debtors	4 026 159	451	1 986 498	6 013 108
Subtotal	4 026 159	451	1 986 498	6 013 108
Eskom Group	1 486	-	276 233	277 719
Insurance clients	2 492	-	370 839	373 331
Others	1 267 398	-	359 035	1 626 433
	5 297 535	**451**	**2 992 605**	**8 290 591**

Trade and other receivables past due but not impaired

Trade and other receivables which are less than 3 months past due are not automatically considered to be impaired. Management's judgement is used to impair amounts, as at 31 March 2019, R 797 860 (2018: R 1 192 510) were past due but not impaired. Trade receivables amounting to R1 500 077 (2018: R1 927 438) are neither past due nor impaired and are considered fully recoverable.

Trade and other receivables impaired

As of 31 March 2019, trade and other receivables of R2 277 483 (2018: R 1 042 444) were impaired and provided for.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

4. Receivables from exchange transactions (continued)

Reconciliation of provision for impairment of trade and statutory receivables

Opening balance	3 869 815	5 804 279
Provision for impairment	5 995 460	3 869 815
Unused amounts reversed	(1 574 684)	(5 804 279)
	8 290 591	**3 869 815**

The maximum exposure to credit risk at the reporting date is the carrying amount of each class of trade receivables mentioned above. The entity does not hold any collateral as security. Trade receivables are individually and collectively assessed for impairment, whether significant or not, and are included within the group of trade receivables with similar credit risk characteristics.

5. Statutory receivables

Statutory receivables	18 216 221	20 647 539
Impairment of receivables	(6 013 108)	(2 827 371)
	12 203 113	**17 820 168**

In terms of the SAWS Act, SAWS provides meteorological services to the airline industry at a rate promulgated by the Minister of Environment, Forestry and Fisheries in the Government Gazette. The Regulating Committee on Meteorological Services facilitates the consultative process between SAWS 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, SAWS charged a rate of 10,5% and 10,25% on all overdue accounts as promulgated. Statutory receivables are stated at amortised cost using effective interest rate method less impairment of receivables. Statutory receivables amounting to R825 793 (2018: R10 973 698) 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 2019, statutory receivables of R562 763 (2018: R2 827 371) were past due but not impaired.

Statutory receivables past due but not impaired

The ageing of amounts past due but not impaired is as follows:

	31 - 60 Days	61 - 90 Days	Over 120 Days
Statutory receivables - 2019	1 582 546	330 180	2 535 578
Statutory receivables - 2018	4 554 450	533 811	1 758 209

6. Prepayments

Prepaid expenses	7 733 560	9 233 433

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

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018
7. Cash and cash equivalents		
Cash and cash equivalents consist of:		
Bank balances and cash on hand	32 094 893	73 729 681
Short-term deposits	28 596 328	26 896 936
	60 691 221	**100 626 617**

8. Investment property

	2019			2018		
	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Investment property	69 277 188	-	69 277 188	67 487 940	-	67 487 940

Reconciliation of investment property - 2019

	Opening balance	Fair value adjustments	Total
Investment property	67 487 940	1 789 248	69 277 188

Reconciliation of investment property - 2018

	Opening balance	Fair value adjustments	Total
Investment property	65 614 150	1 873 790	67 487 940

The investment property (Land) includes portions 411, portion of 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 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 March 2019 by Mr Beukes Kuit from DDP Valuers and Advisory Services (Pty) Ltd, a qualified independent professional valuer. DDP Valuers and Advisory Services (Pty) Ltd 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. If the property was stated on the historical cost basis, the amounts would be as follows:

Historical cost - Investment property:	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 as at 31 March 2019

	2019			2018		
9. Property, plant and equipment	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Land - Garsfontein	12 421 912	-	12 421 912	9 699 780	-	9 699 780
Buildings - Irene and Bethlehem	4 786 600	(278 244)	4 508 356	3 863 836	(185 292)	3 678 544
Fence	2 784 993	(1 649 962)	1 135 031	2 775 043	(1 431 355)	1 343 688
Furniture and fixtures	10 287 282	(5 319 758)	4 967 524	8 103 656	(5 233 626)	2 870 030
Motor vehicles	600 817	(245 343)	355 474	984 236	(547 082)	437 154
Office equipment	4 629 068	(2 375 669)	2 253 399	5 235 786	(2 806 752)	2 429 034
Computer equipment	141 637 267	(51 427 254)	90 210 013	135 076 696	(41 727 890)	93 348 806
Leasehold improvements	3 222 581	(1 854 522)	1 368 059	2 665 691	(1 742 621)	923 070
Aircraft - airframes	1 566 921	(787 404)	779 517	1 637 799	(712 601)	925 198
Aircraft - engines	1 771 965	-	1 771 965	2 037 760	-	2 037 760
Aircraft - propellers	8 860	-	8 860	20 673	(2 363)	18 310
Radar - equipment	267 179 561	(78 786 718)	188 392 843	276 582 768	(79 684 859)	196 897 909
Meteorological equipment	68 934 533	(42 115 079)	26 819 454	64 326 513	(37 375 551)	26 950 962
Air quality equipment	31 871 419	(10 107 648)	21 763 771	30 610 902	(8 097 606)	22 513 296
Tools and other equipment	6 403 928	(1 888 739)	4 515 189	2 473 063	(1 434 452)	1 038 611
Library books and equipment	52 309	(29 707)	22 602	52 309	(25 598)	26 711
Total	**558 160 016**	**(196 866 047)**	**361 293 969**	**546 146 511**	**(181 007 648)**	**365 138 863**

Reconciliation of property, plant and equipment - 2019

	Opening balance	Additions	Disposals	Revaluations	Depreciation	Impairment loss	Total
Land - Garsfontein and Irene	9 699 780	-	-	2 722 132	-	-	12 421 912
Buildings - Irene and Bethlehem	3 678 544	-	-	922 764	(92 952)	-	4 508 356
Fence	1 343 688	9 950	1	-	(218 608)	-	1 135 031
Furniture and fixtures	2 870 030	2 684 578	(28 581)	-	(558 344)	(159)	4 967 524
Motor vehicles	437 154	-	(15 591)	-	(66 089)	-	355 474
Office equipment	2 429 034	752 262	(573 260)	-	(332 630)	(22 007)	2 253 399
Computer equipment	93 348 806	9 016 335	(145 378)	-	(11 863 543)	(146 207)	90 210 013
Leasehold improvements	923 070	596 780	(821)	-	(150 970)	-	1 368 059
Aircraft - airframes	925 198	-	(63 898)	-	(81 783)	-	779 517
Aircraft - engines	2 037 760	-	(265 795)	-	-	-	1 771 965
Aircraft - propellers	18 310	-	(7 141)	-	(2 309)	-	8 860
Radars - equipment	196 897 909	1 099 722	(715 245)	-	(8 889 543)	-	188 392 843
Meteorological equipment	26 950 962	4 633 936	(452)	-	(4 764 251)	(741)	26 819 454
Air quality equipment	22 513 296	1 558 579	(258 981)	-	(2 049 123)	-	21 763 771
Tools and other equipment	1 038 611	3 943 904	(94)	-	(467 232)	-	4 515 189
Library books and equipment	26 711	-	-	-	(4 109)	-	22 602
	365 138 863	**24 296 046**	**(2 075 236)**	**3 644 896**	**(29 541 486)**	**(169 114)**	**361 293 969**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

9. Property, plant and equipment (continued)

Reconciliation of property, plant and equipment - 2018

	Opening balance	Additions	Disposals	Revalua-tions	Depreciation	Impairment loss	Total
Land - Garsfontein	9 626 336	-	-	73 444	-	-	9 699 780
Buildings - Irene and Bethlehem	3 580 821	-	-	175 000	(77 277)	-	3 678 544
Fence	1 527 712	39 276	-	-	(223 300)	-	1 343 688
Furniture and fixtures	2 919 061	423 644	(21 901)	-	(450 774)	-	2 870 030
Motor vehicles	355 771	140 000	-	-	(58 617)	-	437 154
Office equipment	2 614 763	225 414	(81 409)	-	(329 734)	-	2 429 034
Computer equipment	64 363 344	39 257 905	(64 159)	-	(10 208 284)	-	93 348 806
Leasehold improvements	1 023 046	35 847	-	-	(135 823)	-	923 070
Aircraft - Airframes	1 542 286	-	-	(535 198)	(81 890)	-	925 198
Aircraft - Engines	2 504 136	-	-	(466 376)	-	-	2 037 760
Aircraft - Propellers	170 949	-	-	(150 276)	(2 363)	-	18 310
Radars equipment	210 388 231	-	-	-	(8 915 610)	(4 574 712)	196 897 909
Meteorological equipment	30 896 540	560 115	(51 084)	-	(4 454 609)	-	26 950 962
Air quality equipment	23 507 859	1 536 120	(537 202)	-	(1 993 481)	-	22 513 296
Tools and other equipment	1 186 561	15 245	(354)	-	(162 841)	-	1 038 611
Library books and equipment	30 820	-	-	-	(4 109)	-	26 711
	356 238 236	**42 233 566**	**(756 109)**	**(903 406)**	**(27 098 712)**	**(4 574 712)**	**365 138 863**

Revaluations

Reconciliation of surplus or (loss) recognised in the revaluation reserve in the statement of changes in net assets:

Revaluation of PPE.

Aircraft - revaluation		
Aircraft Airframes	-	(535 198)
Aircraft Engines	-	(466 376)
Aircraft Propellers	-	(150 276)
	-	**(1 151 850)**
Land and building - revaluation		
Land - Irene and Garsfontein	2 722 132	73 444
Building - Irene and Bethlehem	922 764	2 048 790
	3 644 896	**2 122 234**

The entity's aircraft were not revalued during the financial year ended 31 March 2019. This is in line with the SAWS Finance and Financial Administration policy which states that aircraft will be revaluated every 2 years.

Aircraft		
Cost	9 811 735	9 811 735
Accumulated depreciation	(9 811 735)	(9 811 735)
	-	**-**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

9. Property, plant and equipment (continued)

Details of properties

Bethlehem Property

Cost	600 000	600 000
Accumulated depreciation	(204 000)	(192 000)
	396 000	**408 000**

The Bethlehem property was revalued at 31 March 2019 by an independent valuer, Mr Rainier Spamer, who is a professional valuer (registration number 618414) 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 and Erf 2064 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 SAWS at financial year end, however, the Minister of Public Works passed all rights, obligations and liabilities to SAWS on the commencement of the SAWS Act, 2001 (No. 8 of 2001).

Irene Property

SAWS utilises Portion 110 of the farm Doornkloof 391 JR for scientific purposes for no consideration, which was fair valued at R2 412 847 on 31 March 2013. 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 SAWS. The improvements were revalued at 31 March 2019 by Mr Beukes Kuit from DDP Valuers and Advisory Services (Pty) Ltd. Valuations were made on the basis of open market value.

There were no contractual commitments for the acquisition of property, plant and equipment entered into by SAWS at the reporting date. SAWS does not have assets pledged as security.

10. Intangible assets

	2019			2018		
	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Computer software	43 499 429	(19 646 204)	23 853 225	42 116 535	(16 492 077)	25 624 458
Servitude	1 500 000	(355 246)	1 144 754	1 500 000	(295 246)	1 204 754
Work-in-progress - Computer Software	3 899 536	-	3 899 536	-	-	-
Total	**48 898 965**	**(20 001 450)**	**28 897 515**	**43 616 535**	**(16 787 323)**	**26 829 212**

Reconciliation of intangible assets - 2019

	Opening balance	Additions	Amortisation	Total
Computer software	25 624 458	1 382 895	(3 154 128)	23 853 225
Servitude	1 204 754	-	(60 000)	1 144 754
Work-in-progress - Computer Software	-	3 899 536	-	3 899 536
	26 829 212	**5 282 431**	**(3 214 128)**	**28 897 515**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

10. Intangible assets (continued)

Reconciliation of intangible assets - 2018

	Opening balance	Additions	Disposals	Amortisation	Total
Computer software	25 576 464	3 157 992	(331)	(3 109 667)	25 624 458
Servitude	1 264 754	-	-	(60 000)	1 204 754
	26 841 218	**3 157 992**	**(331)**	**(3 169 667)**	**26 829 212**

Other information

Intangible assets comprise of computer software (including website costs) and a servitude. SAWS acquired the right of use of land for its metereological 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.

11. Operating lease liability

	2019	2018
Current liabilities	2 759 322	3 834 076

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

SAWS leases 10 premises (2018: 10 premises) from various lessors. The rental agreements for the premises include escalation clauses between 8% and 11% per year in rental payments. The duration of the rentals varies between two and ten years. SAWS has an agreement with Dihlabeng Municipaity which stipulates that SAWS will offer free rental to the municipality in exchange for SAWS incurring no levies and electricity costs on the same.

SAWS entered into a contract with Swartland Municipality and Alkantpan where SAWS provides lightning data in exchange for free rental space. SAWS utilises Portion 110 of the farm Doornkloof 391 JR for scientific purposes for no consideration, which was valued at R2 412 847 on 31 March 2013. Improvement to the property consists of two interconnected offices, a workshop, storage wings and some supporting outbuildings and carports. In accordance with the registration of ownership, the property may not be transferred to SAWS.

SAWS signed a contract for the rental of motor vehicles with Kempston Trading (Pty) Ltd for a total amount of R22 015 278 for 3 years, effective 1 June 2018, the last date of signing of the agreement by both parties.

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.

2019	**Premises**	**Motor vehicle**	**Total**
Future minimum lease payments not later than 1 year	17 448 001	7 338 426	24 786 427
Later than 1 year and not later than 5 years	54 375 210	8 561 497	62 936 707
Later than 5 years	5 284 747	-	5 284 747
	77 107 958	**15 899 923**	**93 007 881**

2018	**Premises**	**Motor Vehicle**	**Total**
Future minimum lease payments not later than 1 year	11 761 680	714 765	12 476 445
Later than 1 year and not later than 5 years	51 649 922	-	51 649 922
	63 411 602	**714 765**	**64 126 367**

Straight lining effect on operating lease liability:		
Opening balance	3 834 076	3 528 881
Deferred rental	(1 074 754)	305 195
Closing balance	**2 759 322**	**3 834 076**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

12. Payables from exchange transactions

Trade payables	14 498 163	21 852 054
Payroll payables	8 266 868	3 544 269
Creditors bursary students	1 573 722	1 310 906
Staff subsistence and travel	182 206	178 103
Sundry payables	5 598 573	3 889 202
	30 119 532	**30 774 534**

Trade and other payables are subsequently carried at amortised cost.

Spot rates at period-end.

US Dollar	14.4649	11.8131
EUR	16.2273	14.5523
GBP	18.8418	16.5754

Unrealised foreign exchange gains and losses are calculated using the spot rate at year-end.

Included in trade and other payables are foreign creditors	**2019 Foreign currency**	**2018 Foreign currency**	**2019 R**	**2018 R**
EuMetNet	EUR	1,678		24,414
IBL Software Engineering	EUR	5,700		
Springer Nature	EUR	5,700		
Interoute	GBP	11,526		191,048
NOAA GMD	USD	25,370		299,708
Microsoft Ireland Operations	USD	45,027		531,911
Selex System Integration	EUR	67,670		984,754
Interoute	GBP 11,526		217,171	
Envitech Ltd	USD 74,015		1,070,842	
			1,288,013	**2,031,835**

13. Unspent conditional grants and receipts

Unspent conditional grants and receipts comprise:

Unspent public contributions and donations	15 955 833	12 019 918

Movement during the year

Balance at the beginning of the year	12 019 918	10 097 278
Additions during the year	9 269 150	5 085 374
Income recognition during the year	(5 333 235)	(3 162 734)
Unspent Donations - 31 March	**15 955 833**	**12 019 918**

Donor funds consist of funding received from various institutions. Memoranda of Understanding (MoUs) are entered into between SAWS and the donors with the aim of utilising SAWS' expertise in meteorology

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

14. Provisions

Reconciliation of provisions - 2019

	Opening Balance	Additions	Utilised during the year	Total
Bonus provision: current	15 500 000	-	(7 441 254)	8 058 746
Capped leave provision: non-current	457 491	39 067	(7 324)	489 234
	15 957 491	**39 067**	**(7 448 578)**	**8 547 980**

Reconciliation of provisions - 2018

	Opening Balance	Additions	Utilised during the year	Total
Bonus provision: current	13 500 000	2 000 000	-	15 500 000
Capped leave provision: non-current	442 548	32 515	(17 572)	457 491
	13 942 548	**2 032 515**	**(17 572)**	**15 957 491**

Non-current liabilities	489 234	457 491
Current liabilities	8 058 746	15 500 000
	8 547 980	**15 957 491**

Provision for Performance Bonus

This is a provision for the performance bonus based on the performance management of SAWS. The actual utilisation is approved by the Board based on a combination of both the entity's and individual staff performance policy against predetermined targets and performance contracts, respectively which are evaluated after year-end. Performance bonuses are payable at the discretion of the Board.

Capped Leave Provision

Capped leave is calculated based on the working days due to each employee, as at 31 July 2001 from the payroll system. Adjustments to this provision relate to increases in salary rates, days claimed or paid out through retirement or death.

15. Unspent government grant - CAPEX

Government grant - capital expenditure	37 030 000	-
Income recognition during the year	(9 513 223)	-
	27 516 777	**-**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

16. Employee benefit obligations

Defined benefit plan

Post retirement medical aid plan

All eligible employees of SAWS, who joined SAWS 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 SAWS 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 2019 is R2 776.94 (2018: R2 652), 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:

Current (In service) employees	19	20
Continuation members (pensioners)	31	31
Total	**50**	**51**

The actuarial valuation of the liability in respect of the post-employment medical aid benefit is performed on balance sheet date as summarised below. The 2019 valuation has been performed by an independent company of Actuarists, One Pangaea Financial, registration number 2013/070734/07.

Changes in the present value of the defined benefit obligation are as follows:

Opening balance	4 861 028	11 319 964
Contributions by plan participants	(1 704 000)	(1 085 936)
Net expense recognised in the statement of financial performance	965 997	(5 373 000)
	4 123 025	**4 861 028**

SAWS undertook an investment plan with Momentum, Customised With-Profit Annuity portfolio (Plan Asset) in order to transfer the financial risk associated with this post-retirement medical liability. This investment plan will also provide SAWS with the ability to share in the benefits with regard to the investment and mortality experience underlying the liability through future

Plan Asset

Return on plan asset	1 506 000	1 633 000
Employer contribution	198 000	39 000
Actuarial (gains) losses	(3 073 000)	(586 000)
	(1 369 000)	**1 086 000**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018
16. Employee benefit obligations (continued)		
Accrued Liability		
Current service cost	367 000	445 000
Interest cost	1 929 000	2 608 000
Actuarial (gain)/ loss	(4 403 000)	(8 426 000)
	(2 107 000)	**(5 373 000)**
Movement in the defined benefit obligation		
Balance 01 April	22 391 713	28 821 713
Current service cost	367 000	445 000
Interest cost	1 929 000	2 608 000
Actuarial (gain)	(4 403 000)	(8 426 000)
Benefit paid	(1 061 000)	(1 057 000)
	19 223 713	**22 391 713**
Changes in the fair value of plan assets are as follows:		
Opening balance	17 530 685	17 501 685
Expected return	1 506 000	1 633 000
Actuarial gains (losses)	(3 073 000)	(586 000)
Contributions by employer	198 000	39 000
Benefits paid	(1 061 000)	(1 057 000)
	15 100 685	**17 530 685**
Summary of employee benefit obligation		
Defined benefit obligation	19 223 713	22 391 713
Fair value of plan asset	(15 100 685)	(17 530 685)
Total	**4 123 028**	**4 861 028**

The entity expects to contribute R 1 012 000 to its defined benefit plans in the following financial year

Key assumptions used

Assumptions used at the reporting date:

Discount rates used	9,65 %	8,81 %
Expected rate of return on assets	5,66 %	6,14 %
Medical aid cost trend rates	7,16 %	7,64 %
Expected increase in salaries	100,00 %	100,00 %
Normal retirement age	65	65
Proportion of employees married at retirement	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.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

16. Employee benefit obligations (continued)

Other assumptions

Assumed healthcare cost trends rates have a significant effect on the amounts recognised in surplus or deficit. A one percentage point change in assumed healthcare cost trends rates would have the following effects:

	One percentage point increase	One percentage point decrease
Employer's accrued liability	17 239 000	21 812 000
Employer's service cost	238 000	343 000
Employer's interest cost	1 781 000	1 841 000
Employer's accrued liability	21 868 000	17 163 000
Employer's service cost	347 000	235 000
Employer's interest cost	2 059 000	1 605 000
	24 274 000	**19 003 000**

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

	2019	2018	2017	2016	2015
Defined benefit obligation	19 223 713	22 391 713	28 822 000	25 844 713	26 480 535
Plan asset	(15 100 685)	(17 530 685)	(17 501 685)	(17 540 239)	(14 629 714)
	4 123 028	**4 861 028**	**11 320 315**	**8 304 474**	**11 850 821**

The employee benefit obligation is partially funded by the plan assets.

Defined contribution plan

It is the policy of the entity to provide retirement benefits to all its employees [or specify the number of employees covered]. A number of defined contribution provident funds, all of which are subject to the Pensions Fund Act exist for this purpose.

The entity is under no obligation to cover any unfunded benefits.

Included in the defined contribution plan information above, is the following plan(s) which is (are) a Multi-Employer Fund and is (are) a Defined Benefit Plans, but due to the fact that sufficient information is not available to enable the entity to account for the plan(s) as a defined benefit plan(s). The entity accounted for this (these) plan(s) as a defined contribution plan(s):

Short term employee benefit

Leave pay accrual		
Opening balance	4 717 707	4 274 669
Leave raised	3 751 398	3 304 209
Leave utilised	(3 134 131)	(2 861 171)
	5 334 974	**4 717 707**

17. Revenue

Commercial revenue	160 608 681	154 956 083
Other revenue	1 229 755	1 109 806
Interest received	4 592 966	6 730 004
Government grants & subsidies	209 488 223	240 482 000
Public contributions and donations	6 844 361	4 048 344
	382 763 986	**407 326 237**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018
17. Revenue (continued)		
The amount included in revenue arising from exchanges of goods or services is as follows:		
Commercial revenue	160 608 681	154 956 083
Other revenue	1 229 755	1 109 806
Interest received	4 592 966	6 730 004
	166 431 402	**162 795 893**
The amount included in revenue arising from non-exchange transactions is as follows:		
Government grants & subsidies	209 488 223	240 482 000
Public contributions and donations	6 844 361	4 048 344
	216 332 584	**244 530 344**
18. Revenue from exchange transactions		
The amount included in other revenue arising from exchanges of goods or services are as follows:		
Commercial revenue		
Aviation	128 234 129	129 300 614
Aviation instruments maintenance income	797 307	915 434
Air quality revenue	5 891 089	6 584 065
Information fees	17 647 285	13 638 158
Training - RTC	880 653	377 064
LDN Sales	5 751 552	3 911 606
Selling of instruments	1 406 665	229 142
	160 608 680	**154 956 083**
Other revenue		
Miscellaneous income	1 175 813	964 163
Delinquency fees	53 941	145 643
	1 229 754	**1 109 806**
19. Investment revenue		
Interest revenue		
Bank	4 592 966	6 730 004
20. Government grants and subsidies		
Operating grants		
Government grant	199 975 000	240 482 000
Capital grants		
Government grant	9 513 223	-
	209 488 223	**240 482 000**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018
21. Public contributions and donations		
TETA SETA Grant	1 511 125	885 609
Donor funds - Other	5 333 236	3 162 735
	6 844 361	**4 048 344**
Reconciliation of conditional contributions		
Balance unspent at beginning of year	12 019 918	10 097 278
Current-year receipts	9 269 150	5 085 374
Conditions met - transferred to revenue	(5 333 235)	(3 162 734)
	15 955 833	**12 019 918**
22. Employee related costs		
Salaries and wages	207 473 952	178 125 572
Performance bonus and leave pay	7 532 099	5 170 306
Medical aid contributions	14 315 906	12 812 318
Unemployment Insurance Fund	836 701	787 707
Compensation Commissioner	840 330	123 563
Post retirement medical aid	15 937 046	13 831 843
Overtime and shift allowance	14 399 470	11 629 794
	261 335 504	**222 481 103**
23. Administrative expenditure		
Admin fees	1 312 258	1 496 338
Audit expenses (Internal)	1 163 322	1 006 541
Sales promotions	2 600	387 856
Public awareness	56 745	10 858
Selling and marketing	27 562	103 404
Commission paid	24 651	92 914
Impairment of trade receivables / (recovered)	4 878 144	(1 703 084)
Board expenses	1 403 174	1 701 068
Conference costs	584 457	400 222
Refreshments	266 995	657 251
Entertainment	389 989	264 925
Entrance fees	4 570	8 488
Legal fees	888 543	2 110 868
Printing and stationery	1 065 206	1 008 132
Training	4 065 337	1 478 071
Bank charges	302 606	292 011
	16 436 159	**9 315 863**
24. Depreciation and amortisation		
Property, plant and equipment	29 541 486	27 098 712
Intangible assets	3 214 128	3 169 667
	32 755 614	**30 268 379**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

25. Impairment of assets

Impairments		
Property, plant and equipment	169 114	4 574 712

During the current financial year, SAWS reviewed its Property, Plant and Equipment in order to assess whether there was any indication that the assets suffered any impairment loss.

The recoverable amount for property, plant and equipment was determined to be below its Carrying Amount and was therefore impaired.

26. Finance costs

Other interest paid - SARS	953 196	-

27. Operating expenses

Cleaning	1 741 396	871 777
Consultants	7 965 610	8 489 420
Consumables spares	12 761 267	25 363 761
Entertainment	1 117	-
Insurance	1 849 639	1 820 753
Conferences and seminars	3 049 171	1 817 688
Computer and software	15 753 691	13 350 692
Promotions and sponsorships	4 244 675	4 021 053
Levies	2 180 673	1 962 307
Motor vehicle leases	2 583 827	1 897 011
Placement fees	3 316 910	1 058 403
Postage and courier	409 343	1 173 051
Security	2 831 390	1 909 063
Subscription and membership fees	4 157 930	2 854 893
Communication costs	13 834 687	11 095 672
Travel - local	15 331 066	11 801 390
Travel - overseas	4 338 472	2 976 920
Electricity	4 760 148	3 963 535
Aircraft expenses	232 337	225 623
Leases and rental	27 173 459	22 244 598
Repairs and maintenance	9 770 590	9 568 780
Publications	426 611	337 333
Audit fees (External)	3 113 092	3 241 226
	141 827 101	**132 044 949**

28. Loss on foreign exchange

Foreign exchange gain	(181 580)	(398 595)
Foreign exchange loss	1 438 214	525 172
	1 256 634	**126 577**

29. Fair value adjustments

Investment property	1 789 247	1 874 738

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018
30. Cash (used in) generated from operations		
(Deficit) surplus	(68 962 361)	17 464 316
Adjustments for non-cash items:		
Depreciation and amortisation	32 755 614	30 268 379
(Profit)/Loss on sale of assets and liabilities	360 933	-
Fair value adjustments	(1 789 248)	(1 873 790)
Impairment deficit	169 114	4 574 712
Debt impairment	-	(1 934 464)
Bad debts written off	457 368	231 379
Movements in operating lease assets and accruals	(1 074 754)	3 834 076
Movements in retirement benefit assets and liabilities	(114 797)	(6 015 798)
Movements in provisions	(7 409 511)	2 014 943
Other non-cash items	1 250 998	(727 045)
Changes in working capital:		
Inventories	(2 149 313)	1 131 857
Receivables from exchange transactions	(1 765 579)	2 087 023
Statutory receivables	5 617 055	(3 625 713)
Prepayments	1 499 873	(102 547)
Payables from exchange transactions	(655 003)	6 736 459
Unspent conditional grants and receipts	3 935 915	1 730 090
	(37 873 696)	**55 793 877**

31. Commitments

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

Commitments

- within one year	79 800 508	94 697 335
- in second to fifth year inclusive	75 640 280	24 197 532
	155 440 788	**118 894 867**

32. Contingencies

Contingent liabilities

Contingent liabilities	-	2 452 754

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

The contingent liability for the prior year is now payable and has been transferred to current liabilities in the current financial year.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

33. Related parties

Relationships

In preparing the annual financial statements for the year ended 31 March 2019, SAWS has identified the related party relations and made the necessary disclosures in the annual financial statements. SAWS 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. SAWS reports functionally to the Department of Environment, Forestry and Fisheries and therefore the Minister of Environment, Forestry and Fisheries is the Executive Authority. SAWS 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 Technology 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 the 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 SAWS 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 SAWS employees by the Government Pension Fund;
- The collection of aviation and other related services revenue from entities controlled by national government; and
- The provision of air qaulity 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 & subsidies	199 975 000	240 482 000
Capital expenditure grant	37 029 996	-
	237 004 996	**240 482 000**
Related party expenditure		
Department of Environmental Affairs	-	(4 176 000)

Purchase of fuel in the 2017/18 financial year by SAWS for the SA Agulhas ship to transport SAWS weather buoys to Sandwich Island.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

33. Related parties (continued)

Remuneration

Non-Executive Directors

2019

Name	Designation	Fees	Travel	Total
Ms M. Mngomezulu***	Former Chairperson	124 860	23 457	148 317
Ms N.Magomola**	Chairperson	286 772	74 056	360 828
Prof. E. Mokotong	Non-Executive Member	103 592	23 478	127 070
Mr D. Lefutso	Non-Executive Member	164 427	42 916	207 343
Adv. D. Block	Non-Executive Member	157 662	41 087	198 749
Ms. S. Mudly-Padayachie	Non-executive Member	140 366	27 494	167 860
Ms N.D. Madiba***	Former Non-Executive Member	27 214	8 252	35 466
Mr P.D. Dexter**	Deputy Chairperson	87 415	36 151	123 566
Mr I. Phaduli**	Non-Executive Member	19 440	946	20 386
Ms F. Renge**	Non-Executive Member	11 664	1 923	13 587
Dr M. Maila#	Non-Executive Member	1	-	1
Mr R. Nicholls***	Non-Executive Member	1	-	1
		1 123 412	**279 762**	**1 403 174**

2018

Name		Fees	Travel	Total
Ms M. Mngomezulu	Chairperson	431 282	31 401	462 683
Mr J. Tshipa*	Non-Executive Member	164 001	12 420	176 421
Prof E. Mokotong	Non-Executive Member	141 108	7 489	148 597
Mr R. Nicholls	Non-Executive Member	11 160	6 351	17 511
Mr D. Lefutso	Non-Executive Member	235 231	54 405	289 636
Adv. D. Block	Non-Executive Member	145 242	20 375	165 617
Ms S. Mudly-Padayachie	Non-Executive Member	95 812	12 594	108 406
Mr K. Modimoeng	Non-Executive Member	123 453	7 716	131 169
Ms N.D. Madiba	Non-Executive Member	90 287	10 741	101 028
		1 537 576	**163 492**	**1 701 068**

* Resigned in November 2017.

**Appointed on the 1st June 2018.

Dr N. Maila was also appointed on the 1st January 2019. He worked for Government and thus was not remunerated.

*** Ceased being Board Members on the 1st June 2018.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

33. Related parties (continued)

Executive management

2019

Name	Designation	Basic salary	Bonuses and performance related payments	Medical aid, UIF & Pension	Cell phone allowance	Total
Mr J. Lengoasa	Chief Executive Officer	3 059 820	-	284 975	36 000	3 380 795
Mr M.F. Ndabambi	Executive Infrastructure and Information Systems	1 758 514	70 732	289 200	36 000	2 154 446
Ms J. Mphafudi	Executive Corporate and Regulatory Services	1 637 005	-	157 842	36 000	1 830 847
Ms B. Shongwe	Chief Financial Officer	1 945 003	-	297 797	36 000	2 278 800
Mr J. Witi #	Acting Executive Weather and Climate Services	107 000	-	-	-	107 000
Mr T. Ngobeni #	Acting Executive Weather and Climate Services	121 314	-	-	-	121 314
Mr D. Terblanche #	Acting Executive Infrastructure and Information Systems	141 689	-	-	-	141 689
		8 770 345	**70 732**	**1 029 814**	**144 000**	**10 014 891**

2018

Name	Designation	Basic salary	Medical aid, UIF & Pension	Cell phone allowance	Leave pay	Total
Ms M.M. Kgari*	Former interim CEO	289 155	-	-	-	289 155
Mr J. Lengoasa**	Chief Executive Officer	2 572 339	150 220	32 323	-	2 754 882
Mr M.F. Ndabambi	Executive Infrastructure and Information System	1 468 320	156 242	36 000	-	1 660 562
Ms J. Mphafudi	Executive Corporate and regulatory Services	1 520 750	100 765	36 000	-	1 657 515
Ms M.E. Hogendoom***	Former CFO	631 472	53 184	12 000	121 428	818 084
Mr L. Gumenge #	Former Acting CFO	237 627	-	-	-	237 627
Ms B. Shongwe ****	Chief Financial Officer	502 500	27 526	9 000	_	539 026
Mr J. Witi #	Acting Executive Weather and Climate Services	160 501	-	-	-	160 501
Ms M.A. Hartslief #	Acting GM: Commercial	144 046	-	-	-	144 046
Mr M. Majodina #	Former Acting GM: Corporate Affairs	83 659	-	-	-	83 659
		7 610 369	**487 937**	**125 323**	**121 428**	**8 345 057**

Amounts reflected only relate to acting allowances paid.

* Resigned 31st May 2017.

** Appointed on the 8th May 2017.

*** Resigned on the 31st July 2017.

**** Appointed 2nd January 2018.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

34. Prior period errors (continued)

During the current financial year, SAWS conducted a physical asset verification assessment and discovered that there were assets that were not reflected on the Fixed Asset Register and the annual financial statements. These assets had a cost of R4 803 265 and an accumulated depreciation of R2 698 265, resulting in an increase of R2 105 000 in retained earnings adjusted on 1 April 2017.

The effect of the recognition of these assets into the Fixed Asset register is as follows:

01 April 2017

Statement of financial position

Increase - Air Quality Equipment	190 297
Increase - Computer Equipment	381 550
Increase - Computer Equipment	2 982 847
Increase - Furniture & Fitting	165 442
Increase - Office Equipment	953 450
Increase - Office Equipment	103 737
Increase - Tools & Other Equipment	25 943
	4 803 266

Accumulated depreciation

Increase - Air Quality Equipment	(95 148)
Increase - Computer Equipment	(138 327)
Increase - Computer Server	(1 774 028)
Increase - Furniture & Fitting	(83 247)
Increase - Meteorological Instrument	(569 752)
Increase - Tools & Other Equipment	(23 524)
Increase - Tools & Other Equipment	(14 239)
	(2 698 265)

Increase - Retained Earning	2 105 001

Computer software purchased during the 2016 financial year was incorrectly reflected in receivables from exchange transactions:

Increase - Computer Software	747 879
Decrease - Receivables from exchange transactions	(747 879)
	-

SAWS did not perform a comprehensive review of the useful lives for Property plant and equipment and intangible assets in the previous financial years. In the current financial year, SAWS performed an extensive asset verification process to ensure that the Fixed Asset Register is compliant to GRAP standards. This resulted in the re-assessment of useful lives effective as on 1 April 2017 to ensure a more reliable and relevant presentation. The revision of useful lives was accounted for retrospectively and comparative amounts have been appropriately restated to account for prior period errors.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

34. Prior period errors (continued)

Correction of Assets Useful Lives

The change was effected to ensure a more relevant and reliable presentation. The revision of useful lives was accounted for retrospectively and comparative amounts have been appropriately restated. The effect of this revision is as follows as at 01/04/2017:

Decrease - Air Quality Equipment	2 652 019
Decrease - Computer Equipment	13 698 616
Decrease - Computer Servers	297 140
Decrease - Computer Software	8 346 837
Decrease - Fences	351 069
Decrease - Furniture & Fitting	1 037 598
Decrease - Houses	1 723
Decrease - Leasehold Improvements	571 067
Decrease - Library Books & Equipment	6 850
Decrease - Meteorological Instruments	13 029 823
Decrease - Motor Vehicles	116 788
Decrease - Office Equipment	241 853
Decrease - Radar Equipment	7 950 333
Decrease - Tools & Other Equipment	503 385
	48 805 101
Increase - Retained Earning	(48 805 102)
Decrease : Retained Surplus	(319 883)
Decrease : Property, plant and equipment	(319 883)

31 March 2018

Correction of Radar impairment in 2018 Financial year which was incorrectly credited to cost - Radar Equipment instead of accumulated depreciation - Radar Equipment.

Statement of Financial Position	
Increase in accumulated depreciation - Radar Equipment	(4 574 712)
Increase in cost - Radar equipment	4 574 712

Statement of Financial Position	**As previously Reported**	**Correction of error**	**Restated amount**
Property, plant and equipment	319 306 840	45 832 023	365 138 863
Intangible assets	16 147 204	10 682 008	26 829 212
Receivables from exchange transactions	12 476 264	(747 878)	11 728 386
Employee benefit obligation	(4 866 964)	5 936	(4 861 028)
Accumulated surplus	(406 406 636)	(55 772 087)	(462 178 723)

Statement of Financial Performance	**As previosly Reported**	**Correction error**	**Restated Amount**
Depreciation and amortisation	35 444 310	(5 175 931)	30 268 379

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

34. Prior period errors (continued)

Other

SAWS received an amount of R2 596 686 in the prior period for services rendered to the Meteorogical Association of Southern Africa. Of this amount, R2 404 136 was received during the year ending 31 March 2018 and the remaining amount of R124 208 was received in the year ending 31 March 2012 and R68 342 was received in the year ending 31 March 2011. These amounts were incorrectly allocated against the Unspent Conditional Grants account instead of the Sundry Receivable accounts.

The effect of the prior year error in the Statement of Financial Position is as follows:

31 March 2017	
Decrease in Unspent Conditional Grants	(192 550)
Decrease in Sundry Receivables	(192 550)
31 March 2018	
Decrease in Unspent Conditional Grants	(2 404 136)
Decrease in Sundry Receivables	(2 404 136)

	As previously reported	Correction of error	Restated amount
Unspent Conditional Grant	14 616 603	(2 596 685)	12 019 918
Sundry Receivables	8 606 868	(2 596 686)	6 010 182

35. 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 marketable securities, the availability of funding through an adequate amount of committed credit facilities and the ability to close out market positions. Due to the dynamic nature of the underlying businesses, entity treasury maintains flexibility in funding by maintaining availability under committed credit lines.

The entity's risk to liquidity is a result of the funds available to cover future commitments. The entity manages liquidity risk through an ongoing review of future commitments and credit facilities. Cash flow forecasts are prepared and adequate utilised borrowing facilities are monitored. Prudent liquidity risk management implies maintaining sufficient cash and obtaining the continued commitment from the Department of Environment, Forestry and Fisheries for the government grant and the collection of aviation income from respective airlines. Due to the nature of the business, management maintains flexibility in funding by maintaining expenses below budget and continuously pursuing additional income via donor funding, information fees and the sale of lightning detection networks.

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

	Less than 1 year
2019 Trade and other payables	30 119 531
2018 Trade and other payables	30 774 533

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018

35. Risk management (continued)

Credit risk

Financial assets, which potentially subject the entity to the risk

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

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.

Market risk

Interest rate risk

The entity's exposure to market risk (in the form of interest rates risk) arises primarily form the entity's investment in cash and cash equivalents, accounts receivable and payable. The entity manages its interest rate risk by obtaining competitive rates from approved financial institutions on a monthly basis. The entity policy is to manage interest rate risk so that fluctuations in variable rates do not have a material impact on surplus/ (deficit).

The entity's exposure to interest rate risk and the effective interest rates on financial instruments at the Statement of Financial Position date is as follows:

	2019 Effective interest rate	2019	2018
Cash	6,50 %	60 691 221	100 626 617
Accounts receivable	10,38 %	30 833 952	31 236 235
Average rate/ Total financial assets	**8,44 %**	**91 525 173**	**131 862 852**

	2019 Effective interest rate	2019	2018
Financial assets	8,44 %	91 525 173	131 862 852
Financial liabilities	-	(30 119 531)	(30 774 533)
Average rate/ Total financial assets	**8,44**	**61 405 642**	**101 088 319**

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 11.

	2019 foreign currency	2018 Foreign currency	2019 R	2018 R
EUR Payables	-	75 048	-	1 092 116
GBP Payables	11 526	11 526	217 171	191 048
USD Payables	74 015	70 398	1 070 842	831 620
	-	**-**	**1 288 013**	**2 114 784**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS as at 31 March 2019

	2019	2018
36. Fruitless and wasteful expenditure		
Accommodation and travel	-	94 580
South African Revenue Service - interest charge and penalties	953 196	11 528
	953 196	**106 108**

The fruitless and wasteful expenditure for the year ending 31 March 2018 relates to cancellation of bookings for accommodation and no show.

An amount of R953 196 (2018: R11 528) relates to late payment of tax to the South African Revenue Service.

An investigation will be initiated to determine the person responsible for the interest and penalties charged. Disciplinary actions may be taken depending on the findings.

37. Irregular expenditure		
Opening balance*	4 786 184	3 087 620
Expenditure incurred in excess of budget	20 012 029	-
Professional fees paid - No prior written approval for deviation	2 421 615	145 007
Salary related costs	2 552 347	587 000
Operating lease - No prior approval for deviation	-	1 553 557
Head Office accommodation	12 449 005	-
Incorrect criteria used to appoint a supplier	172 991	227 689
	42 394 171	**5 600 873**

No irregular expenditure was condoned during the current financial year.

* The opening balance of R4 786 184 relates to amounts that were paid without prior written approval for deviation, relating to legal fees amounting to R82 332, professional fees R145 007 and operating lease R1 553 557, while an amount of R2 262 288 relates to payments exceeding the original quotation.

Details of irregular expenditure

	Disciplinary steps taken/criminal proceedings	
Flawed procurement process that was followed in awarding a tender for Head Office accommodation	Investigations are in progress	12 449 005
No prior written approval for deviation was obtained from National Treasury	The matter will be investigated	2 421 615
Expenditure incurred in excess of budget		20 012 029
Incorrect criteria used to appoint a supplier	The matter will be investigated	172 991
Flawed process that was made in appointment of employees	The matter will be investigated	2 552 347

South African Weather Service

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