

# Business model and Data Policy – South African NMHS perspective

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# History of the South African Weather Service (SAWS)

- 1912-1960: The Weather Service in the Union of South Africa
- 1940: The Meteorological Service is taken over by the Dept of Defence during the Second World War
- 1949: The Meteorological Service is transferred to the Dept of Transport and its name officially changed to South African Weather Bureau (SAWB)
- 1986: The SAWB is transferred to the Department of Environmental Affairs
- 2001: The South African Weather Service (SAWS) is established on 15 July as a Schedule 3A public entity under the Ministry of Environmental Affairs and Tourism
- Currently the South African Weather Service reports to the Dept of Environment, Forestry & Fisheries

**Bottom line: Up until 2001, the NMHS was fully funded by government. Once it became a public entity in 2001, it had to rely on revenue generated from the selling of services.**

# SAWS business model

- Clearly stipulated in the South African Weather Service Act, Act No 8 of 2001 (as amended) are the following functions of the NMHS:
  - Has a mandate to deliver both **public good** (funded by government) and **commercial services** (user-pays model)
  - Has the **national authority to issue severe weather-related watches and warnings** over South Africa - to ensure that there is a single authoritative voice in this regard
  - Be the **long-term custodian of the national climatological record** through the ongoing collection of meteorological data over South Africa and the surrounding southern oceans
  - Designated by the State to provide **weather services to the aviation industry**
  - Fulfils a range of **international obligations** of the government

Bottom line: Government provides an annual grant for the Public Good mandate of SAWS but SAWS is expected to generate funds in addition to the governmental grant. One of the ways it can do this is to sell data and products.

# SAWS data policy

The provision of data is governed by a data policy and allows for SAWS to provide data on a cost recovery basis:

- ❖ Requests for data which are to be used for commercial purposes, carry a fee determined by a pricing model.
- ❖ Data provided to researchers and scientists carry a handling fee (15% of the commercial price of the data).
- ❖ Students and learners who need data for educational purposes are exempted from the handling fee and get the data free of charge.

**Bottom line: SAWS applies this data policy to recover costs for the maintenance of the infrastructure to support data provision to continue into the future.**

# Data challenges

- **Inadequate government funding** to maintain observational networks. The annual government grant allocated to SAWS is shrinking each year and most public entities are being pushed to generate income to fund their operations. Data is expensive to collect, quality control, store and disseminate.
- **Deteriorating public good weather and climate observation infrastructure.** Some of the existing infrastructure is not well maintained. Manual stations which rely on volunteer observers are declining. Very hard to keep long-term climate monitoring station operating (land use issues, vandalism etc.)
- **Multiple institutions owning or managing Earth system observation infrastructure** in the country. Blockages in the institutional arrangements as well as systems and protocols require to collect and make these data available for use. Some stations are close to each other entities' stations meaning there is a duplication of effort. Lack of standardization in siting of stations, methods of observation and quality control measures
- **Lack of technological capacity.** Lack of skills in the big data space. Outdated technologies which are expensive to replace and require expensive annual licence fees. Limited platforms for users to access the data and information

# Declining weather station network

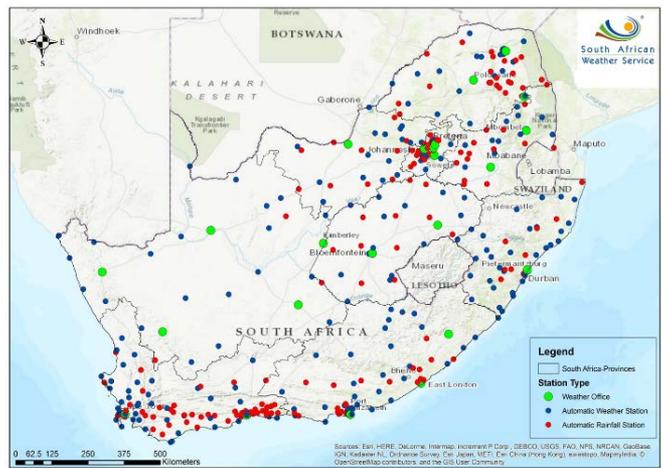


Figure 1: Automatic Weather stations

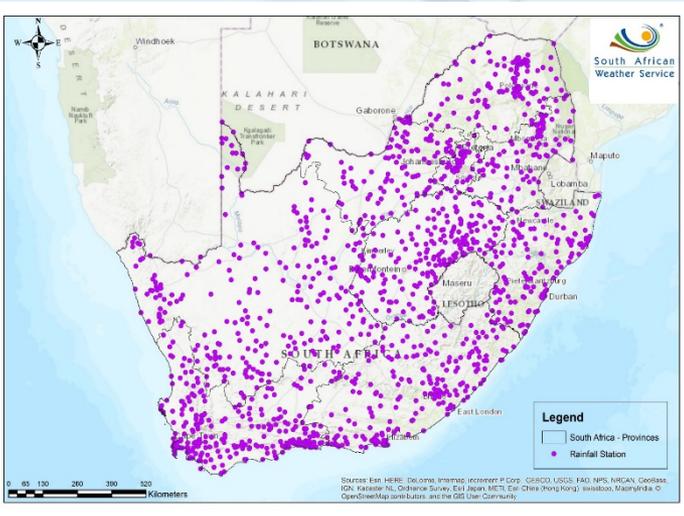


Figure 2: Rainfall stations

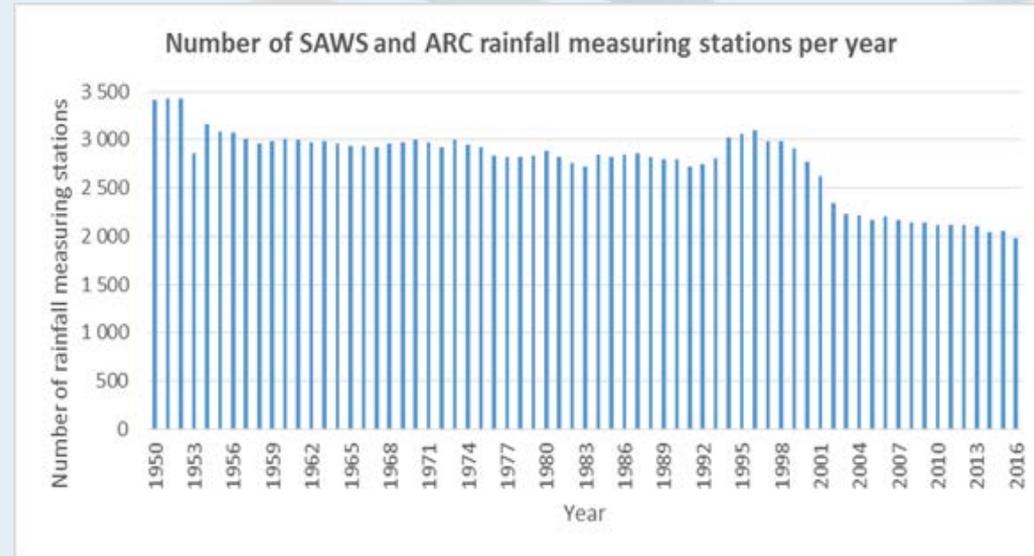


Figure 3. Number of rainfall measuring stations from 1950 to 2016.



**South African  
Weather Service**

# Working towards a future sustainable alternative

- Want to make **data more freely available**, at least to support science and research to the national benefit
- Shifting towards a **user centric approach** to ensure alignment to user requirements and needs
- Exploring opportunities for **partnership and collaboration** in a national data infrastructure initiative
- Ensuring a sustainable long-term approach towards the management of an **interoperable national data infrastructure**
- Developing an integrated government led **funding model** for data and infrastructure management that will support the full value chain.

Aligned to user needs

Partnering with relevant stakeholders

Interoperable national data infrastructure

New funding model for national observing network

# International data exchange

- SAWS fulfils its international obligations to the mandatory parts of WMO Resolutions 40, 25 and 60 which pertains to free sharing of essential data and products. The non-mandatory parts are dealt with in accordance with national data policies.
- SAWS is already exchanging internationally METAR, SYNOP and CLIMAT data of 17 Weather Offices (Inland and Antarctica and Islands) for nowcasting and weather forecasting purposes.

# SAWS as Regional WIGOS Centre (RWC)

- The WIGOS vision calls for an integrated, coordinated and comprehensive observing system to satisfy, in a cost-effective and sustained manner, the evolving observing requirements of Members in delivering their weather, climate, water and related environmental services.
- Nationally, the main platform envisaged for development of the WIGOS implementation plan is the strategic direction that SAWS and Dept of Environment, Forestry & Fisheries is taking in addressing the South African infrastructure requirements in the context of the National Framework for Climate Services (NFCS).
- SAWS furthermore opted to host the RWC in support of provision of quality data input for NWP and as global climate forecasting models.
- The RWC will assist in ensuring a properly maintained and quality controlled database not only for the country but for the SADC region too

# Final thoughts

- Discussion on free and open access to data must be linked to infrastructure sustainability
- The decline in the number of weather stations in the country will negatively affect the implementation of the NFCS objectives that support delivery of climate services
- An integrated, coordinated and comprehensive observing system which is in line with the WIGOS vision will ensure cost-effectiveness and sustainability in observing requirements of Members in delivering weather, climate, water and related environmental services.
- It is acknowledged that the scale of climate research is narrowed and viability of commercially-based projects is impaired because data is not freely available
- Deeper understanding is required in linking open data and socio-economic value for the benefit of the country



Thank you