



POLAR LAB

The Polar Lab Integrated Facility is hosted at the University of Cape Town.



The Polar Lab is a novel research, training, and awareness facility that hinges on infrastructure sharing and interdisciplinarity.

The Polar Lab IF is structured around the establishment of the first sub-zero, temperature-controlled laboratory in Africa, for the simulation of the Antarctic and sub-Antarctic environment for experimental and training purposes. This innovation will bring new opportunities for polar research in Africa.

The goal of the Polar Lab is to implement infrastructure and equipment that will generate a transformed, internationally competitive and sustainable research workforce through the training of students, scientists, engineers and technicians in polar research both on the African continent and in the field.

The Polar Lab will support polar research activities across science and engineering disciplines and allow personnel to undertake research that is currently not possible in the country and the continent.



Image: H. Luyt

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SAPRI

South African Polar Research Infrastructure

VISION

The vision of SAPRI is to enable balanced and transformed research growth across the multiplicity of marine and polar disciplines, and to maintain and further expand the world-class, long-term observational research infrastructure and datasets already established within South African polar and oceanographic research. This will benefit the governmental strategies for Antarctica and the sub-Antarctic islands and assist decision makers to formulate appropriate environmental policies that lessen the risk and vulnerability of global climate change on the regions which impact South Africa, but also which South Africa are custodian to.

MISSION

The SAPRI mission is to transform the access to, and perception of, South African polar research for technicians, engineers, scientists of all disciplines, learners and students, government, private business and civil society and to further accelerate the implementation of the pan-African Science, Technology and Innovation agenda. In doing so, SAPRI will create a co-designed, sustainable and responsive Research Infrastructure which produces Big Science stimulating innovative research and Intellectual Property generation that is of global relevance, and services the needs of all.



sapri.ac.za







ABOUT SAPRI

The South African Polar Research Infrastructure (SAPRI) is one of 13 large Research Infrastructures (RIs) developed by the Department of Science and Innovation (DSI) as part of the South African Research Infrastructure Roadmap (SARIR). The SAPRI was established in 2021 to ensure coordination of South African marine and polar research as a national Big Science programme, providing seamless access to existing and new research infrastructure required to develop and enhance long-term observations of South Africa's polar region.

The ultimate objective of SAPRI is to enable balanced research growth across the marine and polar disciplines, and to maintain and further expand the world-class long-term observational research infrastructure and datasets already established.

The SAPRI is designed as a consortium hosted at the South African Environmental Observation Network (SAEON) and is divided into four Integrated Facilities (IFs):

-  Data, Products and Society (DPS)
-  Long-term Observations on Land (LTO-Land)
-  Long-term Observations in the Ocean (LTO-Ocean)
-  Polar Lab





DATA, PRODUCTS AND SOCIETY (DPS)

The DPS Integrated Facility is hosted at Stellenbosch University, within the Faculty of Science, Department of Botany and Zoology.



The DPS IF of SAPRI is planned to bring together the SAPRI Data Centre, the various types of generated data and downstream products, including modelling and the societal outreach programme.

SAPRI Data Centre

Data from projects falling (even partly) within the domain of SAPRI will be accepted to the SAPRI Data Centre.

The SAPRI Data Centre is housed at SAEON's node for data and information management, the uLwazi Node.

Products

Digital Antarctica: digital representation of physical infrastructure e.g. vessels and stations.

Other data products.

Society

Capacity building in polar research for transformation and societal awareness.

Continuation and consolidation of the Antarctic Legacy of South Africa (ALSA) project. Platform and support for Humanities and Social Sciences studies in polar research.



LONG-TERM OBSERVATIONS ON LAND (LTO-LAND)

The LTO-Land Integrated Facility is hosted at NRF-SAEON Egagasini Node, Foretrust Building, Cape Town.



The LTO-Land IF aims to ensure the continuity of the established long-term observation networks in three different regions: the Prince Edward Island system (Marion and Prince Edward Islands) owned by South Africa, Gough Island (owned by the United Kingdom) where South Africa leases the land to undertake observations; and, the Dronning Maud Land (DML) section of Antarctica where the South African Expedition Station (SANAE IV) is located.

This is done by fulfilling the terrestrial infrastructural needs for long-term monitoring by the land-based observation networks, in these regions. The IF will enhance the existing capacity, strengthen existing research themes, and allow for the development of new themes with a focus on local human capacity development and international collaboration.



Large infrastructures on Marion Island, Gough Island and Antarctica are managed and administered by the Department of Forestry, Fisheries and the Environment (DFFE).



LONG-TERM OBSERVATIONS IN THE OCEAN (LTO-OCEAN)

The LTO-Ocean Integrated Facility is hosted at NRF-SAEON Egagasini Node, Foretrust Building, Cape Town.



The LTO-Ocean IF aims to ensure the continuity of the established long-term observation networks in the oceans surrounding South Africa, including the Southern Ocean, the South-West Indian Ocean and the South Atlantic Ocean. In order to obtain the best scope of determined Essential Climate Variables (ECVs), LTO-Ocean will facilitate access to and develop a number of dedicated ocean platforms.

Furthermore, LTO-Ocean aims to maintain scientific oceanographic equipment for collecting biological, biogeochemical, and physical data through shipboard sampling, autonomous instrumentation, and moorings. The LTO-Ocean IF will also oversee the management of specialised equipment and skilled technicians for seafloor and deep-sea underwater research, and ocean mapping.

This IF will generate valuable long-term datasets that can be used to better understand and address global challenges related to climate change, conservation, and sustainable development.

The S.A. Agulhas II is managed and administered by the Department of Forestry, Fisheries and the Environment (DFFE).

