



DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT (DFFE)

Antarctica Operations



Portfolio Committee on Forestry, Fisheries and the Environment Briefing: 06 June 2023



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& the environment

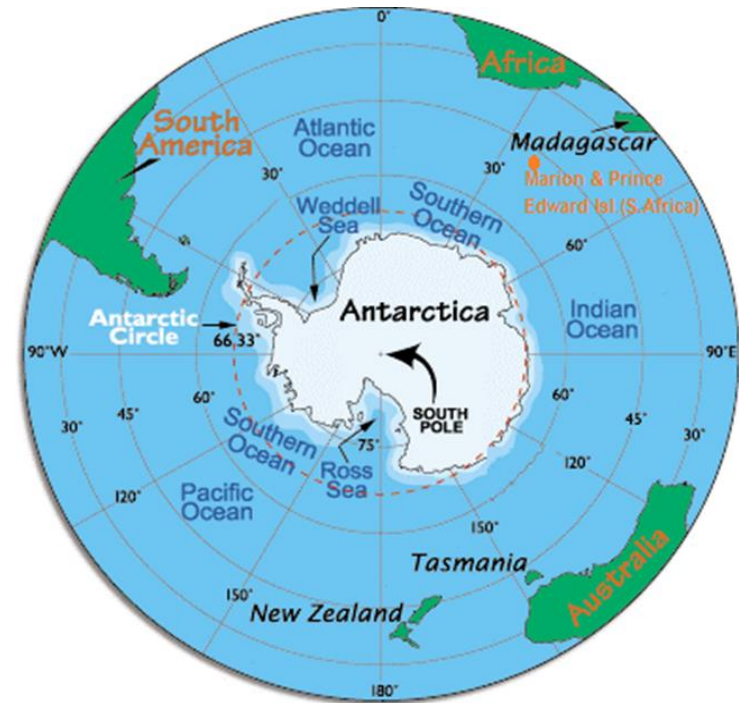
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REPUBLIC OF SOUTH AFRICA



GEOGRAPHIC LOCATION / ANTARCTIC CONTEXT

UNIQUENESS OF ANTARCTICA

- South Pole & surrounded by the Southern Ocean
- 5th largest continent & ~98% covered by ice (1.9 km)
- Average temperature = -49°C at South Pole
- Average annual precipitation 2mm (inland) - 200mm (coast) / 464mm (SA)
- Wind: Can reach a maximum of 100km to 200km/h
- Average altitude 2000m / 700m (globally)
- Antarctica and the Southern Ocean play a significant role in the global climate system.



HISTORY AND COTEXT

- South Africa - original signatory to the Antarctic Treaty (December **1959**).
 - The Treaty is a multilateral agreement to ensure the continent is used exclusively for peace and science. Prohibits new claims for territorial sovereignty
- The Protocol on Environmental Protection with specific emphasis on the protection of the environment was signed in **1991**.
 - Protocol was ratified by South Africa in **1995** and came into force in **1998**.
- Current overwintering expedition is the 62nd



WHAT IS THE ENVIRONMENTAL PROBLEM?

- Antarctica is a continent of extremes i.e. the coldest, driest, highest, most pristine, etc. Together with the Southern Ocean it has the largest contained ecosystem on the planet.
- Antarctica also plays an integral role in regulating global environmental processes. Eg ozone hole – Antarctica is demonstrating to us the impacts mankind has elsewhere on the globe.
- The Antarctic environment is slow in recovering from disruptions. The increase in tourism and the number of Bases/Stations, especially their cumulative impact, will increase the risk to the environment.



ENVIRONMENTAL ANNEX

- Annex VI to the Protocol on Environmental Protection to the Antarctic Treaty: Liability Arising from Environmental Emergencies
 - Creates a framework for Parties to insist that organisations/entities that plan activities in the Antarctic Treaty area: - develop and implement contingency plans to reduce the risk of environmental emergencies: - to respond to environmental incidents when they occur.
 - Parties can take action against non-response of an entity to a particular environmental emergency and create a mechanism to recover the costs of response action either from the operator or a fund which will be established.
 - The Annex requires that operators have sufficient insurance for their operations.
 - An international fund – to be established for reimbursement for response actions taken by Parties that did not cause the emergency.



SOUTH AFRICAN NATIONAL ANTARCTIC EXPEDITIONS (SANAE)

- Comprises of 5 elements SANAE:
 - Research (DST) & long-term monitoring (DFFE)
 - Logistical support & research infrastructure (DFFE)
 - Infrastructure & maintenance (DPW)
 - Medical, driver services & food (DFFE)
 - Search and Rescue (DoT and DFFE)
- In addition, DFFE oversees the fisheries research and management in the waters around Antarctica through CCAMLR



ANTARCTIC EXPEDITIONS

- Annual Relief Voyages
 - Conduct research, carry out maintenance on the bases infrastructure, replenishment of all stocks and supplies (food, fuel, etc.) and the changeover of over-wintering expedition teams that have an all-year round presence at the research stations.
 - 3 voyages to Antarctica, Gough and Marion Island (Southern Oceans)



SA INVESTMENT



SANAE IV



MARION ISLAND



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GOUGH ISLAND



SA AGULHAS II



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INFRASTRUCTURE & FACILITIES

The DPWI is responsible for the infrastructure and facilities at SANAE

Facilities	Status
Electrical power generation	Three new 250kw SCANIA generators were installed in 2022
Heating, ventilation, and air conditioning	System was upgraded in 2016. Primary heating utilising waste heat recovered from the generators. Secondary heating with electrical heating elements
Domestic hot water supply	System was upgraded in 2016. Primary heating utilising waste heat recovered from the generators. Secondary heating with electrical heating elements
Domestic water supply	New snow smelter was installed in 2017; manual filling of snow; electrical heating elements
Waste water management	New biological water treatment plant with membrane filtration was installed in 2017; concentrated sludge is returned to SA; treated water is pumped over the cliff. DFFE receive a monthly report with test results of the water quality

INFRASTRUCTURE & FACILITIES

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Facilities requirements:

1. Emergency base close to SANAE IV
2. Vehicle Workshop
3. Handing over of the SANAP Summer Station (SSS) to DPWI. SSS was constructed in 2010 by DFFE
4. Installation of renewable energy systems for heating and electricity



CARGO & LOGISTICS

- **Everybody** will at different stages help with handling cargo
- Cargo Hauling: (CAT Train) 180 km @ 10km/h
- Offloading from ship (Akta or RSA Bukta)
- Getting cargo/supplies/luggage into the base
- Lots of Manual Labour



TRAVELING IN ANTARCTICA



GETTING AROUND IN ANTARCTICA 13

SA'S NATIONAL INTEREST

- Custodial responsibilities
- SA geographic position: gateway
- Only country in Africa that has a an active Southern Ocean and Antarctic programme
- Unique laboratory
 - Food security, natural hazards, “biotech”
 - health, energy & agriculture



CRITICAL FOR SOUTH AFRICA'S PARTICIPATION

- Optimise use of geographic location to advance world class scientific research that is responsive to relevant national strategic imperatives; and has both regional and global reach, (i.e. gateway, etc.)
- Promote and maintain the special nature and ecological integrity of the Antarctica & Southern Ocean
- Promote public awareness and interest
- To plan, provide and maintain infrastructure for operations in Antarctica and Southern Ocean.



BAN ON MINING

ARTICLE 7

PROHIBITION OF MINERAL RESOURCE ACTIVITIES

Any activity relating to mineral resources, other than scientific research, shall be prohibited.

- The Protocol on Environmental Protection with specific emphasis on the protection of the environment was signed in 1991 in Madrid, Spain by the signatories to the Antarctic Treaty banning mining.
- The protocol entered into force (became law) on the 14th of January 1998. It is up for review after 50 years in 2048 when any changes will need at least a 75% vote from the consultative parties.
- South Africa supports Article 7 and is committed to strengthening it in cooperation with fellow members of the ATCM

THANK YOU!

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Thank You



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