

Address by Dr Fikizolo: Deputy Director General: Ocean and Coasts.

On the Arrival of the SA *Agulhas II* from Antarctica.

On Tuesday, 20th February 2024, Cape Town

Ladies and Gentlemen, distinguished guests, families and friends of our expedition members and members of the media.

I am pleased to join you this morning as we celebrate the return of the SA *Agulhas II* from the Antarctic relief voyage, which this year includes the return of the SA *Agulhas II* from the Marion Island special projects mission (which I will touch on hereunder).

Allow me to express a special word of welcome the SANAE 62 team members back home are spending the last 15 months in Antarctica, which is the coldest and driest place on earth with temperatures as low as -30 degrees during the winter months.

This is an occasion to welcome back men and woman, who have sacrificed their time away from their families their loved ones and friends, not to mention all the basic benefits of being at the comfort of your home. The passion, dedication, and devotion of the overwintering team to their respective responsibilities under the broad umbrella of SANAP work is beyond reproach. Some of the work they performed included support for scientific data collection for local analysis and research as well as international collaboration. To elaborate more on that, South Africa is party to many international agreements and organisations that we submit our data to, and in turn this contributes to the body of knowledge internationally to help humankind to better understand the impact of climate change in the Southern Oceans and all associated Marine ecosystems.

Ladies and gentlemen, this past Antarctic season presented us with a very unique opportunity in the history of the South African National Antarctic Program. It was the first time that in one season we had to plan for two destinations, i.e. the Antarctica continent and Marion Island, both to be covered during the southbound and northbound legs of the voyage. The logistical requirements for this SANAE voyage via Marion Island was extremely demanding, a situation which was further compounded by time constraints for its planning and weather conditions during its implementation. However, one of its positive outcomes was that it provided the Department of Public Works and Infrastructure (DPWI) with the necessary platform to undertake their annual maintenance activities at the SANAE IV base and the complete removal of the old infrastructure on Marion Island. These added requirements in one voyage meant that all the designated teams had **to “walk the proverbial extra mile”** in order to make sure that their assigned duties as per their respective projects were successfully completed within the summer season. Ladies and gentlemen, I am pleased to announce that they did, and we will forever be indebted to them for their sacrifice and commitment.

The oceanographic scientific research.

The ship-based science conducted during this cruise was both successful and a reason for all of us to be proud of our scientists. After leaving Cape Town, and as per the norm, scientists from DFFE, the University of Cape Town and the Council for Scientific and Industrial Research (CSIR) at regular pre-determined intervals sampled seawater and conducted specific atmospheric tests all the while the

ship was sailing. Among other reasons that these samples are collected, is to better understand the Southern Ocean's role in drawing carbon dioxide out of the atmosphere while possibly working against global warming. Furthermore, it was intended that CSIR would also deploy oceanographic gliders to better understand the changing role of storms in the transportation of carbon dioxide into and out of the ocean with the inevitable impact of climate change. Unfortunately, due to poor weather conditions that part of the research plan had to be cancelled.

Also, Stellenbosch University, in collaboration with Aalto University (Finland) and the University of Cape Town, collected valuable data whilst the SA Agulhas II was transversing through ice. The data sets collected by these three esteemed institutions of higher learning, is designed to contribute towards our broader and in-depth understanding of the physical forces of icebreaking on the hull and general structure of the SA Agulhas II on the one hand, and to validate the modelled data of the sea ice on the other. In addition to the vessel's response to ice, and ice property studies, University of Stellenbosch also conducted a study to investigate the participant's response to motion sickness whilst at sea. In addition, the South African Weather Service (SAWS) carried out regular meteorological observations, releasing weather balloons at regular intervals and thus providing invaluable data for weather forecasting.

On the Land based scientific research front

The overwintering science personnel were trained throughout the takeover period to maintain research instruments for Polar Space Weather Studies (PSWS), Super Dual Auroral Radar Network (SuperDARN), Neutron Monitor Programme, Automatic Weather Station and the Nuclear Test-Ban treaty. The stakeholders involved in the land-based research programmes were the South African National Space Agency (SANSA), the North-West University (NWU), the South African Weather Services (SAWS) and the Commission for the Nuclear Test-Ban Treaty Organisation (CTBTO).

Shielded antenna cables and trays for the SuperDARN radar were installed for the improvement of signal-to-noise ratio. The SuperDARN radar itself is used for studying plasma irregularities in the ionosphere and planetary winds. Studying the ionosphere is vital as it has a characteristic that reflects radio waves used by communication systems. The SANSA team did a major upgrade of the SuperDARN radar over this past year and during the takeover period, which includes the successful commissioning of the secondary array known as the interferometer. For the first time in 10 years, the interferometer will be running, adding valuable data to the new SuperDARN radar. Making the SANAE IV SuperDARN one of only a few in Antarctica to have this additional array.

Words of thanks.

Ladies and gentlemen, distinguished guests and families of our expedition members, I would like to take this opportunity and thank the Chief Scientist, Mr Leon Jacobs, who ensured that both the ship and land-based science projects were conducted and completed successfully. Allow me as well to thank the scientific community at large, your contribution to the SANAP and its impact beyond our borders is indeed highly commendable.

The DCOs, Mr Shiraan Watson reliably informed my office that the takeover in Antarctic was successful, and that all the planned activities were achieved despite the adverse weather conditions. Needless to emphasize that the difficulty level of his job was further compounded exacerbated by the fact that all SANAP bases or stations are situated in some of the most remote and harsh places on earth. The SANAE IV base for example, is situated on a mountainous outcrop about 180km from the ice edge area called the Penguin Bukta, which is the closest point of operations between the base and the vessel. Again, and with further emphasis of our bases being in remote areas, the Marion Island as explained in the preceding text, is also but one of such remote and harsh areas which Mr Mhambi had to endure for the demolition or decommissioning of the Old Marion Island Base. Safe to say that both destinations have extreme weather conditions, which makes it extremely challenging to mount successful logistics operations, and we are extremely proud and very grateful to the colleagues for what they have been able to achieve.

To the DFFE Team in the Southern Ocean and Antarctic branch, I would firstly like to thank all the staff for pulling it together to ensure smooth and effective implementation of all these voyages a lived reality.

To the National Department of Public Works and Infrastructure contingent, I am told that you strived towards improving the living conditions at the SANAE IV base. To that kindly receive my eternal gratitude for your contributions and support.

To the team that was deployed at Marion Island in November 2023, thank you for your tireless efforts and dedication, your innovative and creative approach led to the success of the project.

At this juncture I would also like to express my heartfelt condolences to Ms Abongile Mlotywa and her family who lost her mother on the 23rd of January 2024, where she could not attend the funeral as we all know how SANAP is structured. To her and her family as the DFFE we say *“Akuhlanga lungehliyo.”*

To our partners, the Ultimate Helicopters we would like to express our sincere gratitude for successfully and safely completing all cargo and passenger flights both in Antarctica and at Marion Island. Without your support this voyage would not have been the resounding success it has been. Once again, thank you for the safe and professional air support you have rendered during this voyage as you have been doing over the past couple of years.

To Captain Michael Mdluli and his crew, not to mention the background support of the entire African Marine Solutions (AMSOL) management and operations teams, we applaud you for completing this voyage taking the SA Agulhas II to new heights in the broader Southern Ocean and Antarctic exploration and showing its true capabilities in adverse weather conditions. We thank you for your dedication and for always making sure that living conditions on-board the *SA Agulhas II, Dedicated to the Spirit of Miriam Makeba* are of a high standard, and for ensuring that all passengers return home to their loved ones safely.

In closing, I would like to express the Departments' sincere sense of appreciation to all members of the SANAE 62 expedition team and wish each and every one of them all the best in their future endeavours. As we part ways, for now, DFFE hopes that the Antarctic experience would be a memorable one, worthy of being shared fondly with your respective families and friends. Ladies and

gentlemen, colleagues, and members of the media thank you for your participation and contributions to make the South African National Antarctic Program (SANAP) what it is today.

I THANK YOU!