

LAUNCH OF THE SAFARI-2000 REGIONAL SCIENCE INITIATIVE

Statement prepared for the August 1998 meeting of the USA – RSA Bi-National Commission, at the invitation of Dr C Schaeffer, Department of Arts, Culture, Science and Technology

Wise stewardship of the environment, appropriate responses to global climate change and sustainable use of natural resources require an understanding of the links between physical, chemical and biological processes - including human impacts - on global, regional and local scales. Arising from the Southern African Fire/Atmosphere Research Initiative (SAFARI 92), an international field campaign conducted in 1992, scientists now comprehend that the thin layer of the atmosphere acts as a web linking regions of southern Africa up to thousands of kilometers apart. The transport of moisture and trace chemicals in the atmosphere influences processes as diverse as the global radiation balance and agricultural practices involving frequent veldt burning. As the atmospheric environment of southern Africa respects no political boundaries, to achieve the objective of understanding the effects of biomass burning, industrial and biogenic emissions on the southern African system requires a continental scale, multi-disciplinary investigation.

In a series of stakeholder workshops, held during June and July 1998, scientists from southern Africa and the United States have laid the foundations for a large regional science initiative – SAFARI 2000 - to take place in southern Africa over the next three years. The purpose is to understand the operation of the southern African system, stretching from the equator southwards, as an integrated, interconnected system. SAFARI 2000 will comprise a number of linked ground based short and long-term field campaigns to measure biological, soil, atmosphere and radiation processes. A fleet of USA and South African research aircraft will probe the vertical and horizontal properties of the lower and middle troposphere during two intensive field campaigns to take place in the dry winter burning season and the wet summer season. The whole campaign will be supported by intensive meteorological measurements.

These ground and airborne measurements will be complemented by remote sensing observations from NASA's next generation of Earth Observing System (EOS) satellites, scheduled for launch in 1999 and 2000. In turn, the earth and atmosphere based observations of SAFARI 2000 will validate the remote sensed satellite observations. SAFARI 2000 will constitute worldwide the largest validation campaign for the EOS series satellites. In the longer term, the wide area coverage and continuous series of EOS satellite measurements will facilitate monitoring of southern Africa on a continental scale.

The nature of SAFARI 2000 as an integrated regional science initiative requires participation on a multi-national level. The first major science meeting accordingly took place in southern Africa, with the scientists from the following countries and institutions:

USA:

NASA Goddard Space Flight Centre, University of Virginia, University of Maryland, University of Washington, College of William and Mary, Clarke University, US Forest Service

South Africa:

University of the Witwatersrand, South African Weather Bureau, Council for Scientific and Industrial Research, University of Pretoria, University of Stellenbosch, University of Zululand, Vista University, University of Natal, University of Western Cape, University of Cape Town, University of Potchefstroom, Port Elizabeth Technicon, Eskom TRI.

Southern Africa:

Etosha Ecological Institute, Namibia

University of Botswana

University of Zimbabwe

Meteorological Services, Zambia

Eduardo Mondlane University, Mozambique

National Institute of Meteorology, Mozambique

Europe:

University of Leicester, University of Edinburgh, England

Max Planck Institute for Chemistry, Mainz, Germany

A corollary objective of SAFARI 2000 is to encourage both capacity recognition and enhancement from both north to south and south to north.

The products of SAFARI 2000 will contribute to the scientific basis of future International Panel on Climate Change (IPCC) efforts within the region. Regional research will benefit from training and technology transfer in the use of a new generation of satellite derived products. This in turn will contribute to formulation of appropriate policies and responses to manifestations of climate change and international treaties relating to global environmental issues. Information from SAFARI 2000 will be disseminated regionally and internationally via the inter-net as well through the distribution of CD-ROMS. The results from SAFARI 2000 should also provide a knowledge base that can begin to address the impact of the region on global change.

It is fitting in 1998, South Africa's Year of Science and Technology, that this major new scientific and environmental cooperative venture should be launched under the auspices of the Gore-Mbeki Bi-national Commission.