

**KEYNOTE ADDRESS BY THE MINISTER OF SCIENCE AND
TECHNOLOGY, HONOURABLE MR MOSIBUDI MANGENA,
AT THE GROUP ON EARTH OBSERVATIONS MINISTERIAL
SUMMIT, INTERNATIONAL CONVENTION CENTRE IN CAPE
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Ministers,
Heads of Delegations,
Delegates,
Members of the Diplomatic Corps,
Distinguished Guests,
Ladies and Gentlemen

On behalf of the Government and the people of South Africa, I welcome you all. Hosting this crucial Fourth Earth Observation Summit is a very special moment in the history of South Africa and the African continent.

It was 50 years ago, on the 4th of October 1957, when the launch of the Soviet satellite, the Sputnik, ushered in the space era of our times. Sputnik was a mere 184-pound, basket-ball-size sphere, which contained only a radio transmitter, batteries and a thermometer. However, it was a precursor of events that were to change our world for good. The magic moment was soon followed by more launches and, as we all know, major

space players such as NASA, the European Space Agency and others were born.

50 years on, satellites are managing our world. With some 850 operational devices now circling the Earth, satellites are at the core of worldwide communications, global positioning systems, and data gathering on topics as vital as climate change and global warming. It is almost taken for granted today that local news stations have access to satellite views to forecast storms, droughts and daily temperatures.

We now know that outer space is the ideal position from where we learn more about our planet, Earth. The images of our planet, sent continuously from orbit, have become powerful scientific tools to enable better understanding and improved management of the Earth and the environment.

Earth observation is no longer just a way of satisfying our curiosity, but has become crucial in ensuring the survival of humankind. It must be acknowledged, however, that space-based earth observation is not the only way we can understand our earth to make life-saving predictions. There are thousands of data buoys operating in the world's oceans, hundreds of thousands of land-based environmental stations on the ground, tens of thousands of observations by radiosondes and aircraft

currently keeping an eye on the behaviour of and developments on Mother Earth. Our challenge is to ensure that the important data collected through these devices, be they airborne, in situ or in outer space, is shared among the world's systems and users as and when necessary.

Ladies and Gentlemen, this Fourth Earth Observation Summit is an opportune time to look back at where we started this journey.

It was here in South Africa, in Johannesburg, at the World Summit on Sustainable Development in 2002, that the need for coordinated observations relating to the state of the Earth was highlighted. The G8 summit in June 2003 in Evian, France, affirmed the importance of earth observation as a priority. This was followed by the First Earth Observation Summit convened in Washington, DC, at which a declaration was made to support the work of an ad hoc intergovernmental Group on Earth Observations to develop a 10-Year Implementation Plan for a comprehensive, coordinated, and sustained system of earth observation systems. The Second Earth Observation Summit in Tokyo in April 2004 adopted a Framework Document defining the scope and intent of a Global Earth Observation System of Systems, or GEOSS.

The Third Summit, held in Brussels in February 2005, endorsed the GEOSS 10-Year Implementation Plan, and established the intergovernmental Group on Earth Observations to carry it out. Heads of state further supported GEOSS in the G8 Gleneagles Plan of Action released in July 2005. So, this journey around the world, from Johannesburg to Evian, Washington, Tokyo, and Brussels, and now back to Cape Town, indeed illustrates the global character of our enterprise.

As we begin to organise ourselves to tackle this mammoth task, the Earth is experiencing devastating natural disasters in the form of tsunamis, hurricanes, droughts, floods and heat waves. Recently, we have seen severe storms and floods unleashed in various parts of the world, including South America, Europe, Asia and east Africa, causing destruction, and displacing thousands of people in the process.

It is natural disasters like these that reinforce our resolve to continue coming together to plan and coordinate our efforts in developing effective early warning systems, and improve our capacity to collect, analyse and disseminate earth observation data. On this note, I would like to acknowledge the progress made since the Brussels summit.

At the Brussels summit, we indicated the need for our unequivocal commitment to international collaboration to improve systems coordination, and facilitation of data sharing, if we are to make any progress in this regard.

Institutionally, you will agree that one of the Group's most important achievements thus far has been the establishment of the GEO Summit and Plenary as a global governing structure. Another was the formation of the GEO Secretariat, which oversaw the transition of this body from an ad hoc structure to the formal organisation it now is, as well as the setting up of the four technical committees and the GEO Working Group on Tsunami Activities coordinated by the GEOSS Secretariat.

I also acknowledge the success of GEO in mobilising the earth observation community, evident from the increased number of participating organisations. This development has introduced the critical element of technical expertise and added value to the implementation process of GEOSS. Without these organisations, I doubt whether we would be where we are today.

Providing support in terms of earth observation data goes hand in hand with the required technical expertise and infrastructure. In this regard, I applaud the work done by the GEO Capacity

Building Committee, whose mandate is to ensure that users of earth observation data have the necessary knowledge and skills to access the data and use it effectively. Similarly, I congratulate the European Commission which is reaching out to the African earth observation community through the GMES Africa project, whose intention is to close gaps in the provision of EO systems in Africa. We hope this project will receive prominent attention during the coming EU-Africa Summit in Lisbon next week.

The successful implementation of GEO Capacity Building Strategy is crucial. The capability provided by one of its tasks, the GEONETCast, is especially useful in regions where broadband, landline or Internet access is not available. The GEONETCast is a global network of satellite-based data dissemination systems, which provide space-based, airborne and in-situ data, metadata and products transmitted to users worldwide, through a global network of communication satellites using multicast, access-controlled, broadband capability.

The National Oceanic and Atmospheric Administration of the United States of America, the United Nation's World Meteorological Organisation, the European Organisation for the Exploitation of Meteorological Satellites, EUMETSAT, and the FenYunCast of the Chinese Meteorological Administration must

be thanked for their central role in guaranteeing the success of GEONETCast.

I also welcome the recent launch of the China-Brazil Earth Resource Satellite 2B (CBERS), which will provide a number of countries in Central America, the Caribbean, Africa and South Eastern Asia with critical earth observation data.

China and Brazil have agreed to distribute their Earth Observation satellite data free of charge to Africa. South Africa, through the CSIR Satellite Application Centre, will receive the data and distribute it to the rest of Africa. We are also pleased that the European GEONETcast initiative and EUMETSAT have agreed to collaborate with Brazil to broadcast Earth Observation data in Africa.

Furthermore, Ladies and Gentlemen, the European Commission's proposal to build a new alliance on climate change between the European Union and the mostly affected developing countries that have the least capacity to deal with climate change is one worth celebrating. Through this Global Climate Change Alliance, the EU and these developing countries will work together to integrate climate change into poverty reduction strategies.

The results of this will include better preparedness for natural disasters, which are expected to become more frequent and intense as a result of global warming. The Climate Change Alliance renews the commitment of the EU Action Plan on Climate Change and Development to systematically integrate climate change into development cooperation.

Distinguished Guests, it is important to note that the EU has clearly thought through the assistance plan which is to focus on the following five areas:

- implementing concrete adaptation measures;
- reducing emissions;
- helping poor countries benefit from the global carbon market;
- helping poor countries to be better prepared for natural disasters; and
- integrating climate change into development cooperation and poverty reduction strategies.

As climate change affects many sectors, it needs to be integrated into poverty reduction efforts to enhance people's chances of survival.

Now turning to developments in Africa:-

The African Resource Management Constellation is a continental initiative for providing earth observation imagery,

responding directly to some of the challenges Africa faces, which are exacerbated by climate change, such as drought, flooding, outbreaks of fire, and water scarcity. Currently, four countries - South Africa, Nigeria, Algeria and Kenya - have shown commitment to providing national satellites towards the Constellation. Drawing up technical specifications for the satellites making up the Constellation has been preceded by a user requirements exercise, which defines priorities.

While this has been happening, a data policy framework, governing the sharing of data, has been drafted. I am optimistic that appropriate political support for the Constellation will be obtained, specifically given that space science and technology has been identified as a cluster in the African Union/NEPAD Science and Technology Consolidated Plan of Action. We also hope that more African countries will commit to this initiative.

In addition to our commitment to the African Resource Management Constellation, South Africa has a reasonably well-developed earth observation policy framework, which creates an enabling environment for the generation and consumption of earth observation products and services. The value chain comprises three distinct role players, government, science councils and agencies, and academic institutions and users.

Each of them performs a key function in providing, promoting, or using various EO data.

South Africa has recently approved its own Earth Observation System Strategy (SAEOSS) to coordinate all our earth observation activities and ensure our ability to meet the objectives of GEO. This initiative will greatly benefit from the envisaged establishment of the South African Space Agency.

The South African Environmental Observation Network, established to bring better cohesion between research programmes locally and internationally, has made good progress in ensuring that in-situ earth observation data is archived and accessible as a national asset for future generations. The Network has linked a number of environmental observatories and field stations. The observatories deal with areas such as water and water resources monitoring, land use and land cover, disturbance regimes like fires and droughts, biodiversity and human health and security.

While the infrastructure for the acquisition, processing and distribution of space-borne sensing has become active in the past few decades, there has been less development of ground-based sensing networks. With advances in communications

technology and, in particular, ground-based in-situ technologies, it is now feasible to consider webs of sensors on all types of platforms with rapid access for observations. This technology has been developed as sensor webs and sensor networks, which fall under the GEO Data and Architecture Committee that South Africa is currently leading.

Ladies and Gentlemen, this brings me to an important part of my address - the question of how GEO can be of assistance to the continent of Africa and the developing world. We see GEO playing a far more prominent role in improving a number of facets of life for its developing world partners. Earth observation knows no political or sectoral boundaries. You may recall that at the core of GEOSS 10-Year Implementation Plan are nine societal benefit areas. These are cross-sectoral themselves, and are not restricted to a particular country or region of the world.

We definitely see GEO playing a role in addressing some pressing global issues. Earth observation systems could easily be used to track, and in some instances minimise, the negative impact of these environmental problems. In Africa, for example, it could be used to track and mitigate the spread of infectious diseases. In particular, seasonal and waterborne diseases like

malaria and cholera could be improved if early warning systems were developed for the affected areas.

Again, the socio-economic challenges faced by developing countries such as the destruction of ecosystems, water degradation and acid deposition, including trans-boundary air pollution, are already receiving attention in the form of interventions through GEOSS and other partnerships.

Most parts of the developing world still rely on farming for income. Providing a long-term weather prediction system would assist the agricultural sector and improve food security, with positive spin-offs for small-scale and subsistence farmers.

I cannot begin to list all the potential benefits of the Global Earth Observation System of Systems. Suffice it to say that our planet will be a better place to live if we continue our collective efforts to protect and preserve it as we are now doing under the GEO umbrella.

Development in Africa, such as the proposed African Resource Management Constellation, is a step in the right direction. However, we all know that the world's leading players in the advancement of EO technologies and related environmental applications have remote-sensing satellites covering all the

Earth's climatic zones, while their ground-based, air-based and ocean-based monitoring devices serve users by providing high quality observation data in areas as diverse as urban planning, adaptation to and mitigation of climate change, disaster reduction, disease control and humanitarian relief. Progress is needed in sharing these benefits with poorer countries worldwide.

The challenge now is that while research and technological development has succeeded in providing instruments and systems that generate literally millions of environment-related datasets, there is still a lot of work to be done in terms of the interoperability of these systems, and the effective and efficient management, integration and distribution of data in support of the citizens of the world. In the case of Africa and many developing countries, there is simply not much to speak of. However, we take comfort from the fact that the GEO's Capacity Building Strategy has identified these challenges.

Ladies and Gentlemen, it is my belief that proper monitoring of our planet will require the joint use of in-situ and remote sensing techniques. In respect of the former, I am sure the developing world can contribute a great deal.

As we move forward, we need to sustain and build on the gains made by GEO so far. It will be important for all of us, as members of the Group, to continue working together to ensure that all those who need EO data are able to access it. Developed nations will have to play a prominent leadership role, particularly as regards capacity building and providing much needed financial and technical support to developing countries.

We now need to maintain the positive momentum gathered when we adopted the GEOSS 10-Year Implementation Plan in Brussels. We must continue working together to achieve the goals of the Group on Earth Observations, mobilise new resources and invest in the necessary infrastructure.

In conclusion, Ladies and Gentlemen, I believe we should use this Summit to remind ourselves of the commitments we made in Rio de Janeiro in 1992, and in Johannesburg 10 years later. We have undertaken to eradicate world poverty, get rid of unsustainable patterns of production and consumption, protect and manage the natural resource base for economic and social development. The 'value-adding' approach of GEO will no doubt be a catalyst to our achievement of the millennium development goals.

Please enjoy your stay in Cape Town. And may the Summit be a resounding success.

Thank you.

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