



science & innovation

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**WORLD SCIENCE FORUM**  
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# South Africa aims for global success in science and innovation

By **Ace Moloi**

**S**outh Africa has created space for scientists to contribute to its foreign policy and ensure that science diplomacy features in the country's diplomatic relations. This is according to Minister of International Relations and Cooperation, Dr Naledi Pandor, who was addressing a session of the World Science Forum on Thursday, 8 December 2022. "We have allowed ourselves as South Africa to be led by our colleagues in the science system and it is them who are really driving government to ensure that in the diplomatic space there is a science agenda," said the minister. "We work hard at attracting foreign direct investment into our science and technology sector. It is due to this desire of South Africa for international science cooperation that we have increasingly come to see science diplomacy as an important instrument of our foreign policy." As a result, South Africa inserts the agenda of science, technology and innovation in every multilateral organisation it finds itself in such as Southern African Development Community, African Union, BRICS, the United Nations and the G20. Again, the country has assigned science offices to its various embassies across the world to facilitate cooperation in science and innovation. South Africa also pledges to share its institutional capacity to African institutions to assist them with research, as the country's government is also supported by its public science institutions to make sure it acts on policy. However, Minister Pandor expressed concern at the threats of fragmentation in international relations, saying such a fracturing would be disastrous to the African continent as it needs the support of all the major powers. "There is a sentiment in the geopolitical world that is trying to separate the African continent into supporting one part of the powerful world and not working closely with another," she observed. Africa must not allow itself to be forced to pick sides, she stated. Emphasising what many speakers, including President Ramaphosa, had been saying at the forum, Minister Pandor denounced the developed world for vaccine hoarding at the height of the pandemic. The fact that more than 100 countries in the World Trade Organisation supported South Africa and India's motion for a temporary waiver on copyright for vaccines is a spectacular example of what international cooperation can accomplish, she remarked.



Minister of International Relations and Cooperation, Dr Naledi Pandor, sees science playing a major role in diplomatic relations.

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It was also at the peak of the pandemic that South African scientists identified two new COVID-19 variants, thereby proving that Africa is an equal player in global systems of science. Nonetheless, more still needs to be done on the continent when it comes to knowledge production. Accordingly, African countries need to create coherent policies, develop sound systems of innovations and strengthen institutions, so as to attract investment in science. "Without robust, strengthened, well-funded higher education institutions with a research

focus, we are not going to have Africa participating in the science revolution," the Minister said. Furthermore, Dr Pandor said the scientific community must build common understanding of the climate crisis and not assume that since it's a popular concept, it will be comprehended the same way. "I think science communication, alongside science diplomacy, is absolutely imperative, so that if I talk climate change in Bizana, in the Eastern Cape, I understand it the same way that someone would understand it in Los Angeles in the United States of America."



Probing discussions continue as the World Science Forum 2022 nears the end

# Grappling with meaning of science in Africa

By **Ace Moloi**

**A**frica took centre stage yesterday — the third day of the World Science Forum (WSF) — when the scientific community grappled with the role Africa can play in the production of scientific knowledge and how to unleash the potential of African science in global cooperation.

Building on the keynote lecture presented by University of Johannesburg’s Vice-Chancellor and Principal, Prof Tshilidzi Marwala, delegates engaged the topic from a multidisciplinary approach. Prof Marwala’s lecture was Science for Africa and the World – How to unleash the Potential of African Science in Global Cooperation?

The discussion afterwards encompassed a wide array of issues, ranging from the continent’s investment in science, public participation, policymaking, inter-continental partnerships, science communication, mentorship for young people, how to produce more scientific research than we consume and more.

At the heart of the discussion was the meaning of African science, with the leading question being, “Should there be science for Africa?” Professor Michael Backes from the University of Namibia held that there is a disturbing tendency of dictating to African scientists what their inquiry must focus on – the so-called African problems. “Solely focusing on problems cripples science in Africa as it does not take into account any opportunities,” he said.

The forum heard from one of the delegates that many scientists were not prepared to release popular versions of their research, which could be used by the media, schools and the community at large to best comprehend the research’s findings. Another delegate asked why the forum was not expressing concern that current research output was dominated by “non-scientific” publications based on qualitative research, which in her view “romanticises” the problem instead of offering empirical solutions.

CEO of the American Association for the Advancement of Science (AAAS), Dr Sudip Parikh, was among the speakers who reflected on the keynote address and responded to comments from the floor. Replying to a question about how researchers can convince their governments to fund their investigations, Parikh said it was the duty of the scientist to convince decision-makers that it mattered to have such research. “The urgent gets in the way of the important and so we have to make sure that as scientists we are making the case that this investment is long-term.”

Lidia Brito, Regional Director for Southern Africa: UNESCO, described science as a vaccine against inequalities.

She also advised that for science to reach its maximum potential of flattening inequality, some change was necessary. Brito maintained: “You need a different way of sciencing — how do we do science and what



University of Johannesburg’s Vice-Chancellor and Principal, Prof Tshilidzi Marwala, delivered a lecture on the role Africa can play in the production of scientific knowledge on the third day of the World Science Forum at the Cape Town Convention Centre.

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is the kind of science we produce. Otherwise science won’t be that vaccine that fights inequality. We need to really interrogate where are we, who are we and how what we do is creating the crisis that we’re facing today and will face tomorrow if science doesn’t change the way it relates with communities.  
“When we talk about open science,

it’s about sharing with fairness, sharing infrastructure, sharing human capacity, [sharing] the space to produce scientific knowledge with others who many not be called scientists.  
Everybody should benefit from the scientific endeavours but also everyone should be able to participate in the production of knowledge,” she concluded.

Meanwhile, dynamic mathematician and mentor, Dr Angela Tabiri, highlighted the importance of identifying mathematical talent in young African girls, and Alliance of International Science Organisations, Prof Jinghua Cao, detailed various collaborations his organisation has had with the African continent.



# The rise and rise of the South African National Space Agency



The exterior of the Space Weather Centre at Hermanus in the Western Cape.

By **Phakama Mbonambi**

The SA National Space Agency (SANSA) continues in its commitment to explore frontiers of South Africa’s space exploration efforts and Earth observation.

The agency exhibited in two stands at the World Science Forum at the Cape Town Convention Centre and generated a lot of excitement, with throngs of visitors, including school children, flocking to the stand to find out more about what the agency does.

It’s a been a year of achievements for the agency. On 3 November this year, SANSA launched a ground-breaking, multi-million rand Space Weather Centre at Hermanus in the Western Cape. The 24-hour centre, which was built with the support of the Department of Science and Innovation, will help SANSA avail new offerings, including space weather forecasting and alerts of harmful space weather phenomena, to South Africa and Africa at large.

The launch was witnessed by several dignitaries, including the Minister of the Department of Higher Education and Training, Science and Innovation, Dr Blade Nzimande; SANSA’s Acting CEO, Ms Andiswa Mlisa; the Managing Director of Space Science at SANSA, Dr Lee-Anne McKinnell; DG of the Angola Space Management Office (GGPEN), Dr Zolana João; and the Coordinator, Zimbabwe National Geospatial and Space Agency, Dr Pianos Gweme.

In his keynote address, Minister Nzimande shared his joy to be a part of the historic launch of the state-of-the-art regional space weather centre. He described the centre as an illustration of South Africa’s excellence in science and a demonstration that the Department of Science and Innovation, together with its agencies, continue to respond to the nation’s socio-economic challenges by leveraging science, technology and innovation as a catalyst for economic development.

In addition, Dr Nzimande reiterated the importance of SANSA’s Space Weather Centre for safety and security. “It is necessary to note that much like



Minister Blade Nzimande and other officials were on hand at the opening of the Space Weather Centre at Hermanus.



Minister of the Department of Higher Education and Training, Science and Innovation.



The interior of the Space Weather Centre at Hermanus in the Western Cape.

terrestrial weather, space weather results from a complex system driven both by the Sun and events much closer to Earth, and the impact has a significant social and economic impact on Earth,” he said.

**Lunar missions**  
Another milestone for SANSA this year has been the launch, together with NASA, of a groundbreaking deep space facility at Matjiesfontein, Western Cape, that will help the Artemis missions return humans to the Moon.

Located approximately 240km northeast of Cape Town, MTJ will be one of three, 18- to 24-metre, communications LEGS antennas strategically placed around the globe to ensure near-continuous connectivity between astronauts on NASA’s Artemis spacecraft and those who’ll subsequently come to work on and around the lunar surface.

Badri Younes, Deputy Associate Administrator for NASA’s Space Communications and Navigation programme, joined with SANSA officials at the launch of the facility. “Location, weather and existing infrastructure make Matjiesfontein

Artemis, named for Apollo’s sister, will land the first woman and person of colour on the Moon, paving the way for a long-term lunar presence, and serving as a steppingstone to send astronauts to Mars.

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the ideal place to build this antenna,” said Younes. “We really couldn’t have asked for a better spot on Earth than here in South Africa, with whom we first partnered six decades ago to land the first humans on the lunar surface.”

South Africa was home to a ground tracking station outside Johannesburg at Hartebeesthoek that played a critical role in NASA’s Apollo missions in the 1960s. In the near future,

**Collaboration**  
The nature of the space industry encourages collaboration. That is why the agency has over the years worked closely with NASA on various space missions. SANSA has also worked with other agencies such as CNES, a French government agency, and Swedish Space Corporation. It is set to support MBRSC Mission, a Dubai government organisation.

The agency was established in 2010 through the South African National Space Agency Act, 36 of 2008. SANSA aims to promote cooperation in space-related activities, foster research in space science, advance scientific engineering through human capital and support development of an environment conducive to industrial development in space technologies.

SANSA believes in creating an infinite impact for the benefit of all South Africans through technological advancement and innovation.



