



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

WORLD SCIENCE FORUM
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Ensuring that science truly serves all society

Minister welcomes international science community to the opening of World Science Forum

A welcome address by Dr Blade Nzimande, South African Minister of Higher Education, Science and Innovation on the occasion of the opening session of the World Science Forum 2022

His Excellency, President Cyril Ramaphosa, President of the Republic of South Africa and our Guest of Honour;

Prof Tamas Freund, President of the Hungarian Academy of Sciences, and my esteemed Co-Chair of the World Science Forum 2022 Steering Committee;

Excellencies, Ministers of partner countries of the World Science Forum and distinguished representatives of the Diplomatic Corps;

The leadership of the World Science Forum partner organisations: the United Nations Educational, Scientific and Cultural Organisation; the International Science Council; the American Association for the Advancement of Science; the World Academy of Sciences; the InterAcademy Partnership; and the European Academies' Science Advisory Council Delegates to the 2022 World Science Forum;

Allow me to warmly welcome you all to our beautiful country and in Cape Town in particular for the World Science Forum 2022.

It has been a long road, since November 2019, when at the end of the ninth World Science Forum in Budapest, Prof Freund on behalf of the WSF partnership, had entrusted South Africa with the responsibility of hosting the 10th Forum in South Africa, the first to be held in Africa, originally planned for 2021. As you know, we could not host this important event as the whole world faced an unprecedented global COVID-19 pandemic which have had made international travel and conferences virtually impossible until recently.

It is thus with great joy and immense pride that South Africa today is able to honour its commitment to host this prestigious event. Indeed, we should remind ourselves that this august gathering has only been made possible on the strength of remarkable

breakthroughs, extraordinary science diplomacy and courageous leadership that enabled us to bring the pandemic under control. In this regard, our State President had played a seminal role in speaking on behalf of the developing world, including Africa, around issues of vaccine equity, social justice and inclusivity.

In November 2019, I had announced that the theme for South Africa's hosting of the World Science Forum would be "Science for Social Justice". We chose this theme because we believe that the greatest societal challenge of our time is the massive poverty and inequality, which continues to hobble the life chances of millions across the world, particularly in developing countries, but also within the developed world.

This theme is particularly poignant if we reflect on a central paradox of the truly magnificent advances made in modern science and technology over the last century or so against the equally spectacular failures of the dominant economies to create a more equal, inclusive and fairer deal for millions of people. How can we improve our science to ensure its benefits reach the most vulnerable in society? And what in our political, cultural and social systems require changes in order to ensure science truly serves all society?

For the World Science Forum 2022 to make a difference we must confront these challenges. It is of course a dialogue about science and technology which cannot only be amongst the scientific establishment – as important as you are. It must also be a dialogue with society, with policy-makers, citizens, public institutions and private sector interests.

I am confident that we have all the ingredients to achieve this mission. We have the people, you are here: scientists and scholars, policy-makers and government officials, the business community and entrepreneurs, civil society and media, the young and the old, from a one hundred and eighteen (118) countries, assembling exactly the diversity in experience and expertise we need.

I am especially delighted that a large number of delegates have joined us from other African countries and would like to thank the African Academy of Sciences for its support. For us, broader African solidarity,



South African Minister of Higher Education, Science and Innovation Dr Blade Nzimande is passionate about science serving the interests of everyone in society.

strategic cooperation and unity in action to pursue the goals of advancing the frontiers of science and technology for social justice is absolutely imperative. We cannot achieve this as single nation-states. It has to be forged on a wider regional and continental basis.

For this reason, I hope that African science leaders can work together in building a common African science and technology research agenda to enable our societies to tackling the major developmental and existential challenges of our time. Such an agenda must also facilitate much more effective pan-African policy interventions to direct our continent on a new and more sustainable development path.

Global science events such as the WSF presents a unique opportunity to also occasion dialogues across all the continents represented here, bringing together many diverse countries using the common language of science to find more effective ways of helping our respective societies to tackle issues of climate change, degradation of ecological systems and loss of biodiversity, and rising levels of poverty, inequality and unemployment in the face of globalization and technological disruption.

But we require not only dialogue between the developed and developing worlds, but also between different generations. It is for this reason that I

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How can we improve our science to ensure its benefits reach the most vulnerable in society?

deeply appreciate the participation of Young Scientists at the WSF, meeting and talking to each other across different cultural and geographical boundaries about their role in science leadership. After all, if my generation and generations before brought the world to the brink of ecological and climate disaster, perhaps we should place much greater faith and responsibility of young people to become stewards of the earth.

This Conference is also the product of many invaluable international partnerships. A special word of thanks must also go the WSF Founding Partners, UNESCO, ISC and AAAS, for their huge investment in our Forum.

for the next decade. In early in 2023, President Ramaphosa will chair the first Presidential Plenary meeting convened under Decadal Plan, which will bring together senior government, business, science and civil society leaders, to commit through South Africa's first Innovation and Skills Compact, to implement an agenda, which can best be described as one for science for social justice.

We look forward to the address by President Ramaphosa.

We will also receive a key message from President Katalin Novak of Hungary, to be delivered by Ambassador Horvath. And we will also receive key messages from Prof Freund and the other WSF leaders.

Yesterday Mr. President and dear colleagues, I had the privilege to visit the site where the international Square Kilometre Array (SKA) telescope is being erected, in Carnarvon in the Northern Cape Province of South Africa. I was accompanied by a distinguished delegation, including the Chair of the SKAO, Professor Catherine Cesarsky.

The construction process, which has only just begun, will take several years to complete, but will result in a revolutionary new radio telescope array which we hope will over time lead to breakthrough discoveries in modern cosmology.

What struck me about the project was not only the tantalizing prospects of pioneering discoveries in fundamental questions about the nature, origins and evolution of our universe, but also how the SKA team has begun to involve local indigenous communities in not only the development of the facility, but also through training next generation of radio astronomers, engineers, technicians and other skilled workers driving a truly international scientific experiment.

It gives me great hope that we do not have to make false choices between knowing the world and taking people with us in the quest of pursuing that knowledge. After all, such knowledge belongs to all humanity. A truly liberating science is one which holds the prospects of liberating global humanity from all forms of domination, exploitation and ignorance, such that we can live in harmony with other species and act as responsible stewards of the earth.

Allow me to wish you well with the Conference and express the sincere hope that from this will flow a new fountain of knowledge and wisdom to help us become pathfinders to a more sustainable and humane future for all our peoples. I thank you.

Science and the Future



Partnering with SA on science the way to go – Minister Nzimande

By **Ace Moloi**

Ahead of the official opening of the World Science Forum yesterday, Minister of Higher Education, Science and Innovation, Dr Blade Nzimande, assured delegates at the Chemical Industries Education and Training Authority's Pan-African Hydrogen Economy Skills Conference that South Africa is a capable global player in science and innovation.

The conference built on the momentum created at the Green Hydrogen Summit, which was held on November 29, and was the first to be held on the African continent. It also followed on the Hydrogen Society Roadmap launched by the Ministry of Science and Innovation in the first quarter of 2022 with the objectives of obtaining a clear understanding of hydrogen as an energy carrier, as well as achieving a commitment to producing clean hydrogen in a way that is socially just and sensitive to the potential impacts of change on jobs and local economies.

“To partner with South Africa on science, you can't go wrong. The fact that we are holding the World Science Forum is a huge vote of confidence in our science system,” Minister Nzimande remarked. The Minister added that even though Africa was a continent of the sun and the wind, two key resources that are pivotal for a Just Energy Transition, it will take intra-continental collaboration and global partnerships to succeed in creating vibrant hydrogen economies.

“Even though SA has the most advanced science infrastructure on the continent, it is not isolated and must therefore work with the rest of the continent,” Nzimande stated, before going on to urge the international community to go beyond South Africa when exploring partnership

opportunities in Africa. “A Just Energy Transition requires even closer collaboration between industrial companies, innovative small and medium enterprises, training and schooling facilities, financial institutes, investment partners and governments. If we indeed work together, we can speed up the energy transition and make the hydrogen economy a reality in the near future.”

Dr Nzimande further affirmed South Africa's recognition of skills development in correcting the imbalances of the past, allowing meaningful economic participation and also restoring people's dignity. This commitment to skills puts TVET colleges at the centre of producing skilled young people who will play a vital role in meeting the goals of the roadmap. “In transitioning to a just and inclusive green hydrogen economy, the TVET ecosystem needs to cultivate transversal skills, develop a knowledge commons for skills, and create an enabling, collaborative environment to address global shifts and local challenges,” the Minister outlined. Other speakers at the skills conference included the High Commissioner of Britain, Antony Phillipson, who told delegates that South Africa's just energy transition enjoyed the full support of Britain. Hydrogen is no longer “a fuel for the future but of now”, and the South African government has shown immense commitment to realising it, commended the High Commissioner. The conference was sealed with a panel discussion that engaged the themes of inclusion, transformation and skills development, among others.

Ramaphosa calls for action as World Science Forum gets under way

By **Ace Moloi and Phakama Mbonambi**

On Tuesday, 6 December 2022, His Excellency Cyril Ramaphosa, President of the Republic of South Africa, officially opened the World Science Forum currently underway at the Cape Town International Convention Centre.

Held under the theme of Science for Social Justice, the biennial forum is taking place for the first time since the COVID-19 pandemic and it is being held for the first time on the African soil. It is also happening as South Africa is battling load-shedding and the world at large is facing an energy crisis.

Established by the Hungarian Academy of Sciences, in collaboration with the United Nations' Educational, Scientific and Cultural Organisation (UNESCO), the gathering deliberates on the social and economic relevance, influence and responsibilities of science. The WSF creates a platform for the scientific community, public policy makers and communities to exchange ideas on the growing interdependence of science and society, and how science can help to address global challenges facing humanity.

The WSF 2022 subthemes are science for human dignity; science for climate justice; science for Africa and the world; science for diplomacy as well as justice in science.

In his introduction of President Ramaphosa, Dr Blade Nzimande, Minister of Higher Education, Science, Technology and Innovation, said the African continent had registered significant progress in science. "We are the origins of humanity and therefore should also cater for the future of humanity," stated the minister, who is also the co-chair of



South African President Cyril Ramaphosa challenged delegates to ensure that the forum would result in concrete action towards the betterment of lives and livelihoods.

the WSF 2022 Steering Committee.

Opening the forum, Ramaphosa challenged delegates to ensure that the forum would not only be a platform for debate, but that it would also result in "concrete action" towards the betterment of lives and livelihoods. Again, the President called for fair and equal access to scientific innovations and discoveries to close the gap between rich countries and developing economies. "Science for Social Justice expresses our conviction that inequality within and between countries is neither just nor sustainable. This event will inspire concerted global action for science to challenge and address inequality, injustice, poverty, environmental destruction and marginalisation," he said.

"As this is the first World Science Forum to take place in Africa, we hope that it will contribute to advancing the African agenda for science, affirming the crucial contributions Africa has to make in enriching global science."

The forum, continued the President, had to demonstrate South Africa's

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commitment to international cooperation in science. Moreover, Africa had the necessary collective resources and brain power to play a meaningful role in global science.

By hosting the first WSF in Africa, South Africa is hoping to achieve three key goals: to promote global debate that inspires action; to provide support for African leadership in global science policy discussions; and to promote South Africa as a strategic partner for global

science collaboration in response to societal challenges.

In addition to Minister Nzimande, the speakers on the first day of the forum included Professors Roula Inglesi-Lotz, Co-Chair of the Global Young Academy; Tamás Freund, President of the Hungarian Academy of Sciences; Felix Dakora, President of the African Academy of Sciences; and Sir Peter Gluckman, President of the International Science Council.

Other speakers were Dr Shamila Nair-Bedouelle, Assistant Director-General for Natural Sciences at UNESCO, and Princess Sumaya bint El Hassan, President of Jordan's Royal Scientific Society.

The forum, which runs until December 9, features a packed programme that includes 28 thematic sessions that will explore how science could improve lives for all in the 21st century. More than 900 leading scientists and decision-makers from the politics and industry, representatives of civil society are attending the event.

A keynote address by President Cyril Ramaphosa at the opening session of the World Science Forum 2022

Firstly, we have the rich, diverse and complementary expertise of Forum participants.

Secondly, we have access to significant collective resources, including cooperation instruments, which can be mobilised for investment in science for social justice.

Thirdly, we have our collective will and determination to ensure science makes a difference by informing policy that will create a more just and equal world.

I look forward to following the progress of the Forum over the coming days and to the Declaration you will adopt on Friday.

I hope that it will set out a focused and concerted action plan for partnership to put science at the service of society.

In this regard, I want to challenge the Forum to critically consider the following five key questions set for the Forum's debates and to respond with firm proposals.

Firstly, what role should science play in protecting and enhancing human dignity

and in fighting poverty, unemployment and inequality?

For example, the inequality in access to vaccines during the COVID-19 pandemic was a gross violation of human rights and contributed to further loss of life.

The global scientific community demonstrated the value of cooperation in responding with unprecedented urgency to produce COVID-19 vaccines.

Yet, the benefits of that extraordinary scientific work did not benefit all of humanity equally.

This experience has informed South Africa's development of a national vaccine manufacturing programme, which includes a partnership with the World Health Organisation through hosting the mRNA technology transfer hub here in Cape Town.

This is part of a broader effort by African countries to produce the vaccines and other pharmaceuticals that the continent's people need. My second question is, what role should

science play to enable a just climate transition, minimising the social and economic impact, and securing the livelihoods of those most vulnerable to climate change?

Innovation and green technologies must be at the forefront of our response to this challenge and must enable developing economies to exploit new growth opportunities.

This is part of the motivation for South Africa's significant investment in developing a hydrogen economy, which will be presented at this Forum.

I am delighted that the African Academy of Sciences has embraced the energy innovation challenge.

My third question is, how can we ensure the contribution of African science is recognised as a global resource that is part of the global responses to global challenges?

It is fitting that the World Science Forum coincides with a special ceremony to celebrate the start of construction of the global Square Kilometer Array radio telescope hosted in South Africa.

What to expect at the WSF

By **Mmampei Chaba**

The first WSF to be hosted on the African continent has noted over 2 380 registered delegates, over 2 000 accredited delegates, a 100 exhibitors, from 116 countries represented here today, over 350 sponsored delegates through the 16 partners who have provided travel and accommodation grants to enable delegates who would otherwise not had this chance of a lifetime to come to the beautiful Cape to witness this historic science gathering.

Through the support of the 2022 WSF partners, over 25 exciting, stimulating and fun pre-events leading to the Forum took place in the past week. Highlights among these were:

1. Science Journalists Programme, where journalists funded by the Fonds du Research de Quebec, UNESCO, SADC, NYS and supported by the WFSJ, participated in a Science Journalist Programme hosted at the University of Stellenbosch, which took place from 30 November to 2 December.
2. The youth-led Citizens Rin for clean air, where delegates did a 10km walk (Sea Point and Khayelitsha) to collect air quality data. The results will be shared during the WSF closing ceremony on Friday.
3. The Women in Science Film Festival.
4. ISC Global Knowledge Dialogue and dinner on 5 December.
5. Inaugural Science Diplomacy for Economic Development Through Hydrogen Roundtable Workshop, on 5-6 December.
6. The Celebration of the Commencement of the Construction of the Square Kilometer Array (SKA C3) launch in Carnarvon, Northern Cape on 5 December and the SKAO Breakfast on 6 December.
7. Cape Town Tour for Early Career Researchers took place on 6 December.
8. Eight science excursions to science institutions in the Western Cape.

For more information on the WSF

pre-events, you can visit the website: <https://worldscienceforum.org/default-rovat-default-cikk/pre-events-110112>

The theme of this year's forum, Science for Social Justice, will be unpacked, debated, questioned and possible solutions will be proposed, which can hopefully be your takeaway as possible actions for implementation. The Science for Social Justice theme will interrogate a range of aspects of the scientific enterprise, and how the production and application of knowledge should challenge social injustices. In the next 2.5 days, the following five sub-themes will be covered through 28 thematic sessions, delivered by 25 plenary session speakers and 140 thematic session speakers.

1. The first sub-theme, Science for Human Dignity, will examine role science plays in fighting poverty, unemployment, inequality and exclusion and other social ills such as drugs and alcohol abuse. In a session organised by SciCom - Making Sense of Science, Global Commission on Drug Policy, a panel will assess how the goal of a "drug-free world" backed by a "war on drugs" anchored in "science" and enshrined in international drug control treaties is naive and dangerous.
2. The second sub-theme, Science for Climate Justice, will explore how science working with civil society can lead the way in correcting the failure of climate policy. As an example of a topic that will be discussed under this

sub-theme, we will have a panel that will discuss the global dynamics that put scholars at risk, and will examine the factors that shape the experiences of at-risk, displaced, and refugee scholars, and discuss best practices for supporting at-risk scholars through different organisations. The presenters from this session organised by the Global Young Academy and Science in Exile will also introduce the participants to the different ways they can support at-risk scholars.

3. On Thursday, the focus will be on Science for Africa and the World, focusing on unleashing the potential of African science in global cooperation. According to the World Bank Statistics, the number of European researchers are reported to be at an average of 4 257 per million people as compared to Sub-Saharan African Researchers, whose figures range from 11 researchers per million (DRC) to 484 per million in South Africa. The sessions under these theme will focus on how Africa, starting from this low base can still unleash its potential to address its developmental challenges through global partnerships, unpacking the role of academies, science for public good, and evidenced based policy-making.

4. The sub-theme, Science for Diplomacy, will focus on the role of science in rebooting multilateralism and global solidarity. One of the sessions will for example be on the Repatriation of unethically obtained

human remains; and whether policy and science can converge to ensure community justice?

5. On the last day of the Forum, the sub-theme Justice in Science will reflect on how science can contribute to the society we want. The last day of the Forum will also include the adoption of the Cape Town Declaration, which is call and commitment to action for all of us to ensure that the opportunities, privileges and benefits provided through the science enterprise are accessible to societies as a whole in a fair, non-exclusive, and equitable manner.

This is just a teaser of a myriad interesting topics you can engage in throughout the Forum. Our esteemed Steering Committee (SC) and Organising Committee have put together this programme hoping for the 2022 WSF to provide a platform for stimulating, and thought-provoking discussions, and their contributions and guidance have been extremely valuable. And, of course, the local organising committee has worked diligently to transform the SC's ideas.

We will, of course, have some fun through a very busy social programme, which include a cocktail function tonight, a WSF Delegates Party on Wednesday, funded by Frontiers Policy Lab, a DSI gala dinner on Thursday, which will include the induction of the African Academy of Sciences fellows and a closing ceremony and a South African "braai" on Friday.

Mmampei Chaba is Chief Director: Multilateral Cooperation and Africa: Department of Science and Innovation

Programme Director, Co-Chairs of the World Science Forum 2022 Steering Committee,

Dr Blade Nzimande, Minister of Higher Education, Science and Innovation,

Prof Tamás Freund, President of the Hungarian Academy of Sciences,

Ministers of partner countries of the World Science Forum,

Representatives of the Diplomatic Corps,

Leadership of the World Science Forum partner organisations,

Delegates to the 2022 World Science Forum,

It is a great privilege to address you at the start of this historic event, the first World Science Forum to be hosted in Africa.

I extend the warmest of South African welcomes to all delegates - to our international guests who have travelled to Cape Town and to all those who are following proceedings online.

Today more than ever, science is called upon to assist humanity in responding to the key challenges of our time, including disease, climate change and food insecurity.

We therefore need to ensure that this

Forum will not only be a platform for vibrant discussion, but will also lead to concrete actions harnessing science as an instrument for social justice.

The theme for the Forum - Science for Social Justice - should guide our deliberations.

This theme expresses our conviction that inequality within and between countries is neither just nor sustainable.

This event will inspire concerted global action for science to challenge and address inequality, injustice, poverty, environmental destruction and marginalisation.

By hosting this Forum, South Africa is demonstrating its strong commitment to international cooperation in science.

Science progresses when nations work together.

As this is the first World Science Forum to take place in Africa, we hope that it will contribute to advancing the African agenda for science, affirming the crucial contributions Africa has to make in enriching global science.

We have all the ingredients required for success.

My fifth and final question, is how do we transform the nature of the scientific enterprise, making science more reflective of the society we want?

We must ensure greater transparency and sharing in the scientific enterprise.

We need to make Open Science a reality and maintain an uncompromising position on research integrity and ethics.

The use of science for social justice requires committed international cooperation.

This World Science Forum could, therefore, not come at a more appropriate time.

I want to thank the World Science Forum partners for entrusting South Africa with this responsibility.

I congratulate Minister Nzimande and Professor Freund on the Steering Committee's success in compiling a relevant and thought-provoking programme.

My appreciation goes to all who contributed to the Forum's organisation.

I want to assure President Katalin Novák, as the esteemed Patron of the World Science Forum, of our support and commitment to continue working with the WSF partnership to ensure the proud

legacy of this World Science Forum will endure beyond Cape Town.

I would like to conclude with the words of former President Nelson Mandela, who said:

"What counts in life is not the mere fact that we have lived. It is what difference we have made to the lives of others that will determine the significance of the life we lead."

What matters is not the fact that we have participated in the World Science Forum here in Cape Town, but rather what we will do as a consequence to improve the lives of others, making our world a more just one.

I am confident that this World Science Forum will contribute to the difference that humanity seeks and needs.

I thank you.