

Keynote address by the Minister of Science and Technology, Ms Mmamoloko Kubayi-Ngubane, at the 4th National Conference on Global Change, on 3 December 2018

Programme Director

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DST and NRF officials

Officials of the Limpopo Office of the Premier and Provincial Government;

Distinguished guests

Ladies and gentlemen

It is a great pleasure for me to welcome you to the 4th National Global Change Conference. We are gathered today under the theme "Sustainable futures through science and innovation" at a time when the world and our country are facing significant challenges, while at the same time the world of technology is changing very fast.

The world is confronted with a number of complex and devastating challenges that will require a range of responses. Through the United Nations, the countries of the world have committed to work together under various frameworks to tackle these challenges. Through these multilateral effort the world has registered significant progress in reducing poverty over the past decades.

One of these frameworks that dealt comprehensively with the challenges facing the world was the Millennium Development Goals. The world achieved the target of cutting the poverty rate in half by 2015 – five years ahead of schedule – in 2010. Despite the significant gains made in reducing poverty, the number of people living in extreme poverty globally remains unacceptably high.

According to the World Bank, "More than half of the extreme poor live in sub-Saharan Africa and if the trend continues, by 2030 nearly 9 out of 10 extreme poor will be in sub-Saharan Africa."

Climate change, extreme poverty and gender inequality are among the many challenges that define the post-Millennium Development Goals era. For this reason, the countries of the world have committed to the Sustainable Development Goals as a new framework for tackling these global challenges.

According to the United Nations, "The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals, which are an urgent call for action by all countries –

developed and developing – in a global partnership. They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests."

The post 2010 economic crisis global growth forecasts indicate that poverty reduction may not be fast enough to reach the target of ending extreme poverty by 2030. In South Africa, these issues are amplified by a range of other factors that serve to exacerbate stresses, including inequitable resource distribution, unemployment, climate variability and change, a range of health concerns, land issues, and education challenges at all levels.

Achieving local, national and the international goals linked to the Paris Agreement and the Sustainable Development Goals, among other environmental agendas, has become a focus for several science and policy efforts, many of which are also linked to South Africa's National Development Plan.

Research efforts are also focused on better understanding problems that are coupled with climate change, ecological change and degradation, and ever-increasing extractive pressures on environmental resources and ecosystems in a fast urbanising world.

As a consequence of the increasing pressures driven by global change, South Africa faces the urgent priority of training a generation of scientists who can support decision-makers through undertaking excellent and appropriate global change science research.

Albert Einstein, in a book called *Ideas and Opinions*, in an essay called "Why Socialism?", says the following "Science ... cannot create ends and, even less, instill them in human beings; science, at most, can supply the means by which to attain certain ends. But the ends themselves are conceived by personalities with lofty ideals and – if these ends are not stillborn but vital and vigorous – are adopted and carried forward by those many human beings who, half-consciously, determine the slow evolution of society."

Einstein, in the same essay cautions that: "We should be on our guard not to overestimate science and scientific methods when it is a question of human problems; and we should not assume that experts are the only ones who have the right to express themselves on questions affecting the organization of society."

As Einstein has observed, solving the challenges confronting us will not be achieved only through technical expertise. Increasingly, the role of the social sciences and humanities are being seen as critical science inputs. The role of enhanced understanding of the central part that values, belief systems and cultural dimensions play in shaping the problems we face and informing solutions are needed to deepen our understanding of complex problems. The creative arts, for example, are vital to informing the systems approach that is needed to address the challenges we face.

Fundamental science to support all these interlinked national and international policy developments is well positioned under the general theme of global change research.

Indeed, the transdisciplinary approach required to support such international policy trends has been strengthened recently through the establishment of the international research framework entitled "Future Earth", which amalgamates the previous global change programmes of the International Geosphere-Biosphere Programme, International Human Dimension Programme on Global Environmental Change and Diversitas. South Africa is now hosting the Southern African Future Earth office that will aim to promote integrative global change research.

The 10-year Global Change Research Plan adopted by the Department of Science and Technology (DST) in 2008 has provided a broad framework for global change research in South Africa. This has stimulated the DST and the National Research Foundation (NRF), who in collaboration with the Global Change Science Committee, have recently developed an Earth Systems Science (ESS) programme that focuses on biophysical ESS issues. A parallel process is also currently under way to develop a related focus on global change science and society with a strong emphasis on the social sciences.

This conference offers a unique opportunity for a multi-stakeholder dialogue on topical issues related to global change. By bringing together representatives from the research and development sector, business, industry, government, and civil society, to share and debate the latest research, technology and strategic solutions to our challenges, it gives us a better chance to achieve the Sustainable Development Goals and the goals of the National Development Plan.

As Einstein said, the ends which technology can help us achieve are conceived by people with lofty ideals. I believe that this conference is full of such people, who are concerned about our world and who would like to create a better world for all.

I once again welcome you to this conference and wish you well in your deliberations.

I thank you.