

Keynote Address by Director-General Phil Mjwara at the National Climate Change Policy Summit – Science Day,

Date:

2009-03-04 12:30

Venue:

Gallagher Estates, Midrand

Type:

Director General

IsArchived:

False

Content:

Honourable Ministers, Ministers...

Honourable Representatives of the South African Parliament ...

Representatives of various Embassies....

Fellow Colleagues in Government...

Ladies and Gentlemen

The Department of Science and Technology is proud to host today's science day. I am confident that the presentations, discussions, and engagements that follow will play a significant role in shaping and guiding the policy discussions that follow over the next two days.

Of the many complex challenges facing humanity today, climate change has been the issue that has had the most success in terms of using science to inform policy and action. But we need to be building on this foundation.

Climate change is undoubtedly a foremost challenge of the 21st century. It is the only issue that consistently ranks high on the political agenda of all nations of the world, be they developing or developed, and also features high on the agenda of multilateral forums such as the United Nations.

As such, it is no surprise that the broader global scientific community is being challenged on a daily basis to step up to the plate and play an even bigger and more value-adding role in the fight against climate change.

This is a major challenge since climate change touches on so many areas of STI, i.e. science, technology, and innovation. To set the scene for the science day, I would like to use my limited time to focus on six key STI challenges that I think we should focus on as well as two cross-cutting ones. Measures to address these challenges will need to be strongly integrated into the climate change policy framework that is the focus of this summit.

Firstly, the complexity and scale of climate change require a very strong foundation in the fundamental earth sciences. Important work on the science of climate change happened over the last couple of decades. These were effectively consolidated in the set of reports that emerged from the last IPCC process. As you will hear in the presentations that follow, the fourth assessment report clearly demonstrated that urgent action is required if we are to avert major crises.

However, it would be a mistake to assume that scientific consensus on the need for action imply that we now enough in terms of the functioning of the climate system. The climate system as part of a broader earth system is complex and there are many areas where it is imperative for fundamental understanding to be substantially improved.

One such area is the importance of the Southern Oceans and its associated land masses. Oceans cover 71% of the Earth's surface and have a major influence on climate. Their currents distribute heat around the globe, while evaporation from the sea surface increases the moisture content and warmth of the air above, contributing to cloud formation and wind generation. The southern tip of Africa is also an important oceanic circulation 'choke point', lying close to the intersection of three pathways of the Global Ocean Conveyor Belt, which plays a vital role in the heat balance of the Earth and hence its climate.

Ensuring that adequate resources are directed towards a deeper understanding of the role of the Southern Ocean on climate change should be a vital part of any package of STI efforts over the next 5-10 years. The results of these investments will be of greater benefit for the global community. Consistent with the policy approach of using our geographic advantage for STI efforts, South Africa is providing significant support for the vital area of work.

However, as will become evident in my address, there are other vital STI areas of work related to climate change that are essential for South Africa's development efforts and which need to be substantially enhanced. As such, it is vital that our developed country partners and the business community also appreciate the importance of the fundamental earth sciences and work with government to enhance this area of work. Over the last couple of years, we have invested in appropriate research platforms and institutions and we stand ready to work with others to significantly grow this vital body of knowledge.

Secondly, the IPCC Fourth Assessment Report, particularly the report from working group 2, highlight that of all the continents, Africa is likely to be the most negatively impacted due to climate change and variability. Impacts will be wide-ranging and will be felt in the water sector, agriculture, fisheries as well as negative exposure to sea-level rise.

These high-level observations are important in focusing attention on the major challenges likely to be faced. However, for meaningful action to be taken on adaptation and climate-proofing, there is a need for more work on the downscaling of climate projections and to link these to shorter run changes in climate variability. In addition, new tools and science are required which are designed around the needs of decision-makers instead of the interests of scientists and researchers. As an example, for decision-makers, the language of risk is more useful especially if the risk is defined in terms of multiple impacts.

My department has recognised the importance of this challenge and have initiated and seeded a major flagship priority intervention known as the Risk and Vulnerability Atlas initiative. I encourage you to attend the side event scheduled for this evening to get more information on the initiative but more importantly to contribute to shaping and developing the Atlas so that it becomes an important bridge between the science and policy communities.

The third issue that I would like to highlight is that of earth observation. Coping with climate change and variability demands good scientific understanding which is based on sufficient and reliable observations.

During the 2002 World Summit on Sustainable Development held in South Africa as well as calls emerging from the G8 (Group of Eight) leading industrialized countries, the urgent need for international collaboration was highlighted as essential for exploiting the growing potential of Earth observations to support decision making in an increasingly complex and environmentally stressed world.

This has led to the formation of the Group on Earth Observation (GEO) with a mandate to build a Global Earth Observation System of Systems (GEOSS). GEO enhance our understanding of the Earth system - its weather, climate, oceans, atmosphere, water, land, geodynamics, natural resources, ecosystems and empower us to manage and exploit its resources in a sustainable manner. We are proud to be a member of the Executive Committee and one of the four co-chairs of GEO.

South Africa stands to not only benefit from GEO but we can also contribute immensely in the generation, analyses and dissemination of new knowledge in this regard. Two years ago, we received approval for the South African Earth Observation Strategy (SAEOS) which provides an important framework for maximising the benefits of earth observation efforts in South Africa. Shortly, we will see the establishment of the South African Space Agency (SASA) and this will provide a major boost to implementing the SAEOS framework.

The increasing importance of climate change as an issue is reflected in the work of GEO. For the 2009-2011 work programme, five of the 46 GEO tasks directly deal with climate activities. An important task is the resourcing and implementation of the Climate for Development in Africa Programme (ClimDev Africa). ClimDev Africa aims to improve the availability, exchange and use of climate information & services at national, local and regional levels in

support of economic growth and achievement of the Millennium Development Goals.

The development of observation networks is resource-intensive but the lack of such networks can decrease our ability to respond effectively to the challenge of climate change.

The fourth challenge is the one that is well-known and tends to dominate discussions at the national as well as global level. This relates to the urgent need to substantially enhance efforts on the energy front. We have already put in place a number of platforms, initiatives and programs that assist in building the technological capabilities required to mitigate climate change.

Driven by a vision to ensure energy security and support economic growth without compromising environmental protection, these platforms include the Centre for Renewable and Sustainable Energy Studies, whose mandate is to train scientists and engineers with the required technical expertise to unlock the country's renewable energy resources and implement appropriate technology for sustainable energy use. The DST also funds a Demand Side Management and Energy Efficiency Hub, the aim of which is to develop and strengthen capacity in energy efficiency, including fuel switching to renewable technologies, and demand-side management in support of accelerated and shared economic growth.

The prospects, opportunities and challenges of a possible hydrogen economy – which is widely recognized as a sustainable and environmentally friendly part of a future low carbon economy – have persuaded the Department to develop a National Hydrogen and Fuel Cells Technologies Research, Development and Innovation Strategy, and set up a sizable programme to develop South African capabilities in these technologies. These initiatives will advance the development of a critical mass of local capabilities in sustainable low carbon energy technology solutions. The commercialization of these should thus help reduce the country's greenhouse gas emissions.

The fifth key challenge is also in the technology and innovation space but relates to adaptation. Sadly, this area continues to be neglected in the global discussion on technology development for a variety of reasons. One of the key reasons relate to the difficulty of applying traditional market mechanisms to stimulate, development, deploy and commercialise these technologies, particularly those that are required by the developing world.

Governments tend to be the major consumer of these innovations and as such governments need to play a major role in their production and deployment. However, with the other competing demands that developing countries face, they are not in a position to resource such initiatives. On the other hand, developed countries tend neglect these technology areas as they do not provide any national level benefit and the commercialisation returns may be low.

South Africa has important capabilities in this regard and there is a significant potential for enhancing economic returns if these innovation areas are prioritised as well. A process is

underway to work with others to strengthen the innovation system for this sector. However, it is vital that any climate change policy also focuses on the growth of those sectors that support adaptation.

Finally, solving the climate change challenge through an exclusive focus on hard technological fixes will not succeed. In terms of the nature of the challenge, more effort is required in terms of understanding and managing difficult issues in the area of human and social dynamics. This includes measures and approaches to support changes in human behaviour towards sustainability, greening the macro and micro-economic environments, the use of fiscal instruments, etc. South Africa has small but important research programmes exploring these difficult issues and I am proud at the feedback that we get that South Africa is often regarded as amongst the pioneers focusing on this vital area of science and research.

I would like to wind down my address by focusing on two cross-cutting issues that are an integral component of the STI challenge in the fight for climate change. These are human capital development, and reforming the governance and functioning of the Global System of Innovation.

All of the STI challenges discussed above is dependent on the availability of adequately trained researchers and technology developers. The interest in earth stewardship by a growing number of young South Africans need to be harnessed through structured and proactive programmes so that we can create an adequate base to service the many priority areas of research.

The second major issue relates to the governance of the global system of innovation and includes the transfer of technology from developed parties to developing countries. This continues to be a vex issue at the climate change negotiations but it remain one of the four elements that will shape the post-2010 deal. Our discussions today should include an exploration of practical measures that will assist us in this regard and strengthen our positions at the climate change negotiations.

In conclusion, South Africa's relatively small STI base is actively engaged with the full range of areas that constitute the 'Science and Technology Challenge in response to climate change'. This includes efforts on fundamental understanding, downscaling of global models, pioneering new scientific and methodological approaches on risk and vulnerability, to strengthening global earth observation to technologies for energy and for climate change adaptation. The work being done on both the science and technology fronts need to be substantially developed over the next few years and will require the support of all parties.

I would like to end by thanking all of the speakers that follow and to thank you for making time available to be part of the Science Day.

