



POLITY

ARTICLE BY: CREAMER MEDIA
REPORTER

PUBLISHED: 20 APR 2010

SA: Hanekom: Budget vote speech by Science and Technology Deputy Minister, National Assembly (20/04/2010)

Date: 20/04/2010

Source: The Department of Science and Technology

Title: SA: Hanekom: Budget vote speech by Science and Technology Deputy Minister, National Assembly

Speaker, Honourable Members

Our country occupies an increasingly prominent place at the frontiers of science. Any lingering doubts about this assertion were surely laid to rest when, earlier this month, Deputy President Motlanthe announced what is being referred to as "the most significant palaeontological find in nearly a century". This was, of course, the remarkable discovery by Professor Lee Berger of two fossil skeletons of a previously unknown hominid species at the Cradle of Humankind, now known as *Australopithecus sediba*. One of these fossils will be on display at the Iziko Museum, which will be hosting a paleo focus week on behalf of the Department of Science and Technology (DST) during the next four days, starting tomorrow.

These early ancestors of ours lived in the area some two million years ago. The painstaking research undertaken by a team of researchers from the University of Witwatersrand to ensure the success of this project speaks volumes about the calibre and dedication of our scientists.

On an entirely different front, our astronomers and engineers once again demonstrated that they rank among the best in the world when, just a few weeks ago, Minister Pandor launched the first seven of the 80 dishes that will constitute the MeerKAT radio telescope. If we succeed in our bid to build the Square Kilometre Array (SKA), we will be host to the largest radio telescope ever constructed. And it will be an African project, involving a partnership with eight African countries.

The SKA will enable us to look back 13 billion years to a period just 500 000 years after the "Big Bang" that signalled the formation of the universe.

South Africa's prolific evidence of the origins of life on earth has shed significant new light on how life on our planet has evolved over millions of years. Through our increasing mastery of the two disciplines of palaeontology and astronomy, we are becoming the world's experts on unveiling the mysteries of the past - how the universe came to be, what made us what we are today, and what significance this knowledge may have for our decisions about our future.

While we pride ourselves on our status as the "cradle of humankind", we need to ensure that we are also the custodians of the future of humankind. We have a special responsibility to care for our planet, and apply our knowledge to shape a better future for the generations that follow us. Our early ancestors used stone tools, but we have at our disposal the tool of modern science - our best chance of finding solutions to the most pressing needs of society.

Healthcare

One of the broad goals we have set for ourselves as government is to increase the life expectancy of our people. This will not be achieved unless we are able to combat HIV and AIDS more effectively. While this challenge is now being vigorously addressed by the Department of Health, it is clear that only through a collective effort will we break the back of this devastating virus. Our research community plays a vital role in this effort.

During the past three years, researchers at the Centre for the Aids Programme of Research in South Africa, based in Durban, have been testing an antiretroviral, Tenofovir, as a microbicide gel. The trial, funded jointly by the DST and the government of the United States of America, involved 1 000 women, and was completed in March this

year. The results will be announced in July. We are optimistic that the gel will prove an effective method of HIV prevention for those women who are exposed to multiple sexual partners or are, for some reason, restricted in their use of condoms. If, as we hope, the gel is effective in preventing HIV infection in just one third of the users, it will have an enormously positive impact on the HIV epidemic in our country. The gel will also have to be affordable. The good news is that the DST has secured a royalty fee for the manufacturing of the product. Our researchers are now investigating how we can manufacture it locally.

Also on the health front, there is encouraging news from tuberculosis (TB) researchers. The South Africa Tuberculosis Research and Innovation Initiative and the USA's National Institutes of Health have completed the first phase of a programme to discover new drugs for the treatment of tuberculosis. Led by a South African biologist stationed at NIH, the South African-United States teams in Washington have screened 35 000 drug-like compounds, discovering 640 totally new drug-like compounds, which present exciting potential to become new drugs for the treatment of tuberculosis. Over the next 10 years, scientists from both countries will be working together to realise the goal of developing the first South African drug for TB treatment. At the same time they will be contributing to global discovery efforts in this arena and building local capacity and capabilities in drug discovery and development.

Honourable Members, this is what drives us - the pursuit of knowledge and the application of science that makes a difference to people's lives.

Honourable Members, it should be clear by now that, by using the best modern tools at our disposal, we are both mastering the science of the past, and actively engaging with the challenges of the present. Now we come to one of the biggest issues confronting humankind - the threat of climate change.

Climate change

Science has woken us up to the threats facing our planet. Currently we are losing up to 140 000 species per year. However, unlike the past mass extinction events, the current "sixth extinction" is human induced. We are at the crossroads - we can either plunge further and irreversibly into this looming catastrophe, or we can use science to help us make new choices, and modify our behaviour to rescue the situation.

South Africa is among the countries most vulnerable to the effects of climate change. Recognising the seriousness of our situation, and the impact of human activity on the natural resources on which life depends, the DST has included global change science as one of the grand challenge areas in our Ten-Year Innovation Plan.

Any effective response to climate change must be linked to the broader outcome of building an environmentally, socially and economically sustainable South Africa. Globally, knowledge, technology development and innovation are regarded as core to any attempt to cope with and adapt to the negative consequences of climate and other environmental changes. Our challenge is to find and adopt ways of reducing our carbon, pollution and waste footprint.

The DST has made important progress in supporting South Africa's efforts to adapt to climate change and to support mitigation efforts. I would like to highlight four aspects:

- * Firstly, through a partnership with the scientific and research community, we have finalised a 10-year Global Change Research Plan. The plan identifies areas of knowledge generation that are key to supporting not only a better understanding of climate change and environmental impacts, but also policy, decision-making and action. The research plan will be published and widely circulated in the next few months.

- * Secondly, through focused initiatives like the South African Research Chairs Initiative, the Applied Centre for Climate and Earth Systems Science, and other innovative programmes, the Department is helping to build the next generation of leaders, managers and researchers to support the sustainable development efforts of government, industry, and other institutions.

- * Thirdly, in response to the weaknesses in the data and models currently available the DST initiated the South African Risk and Vulnerability Atlas programme. The programme is targeted at supporting local-level decision making, and will include capacity-building and support in interpreting the information in the Atlas. A hard-copy version of the Atlas and an interactive web-based tool will be available in the next few months.

- * And finally, if South Africa is to become a low carbon economy, more attention needs to be paid to energy issues, and efforts to find low carbon energy solutions. The Department continues to support research, innovation and human capital development in the field of alternative and renewable energies.

Renewable energy

Which brings me, Honourable Members, to the matter of renewable energy. South Africa has the potential for large-scale solar energy generation, but we have yet to exploit this potential fully. The DST has embarked on a process of assessing where solar energy technology might play a significant role in our country, and how we can develop and strengthen it to achieve a competitive advantage from which economic benefits can be derived.

In this regard the Department commissioned the CSIR to facilitate the development of a long-term national solar technology roadmap to guide our activities. The Department will be engaging with various stakeholders on the draft technology roadmap so that we can finalise and agree on a national implementation plan.

In parallel to this, the Department will promote strategic partnerships and establish a solar energy centre of competence that will serve as a platform for commercialising solar energy innovations.

Of course, solar energy is not the only alternative to our current reliance on fossil fuels. The DST is pioneering and supporting a number of exciting initiatives in this area, which will contribute both to a growing green economy, and ultimately the protection of the future of our planet.

Honourable Members, the vehicles that brought us to Parliament this morning are amongst the greatest contributors to the emissions threatening our planet. In addition, they rely on a non-renewable resource, which will run out one day.

One vehicle that arrived here this morning did not pollute the atmosphere, and arrived quietly because it is driven by an electric motor. It is called the Joule. This vehicle was designed by a team of South Africans, supported by the DST, and it is parked outside for all of you to see.

It is estimated that by 2020 electric and hybrid vehicles could account for up to 20% of vehicle sales globally. In this context, South Africa needs to ensure that it is not left behind in the growing demand for environmentally friendly vehicles.

It is our business to fund this kind of innovation. In a globally competitive market, not all innovations will be successfully commercialised, but, working closely with the Department of Trade and Industry, we will ensure that the necessary backing is there, including further research in improved battery technology, the training of

engineers, and the registration of intellectual property rights, to support South African innovations such as these in order for them to penetrate a competitive market.

Human capital

Honourable Members, we have yet to find satisfactory answers to a great many scientific challenges, but perhaps the biggest challenge is on the human capital front. The reality is that we are not producing nearly enough scientists, and without scientists there can be no science.

Success in our efforts to develop science, engineering and technology human resources that are representative of South Africa's demographics depends largely on having sufficient numbers of school leavers with passes in mathematics and science. We are aware that to do this we will have to encourage more learners to choose mathematics and science when they enter grade 10, and then attract the best performers to science-based careers. The Youth into Science Strategy that the DST adopted in 2007 contributes to this goal.

We are working closely with the Department of Basic Education in the implementation of its National Strategy for Mathematics, Science and Technology Education. It is in this context that the DST has adopted 18 Dinaledi Schools - two schools in each province, in reasonable proximity to Science Centres. I have already started a programme of visits to our adopted schools in order to assess the situation on the ground and to find out how we can strengthen our support to them. At the same time, the Department is drafting a comprehensive plan for support to the 18 adopted schools.

One of the innovative ways in which we hope to assist learners is through the Dr Math project, an initiative of the Council for Scientific and Industrial Research's (CSIR) Meraka Institute. Dr Math gives learners online assistance with their maths homework. The software has been enhanced to allow tutors to log on from dispersed locations. The Meraka Institute is in discussion with the Department of Basic Education and network operators on further expansion plans for the programme.

The DST remains committed to the cause of making citizens aware of the importance of science in their lives. One of the key instruments we are using to do this is the annual National Science Week (NSW). In our quest to improve the quality and reach of the event, a 10-year review of this intervention will be conducted this year. The conclusion of the review will inform our next five-year strategy, which will come into effect in 2012. Meanwhile, we have adopted an interim strategy to guide the implementation of the National Science Week in 2010 and 2011, and for these two years the theme will be "The Role of Science in Economic Development".

Honourable Members, in this vein we urge you to return to your own constituencies and assist in fostering more interest in the sciences among our young people. Indeed there is a science to everything we do. There is science in the construction of an informal shack and in the building of a satellite; it is science that will enable us to identify new vaccines or to learn about our past through the analysis of ancient fossil. It is up to us Honourable Members to excite and enthuse our younger generation and to give them all the necessary support to become the great scientists of the future.

In order for our economy to become more competitive and achieve higher growth rates and for us to continue to address the needs of ordinary people in our country we must increase our investment in our research capabilities. By doing so, we will secure our prominent place at the frontiers of global science.

Thank you.