



science  
& technology

Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA



Annual Report  
2007/08

# Our vision

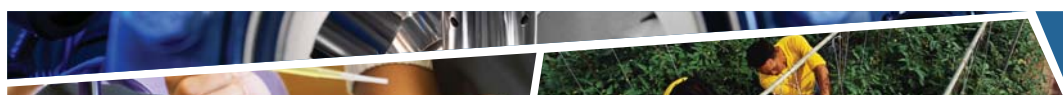
*To create a prosperous society that derives enduring and equitable benefits from science and technology.*

# Our mission

*To develop, coordinate and manage a national system of innovation that will bring about maximum human capital, sustainable economic growth and improved quality of life for all.*

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*Mosibudi Mangena*  
*Minister of Science and Technology*



# Foreword

The 2007/08 financial year has been a challenging and productive one for the Department of Science and Technology and the science councils that report to it.

The year under review provides us with an opportunity to reflect once again on whether adequate steps are being taken to construct a knowledge-based economy, and to confront the many challenges our country faces.

It is clear that the need to modernise the economy is as urgent as ever; and that new science and technology-based approaches to energy and food production, education and health, for example, are required to achieve this objective.

Apart from the spending on the programmes falling under our mandate, my department is also concerned about total spending on research and development in South Africa.

Our country is richly endowed with mineral deposits, and to maximise the advantage this gives us, we need to ensure that we stay at the cutting edge of technology for the extraction and processing of these minerals.

South Africa also has an abundance of agricultural assets, and has established an enviable reputation as an exporter of high-quality farm produce. To remain competitive, we need to be constantly researching ways of enhancing the quality and quantity of what we produce.

In every area of scientific endeavour, and in all newly developing fields – from the development and testing of Aids vaccines, to the production of motor vehicles – both government and private enterprises need to put money aside for research and development. But most important of all, we need to ensure that the benefits of science and technology are felt by all citizens.

Attractive research and development tax incentives are now in place, and my department is supporting communication efforts designed to ensure that these and other incentives are more frequently and compellingly brought to the attention of those likely to benefit from them, particularly smaller enterprises, which must also benefit from developments in science and technology.

When the Department of Science and Technology was established five years ago, it was assigned a leading role in modernising our economy. This was a clear indication of the role that science and technology was expected to play in an economy, which was then attempting to achieve an ambitious 6% to 7% growth rate.

I believe that this is an appropriate time to examine what has been achieved in this respect and what remains to be done in the medium term, and to consider novel ways of ensuring that science, technology and innovation benefit all our people.

The need to recruit and retain more talented people to the sciences has stimulated a number of human capital programmes, such as the centres of excellence and the South African Research Chairs Initiative.

In the past two years we have established 72 research chairs at South African higher education institutions, 16 of which are in new disciplines. Our target is to establish 210 research chairs by 2010 to contribute to the growth of high-level research capital and production capacity in the academic and industrial sectors.

Although what we have achieved is not yet enough to meet our country's needs, we are very proud of the people who are engaged in this critical programme.

These initiatives are having a positive effect, but our major challenge is at school level. The number of school-leavers with good passes in mathematics and science remains low. And it is clear that, unless we spark our children's interest in science, engineering and technology from an early age, we are likely to lose these minds to the scientific disciplines forever.

This is clearly something we cannot allow to happen, and we are working with the Department of Education to implement the Youth into Science Strategy, which was approved by Cabinet in March 2007. Failure to meet the targets set by this strategy will mean failure to build the human capital required for our future progress as a nation.

To give effect to the provisions of the Youth into Science Strategy, we have developed a plan to establish a network of science centres across the country. Other initiatives supporting this strategy include National Science Week, mathematics and science camps for learners, support programmes for educators, increased support for existing science centres, and the mobilisation of the corporate sector in support of science awareness campaigns. The number of science centres has increased from nine to 17 in the past three years, and our long-term goal is to have a science centre in every district.



# Foreword (continued)

What is at stake here is the well-being of our society. If we continue to lose the best of our young minds, our National System of Innovation will be rendered ineffectual, and our infrastructure, environment and economy will suffer.

As Africa's largest economy, and one which other African countries often look to for guidance, South Africa continues to play an important role in the development, integration and unification of our continent, principally through our participation in the New Partnership for Africa's Development (NEPAD). Science and technology are critical elements in this initiative. South Africa served as chair for the African Ministers' Council for Science and Technology for the first two years of the organisation's existence. This gave us an excellent opportunity to raise the profile of the disciplines of human endeavour that make such a substantial contribution to the improvement of the quality of the lives of the human race.

The field of astronomy has been a particular success for us in our quest to create a knowledge-based economy. This is not just because of our geographic position, although this gave us a great advantage. Initiatives such as the Southern African Large Telescope, launched in November 2005, and our membership of the Group on Earth Observation, a progressive multilateral body, have brought us a step closer towards the objective of creating a hub of astronomy research in southern Africa.

Our leadership role in GEO has ensured that our satellite ground stations at the Council for Scientific and Industrial Research will be central to the download and processing of China-Brazil Earth Resource Satellites imagery and its distribution, cost-free, throughout Africa. The data produced assist in agricultural planning and improved resource management. At a time of sharply escalating global food prices, the value of such planning cannot be underestimated.

We are seeking to increase our activities in astronomy by coordinating an international bid that includes many African partners to host the extraordinary new Square Kilometre Array (SKA) radio telescope. South Africa and Australia are the only remaining bidders to host this sensational device.

The SKA is not only a set of dishes in the Karoo, but also a project that combines fundamental developments in radio frequency technology, information and communication technology, and high-performance computing. The telescope will need the fastest data transport networks and most powerful computing facilities possible. As a result, the project has the potential to seed various new industries in the ICT sector. Data will have to be moved very quickly, which will require the introduction of data transport and signal processing technologies to carry information at about one terabit a second. This is faster than the IBM Blue Gene, currently the fastest supercomputer in the world.

The Square Kilometre Array will enable us to research the origins of the universe from a single vantage point. We are not simply hoping that this wonderful project will land in our laps; our hardworking team is now in the second of three stages in the construction of our smaller-scale demonstration model, the Karoo Array Telescope, and the MeerKAT. The MeerKAT will showcase novel production technologies, and will be an important instrument for exploring the evolution of galaxies and the nature of transient radio sources.

Much of this work would not have been possible without a significant increase in the Department of Science and Technology's budget allocation. The National Treasury gave the Department an extra R1,2 billion over the 2007 Medium Term Expenditure Framework for a wide range of programmes.

While the Department's efforts have generally met with approval, we have not been without our critics. The public wants to see ongoing evidence of socio-economic benefits flowing directly from scientific and technological investment, and this is not always easy to provide.

Again, while deploring the relative superficiality of such tangible evidence, well-meaning critics have also accused the Department of having set goals that are too broad, and therefore difficult to measure. Others feel the Department is one-dimensional, that its efforts have been confined to science rather than the full spectrum of innovation, and that because of this it has failed to capture the full value chain of investment for the economy. We have also been challenged to approach the innovation chain from more than one direction.

To meet these challenges, we are taking a number of bold steps. One of these is the creation of the Technology Innovation Agency (TIA), a new public entity we hope to establish before the end of 2008. It is designed to provide financial assistance to individuals or parties to enable them to develop and commercialise their technological innovations and inventions. The Agency will draw together and integrate the management of disparate technological innovation initiatives that are still at an early development stage.

The Agency will also become a custodian of the centres of competence. These centres are intended to actively promote greater collaboration between academia, industry, research councils, entrepreneurs or technopreneurs, international research organisations, companies, and individual inventors and innovators, so as to produce socio-economic benefits for the country. The centres of competence complement the centres of excellence programme we launched in 2004, which focuses primarily on basic research, knowledge production and publications.



The TIA concept is closely aligned with another initiative: government's policy on intellectual property derived from publicly financed research and development. This has been a grey area for far too long. Bitter experience has revealed the importance of establishing clarity of purpose on the issue. With the support of the Cabinet, we have developed a policy framework and draft legislation.

The policy framework provides for the development of clear obligations related to the ownership of such intellectual property. It articulates well-defined benefits for researchers who disclose their inventions to the institutions for which they are working, and provides for access to skills and funding for the commercialisation of such inventions. The draft legislation provides for an enabling environment for intellectual property creation, protection, management and commercialisation. It also gives greater clarity on the ownership of intellectual property generated from publicly financed research. All these interventions would be supported and guided by a national intellectual property management office, to be established by the same legislation.

These initiatives are all part of a larger plan, the Department's Ten-Year Innovation Plan for South Africa, which charts the course to enhanced innovation over the next decade. The plan has enormous potential to contribute to sustained economic growth and the entrenchment of a knowledge-based economy. Five key development focus areas have been identified in the plan as the "grand challenges".

- The challenge of developing our **bioeconomy**. We have the good fortune to live in a country with the world's third largest biodiversity resource base, and a solid foundation of expertise. The need here is to manage the product value chain systematically to exploit these advantages for the establishment of a globally competitive nutraceutical and pharmaceutical industry.
- The challenge of **space science and technology**. One of the ways we are responding to this challenge is through the establishment of a national space agency, which will assist us to grow and manage, in a coordinated fashion, our satellite industry and a range of innovations in space sciences, earth observation, communications and navigation.
- The challenge to provide **energy security**. Working closely with industry, we are exploring opportunities in clean coal technologies, nuclear energy, renewable energy, hydrogen and fuel cell technologies, as well as other promising possibilities.
- The challenge of **global change**. South Africa's geographic position, biodiversity and a large pool of expertise enable us to play a leading role in climate change science. Given our proximity to Antarctica, the Southern Ocean, and the

confluence of the Agulhas and Benguela currents, we are ideally positioned to serve as a laboratory for global change.

- The challenge of **human and social dynamics**. These dynamics are at the core of nearly every major challenge facing South Africa – from climate change and xenophobic violence to creating a competitive and innovative workforce.

We plan to direct the focus of the National System of Innovation to address these challenges. We have confidence in our ability to make progress, despite the fact that there are many more than these five grand challenges at present, and that new challenges will emerge.

Our country's standing in various multilateral organisations such as UNESCO and the OECD provides further opportunities. For example, South Africa was selected to host the African component of the International Centre for Genetic Engineering and Biotechnology, which was opened in Cape Town in September last year. Our partnership with the European Commission has enabled South African and European scientists to collaborate on research into a wide range of problems, including tuberculosis, malaria, and HIV.

I must add that, in all these engagements, South African scientists and technologists are increasingly empowered to hold their own internationally. Under the EU's previous science and technology research programme, the Sixth Framework Programme, South African researchers participated in 117 international projects, winning funding of €13,8 million. South Africa ranked fourth – after the United States of America, China, and Russia – regarding successful FP6 participation by non-EU countries.

The Department of Science and Technology and the science councils have been fortunate in the interest they have received from the Portfolio and Select Committees, which has kept us on our toes and spurred us on. We intend to make sure that we continue this strong link with Parliament.

The department, under the energetic and innovative leadership of Dr Phil Mjwara, has performed above expectations, and I am sure it will continue to do so. I would like to thank the boards, management and staff of the science councils reporting to me, who have done sterling work for the National System of Innovation. My final word of thanks is to Deputy Minister Derek Hanekom. It has been a privilege to work with him towards the vitally important modernisation of our economy.



**Mosibudi Mangena**  
*Minister of Science and Technology*





*Derek Hanekom  
Deputy Minister of Science and Technology*





# Preface

It has to be said, in all humility, that a quick look at the milestones and events of the past four years reveals the quite remarkable story of a country that is rapidly positioning itself among the global leaders in innovation, science and technology.

## Astronomy

In November 2005, the Southern African Large Telescope was officially launched by President Mbeki in the small Karoo town of Sutherland. This small town now boasts the biggest optical telescope in the Southern Hemisphere. The project has been hailed as a work of engineering brilliance, and has put South Africa firmly on the map in the world of astronomical science.

Astronomy was identified in our National Research and Development Strategy as one of the areas in which South Africa enjoys a geographic advantage because of its climate and exceptionally clear skies. For this reason we will continue to invest in astronomy, irrespective of the outcome of the Square Kilometre Array bid.

The MeerKAT telescope is being designed and built near Carnarvon by a team of 40 young engineers and scientists, who have quickly picked up world-class skills and expertise in ICT technologies – skills we will need in the coming decades if we are to be competitive in the knowledge economy. The normally quiet town is suddenly abuzz, with work on the access road and other infrastructure already under way. The MeerKAT is likely to be one of the world's leading radio astronomy facilities for some years to come.

We also have 64 students, including 26 from our African partners, on bursaries to study for PhDs and MScs on topics related to the MeerKAT and the SKA. This year we had our first undergraduate intake of 16 students to study physics and engineering, and a cyber centre is being built at Carnarvon High School.

## Human capital

The skills shortage remains a challenge, notwithstanding all the gains we have made. It is estimated that 7 000 science and technology professionals left the country between 1994 and 2001. However, there is light at the end of the tunnel.

A number of initiatives have been launched to address this challenge. These include the establishment of the Institute for Advanced Tooling, the South Africa-Norway Programme on Research Cooperation, the African Institute for Mathematical Sciences and the African Scholarship Programme for Innovation Studies. These initiatives will greatly increase our scientific and technological capacity.

The National Research Foundation (NRF) continues to do a sterling job in this area. It is through the NRF that our major human capital initiatives, like the South Africa Research Chairs Initiative and the centres of excellence, are managed. In 2007 alone, the NRF awarded 2 700 research grants and funded 4 000 students – which amounts to almost a billion rand.

## ICT

Without a well-developed information and communication infrastructure, there is little hope of us achieving our growth targets, addressing our education challenges, or advancing in our science and research endeavours.

The launching of the Meraka Institute in April 2005 was certainly a milestone event in the process of unleashing the powerful potential of ICT. The Institute is not only home to a growing range of ICT research and

*The MeerKAT telescope is being designed and built near Carnarvon by a team of 40 young engineers and scientists, who have quickly picked up world-class skills and expertise in ICT technologies.*



# Preface (continued)

development projects, but also houses large-scale interventions such as the Centre for High Performance Computing and the South African National Research Network. These interventions allow our scientists to tackle problems on a scale significantly beyond what they were able to do previously and, importantly, to do it right here in South Africa instead of abroad.

These initiatives have prompted international companies to partner with us in ways seldom seen before. Both Intel and IBM came forward with donations of supercomputers to be housed at our facilities.

Technology developed under Meraka's human language technology programme has found its way into a microchip that will power the speech-like sounds produced by toys across the world. It is estimated that 80 million of these chips will be manufactured over the next few years.

The same type of technology is also being applied to address something far from playful – empowering the caregivers of HIV-infected orphans to use their cellphones to access information about medical conditions and care in their mother tongue. Caregivers are often illiterate, and speech-recognition and text-to-speech technologies can provide them with automated verbal feedback. This is a clear example of world-class science making a real impact on the lives of ordinary people.

The Meraka Institute's inventions in the area of wireless mesh networks are finding applications in a number of African countries. The technologies and training materials are being used to construct communications networks where none previously existed, at costs that even the poorest communities can afford. Here at home, the networks have been rolled out in Mpumalanga, KwaZulu-Natal and the Eastern Cape, and are proving valuable in telehealth and in linking up schools in rural communities, especially when there are not enough teachers.

## Biotechnology

Along with ICT, biotechnology was identified in the National Research and Development Strategy as one of the key science platforms. In harnessing the potential of biotechnology we stand to make significant progress in addressing human and animal health challenges, enhancing food security, creating jobs and protecting our environment.

Milestones in this area include the awarding of the third component of the International Centre for Genetic Engineering and Biotechnology to South Africa, and the recently launched Centre for Proteomic and Genomic Research, both housed at the University of Cape Town, and both boosting our efforts to gain standing as a global player in the sector.

Scientists at our biotechnology institutions are working hard to win the fight against some of our most difficult health challenges, including extensively drug-resistant tuberculosis (XDR-TB). Funded by LIFElab (one of the biotechnology innovation centres), the National Genomics Platform has collaborated with leading scientists from the University of KwaZulu-Natal on a project to sequence the entire genome of one strain of XDR-TB.

This sequence information will be used to develop molecular diagnostic tools for XDR and multidrug-resistant tuberculosis, which will assist clinicians in treating patients with TB. It will also lead to a better understanding of the mutations leading to drug-resistant TB, and may help in the identification of therapeutic agents that can target drug-resistant TB.

## Health interventions

We have repeatedly said that science and technology are essential tools to improve the well-being of our people. With 5.5 million HIV-positive people in our country, it is self-evident that we need to mobilise our best scientists in the fight against this debilitating disease. We have the scientists, and we have the institutions.

The development of a vaccine against Aids is no easy task – the virus is elusive and mutates rapidly. But without an effective vaccine there is little hope of eradicating the pandemic. While there have been setbacks and disappointments, we will continue giving support to our dedicated researchers.

Of course, the search for a vaccine continues alongside other HIV prevention and treatment research. Through LIFElab and Biopad we are funding three companies that focus on HIV therapeutics, ranging from new anti-HIV compounds derived from natural products to peptides that can act as novel HIV-entry inhibitors.

LIFElab is also funding a clinical trial to assess the safety and effectiveness of a vaginal microbicide. Although there are some very real scientific and logistical challenges, I would be bold enough to say that there is reason to be at least cautiously optimistic about the possibility of a safe and effective microbicide being developed.

## Energy

One of the grand challenges in our Ten-Year Innovation Plan is energy security. The immediate, short-term solution to our current energy crisis is to reduce the consumption of electricity wherever we can, in the least disruptive way. In the longer term, we will have to find cost-effective solutions that take into account the finite nature of our primary sources of energy, as well as their effect on the environment.



The CSIR's built environment unit is developing and testing technologies aimed at improving the design of low-cost housing in two pilot projects – one in the Overstrand Municipality, involving 611 houses, and one in the Buffalo City Municipality, involving 2 500 houses.

Among the 10 or more innovative technologies under investigation, the development and application of technologies aimed at achieving energy independence feature prominently. New insulation materials in walling and roofing are being tested in order to improve the internal comfort of these homes by reducing heat loss in winter and heat gain in summer.

The use of solar and wind panels to generate power is also being investigated, with the aim of supplying a minimum allocation of electricity to the households in the project at little or no cost to the consumer, municipality or electricity supplier. We have allocated R38 million to this project, and if the results are positive we plan to develop a model that can be replicated in all future housing projects.

In his budget speech the Minister of Finance spoke about the turbulent weather that we need to prepare for in the years ahead. The DST has the task of ensuring that we are able to position ourselves in a rapidly changing world, and of finding innovative solutions to assist us in navigating our way through the storms.

The research conducted at our science councils and universities offers us the tools to do this. The research and analytical work we do in the social sciences must guide us in our interventions, and in our understanding of society. The ongoing xenophobic violence in our country demonstrates the necessity of gaining a better understanding of the extent and underlying causes of the prejudice and brutality in our society.

The HSRC is playing an immensely important role in assisting us to monitor the impact of our policies and programmes. Under the leadership of Dr Olive Shisana, it has established itself as a world-class research body in the human sciences, and is supporting a number of government departments in critical areas of policy analysis.



**Derek Hanekom**  
*Deputy Minister of Science and Technology*

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*Dr Phil Mjwara  
Director-General of Science and Technology*



# Introduction

This annual report reflects on the progress made by the Department of Science and Technology in the 2007/08 financial year. It also contains a summary of the Department's achievements, measured against strategic objectives, outputs and service delivery indicators.

## Strategic priorities

In the period under review, Cabinet approved the DST's Ten-Year Innovation Plan, which aims to help drive South Africa's transformation to a knowledge-based economy in which the production and dissemination of knowledge leads to economic benefits and enriches all fields of human endeavour. To this extent, success will be measured by the degree to which science, technology and innovation drives enhanced productivity, economic growth and socio-economic development. The Plan sets out core projections, which are summarised as South Africa's "grand challenges" in science and technology. These are "the bioeconomy", space science and technology, energy security, science and technology in response to global change, and human and social dynamics.

During the period under review the DST received increased funding from the National Treasury. From 2006/07 to 2008/09 some R1,215 billion was allocated, largely to new science infrastructure, such as the Centre for High Performance Computing, nanotechnology characterisation centres, and astronomy and space science, as well as to accommodating the associated human resource requirements.

The process of establishing the Technology Innovation Agency (TIA) through appropriate legislation commenced in the 2007/08 performance period and will continue. TIA will incorporate, among other instruments, the Innovation Fund and the biotechnology regional innovation centres. It will attempt to manage the development of products through the establishment of a network of centres of competence, which will be focused on market opportunities, and foster partnership with industry and public research institutions. Over and above these activities, TIA will stimulate venture capital and foreign investment. The TIA Bill has been approved by the National Assembly.

We continue to prioritise areas of science in which South Africa has a geographical advantage. Astronomy is one of these, and the DST has developed the Astronomy Geographic Advantage Programme to build up astronomy in Southern Africa. Parliament has approved the Astronomy Geographic Advantage Bill, which will protect sensitive astronomy sites and maintain South Africa's geographic advantage.

The challenge of human resources for science and technology is being addressed at all levels, in collaboration with other stakeholders. Although the basic constraint remains the quantity and quality of students entering higher education programmes, much has been done to utilise existing human resource streams more effectively.

In the period under review, the National Treasury and the DST continued with the process of reporting on research and development (R&D) expenditure, including a section in DST's Estimates of National Expenditure that highlighted this expenditure according to internationally recognised definitions. Expenditure on R&D is now included in the National Treasury systems.

The purpose of capturing this data is to obtain a broad, consolidated view of public expenditure, by sector and in an integrated manner. This should help decision-makers to influence sector appropriations for science and technology activities and to develop sector-specific R&D plans.

As a path to improving R&D expenditure, the DST aims to broaden government's scope of gross national expenditure on science and technology (S&T) beyond direct policy interventions to include fiscal incentives. Legislation was amended in October 2006 to provide for a 150% deduction of spending on R&D by private organisations. This will provide a holistic approach to national efforts to make gross expenditure on R&D reach 1% of GDP by 2008.

## Acknowledgements

The achievements over the past year would not have been possible without the hard work of the Department's staff, and the leadership and support of the Minister and the Deputy Minister. To them, I wish to express my sincere gratitude.

I would also like to thank the Chairperson and all the members of the Portfolio Committee on Science and Technology, who provided excellent support over the past year, and the DST's Audit Committee, who ensured that we received a clean audit report.



Dr Phil Mjwara  
Director-General



# Structure During the Reporting Period



Mosibudi Mangena  
Minister of Science  
and Technology



Derek Hanekom  
Deputy Minister of Science  
and Technology



Dr Phil Mjwara  
Director-General



Daniel Moagi  
Senior Programme Manager



Dr Anusha Lucen  
Group Executive

Programme 1: Corporate  
Services and Governance



Dr Boni Mehlomakhulu  
Group Executive

Programme 2: Research,  
Development and Innovation



Dhesigen Naidoo  
Group Executive

Programme 3: Internal  
Cooperation and Resources



Dr Bethuel Sehlapelo  
Group Executive

Programme 4: Human Capital  
and Knowledge Systems



Marjorie Pyoos  
Group Executive

Programme 5: Socio-Economic  
Partnerships



# Structure Effective 1 April 2008



Mosibudi Mangena  
Minister of Science  
and Technology



Derek Hanekom  
Deputy Minister of Science  
and Technology



Dr Phil Mjwara  
Director-General



Daniel Moagi  
Senior Programme Manager



Vacant

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Programme 1: Corporate  
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Dr Boni Mehlomakhulu  
Group Executive

Programme 2: Research,  
Development and Innovation



Dr Thomas Auf der Heyde  
Group Executive

Programme 3: Internal  
Cooperation and Resources



Dr Bethuel Sehlapelo  
Group Executive

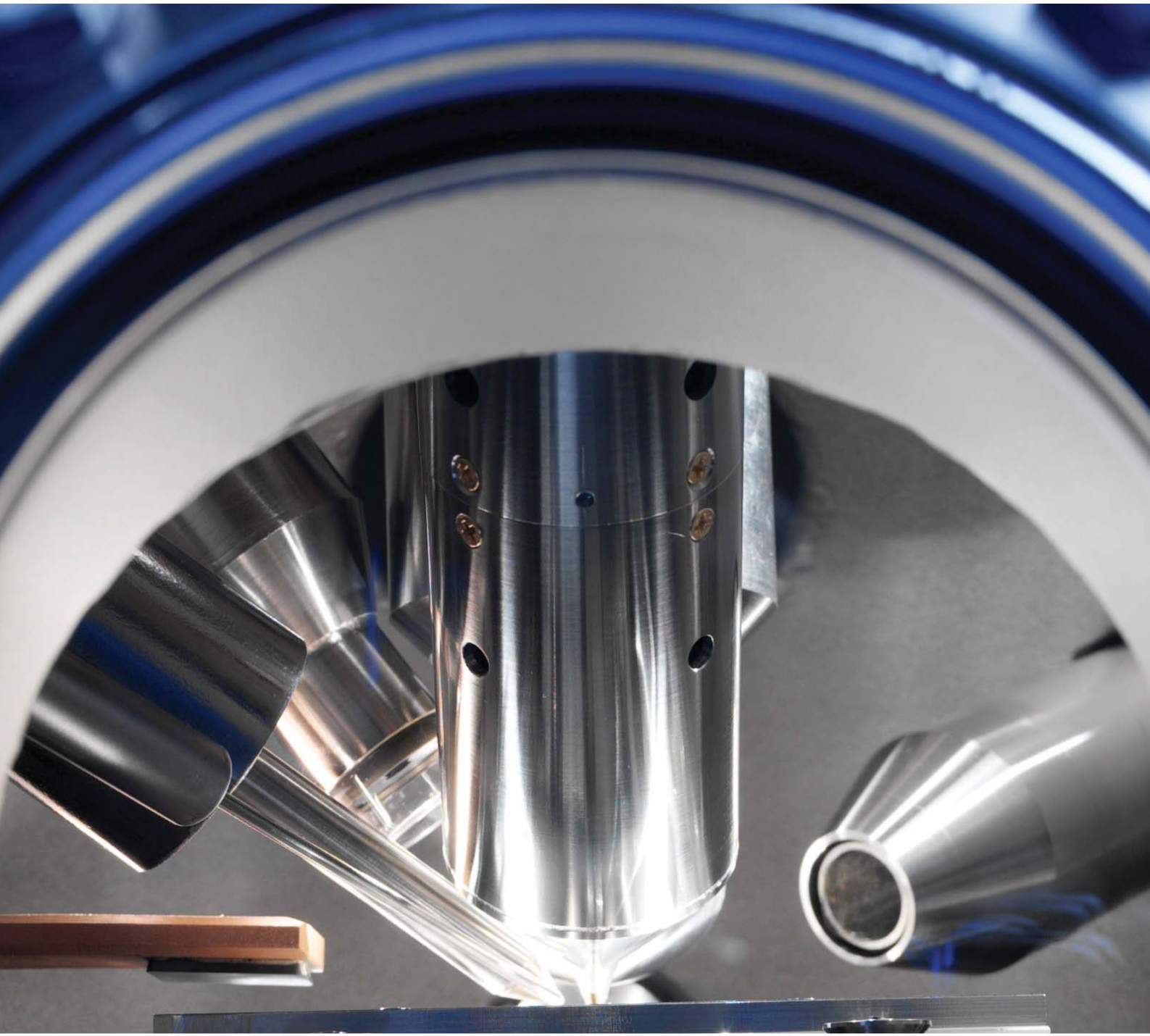
Programme 4: Human Capital  
and Knowledge Systems



Marjorie Pyoos  
Group Executive

Programme 5: Socio-Economic  
Partnerships









# Programme I

Corporate Services and Governance

# Programme I

## Corporate Services and Governance

**Purpose:** Responsible for the overall management of the DST and for providing centralised support services to ensure that funded organisations comply with good corporate governance practices and are aligned with the strategic focus of the NSI, as well as monitoring and evaluating the science councils.

### Service delivery objectives and indicators

#### Recent outputs

The Programme conducted overall management of the Department and provided effective and efficient centralised support services. It also ensured that the science councils complied with good corporate governance practices and that the performance of science councils was managed. A policy on governance standards for science, engineering and technology institutions continued to be implemented, and there was improvement in the governance of science councils. In particular, shareholder compacts were signed with all science councils reporting to the DST for the period under review.

#### Service delivery achievements

The delivery achievements relating to the Programme are tabulated below.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Governance	Implementation of the key performance indicator (KPI) reporting framework	Assessment of KPI reports from science, engineering and technology institutions (SETIs)	March 2008	Analysis and feedback sessions on all DST-based SETIs (NRF, AISA, CSIR, HSRC), line-department-based SETIs (Medical Research Council, Council for Geoscience, Mintek, ARC) and Tshumisano Trust. KPI reports were completed. A report on the performance of all SETIs was compiled.





# Programme 2

Research, Development  
and Innovation

# Programme 2

## Research, Development and Innovation (RDI)

**Purpose:** To provide policy leadership in the DST's long-term cross-cutting research and innovation areas in the NSI, and play a key role in developing strategic new institutional arrangement to drive research and innovation in South Africa.

**Measurable objective:** RDI is committed to providing the resources – people, programmes, physical facilities, funding and networks – to ensure that critical innovation happens. On a day-to-day basis it stimulates, identifies and harnesses good ideas, nurtures their development and guides the transformation of those ideas into reality. The Programme measures its successes through the businesses that emerge, one by one, by virtue of its policies, strategies and interventions.

### Service delivery objectives and indicators

#### Recent outputs

The Programme was in a development stage during 2007/08. Three of the four general manager positions are in the process of being filled.

#### Health Innovation

The initiation of the South African Malaria Initiative and the Telemedicine Intervention Strategy were high points for the Health Innovation unit. South African malaria researchers formed the South African Malaria Initiative consortium. International malaria experts assisted in identifying three key areas for research in the global and local malaria research context: (1) the discovery of new drug targets and lead molecules; (2) the development of robust rapid malaria diagnostics tests suited to the endemic high transmission areas of Africa; and (3) improved molecular epidemiology and understanding of the vector-parasite interaction. All three research programmes are currently under way. In January 2007, the Telemedicine Intervention Strategy in KwaZulu-Natal was approved for funding for four years. The project's objective is to establish a telemedicine service to deliver health care to rural populations in KwaZulu-Natal. The intention is to link academic sites in Durban to 16 rural hospitals, and to provide the hospitals with telemedicine diagnostic instruments and units. In addition, appropriate specialist medical services will be acquired to give telemedicine support to the 16 sites in this project, and to another 27 sites in the province with telemedicine capacity. The project aims to provide a working model of telemedicine which can be adapted for use in the rest of South Africa, and which provides viable solutions that are exportable

to other developing countries. It will also provide rural areas with broadband connectivity that can be used for e-education, e-governance, medical informatics and epidemiological research and monitoring.

#### Hydrogen and Energy

The Hydrogen and Fuel Cell Technologies RDI Strategy was approved by Cabinet in May 2007. Three CoCs, each with a different mandate, were established to realise the vision articulated in the Strategy. The CoCs are for catalysis (at the University of Cape Town and Mintek), for infrastructure (at North-West University and the Council for Science and Industrial Research), and for system integration and validation (at the University of the Western Cape). The subprogramme has also been instrumental in the establishment of six research chairs, a vehicle to develop high-level human capital in areas of interest.

#### Innovation Instruments and Planning

This subprogramme was established in February 2008. Its major outputs include the following:

- On 25 July 2007 Cabinet approved the process towards the establishment of the Technology Innovation Agency (TIA). TIA will focus primarily on consolidating and enhancing biotechnology regional innovation centres, the Innovation Fund, Advanced Manufacturing Technology Strategy projects, Tshumisano Trust and the Hydrogen Economy CoCs. On 5 March 2008, the TIA Bill was adopted by the National Assembly. It is scheduled to make its way through the NCOP by the end of June 2008.



- The subprogramme is also responsible for the Intellectual Property Rights from Publicly Financed Research (IPR) Bill, which looks at the management of intellectual property that was derived from publicly funded research. On 30 May 2007, Cabinet approved that the IPR policy framework be gazetted and taken for public comments/consultations. The DST then embarked on an extensive public consultation process, which included consultations with government departments, state-owned entities, research councils, higher education institutions and private sector stakeholders. The result of these consultations was that the IPR Bill was more aligned with the Cabinet-approved IPR framework, and is now ready to be tabled in Parliament by the Minister of Science and Technology.

A task team was appointed to interrogate the approximately 50 recommendations that emanated from the final OECD report, and to advise the Minister on how best to proceed with the implementation of the report's recommendations. The Cabinet-requested Tracking Study on Research and Development Expenditure in South Africa is awaiting final approval by the NACI Council, after which advice to the Minister will be formulated. Three other projects are due for completion in the 2008/09 financial year; namely, an investigation into the relationship between innovation and competitiveness in South Africa, a review of the state of the S&T policy interactions in Africa and their implications for South Africa, and advice on the South African science system.

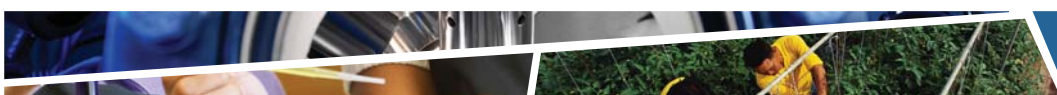
#### **The National Advisory Council on Innovation (NACI) Secretariat**

A final report on the international review of the NSI by the OECD was submitted to the Minister to present to Cabinet.

#### **Service delivery achievements**

The delivery achievements relating to the Programme are tabulated below.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Space Science and Technology	Establish and operate a South African Space Agency (SASA)	Agency established and operational	December 2007	Partly achieved. Target date changed to 31 March 2009 owing to the executive decision to present the TIA Bill ahead of the Space Agency Bill.  The establishment of an interim office for the space agency is under way and will be finalised by March 2009. The drafting of the National Space S&T Strategy was to be finalised in July 2008. The process is at Portfolio Committee level. Implementation of the strategy will be one of the primary mandates of the agency.



## Programme 2 (continued)

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Space Science and Technology (continued)	Launch and operate SumbandilaSAT	Launch completed and mission control telemetry tracking and control in place	July 2007	Target date changed to end of 2009 due to the breakdown of relations between parties concerned with the launch of the satellite. Launch event still to be confirmed pending ongoing negotiations with the Russian Space Agency and Indian Space Research Organisation
	SKA/KAT – establish 10% programme	International partnerships and agreed programme	March 2008	Partly achieved. The construction of a 15 metre reflector antenna, a MeerKAT prototype, at the Hartebeesthoek Radio Astronomy Observatory in Gauteng, has been completed.

This prototype is currently being optimised for operation prior to the MeerKAT telescope construction in the Northern Cape, which is due to start in the last quarter of 2008.

MeerKAT R&D continues to acquire international partnerships through the South African SKA Project Office. The DST is currently pursuing partnerships that will bring funds and/or essential equipment for MeerKAT.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Innovation Instruments and Planning	Technology Innovation Agency (TIA)	TIA established	December 2007	The TIA Bill was approved by the National Assembly on 5 March 2008. It is due to be read in the NCOP by the end of June 2008, and to be signed by the President in about the middle of the 2008/09 financial year.

Consultation with the National Treasury on the TIA business case is ongoing and will culminate in the TIA corporate formation at the beginning of the 2009/10 financial year.

The transitional management office has been established and the migration process is to be finalised by December 2008.



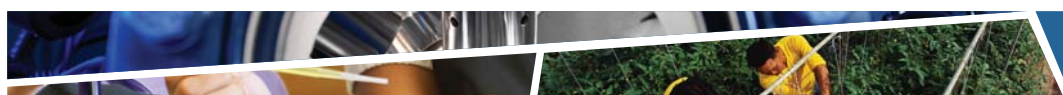
Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Hydrogen and Energy	Hydrogen and Fuel Cell Technologies Research, Development and Innovation Strategy	Strategy approved by Cabinet	May 2007	Achieved. The strategy was approved in May 2007.
	Agreements with private sector on jointly funded flagship projects	Number of joint DST/private sector-funded projects by August 2007	Three funded projects	Two companies have invested. PetroSA contributed to a system integration and validation CoC at the University of the Western Cape.
	Development of CoCs	Number of consortium-based competence hubs established by June 2007	Two hubs	Achieved. Three CoCs have been established.

A programme-wide technology roadmap is under development and the first draft will be ready by the end of June 2008.

International engagements with global leaders in the field are under way, and will further inform direction and focus of programme activities.

The System Integration and Validation CoC has already finalised the recruitment process for an international expert, who will start on 1 September 2008.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Biotechnology and Health	Biosafety platform that can assist in the development of biosafety requirements	Business plan completed by Plantbio	August 2007	Partly achieved. Business plan submitted to Programme 2, to be presented at DST Exco in May or June 2008 for final approval.
	Structural biology strategy	Structural biology strategy approved	October 2007	Partly achieved. Cape Biotech has been appointed to act as secretariat. The Steering Committee has been appointed by the DST and Cape Biotech to initiate the development of the National Structural Biology Platform business plan, which should be ready for implementation by October 2008. The project was expanded from a local intervention into a national strategy and this is taking extra time.









# Programme 3

International Cooperation  
and Resources

# Programme 3

## International Cooperation and Resources

**Purpose:** To develop and monitor bilateral and multilateral relationships and agreements in S&T to strengthen the NSI and enable a flow of knowledge, capacity and resources into South Africa and neighbouring countries.

**Measurable objective:** Increased flows of scientific knowledge and resources to South Africa through participation in joint programmes.

### Service delivery objectives and indicators

#### Recent outputs

##### Overseas Bilateral Cooperation (OBC)

The Subprogramme has achieved the implementation of over 400 R&D projects in areas such as energy, space, information communications technologies (ICT) and biotechnology. International bilateral agreements served as a basis for implementing cooperation in the India-Brazil-South Africa Framework and other flagship projects such as Biota South (capacity development in mapping biodiversity). INSITE, the International Science, Innovation and Technology Exhibition, also falls under this Subprogramme. The first government involvement in the French South African Technical Institute in Electronics has secured the platform for expanding the existing relationships and utilising this capacity development model in other scientific areas. The South African chapter of the African Institute for Capacity Development is at an advanced stage of development and will provide for the generation, coordination and dissemination of knowledge, as well as international training opportunities.

##### Multilateral Cooperation and Africa

Regional cooperation will be supported through integrated projects under the auspices of the SADC and NEPAD through instruments such as trilateral engagements and international consortia. South Africa's participation in the OECD's Committee for Scientific and Technological Policy resulted in the finalisation of the peer review of the NSI.

South Africa won the bid to host the third component of the ICGEB in Cape Town. This honour was made possible through the support of the G8 countries, the NEPAD S&T Steering Committee and the African Ministers Council on Science and Technology (AMCOST). The component was officially inaugurated by the President of the Republic of South Africa on

10 September 2007. The hosting of this facility will go a long way towards providing research facilities for biotechnology in health-related research activities and projects aimed at the sustainable application of biotechnology to combat prevalent diseases such as HIV/Aids, hepatitis, rotavirus diarrhoea infections in children, malaria, tuberculosis and dengue fever. The component will assist in promoting integrated regional and continental research collaboration.

South Africa signed bilateral agreements with Malawi, Zambia and Zimbabwe. In order to strengthen regional S&T cooperation and integration, South Africa hosted a regional workshop at which the SADC Protocol on Science, Technology and Innovation was drafted. The Protocol was later adopted by the SADC Ministerial Conference on Science and Technology. The Africa Cooperation unit successfully hosted the First African Union (AU) Conference on Women in Science and Technology, another contribution to building expertise, and knowledge and research networks in Africa.

##### International Resources

The Department has successfully bid for funding from the European Commission's sector Budget in support of S&T from the EU's Programme for Reconstruction and Development. This funding will allow the DST to address poverty, underdevelopment and marginalisation. The DST launched the European South African Science and Technology Advancement Programme, a dedicated platform for the advancement of S&T cooperation between the EU and South Africa. This has significantly enhanced South Africa's participation in the recently launched Seventh Framework Programme.

The DST recently signed an agreement on the South Africa-Finland ICT Knowledge Partnership (SAFIPA) Programme, which aims to implement projects for the creation and delivery models of ICT-based service applications that are suitable for local



conditions, supporting innovation and knowledge generation in the field of information society technologies in South Africa. The Cooperation Framework on Innovation Systems between Finland and South Africa (COFISA) is playing a significant role in assessing the feasibility of science parks in the three pilot provinces, namely Gauteng, the Eastern Cape and the Western Cape. South Africa

continues to play a significant role in the implementation of the Global Earth Observation System of Systems. The DST has also entered into a knowledge partnership with the World Bank, which will allow the Bank and the Department to share experiences and best practices towards building a knowledge economy in South Africa and the rest of the region.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Overseas Bilateral Cooperation	Country-to-country cooperation and partnerships outside Africa	Increased cooperation with countries in Eastern Europe, the Gulf region and Asia; increased development partnerships, especially with Scandinavia	10 new bilateral projects	Achieved. New joint projects: <ul style="list-style-type: none"> <li>Argentina: 16</li> <li>Cuba: 1</li> <li>China and Korea: 10</li> <li>Germany: 1</li> <li>France: 2</li> <li>Russia: 1</li> </ul>

### Service delivery achievements

The delivery achievements relating to the Programme are tabulated below.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Multilaterals and Africa	African cooperation in S&T	Number of South-South partnerships and global science programmes	Five new partnerships or programmes	Achieved. Nine new global partnerships/global science programmes were established, including a capacity-building and legal framework at the SADC
		Number of bilateral partnership programmes in all five regions in Africa	10 new programmes	Achieved.

Eleven joint bilateral partnerships were established with the following countries:

- Mozambique: 1 (indicators).
- Kenya: 2 (Established an African research programme in schizophrenia, and resuscitated the 2005 bilateral agreement, establishing a new plan of action).
- Uganda: 1 (Establishing an African research programme in schizophrenia).
- Mali: 1 (Timbuktu manuscripts).
- Rwanda: 2 (Joint STI seminar, exchange of expertise).
- Lesotho: 4 (Science centre, exploratory visits, tissue culture project, joint science week).
- Malawi: 2 (Indicator training, signed an agreement).
- Tanzania: 1 (Fact-finding on the NSI review).
- Zambia: 3 (NSI review, indicators, signed an STI agreement).
- Institutionalised the SADC STI governance structure.
- Championed the establishment of the legal instrument (protocol) for STI cooperation in the SADC.
- Continued with the financial support of NEPAD flagship initiatives on S&T. These include the African Laser Centre (ALC), South African National Bioinformatics Institute (SANBIO) and Africa Institute of Mathematics and Science (AIMS). AIMS has 53 students from different countries enrolled for postgraduate diploma, of which 20 are female. In 2007, 47 students (12 female) graduated.
- Supported the initiation of the new NEPAD flagship programme on energy.



# Programme 3 (continued)

Partnered with the AU with a view to promote the participation of women in science in Africa (Committee of Women in Science established).

Establishment of the Cape Town component of the ICGEB.

Established partnership agreement with the European Molecular Biology Conference.

Assumed full membership of the International Institute for Applied Systems Analysis.

Serving as a non-executive member with a view to become a full member of Supporting Entrepreneurs for Sustainable Development.

Established partnership with Canada through UNESCO to exchange teachers to build physics capacity in the youth.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
<b>International Resources</b>	International resources (such as international research funding, foreign investment, donor support, location of global infrastructure, knowledge)	Increase the international funds won through leveraging and participation by 50% (in comparison with the previous year)	At least R50 million in new funds from international sources	Achieved. About R60 million was received from Finland through COFISA for SAFIPA for S&T in Africa

Submitted proposals and secured funding from the EU for projects – INCONTACT, CAASTNET and ESASTAP. These projects are aimed at facilitating cooperation in S&T between sub-Saharan Africa and the EU.

Initial discussions were held with Nokia in Finland in an effort to get Nokia to establish a research centre in South Africa. Nokia expressed interest in involving South Africa in their FP7 projects.

Bioscience initiatives in the SADC through NEPAD's Sanbio initiative. The Finnish Government will again invest R30 million in this initiative.

Participated in the IST Africa initiative. South Africa shared its experience in dealing with the digital divide (through strategic private-public and international partnerships) with representatives from the rest of the continent. The presentation was well-received and cited throughout the IST Africa Plenary and during EU-SADC bilateral engagements.

Currently, South Africa's participation in FP7 stands at R47 million, with over R70 million allocated to South Africa researchers. This is equal to 40% of South Africa's share in the whole FP6.

The DST submitted a sector budget support (SBS) funding proposal to the European Commission for the support of S&T interventions for poverty alleviation and sustainable development. The proposal, which was initially for €20 million, has been approved for €30 million, and was signed in March 2008. The DST will implement SBS interventions from 2008 to 2011.

Ongoing support and intelligence provided in support of the DG and the SKA office in their engagements with the EU and potential international funders.

Continued contribution to GEO's Capacity Building Committee. South Africa's leadership in this committee was further entrenched through the expert leadership of DST's secondment to GEO, of a person who is responsible for developing a capacity development strategy.

South Africa continued its leadership role as Executive Committee member of GEO and co-chair. The strong collective leadership of GEO, the co-chairs of which include China, the European Commission and the United States of America, has seen GEO grow in membership and influence.

A number of programmes aimed at facilitating data exchange and extensive distribution, such as GEO-Netcast and China-Brazil Earth Observation, have been launched to share data with the developing world.

Hosted the fourth GEO Ministerial Summit and Plenary in Cape Town, which received praise for its organisation, the record attendance, the quality of engagements on content issues and the comprehensiveness of the Cape Town Declaration.





# Programme 4

Human Capital and  
Knowledge Systems

# Programme 4

## Human Capital and Knowledge Systems

**Purpose:** To develop and implement national programmes to produce knowledge, human capital and the associated infrastructure, equipment and public research services to sustain the NSI.

**Measurable objective:** Development and maintenance of a highly competent and representative cohort of scientists.

### Service delivery objectives and indicators

#### Recent outputs

#### Human Capital and Science Platforms

##### High-End Skills

The South African Research Chairs Initiative (SARChI) has awarded 72 research chairs in key areas aligned to government strategies. The SARChI is set to revitalise the NSI through the injection of expertise and funding. The Innovation Honours Bursary supported 280 students in 2007, with 83% of all awards made to black students and 55% to women. Most importantly, and fundamental to long-term knowledge worker development, 70% of the students supported intend to do a master's degree.

The Professional Development Programme is aimed at increasing research capacity among young professionals, and enabling them to develop research careers. So far, it has placed 62 researchers in science councils. The Postdoctoral Fellowship Programme has supported 71 postdoctoral fellows at various NSI institutions. The seven existing centres of excellence (CoEs) continue to foster the exploitation of cross-disciplinary and cross-institutional collaboration among researchers and institutions. To date, 313 postgraduate students have been trained through the CoEs, and 218 articles have been published in peer-reviewed journals.

#### Science and Youth

A National Youth Service Programme is also incorporated into and supports the roll-out of the Youth into Science Strategy. Through this programme, a total of 125 unemployed science, engineering and technology graduates have been deployed at 22 centres countrywide. The unemployed science graduates database, aimed at addressing unemployment among science graduates, was officially launched in May 2007. The database will provide stakeholders in knowledge generation and human resource development with organised information on the realities of unemployment among science, engineering and technology graduates. The information from the database could also be

used to measure the extent and determine the dynamics of unemployment in the science, engineering and technology fields.

#### Indigenous Knowledge Systems

The National Indigenous Knowledge Systems Office (NIKSO) has exercised oversight over the ring-fenced research funds administered by the NRF. A new research model was agreed upon and approved by the DST and the NRF. It will be piloted in 2008, and implemented fully in 2010. The establishment of IKS research chairs in the NSI continues, with a research chair on traditional medicines and health systems awarded to the University of KwaZulu-Natal. Key stakeholders for the CoE on IKS curriculum development were identified as the universities of Venda, Limpopo and North West. There has been progress in growing the CoE from the bottom up, including working with the South African Qualifications Authority on developing and registering a new qualification – Bachelor of IKS. In 2007, NIKSO also approved a concept document on IKS centres, and contracted the University of Zululand to establish the first IKS centre. NIKSO undertook a comprehensive audit of IKS-related databases in higher education institutions, and government and research agencies.

During the course of this year the Minister of Science and Technology appointed an IKS Ministerial Advisory Committee made up of IKS holders, practitioners and experts. The committee includes two external experts from Uganda and Namibia. Additional committees for science councils and interdepartmental interests have been established to represent a diverse stakeholder involvement in NIKSO. In unfolding its advocacy strategy, NIKSO participated collaboratively with the Science and Youth unit in presenting IKS to learners during National Science Week. In the past year NIKSO has focused on initiating institutional collaboration with provinces and key institutions.



### Service delivery achievements

The delivery achievements relating to the programme are tabulated below.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Human Capital and Science Platforms	South African Research Chairs Initiative	Number of research chairs at higher education institutions established and funded by June 2007	20 new research chairs	Achieved. A total of 21 research chairs established and fully functional.
		Number of candidate research chairs from science systems outside higher education identified by April 2008	35 candidate research chairs	Achieved. 51 new research chairs identified.
	Youth into Science Strategy implemented	Increase in youth participating in National Science Week	25 000 more young people participating	Not achieved. Due to industrial action during 2007, participation did not increase.
		Increase in disadvantaged youth participating in the Youth into Science Strategy	Annual increase of 750 disadvantaged youth	Achieved. An increase of 1 600 disadvantaged youth helped through science camps.
		Number of unemployed science graduates benefiting from internships and mentorships annually	100 unemployed science graduates	Achieved. A total of 95 unemployed science graduates were placed in the internship programme. In addition, 125 entered the National Youth Service Programme.
		Number of Mathematics and Science educators equipped to support curriculum delivery and learners participating in competitions and Olympiads	Annually, Mathematics and Science educators from 450 schools were equipped with the knowledge and skills to support curriculum delivery and learners participating in competitions and Olympiads	Achieved. A total of 896 mathematics and science educators from 510 schools in all nine provinces have been trained.
	Science, engineering and technology human capital programmes	Number of honours students in support programmes for midstream human capital pipeline by December 2007	200 honours students	Achieved. 280 students have been supported.
		Concept for support programme for engineering skills developed, approved and implemented	January 2008	Achieved. Engineering has been repositioned in the innovation enabling skills framework, completed by January 2008.
	Science missions and platforms	Palaeosciences research development plan approved and funded, and grants given to individual and group researchers under the African Origins Platform Strategy	September 2007	Achieved. A total of 10 grants have been approved and are currently being administered by the NRF. The Minister approved the submission of the palaeosciences strategy to Cabinet.



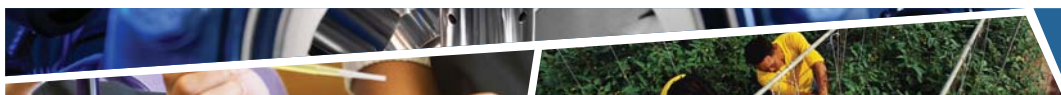
## Programme 4 (continued)

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Human Capital and Science Platforms (continued)	Science missions and platforms (continued)	Decadal plan for the Astronomy Geographical Advantage Strategy developed and approved	December 2007	Partly achieved. The plan has been developed but not yet approved by Exco. The implementation plan will be finalised by March 2009.
		Marine Research Strategy, incorporating the African Coelacanth Ecosystem Programme (ACEP), developed and approved, and research grants funded	Research grants for ACEP: June 2007. Research grants for the rest of strategy: December 2007	Partly achieved. ACEP grants were awarded. The Marine Research Strategy is being developed.
Indigenous Knowledge Systems (IKS): Knowledge Development	National IKS research agenda coordinated	Funding programme for IKS research projects established and funded	March 2008	Not achieved due to unsuccessful funding submission to NT.
	Establishment of IKS research laboratories	Study completed on areas that need to be developed through IKS laboratories: medicine, food, cosmetics, jewellery	December 2007	Not achieved. No funding to enable implementation of the establishment of new IKS laboratories.
Emerging Research Areas and Infrastructure	Establishment of a Centre for High Performance Computing	First fully functional node of the CHPC commissioned and operational in Cape Town	April 2007	Achieved. Launched in May 2007.
	Roll-out of the National Equipment Programme	Database of equipment purchased and received by researchers in place and functional	December 2007	Not achieved. As a result of restructuring of the subprogramme and a lack of human capacity the deadline could not be met. The proposed new target date is March 2009.
	Successful implementation of National Nanotechnology Strategy	Established nanotechnology characterisation centres	Two centres established and funded: October 2007	Achieved. Two centres launched in November 2007.
	Feasibility study for nanotechnology institute	Completed assessment and finalised feasibility report	Report in place: December 2007	Not achieved. The process for the establishment of the nanotechnology institute has been put on hold owing to an established need to consult widely on the idea before proceeding.





Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
Emerging Research Areas and Infrastructure (continued)	Development of new research areas	National Strategy for Photonics	July 2007	Not achieved. With the finalisation of the plan requiring comprehensive data collection, and local and international consultation, it was found that the original target date had been too ambitious. A more realistic date, given the progress made with the data collection, has been set: March 2009.
		National Theoretical Physics Institute: Full proposal developed	Proposal for the development of the institute finalised: January 2008	Achieved. The proposal was approved.
		Synthetic Biology Plan	Plan finalised: December 2007	Achieved. The plan was finalised in October 2007.
		Development of Aptamer Research Platform	Proposal finalised: May 2007	Partly achieved. The proposal was finalised in July 2007.







# Programme 5

Socio-Economic Partnerships

# Programme 5

## Socio-Economic Partnerships

**Purpose:** To provide policy, strategy and direction-setting support for R&D-led growth of value-adding industries; to enable government, industry, and the general public to understand and deal with the challenges of global change better; for evidence-based research on the human and social dynamics of development; and to enhance government decision-making on S&T (including R&D) as productive investments.

**Measurable objective:** Partners and programmes to ensure the appropriate contribution of S&T with different sectors.

### Service delivery objectives and indicators

#### Recent outputs

##### *Wireless Mesh Network (WMN) Technologies*

Research and technology development in this area led to the implementation of a pilot project in Peebles Valley in Mpumalanga. The technology was used to address the problems of telecommunication costs and lack of Internet connectivity associated with rural areas. Using a combination of WMN technologies for "First-Inch, First-Mile" – as opposed to last mile connectivity and satellite communications for long and backhaul, connectivity was achieved between an HIV clinic in a poor rural village in Peebles Valley, and other health points in the province. Local farmers also benefited from this initiative, which enabled them to obtain cost-effective internet connectivity.

The methodology used in this project has been documented and released under creative commons licence, an open-source software licensing model, for replication and improvement by all role players and beneficiaries across the globe.

##### *ICT in education – the MobileEd project*

The MobileEd project involves the development of technology applications to enhance teaching and learning using cellphone communication and network technology. This project was initially piloted with the participation of a previously disadvantaged school and a more affluent school. The application allows for peer collaborative learning among learners, using cellphones to source learning content from Wikipedia (a free online encyclopaedia).

The project also incorporates other technologies, such as human language technologies. Learners can send in questions about any subject or concept and the system will automatically dial back

with an answer, either voice or text, depending on the learner's choice. An offshoot of the MobileEd platform was its groundbreaking use for communication by UNICEF during the hurricanes in the Caribbean in early 2007.

##### *Establishing a titanium industry*

The DST has committed to a major development programme for establishing a local industry base in titanium metals and product development. Some aspects of the programme are already showing promising results. Through the Advanced Manufacturing Technology Strategy (AMTS), a large programme of work has commenced on titanium investment casting. This has so far involved extensive upgrading and refurbishment of an industrial-scale vacuum furnace and robotic mould dipping and handling system at the CSIR.

The basic technology for the production of investment casting moulds for titanium has been established. This is a major achievement, as the technology is proprietary and therefore carefully guarded by the few organisations around the world that are able to cast titanium successfully. Through the advanced metals initiative, a major R&D programme has been set up to develop a novel, continuous and cost-competitive process for the commercial production of primary titanium metal. The CSIR, the Nuclear Energy Corporation of South Africa (Necsa) and Mintek comprise the core DST-supported R&D performers. The markets targeted are in the aerospace, automotive and medical device sectors. To date, a number of novel routes for the production of primary titanium metal have been conceptualised and tested. Laboratory facilities have been established in preparation for the further development of the chosen process.



### Service delivery achievements

The delivery achievements relating to the Programme are tabulated below.

Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
S&T for Economic Impact	Directed science, engineering and technology programmes demonstrating potential for positive economic results	Number of new flagship programmes that advance the 2006 ICT R&D Strategy	One additional flagship programme	Achieved. Two new medium-term flagship programmes were initiated. This includes a focus programme on information security, which will be developed into a CoC in the 2008/09 financial year. A flagship programme in the increasingly important area of independent living was also established, with positive economic results.
		Number of new chairs of energy R&D under SANERI in 2007	Three new chairs	Achieved. SANERI awarded three additional chairs of energy research to Stellenbosch University (Senior chair – biofuels and other clean alternative fuels), North West University (Associate chair – biofuels and other clean alternative fuels) and the University of the Witwatersrand (Senior chair – clean-coal technologies).
		Number of technology interventions in 2007/08 that support provincial growth and development strategies	Two provincially-based interventions	Achieved. Two pilot case studies undertaken to strengthen the innovation capabilities of Northern Cape (Kimberley area) and Free State (Mangaung).

Processes under way to support the development of a science park in North West as a pilot case for the development of a South African Science Park Strategy.

The Post-harvest Innovation Programme initiated with the ARC and the Fresh Produce Exporters Forum to deal with technological challenges

facing the fresh produce exporters. The programme will support the competitiveness of the citrus, deciduous, table grapes and subtropical fresh fruit industries (Western Cape, Limpopo, Mpumalanga and Northern Cape).



## Programme 5 (continued)

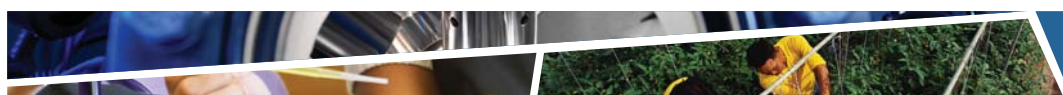
Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
S&T for Social Impact	Research on science and poverty and unemployment	Research report and a conference on the definitions of poverty and underdevelopment	Draft report by July 2007 Conference in August 2007	Partly achieved. The report was finalised later than scheduled. However, the research team participated in developing the Anti-Poverty Strategy, which was approved by Cabinet in October 2007.
	Research on analytical modelling for integrated and sustainable development planning	Research report on scenarios for reducing unemployment	Final report by August 2007	Partly achieved. The draft final report was received and presented at a seminar in May 2008. There was a delay in arranging the seminar owing to the referral of the report for external assessment.
		Research report and conference on findings of special study	Draft report by June 2007, Conference by December 2007	Partly achieved. Phase I of the research resulted in the profiling of informal housing settlements. The Departments of Housing and Transport have used the findings in their planning. A workshop was held in April 2008 to share research results with key stakeholders.
	Activities to support decision-making across government	Number of reports on alternative, more affordable and effective technology solutions in government service delivery during 2007/08	Five reports	Partly achieved. A joint DST, Department of Water Affairs and Forestry (DWAF) and researchers' project on innovative alternative technologies for water supply and access was conducted.

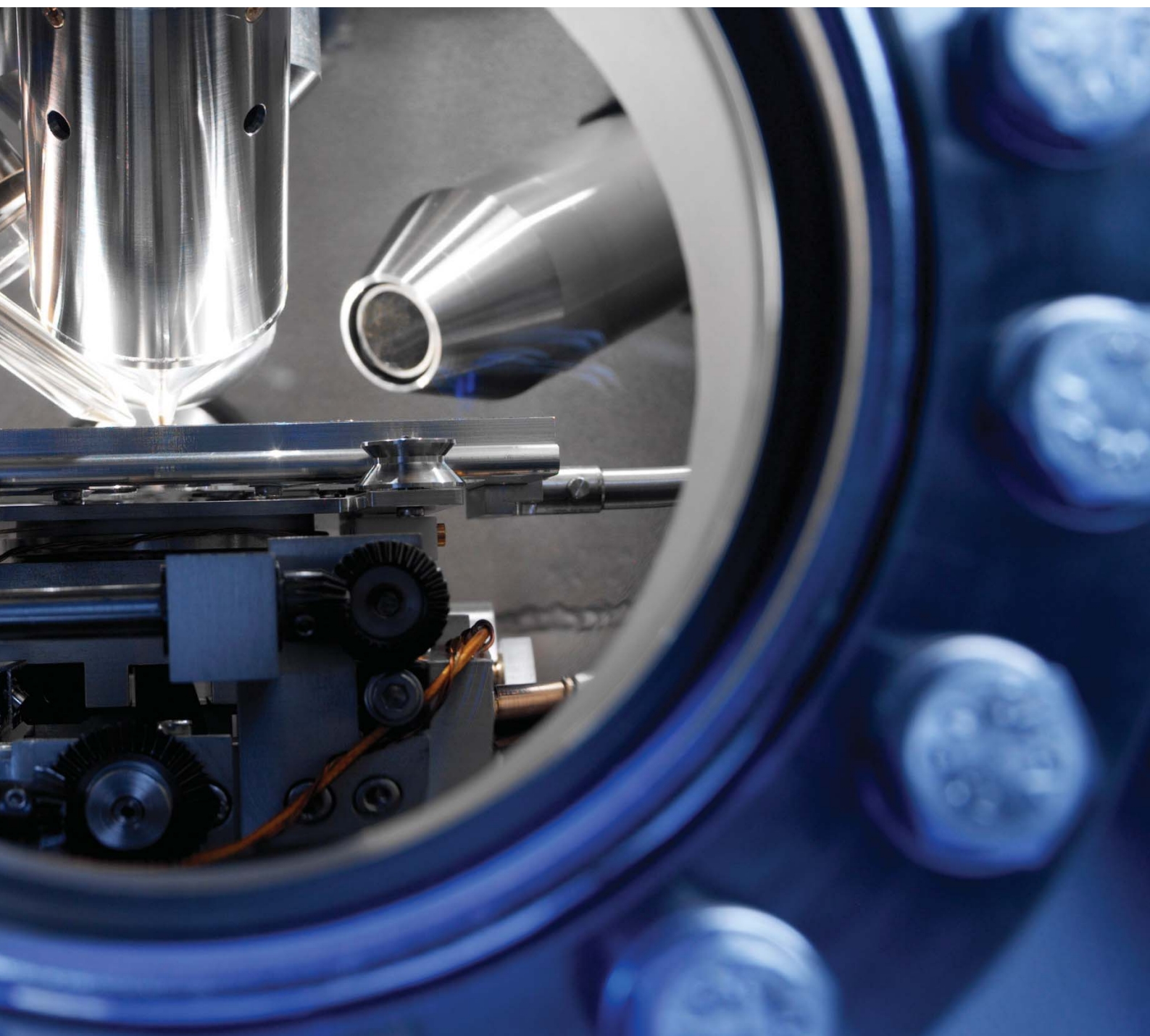
It resulted in 17 harvesting techniques being successfully tested in Umkhanyakudi, KwaZulu-Natal. A joint workshop was conducted in November 2007. A task team (DST, DWAF, the Department of Provincial and Local Government, South African Local Government

Association, WRC, CSIR, HSRC, Development Bank of South Africa and Independent Development Trust) was set up to finalise a response plan and to be responsible for implementation. The final report is due for presentation to the social cluster at the end of June 2008.



Subprogramme	Output	Measure/Indicator	Actual performance against target	
			Target	Actual
S&T Investments	Effective planning and efficient investment in S&T by government departments	R&D plans and strategic plans approved by Cabinet	Five reports	Partly achieved. Transport STI Strategy and Agricultural R&D Strategy were approved by the respective ministers and directors-general.
	Reports on performance of S&T indicators	R&D survey report	2007/08	Achieved. The R&D survey report showing 0,92% of GDP was spent on R&D in 2005/06 was approved and published.
		Innovation survey report	2007/08	The innovation survey report was launched in April 2007.
	Evaluation of the R&D Tax Incentives Programme	Monitor the uptake, awareness and impact of R&D tax incentives	2007/08, and annually thereafter	Partly achieved. Developed a monitoring system, which is ready for piloting. Established a fully resourced unit to evaluate submissions. A total of 31 were applications received. The uptake is slow but will improve after the advocacy campaigns.









# Public Entities

Reporting to the Minister

# Public Entities Reporting to the Minister



## COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

### **CSIR president receives Order of Mapungubwe during the 2007/08 financial year**

Dr Sibusiso Sibisi, President and CEO of the CSIR, was awarded the Order of Mapungubwe: Silver in September 2007. Dr Sibisi was among a select group of South Africans who received national orders in recognition of their contribution to the country in their respective fields.

### **South Africa launches first nanotechnology innovation centres**

South Africa's first two national nanotechnology innovation centres were launched in November 2007, one at the CSIR and one at Mintek. Nanotechnology has the potential to revolutionise the quality of life of South Africa's citizens, through highly accurate and sensitive medical diagnostic devices, new disease therapies, and the monitoring and improvement of basic water supplies, among other things. To ensure that South Africa remains internationally competitive in this fast-developing field, the country's nanoscience and nanotechnology effort is being coordinated at national level by the DST through its national nanotechnology strategy, and activities at the new centres are strongly aligned with this strategy.

The focus of the CSIR-hosted centre, the National Centre for Nano-structured Materials, is on the design, modelling, synthesis, characterisation and fabrication of new and novel nano-structured materials with specific functional properties, while the centre at Mintek focuses on water, health, mining and minerals. These areas have been identified in the National Nanotechnology Strategy as key in the development of nanoscience and nanotechnology in order to effect social development. Both centres will have a strong focus on human capital development.

### **Supercomputing for South African researchers**

South African researchers gained the advantage of massive computing power when the Centre for High Performance Computing (CHPC), hosted by the University of Cape Town and managed by the CSIR, was opened on 22 May 2007. The CHPC

*The key public entities that report to the Minister of Science and Technology are listed below, along with brief reports on their performance during the 2007/08 financial year. More details can be found in the entities' own annual reports.*



is an important step in the modernisation of South Africa's science infrastructure. The high-speed computational infrastructure comprises 160 computer nodes (640 processors) in a clustered architecture. It is rated to have a peak performance of around 2,5 teraflops, or 2,5 million million mathematical operations every second, which is complemented by 50 terabytes of storage space. This compares with the performance of a few thousand standard personal computers.

### **Micromanufacturing laboratory**

The CSIR – in partnership with the Advanced Manufacturing Technology Strategy (AMTS) implementation unit – launched a state-of-the-art micro-manufacturing laboratory in December 2007. This is the first platform dedicated to this technology area in South Africa; pockets of dedicated micromanufacturing do exist in South Africa, but no laboratory has been dedicated to it. The CSIR's research will initially focus on microfluidics and microsystems.

The launch followed the completion of the Micromanufacturing Strategy of South Africa, which was facilitated by the AMTS with key contributions from the CSIR, the Central University of Technology, Stellenbosch University and the Nelson Mandela Metropolitan University, in consultation with industry and relevant international experts. The Strategy identifies the need for capacity building and skills development in this area, and the CSIR laboratory currently offers three doctoral studentships and one internship in the area.

The focus of microfluidics conducted at the CSIR laboratory will be on developing modelling, manufacturing and testing capabilities for microfluidic devices. The immediate goal will be research on manufacturing critical components such as valves, pumps, channels, mixers and separators. These components will then be merged to form subsystems, which will be linked directly to applications. A number of applications have been identified in the biomedical field, and the group is working closely with biomedical groups in the design and development of these systems. The microsystems focus on the development of a microfuel cell as a technology demonstrator to build skills and capacity in the microsystems domain. The microfuel cell will be used for portable electronic devices such as cellphones and notebooks, working closely with relevant national programmes in this area. As an important emerging technology area, micromanufacturing has been defined by the World Technology Evaluation Centre as an enabling, transforming and strategic technology. It bridges the gap between the nano and macro worlds. With micro-factories, products can be manufactured where needed and the technology is available to more people. The technology

can also bring about reduced capital investment, space and energy costs, and increased portability and productivity.

### **National research cyberinfrastructure in Gauteng**

The first four research infrastructure sites of the South African National Research Network (SANReN) went live in Johannesburg on 31 March 2008, which was a major step forward in the creation of an ICT technology platform for South African research, and is set to place local R&D on par with the best in the world. Teams from the Tertiary Education Network (TENET), the University of the Witwatersrand (Wits), the University of Johannesburg (UJ) and Neotel worked closely together to deploy the network. SANReN is sponsored by the DST and managed by the CSIR. Neotel provided the optical fibre circuit to ensure a high capacity backbone for the SANReN Johannesburg ring. The backbone of Neotel's next generation network is both flexible and scalable, and is custom-made according to SANReN requirements. SANReN provides the network equipment. Neotel's tailor-made solutions to ensure network capacity are vital in enabling SANReN to respond to network demands. TENET secures Internet services for South African universities and research institutions, and provides operational services to SANReN; currently this includes national and international connectivity at the gateway. Operating costs are recovered by TENET from the user institutions. The four sites are the main campuses of Wits and UJ, and two of UJ's satellite campuses. The four sites are on a shared 10 Gbps ring network that connects them to each other and to a major gateway site operated by TENET and hosted by Internet Solutions in Johannesburg. Future plans are to make all Wits satellite campuses and the CSIR's Johannesburg campus live at the same capacity. Plans are also afoot to upgrade the main campuses of Wits and the UJ. Research and tertiary education institutions across South Africa will be connected to SANReN as the network expands.

### **Unique remote sensing capability**

During 2007, the SPOT 5 satellite direct acquisition availability programme was launched at the CSIR Satellite Applications Centre at Hartebeesthoek. SPOT 5 is part of the well-known SPOT constellation that consists of five earth observation satellites. A French distributor of geographic information and products, Spot Image, was appointed by the French National Space Agency, Centre National d'Études Spatiales (CNES), as sole commercial operator of the SPOT satellites, the first of which was put in orbit in 1989. The CSIR has a long-standing relationship with Spot Image, and developed and negotiated an



# Public Entities Reporting to the Minister (continued)

open access model. This model ensures access to data from the SPOT 2, 4 and 5 sensors for government departments, research institutions and academia in South Africa.

The direct receiving capability by the CSIR of SPOT 5 data since October 2006 has allowed its remote sensing scientists to reach significant milestones on the prime deliverable of the 2,5-meter natural-colour seamless mosaic. This product holds enormous benefits for its users, as the mosaic is a valuable tool for decision makers on matters relating to food security, water management, disaster management, agriculture, housing development, utilities and infrastructure planning, mine rehabilitation, and national safety and security, among other things.

## **Programme to stimulate laser research**

Research and development outputs resulting from the CSIR programme that supports laser-based research at higher education institutions (HEIs) in South Africa included 108 research publications, two patents, nine products and 33 workshops. The rental pool programme is an extensive human capital development programme in support of growing laser-based research at HEIs in South Africa. It is managed by the CSIR National Laser Centre and funded in part by the DST through the National Research Foundation. The CSIR provides research teams with state-of-the-art laser equipment and diagnostics, scientific and technical support and much-needed laser optic consumables.

## **Advanced Robotics and Mechatronics Research Network**

The CSIR and the University of KwaZulu-Natal (UKZN) have partnered to increase collaboration and enhance knowledge-sharing in advanced robotics and mechatronics. Robotics and mechatronics comprise sensors, software and computers embedded in machines and devices that bring the power of computing technology to everyday practices. Together, the technologies emulate and enhance human ability to perceive reason, take decisions, and act. This allows machines and devices to anticipate requirements and deal with environments that are complex and unknown. Advanced robotics have emerged as an important technical domain over the past two decades. The Advanced Robotics and Mechatronics Research Network (ARMRN) will allow the sharing of expensive infrastructure, while contributing to human capital development through studentships at the CSIR. The ARMRN will be further expanded to include the Central University of Technology in the Free State, the Nelson Mandela Metropolitan University in Port Elizabeth, Stellenbosch

University, the Tshwane University of Technology and others. As a result of this collaboration, the first advanced robotics and mechatronics symposium was held last year. Engineering faculties from HEIs in South Africa had the opportunity to present and share their work at both undergraduate and postgraduate level. Advanced robotics have emerged as an important technical domain over the past two decades. Robotics and mechatronics comprise sensors, software and computers embedded in machines and devices that bring the power of computing technology into everyday practices. The symposium was sponsored by the DST's AMTS implementation unit, which is hosted by the CSIR. Co-hosts were the UKZN and the Central University of Technology.

## **Femtosecond science**

The CSIR's femtosecond science laboratory has made headway in matching international advancements in this technology. Cutting-edge femtosecond laser equipment has been installed at and commissioned by the CSIR National Laser Centre. Femtosecond science involves the use of femtosecond laser sources in various scientific fields such as physics, chemistry, biology and micromachining. Laser scientists at the CSIR and chemists of North-West University (NWU) have also started a research project in which they are using femtosecond laser pulses to investigate chemical processes of importance to South Africa. The project team comprises three physicists and two technicians from the CSIR, faculty members and two PhD students from NWU, as well as five MSc students from NWU and Stellenbosch University. The equipment taken into use at the CSIR includes a femtosecond oscillator and amplifier and an optical parametric amplifier. The equipment is funded partially by the DST, backed by a CSIR capital investment.

## **Composite materials research**

The CSIR and the AMTS unit of the DST jointly hosted a conference on fibre-reinforced composites in Port Elizabeth during the year under review. The conference aimed to provide an international forum for various classes of composite materials and structures. The conference was attended by more than 130 delegates, representing 17 countries, and 88 papers were presented over the three-day event. The CSIR and its collaborators are actively working towards improving materials, structures and systems to provide novel solutions for ever-increasing demands in the automotive and aerospace industry sectors, in particular. South Africa's resurgence in the global automotive market and the interest of leading players in the aerospace industries for sourcing natural fibre-reinforced



composite products and technology from the country have sparked two projects on natural fibre-reinforced composites and on fully biodegradable natural fibre-reinforced composites. The first project could have competitive benefits for automotive, aerospace and packaging applications. The project on fully biodegradable composites focuses on the delivery of a sample composite panel to Airbus in compliance with its specifications. The latter development is in compliance with the European Clean Sky research initiative, which Airbus supports.

### **Collaboration with EU on road transport**

A European Union initiative aimed at increasing road transport research cooperation between Europe and the emerging markets of Brazil, China, India and South Africa saw key partners and stakeholders engage in Pretoria. The CSIR is coordinating the activities of the project, code-named SIMBA, in the South African region. Funded by the EU's Framework Programme, SIMBA has established a collaboration network of key stakeholders in the fields of intelligent transport systems (ITS), infrastructure and automotive development. The project aims to increase road safety, mobility and transport efficiency through the exchange of technological know-how and best practices. South Africa's road transport priorities include issues such as the deterioration of road infrastructure, improved mobility and road safety. The South African government has already put in place many innovative and far-reaching policies to address mobility, safety and infrastructure management, including the introduction of ITS to deal with the increasing congestion on South Africa's urban roads and improve public transport for the 2010 World Cup.

### **Rural development**

The CSIR is participating in an international research consortium aimed at enabling people in rural areas to participate fully in the Regional Transportation District (RTD) activities that potentially affect their lives. Funded by the European Union's Framework Programme 6 (FP6), the consortium comprises 30 partners from 15 countries. Researchers from the CSIR are involved in the project. Called "Collaboration@Rural: a Collaborative Platform for Working and Living in Rural Areas", the three-year project provides a collaborative platform for RTD institutions and rural communities, and aims to develop effective methodologies for the implementation of rural living laboratories within rural economies. Rural living laboratories focus on users in real-life R&D contexts, involving people, businesses and public players in the co-creation of services enhancing rural development. The living laboratories concept is about RTD institutions setting up long-term relationships with the inhabitants of the real-world

context in a way that will ensure active participation by the latter in the R&D process. A large part of the project will investigate ICT-related technologies and processes in the deep rural areas.

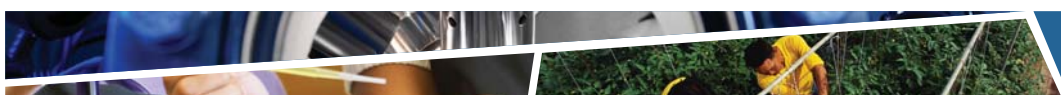
The technical aspect of the project comprises three layers, namely collaborative core services, software collaborative tools and rural living laboratories. The Sekhukhune area has been selected as the location of the rural living laboratory for South Africa. Various relationships will be set up with SMMEs and other public and private sector role players in the area. The research team will collaborate with these entities on an ongoing basis to ensure the two-way flow of information, knowledge, responses and needs for the duration of the project, and beyond.

### **First African digital data conference**

Cost-effective access to digital data that results from publicly-funded research was one of the topics highlighted at the first African digital curation conference, held in February 2008. The exchange of ideas, knowledge and data is fundamental for human progress and core to the OECD. The 30 OECD countries, and the governments of South Africa, China, Israel and Russia, have adopted a declaration on open access to research data resulting from public funding. The OECD will develop guidelines and principles for facilitating optimal access to digital research data. The conference was organised under the auspices of the DST, three science councils (the CSIR, the HSRC and the NRF), the University of Pretoria and the Academy of Science of South Africa. Curation and management of research outputs (including datasets, journal articles and models) refer to taking care of digital content, evaluating its quality and promoting the content during its entire life cycle. It stretches beyond the short-term boundaries of individual research projects and involves accessibility periods of longer than 20 years. International speakers, mainly from the UK, the EU and the USA, shared perspectives and looked at new roles and opportunities. The curation of African digital content and practices in specific science domains were interrogated on the second day of the event. The infrastructure to provide access to research data is still underdeveloped in Africa. Proceedings concluded with discussion on a formalised network of African data and information curation centres.

### **FabLabs**

The sixth FabLab (fabrication laboratory) – the first in the Northern Cape – was launched on 6 August 2007, marking a further realisation of the DST's goal of providing science, engineering and technology platforms for social development, while benefiting private sector competitiveness and growth.



# Public Entities Reporting to the Minister (continued)

The FabLabs achieve this by bringing advanced manufacturing technology to ordinary people as an accessible platform to empower themselves by personally participating in an environment that enables the freedom to experiment and peer learning. The platforms also provide the means to solve local problems innovatively and stimulate creativity that should lead to technopreneurship options. The DST enables the roll-out of the FabLabs nationally through the AMTS implementation unit. The AMTS has entered into a partnership with the Massachusetts Institute of Technology's Center for Bits and Atoms to establish FabLabs in South Africa. The AMTS currently supports FabLabs at the Innovation Hub in Pretoria, Soshanguve (north of Pretoria), Cape Town, Bloemfontein, Potchefstroom and Kimberley. A minimum of 10 FabLabs will eventually be established in South Africa. FabLabs offer a group of off-the-shelf, industrial-grade fabrication and electronics tools, using open-source software and dedicated programmes to allow users to build almost anything from inexpensive and readily available materials. The goal of the FabLab concept is to help people use advanced information technologies to develop and produce solutions for local problems.

## Essential oils factory in Northern Cape

An essential oils factory has been established in Onseepkans in the Northern Cape to make a long-term impact on poverty in the region. The new distillation plant for rose geranium essential oils is one of many projects funded by the DST to create sustainable jobs for communities plagued by high rates of unemployment. The project has created jobs for 34 previously unemployed people in this geographically-isolated town. The well-drained soil, abundant sunlight and constant availability of irrigation water from the Orange River make Onseepkans an ideal site to cultivate rose geranium. South Africa's various micro-climates are well suited for growing essential oils such as lemon grass, lavender, peppermint and rose geranium, as well as indigenous plants such as buchu and *Lippia javanica*.

The DST's funding for the Onseepkans project has to date resulted in, among other things, the establishment of an irrigation dam and pump house, an irrigation system, a distillation factory, and an office and other buildings. Thirty hectares of rose geranium have been planted. Workers have been trained in all aspects of running an agro-business, including technical procedures relating to steam distillation, a special type of distillation that allows the isolation of essential oils from any component of a plant, although

typically leaves and flowers. A section 21 company, Sidasoas, has been established as the legal entity through which the Onseepkans community will run their business. The members and directors of Sidasoas all come from the Onseepkans community.

## Aerospace research and development

The first South African International Aerospace Symposium was co-hosted by the AMTS implementation unit and the Europe South Africa Science and Technology Advancement Programme in April 2007. The aerospace industry is of great importance to South Africa and needs robust technology advancement programmes and sustainable R&D for future growth. The symposium aimed to showcase aerospace-related research and technology from Africa to the world and to benchmark specifically South African technology against the best in the world. The symposium provided a roadmap of new and innovative aerospace technology trends, and served as a checklist for South Africans to position their own competencies and capabilities strategically. Leading South African researchers had the opportunity to present their work to demonstrate local niche areas of world-class expertise, creating future collaboration opportunities. Denel Aerospace Systems invited delegates to a live demonstration of unmanned aerial vehicle technology. The organisers believed the symposium was timely as significant aerospace-related activities had taken place over the past 12 months. These included several joint technology projects between the DST and Airbus following an agreement at the African Aerospace Defence 2006 show. Following the symposium, the CSIR and several universities, including the Cape Peninsula University of Technology, the University of Pretoria and Stellenbosch University, were accepted into projects of the EU Framework Programme. AMTS and AeroSud launched the Advanced Manufacturing Technology Laboratory for Aviation in February 2008, to help develop the skills needed in the aerospace industry. This is done in collaboration with the Denel Academy of Learning and Development. The CSIR has rolled out and contracted projects in advanced composite and metal technologies, advanced electronics and sensors, and advanced production technologies in excess of R80 million, with the involvement of local aerospace companies such as AeroSud, ATE and Denel, as well as SMMEs.





## HUMAN SCIENCES RESEARCH COUNCIL

The HSRC continued its work on highly relevant issues for South Africa and the African continent, such as education and skills development, the social aspects of HIV/Aids, and urban and rural development challenges.

### **HIV/Aids and health**

#### ***Mentor mothers***

The HSRC was awarded a five-year grant through the US National Institutes of Health (NIH) Project Masihambisane, is a randomised clinic-level trial to test the effectiveness of a mentor mother intervention in improving the outcomes of mothers and children in government-led prevention of mother-to-child HIV transmission programmes.

#### ***Trial to test an education allowance***

Another five-year grant through the NIH was awarded for the project *Going to Scale*, a randomised community trial to test the impact of a health and education allowance on the well-being of poor children in communities hard hit by HIV/Aids. In addition, Project Accept, a randomised community mobilisation trial to affect HIV incidence, received further funding from NIH to extend the study for an additional three years. These two studies and Masihambisane are run from the HSRC's Sweetwaters office near Pietermaritzburg.

#### ***National health insurance debate***

In response to calls for more stakeholder involvement in the debate about national health insurance, a colloquium, attended by a broad range of stakeholders, including the Ministry of Health, took place in July 2007. The deliberations clearly demonstrated the need to expand work around this theme by looking at broader health issues, strengthening the public health system (human resources, financing, and district health systems), and defining a basic package of services for South Africa. The report on the colloquium resulted in some stakeholders preparing implementation plans and budgets for tabling before government that illustrate the benefits, practicality and affordability of introducing national health insurance.

### ***National Strategic Plan for HIV and Aids and STI***

The HSRC played a major role in the development and implementation of the National Strategic Plan (NHS) for HIV and Aids and STI, 2007-2011, especially with regard to the monitoring and evaluation of national responses, but also in the development and testing of theory-based behavioural risk reduction interventions.

### ***Contribution to research sector of South African National Aids Council***

The HSRC played a crucial role in the research sector of the South African National Aids Council by providing technical assistance to the office of the deputy chair and the civil society sector of the council. The third South African Aids Conference, which took place under the leadership of the HSRC's CEO, Dr Olive Shisana, led to the adoption of a declaration committing all South Africans to do their utmost to make the implementation of the NSP a reality. This led to the HSRC being appointed as a UNAIDS Collaborative Centre of Excellence.

### ***HIV/Aids-related stigma and discrimination***

A five-year study to understand HIV/AIDS-related stigma and how to combat it, aimed to strengthen research infrastructure and research capacity at the Universities of the Western Cape and Limpopo. The project, funded by the US National Institute of Mental Health, through Pennsylvania State University, intended to develop and sustain cultural and gender-based interventions for the elimination of stigma associated with HIV/Aids prevention, care and support. The eventual aim is to make available an HIV/Aids stigma scale and test anti-stigma interventions.

### ***The welfare of children***

#### ***Indicators for child well-being***

To improve capacity in tracking the impact of policy on child well-being, comprehensive indicators for monitoring children's situation and their access to support for health and development was developed in a publication titled *Monitoring child well-being, a rights-based approach*. The book had one of the highest hit rates on the HSRC Press website, including from government departments and NGOs, which continue to request training on the system. A set of core indicators is available on the HSRC Press website for free dissemination.

#### ***Early childhood development***

The HSRC launched a major research initiative called "The Early Years" in 2007, to contribute knowledge to breaking the cycle of poverty for children. The HSRC established a project on institutional innovations aimed at enabling an increase of early



# Public Entities Reporting to the Minister (continued)

childhood development (ECD) services for children under the age of five. This is an extremely important source of job creation, particularly for rural women. The project makes a significant contribution to transforming thinking about gender, particularly in relation to the problem of unpaid and undervalued labour, and supports the employment scenarios initiative as part of its government employment creation theme. This project is funded by the Department of Education through the Directors-General Social Cluster, the WK Kellogg Foundation, and the HSRC. It is overseen by the government's Interdepartmental ECD Committee.

## **Policy research**

### ***Getting research into policy***

In March 2008, a colloquium on "Getting research evidence into policy and practice: HIV and Aids in Africa", was organised and hosted in conjunction with the University of Limpopo. The colloquium, which was attended by 50 delegates, was opened by Dr Zola Skweyiya, Minister of Social Development, and the keynote speaker Mr Pierre Sane, UNESCO's Assistant Director-General for Social and Human Sciences. The meeting examined various case studies that highlighted good practice in getting evidence into policy and practice. An outcome of the colloquium was a request from UNESCO to pilot test the MOST Online Policy Research Tool.

### ***Policy briefs***

By the end of 2007/08, the first in a series of HSRC policy briefs were in press. The policy briefs, or policy recommendations, aim to provide, in a concise and digestible format, policy-relevant research information, which has been refined through a consultative process of policy dialogues. The HSRC will produce 12 policy briefs per year, linked to government's policy priorities (various clusters). The first three in the series deal with issues such as high university dropout rates, the dynamics of the fear of crime in South Africa, and the debate around possible signs of a dependency culture in South Africa.

### ***Solutions for policy implementation***

A workshop in August 2007, hosted jointly with DST for the Portfolio Committee on Science and Technology, on: "*Arriving at solutions for policy implementation*", was attended by more than 20 members of Portfolio Committees of Health, Housing, Social Development, Minerals and Energy, Education, Local Government, Labour and Trade and Industry. The following topics were presented and discussed: HIV/Aids and the role of the state in the future of child-headed households; capacity building for 2010 and beyond; poverty alleviation; and informal settlements and migration: creating sustainable human settlements. Members of

Parliament indicated that they found the workshop informative and useful, and that they especially appreciated the opportunity for extended discussions with the researchers who had conducted the various research projects.

### ***Social policy and the developmental state***

A workshop and public lecture on "Social Policy and the Developmental State: Lessons for South Africa", led by Dr Thandika Mkandawire, Director of the United Nations Research Institute for Social Development in Geneva, was held in November 2007. A select group of 40 senior policy makers and researchers attended. Given subsequent heightened interest in the concept of a "democratic developmental state", a follow-up policy dialogue took place in June 2008 to draw on international experience and pertinent policy and institutional frameworks.

### ***Youth policy***

The youth policy initiative was launched in 2007 and consisted of a series of six round-table meetings, during which research, policy and programme experts came together to consolidate the state of science of youth development and the demands for action. The central thrust of the initiative is to bridge the gap between the rich store of youth research currently available in South Africa and policy development. The debates attempted to move the youth development agenda beyond describing the extent of the challenges, to proposing viable policy and programmatic directions that could be undertaken in a coherent and integrated manner. The initiative will continue into 2008.

## **Democracy and governance**

### ***The future of South African politics***

In response to a call for proposals from the Presidency, three forward-looking strategy papers were produced on the future of South African politics, on South Africa's role in global politics and on the importance of social cohesion. These papers were presented to the Presidency along with eight others prepared by HSRC researchers. All the presentations were managed by D&G, which is in the process of publishing them all as a research monograph. The papers formed part of a scenario planning process informing the Cabinet of pending strategic issues.

### ***South Africa in Africa***

A project under the Council for the Development of Social Science Research in Africa (CODESRIA) collaboration, called "South Africa in Africa", brings together a network of leading African researchers. Along similar lines, the identity and citizen project established a network of African scholars dealing with





the issues of citizenship and identity. Scholars in this network are drawn from institutions in various African countries, including Angola, Democratic Republic of Congo, Ivory Coast, Kenya, Rwanda, Sudan, Tanzania and Zimbabwe.

### ***Traditional leadership***

The policy unit in the Presidency commissioned a study on traditional leadership. The study assessed the extent to which traditional leadership had been integrated into the democratic system of governance in South Africa. More importantly, it examined the dynamics that emerge when two historically different systems of governance co-exist and how the linkages between them affect citizens. The study was based on a review of government policy initiatives, views of stakeholders on these initiatives, and the evaluation of operational mechanisms that were adopted to implement the policies.

### ***Migration in Africa***

The HSRC played a major role in the African Migration Alliance (AMA) workshop on climate change and migration, sponsored by the national Department of Social Development's Population and Development Directorate. Key themes that emerged were highlighted in the reports from the AMA's climate change and migration pilot research projects in Senegal, DRC and South Africa. Work in Senegal led the way, showing climate change and environmental exhaustion as a key migration driver accounting for the exodus of Senegalese from the country's interior and the collapse of home food production, leading to steeply rising out-migration to Europe and an increasingly precarious dependence on imported food. At a time when world food stocks are critically endangered for poor countries and international migration rates are often seen as out of control, the AMA workshop results draw attention to the critical migration/environment interface and help to highlight the unforeseen risks it carries for Africa so that sound policy can be developed to address these hazards.

### ***Violent crime in South Africa***

Crime and violence have been a constant challenge for South Africa. During the year, two major violence studies were in process. The first project is a study of male offenders who have been convicted for violent crimes, and who are currently serving prison sentences. The project seeks to understand the individual life histories, circumstances and choices which individuals make. The second project seeks to study the impact of violent crime on social cohesion in South Africa. It is a national study, focusing on areas which have experienced high levels of violent crime, and compares them to areas with the same demographic and socio-economic profiles in order to understand whether the social

capital and networks of communities impacts on the occurrence of violent crime and shapes their ability to respond. The goal of both these ongoing projects is to generate knowledge that will deepen understanding of the escalating violence and assist in the formulation of social intervention strategies.

## **Education and skills development**

### ***Employment scenarios***

The employment scenarios project drew together a high-level network of decision-makers in a forum to consider how AsgISA and Millennium Development Goal targets of halving unemployment and poverty by 2015 can be met. The research provides information on the kinds of jobs, in what numbers and at what wages, that are needed to solve South Africa's jobs and poverty crisis. The scenarios have been highly successful in enabling open thinking about critical questions, policy balance and the kinds of decisions different stakeholder groupings need to reduce unemployment and poverty dramatically.

### ***Education quality programmes***

The HSRC hosted a meeting of national policy experts to review key education quality intervention programmes implemented in South Africa since 1994. The purpose of the review was to identify best practices and disseminate lessons learnt for improving the quality of education in South African schools. The results of this review will be published as a book.

### ***The relationship between teacher quality and learning***

A pilot study on the quality of teachers and learning outcomes in Gauteng was conducted by a large team spread across universities in South Africa and the USA. These combined efforts produced a complex, multifaceted report that yielded new insights into teachers, students, and the mathematical knowledge of teachers, but also what happens inside classrooms. Analysis of videotapes of 40 classrooms showed that the level of cognitive demand intended is not always achieved.

### ***Labour market legislation***

Several groundbreaking research reports, commissioned by the Department of Labour, will be released in 2008. The HSRC had to provide comprehensive impact assessments of key post-apartheid labour market legislation in terms of equity and efficiency in the South African labour market. The studies included the Basic Conditions of Employment Act, the National Skills Development Act, and the Employment Equity Act.



# Public Entities Reporting to the Minister (continued)

## **Database to monitor learner performance**

A database of grade 9 assessment items was developed for English (FAL), mathematics and science to monitor learner performance levels in all assessment standards specified in the National Curriculum Statements. These items were piloted in four provinces and will be used to develop instruments for the national assessment survey to be administered in November 2009.

## **Student dropout**

Uppermost among the key findings of the student pathways study on why students dropped out of university without obtaining a qualification, was lack of finance. The study's survey found that while the average low socio-economic status (SES) across the seven institutions was 70%, the low SES was more pronounced in historically black disadvantaged institutions where it was above the average of the seven institutions. For example, at the University of Fort Hare it was 82%, at the University of the North it was also 82%, at the University of the Western Cape it was 79%, while at Cape Peninsula University of Technology it was 74%. The parents/guardians of the low SES students either had "no formal education" or had "some secondary education", and their monthly income was in the brackets "no income", between R1 and R400, or between R801 and R1 600.

## **Employment**

### **Scenarios and strategies for employment**

The purpose of this work is to identify clear scenarios and strategies to halve unemployment and poverty by 2014 on a sustainable basis. Through round-table dialogue, scenario building and thematic research, the employment growth and development initiative has successfully drawn together top decision-makers to concretise forward-looking and innovative ideas. The path and policy complements required to achieve any one of these scenarios are identified alongside their political, financial and bureaucratic implications, which are then put to policymakers, stakeholders and experts for dialogue and debate. This initiative deepens policy conceptualisation in terms of employment dynamics, and validates existing policies or identifies possible policy gaps by testing the potential employment impact of current policy thrusts. It also supports decision-making in terms of employment promotion and poverty reduction as part of government's growth strategy, and deepens dialogue on employment policy among central decision-makers and in civil society. A number of research projects support the employment scenarios initiative.

## **History**

### **Meaning of Timbuktu**

A scholarly book, *The Meanings of Timbuktu*, was published by the HSRC. The book reflects on the meaning of the manuscripts found in Timbuktu, Mali. The broader project to safeguard the manuscripts represents NEPAD's first official cultural project, the socio-economic development plan of the African Union. The book project, facilitated by the HSRC, represents the first tangible output of the HSRC's Memorandum of Understanding with CODESRIA.

## **Science and technology**

### **Review of South Africa's innovation policy**

The HSRC provided key information (data and analysis) for the recent OECD Review of South Africa's Innovation Policy. The review noted that South Africa has developed a strong capability to provide strategic intelligence and analysis to support policy, and the HSRC has played an important role in this regard.

### **Technology-oriented initiatives to promote economic development**

A study was commissioned by the DST into current technologically-oriented poverty reduction initiatives in South Africa, with a particular focus on rural areas. Having a clear picture of the status quo will assist DST to figure out how it should position itself to make the greatest possible difference in the fight against poverty. What are the gaps? What is relatively well covered? What is the scope for information sharing? What difference is currently being made? The report assembled various pieces of information and analysis regarding contemporary, programmatic attempts to promote rural development in South Africa by means of technology. The emphasis of the exercise was specifically on the development and/or transfer of technologies that seek to address poverty by means of supporting production activities.

## **Service delivery**

### **FIFA 2010 World Cup research**

As part of the FIFA 2010 World Cup Research Project and ongoing collaboration with the Wits Centre for Urban and Built Environment Studies and the Wits Institute for Social and Economic Research, the HSRC co-hosted the "2010: Alternative Voices" colloquium on 7 November 2007. The colloquium aimed to move away from conversations about the physical legacies of the 2010 FIFA World Cup and sought to create a space in which



alternative voices could engage one another. Featuring a series of plenary and round-table discussions, the programme included speakers drawn from academic, activist, local authority and other spheres. The third wave of the 2010 longitudinal survey showed, among other things, that South Africans' attitudes about the World Cup remain positive. Perceptions are consolidating around anticipated benefits, disadvantages and notions of readiness. The release of the results generated huge public interest, attesting to the value of the survey, and other facets of 2010 research. The HSRC now consolidates the largest body of 2010 research in the country.

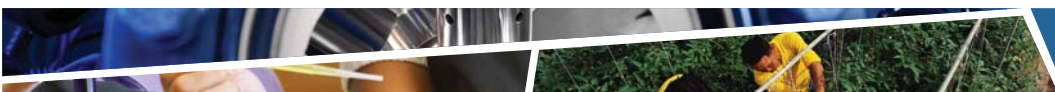
### ***Economic impact of welfare grants***

The study found that a large number of grant recipients spent their money on commodities that are essential for households. The pay points themselves provided huge trading markets for both local and outside entrepreneurs. Many of the traders were not local people but moved around with pension vehicles on pension paydays. It showed that there was a general pattern in the manner grant recipients spent their money as well as the kinds of commodities that sell at such pension pay points. Commodities ranged from groceries to appliances to services such as medical examinations. The study concluded that social grants had a huge economic impact in the study areas. A sizeable number of people had managed to start their own small businesses using grant money. At the same time, local formal businesses benefited from grant money spent by grant recipients. These effects had resulted in some permanent and/or temporary employment creation.

### ***Water regulation***

As the focus of the Department of Water Affairs and Forestry shifts from delivery to regulation, a research team drew up 10 indicators (including consultation, access, flow and children's health) which are central to water standards, and which can be used by communities to report to municipalities with the responsibility for water services. Community members have been trained to undertake exercises (such as in mapping and surveys) to provide the basis by which services can be measured and judged. A final scorecard in a set of tools provides the input into local regulation.

*The third wave of the 2010 longitudinal survey showed, among other things, that South Africans' attitudes about the World Cup remain positive. Perceptions are consolidating around anticipated benefits, disadvantages and notions of readiness. The release of the results generated huge public interest, attesting to the value of the survey, and other facets of 2010 research.*



# Public Entities Reporting to the Minister (continued)



## ACADEMY OF SCIENCE OF SOUTH AFRICA

The Academy of Science of South Africa, established by the ASSAf Act, 2001, is tasked with providing direction, investigating and generating evidence-based advisories on science-based issues of public interest. ASSAf regularly publishes its findings and recommendations, and also acknowledges the achievements of South African scientists, in order to develop the intellectual capacity of the nation and promote innovative scientific thinking. The Academy enjoys regular interaction and knowledge exchange with other national science academies throughout Africa and in particular through partnerships within the SADC, as well as the global scientific community.

### Authoritative reports on evidence-based findings

- During 2007/08 ASSAf produced authoritative reports tackling often controversial topics, where evidence-based advice would be helpful to the country and would have a direct impact on the quality of life of the poor in South Africa.
- Following the publication of ASSAf's report, *A Strategic Approach to Research Publishing in South Africa*, in March 2006, the Academy's scholarly publishing unit and the Committee on Scholarly Publishing in South Africa began implementing the report's 10 recommendations, commencing with a feasibility study and a comparative analysis of applicable global open access systems, for the prospective launch of a national platform for high-quality South African scholarly journals. ASSAf also established a National Scholarly Editors' Forum, functioning mainly in virtual mode through electronic and other forms of communication (for which a database of South African editors was established), but also through workshops and annual conferences on key topics. ASSAf obtained general support for the adoption of a national best-practice code for editorial discretion and the peer review of scholarly journals, set in motion a system of quality assurance consisting of discipline-grouped peer review of local journals by consensus panels, and began an extension of the March 2006 ASSAf study on South African research journals via an analysis of scholarly publishing by local authors in books or book chapters. The Academy's scholarly publishing programme is contract-funded by the Department of Science and Technology.
- ASSAf published a consensus study on the nutritional influences on human immunity, with special reference to HIV infection and clinical TB, entitled *HIV/Aids, TB and Nutrition* (July 2007). The report was printed and distributed to all ASSAf's national and international stakeholders, including national government departments. The issues concerning nutritional influences on human immunity and response to major pandemic infections, such as TB and HIV infections, have been among the most controversial in South Africa in the last half-decade. These issues have given rise to serious differences in the approach to public policy in addressing the ravages of these diseases. The report provided clear guidance on the key issues, and a set of recommendations based on the best evidence and the most integrated understanding of the ways in which nutrition affects people suffering from infections such as tuberculosis and HIV-caused immunodeficiency states. Professor Barry Mendelow, Chairperson of the Consensus Panel on HIV/Aids and Nutrition, was recognised for his exceptional services to the Academy, in this particular study, at the ASSAf annual general meeting. The report's findings generated global interest, and featured prominently in international print and electronic media, including BBC News, the Washington Post, New York Times, SciDev.Net, IRIN Africa News, ScienceNOW, allAfrica.com, Independent Online, Oneworld TV, and the AIDS and HIV Information Centre.
- The ASSAf Council approved a recommendation that a nationally convened consensus study panel be organised by the Academy to help address a number of urgent and interdependent issues concerning clinical research and related training in South Africa. The clinical research panel was set up in 2007, and tasked with examining and addressing the most relevant reliable evidence on key questions related to clinical research and trials, and deriving suitable recommendations to develop cost-effective preventive and/or therapeutic strategies at all levels of healthcare.
- Plans were begun to establish a consensus panel tasked with investigating the status of the Humanities in South Africa. The panel would focus on describing the potential social and economic importance of the humanities, analyse their present strengths and weaknesses, explain issues of funding, launch an enquiry into the anatomy of particular disciplines, and make a case for strengthening the national role of this group of disciplines. The panel's findings and recommendations would be published as a consensus report, and contribute to national life and development.



- The Academy Council approved the augmentation of the Committee on Science for the Alleviation of Poverty in mid-2007, to include 20 to 24 ASSAf members, drawn from the ASSAf membership and other constituencies. The augmented committee was mandated to generate forum-type studies in any area of its choice, but was requested to cover three broad areas: (a) Small-scale agriculture; (b) Health of poor communities; and (c) General environmental and other sustainability aspects of smaller (secondary) cities. In each case, the committee identified the topics most likely to generate new ideas and recommendations for implementation in the field, based on the best scientific evidence that could be utilised for this purpose.
- ASSAf's Committee on Science for Poverty Alleviation published the Forum Proceedings Report on *Science-Based Improvements of Rural/Subsistence Agriculture* (July 2007).

### Recognition of scientific scholarly excellence

- ASSAf awarded its third annual set of Science for Society Gold Medals to scientists who made a valued contribution to scientific development in South Africa. The gold medal is acknowledged as the premier mark of peer and systemic recognition of achievements that reflect the academy's values and mission. Professors Pieter S Steyn and J Darrell Comins were awarded the ASSAf Science for Society Gold Medal for 2007.
- ASSAf acknowledged younger scientists through the TWAS/DST/ASSAf Prize for Young Scientists in South Africa. Professor Albert Modi received the award for Life Sciences in 2007, while Professor Jens Gutzmer received the 2006 prize for Physical Sciences.
- Throughout the period under review, the Academy acted as a centre for disseminating notices of international science prizes, and enhanced take-up by South African nominators.
- ASSAf partnered other organisations with local chapters in the principal South African metropolises in offering public lectures in accessible locations, advertised in local media and institutions. ASSAf collaborated with the Royal Society of South Africa and the Suid-Afrikaanse Akademie vir Wetenskap en Kuns in convening public regional lectures in KwaZulu-Natal, Cape Town and Bloemfontein.
- The South African-born Dr Sydney Brenner donated a portion of his 2002 Nobel Prize winnings to permit ASSAf to offer a prestigious, high-end research fellowship. The Sydney Brenner Fellowship affords outstanding, promising and creative

young scientists the opportunity to study a science discipline at a South African higher education institution for a period of two years. The Academy acknowledged with great appreciation the receipt of additional funding from the local Oppenheimer Memorial Trust, which permitted the selection of two fellows during the 2007/08 financial year, namely Drs Shaheen Mowla and Zenda Woodman.

### Mobilisation of ASSAf members

- The Academy's core asset is its membership; the involvement and contribution of members determine the extent and scope of ASSAf's contribution to South African society.
- As the tables on the next page show, the Academy augmented its membership from 276 to 294, with the appointment of a further 18 scientists and scholars.

### Partnerships with science academies and institutions

- A memorandum of understanding (MoU) signed between ASSAf and the US National Academies (USNA), together with a formal USNA-ASSAf contract in mid-2005, was finally completed when ASSAf's multi-year strategic plan was approved by the ASSAf Council in mid-2006 and added as the required appendix to the MoU.
- In late 2007, ASSAf established an international liaison office to provide assistance to ASSAf office-bearers and staff in their interactions with the inter-academy panel (IAP), Network of African Science Academies, individual African science academies through the African Academy Development Initiative programme, the Inter-Academy Medical Panel (IAMP), the Academy of Science for the Developing World (TWAS), and bilateral engagements outside the continent.
- The Academy collaborated actively with TWAS, which manages programmes designed to stimulate scientific development in developing countries and co-sponsors ASSAf's Young Scientist Prize for South Africa. ASSAf popularised the TWAS fellowship schemes in South Africa and acted as its South African office.
- A significant outflow of ASSAf's membership of the IAP has been its continuing inclusion in the annual meetings of the so-called 'G8 plus 5' scheme, where the national science academies of the 15 countries concerned discuss key issues of common interest and provide evidence-based advice to the Heads of State at the 'G8 plus 5' Heads of State Summit Meeting.



# Public Entities Reporting to the Minister (continued)

ASSAf membership statistics: 2007/08					
	Male	Female	White	Black	Total
Earth sciences	11	3	11	3	14
Economic sciences	9	2	8	3	11
Education	6	2	5	3	8
Human sciences	31	18	32	17	49
Life sciences	64	18	62	20	82
Mathematical sciences	15	2	11	6	17
Physical sciences	35	5	30	10	40
Social sciences	23	15	24	14	38
Technological sciences	29	6	29	6	35
<b>Total</b>	<b>223</b>	<b>71</b>	<b>212</b>	<b>82</b>	<b>294</b>

- ASSAf's membership of the IAMP has provided valuable contacts with the world's main medical academies and focused attention on the health problems of the developing world. The Academy has also provided one of the two co-chairs of the IAMP for the current two-year period.
- ASSAf became a member of the influential 'science council' sector in the National Science and Technology Forum.
- ASSAf was involved in a number of conferences, seminars, dialogues, and similar events, most notably hosting the IAP Programme on Promoting Access to and Use of Digital Knowledge Resources in Countries with Developing and Transitional Economies, on 16 May 2007. The workshop produced a funding proposal to engage the IAP and its member academies in strengthening their own scientific and technical capacity, as well as that of developing countries and transitional economies, via e-research.

## Stakeholder marketing and ASSAf periodicals

- ASSAf's two national publications enjoyed continued respect and recognition. The *South African Journal of Science*, as a century-old accredited multidisciplinary scientific research journal, remained competitive, both nationally and internationally. Its four-year old offshoot, *Quest: Science for South Africa*, remained a leading popular science magazine, attractively and effectively showcasing the country's scientific research.
- *Quest: Science for South Africa* (in its fourth volume) positioned itself as a potentially powerful vehicle for stimulating the country's youth to become aware of South African science and

enter science-related careers. With growing support from the Department of Science and Technology, and hopes of generating further interest, particularly among other government departments and science councils, *Quest* magazine has thus far provided South Africans and other readers with accurate, informative, up-to-date, locally-generated articles on scientific research.

- ASSAf's high-impact ranking, multidisciplinary, bimonthly research journal, the *South African Journal of Science* was disseminated in printed and electronic formats. It is to be restructured towards the end of 2008/09 via the appointment of a part-time Editor-in-Chief and team of associate editors, and in the long-term, publication online via an open access system.

*ASSAf's website, at [www.assaf.org.za](http://www.assaf.org.za) contains full information on the Academy and its activities. A printed quarterly newsletter is also widely disseminated to promote knowledge and understanding of ASSAf's national and international role.*





## THE NATIONAL RESEARCH FOUNDATION

In the year under review the new NRF strategy: **Vision 2015** was launched, outlining the following specific strategic goals:

- promoting internationally competitive research as basis for a knowledge economy;
- growing a representative science and technology workforce in South Africa;
- providing cutting edge-research, technology and innovation platforms;
- operating world-class evaluation and grant-making systems; and
- contributing to a vibrant national innovation system.

Central to this vision is the development of human capital development through all the platforms of the NRF, through funding interventions, providing access to large national research infrastructure or science advancement, communication and outreach activities.

### Research and Innovation Support and Advancement (RISA)

- In order to address the shortage of highly skilled human capital, the NRF launched the PhD project. The aim of this project is to increase the depth and diversity of appropriately skilled graduates with research doctorates. Approximately 900 potential students applied for assistance.
- The Scarce Skills Development Programme, funded through the Department of Labour, also contributed to the goal of providing appropriately skilled, high-level HR.
- The level of funding for honours, master's, doctoral and post-doctoral training of researchers will be increased for the first time since 1999 in order to promote a throughput of researchers instead of an early exit of students at a lower level of study. This will require an additional investment of R30 million.

- 4 600 students were supported during 2007/08 (30% of applicants).
- 1 600 researchers received support (40% of those that submitted proposals); approximately 50% of all researchers funded were from designated groups.
- In response to the recommendations of the 2005 NRF Institutional Review, HESA commissioned the review of the rating system, resulting in a decision by the NRF to re-link rating with funding.
- On the basis of institutional review recommendations, the focus area framework was also reviewed. The funding framework for RISA was subsequently changed and it was decided to find a balance between supporting research related directly to national strategic imperatives, and to supporting basic research in all fields that would form the required broad pool of knowledge workers able to address specific scientific questions. An effort will be made to find the correct balance in funding excellent science and research development initiatives. Funding interventions to support this approach include the South African Research Chairs Initiative (72 chairs), the centres of excellence (7) and the Thuthuka Programme.
- In the DST/NRF internship programme, 169 interns completed their training, and 77% of these have succeeded in finding employment. A further 11% are pursuing higher education through full-time studies, while 12% remained unemployed five months down the line.
- The South African Agency for Science and Technology Advancement (SAASTA) launched the first phase of the Johannesburg Observatory site with fully operational programmes for educators, learners and the general public.
- SAASTA supports the Youth into Science Strategy by promoting science literacy and encouraging talent to enter into SET-based careers.
- SAASTA worked in collaboration with the various national research facilities to make a significant impact on science outreach and advancement.



# Public Entities Reporting to the Minister (continued)

## National research facilities

The range of work of the national research facilities covers or has the potential to cover most of the DST's grand challenges, e.g.

- Space science and technology through the Astro/Space/Geosciences cluster (SAAO (including SALT), HMO and HartRAO);
- Global change and Bioeconomy through the Biodiversity/Conservation cluster (SAIAB, SEAON and NZG);
- Energy Security; Pharmaceuticals (iThemba Laboratory for Accelerator Based Sciences).

## Astro/Space/Geosciences cluster

### South African Astronomical Observatory (SAAO)

- The American Museum of Natural History of New York, and the Inter-University Centre for Astronomy and Astrophysics of Pune, India, both joined as SALT partners in May 2007. In return for their financial investment and the contribution of their skills and knowledge, the new partners will gain access to observing time on SALT.
- The National Astrophysics and Space Science programme (NASSP) attracts students from all over Africa. It has a very high throughput, with over half the students who complete honours going on to do PhDs. The new extended NASSP honours programme will take more students and will run in conjunction with the Karoo Array Telescope (KAT)/Square Kilometre Array (SKA).
- SAAO had a socio-economic impact on the local community by attracting tourism to the Northern Cape.
- SAAO hosted the second African Leadership Conference on Space Science and Technology for Sustainable Development in October 2007.

### Hermanus Magnetic Observatory (HMO)

- HMO became the regional warning centre for space weather for Africa under the auspices of the International Space Environment Service, and set up infrastructure and technology systems to deliver on this mandate.
- The Ihlabathi Core to Space flagship project has been launched and it is trusted that funding will be granted for implementation.
- HMO was awarded the contract to provide Magnetic Field and Electric Field Signature Measurement support and cathodic protection to the SA Navy.

## Hartebeesthoek Radio Astronomy Observatory (HartRAO)

HartRAO supported the new radio astronomy initiative to build KAT.

- It is building an all South African 15-metre diameter demonstrator antenna, XDM; and using that concept to erect and operate an array consisting of seven such antennae (KAT-7) as a test interferometer.
- It is building an 80 antennae array, MeerKAT, as a stand alone instrument which will serve South African and international astronomers for many years, up to and beyond the advent of the full SKA project.
- XDM, the prototype antenna was completed and tested in mid-2007 showing that it could be used for frequencies up to 12 GHz.
- Preparatory work for MeerKAT and the SKA included a new paper on the science of the array and analysis of VLBI data on potential Southern Hemisphere calibrator sources.
- In collaboration with the SKA project, part of the Rosebank office has been turned into the Centre for Astronomy, and was officially opened by Professor Jocelyn Bell Burnell, the discoverer of Pulsating Radio Sources.
- An ex-Telkom seven-metre diameter communications antenna was erected at HartRAO as a radio telescope to be situated near the radio-quiet SKA area in the Karoo, to participate in the Southern Hemisphere part of an All Sky Cosmic Foreground Survey at a wavelength of 6 cm.
- Planning for a major new geodesy observatory outstation at a (preferred) site near Matjiesfontein included an international scientific meeting near the site, the release of a logistical and scientific document and an agreement to import a one-metre optical telescope for both satellite and lunar laser ranging at the new site.

## Biodiversity/Conservation cluster

### South African Institute for Aquatic Biodiversity (SAIAB):

- The African Coelacanth Ecosystems Programme is in phase 2. A number of exciting projects have been approved that will fit in closely with the Agulhas Somali Currents Large Marine Ecosystem programmes that SAIAB is also hosting.
- SAIAB scientists are leading the African involvement in the international FISH Barcode of Life Project and have entered into a MoA with the Canadian Centre for DNA Barcoding.





- The SAIAB information portal provides online Geographic Information System (GIS) maps of southern African freshwater fish distributions.

### **South African Environmental Observation Network (SAEON)**

SAEON covers the observation of terrestrial, atmospheric and oceanic systems, inclusive of recent-past environmental conditions inferred from geological and palaeontological observations. These observations are prerequisites for understanding environmental change and study the impact of human settlements and recreation on nature, and the human use of goods and resources such as firewood, food, water and biodiversity.

- SAEON was a founding member chair and host of the Environmental Long-Term Observatories of Southern Africa and assisted in shaping the direction of long-term ecological monitoring research at international level. It works across departments and in collaboration with provincial and local governments.
- Six SAEON nodes facilitate observation and information systems for four terrestrial regions, the coastal zone, and offshore marine systems.

- The Ndlovu node at Phalaborwa launched the first citizen science project – a long-term bird survey for the Lowveld region, including Kruger National Park.

- The SAEON data portal connects distributed data nodes and providers through an online information management system with spatial analytical capability.

### **Nuclear sciences**

#### **iThemba LABS**

- 40 MScs have graduated from the highly successful MANUS/MATSCI project, with 20 from UKZN, of which three enrolled for a full-time PhD programme. (UZ, since its inception, has produced fewer than 10 MScs in Physics.)
- There have been positive developments on the collaboration with Necsa/NTP on radioisotope and radiopharmaceutical production, exploring collaboration on the establishment of a radio-pharmacy laboratory.

The collective publication record of the national research facilities for 2007/08 is as follows:

**Facilitating knowledge production – Performance measures/outputs: 2007/08**

	Target	Performance
Number of research reports	240	109
Number of technical reports (related to research)	61	77
Number of journal articles (refereed by ISI and others)	147	264
Number of full-length published conference proceedings	187	121
Number of chapters in books	3	8
Number of books	8	4
Number of patents filed	–	–
Number of patents awarded	1	–
Number of publications with external authors	126	248
Artefacts and products	–	2



# Public Entities Reporting to the Minister (continued)



## SOUTH AFRICAN NATIONAL ENERGY RESEARCH INSTITUTE (SANERI)

SANERI operations are classified under five main research and human capital development programmes, namely:

- the SANERI Bursary Programme;
- the SANERI Energy Research Programme;
- the Hub and Spokes Programme;
- the Chairs of Energy Research Programme; and
- the Green Transport Demonstration Programme.

Below is a summary of highlights for the 2007/08 financial year:

- In 2007/08, SANERI awarded 19 master's bursaries and 14 PhD bursaries. This brings to 54 the number of postgraduate students under the SANERI bursary scheme up to the end of the financial year.
- The hub of renewable and sustainable energy at Stellenbosch University awarded 49 new postgraduate bursaries for renewable energy studies, most of which will be held in other universities. This is in addition to the 25 students enrolled at Stellenbosch in 2006/07.
- A new hub for energy efficiency and demand-side management was established at the University of Pretoria following a competitive bid by seven universities. The University of Pretoria received seed funding of R1 million and the new hub will be fully operational from January 2009.
- In December 2007, SANERI and the DST signed an agreement for hosting the demonstration programme for alternative fuels for transport. Negotiations have been successfully concluded with BMW to participate in the 2010 demonstration project. A key enabler for the demonstration of alternative fuels is the availability of the infrastructure for refuelling. SANERI has secured partners for establishing refuelling stations for liquefied petroleum gas and biodiesel fuels.

- Under the Energy Research Programme, SANERI received a total of 123 research proposals on the 2007/08 call for proposals. After a two-stage screening process, SANERI approved 29 projects for funding, but due to cash flow limitations only 15 projects, with a total funding of about R10m, were commissioned in 2007/08. The other 14 projects will be commissioned in the 2008/09 financial year.

### Research highlights

Research in its nature is a long-term investment, which takes a long time to produce technical results. The following achievements, though not technical, are worth noting:

- **Geological carbon storage atlas for South Africa**  
SANERI successfully initiated and coordinated a R2 million funding agreement for the establishment of a carbon geological storage atlas for South Africa. PetroSA, Eskom, Sasol and AngloCoal have committed R1,8 million to this project and the balance will be contributed by SANERI. This project will begin in the 2008/09 financial year and will show the potential for underground storage of sequestered carbon in the country. This is a significant step in supporting the development of clean coal technologies by these key industrial players.
- **Procurement of a high pressure spray injector for fuel testing**  
This R4 million equipment is being installed at the University of the Witwatersrand with open access for all local researchers. It will enable the study of fuel spray patterns in internal combustion engines. This is important in understanding the combustion characteristics of new fuels e.g. biofuels.
- **The Ocean Energy Network of South Africa**  
SANERI, together with Eskom, was a key role player in the formation of the Ocean Energy Network, the main objective of which is to stimulate research and investment in ocean energy technologies by creating awareness of the viability of ocean energy use in South Africa.
- **Implementation of international agreements**  
SANERI has signed a number of important MoUs with other energy research organisations, including the Brandenburg University of Germany. In this regard, Eskom is in discussion with Brandenburg on the training and development of Eskom's technical staff.





## **AFRICA INSTITUTE OF SOUTH AFRICA (AISA)**

### **Overview**

The Africa Institute of South Africa (AISA) is a statutory body, which focuses primarily on political, socio-economic, international and development issues in contemporary Africa. It was first established in 1960 as a non-profit organisation, until the Africa Institute of South Africa Act, 2001, accorded it the status of a statutory body, making it a member of the family of science councils. In addition to conducting research in Africa and disseminating this knowledge, AISA also supports policy developments, offers training on research methodology, develops briefs on regional and continental issues, establishes partnerships with sister organisations to further knowledge about Africa, and participates as an observer in African elections to promote peace, development and prosperity on the continent.

Below is a summary of performance highlights for the 2007/08 financial year:

In the last two quarters of 2007/08, AISA managed to fill most of its management vacancies. This created conditions for increased commitment to its mandate, improved stability and confidence within the organisation, stabilising AISA and enhancing its performance. These positive changes can largely be attributed to a commitment of addressing gaps in operations, namely, increasing transparency, developing of human capital, realigning processes and systems, improving monitoring and evaluation and decreasing vulnerability to risks.

### **Research, publications, library and documentation services alignment**

To ensure that research conducted by AISA conforms to the DST's Ten-year Innovation Strategy and topical developments in Africa, a research division was restructured to address the thematic subjects of sustainable development, governance and democracy, peace and security, policy, and science and technology, without losing the focus of its area studies expertise. This will enable AISA to maintain its credibility as an advisory body on African affairs and promote greater awareness of current issues on the continent. Given AISA's limited resources, strategic

relationships with academic, scientific institutions, government departments and non-profit organisations are pursued to mitigate the lack of personnel, skills and other resources. Internally, the operations and planning of core AISA divisions are informed by the work of the Research and Publications Committee, Editorial Committee and Editorial Board. This also promotes information sharing the identification of areas of potential research, and a greater awareness of the research conducted by AISA. In addition, the joint collaboration between AISA and specific universities on the AISA Campus Series enables AISA to address larger audiences at historically disadvantaged institutions. Previously AISA conducted training only for a limited number of students at its premises or facilities in Pretoria, but now a task team has been formed to visit less affluent universities. The aims of the AISA Campus Series include:

- conducting lectures on research methodology;
- promoting networking and encouraging students and academics to use AISA as a conduit through which their research can be published;
- engaging academics in these institutions in shaping and presenting the programme.

Simultaneously, it also provides AISA with the opportunity to market its library facilities (some of the best on the continent), AISA's internship programmes, and AISA's young graduates and scholars and fellowship programmes.

### **Turnaround strategy**

During 2007/08 AISA engaged with a number of government departments, including the Department Education, Justice and Constitutional Development, Foreign Affairs, Land Affairs, as well as social development agencies across the globe with an interest in Africa. The objectives were to isolate areas of commonality, decrease research costs, build networks and, if possible, boost AISA's already impressive African affairs holdings. For example, a Memorandum of Understanding (MoU) was signed with the North-South Centre of the Council of Europe to work jointly on research covering Africa-Europe issues. This MoU emanated from the summit declaration between the two continents in December 2007. AISA also participated in a number of seminars, television and radio interviews to reflect findings on the Zimbabwean situation, the Kenyan elections, the Sudan/Darfur crisis and the implementation of the Sudan Comprehensive Peace Agreement. At an internal level, a scan of the environment reflected a need for organisational redesign to realign functions, and to streamline processes, systems and operations.



# Public Entities Reporting to the Minister (continued)



## TSHUMINASO TRUST

Technological innovation and related skills development have been identified as being of vital importance to the competitiveness of small businesses in South Africa. Tshumisano Trust runs the Technology Stations Programme with funding from the DST and the Gesellschaft für Technische Zusammenarbeit, the German agency for worldwide technical cooperation. Technology stations at universities of technology provide technology solutions, services and training to existing small businesses. Details of some of these for the year under review are given below.

### Automated crisp fryer

An automated crisp fryer was designed to assist a small business to become more competitive through better quality control. The prototype consisted of a slicer, an oil bath with a caterpillar conveyor for removing the fried crisps, and an oven with a steel conveyor belt for baking the crisps. The prototype was controlled electrically with variable speed drivers for the motors and thermostats on the oil bath and oven. The client is confident that the prototype will benefit the business.

### Double-ended seamer machine

A double-ended seamer machine was designed and developed for forming seams on vehicle silencers. The machine will make it possible to manufacture and sell high-end forming machines that have previously been imported at very high cost. This is the first time such technology has been used for this type of application.

### Atlantis textile cluster (major project)

Atlantis is about 70 km from Cape Town, and has one of the highest unemployment rates in the country. The project brought together five textile companies in the area to focus on the training and development of the next generation of technical and management staff at these companies. The participants are 14 students doing their practical training, three of whom are female. The training is conducted in Atlantis by the Cape Peninsula University of Technology (CPUT) lecturers in one-week blocks every six weeks. The programme is expected to take two

years, the first year of which has improved participants' performance to such an extent that the Cape Town Fashion Council has agreed to contribute to the project funding (taking into account that the companies themselves contribute at least 50% of the overall cost of the project).

### Cutting process improved

A well-known manufacturer of bedding and curtaining in Atlantis was encountering problems with the cutting process. The materials produced are unique, and therefore quite expensive. A system was put in place with training provided to improve the smooth flow of materials through the factory.

### Design technology products

Tshumisano assisted a small business to develop a catalogue of CAD-generated drawings for an exhibition in the United States of America. The drawings were completed by a DST-funded intern, and the company was able to use the catalogue as a marketing tool to secure orders.

### Solving productivity problems

A small business that does subcontracting work was experiencing productivity problems. A DST-funded intern conducted an extensive analysis of the business, monitoring performance on a daily basis until the exact cause of the low productivity had been pinpointed. With improved planning the business was able to reduce the overtime worked, and the intern's report is to be used as a case study for students doing the CPUT academic programme.

### Producing a sellable range

The Technology Station in Clothing and Textiles (TSCT) and the Cape Town Fashion Council developed a project to assist emerging fashion designers produce products that meet retail quality and cost standards. The project was subsidised by the Fashion Council, which is a provincial government initiative to support designers.

### Pet accessories

A small business that makes dog collars and accessories needed to develop standards in order to determine how long it took to produce the various products. A DST intern spent a few weeks at the company conducting the time studies necessary for the development of standards.



### **Police choir outfits and flight suits**

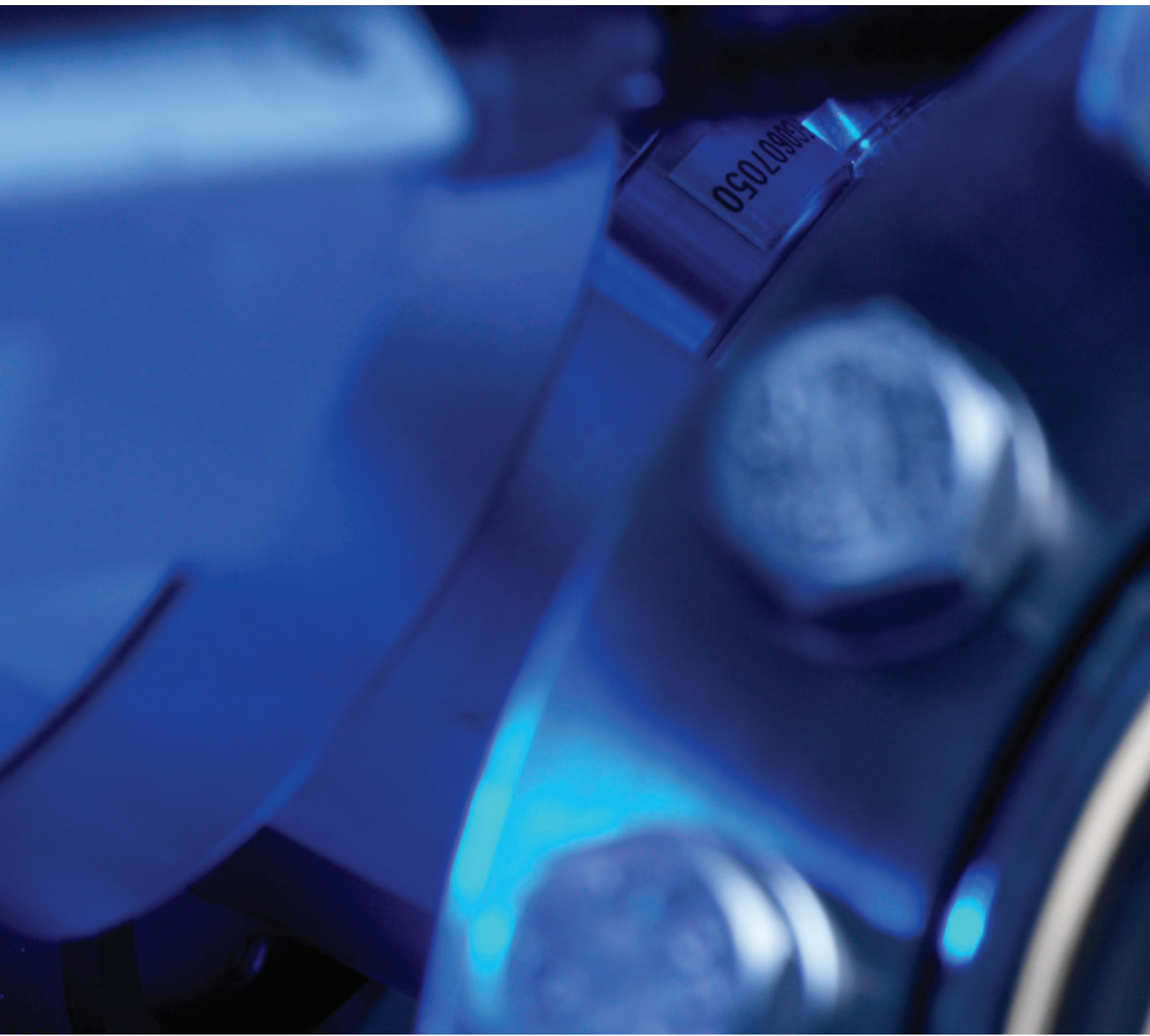
The TSCT secured a tender to design and manufacture outfits for the Western Cape Police Choir to wear at a national competition. This gave the interns valuable experience in design, product development material procurement, subcontracting and customer liaison, and exposed them to market opportunities. A similar project was done for the CPUT Mechanical Engineering Department, which wanted flight suits that would allow researchers to keep all their accessories on them in the field. This project was carried out by interns, who had to analyse performance requirements and then design and manufacture the suits.

### **Paraffin stove project**

The Product Development Technology Station gained wide recognition for its Safe Paraffin Stove development. The initial funding of R113 000 that was received from Tshumisano has leveraged a total of R1,16 million from a number of sources, including the Fuchs Foundation and the BP Foundation.

*The Atlantis textile cluster project brought together five textile companies in the area to focus on the training and development of the next generation of technical and management staff.*







# Annual Financial Statements

for the year ended 31 March 2008

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# Report of the Accounting Officer

for the year ended 31 March 2008

## Report of the Accounting Officer to the Executive Authority and Parliament of the Republic of South Africa

### I. General review of the state of financial affairs

#### 1.1 Policy decisions and significant events

The strategic management model for the science and technology system gave the Department the role of developing emerging and rapidly changing areas of science and technology as well as coordinating and providing support to sector specific science and technology activities led by other government departments. The period under review was marked by the new inventions such as the development of the Ten-year Innovation Plan and the initiation of the processes of establishing the Technology Innovation Agency and the national space agency.

The Astronomy Geographic Advantage Bill and the Human Sciences Research Council Bill were taken through the parliamentary legislation process and they are currently considered. The 2007/08 financial year has also seen the establishment of two national nanotechnology innovation centres that will build researchers in nanotechnology and fast-track South Africa's ability to develop technologies and commercialise research results emanating from this cross-cutting area. In addition, the Cape Town component of International Centre of Genetic Engineering and Biotechnology, that aims to expand the biotechnology platform and develop a bio-economy base, was launched.

#### 1.2 Programmes

The key operational activities of the Department continue to be carried out by the five main Programmes. The renaming of two Programmes, namely, Research, Development and Innovation (previously Science and Technology Expert Services); and Socio-Economic Partnerships (previously Government Sector Programmes and Coordination) has not changed their strategic focus, but managed to streamline and enhance their activities. Below is the list of programmes:

- Programme 1: Corporate Services and Governance
- Programme 2: Research, Development and Innovation
- Programme 3: International Cooperation and Resources
- Programme 4: Human Capital and Knowledge Systems
- Programme 5: Socio-Economic Partnerships

#### *Spending trends*

The total expenditure of the Department for the period under review was R3,127 billion or 99,5% of the total budget – with transfer payments accounting to R2,908 billion or 92,5% of the total spending, leaving total unspent funds of R16,946 million. The breakdown of spending is detailed on the tables on the next page.



### Budget reconciliation

	2007/08 R'000	2006/07 R'000
Amount voted	3 144 229	2 617 093
Actual expenditure	3 127 280	2 612 999
<b>Surplus</b>	<b>16 949</b>	4 094

### Economic classification

	2007/08 R'000	2006/07 R'000
Current expenditure	211 000	174 004
Transfer payments	2 908 359	2 293 388
Payments for capital assets	7 921	145 607
<b>Total</b>	<b>3 127 280</b>	2 612 999

The main contributor to the unspent funds is the South African Aids Vaccine Initiative (SAAVI) with a budget of R15 million. This amount comprises R7,7 million that was transferred to the Medical Research Council (MRC) and R7,3 million will be returned to National Treasury on the grounds of unsatisfactory deliverables.

### Virement

There were savings realised on compensation of employees due to posts that were vacated during the course of the year (this is inevitable because employees turn to seek greener pastures elsewhere); and the resultant savings from goods and services. Such funds were moved to finance once-off priority projects, which could not be funded due to budget constraints. Before affecting the virement, we ensured that the Department complies with the prescripts and the National Treasury approval was obtained. There was also a virement request that involved minimal amounts for which the Accounting Officer had delegated powers to authorise, which was approved by the Accounting Officer. The breakdown of virements are detailed according to Programmes and economic classification as follows:

#### *Virement between programmes*

R' thousands	From	To
Programme 1: Corporate Services and Governance	614	–
Programme 2: Research, Development and Innovation	3 300	–
Programme 3: International Cooperation and Resources	4 037	–
Programme 4: Human Capital and Knowledge Systems	–	23 521
Programme 5: Socio-Economic Partnerships	15 570	–
<b>Total</b>	<b>23 521</b>	<b>23 521</b>

# Report of the Accounting Officer (continued)

for the year ended 31 March 2008

*Virement between economic classification*

R'000	From	To
Current	12 565	–
Transfers	–	12 752
Payment for capital assets	187	–
<b>Total</b>	<b>12 752</b>	<b>12 752</b>

*Any other material matter*

No cases of unauthorised, fruitless or wasteful expenditure were reported for the period under review.

## 2. Services rendered by the Department

### 2.1. Core business of the Department

The Department's core business is to develop research and development policies in line with the National Research and Development Strategy and monitor the implementation thereof. As such, the Department does not provide any services to any institution or persons on a recoverable basis.

### 2.2. Inventories

The costing method used for inventory valuation by the Department is the weighted cost method. Inventories purchased during the financial year are disclosed at cost in the notes. For replenishing purposes, the Department through its supply chain management (SCM), uses the logistical information system (LOGIS), which utilises the analytical technique for SCM (provisioning). This system assists the Department to maintain and manage inventory at the lowest levels. Furthermore, our inventory is not used for reselling and as such, low levels of inventory are ideal for our operations. The low levels of inventory are beneficial to the Department as cash is rarely locked up in inventory. Incidences of obsolescence are therefore rare, as inventory is not held for a long period of time. Losses due to theft are not material either.

## 3. Capacity constraints

The governance subprogramme experienced instability towards the latter part of the financial year and has seen the departure of most senior officials; where some units were almost without permanent staff. However, the Human Resource unit brought the situation under control by expediting the recruitment process.

Due to the superior training that the Department provides to its employees, it was faced with a challenge of losing its officials at middle management levels (level 9 and 11) to other departments for better paying positions at the same levels (levels 10 and 12). To curb this turnover, the DST upgraded the salary scales of all middle management positions to match those of other departments. This was adopted as a retention strategy for the skills in the affected positions.

In addition, other initiatives to ensure highly productive and contented personnel corps were identified. For example a climate survey, in addition to other human resource surveys, was used upon to establish disconcerting issues in the Department, and programmes to address such issues were identified and implemented.

## 4. Utilisation of donor funds

The Department did not receive donor funding for the period under review.

## 5. Public entities

The public entities funded from the Department's vote during the 2007/08 financial year are as follows:

### ***Human Sciences Research Council (R155,9 million)***

The Human Sciences Research Council (HSRC) was established in terms of the Human Sciences Research Act, 1968. It supports development in South Africa and Africa by coordinating and conducting applied social science research projects. Its research structures and activities are aligned to the South African national development priorities, notably: poverty reduction through economic development, skills enhancement, job creation, the elimination of discrimination and inequalities, and effective service delivery. The HSRC is poised to play a key role in the implementation of the recently approved Ten-year Innovation Plan – particularly in relation to the challenge of human and social dynamics.

### ***National Research Foundation (R620,5 million)***

The National Research Foundation (NRF) was established in terms of the National Research Foundation Act, 1998. The objective of the foundation is to support and promote research through funding, human resource development, and the provision of the necessary research facilities for the creation of knowledge, innovation and development in all fields of science and technology – including indigenous knowledge. In addition to the agency function the NRF is performing for the DST, it is acting as a service provider for the Department of Environmental Affairs and Tourism for marine research, the Department of Trade and Industry for the Technology and Human Resource for Industry Programme, and the Department of Labour for the Scarce Skills Development Fund.

### ***Africa Institute of South Africa (R26,5 million )***

The Africa Institute of South Africa (AISA) is a statutory body established in terms of the Africa Institute of South Africa Act, 2001. The key role of AISA is to conduct research and support policy development; embark on training programmes; and participate in and maintain networks for peace, development and prosperity in Africa. Its primary focus is on political, socio-economic, international and development issues in contemporary Africa. It contributes to the goals of the national system of innovation through research programmes, which impact on knowledge production and human resource development in African studies – a scarce resource in South Africa.

### ***Council for Science and Industrial Research (R517,3 million)***

The Council for Science and Industrial Research (CSIR) is governed by the Scientific Research Council Act, 1988. The objectives of the CSIR are to foster industrial and scientific developments in the national interest, through directed and particularly multidisciplinary research and technological innovation, either by itself or in cooperation with principals from the private or public sectors.

### ***Tshumisano Trust (R36 million)***

Tshumisano Trust is a joint venture, funded by the Department of Science and Technology, with participation by the Department of Labour, universities and the Gesellschaft für Technische Zusammenarbeit (GTZ). The core business of Tshumisano Trust is to leverage skills and product development support within universities of technology so that technology stations can provide support to small- and medium-sized businesses.

### ***Academy of Science of South Africa (R3,4 million )***

The Academy of Science of South Africa (ASSAf) was formally established in 2001 in terms of the Academy of Science of South Africa Act, 2001. ASSAf's objectives are to promote common ground for scientific thinking across all disciplines; to encourage and promote innovative and independent scientific thinking; to promote the optimum development of the intellectual capacity of all people; and to link South Africa with scientific communities at the highest levels, and the African continent in particular. In addition, it investigates matters of public interest concerning science and manages the *South African Journal of Science*.

# Report of the Accounting Officer (continued)

for the year ended 31 March 2008

## 6. Other organisations to which transfer payments are made

Transfer	Amount 2007/08	Amount 2006/07
<b>Programme 1: Corporate Services and Governance</b>		
Technology Top 100	2 417	2 060
Institution and Programme Support	996	2 122
<b>Total</b>	<b>3 413</b>	<b>4 182</b>
<b>Programme 2: Research, Development and Innovation</b>		
Innovation Fund	141 818	131 260
South African Aids Vaccine Initiative	8 067	15 000
Space Science	37 591	43 548
Square Kilometre Array	105 511	19 435
International Centre for Genetic Engineering and Biotechnology	10 000	–
Hydrogen Strategy	30 576	10 000
Health Innovation	9 000	9 334
Innovation Projects	4 600	3 190
Biotechnology Strategy	161 722	148 080
<b>Total</b>	<b>508 885</b>	<b>379 847</b>
<b>Programme 3: International Cooperation and Resources</b>		
Global Science	32 461	56 661
<b>Total</b>	<b>32 461</b>	<b>56 661</b>
<b>Programme 4: Human Capital and Knowledge Systems</b>		
Human Capital Development	195 910	56 000
Frontier Science and Technology	103 500	52 152
Indigenous Knowledge Systems	4 200	3 490
Science and Youth	28 009	20 236
Science Themes	43 327	52 105
Research and Development Infrastructure	50 000	50 000
Academies	3 400	3 000
Learnships	3 112	4 444
South African National Research Network	162 000	22 000
<b>Total</b>	<b>593 458</b>	<b>232 659</b>

## 6. Other organisations to which transfer payments are made (continued)

Transfer	Amount 2007/08	Amount 2006/07
<b>Programme 5: Socio-Economic Partnerships</b>		
Technology planning and diffusion	38 180	79 433
Advanced Manufacturing Technology Strategy	57 706	51 800
Public Assets	43 000	43 000
Information communication technology	54 210	27 200
Natural resources	–	29 666
Technology for Poverty Alleviation	39 925	55 7000
Technology for Sustainable Livelihoods	53 040	53 000
Research Information Management System	16 000	13 000
Resource-based industries	27 565	29 666
Biofuels	4 500	–
South African National Energy Research Institute	42 000	40 000
	<b>376 126</b>	<b>422 465</b>

## 7. Corporate governance arrangements

### 7.1 Resolution of the past financial year – Matters of emphasis

The matter of emphasis for the past financial year related to the inclusion of the cost price of the Department's building in its assets register as opposed to the transaction reflecting in the records of the Department of Public Works (DPW), the custodian of all government property. The Department took the aforesaid position because at the time when the annual financial statements were prepared, the title to the property had not been transferred to the DPW. The final sign-off of the contract to consummate the transfer has now been finalised, but the demarcation of municipal services, which we are working with the DPW to conclude the transfer; has still to take place.

### 7.2 Matters of governance

Asset policies and procedures are in place and we also intend to improve these to ensure continuity as regards the management of assets. Information systems user-profile management has been discussed with the office of the Auditor-General. The information security policy has also been approved.

#### *Management/fraud prevention policy*

We have not slackened in our endeavours to manage and prevent fraud. Risk assessment continues to take centre stage in the Department; the Director-General ensures that risk is a standing item on the Exco agenda. An official who is independent from the internal audit unit has been hired to assist the Exco in the identification and management of risks. In addition to the above, a risk committee has been appointed that will also oversee and guarantee the effective implementation and management of risks within the DST.

In place are fraud prevention and whistle-blowing policies. Like all government departments, the Department has transferred its whistle-blowing activities/fraud hotline to the Public Service Commission.

#### *Materiality and significance framework*

Although no legislation requires that a department should have a materiality and significance framework in place, the Department has made it a point to have the framework in place. The reason for the adoption of this practice is based on the principles of "good business practice" and as such it also serves the auditors very well.

# Report of the Accounting Officer (continued)

for the year ended 31 March 2008

## *Management process to minimise conflict of interest*

As with the management/fraud prevention policy above, the Department is continuously ensured that the following management process are implemented to minimise conflict of interests:

- (i) All senior managers are required to complete a disclosure of information form on appointment;
- (ii) Furthermore, they are required on an annual basis to declare their financial interest in terms of partnerships, directorships, etc.
- (iii) Since the beginning of 2006/07, all DST staff have been expected to declare their financial interest in terms of partnerships, directorships, etc, on an annual basis.
- (iv) All members of the Departmental Adjudication Tender Committee and the evaluation team are required to complete a declaration of interest form prior to the adjudication and evaluation of the tender/bid.
- (v) These procedures have been consistently applied.

## **Audit Committee**

In order to comply with the Public Finance Management Act (PFMA) and Treasury Regulations, the Department has an active Audit Committee that meets at least three times a year. Dr JM Stewart, who has been the chairperson for the past three years, was replaced by Mr V Magan when his term of office expired. All the members have a financial background. Our internal audit unit has direct access to the Accounting Officer and the Audit Committee. The members of the Audit Committee are Dr PM Mjwara (Director-General of the Department of Science and Technology), Mr V Magan (Chairperson), Mr L Ledwaba and Mr L Kaplan.

## **8. Asset management**

In addition to using Asset-Pro, procured through contracting Tat-ICHAIN, the Department has appointed a resource whose sole responsibility is to manage the assets as well as to transfer skill to the Asset Team. This is progressing well and we believe that by end of September we shall be in a position to evaluate the effectiveness of the skills transfer.

## **9. New/Proposed activities**

The Department established a new component, Strategy and Planning, to strengthen the management of strategic issues of the department in line with the financial and budget reforms. The risk management and fraud prevention functions were also separated from the internal audit functions in order to improve the management thereof. These changes resulted in the reprioritisation of the operations budget. The changes yielded positive results in the operations of the Department and bridged the compliance gap that was identified prior to the new developments.

## **10. Events after reporting date**

The signing off of the DST building to DPW took place towards the end of the financial year. However, the actual transfer of the building from the CSIR to DPW will only be effective after the separation of municipal services (water and electricity) has been finalised.

## **11. Performance information**

The Department has a planning cycle framework, which ensures that strategic planning is systematised and synchronised with budgeting, reporting, monitoring and evaluation of deliverables. The framework provides for performance reporting to occur quarterly and annually. The quarterly reports are compiled and presented to the Executive Committee for approval and then submitted to the Executive Authority (Minister of DST). The annual performance review is carried out and approved internally in terms of the Treasury Regulations, and subsequently sent to the Auditor-General.

## **12. SCOPA resolutions**

No issues were raised by SCOPA regarding the Department.

## **13. Prior modifications to audit reports**

The matter of emphasis on the previous audit was on deficiencies in the management of assets. The Department has appointed a dedicated person to effect all the recommendations by the Audit Committee. The Department will ensure skills transfer to its officials and the development and the implementation of the asset management plan by the end of the process.

## **14. Exemptions and deviations received from the National Treasury**

No exemptions and deviations were received from the National Treasury.

## **15. Other**

The internal audit unit has continued to do performance audits, and for the year under review the following projects were audited: The Makhatini Aquaculture and the Kwanobuhle Essential Oils. The Makhatini project was managed by the ARC and, after the audit, Stellenbosch University will take over to streamline the processes. The Kwanobuhle project is currently managed by the CSIR.

## **16. Approval**

The annual financial statements set out on pages 75 to 107 have been approved by the Accounting Officer:



Dr PM Mjwara  
*Director-General*

30 May 2008

# Report of the Auditor-General to Parliament on the Financial Statements

for the year ended 31 March 2008

Report of the Auditor-General to Parliament on the financial statements and performance information of Vote 31: Department of Science and Technology for the year ended 31 March 2008

## Report on the financial statements

### Introduction

I have audited the accompanying financial statements of the Department of Science and Technology (DST), which comprise the appropriation statement, statement of financial position as at 31 March 2008, statement of financial performance, statement of changes in net assets and cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory notes, as set out on pages 75 to 107.

### Responsibility of the accounting officer for the financial statements

The accounting officer is responsible for the preparation and fair presentation of these financial statements in accordance with the modified cash basis of accounting determined by National Treasury, as set out in the accounting policy note 1.1 and in a manner required by Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA). This responsibility includes:

- designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error;
- selecting and applying appropriate accounting policies; and
- making accounting estimates that are reasonable in the circumstances.

### Responsibility of the Auditor-General

As required by section 188 of the Constitution of the Republic of South Africa, 1996, read with section 4 of the Public Audit Act (PAA), 2004 (Act No. 25 of 2004), my responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with the International Standards on Auditing and *General Notice 616 of 2008*, issued in *Government Gazette No. 31057 of 15 May 2008*. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance on whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

An audit also includes evaluating the:

- appropriateness of accounting policies used;
- reasonableness of accounting estimates made by management; and
- overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.



### **Basis of accounting**

The department's policy is to prepare financial statements on the modified cash basis of accounting determined by the National Treasury, as set out in accounting policy note 1.1.

### **Opinion**

In my opinion the financial statements present fairly, in all material respects, the financial position of the Department of Science and Technology as at 31 March 2008 and its financial performance and cash flows for the year then ended, in accordance with the modified cash basis of accounting determined by the National Treasury, as set out in accounting policy note 1.1 and in the manner required by the PFMA.

### **Other matters**

Without qualifying my audit opinion, I draw attention to the following matters that relate to my responsibilities in the audit of the financial statements:

### **Matters of governance**

The PFMA tasks the accounting officer with a number of responsibilities concerning financial and risk management and internal control. Fundamental to achieving this is the implementation of certain key governance responsibilities, which I have assessed as follows:

Matter of governance	Yes	No
<b>Audit Committee</b>		
• The department had an audit committee in operation throughout the financial year.	✓	
• The Audit Committee operates in accordance with approved, written terms of reference.	✓	
• The Audit Committee substantially fulfilled its responsibilities for the year, as set out in section 77 of the PFMA and Treasury Regulation 3.1.10.	✓	
<b>Internal audit</b>		
• The department had an internal audit function in operation throughout the financial year.	✓	
• The internal audit function operates in terms of an approved internal audit plan.	✓	
• The internal audit function substantially fulfilled its responsibilities for the year, as set out in Treasury Regulation 3.2.	✓	
<b>Other matters of governance</b>		
• The annual financial statements were submitted for audit as per the legislated deadlines section 40 of the PFMA for departments.	✓	
• The financial statements submitted for audit were not subject to any material amendments resulting from the audit.	✓	
• No significant difficulties were experienced during the audit concerning delays or the unavailability of expected information and/or the unavailability of senior management.	✓	
• The prior year's external audit recommendations have been substantially implemented.	✓	

# Report of the Auditor-General to Parliament on the Financial Statements (continued)

for the year ended 31 March 2008

## **Other reporting responsibilities**

### ***Report on performance information***

I have reviewed the performance information as set out on pages 16 to 37.

### **Responsibility of the accounting officer for the performance information**

The accounting officer has additional responsibilities as required by section 40(3)(a) of the PFMA to ensure that the annual report and audited financial statements fairly present the performance against predetermined objectives of the department.

### **Responsibility of the Auditor-General**

I conducted my engagement in accordance with section 13 of the PAA read with *General Notice 616 of 2008*, issued in *Government Gazette No. 31057 of 15 May 2008*.

In terms of the foregoing my engagement included performing procedures of an audit nature to obtain sufficient appropriate evidence about the performance information and related systems, processes and procedures. The procedures selected depend on the auditor's judgement.

### **Audit findings (performance information)**

I believe that the evidence I have obtained is sufficient and appropriate to report that no significant findings have been identified as a result of my review.

## **Appreciation**

The assistance rendered by the staff of the Department of Science and Technology during the audit is sincerely appreciated.

*Auditor-General*

Pretoria  
31 July 2008



AUDITOR-GENERAL

# Audit Committee's Report

for the year ended 31 March 2008

## Overview

We are pleased to present our report for the financial year ended 31 March 2008.

## Audit Committee members and attendance

The Audit Committee consists of the members listed hereunder and meets as often as it deems necessary as per the approved terms of reference.

During the current year five meetings were held (four ordinary and one extraordinary).

Name of member	Position	Date appointed	Date resigned	Number of meetings attended
V Magan	Chairperson	Sept 2006	n/a	5 out of 5
P Mjwara	Member – ex officio, accounting officer of DST	April 2006	n/a	3 out of 5
L Kaplan	Member	Sept 2006	n/a	5 out of 5
L Ledwaba	Member	Sept 2006	n/a	2 out of 5
JM Stewart	Chairperson, resigned	Sept 2003	13 Aug 2007	3 out of 5

## Audit Committee's responsibility

The Audit Committee reports that it has complied with its responsibilities arising from section 38(1)(a) of the Public Finance Management Act and Treasury Regulation 3.1.13. The Audit Committee also reports that it has adopted appropriate formal terms of reference as its audit committee charter has regulated its affairs in compliance with the charter and has discharged the responsibilities as contained therein.

## The effectiveness of internal control

During the year under review, the committee has monitored the efforts that were made to rectify internal control deficiencies previously identified, in particular the weaknesses identified with the fixed-asset register, where considerable effort has been made towards ensuring the completeness of the fixed-asset register.

The committee is satisfied that the internal audit function, which involves the assistance of an outsourced service provider, operates efficiently and effectively, and that the systems of internal control over the major financial risks are effective.

## Risk management

An updated risk assessment was formally completed during the past year and internal audit used this data to prepare a rolling three-year strategic audit plan as well as the annual operating audit plan. The committee has monitored the management of significant risks and is satisfied on the overall effectiveness of risk management. The department maintains an approved risk management strategy and a fraud prevention plan is in place and is being implemented.

## Submission of in-year management and monthly/quarterly reports in terms of the

Public Finance Management Act and the Division of Revenue Act

The committee has considered quarterly reports prepared and issued by the accounting officer and the department during the year under review and considers them to be of acceptable quality and has substantially complied with the requirements of the PFMA and the Division of Revenue Act.

# Audit Committee's Report (continued)

for the year ended 31 March 2008

## Evaluation of financial statements

The Audit Committee has:

- reviewed the audited annual financial statements to be included in the annual report;
- reviewed the Auditor-General's management letter and management response; and
- reviewed the report of the Auditor-General.

The Audit Committee concurs and accepts the conclusions of the Auditor-General on the annual financial statements and is of the opinion that the audited annual financial statements be accepted and read together with the report of the Auditor-General.

## Appreciation

The committee expresses its sincere appreciation to the accounting officer; senior management team and the Auditor-General.



**Mr Viren Magan**

Chairperson of the Audit Committee

31 July 2008

# Appropriation Statements

for the year ended 31 March 2008

## Appropriation per programme

	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>1. Corporate Services and Governance</b>	115 062	–	(614)	114 448	113 390	1 058	99,1	219 355	217 244
Current payment	109 174	(5 078)	(614)	103 482	103 185	297	99,7	72 548	70 538
Transfers and subsidies	4 188	–	–	4 188	3 429	759	81,9	2 619	2 619
Payment for capital assets	1 700	5 078	–	6 778	6 776	2	99,9	144 188	144 087
<b>2. Research, Development and Innovation</b>	541 301	–	(3 300)	538 001	531 444	6 557	98,8	404 874	402 503
Current payment	28 635	(240)	(6 050)	22 345	21 682	663	97,0	20 185	19 927
Transfers and subsidies	512 443	–	2 750	515 193	509 305	5 888	98,9	384 103	382 038
Payment for capital assets	223	240	–	463	457	6	98,7	586	538
<b>3. International Cooperation and Resources</b>	103 776	–	(4 037)	99 739	99 433	306	99,7	124 446	124 304
Current payment	44 606	(123)	(4 037)	40 446	40 134	312	99,2	42 136	42 005
Transfers and subsidies	59 004	–	–	59 004	59 014	(10)	100,0	81 802	81 791
Payment for capital assets	166	123	–	289	285	4	98,6	508	508
<b>4. Human Capital and Knowledge Systems</b>	1 252 079	–	23 521	1 275 600	1 272 583	3 017	99,8	876 932	877 480
Current payment	20 154	–	1 543	21 697	21 352	345	98,4	19 479	19 505
Transfers and subsidies	1 231 715	–	22 123	1 253 838	1 251 168	2 670	99,8	857 370	857 900
Payment for capital assets	210	–	(145)	65	63	2	96,9	83	75
<b>5. Socio-Economic Partnerships</b>	1 132 011	–	(15 570)	1 116 441	1 110 430	6 011	99,5	991 486	991 468
Current payment	44 365	(16 000)	(3 407)	24 958	24 647	311	98,8	22 008	22 029
Transfers and subsidies	1 087 261	16 000	(12 121)	1 091 140	1 085 443	5 697	99,5	969 044	969 040
Payment for capital assets	385	–	(42)	343	340	3	99,1	434	399
<b>Subtotal</b>	3 144 229	–	–	3 144 229	3 127 280	16 949	99,5	2 617 093	2 612 999
<b>Statutory appropriation</b>									
Current payment									
Transfers and subsidies									
Payment for capital assets									
<b>Total</b>	3 144 229	–	–	3 144 229	3 127 280	16 949	99,5	2 617 093	2 612 999
<b>Reconciliation with statement of financial performance</b>									
<i>Add:</i>									
Prior year unauthorised expenditure approved with funding				–				–	
Departmental revenue				219				1 029	
Direct exchequer receipts									
CARA Fund assistance									
Local and foreign aid assistance received									
<b>Actual amounts per statements of financial performance (total revenue)</b>				3 144 448				2 618 122	
<i>Add:</i>									
Local and foreign aid assistance					–				–
Direct exchequer payments					–				–
CARA Fund assistance					–				–
Prior year unauthorised expenditure approved					–				–
Prior year fruitless and wasteful expenditure approved					–				–
<b>Actual amounts per statements of financial performance (total expenditure)</b>					3 127 280				2 612 999

# Appropriation Statements (continued)

for the year ended 31 March 2008

## Appropriation per economic classification

	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>Current payments</b>	246 934	(21 441)	(12 565)	212 928	211 000	1 928	99,1	176 356	174 004
Compensation of employees	114 861	(3 403)	(7 347)	104 111	104 075	36	99,9	84 277	83 743
Goods and services	132 059	(18 106)	(5 218)	108 735	106 843	1 892	98,3	91 991	90 173
Interest and rent on land	–	–	–	–	–	–	–	–	–
Financial transactions in assets and liabilities	14	68	–	82	82	–	100,0	88	88
<b>Transfers and subsidies</b>	2 894 611	16 000	12 752	2 923 363	2 908 359	15 004	99,5	2 294 938	2 293 388
Provinces and municipalities	–	–	–	–	–	–	–	64	64
Departmental agencies and accounts	1 616 012	(101 762)	10 545	1 524 795	1 516 928	7 867	99,5	1 161 663	1 160 159
Universities and technikons	15 033	28 834	–	43 867	45 817	(1 950)	104,4	45 972	45 972
Foreign governments and international organisations	–	–	–	–	–	–	–	–	–
Public corporations and private enterprises	593 534	431 721	–	1 025 255	1 023 212	2 043	99,8	740 719	740 719
Non-profit institutions	669 386	(342 793)	2 207	328 800	322 215	6 585	98,0	345 515	345 490
Households	646	–	–	646	187	459	28,9	1 005	984
<b>Payments for capital assets</b>	2 684	5 441	(187)	7 938	7 921	17	99,8	145 799	145 607
Buildings and other fixed structures	–	–	–	–	–	–	–	133 174	133 174
Machinery and equipment	2 684	5 441	(187)	7 938	7 921	17	99,8	12 625	12 433
Biological or cultivated assets	–	–	–	–	–	–	–	–	–
Software and other intangible assets	–	–	–	–	–	–	–	–	–
Land and subsoil assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	3 144 229	–	–	3 144 229	3 127 280	16 949	99,5	2 617 093	2 612 999

## Statutory appropriation

Details of direct changes against the National/Provincial Revenue Fund	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
List all direct charges against the National/Provincial Revenue Fund President and deputy-president salaries Member of Executive Committee/ parliamentary officers/legislature Judges and magistrates salaries Sector Education and Training Authorities (SETAs) National Skills Fund									
<b>Total</b>	–	–	–	–	–	–	–	–	–

Statutory appropriation

Programme per subprogramme	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>I.1 Minister</b>	938	169	–	1 107	1 107	–	100,0	1 038	1 038
Current payment	938	169	–	1 107	1 107	–	100,0	1 038	1 038
Transfers and subsidies	–	–	–	–	–	–	–	–	–
Payment for capital assets	–	–	–	–	–	–	–	–	–
<b>I.2 Deputy minister</b>	762	188	–	950	949	1	99,9	865	865
Current payment	762	188	–	950	949	1	99,9	865	865
Transfers and subsidies	–	–	–	–	–	–	–	–	–
Payment for capital assets	–	–	–	–	–	–	–	–	–
<b>I.3 Management</b>	5 228	271	–	5 499	5 499	–	100,0	4 491	4 491
Current payment	5 228	271	–	5 499	5 499	–	100,0	4 487	4 487
Transfers and subsidies	–	–	–	–	–	–	–	4	4
Payment for capital assets	–	–	–	–	–	–	–	–	–
<b>I.4 Corporate services</b>	99 594	(276)	(614)	98 704	97 727	977	99,0	207 623	206 364
Current payment	93 786	(5 341)	(614)	87 831	87 615	216	99,8	60 930	59 772
Transfers and subsidies	4 188	–	–	4 188	3 429	759	81,9	2 613	2 613
Payment for capital assets	1 620	5 065	–	6 685	6 683	2	99,9	144 080	143 979
<b>I.5 Governance</b>	5 622	(1 741)	–	3 881	3 801	80	97,9	2 636	2 636
Current payment	5 542	(1 754)	–	3 788	3 708	80	97,9	2 526	2 526
Transfers and subsidies	–	–	–	–	–	–	–	2	2
Payment for capital assets	80	13	–	93	93	–	100,0	108	108
<b>I.6 Property management</b>	2 918	1 389	–	4 307	4 307	–	100,0	2 702	1 850
Current payment	2 918	1 389	–	4 307	4 307	–	100,0	2 702	1 850
Transfers and subsidies	–	–	–	–	–	–	–	–	–
Payment for capital assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	115 062	–	(614)	114 448	113 390	1 058	99,1	219 355	217 244

# Appropriation Statements (continued)

for the year ended 31 March 2008

## Statutory appropriation

Economic classification	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>Current payment</b>	109 174	(5 078)	(614)	103 482	103 185	279	99,7	72 548	70 538
Compensation of employees	47 630	(2 851)	–	44 779	44 771	8	99,9	34 332	33 835
Goods and services	61 530	(2 295)	(614)	58 621	58 332	289	99,5	38 128	36 615
Interest and rent on land	–	–	–	–	–	–	–	–	–
Financial transactions in assets and liabilities	14	68	–	82	82	–	100,0	88	88
<b>Transfers and subsidies to</b>	4 188	–	–	4 188	3 429	759	81,9	2 619	2 619
Provinces and municipalities	–	–	–	–	–	–	–	–	–
Departmental agencies and accounts	–	–	–	–	–	–	–	28	28
Universities and technikons	–	445	–	445	445	–	100,0	–	–
Foreign governments and international organisations	–	–	–	–	–	–	–	–	–
Public corporations and private enterprises	–	–	–	–	–	–	–	–	–
Non-profit institutions	4 184	(445)	–	3 739	2 967	772	79,4	2 060	2 060
Households	4	–	–	4	17	(13)	425,0	531	531
<b>Payment for capital assets</b>	1 700	5 078	–	6 778	6 776	2	99,9	144 188	144 087
Buildings and other fixed structures	–	–	–	–	–	–	–	133 174	133 174
Machinery and equipment	1 700	5 078	–	6 778	6 776	2	99,9	11 014	10 913
Biological or cultivated assets	–	–	–	–	–	–	–	–	–
Software and other intangible assets	–	–	–	–	–	–	–	–	–
Land and subsoil assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	115 062	–	(614)	114 448	113 390	1 058	99,1	219 355	217 244



Statutory appropriation

Programme per subprogramme	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>2.1 Space Science</b>	293 533	1 324	115	294 972	296 157	(1 185)	100,4	208 002	205 849
Current payment	5 319	1 200	115	6 634	6 430	204	96,9	6 051	5 982
Transfers and subsidies	288 131	–	–	288 131	289 521	(1 390)	100,5	201 689	199 624
Payment for capital assets	83	124	–	207	206	1	99,5	262	243
<b>2.2 Hydrogen and Energy</b>	31 966	(9)	2 505	34 462	35 025	(563)	101,6	14 116	14 068
Current payment	4 739	–	(245)	4 494	4 380	114	97,5	4 026	3 987
Transfers and subsidies	27 147	–	2 750	29 897	30 576	(679)	102,3	10 000	10 000
Payment for capital assets	80	(9)	–	71	69	2	97,2	90	81
<b>2.3 Biotechnology and Health</b>	206 560	(1 315)	(3 106)	202 139	194 164	7 975	96,1	177 467	177 283
Current payment	10 027	(1 416)	(3 106)	5 505	5 255	250	95,5	4 900	4 728
Transfers and subsidies	196 513	–	–	196 513	188 789	7 724	96,1	172 414	172 414
Payment for capital assets	20	101	–	121	120	1	99,2	153	141
<b>2.4 National Advisory Council on Innovation</b>	9 242	–	(2 814)	6 428	6 098	330	94,9	5 289	5 303
Current payment	8 550	(24)	(2 814)	5 712	5 617	95	98,3	5 208	5 230
Transfers and subsidies	652	–	–	652	419	233	64,3	–	–
Payment for capital assets	40	24	–	64	62	2	96,9	81	73
<b>Total</b>	<b>541 301</b>	<b>–</b>	<b>(3 300)</b>	<b>538 001</b>	<b>531 444</b>	<b>6 557</b>	<b>98,8</b>	<b>404 874</b>	<b>402 503</b>
<b>Economic classification</b>									
<b>Current payment</b>	28 635	(240)	(6 050)	22 345	21 682	663	97,0	20 185	19 927
Compensation of employees	16 351	–	(4 870)	11 481	11 465	16	99,9	9 463	9 446
Goods and services	12 284	(240)	(1 180)	10 864	10 217	647	94,0	10 722	10 481
Interest and rent on land	–	–	–	–	–	–	–	–	–
Financial transactions in assets and liabilities	–	–	–	–	–	–	–	–	–
<b>Transfers and subsidies to:</b>	512 443	–	2 750	515 193	509 305	5 888	98,8	384 103	382 038
Provinces and municipalities	–	–	–	–	–	–	–	17	17
Departmental agencies and accounts	167 634	141 621	–	309 255	302 961	6 294	98,0	152 500	151 000
Universities and technikons	11 814	550	–	12 364	15 114	(2 750)	122,2	27 322	27 323
Foreign governments and international organisations	–	–	–	–	–	–	–	–	–
Public corporations and private enterprises	3 795	44 932	–	48 727	46 684	2 043	95,8	30 254	30 254
Non-profit institutions	329 181	(187 103)	2 750	144 828	144 425	403	99,7	173 741	173 193
Households	19	–	–	19	121	(102)	636,8	269	251
<b>Payment for capital assets</b>	223	240	–	463	457	6	98,7	586	538
Buildings and other fixed structures	–	–	–	–	–	–	–	–	–
Machinery and equipment	223	240	–	463	457	6	98,7	586	538
Biological or cultivated assets	–	–	–	–	–	–	–	–	–
Software and other intangible assets	–	–	–	–	–	–	–	–	–
Land and subsoil assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	<b>541 301</b>	<b>–</b>	<b>(3 300)</b>	<b>538 001</b>	<b>531 444</b>	<b>6 557</b>	<b>98,8</b>	<b>404 874</b>	<b>402 503</b>

# Appropriation Statements (continued)

for the year ended 31 March 2008

## Statutory appropriation

Programme per subprogramme	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>3.1 Multilaterals and Africa</b>	50 174	25 190	(1 818)	73 546	73 261	285	99,6	68 916	68 857
Current payment	16 284	(87)	(1 828)	14 379	14 120	259	98,2	14 385	14 337
Transfers and subsidies	33 825	25 190	–	59 015	58 992	23	99,9	54 374	54 363
Payment for capital assets	65	87	–	152	149	3	98,0	157	157
<b>3.2 International Resources</b>	32 101	(19 942)	(2 097)	10 062	10 048	14	99,9	27 340	27 285
Current payment	12 143	(12)	(2 097)	10 034	10 018	16	99,8	10 226	10 171
Transfers and subsidies	19 942	(19 942)	–	–	3	(3)	–	16 898	16 898
Payment for capital assets	16	12	–	28	27	1	96,4	216	216
<b>3.3 Bilateral Cooperation</b>	21 501	(5 248)	(122)	16 131	16 124	7	99,9	28 190	28 162
Current payment	16 179	(24)	(122)	16 033	15 996	37	99,8	17 525	17 497
Transfers and subsidies	5 237	(5 248)	–	(11)	19	(30)	(172,7)	10 530	10 530
Payment for capital assets	85	24	–	109	109	–	100,0	135	135
<b>Total</b>	103 776	–	(4 037)	99 739	99 433	306	99,7	124 446	124 304
<b>Economic classification</b>									
<b>Current payment</b>	44 606	(123)	(4 037)	40 446	40 134	312	99,2	42 136	42 005
Compensation of employees	19 616	235	–	19 851	19 849	2	100,0	17 404	17 401
Goods and services	24 990	(358)	(4 037)	20 595	20 285	310	98,5	24 732	24 604
Interest and rent on land	–	–	–	–	–	–	–	–	–
Financial transactions in assets and liabilities	–	–	–	–	–	–	–	–	–
<b>Transfers and subsidies to:</b>	59 004	–	–	59 004	59 014	(10)	100,0	81 802	81 791
Provinces and municipalities	–	–	–	–	–	–	–	11	11
Departmental agencies and accounts	26 816	533	–	27 349	27 349	–	100,0	29 564	29 564
Universities and technikons	3 201	1 325	–	4 526	4 527	(1)	100,0	3 189	3 189
Foreign governments and international organisations	–	–	–	–	–	–	–	–	–
Public corporations and private enterprises	14 750	7 998	–	22 748	22 748	–	100,0	28 692	28 692
Non-profit institutions	14 226	(9 856)	–	4 370	4 368	2	100,0	20 178	20 170
Households	11	–	–	11	22	(11)	200,0	168	165
<b>Payment for capital assets</b>	166	123	–	289	285	4	98,6	508	508
Buildings and other fixed structures	–	–	–	–	–	–	–	–	–
Machinery and equipment	166	123	–	289	285	4	98,6	508	508
Biological or cultivated assets	–	–	–	–	–	–	–	–	–
Software and other intangible assets	–	–	–	–	–	–	–	–	–
Land and subsoil assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	103 776	–	(4 037)	99 739	99 433	306	99,7	124 446	124 304

Programme per subprogramme	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>4.1 Human Capital and Science Platforms</b>	928 613	(1 521)	19 224	946 316	943 341	2 975	99,7	752 913	753 371
Current payment	10 593	929	601	12 123	11 820	303	97,5	10 973	10 897
Transfers and subsidies	917 965	(2 450)	18 623	934 138	931 467	2 671	99,7	741 870	724 410
Payment for capital assets	55	–	–	55	54	1	98,2	70	64
<b>4.2 Indigenous Knowledge Systems</b>	10 445	(800)	897	10 542	10 508	34	99,7	9 160	9 216
Current payment	5 390	–	942	6 332	6 299	33	99,5	5 647	5 715
Transfers and subsidies	5 000	(800)	–	4 200	4 200	–	100,0	3 500	3 490
Payment for capital assets	55	–	(45)	10	9	1	90,0	13	11
<b>4.3 Emerging Research Areas and Infrastructure</b>	313 021	2 321	3 400	318 742	318 734	8	99,9	114 859	114 893
Current payment	4 171	(929)	–	3 242	3 233	9	99,7	2 859	2 893
Transfers and subsidies	308 750	3 250	3 500	315 500	315 501	(1)	100,0	112 000	112 000
Payment for capital assets	100	–	(100)	–	–	–	–	–	–
<b>Total</b>	1 252 079	–	23 521	1 275 600	1 272 583	3 017	99,8	876 932	877 480
<b>Economic classification</b>									
<b>Current payment</b>	20 154	–	1 543	21 697	21 352	345	98,4	19 479	19 505
Compensation of employees	12 665	(787)	–	11 878	11 869	9	99,9	9 789	9 779
Goods and services	7 489	787	1 543	9 819	9 483	336	96,6	9 690	9 726
Interest and rent on land	–	–	–	–	–	–	–	–	–
Financial transactions in assets and liabilities	–	–	–	–	–	–	–	–	–
<b>Transfers and subsidies to:</b>	1 231 715	–	22 123	1 253 838	1 251 168	2 670	99,8	857 370	857 900
Provinces and municipalities	–	–	–	–	–	–	–	3	3
Departmental agencies and accounts	1 075 416	(161 435)	22 123	936 104	936 105	(1)	100,0	774 932	774 932
Universities and technikons	18	8 753	–	8 771	7 970	801	90,9	6 530	6 529
Foreign governments and international organisations	–	–	–	–	–	–	–	–	–
Public corporations and private enterprises	20 445	239 407	–	259 852	259 852	–	100,0	47 146	47 146
Non-profit institutions	135 335	(86 725)	–	48 610	47 230	1 380	97,2	28 756	29 287
Households	501	–	–	501	11	490	2,2	3	3
<b>Payment for capital assets</b>	210	–	(145)	65	63	2	96,9	83	75
Buildings and other fixed structures	–	–	–	–	–	–	–	–	–
Machinery and equipment	210	–	(145)	65	63	2	96,9	83	75
Biological or cultivated assets	–	–	–	–	–	–	–	–	–
Software and other intangible assets	–	–	–	–	–	–	–	–	–
Land and subsoil assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	1 252 079	–	23 521	1 275 600	1 272 583	3 017	99,8	876 932	877 480

# Appropriation Statements (continued)

for the year ended 31 March 2008

Statutory appropriation

Programme per subprogramme	2007/08							2006/07	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
<b>5.1 Science and Technology for Economic Impact</b>	852 552	16 665	(12 121)	857 096	851 508	5 588	99,3	772 678	772 734
Current payment	14 200	657	–	14 857	14 832	25	99,8	13 169	13 245
Transfers and subsidies	838 197	16 000	(12 121)	842 076	836 513	5 563	99,3	759 302	759 298
Payment for capital assets	155	8	–	163	163	–	100,0	207	191
<b>5.2 Science and Technology for Social Impact</b>	256 593	(664)	(1 506)	254 423	254 076	347	99,9	214 388	214 325
Current payment	7 400	(657)	(1 464)	5 279	5 067	212	96,0	4 545	4 490
Transfers and subsidies	249 064	–	–	249 064	248 930	134	99,9	209 742	209 742
Payment for capital assets	129	(7)	(42)	80	79	1	98,8	101	93
<b>5.3 Science and Technology Investment</b>	22 866	(16 001)	(1 943)	4 922	4 846	76	98,5	4 420	4 409
Current payment	22 765	(16 000)	(1 943)	4 822	4 748	74	98,5	4 294	4 294
Transfers and subsidies	–	–	–	–	–	–	–	–	–
Payment for capital assets	101	(1)	–	100	98	2	98,0	126	115
<b>Total</b>	<b>1 132 011</b>	<b>–</b>	<b>(15 570)</b>	<b>1 116 441</b>	<b>1 110 430</b>	<b>6 011</b>	<b>99,5</b>	<b>991 486</b>	<b>991 468</b>
<b>Economic classification</b>									
<b>Current payment</b>	44 365	(16 000)	(3 407)	24 958	24 647	311	98,8	22 008	22 029
Compensation of employees	18 599	–	(2 477)	16 122	16 121	1	100,0	13 289	13 282
Goods and services	25 766	(16 000)	(930)	8 836	8 526	310	96,5	8 719	8 747
Interest and rent on land	–	–	–	–	–	–	–	–	–
Financial transactions in assets and liabilities	–	–	–	–	–	–	–	–	–
<b>Transfers and subsidies to:</b>	<b>1 087 261</b>	<b>16 000</b>	<b>(12 121)</b>	<b>1 091 140</b>	<b>1 085 443</b>	<b>5 697</b>	<b>99,5</b>	<b>969 044</b>	<b>969 040</b>
Provinces and municipalities	–	–	–	–	–	–	–	5	5
Departmental agencies and accounts	346 146	(82 481)	(11 578)	252 087	250 513	1 574	99,4	204 667	204 663
Universities and technikons	–	17 761	–	17 761	17 761	–	100,0	8 931	8 931
Foreign governments and international organisations	–	–	–	–	–	–	–	–	–
Public corporations and private enterprises	554 544	139 384	–	693 928	693 928	–	100,0	634 627	634 627
Non-profit institutions	186 460	(58 664)	(543)	127 253	123 225	4 028	96,8	120 780	120 780
Households	111	–	–	111	16	95	14,4	34	34
<b>Payment for capital assets</b>	<b>385</b>	<b>–</b>	<b>(42)</b>	<b>343</b>	<b>340</b>	<b>3</b>	<b>99,1</b>	<b>434</b>	<b>399</b>
Buildings and other fixed structures	–	–	–	–	–	–	–	–	–
Machinery and equipment	385	–	(42)	343	340	3	99,1	434	399
Biological or cultivated assets	–	–	–	–	–	–	–	–	–
Software and other intangible assets	–	–	–	–	–	–	–	–	–
Land and subsoil assets	–	–	–	–	–	–	–	–	–
<b>Total</b>	<b>1 132 011</b>	<b>–</b>	<b>(15 570)</b>	<b>1 116 441</b>	<b>1 110 430</b>	<b>6 011</b>	<b>99,5</b>	<b>991 486</b>	<b>991 468</b>

# Notes to the Appropriation Statements

for the year ended 31 March 2008

1. Details of transfers and subsidies as per Appropriation Act (after virement):  
Details of these transactions can be viewed in note 6 (transfers and subsidies) and Annexure I (F, G, H, I, K, L) to the annual financial statements.
2. Details of specifically and exclusively appropriated amounts voted (after virement):  
Details of these transactions can be viewed in note 1 (annual appropriation) to the annual financial statements.
3. Details of financial transactions in assets and liabilities:  
Details of these transactions can be viewed in note 5 (financial transactions in assets and liabilities) to the annual financial statements.
4. Explanations of material variances from amounts voted (after virement):

## 4.1 Per programme

	Final appropriation R'000	Actual expenditure R'000	Variance R'000 R'000	Variance as a % final appropriation %
<b>Programme 1: Corporate Services and Governance</b>	114 448	113 390	1 058	0,92
The variance is a result of cost-saving measures introduced by the department with regard to travel as well as an under-spending due to delays in finalising the relative projects under the institutional and programme support transfer objective.				
<b>Programme 2: Research, Development and Innovation</b>	538 001	531 444	6 557	1,22
The variance is due to funds not spent under the South African Aids Vaccine Initiative project which is to be relinquished to the National Treasury.				
<b>Programme 3: International Cooperation and Resources</b>	99 739	99 433	306	0,31
<b>Programme 4: Human Capital and Knowledge Systems</b>	1 275 600	1 272 583	3 017	0,24
<b>Programme 5: Socio-Economic Partnerships</b>	1 116 441	1 110 430	6 011	0,54
<b>4.2 Per economic classification</b>				
<b>Current payment</b>				
Compensation of employees	104 111	104 075	36	0,03
Goods and services	108 735	106 843	1 892	1,74
Financial transactions in assets and liabilities	82	82	-	-
<b>Transfers and subsidies</b>				
Departmental agencies and accounts	1 524 795	1 516 928	7 867	0,52
Universities and technikons	43 867	45 817	(1 950)	(4,45)
Public corporations and private enterprises	1 025 255	1 023 212	2 043	0,20
Non-profit institutions	328 800	322 215	6 585	2,00
Households	646	187	459	71,05
<b>Payments for capital assets</b>				
Machinery and equipment	7 938	7 921	17	0,21

# Statement of Financial Performance

for the year ended 31 March 2008

	Note	2007/08	2006/07
<b>Revenue</b>			
Annual appropriation	1	3 144 229	2 617 093
Departmental revenue	2	219	1 029
<b>Total revenue</b>		<b>3 144 448</b>	2 618 122
<b>Expenditure</b>			
<b>Current expenditure</b>			
Compensation of employees	3	104 075	83 743
Goods and services	4	106 843	90 173
Financial transactions in assets and liabilities	5	82	88
<b>Total current expenditure</b>		<b>211 000</b>	174 004
<b>Transfers and subsidies</b>	6	<b>2 908 359</b>	2 293 388
<b>Expenditure for capital assets</b>			
Buildings and other fixed structures	7	–	133 174
Machinery and equipment	7	7 921	12 433
<b>Total expenditure for capital assets</b>		<b>7 921</b>	145 607
<b>Total expenditure</b>		<b>3 127 280</b>	2 612 999
<b>Surplus for the year</b>		<b>17 168</b>	5 123
Reconciliation of surplus for the year			
Voted funds	11	16 949	4 094
Departmental revenue	12	219	1 029
<b>Surplus for the year</b>		<b>17 168</b>	5 123

# Statement of Financial Position

at 31 March 2008

	Note	2007/08	2006/07
<b>ASSETS</b>			
<b>Current assets</b>		<b>17 038</b>	4 139
Cash and cash equivalents	8	16 151	3 015
Prepayments and advances	9	68	83
Receivables	10	819	1 041
<b>Total assets</b>		<b>17 038</b>	4 139
<b>LIABILITIES</b>			
<b>Current liabilities</b>		<b>16 973</b>	4 105
Voted funds to be surrendered to the National Revenue Fund	11	16 948	4 094
Departmental revenue to be surrendered to the National Revenue Fund	12	23	11
Payables	13	2	–
<b>Total liabilities</b>		<b>16 973</b>	4 105
<b>NET ASSETS</b>		<b>65</b>	34
<b>Represented by:</b>			
Recoverable revenue (staff and other debts recovered)		65	34
<b>Total</b>		<b>65</b>	34

# Statement of Changes in Net Assets

for the year ended 31 March 2008

	Note	2007/08	2006/07
Recoverable revenue			
Opening balance		34	3
Transfers:		31	31
Irrecoverable amounts written off	5.3	–	(3)
Debts recovered (included in departmental revenue)		(15)	(31)
Debts raised		46	65
Closing balance		65	34
<b>Total</b>		<b>65</b>	34

# Cash Flow Statement

for the year ended 31 March 2008

	Note	2007/08	2006/07
<b>Cash flow from operating activities</b>			
Receipts		3 144 337	2 618 065
Annual appropriated funds received	1	3 144 228	2 617 093
Departmental revenue received	2	109	972
Net (increase)/decrease in working capital		239	(2 933)
Surrendered to National Revenue Fund		(4 301)	(4 205)
Current payments		(211 000)	(174 004)
Transfers and subsidies paid		(2 908 359)	(2 293 388)
<b>Net cash flow available from operating activities</b>	14	<b>20 916</b>	143 535
<b>Cash flows from investing activities</b>			
Payments for capital assets		(7 921)	(145 607)
Proceeds from sale of capital assets	2	110	57
<b>Net cash flows from investing activities</b>		<b>(7 811)</b>	(145 550)
<b>Cash flows from financing activities</b>			
Increase in net assets		31	31
<b>Net cash flows from financing activities</b>		<b>31</b>	31
Net increase in cash and cash equivalents		13 136	(1 984)
Cash and cash equivalents at the beginning of the period		3 015	4 999
<b>Cash and cash equivalents at end of period</b>	15	<b>16 151</b>	3 015



# Accounting Policies

for the year ended 31 March 2008

The financial statements have been prepared in accordance with the following policies, which have been applied consistently in all material aspects, unless otherwise indicated. However, where appropriate and meaningful, additional information has been disclosed to enhance the usefulness of the financial statements and to comply with the statutory requirements of the Public Finance Management Act, 1999, and the Treasury Regulations issued in terms of the Act, and the Division of Revenue Act, 2006.

## 1. Presentation of the financial statements

### 1.1 Basis of preparation

The financial statements have been prepared on a modified cash basis of accounting, except where stated otherwise. The modified cash basis constitutes the cash basis of accounting supplemented with additional disclosure items. Under the cash basis of accounting transactions and other events are recognised when cash is received or paid.

### 1.2 Presentation currency

All amounts have been presented in the currency of the South African Rand (R), which is also the functional currency of the department.

### 1.3 Rounding

Unless otherwise stated all financial figures have been rounded to the nearest one thousand Rands (R'000).

### 1.4 Comparative figures

Prior period comparative information has been presented in the current year's financial statements. Where necessary, figures, included in the prior period financial statements, have been reclassified to ensure that the format in which the information is presented is consistent with the format of the current year's financial statements.

### 1.5 Comparative figures – Appropriation statement

A comparison between actual amounts and final appropriation per major classification of expenditure is included in the appropriation statement.

## 2. Revenue

### 2.1 Appropriated funds

Appropriated funds are recognised in the financial records on the date the appropriation becomes effective. Adjustments to the appropriated funds made in terms of the adjustments budget process are recognised in the financial records on the date the adjustments become effective.

Total appropriated funds are presented in the statement of financial performance.

Unexpended appropriated funds are surrendered to the National Revenue Fund. Amounts owing to the National Revenue Fund at the end of the financial year are recognised in the statement of financial position.

### 2.2 Departmental revenue

All departmental revenue is paid into the National Revenue Fund when received, unless otherwise stated. Amounts owing to the National Revenue Fund at the end of the financial year are recognised in the Statement of Financial Position.

Amounts receivable at the reporting date are disclosed in the disclosure notes to the annual financial statements.

#### 2.2.1 Sales of goods and services other than capital assets

The proceeds received from the sale of goods and/or the provision of services is recognised in the statement of financial performance when the cash is received.

#### 2.2.2 Interest, dividends and rent on land

Interest, dividends and rent on land is recognised in the statement of financial performance when the cash is received.

# Accounting Policies (continued)

for the year ended 31 March 2008

## 2.2.3 Sale of capital assets

The proceeds received on sale of capital assets are recognised in the statement of financial performance when the cash is received.

## 2.3.4 Financial transactions in assets and liabilities

Repayments of loans and advances previously extended to employees and public corporations for policy purposes are recognised as revenue in the statement of financial performance on receipt of the funds.

Cheques issued in previous accounting periods that expire before being banked are recognised as revenue in the statement of financial performance when the cheque becomes stale. When the cheque is re-issued the payment is made from revenue.

## 3. Expenditure

### 3.1 Compensation of employees

#### 3.1.1 Short-term employee benefits

Salaries and wages comprise payments to employees (including leave entitlements, 13th cheques and performance bonuses). Salaries and wages are recognised as an expense in the statement of financial performance when final authorisation for payment is effected on the system (by no later than 31 March of each year). All other payments are classified as current expense.

Short-term employee benefits that give rise to a present legal or constructive obligation are disclosed in the disclosure notes to the financial statements. These amounts are not recognised in the statement of financial performance or position.

#### 3.1.2 Post-retirement benefits

The department provides retirement benefits (pension benefits) for certain of its employees through a defined benefit plan for government employees. These benefits are funded by both employer and employee contributions.

Employer contributions (ie social contributions) to the fund are expensed when the final authorisation for payment to the fund is effected on the system (by no later than 31 March of each year). No provision is made for retirement benefits in the financial statements of the department. Any potential liabilities are disclosed in the financial statements of the National Revenue Fund and not in the financial statements of the employer department.

The department provides medical benefits for certain of its employees. Employer contributions to the medical funds are expensed when final authorisation for payment to the fund is effected on the system (by no later than 31 March of each year).

#### 3.1.3 Termination benefits

Termination benefits such as severance packages are recognised as an expense in the statement of financial performance as a transfer (to households) when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

#### 3.1.4 Other long-term employee benefits

Other long-term employee benefits (such as capped leave) are recognised as an expense in the statement of financial performance as a transfer (to households) when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

Long-term employee benefits that give rise to a present legal or constructive obligation are disclosed in the disclosure notes to the financial statements. These amounts are not recognised in the statement of financial performance or position.

### **3.2 Goods and services**

Payments made for goods and/or services are recognised as an expense in the statement of financial performance when the final authorisation for payment is effected on the system (by no later than 31 March of each year). The expense is classified as capital if the goods and services were used for a capital project or an asset of R5 000 or more is purchased. All assets costing less than R5 000 will also be reflected under goods and services.

### **3.3 Financial transactions in assets and liabilities**

Debts are written off when identified as irrecoverable. Debts written-off are limited to the amount of savings and/or underspending of appropriated funds. The write-off occurs at year-end or when funds are available. No provision is made for irrecoverable amounts but amounts are disclosed as a disclosure note.

All other losses are recognised when authorisation has been granted for the recognition thereof.

### **3.4 Transfers and subsidies**

Transfers and subsidies are recognised as an expense when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

### **3.5 Expenditure for capital assets**

Payments made for capital assets are recognised as an expense in the statement of financial performance when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

## **4. Assets**

### **4.1 Cash and cash equivalents**

Cash and cash equivalents are carried in the statement of financial position at cost.

For the purposes of the cash flow statement, cash and cash equivalents comprise cash on hand, deposits held, other short-term highly liquid investments and bank overdrafts.

### **4.2 Prepayments and advances**

Amounts prepaid or advanced are recognised in the statement of financial position when the payments are made.

Prepayments and advances outstanding at the end of the year are carried in the statement of financial position at cost.

### **4.3 Receivables**

Receivables included in the statement of financial position arise from cash payments made that are recoverable from another party.

Receivables outstanding at year-end are carried in the statement of financial position at cost.

### **4.4 Inventory**

Inventories purchased during the financial year are disclosed at cost in the notes.

### **4.5 Capital assets**

A capital asset is recorded on receipt of the item at cost. Cost of an asset is defined as the total cost of acquisition. Where the cost cannot be determined accurately, the capital asset should be stated at fair value. Where fair value cannot be determined, the capital asset is included in the asset register at R1.

Projects (of construction/development) running over more than one financial year relating to assets, are only capitalised as assets on completion of the project and at the total cost incurred over the duration of the project.

Disclosure note 24 reflects the total movement in the asset register for the current financial year.

# Accounting Policies (continued)

for the year ended 31 March 2008

## 5. Liabilities

### 5.1 *Voted funds to be surrendered to the National Revenue Fund*

Unexpended appropriated funds are surrendered to the National Revenue Fund. Amounts owing to the National Revenue Fund at the end of the financial year are recognised in the statement of financial position.

### 5.2 *Departmental revenue to be surrendered to the Revenue Fund*

Amounts owing to the National Revenue Fund at the end of the financial year are recognised in the statement of financial position at cost.

### 5.3 *Payables*

Recognised payables mainly comprise amounts owing to other governmental entities. These payables are recognised at historical cost in the statement of financial position.

### 5.4 *Contingent liabilities*

Contingent liabilities are included in the disclosure notes.

### 5.5 *Commitments*

Commitments are not recognised in the statement of financial position as a liability or as expenditure in the statement of financial performance but are included in the disclosure notes.

### 5.6 *Accruals*

Accruals are not recognised in the statement of financial position as a liability or as expenditure in the statement of financial performance but are included in the disclosure notes.

### 5.7 *Employee benefits*

Short-term employee benefits that give rise to a present legal or constructive obligation are disclosed in the disclosure notes to the financial statements. These amounts are not recognised in the statement of financial performance or the statement of financial position.

### 5.8 *Lease commitments*

Lease commitments are not recognised in the statement of financial position as a liability or as expenditure in the statement of financial performance but are included in the disclosure notes.

Operating and finance lease commitments are expensed when the payments are made. Assets acquired in terms of finance lease agreements are disclosed in the annexures and disclosure notes to the financial statements.

## 6. Receivables for departmental revenue

Receivables for departmental revenue are disclosed in the disclosure notes to the annual financial statements.

## 7. Net assets

### 7.1 *Recoverable revenue*

Amounts are recognised as recoverable revenue when a payment made in the previous financial year becomes recoverable from a debtor in the current financial year.

## 8. Related party transactions

Specific information with regard to related party transactions is included in the disclosure notes.

## 9. Key management personnel

Compensation paid to key management personnel, including their family members where relevant, is included in the disclosure notes.

# Notes to the Annual Financial Statements (continued)

for the year ended 31 March 2008

	Final appropriation R'000	Actual funds received R'000	Funds not requested/ not received R'000	Appropriation received 2006/07 R'000
<b>1. Annual appropriation</b>				
Included are funds appropriated in terms of the Appropriation Act for National Departments (Voted funds).				
Corporate Services and Governance	114 448	114 447	1	219 355
Research, Development and Innovation	538 001	538 001	–	404 874
International Cooperation and Resources	99 739	99 739	–	124 446
Human Capital and Knowledge Systems	1 275 600	1 275 600	–	876 932
Socio-Economic Partnerships	1 116 441	1 116 441	–	991 486
<b>Total</b>	<b>3 144 229</b>	<b>3 144 228</b>	<b>1</b>	<b>2 617 093</b>

	Note	2007/08 R'000	2006/07 R'000
<b>2. Departmental revenue</b>			
<b>Description</b>			
Sales of goods and services other than capital assets	2.1	24	301
Interest, dividends and rent on land	2.2	6	–
Sales of capital assets	2.3	110	57
Financial transactions in assets and liabilities	2.4	79	671
<b>Departmental revenue collected</b>		<b>219</b>	<b>1 029</b>

		2007/08 R'000	2006/07 R'000
<b>2.1 Sales of goods and services other than capital assets</b>			
Sales of goods and services produced by the department		24	301
Sales by market establishment		24	301
<b>Total</b>		<b>24</b>	<b>301</b>
<b>2.2 Interest, dividends and rent on land</b>			
Interest		6	–
<b>Total</b>		<b>6</b>	<b>–</b>
<b>2.3 Sales of capital assets</b>			
Other capital assets		110	57
<b>Total</b>		<b>110</b>	<b>57</b>
<b>2.4 Financial transactions in assets and liabilities</b>			
Nature of recovery			
Other receipts including recoverable revenue		79	671
<b>Total</b>		<b>79</b>	<b>671</b>

# Notes to the Annual Financial Statements (continued)

for the year ended 31 March 2008

	2007/08 R'000	2006/07 R'000
<b>3. Compensation of employees</b>		
<b>3.1 Salaries and wages</b>		
Basic salary	68 126	54 368
Performance award	2 577	2 540
Service based	247	160
Compensative/Circumstantial	1 924	2 328
Periodic payments	536	609
Other non-pensionable allowances	19 744	15 398
<b>Total</b>	<b>93 154</b>	<b>75 403</b>
<b>3.2 Social contributions</b>		
<i>3.2.1 Employer contributions</i>		
Pension	8 217	6 259
Medical	2 695	2 073
Bargaining council	9	8
<b>Total</b>	<b>10 921</b>	<b>8 340</b>
<b>Total compensation of employees</b>	<b>104 075</b>	<b>83 743</b>
<b>Average number of employees</b>	<b>313</b>	<b>265</b>

	Note	2007/08 R'000	2006/07 R'000
<b>4. Goods and services</b>			
Advertising		2 064	3 629
Attendance fees (including registration fees)		827	974
Bank charges and card fees		43	36
Bursaries (employees)		777	402
Catering		1 245	539
Communication		8 168	6 211
Computer services		1 114	1 821
Consultants, contractors and special services		34 134	25 582
Courier and delivery services		444	642
Driving licences and permits		2	3
Entertainment		940	1 390
External audit fees	4.1	781	1 304
Equipment less than R5 000		187	1 822
Honoraria (voluntary workers)		–	12
Inventory	4.2	7 125	4 455
Maintenance, repairs and running costs		1 780	116
Operating leases		6 252	3 147
Personnel agency fees		353	635
Photographic services		17	34
Plants, flowers and other decorations		22	6
Printing and publications		902	237
Resettlement costs		855	311
Subscriptions		1 447	1 061
Travel and subsistence	4.3	31 665	30 454
Venues and facilities		4 032	4 148
Protective, special clothing and uniforms		–	3
Training and staff development		1 667	1 199
<b>Total</b>		<b>106 843</b>	<b>90 173</b>

		2007/08 R'000	2006/07 R'000
<b>4. Goods and services</b> (continued)			
<b>4.1 External audit fees</b>			
Regularity audits		781	746
Performance audits		–	482
Other audits		–	76
<b>Total</b>		<b>781</b>	<b>1 304</b>
<b>4.2 Inventory</b>			
Domestic consumables		22	76
Fuel, oil and gas		373	272
Parts and other maintenance material		1 850	48
Stationery and printing		4 880	4 059
<b>Total</b>		<b>7 125</b>	<b>4 455</b>
<b>4.3 Travel and subsistence</b>			
Local		16 398	13 933
Foreign		15 267	16 521
<b>Total</b>		<b>31 665</b>	<b>30 454</b>

	Note	2007/08 R'000	2006/07 R'000
<b>5. Financial transactions in assets and liabilities</b>			
Other material losses written off	5.1	68	25
Debts written off	5.2	14	63
<b>Total</b>		<b>82</b>	<b>88</b>

		2007/08 R'000	2006/07 R'000
<b>5.1 Other material losses written off</b>			
<b>Nature of losses</b>			
Damages to hired vehicles		38	25
Damages to other vehicles		30	–
<b>Total</b>		<b>68</b>	<b>25</b>
<b>5.2 Debts written off</b>			
<b>Nature of debts written off</b>			
Transfer to debts written off		–	4
Leave without pay debt		9	3
Salary debt		3	55
Travel and subsistence debt		2	1
<b>Total</b>		<b>14</b>	<b>63</b>
<b>5.3 Irrecoverable amounts written off</b>			
Other		–	3
Private travel and subsistence expenditure		–	3
<b>Total</b>		<b>–</b>	<b>3</b>

# Notes to the Annual Financial Statements (continued)

for the year ended 31 March 2008

	Note	2007/08 R'000	2006/07 R'000
<b>6. Transfers and subsidies</b>			
Provinces and municipalities	Annex IF	–	64
Departmental agencies and accounts	Annex IG	1 516 928	1 160 159
Universities and technikons	Annex IH	45 817	45 972
Public corporations and private enterprises	Annex II	1 023 212	740 719
Non-profit institutions	Annex IK	322 215	345 490
Households	Annex IL	187	984
<b>Total</b>		<b>2 908 359</b>	<b>2 293 388</b>
<b>7. Expenditure for capital assets</b>			
Buildings and other fixed structures	24	–	133 174
Machinery and equipment	24	7 921	12 433
<b>Total</b>		<b>7 921</b>	<b>145 607</b>
<b>8. Cash and cash equivalents</b>			
Consolidated paymaster general account		16 121	2 982
Disbursements		(3)	–
Cash on hand		33	33
<b>Total</b>		<b>16 151</b>	<b>3 015</b>
<b>9. Prepayments and advances</b>			
Travel and subsistence		68	83
<b>Total</b>		<b>68</b>	<b>83</b>

	Note	Less than one year R'000	One to three years R'000	Older than three years R'000	Total 2007/08 R'000	Total 2006/07 R'000
<b>10. Receivables</b>						
Households and non-profit institutions	10.1	–	–	–	–	536
Private enterprises	10.2	3	–	–	3	–
Staff debtors	10.3	146	6	–	152	6
Other debtors	10.4	458	112	76	646	272
Intergovernmental receivables	Annex 4	4	9	5	18	227
<b>Total</b>		<b>611</b>	<b>127</b>	<b>81</b>	<b>819</b>	<b>1 041</b>



	2007/08 R'000	2006/07 R'000
<b>10. Receivables</b> (continued)		
<b>10.1 Households and non-profit institutions</b>		
South African Agency for the Advancement of Science and Technology (SAASTA)	–	536
<b>Total</b>	<b>–</b>	<b>536</b>
<b>10.2 Private enterprises</b>		
DEP Technologies (Pty) Limited	3	–
<b>Total</b>	<b>3</b>	<b>–</b>
<b>10.3 Staff debtors</b>		
Bursary debt	36	6
Salary overpayment	93	–
Telephone debt	23	–
<b>Total</b>	<b>152</b>	<b>6</b>
<b>10.4 Other debtors</b>		
Claims recoverable: Other recoverable amounts	57	33
Claims recoverable: Theft and losses	188	170
Income tax debt	3	10
Persal salaries and stoppages	337	31
Previous employees – Salary overpayment	32	–
Previous employees – Resettlement debt	29	28
<b>Total</b>	<b>646</b>	<b>272</b>

	Note	2007/08 R'000	2006/07 R'000
<b>11. Voted funds to be surrendered to the National Revenue Fund</b>			
Opening balance		4 094	3 183
Transfer from statement of financial performance		16 949	4 094
Voted funds not requested/not received	11.1	(1)	–
Paid during the year		(4 094)	(3 183)
<b>Closing balance</b>		<b>16 948</b>	<b>4 094</b>

	2007/08 R'000	2006/07 R'000
<b>11.1 Voted funds not requested/not received</b>		
Funds not to be requested	(1)	–
	<b>(1)</b>	<b>–</b>

# Notes to the Annual Financial Statements (continued)

for the year ended 31 March 2008

	2007/08 R'000	2006/07 R'000
<b>12. Departmental revenue to be surrendered to the National Revenue Fund</b>		
Opening balance	11	4
Transfer from statement of financial performance	219	1 029
Paid during the year	(207)	(1 022)
<b>Closing balance</b>	<b>23</b>	<b>11</b>

		30 days R'000	30+ days R'000	2007/08 Total R'000	2006/07 Total R'000
<b>13. Payables – current</b>					
Description	Note				
Other payables	13.1	2	–	2	–
<b>Total</b>		<b>2</b>	<b>–</b>	<b>2</b>	<b>–</b>

	2007/08 R'000	2006/07 R'000
<b>13.1 Clearing accounts</b>		
Description		
Persal salaries and stoppages	2	–
<b>Total</b>	<b>2</b>	<b>–</b>

	2007/08 R'000	2006/07 R'000
<b>14. Net cash flow available from operating activities</b>		
Net surplus/(deficit) as per statement of financial performance	17 168	5 123
Add back non-cash/cash movements not deemed operating activities	3 748	138 412
Decrease in receivables – current	222	61
Decrease in prepayments and advances	15	121
Increase in payables – current	2	(3 115)
Proceeds from sale of capital assets	(110)	(57)
Expenditure on capital assets	7 921	145 607
Surrenders to National Revenue Fund	(4 301)	(4 205)
Voted funds not requested/not received	(1)	–
<b>Net cash flow generated by operating activities</b>	<b>20 916</b>	<b>143 535</b>

	2007/08 R'000	2006/07 R'000
<b>15. Reconciliation of cash and cash equivalents for cash flow purposes</b>		
Consolidated paymaster general account	16 121	2 982
Disbursements	(3)	–
Cash on hand	33	33
<b>Total</b>	<b>16 151</b>	<b>3 015</b>

## Disclosure Notes to the Annual Financial Statements

for the year ended 31 March 2008

	Note	2007/08 R'000	2006/07 R'000
<b>16. Contingent liabilities</b>			
Liable to	Nature		
Housing loan guarantees	Employees		
	Annex 3A	204	223
<b>Total</b>		<b>204</b>	<b>223</b>

	2007/08 R'000	2006/07 R'000
<b>17. Commitments</b>		
<b>Current expenditure</b>		
Approved and contracted	667	59
Approved but not yet contracted	174	–
	<b>841</b>	<b>59</b>
<b>Capital expenditure</b>		
Approved and contracted	251	1 192
	<b>251</b>	<b>1 192</b>
<b>Total commitments</b>	<b>1 092</b>	<b>1 251</b>

	30 days R'000	30+ days R'000	2007/08 Total R'000	2006/07 Total R'000
<b>18. Accruals</b>				
<b>Listed by economic classification</b>				
Goods and services	31	222	253	591
Machinery and equipment	–	–	–	90
Other	–	–	–	60
<b>Total</b>	<b>31</b>	<b>222</b>	<b>253</b>	<b>741</b>

# Disclosure Notes to the Annual Financial Statements

(continued)

for the year ended 31 March 2008

	Note	2007/08 R'000	2006/07 R'000
<b>18. Accruals</b> (continued)			
<b>Listed by programme level</b>			
Programme 1: Corporate Services and Governance		217	661
Programme 2: Research, Development and Innovation		7	53
Programme 3: International Cooperation and Resources		29	25
Programme 5: Socio-Economic Partnership		–	2
<b>Total</b>		<b>253</b>	<b>741</b>
Confirmed balances with other departments	Annex 5	17	120
Confirmed balances with other government entities	Annex 5	97	–
<b>Total</b>		<b>114</b>	<b>120</b>

	2007/08 R'000	2006/07 R'000
<b>19. Employee benefits</b>		
Leave entitlement <sup>1</sup>	3 701	1 941
Thirteenth cheque	2 373	2 028
Capped-leave commitments <sup>2</sup>	2 643	2 377
<b>Total</b>	<b>8 717</b>	<b>6 346</b>

<sup>1</sup>Leave entitlement represents leave credits in respect of the current (full annual or prorata leave) and previous leave cycle that is payable to an official in the event of resignation, retirement, medical boarding and resignation.

<sup>2</sup>Capped-leave credits that have been accumulated by employees as at 30 June 2000. These leave credits are only paid out in the event of death, retirement and medical boarding at the employee's annual basic salary as at the last day of duty.

	Land R'000	Building and other fixed structures R'000	Machinery and equipment R'000	Total R'000
<b>20. Lease commitments</b>				
<b>20.1 Operating leases</b>				
<b>2007/2008</b>				
Not later than one year	–	–	1 821	1 821
Later than one year and not later than five years	–	–	4 060	4 060
<b>Total present value of lease liabilities</b>	<b>–</b>	<b>–</b>	<b>5 881</b>	<b>5 881</b>
<b>2006/2007</b>				
Not later than one year	–	–	2 034	2 034
Later than one year and not later than five years	–	–	3 063	3 063
<b>Total present value of lease liabilities</b>	<b>–</b>	<b>–</b>	<b>5 097</b>	<b>5 097</b>

	2007/08 R'000	2006/07 R'000
<b>21. Receivables for departmental revenue</b>		
Sales of goods and services other than capital assets	24	301
Interest, dividends and rent on land	6	–
Sales of capital assets	110	57
Financial transactions in assets and liabilities	79	671
<b>Total</b>	<b>219</b>	<b>1 029</b>

## 22. Related-party transactions

The following entities are under the ownership control of the department in terms of chapter I of the Public Finance Management Act, 1999 (Act No. 1 of 1999 as amended by Act 29 of 1999) and report to the Minister of Science and Technology and as such are related parties to the department:

- Africa Institute of South Africa.
- Academy of Science of South Africa.
- Council for Scientific and Industrial Research.
- Human Sciences Research Council.
- National Research Foundation.
- Tshumisano Trust.

The department transactions with these entities are limited to transfer and subsidy payments. Annexures G, I and K to the annual financial statement reflect these transactions. Where transactions other than these occur they occur within a normal supplier/client relationship in terms of procurement procedures of the department in terms of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

	Number of individuals	2007/08 R'000	2006/07 R'000
<b>23. Key management personnel</b>			
Political office bearers (provide detail below)	2	2 053	1 605
Officials			
Level 15 to 16	7	5 655	4 314
Level 14 (CFO)	1	655	561
<b>Total</b>		<b>8 363</b>	<b>6 480</b>

The key management personnel do not qualify for any remuneration other than the approved remuneration structures for different classes of key management personnel (political office bearers and officials).

# Disclosure Notes to the Annual Financial Statements

(continued)

for the year ended 31 March 2008

	Opening balance R'000	Current year adjustments to prior year balances R'000	Additions R'000	Disposals R'000	Closing balances R'000
<b>24. Tangible capital assets</b>					
Movement in tangible capital assets per asset register for the year ended 31 March 2008					
Building and other fixed structures	133 174	–	–	–	133 174
Dwellings	–	–	–	–	–
Non-residential buildings <sup>1</sup>	133 174	–	–	–	133 174
<b>Machinery and equipment</b>	<b>28 417</b>	<b>(5 777)</b>	<b>7 921</b>	<b>(404)</b>	<b>30 157</b>
Transport assets	2 544	(13)	924	(404)	3 051
Computer equipment	14 198	(6 632)	3 456	–	11 022
Furniture and office equipment	9 011	(158)	154	–	9 007
Other machinery and equipment	2 664	1 026	3 387	–	7 077
<b>Total tangible assets</b>	<b>161 591</b>	<b>(5 777)</b>	<b>7 921</b>	<b>(404)</b>	<b>163 331</b>

<sup>1</sup>Additional disclosure on non-residential building (DST building)

The final sign-off of the contract to consummate the transfer of the DST building to the Department of Public Works (DPW) has been finalised. The department is working with the DPW regarding the demarcation of municipal services to conclude the transfer of the building.

	Cash cost R'000	Non-cash fair value/RI R'000	(Capital work in progress current cost) R'000	Received current, not paid (Paid current year, received prior year) R'000	Total Cost R'000
<b>24.1 Additions to tangible capital assets per asset register for the year ended 31 March 2008</b>					
Machinery and equipment	7 921	–	–	–	7 921
Transport assets	924	–	–	–	924
Computer equipment	3 456	–	–	–	3 456
Furniture and office equipment	154	–	–	–	154
Other machinery and equipment	3 387	–	–	–	3 387
<b>Total</b>	<b>7 921</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>7 921</b>

	Sold for cash Cost/value price as per annual report R'000	Transfer out or scrapped Cost/value price as per annual report R'000	Total disposals R'000	Cash received Actual cost R'000
<b>24. Tangible capital assets</b> (continued)				
24.2 Disposals of tangible capital assets per asset register for the year ended 31 March 2008				
Machinery and equipment (continued)	404	–	404	110
Transport assets	404	–	404	110
<b>Total</b>	<b>404</b>	<b>–</b>	<b>404</b>	<b>110</b>

	Opening balance R'000	Additions R'000	Disposals R'000	Closing balance R'000
24.3 Movement in tangible capital assets per asset register for the year ended 31 March 2007				
Building and other fixed structures	–	133 174	–	133 174
Non-residential buildings	–	133 174	–	133 174
Machinery and equipment	18 579	12 433	2 595	28 417
Transport assets	2 544	–	–	2 544
Computer equipment	8 372	6 445	619	14 198
Furniture and office equipment	5 024	5 914	1 927	9 011
Other machinery and equipment	2 639	74	49	2 664
<b>Total tangible assets</b>	<b>18 579</b>	<b>145 607</b>	<b>2 595</b>	<b>161 591</b>

# Annexures to the Annual Financial Statements (continued)

for the year ended 31 March 2008

## Annexure IF Statement of unconditional grants and transfers to municipalities

Name of municipality	Grant allocation				Transfer		Spent		2006/07	
	Amount	Rollovers	Adjustments	Total available	Actual transfer	% of available funds transferred	Amount received by municipality	Amount spent by municipality	% of available funds spent by municipality	Total available
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000
Regional service council Levies: Tshwane Metropolitan Municipality	-	-	-	-	-	-	-	-	-	64
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>64</b>

## Annexure IG Statement of transfers to departmental agencies and accounts

Department/Agency/Account	Transfer allocation				Transfer		2006/07
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of available funds transferred	Final Appropriation Act
	R'000	R'000	R'000	R'000	R'000	%	R'000
Africa Institute of South Africa (AISA)	26 530	-	-	26 530	26 530	100	24 954
Biotechnology Strategy	-	-	37 500	37 500	37 500	100	-
Research and Development Infrastructure (capital)	50 000	-	-	50 000	50 000	100	50 000
Frontier Science and Technology (current)	-	-	-	-	-	-	15 000
Frontier Science and Technology (capital)	-	-	20 500	20 500	20 500	100	20 000
Global Science	286	-	533	819	819	100	4 610
Health Innovation	66	-	-	66	66	100	-
Human Resource Development	183 500	-	(14 072)	169 428	169 429	100	55 000
Human Sciences Research Council (HSRC)	155 949	-	-	155 949	155 949	100	121 473
Indigenous Knowledge Systems	-	-	1 550	1 550	1 550	100	2 500
Information Communication Technology (ICT)	-	-	16 000	16 000	16 000	100	13 000
Innovation Fund	141 818	-	-	141 818	141 818	100	131 260
Institutional and Programme Support	-	-	-	-	-	-	100
International Centre for Genetic Engineering and Biotechnology	10 000	-	-	10 000	10 000	100	-
Leveraging Services Strategy	-	-	-	-	-	-	1 739
National Public Assets	43 000	-	-	43 000	43 000	100	43 000
National Research Foundation (NRF)	650 299	-	7 400	657 699	657 699	100	596 671
SA Aids Vaccine Initiative	15 750	-	-	15 750	8 067	51,2	-
Science and Youth	-	-	2 631	2 631	2 631	100	2 500
Science Themes	29 012	-	5 284	34 296	34 296	100	33 261
Square Kilometre Array (capital)	-	-	80 000	80 000	80 000	100	-
Square Kilometre Array (current)	-	-	24 121	24 121	25 511	105,8	19 435
Technology for Poverty Alleviation	4 500	-	19 464	23 964	23 963	100	6 151
Technology for Sustainable Livelihoods	-	-	299	299	300	100,3	-
Technology Planning and Diffusion	39 889	-	(27 130)	12 759	11 300	88,6	19 300
Learnerships	3 855	-	(3 855)	-	-	-	-
South African National Research Network	158 750	-	(158 750)	-	-	-	-
Advanced Manufacturing Technology Strategy	42 808	-	(42 692)	116	-	-	-
South African National Energy Research Institute	42 000	-	(42 000)	-	-	-	-
Tshumisano Trust	18 000	-	(18 000)	-	-	-	-
Space Science (current)	-	-	-	-	-	-	205
<b>Total</b>	<b>1 616 012</b>	<b>-</b>	<b>(91 217)</b>	<b>1 524 795</b>	<b>1 516 928</b>		<b>1 160 159</b>



## Annexure IH

### Statement of transfers to universities and technikons

University/Technikon	Transfer allocation				Transfer		2006/07	
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	Amount not transferred	% of available funds transferred	Final Appropriation Act
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000
North West University	-	-	3 751	3 751	3 751	-	100	738
Tshwane University of Technology	-	-	200	200	200	-	100	70
University of Cape Town	-	-	4 478	4 478	4 478	-	100	8 224
University of Fort Hare	-	-	167	167	167	-	100	198
University of Free State	-	-	5 699	5 699	5 699	-	100	275
University of Johannesburg	-	-	-	-	-	-	-	134
University of KwaZulu-Natal	-	-	103	103	103	-	100	667
University of Limpopo	-	-	200	200	200	-	100	348
University of Pretoria	-	-	5 882	5 882	7 832	(1 950)	133,2	5 483
Stellenbosch University	15 033	-	308	15 341	15 341	-	100	24 188
University of Venda	-	-	200	200	200	-	100	250
University of Western Cape	-	-	3 018	3 018	3 018	-	100	190
University of the Witwatersrand	-	-	4 364	4 364	4 364	-	100	4 933
University of Zululand	-	-	464	464	464	-	100	274
<b>Total</b>	<b>15 033</b>	<b>-</b>	<b>28 834</b>	<b>43 867</b>	<b>45 817</b>	<b>(1 950)</b>		<b>45 972</b>

## Annexure II

### Statement of transfers/subsidiaries to public corporations and private enterprises

Name of public corporation/ private enterprise	Transfer allocation				Expenditure				2006/07
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of available funds transfer	Capital	Current	Final Appropriation Act
	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000	R'000
<b>Private Enterprises</b>									
Transfers									
Council for Scientific and Industrial Research (CSIR)	76 182	-	405 185	481 367	479 324	99,6	-	479 324	246 384
Council for Mineral Technology (MINTEK)	-	-	26 536	26 536	26 536	100	-	26 536	11 123
Donations and gifts	-	-	-	-	-	-	-	-	18
<b>Subtotal</b>	<b>76 182</b>	<b>-</b>	<b>431 721</b>	<b>507 903</b>	<b>505 860</b>		<b>-</b>	<b>505 860</b>	<b>257 525</b>
Subsidies									
Council for Scientific and Industrial Research (CSIR)	517 352	-	-	517 352	517 352	100	-	517 352	483 194
<b>Subtotal</b>	<b>517 352</b>	<b>-</b>	<b>-</b>	<b>517 352</b>	<b>517 352</b>		<b>-</b>	<b>517 352</b>	<b>483 194</b>
<b>Total</b>	<b>593 534</b>	<b>-</b>	<b>431 721</b>	<b>1 025 255</b>	<b>1 023 212</b>		<b>-</b>	<b>1 023 212</b>	<b>740 719</b>

# Annexures to the Annual Financial Statements (continued)

for the year ended 31 March 2008

## Annexure 1K Statement of transfers to non-profit institutions

	Transfer allocation				Expenditure		2006/07
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of available funds transferred	Final Appropriation Act
Non-profit institutions	R'000	R'000	R'000	R'000	R'000	%	R'000
<b>Transfers</b>							
Academy of Sciences of South Africa (ASSAF)	2 580	–	–	2 580	2 580	100	153
Acorn Technologies (Pty) Limited	245	–	–	245	245	100	–
Africa Analysis for Policy Analysis	–	–	–	–	–	–	197
AfricaBio	150	–	–	150	150	100	–
Aquaculture Association of South Africa (AASA)	45	–	–	45	45	100	–
Asande Projects	–	–	–	–	–	–	431
Association for Mathematics Education of South Africa	225	–	–	225	225	100	–
Biopad Regional Innovation Centre Trust	–	–	–	–	–	–	34 300
B. North (Council for Scientific and Industrial Research (CSIR)	–	–	–	–	–	–	–
Hydrogen Competency Centre)	7	–	–	7	7	100	–
Beyond 2000 Publishers	750	–	–	750	750	100	–
Biopad Trust	64 437	–	(34 600)	29 837	29 837	100	–
Bokamoso Science and Technology Education Centre	–	–	–	–	–	–	263
Cape Biotech Trust (CAPEBIO)	134 355	–	(100 000)	34 355	34 355	100	34 300
Cape Peninsula University of Technology (CPUT)	123	–	–	123	123	100	–
City of Johannesburg	–	–	–	–	–	–	5 500
Companies and Intellectual Property Registration Office	–	–	–	–	–	–	3 500
Council for Geoscience	1 865	–	–	1 865	1 865	100	2 088
Council for Scientific and Industrial Research (CSIR)	9 000	–	–	9 000	9 000	100	–
Da Vinci Integration Enterprises (Pty) Limited	2 417	–	–	2 417	2 417	100	–
Department of Public Enterprises	2 723	–	–	2 723	2 723	100	–
Development Bank of Southern Africa	290	–	–	290	290	100	–
East Coast Biotechnology Innovation Centre Trust	132 620	–	(100 000)	32 620	32 620	100	500
Econ Analysis	–	–	–	–	–	–	66
Expo for Young Scientists	1 000	–	–	1 000	1 000	100	417
Gateway Discovery Centre Trust	–	–	–	–	–	–	85
Global Research Alliance Management Services	–	–	–	–	–	–	122
Grahamstown Foundation	–	–	–	–	–	–	242
High Impact Innovation	110	–	–	110	110	100	–
Innovation Trust	–	–	–	–	–	–	162
Institute of Natural Resources	360	–	–	360	360	100	–
International Centre for Genetic Engineering and Biotechnology	–	–	–	–	–	–	10 000
International Congress on Nitrogen Fixation	95	–	–	95	95	100	–
International Square Kilometre Array Project Office	–	–	–	–	–	–	236
ISSCT Conference	–	–	–	–	–	–	500
iThemba LABS	14	–	–	14	14	100	750
KPMG Services (Pty) Limited	103	–	–	103	103	100	71
Lifelab	–	–	–	–	–	–	34 300
Limpopo Province Education Development Trust	–	–	–	–	–	–	300
Medical Research Council (MRC)	–	–	–	–	–	–	22 790
MTN Science Centre	–	–	–	–	–	–	260
National Bioinformatics Network (NBN)	17 515	–	–	17 515	17 515	100	16 500
National Research Foundation (NRF)	5 040	–	–	5 040	5 040	100	–
National Science and Technology Forum	6 000	–	–	6 000	6 000	100	–
Nelson Mandela Metropolitan University	18	–	–	18	18	100	–
Northern Flagship Institution	1 000	–	–	1 000	1 000	100	–

## Annexure IK

### Statement of transfers to non-profit institutions (continued)

	Transfer allocation				Expenditure		2006/07
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of available funds transferred	Final Appropriation Act
Non-profit institutions	R'000	R'000	R'000	R'000	R'000	%	R'000
<b>Transfers (continued)</b>							
Nuclear Energy Corporation of South Africa (NECSA)	20 706	–	–	20 706	20 706	100	18 450
Old Mutual Properties	–	–	–	–	–	–	200
Partners in Development	–	–	–	–	–	–	486
Plantbio Trust	21 170	–	–	21 170	21 170	100	25 500
Port Elizabeth Museum	50	–	–	50	50	100	–
Rocalistep (Pty) Limited	–	–	–	–	–	–	94
Satellite Mapping Agency	–	–	–	–	–	–	175
SA Node of the Millennium Project (Pty) Limited	100	–	–	100	100	100	–
Sci-Bono Discovery Centre	2 200	–	–	2 200	2 200	100	1 754
Seda Technology Programme	–	–	–	–	–	–	12 000
South African Academy of Engineering	–	–	–	–	–	–	12
South African Agency for Science and Technology Advancement (SAASTA)	11 176	–	–	11 176	11 176	100	13 370
South African Environmental Observatory Network	–	–	–	–	–	–	60
South African Institute of Physics	98	–	–	98	98	100	667
South African Mathematics Foundation (SAMF)	500	–	–	500	500	100	2 639
South African National Biodiversity Institute (SANBI)	250	–	–	250	250	100	2 700
South African National Energy Research Institute (SANERI)	105 000	–	(60 000)	45 000	45 000	100	40 000
South African Young Nuclear Professionals Society (SAYPS)	127	–	–	127	127	100	–
Southern African Research and Innovation Management Association (SARIMA)	878	–	–	878	878	100	520
Stellenbosch-University	9	–	–	9	9	100	–
Sunspace	–	–	–	–	–	–	10 000
Technology Top 100	–	–	–	–	–	–	2 060
Telkom SA Limited	–	–	–	–	–	–	50
The Growth Laboratory (Pty) Limited	53	–	–	53	53	100	–
The Medical Research Council (MRC)	6 981	–	–	6 981	6 981	100	–
The South African Chemical Institute	130	–	–	130	130	100	118
The South African Institute of Physics (SAIP)	278	–	–	278	278	100	–
The South African Mathematics Foundation (SAMF)	2 192	–	–	2 192	2 192	100	–
The Thuthuka Education Upliftment Fund	6 143	–	–	6 143	6 143	100	4 902
The Water Research Commission	600	–	–	600	600	100	600
Tshumisano Trust	102 071	–	(45 986)	56 085	49 500	88,3	37 509
Wine Industry Network of Expertise and Technology (Winetech)	2 000	–	–	2 000	2 000	100	–
Wits Commercial Enterprise (Pty) Limited	187	–	–	187	187	100	616
<b>Subtotal</b>	<b>665 986</b>	<b>–</b>	<b>(340 586)</b>	<b>325 400</b>	<b>318 815</b>		<b>342 515</b>
<b>Subsidies</b>							
Academy of Sciences of South Africa (ASSAF)	3 400	–	–	3 400	3 400	100	3 000
<b>Subtotal</b>	<b>3 400</b>	<b>–</b>	<b>–</b>	<b>3 400</b>	<b>3 400</b>		<b>3 000</b>
<b>Total</b>	<b>669 386</b>	<b>–</b>	<b>(340 586)</b>	<b>328 800</b>	<b>322 215</b>		<b>345 515</b>

# Annexures to the Annual Financial Statements (continued)

for the year ended 31 March 2008

## Annexure 1L Statement of transfers to households

Households	Transfer allocation				Expenditure		2006/07
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of available funds transferred	Final Appropriation Act
	R'000	R'000	R'000	R'000	R'000	%	R'000
Institutional support	–	–	–	–	–	–	200
Gifts and donations	646	–	–	646	187	28,9	784
<b>Total</b>	<b>646</b>	<b>–</b>	<b>–</b>	<b>646</b>	<b>187</b>	<b>28,9</b>	<b>984</b>

## Annexure 1O Statement of gifts, donations and sponsorships made and remissions, funds and payments made as an act of grace for the year ended 31 March 2008

	2007/08 R'000	2006/07 R'000
Nature of gift, donation or sponsorship (Group major categories but list material items including name of organisation)		
Paid in cash		
South African Women in Science Awards	419	200
Corporate and promotional gifts*	68	785
<b>Total</b>	<b>487</b>	<b>985</b>

\*Gifts/Promotional items were presented to foreign and local dignitaries, guest speakers at departmental events and to the general public during science and technology events. It is, however, not practical to list all recipients individually.

## Annexure 3A Statement of financial guarantees issues as at 31 March 2008 – local

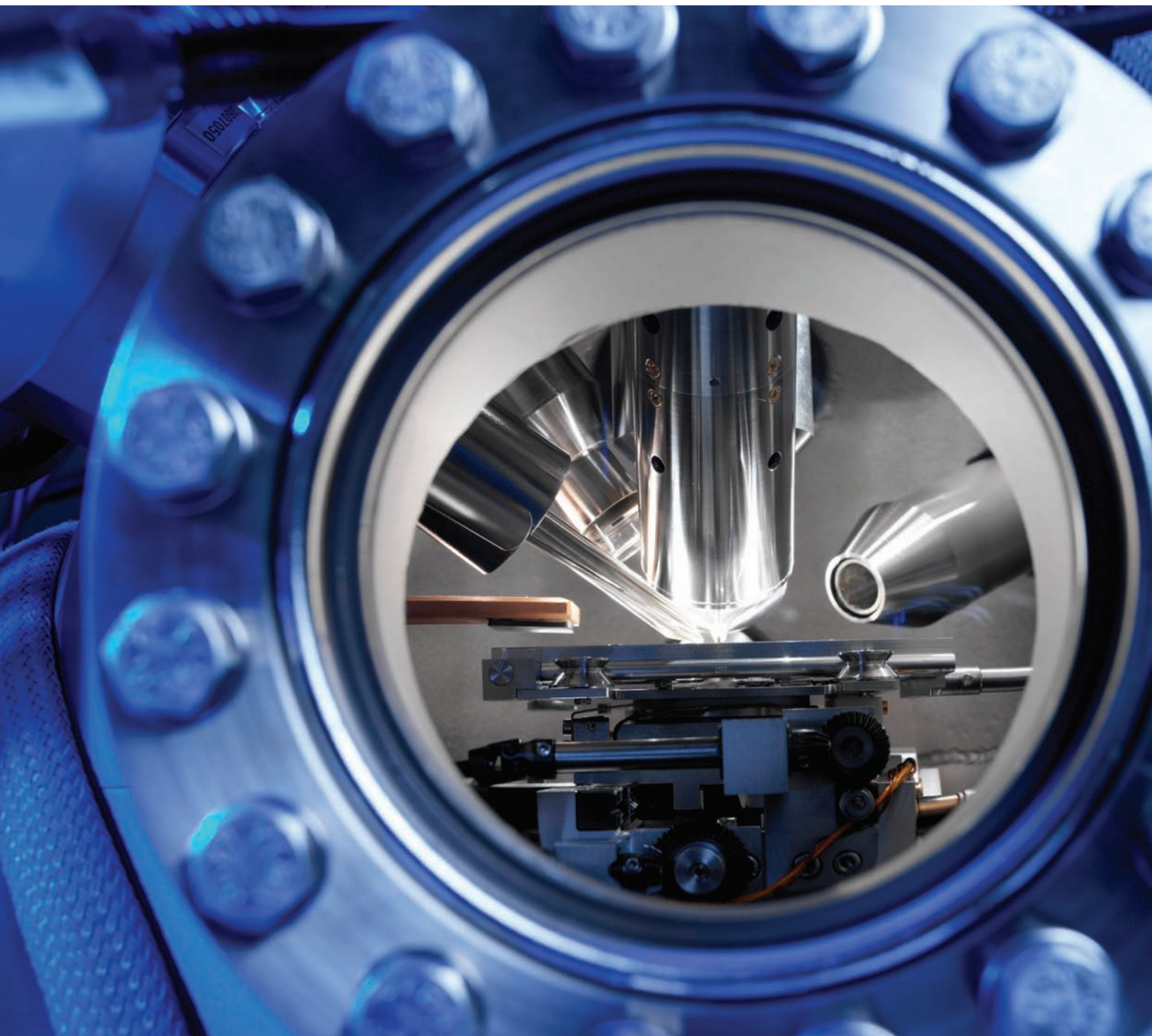
Guarantor institution	Guarantee in respect of	Original guaranteed capital amount	Opening balance 1 April 2007	Guarantees draw-downs during the year	Guarantees repayments/cancelled/reduced/ released during the year	Revaluations	Closing balance 31 March 2008	Guaranteed interest for year ended 31 March 2008	Realised losses not recoverable ie claims paid out
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Absa Bank	Housing	300	97	–	–	–	97	–	–
Standard Bank		124	12	–	–	–	12	–	–
First National Bank		126	28	–	–	–	28	–	–
Nedbank		65	67	–	–	–	67	–	–
VSB Mutual Bank		19	19	–	19	–	–	–	–
<b>Total</b>		<b>634</b>	<b>223</b>	<b>–</b>	<b>19</b>	<b>–</b>	<b>204</b>	<b>–</b>	<b>–</b>

## Annexure 4 Intergovernment receivables

	Confirmed balance outstanding		Unconfirmed balance outstanding		Total	
	31/03/2008 R'000	31/03/2007 R'000	31/03/2008 R'000	31/03/2007 R'000	31/03/2008 R'000	31/03/2007 R'000
<b>Government entity</b>						
Department of Agriculture	–	–	–	3	–	3
Department of Arts and Culture	–	–	–	26	–	26
Department of Correctional Services	–	–	5	5	5	5
Department of Defence	–	–	1	–	1	–
Department of Environmental Affairs and Tourism	2	–	–	–	2	–
Department of Health	–	–	–	18	–	18
Gauteng: Agriculture Conservation Environment	–	–	1	–	1	–
Gauteng Department of Social Development	–	–	8	8	8	8
Gauteng Provincial Government (shared services)	–	–	–	24	–	24
North West Education Department	–	–	–	1	–	1
Statistics South Africa	–	–	–	12	–	12
Department of Trade and Industry	–	–	1	–	1	–
<b>Subtotal</b>	<b>2</b>	<b>–</b>	<b>16</b>	<b>97</b>	<b>18</b>	<b>97</b>
<b>Other government entities</b>						
National Research Foundation	–	149	–	–	–	149
<b>Subtotal</b>	<b>–</b>	<b>149</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>149</b>
<b>Total</b>	<b>2</b>	<b>149</b>	<b>16</b>	<b>97</b>	<b>18</b>	<b>246</b>

## Annexure 5 Intergovernment payables

	Confirmed balance outstanding		Unconfirmed balance outstanding		Total	
	31/03/2008 R'000	31/03/2007 R'000	31/03/2008 R'000	31/03/2007 R'000	31/03/2008 R'000	31/03/2007 R'000
<b>Government entity</b>						
<b>Department Current</b>						
Department of Health	–	18	–	–	–	18
Department of Justice and Constitutional Development	15	–	–	–	15	–
Gauteng Provincial Government	–	10	–	–	–	10
Government Printing Works	–	92	–	–	–	92
South African Police Service	2	–	–	–	2	–
<b>Total</b>	<b>17</b>	<b>120</b>	<b>–</b>	<b>–</b>	<b>17</b>	<b>120</b>
<b>Other government entity Current</b>						
The South African Management Development Institute (SAMDI)	97	–	–	–	97	–
<b>Total</b>	<b>97</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>97</b>	<b>–</b>





# Human Resources

Oversight Report

# Human Resources – Oversight Report

## I. Training provided

				Training needs identified 2007		
Occupational – categories	Gender	Number of employees as at April 2007	Learnerships	Skills programmes/ short courses (1)	Other forms of training	Total
Legislators, senior officials	Female	26	0	11	0	11
	Male	49	0	11	0	11
Professionals	Female	72	0	15	0	15
	Male	44	0	15	0	15
Technicians	Female	3	0	3	0	3
	Male	2	0	3	0	3
Clerks	Female	66	0	13	0	13
	Male	26	0	13	0	13
Elementary occupations	Female	4	0	4	0	4
	Male	0	0	0	0	0
Subtotal	Female	171		46		46
	Male	121		40		40
<b>Total</b>		<b>292</b>	<b>0</b>	<b>86</b>	<b>0</b>	<b>86</b>

				Training needs identified 2007/08		
Occupational – categories	Gender	Number of employees as at April 2008	Learnerships	Skills programmes/ short courses (1)	Other forms of training	Total
Legislators, senior officials	Female	28	0	3	3	6
	Male	52	0	3	0	3
Professionals	Female	86	0	11	4	15
	Male	57	0	10	3	13
Technicians	Female	1	0	2	0	2
	Male	2	0	2	0	2
Clerks	Female	69	0	13	1	14
	Male	24	0	10	1	11
Elementary occupations	Female	3	0	1	0	1
	Male	1	0	0	0	0
Subtotal	Female	187	0	30	8	38
	Male	136	0	25	4	29
<b>Total</b>		<b>323</b>	<b>0</b>	<b>55</b>	<b>12</b>	<b>67</b>



### 1.1 – Personnel costs by programme, 2007/2008

Programme	Total expenditure (R'000)	Personnel expenditure (R'000)	Training expenditure (R'000)	Professional and special services (R'000)	Personnel cost as a percent of total expenditure	Average personnel cost per employee (R'000)
Corporate Services and Governance	1 13 390	44 771	1 178	24 152	39,48	309
Research, Development and Innovation	531 444	11 465	97	2 713	2,16	318
International Cooperation and Resources	99 433	19 849	137	3 294	19,96	331
Human Capital and Knowledge Systems	1 272 583	11 869	87	2 035	0,93	330
Socio-Economic Partnerships	1 110 430	16 121	105	2 616	1,45	343
<b>Total</b>	<b>3 127 280</b>	<b>104 075</b>	<b>1 604</b>	<b>34 810</b>	<b>3,33</b>	<b>321</b>

### 1.2 – Personnel costs by salary bands, 2007/2008

Salary bands	Personnel expenditure (R'000)	Percentage of total personnel cost	Average personnel cost per employee (R'000)
Lower skilled (levels 1 – 2)	0	0,00	0
Skilled (levels 3 – 5)	997	0,96	125
Highly skilled production (levels 6 – 8)	12 972	12,46	143
Highly skilled supervision (levels 9 – 12)	40 152	38,58	275
Senior management (levels 13 – 16)	49 954	48,00	632
<b>Total</b>	<b>104 075</b>	<b>100,00</b>	<b>355</b>

# Human Resources – Oversight Report (continued)

1.3 – Salaries, overtime, homeowners' allowance and medical assistance by programme, 2007/2008								
Programme	Salaries		Overtime		Homeowners' allowance		Medical assistance	
	Amount (R'000)	Salaries as a percentage of personnel cost	Amount (R'000)	Overtime as a percentage of personnel cost	Amount (R'000)	HOA as a percentage of personnel cost	Amount (R'000)	Medical assistance as a percentage of personnel cost
Corporate Services and Governance	44 771	100,00	451	1,01	701	1,57	1 318	2,94
Research, Development and Innovation	11 465	100,00	2	0,02	237	2,07	222	1,94
International Cooperation and Resources	19 849	100,00	117	0,59	306	1,54	441	2,22
Human Capital and Knowledge Systems	11 869	100,00	7	0,06	239	2,01	335	2,82
Socio-Economic Partnerships	16 121	100,00	4	0,02	373	2,31	379	2,35
<b>Total</b>	<b>104 075</b>		<b>581</b>		<b>1 856</b>		<b>2 695</b>	

1.4 – Salaries, overtime, homeowners' allowance and medical assistance by salary bands, 2007/2008								
Salary bands	Salaries		Overtime		Homeowners' allowance		Medical assistance	
	Amount (R'000)	Salaries as a percentage of personnel cost	Amount (R'000)	Overtime as a percentage of personnel cost	Amount (R'000)	HOA as a percentage of personnel cost	Amount (R'000)	Medical assistance as a percentage of personnel cost
Lower skilled (Levels 1 – 2)	0	0,00	0	0,00	0	0,00	0	0,00
Skilled (levels 3 – 5)	997	0,96	51	0,05	502	0,48	415	0,40
Highly skilled production (levels 6 – 8)	12 972	12,46	163	0,16	755	0,73	925	0,89
Highly skilled supervision (levels 9 – 12)	40 152	38,58	367	0,35	599	0,58	1 355	1,30
Senior management (levels 13 – 16)	49 954	48,00	0	0	0	0,00	0	0
<b>Total</b>	<b>104 075</b>	<b>100,00</b>	<b>581</b>	<b>0,56</b>	<b>1 856</b>	<b>1,78</b>	<b>2 695</b>	<b>2,59</b>

## 2. Employment and vacancies

The vacancy rate reflects the percentage of posts that are not filled.

### 2.1 – Employment and vacancies by salary bands, 31 March 2008

Programme	Number of posts	Number of posts filled	Vacancy rate	Number of posts filled additional to the establishment
Corporate Services and Governance	163	145	11,04	–
Research, Development and Innovation	42	36	14,29	–
International Cooperation and Resources	62	60	3,23	–
Human Capital and Knowledge Systems	43	36	16,28	–
Socio-Economic Partnerships	56	47	16,07	–
<b>Total</b>	<b>366</b>	<b>324</b>	<b>11,48</b>	<b>–</b>

### 2.2 – Employment and vacancies by salary bands, 31 March 2007

Programme	Number of posts	Number of posts filled	Vacancy rate	Number of posts filled additional to the establishment
Lower skilled (levels 1 – 2)	0	0	0,00	–
Skilled (levels 3 – 5)	10	8	2,19	–
Highly skilled production (levels 6 – 8)	97	91	24,86	–
Highly skilled supervision (levels 9 – 12)	167	146	39,89	–
Senior management (levels 13 – 16)	92	79	21,58	–
<b>Total</b>	<b>366</b>	<b>324</b>	<b>11,48</b>	<b>–</b>

# Human Resources – Oversight Report (continued)

## 3. Job evaluation

3.1 – Job evaluation, 1 April 2007 to 31 March 2008							
Salary band	Number of posts	Number of jobs	Percentage of posts evaluated by salary bands	Posts upgraded		Posts downgraded	
				Number	Percentage of posts	Number	Percentage of posts
Lower skilled (levels 1 – 2)	0	0	0,00	0	0,00	0	–
Skilled (levels 3 – 5)	10	0	0,00	0	0,00	0	–
Highly skilled production (levels 6 – 8)	97	3	3,09	0	0,00	0	–
Highly skilled supervision (levels 9 – 12)	167	91	54,49	141	84,43	0	–
Senior management service Band A	65	1	1,54	0	0,00	0	–
Senior management service Band B	20	3	15,00	0	0,00	0	–
Senior management service Band C	6	0	0,00	0	0,00	0	–
Senior management service Band D	1	0	0,00	0	0,00	0	–
<b>Total</b>	<b>366</b>	<b>98</b>	<b>26,78</b>	<b>141</b>	<b>38,52</b>	<b>0</b>	<b>–</b>

3.2 – Profile of employees whose salary positions were upgraded due to their posts being upgraded, 1 April 2007 to 31 March 2008					
Beneficiaries	African	Asian	Coloured	White	Total
Female	8	1	0	1	10
Male	1	0	0	1	2
<b>Total</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>12</b>

#### 4. Employment changes

##### 4.1 – Annual turnover rates by salary band for the period 1 April 2007 to 31 March 2008

Salary band	Number of employees per band as at 1 April 2007	Appointments and transfers into the department	Terminations and transfers out of the department	Turnover rate %
Lower skilled (levels 1 – 2)	0	0	0	0,00
Skilled (levels 3 – 5)	9	0	1	11,11
Highly skilled production(levels 6 – 8)	96	39	29	30,21
Highly skilled supervision(levels 9 – 12)	119	37	19	15,97
Senior management service Band A	44	13	5	11,36
Senior management service Band B	18	1	3	16,67
Senior management service Band C	6	0	2	33,33
Senior management service Band D	1	0	0	0,00
<b>Total</b>	<b>293</b>	<b>90</b>	<b>59</b>	<b>20,14</b>

##### 4.2 – Reasons why staff are leaving the department

Termination type	Number	Percentage of total
Death	0	0,00
Resignation	35	59,32
Expiry of contract	14	23,73
Dismissal – operational changes	0	0,00
Dismissal – misconduct	1	1,69
Dismissal – inefficiency	0	0,00
Discharged due to ill-health	0	0,00
Retirement	1	1,69
Transfers to other public service departments	8	13,56
Other		0,00
<b>Total</b>	<b>59</b>	
Total number of employees who left as a percentage of the total employment		20,14

# Human Resources – Oversight Report (continued)

## 4.3 – Promotions by salary band

Salary band	Employees 1 April 2007	Promotions to another salary level	Salary bands promotions as a percentage of employees by salary level	Progressions to another notch within a salary level	Notch progressions as a percentage of employees by salary band
Lower skilled (levels 1 – 2)	0	0	0,00	0	0,00
Skilled (levels 3 – 5)	9	0	0,00	6	66,67
Highly skilled production (levels 6 – 8)	96	2	2,08	41	42,71
Highly skilled supervision (levels 9 – 12)	119	9	7,56	60	50,42
Senior management (levels 13 – 16)	69	8	11,59	41	59,42
<b>Total</b>	<b>293</b>	<b>19</b>	<b>6,48</b>	<b>148</b>	<b>50,51</b>

## 5. Employment equity

The tables in this section are based on the formats prescribed by the Employment Equity Act 55 of 1998.

### 5.1 – Total number of employees (including employees with disabilities) in each of the following occupational categories as at 31 March 2008

Occupational categories (SASCO)	Male				Female			
	African	Coloured	Indian	White	African	Coloured	Indian	White
Management (levels 13 – 16)	36	3	8	5	17	2	3	5
Middle management (levels 9 – 12)	43	3	1	7	78	4	3	6
Administrative (levels 6 – 8)	17	2	1	1	56	6	2	7
Clerical (levels 3 – 5)	4	0	0	0	4	0	0	0
Elementary occupations (levels 1 – 2)	0	0	0	0	0	0	0	0
<b>Total</b>	<b>100</b>	<b>8</b>	<b>10</b>	<b>13</b>	<b>155</b>	<b>12</b>	<b>8</b>	<b>18</b>
Employees with disabilities	1	0	1	2	2	0	0	1

5.2 – Total number of employees (including employees with disabilities) in each of the following occupational bands as on 31 March 2008

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management (levels 15 – 16)	3	0	0	0	1	1	0	0	5
Senior management (levels 13 – 14)	33	3	8	5	16	1	3	5	74
Professionally qualified and experienced specialists and mid-management (levels 9 – 12)	43	3	1	7	78	4	3	6	145
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents (levels 6 – 8)	17	2	1	1	56	6	2	7	92
Semi-skilled and discretionary decision-making (levels 3 – 5)	4	0	0	0	4	0	0	0	8
Unskilled and defined decision-making (levels 1 – 2)	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>100</b>	<b>8</b>	<b>10</b>	<b>13</b>	<b>155</b>	<b>12</b>	<b>8</b>	<b>18</b>	<b>324</b>

# Human Resources – Oversight Report (continued)

## 5.3 – Recruitment for the period 1 April 2007 to 31 March 2008

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management (levels 15 – 16)	0	0	0	0	0	0	0	0	0
Senior management (levels 13 – 14)	3	2	1	1	7	0	0	1	15
Professionally qualified and experienced specialists and mid-management (levels 9 – 12)	15	0	0	1	17	1	1	1	36
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents (levels 6 – 8)	4	0	0	0	31	1	2	1	39
Semi-skilled and discretionary decision-making (levels 3 – 5)	0	0	0	0	0	0	0	0	0
Unskilled and defined decision-making (levels 1 – 2)	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>22</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>55</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>90</b>



5.4 – Promotions for the period 1 April 2007 to 31 March 2008

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management (levels 15 – 16)	0	0	0	0	1	0	0	0	1
Senior management (levels 13 – 14)	4	0	1	0	0	1	0	1	7
Professionally qualified and experienced specialists and mid-management (levels 9 – 12)	1	0	0	1	6	0	0	1	9
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents (levels 6 – 8)	0	0	0	0	0	0	0	0	0
Semi-skilled and discretionary decision-making (levels 3 – 5)	0	0	0	0	2	0	0	0	2
Unskilled and defined decision-making (levels 1 – 2)	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>19</b>

# Human Resources – Oversight Report (continued)

## 5.5 – Terminations for the period 1 April 2007 to 31 March 2008

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management (levels 15 – 16)	0	0	1	0	0	0	1	0	2
Senior management (levels 13 – 14)	3	0	0	0	3	1	1	0	8
Professionally qualified and experienced specialists and mid-management (levels 9 – 12)	5	0	0	1	8	2	0	3	19
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents (levels 6 – 8)	4	0	0	0	22	0	1	2	29
Semi-skilled and discretionary decision-making (levels 3 – 5)	1	0	0	0	0	0	0	0	1
Unskilled and defined decision-making (levels 1 – 2)	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>13</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>33</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>59</b>

## 6. Performance rewards

### 6.1 – Performance rewards by race, gender, and disability

	Beneficiary profile			Cost	
	Number of beneficiaries	Total number of employees in the group	Percentage of total within the group	Cost ('000)	Average cost per employee ('000)
<b>African</b>					
Male	56	98	57,14	781	14
Female	84	153	54,90	1 005	12
<b>Asian</b>					
Male	7	9	77,78	229	33
Female	3	8	37,50	78	26
<b>Coloured</b>					
Male	4	8	50,00	62	16
Female	7	12	58,33	78	11
<b>White</b>					
Male	6	12	50,00	85	14
Female	16	17	94,12	187	12
Employees with a disability	7	8	100,00	72	10
<b>Total</b>	<b>190</b>	<b>325</b>	<b>58,46</b>	<b>2 577</b>	<b>14</b>

### 6.2 – Performance rewards by salary bands for personnel below Senior Management Service

Salary bands	Beneficiary profile			Cost		
	Number of beneficiaries	Number of employees	Percentage of total within salary bands	Total cost (R'000)	Average cost per employee	Total cost as a percentage of the total personnel expenditure
Lower skilled (levels 1 – 2)	0	0	0,00	0,00	0,00	0,00
Skilled (levels 3 – 5)	6	8	75,00	24,00	4,00	0,02
Highly skilled production (levels 6 – 8)	65	91	71,43	455,00	7,00	0,44
Highly skilled supervision (levels 9 – 12)	85	146	58,22	1 020,00	12,00	0,98
<b>Total</b>	<b>156</b>	<b>245</b>	<b>63,67</b>	<b>1 499,00</b>	<b>9,61</b>	<b>1,44</b>

# Human Resources – Oversight Report (continued)

## 6.3 – Performance-related rewards (cash bonus), by salary band, for Senior Management Service

Salary bands	Beneficiary profile			Cost		
	Number of beneficiaries	Number of employees	Percentage of total within salary bands	Total cost (R'000)	Average cost per employee	Total cost as a percentage of the total personnel expenditure
Band A	19	57	33,33	513	27	0,49
Band B	11	17	64,71	363	33	0,35
Band C	3	4	75,00	114	38	0,11
Band D	1	1	100,00	89	89	0,09
<b>Total</b>	<b>34</b>	<b>79</b>	<b>43,04</b>	<b>1 079</b>	<b>47</b>	<b>1,04</b>

## 7. Leave utilisation

The Public Service Commission identified the need for careful monitoring of sick leave within the public service. The following tables provide an indication of the use of sick leave (table 7.1) and disability leave (table 7.2). In both cases, the estimated cost of the leave is also provided.

### 7.1 – Sick leave, 1 April 2007 to 31 March 2008

	Total days	Percentage days with medical certification	Number of employees using sick leave	Percentage of total employees using sick leave	Average days per employee	Estimated cost (R'000)
Lower skilled (levels 1 – 2)	0	0,00	0	0,00	0,00	0
Skilled (levels 3 – 5)	39	4,27	6	75,00	6,50	9
Highly skilled production (levels 6 – 8)	196	21,47	67	73,63	2,93	196
Highly skilled supervision (levels 9 – 12)	474	51,92	86	58,90	5,51	306
Senior management (levels 13 – 16)	204	22,34	44	55,70	4,64	889
<b>Total</b>	<b>913</b>	<b>20,00</b>	<b>203</b>	<b>62,65</b>	<b>4,50</b>	<b>1 400</b>

### 7.2 – Disability leave (temporary and permanent), 1 January 2007 to 31 December 2007

Salary band	Total days taken	Percentage days with medical certification	Number of employees using disability leave	Percentage of total employees using disability leave	Average days per employee	Estimated cost (R'000)
Lower skilled (levels 1 – 2)	0	0	0	0,00	0	
Skilled (levels 3 – 5)	0	0	0	0,00	0	0
Highly skilled production (levels 6 – 8)	42	100	1	0,31	42	1
Highly skilled supervision (levels 9 – 12)	0	0	0	0,00		0
Senior management (levels 13 – 16)	0	0	0	0,00	0	0
<b>Total</b>	<b>42</b>	<b>100</b>	<b>1</b>	<b>0,31</b>	<b>42</b>	<b>1</b>

Table 7.3 summarises the utilisation of annual leave. The wage agreement concluded with trade unions in the PSCBC in 2000 requires management of annual leave to prevent high levels of accrued leave being paid at the time of termination of service.

### 7.3 – Annual leave, 1 January 2007 to 31 December 2007

	Total days taken	Percentage days with medical certification
Lower skilled (levels 1 – 2)	0	0,00
Skilled levels 3 – 5)	165	20,63
Highly skilled production (levels 6 – 8)	1 415	17,91
Highly skilled supervision (levels 9 – 12)	1 977	15,94
Senior management (levels 13 – 16)	1 220	16,94
<b>Total</b>	<b>4 777</b>	<b>18,16</b>

### 7.4 – Capped leave, 1 April 2007 to 31 March 2008

Salary bands	Total days of capped leave taken	Average number of days taken per employee	Average capped leave per employee as at 31 March 2006
Lower skilled (levels 1 – 2)	0	0,00	0,00
Skilled (levels 3 – 5)	0	0,00	30,25
Highly skilled production (levels 6 – 8)	0	0,00	28,83
Highly skilled supervision (levels 9 – 12)	0	0,00	26,50
Senior management (levels 13 – 16)	0	0,00	39,72
<b>Total</b>	<b>0</b>	<b>0,00</b>	<b>32,10</b>

# Human Resources – Oversight Report (continued)

## 7.5 – Leave payouts for the period 1 April 2007 to 31 March 2008

The following table summarises payments made to employees as a result of leave that was not taken.

Reason	Total amount (R'000)	Number of employees	Average payment per employee ('000)
Leave payout for 2006/07 due to non-utilisation of leave for the previous cycle	30	3	10,00
Capped-leave payouts on termination of service for 2007/08	0	0	0,00
Current leave payout on termination of service for 2005/06	181	29	6
<b>Total</b>	<b>211</b>	<b>32</b>	<b>6,59</b>

## 8. HIV and Aids and health promotion programmes

### 8.1 – Details of health promotion and HIV and Aids programmes (tick the applicable boxes and provide the required information)

Question	Yes	No	Details, if yes
1. Has the department designated a member of the SMS to implement the provisions contained in Part VI E of Chapter 1 of the Public Service Regulations, 2001? If so, provide her/his name and position.	✓		General Manager: Human Resource Mrs Lerato Gumbi
2. Does the department have a dedicated unit or has it designated specific staff members to the health and well-being of your employees? If so, indicate the number of employees who are involved in this task and the annual budget that is available for this purpose.	✓		Special Programmes Unit: Two employees. The budget for the HIV and Aids programme is located under the Special Programmes Unit (R1,4 million).
3. Has the department introduced an Employee Assistance or Health Promotion Programme for your employees? If so, indicate the key elements/services of this programme.			The Employee Health and Wellness Programme, which focuses on wellness management, health management and occupational health and safety. The Department has also appointed a service provider to provide employee wellness programme services.

8.1 – Details of health promotion and HIV and Aids programmes (tick the applicable boxes and provide the required information) (continued)

Question	Yes	No	Details, if yes
<p>4. Has the department established (a) committee(s) as contemplated in Part VI E.5 (e) of Chapter I of the Public Service Regulations, 2001? If so, please provide the names of the members of the committee and the stakeholder(s) that they represent.</p>	✓		<p>Healthcare and wellness support committee, which consists of the core team and operational teams (inspection, first-aiders, peer counsellors and firefighters).</p> <ol style="list-style-type: none"> <li>1. Sheila van Stryp (PSA Union rep)</li> <li>2. Dorothy Leshaba (NEHAWU Union rep)</li> <li>3. Vivienne Gondwe (Chairperson)</li> <li>4. Loretta Pillay</li> <li>5. Thuli Letsoalo (Deputy Chairperson)</li> <li>6. Tom Suchanandan</li> <li>7. Iris Mashiyi</li> <li>8. Mirranda Mohapi</li> <li>9. Anneline Morgan</li> <li>10. George Seokane</li> <li>11. Oupa Mazibuko</li> <li>12. Philile Sigubudu</li> <li>13. Lydia Phasha</li> <li>14. Siphwe Mngomezulu</li> <li>15. Jack Ramalata</li> <li>16. Johannah Moima</li> <li>17. Gugu Zwane</li> <li>18. Swasti Soomaroo</li> <li>19. Moema Maponya</li> <li>20. Tebogo Modiba</li> </ol>
<p>5. Has the department reviewed its employment policies and practices to ensure that these do not unfairly discriminate against employees on the basis of their HIV status? If so, list the employment policies/practices so reviewed.</p>	✓		<p>HIV and Aids policy and the policy on Employee Health and Wellness Programme.</p>

# Human Resources – Oversight Report (continued)

## 8.1 – Details of health promotion and HIV and Aids programmes (tick the applicable boxes and provide the required information) (continued)

Question	Yes	No	Details, if yes
6. Has the department introduced measures to protect HIV-positive employees or those perceived to be HIV-positive from discrimination? If so, list the key elements of these measures.	✓		<ol style="list-style-type: none"> <li>1. Conducted education and awareness session with managers and employees during the commemoration of Candle Light Memorial and World Aids Day. Conducted education session for teenagers of employees on HIV and Aids and issues of sexuality.</li> <li>2. Distributed awareness material to create an environment of acceptance for infected and affected employees.</li> </ol>
7. Does the department encourage its employees to undergo voluntary counselling and testing? If so, list the results that you have achieved.	✓		We conducted three voluntary counselling and testing (VCT) drives in the last financial year.
8. Has the department developed measures/ indicators to monitor and evaluate the impact of its health promotion programme? If so, list these measures/indicators.	✓		<p>The committee developed a programme with clear indicators and these were monitored on a monthly basis by the committee. The following indicators were monitored:</p> <ol style="list-style-type: none"> <li>1. The number of VCTs done and employees testing.</li> <li>2. The percentage of employees seeking peer counselling.</li> <li>3. The percentage of employees utilising the counselling services offered by the service provider with specific focus on HIV and Aids.</li> <li>4. The number of training interventions conducted in relation to number of planned.</li> <li>5. The percentage of employees and managers attending the training interventions.</li> <li>6. The number of employees and managers participating in HIV and Aids activities.</li> <li>7. The number of training sessions conducted for the committee.</li> </ol>



# Corporate Information

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# Glossary

AAD	African Aerospace and Defence	NASAC	Network of African Science Academies
ACEP	African Coelacanth Ecosystem Programme	NCNSM	National Centre for Nano-structured Materials
Aids	Acquired Immunodeficiency Syndrome	NCOP	National Council of Provinces
AISA	Africa Institute of South Africa	Necsa	Nuclear Energy Corporation of South Africa
ALC	African Laser Centre	NEPAD	New Partnership for Africa's Development
AMA	African Migration Alliance	NIH	National Institutes of Health
AMCOST	African Ministers Council on Science and Technology	NIKSO	National Indigenous Knowledge Systems Office
AMTS	Advanced Manufacturing Technology Strategy	NRF	National Research Foundation
ARC	Agricultural Research Council	NSI	National System of Innovation
ARMRN	Advanced Robotics and Mechatronics Research Network	NSW	National Service Week
ASADI	African Science Academy Development Initiative	NSTF	National Science and Technology Forum
AsgiSA	Accelerated and Shared Growth Initiative for South Africa	NT	National Treasury
AU	African Union	OECD	Organisation for Economic Cooperation and Development
CHCP	Centre for High Performance Computing	PFMA	Public Finance Management Act
CNES	Centre Nationale d'Études Spatiales	PSC	Public Service Commission
CoC	centre of competence	R&D	research and development
CODESRIA	Council for the Development of Social Science Research in Africa	RDI	research, development and innovation
CoEs	centres of excellence	RISA	Research and Innovation Support and Advancement
CPUT	Cape Peninsula University of Technology	S&T	science and technology
CSIR	Council for Scientific and Industrial Research	SAAO	South African Astronomical Observatory
DG	Director-General	SAASTA	South African Agency for Science and Technology Advancement
DME	Department of Minerals and Energy	SAAVI	South African Aids Vaccine Initiative
DPW	Department of Public Works	SADC	Southern African Development Community
DST	Department of Science and Technology	SAEON	South African Environmental Observation Network
DWAF	Department of Water Affairs and Forestry	SAFIPA	South Africa-Finland ICT Knowledge Partnership
ESASTAP	European South African Science and Technology Advancement Programme	SAIAB	South African Institute for Aquatic Biodiversity
EU	European Union	SANBIO	South African National Bioinformatics Institute
Exco	Executive Committee	SANERI	South African National Energy Research Institute
GEO	Group on Earth Observations	SANReN	South African National Research Network
GIS	Geographic Information System	SAQA	South African Qualifications Authority
GTZ	Gesellschaft für Technische Zusammenarbeit	SBS	sector budget support
HartRAO	Hartebeesthoek Radio Astronomy Observatory	SCM	supply chain management
HMO	Hermanus Magnetic Observatory	SES	socio-economic status
HSRC	Human Sciences Research Council	SKA	Square Kilometre Array
HIV	Human Immunodeficiency Virus	SMS	Senior Management Service
IAP	Inter-Academy Panel	TIA	Technology Innovation Agency
IAT	Institute for Advanced Tooling	TSCT	Technology Station in Clothing and Textiles
ICT	information and communication technology	TWAS	Academy of Science for the Developing World
IKS	Indigenous Knowledge Systems	UNESCO	United Nations Educational Scientific and Cultural Organisation
IP	Intellectual Property	UNICEF	United Nations Children's Emergency Fund
IPR	Intellectual Property Rights	USNA	US National Academy of Sciences
ITS	intelligent transport systems	VCT	voluntary counselling and testing
MRC	Medical Research Council	Wits	University of the Witwatersrand
NACI	National Advisory Council on Innovation	XDR-TB	extremely drug-resistant tuberculosis

