



Science and technology

South African science and research are world class. To expand the country's scientific and technical leadership, government's budget for these areas has increased by 27,6% in the past five years.

Strategy

In 2002, the Department of Science and Technology's Research and Development Strategy was approved. This enhanced the National System of Innovation through which a multitude of role-players work to pursue goals of economic development and progress.

Innovation Centres

Three Biotechnology Regional Innovation Centres are focused on specific regions of the country and areas of technology. These include human and animal health,



FACT

International research collaboration includes 60 active projects with France, and eight with the People's Republic of China. Others include Belgium, Germany, Hungary, Sweden, Italy, India, Nigeria, Russia, the United Kingdom (UK) and United States of America (USA).



FACT

The South African Large Telescope (SALT), being built at Sutherland in the Northern Cape, is a multimillion-Rand project involving Germany, Poland, the USA, New Zealand and the UK. It will be the largest single optical telescope in the southern hemisphere.

plant biotechnology and industry/environmental-related biotechnology.

Backed by the European Union, the Godisa National Incubation Programme was launched in 2001. The Programme aims to encourage technology transfer and to help small businesses compete in the global economy. Eight technology-transfer centres have been established.



FACT

The Agricultural Research Council's Bee-Keeping for Poverty-Relief Programme has been implemented in 35 rural and peri-urban areas. Communities produce honey, wax and wax products, as well as items such as protective clothing.



FACT

South Africa is bidding to host the ambitious Square Kilometre Array (SKA) radio telescope, a telescope that will have multiple receiving surfaces and will provide radio astronomers with one million m² of collecting area. The Northern Cape is an ideal location for the SKA's core array.

Supporting innovators

Technology for Human Resources for Industry Programme (THRIP)

Supported by government, business and education, THRIP invested R404 million in 266 projects in 2003 to improve South Africa's competitiveness.

Innovation Fund

Designed to help turn research into new products through large-scale grants, the Fund will support projects to the tune of R161 million over the next three years.

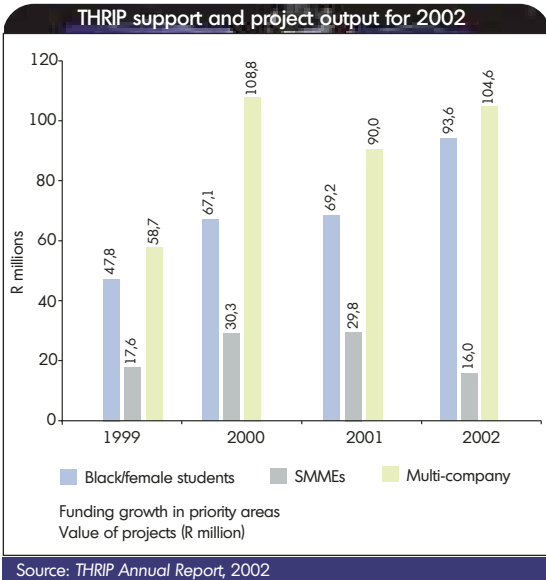
Research capacity-development programmes

These seek to boost historically black universities by supporting individual researchers and encouraging a postdoctoral research culture.

National research facilities

South Africa has five national research facilities which are managed by the National Research Foundation (NRF). The NRF is responsible for promoting and supporting basic and applied research. These are the:

- Hartebeesthoek Radio Astronomy Observatory (HartRAO), west of Johannesburg, Gauteng
- South African Institute for Aquatic Biodiversity (SAIAB) in Grahamstown, Eastern Cape
- iThemba Laboratory for Accelerator-Based Sciences in Faure, Western Cape
- South African Astronomical Observatory (SAAO) in Cape Town, Western Cape, and Sutherland in the Northern Cape, and the Southern African Large Telescope (SALT)
- Hermanus Magnetic Observatory (HMO).





Hartebeesthoek Radio Astronomy Observatory

HartRAO is South Africa's national research facility for radio astronomy and space geodesy. A 26-m telescope operates as a single dedicated instrument in a variety of fields, while participating in global networks of radio telescopes.

South African Institute for Aquatic Biodiversity

The SAIAB is a leading centre for the study of fish and biodiversity in Africa and the surrounding seas. The institute is responsible for the national collection of fish (more than 450 000 specimens) and promotes knowledge and awareness of fish and aquatic conservation.

iThemba LABS

iThemba LABS has established itself as a major commercial centre for radiation. Its Major Radiation Medicine Centre will become the centrepiece of cancer control in southern Africa and an internationally recognised centre of excellence in cancer treatment, research and training.

South African Astronomical Observatory and Southern African Large Telescope

The SAAO has seven telescopes at Sutherland used for optical and infrared observations. The US\$30-million SALT, an 11-m optical telescope, will be completed in 2004.

Hermanus Magnetic Observatory

The HMO is of strategic importance as a player in space and earth sciences, as well as geospatial information. It conducts research of the earth's magnetic and geomagnetic fields and space environment.

Science Councils

Council for Scientific and Industrial Research (CSIR)

The CSIR is the largest community and industry-directed scientific and technological research, development and implementation organisation in Africa.

Some 7 000 clients are served every year, and 60% of the CSIR's income is funded externally.

The CSIR's functions are centred in eight market-orientated business units:

- Food, Biotechnology and Fine Chemicals Technology
- Building and Construction Technology
- Defence Technology
- Water, Environment and Forestry Technology
- Information and Communications Technology
- Manufacturing and Materials Technology
- Mining Technology
- Roads and Transport Technology.

Mintek

The national mineral research organisation, Mintek, is a world leader in its field. Now 70 years old, Mintek provides service-test work, process development, consulting and innovative products. Only about 37% of the annual budget of R220 million is funded by the State.

Human Sciences Research Council (HSRC)

The HSRC conducts large-scale, policy-relevant, social-scientific projects for public-sector users, non-governmental organisations and international development agencies.

The HSRC's top researchers focus on poverty reduction, skills enhancement, job creation and the elimination of discrimination and inequalities.

Medical Research Council (MRC)

Established in 1969, the MRC conducts research through

six national programmes, and collaborates with most of the world's top health-research agencies to improve the nation's health status and quality of life.

The MRC disseminates research information through the National Health Knowledge Network. The Council recently established the African Biotechnology Information Centre in co-operation with various universities.

The MRC National HIV/AIDS Lead Programme co-ordinates the South African AIDS Vaccine Initiative.

Agricultural Research Council (ARC)

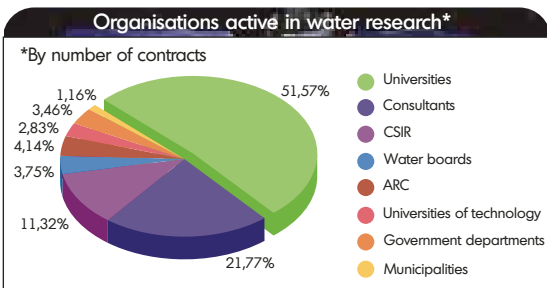
The ARC is committed to the promotion of agriculture and related sectors through research, and technology development and transfer.

Council of Geoscience (CGS)

The CGS supplies the country with geoscience data to establish a safe cost-effective physical infrastructure.

South African Bureau of Standards (SABS)

The SABS produces, maintains and disseminates standards. It promotes standardisation in business and government and administers compulsory standards on behalf of the State. It also certifies international quality standards such as ISO 9000 and ISO 14001.



Source: South Africa Yearbook 2003/04

Other important research bodies

The National Institute for Tropical Diseases in Tzaneen, Limpopo, does ongoing assessment of various malaria control programmes.

The South African National Antarctic Programme manages three bases, one at Vesleskarvet in Dronning Maud Land, Antarctica; a second on Marion Island in the south Indian Ocean; and a third on Gough Island, a British territory in the South Atlantic Ocean.

Mine-safety research

The Safety in Mines Research Advisory Committee aims to advance mineworkers' safety. It has a permanent research management office overseeing research in rock engineering, engineering and occupational health.

Energy research

The Chief Directorate: Energy of the Department of Minerals and Energy manages a policy-directed research programme. This includes transport energy, renewable energy and energy for developing areas, coal, electricity, energy efficiency, energy economy and integrated energy-policy formulation.

Agricultural research

Agricultural research is conducted by the ARC, several universities and the private sector.

Water research

Water research in South Africa is co-ordinated and funded by the Water Research Commission in Pretoria.