

UK Science & Innovation Network Country Snapshot:

South Africa

South Africa position in Global Innovation Index 2016:

54

Position of UK in South Africa's international collaboration 2015-16 (Nature Index):

2nd

South Africa: Science and Innovation Landscape

South Africa has a good track record in science and innovation: it was responsible for the first heart transplant, the CAT scan, and the cricket 'speed gun'. But many of its innovations were introduced during the apartheid era, benefitting only a privileged few. After 1994, funding was initially diverted to address the large socio-economic inequalities and challenges left by apartheid.

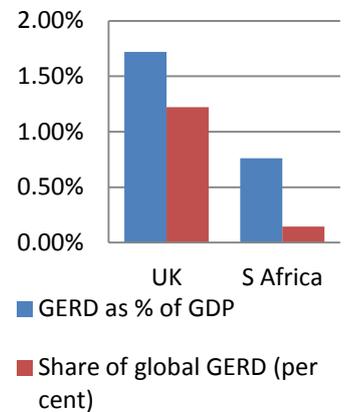
Since then, national research policy has transformed from a relatively isolated research structure towards a community that is outward looking, but also in tune with the challenges facing the poorer sections of SA society. Research policy is guided by the [2002 National Research and Development Strategy](#) and the [2008 Ten-Year Innovation Plan](#). The Plan is designed to drive SA towards becoming a top three emerging economy in the global pharmaceutical industry; to deploy satellites

under a new Space Programme; to become a world leader in climate science; and to have a diversified and sustainable energy sector, with security of supply.

The Department of Science and Technology (DST), set-up in 2004, is responsible for implementing the Ten Year Plan. Other Departments also have significant research responsibilities, including the Department of Higher Education and Training and the Department of Trade and Industry. SA expenditure on R&D has hovered around **0.9% of GDP** in recent years, though the target, for the first time set explicitly by the new ANC government, is to **double** this figure over the next five years. Government and industry are the main R&D funders (46% and 43% respectively in 2010), with most of the R&D performed by the private sector (60%), government research institutes, including science councils (20%) and the higher education sector (20%).

In 2016, DST's budget decreased slightly from R7.5b in FY14/15 to R7.4b in FY 15/16 (**£138m**). Most of DST's funds for R&D are allocated through agencies which they oversee. The main ones are: the Council for Scientific and Industrial Research (CSIR), the National Research Foundation (NRF) and the Human Sciences Research Council (HSRC). In addition, DST also oversees the SA National Space Agency (SANSa) and the Technology Innovation Agency (TIA). The latter aims to stimulate technological innovation by assisting the commercialisation of research. Further steps are being taken to try to bridge the chasm between business and government.

SA has some **world class university faculties**, most noticeably a cluster in the Western Cape comprising the Universities of Cape Town (highest ranked globally at 120), Stellenbosch and the Western Cape, as well as the Universities of the Witwatersrand, Johannesburg and Pretoria (all in Gauteng), Rhodes (Eastern Cape) and KwaZulu Natal (in KZN). In addition, a range of Universities of Technology and other universities across the country conduct useful research.



Source: OECD Science and Technology Indicators



Value of exports to South Africa:

£2.5b

Value of imports from South Africa:

£4.6b

Research at universities and public research institutions is mainly block funded by government. Much of the research funding for the private sector flows through the National Research Foundation, which also operates **six national research facilities** and manages competitive research funding programmes for businesses, researchers at national facilities and Higher Education institutions. There is also a range of other funding agencies such as the Water Research Commission, the SA National Energy Development Institute and the Medical Research Council. Many of these are funded through their line Departments not DST.

SA's growing importance as a centre of science and innovation excellence is best illustrated by the 2012 decision for SA to host the majority of the **Square Kilometre Array giant telescope** - one of the largest ever international science projects. In April 2015, Manchester was chosen as the global HQ for the project. There are numerous other S&I strengths in SA beyond astronomy. For example, work on TB, malaria and HIV/AIDS is yielding groundbreaking new research. Clinical trials of an antiviral vaginal gel to combat HIV/AIDS are underway, while a compound has been developed that will assist with single-dose treatments for all stages of malaria.

UK Science and Innovation in South Africa

The UK's S&I footprint in SA is considerable and growing. We have a formal bilateral Science and Technology Agreement (since 1995) and a rich array of partnerships between our academics and researchers, both at individual and institution level. SA is the fifth most successful country in accessing EU Framework Programme (FP7) research funding, partnering in these with the UK more than any other country. The UK and SA have agreed that shared S&I priority focus areas are **health research; astronomy and space; biosciences; and climate change**. The main bilateral S&I programme is the **UK/South Africa Newton Fund**, which launched in September 2014. The partnership is worth up to **£8m/year for five years**. Activities focus on public health; environment and food security; and science and technology capacity building, underpinned by cross-cutting themes of Big Data and regional co-operation across sub-Saharan Africa.

SIN South Africa recent success stories:

We have successfully worked with government and delivery partners in SA to explore options for expansion of the successful Newton programme. 2016/17 UK budget increased from £4million to £5 million, and forecast to spend nearer £7 million.

AMR Campaign resulted in SA co-sponsorship of UK UNGA side event, plus special Newton funds identified to back AMR research collaboration, and UK/BHC leadership at 6th ICAN conference.

Support for SPRU science and research policy week, feeding into SA's policy refresh.

UK and SA experts exploring range of opportunities for collaboration on big data, facilitated by SIN workshop, hosted in partnership with the Centre for High Performance Computing

Forward Look:

Supporting a regional Antimicrobial Resistance Conference, hosted by South African Department for Health backed by Fleming Funds.

Fostering Space partnerships through the UK Space Agency's International Partnership Programme
Showcasing the range of UK-South Africa S&I partnerships at Science Forum South Africa 2016

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