

SOUTH AFRICA

South Africa's innovation system is in transition. R&D intensity, with gross domestic expenditure on R&D (GERD) at 0.92% of GDP in 2005, is now broadly in line with the country's income level, and growth in GERD has been robust in recent years, with real expenditure doubling from 1997 to 2005. Business funds 44% of GERD, down from 56% in 2001, contrary to trends in transition economies such as China. However, South Africa has a core of strong innovative business enterprises, and the share of GERD performed by the business sector (58%) is similar to or higher than some OECD countries with higher R&D intensity, such as Italy, Spain and Canada. The ratio of business expenditure on R&D to GDP stood at 0.53% in 2005.

The current level of human resources for science and technology (HRST) is quite low. However, the share of science and engineering graduates in new degrees awarded is growing, which may help strengthen future stocks of HRST.

The level of R&D funding from abroad appears exceptionally high: at 13.6%, it is the highest of all non-OECD countries considered. This may be due to South Africa's special position and competence as a host for major international medical research undertakings, especially related to HIV/AIDS. On other indicators, South Africa's integration in international R&D activities is quite moderate.

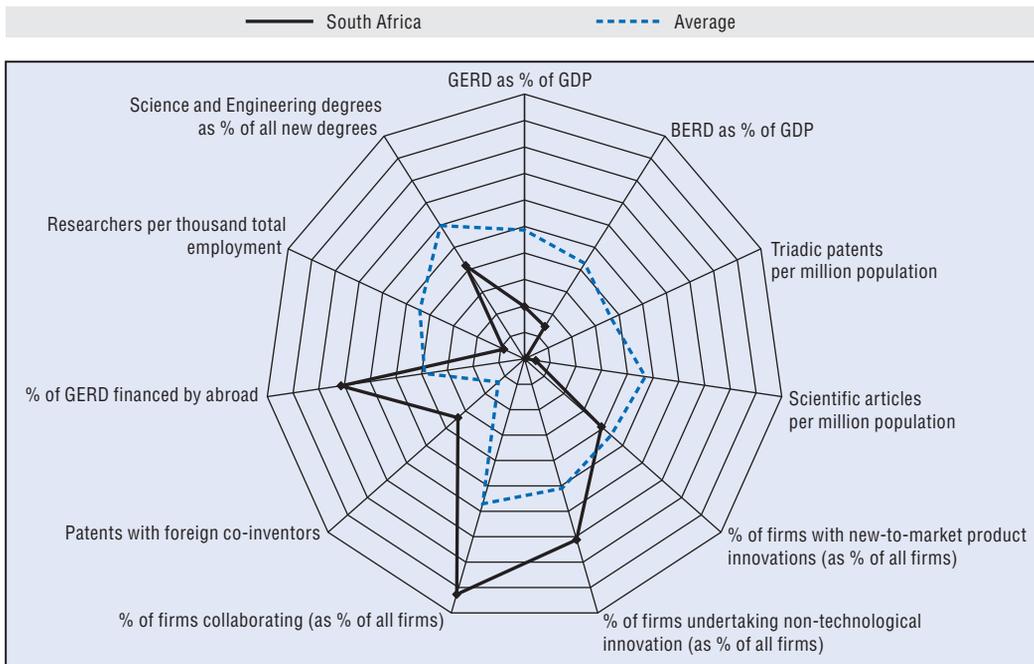
South Africa accounted for 0.3% of the world's scientific articles in 2005, down

from 0.4% in 1995, and accounted for 0.1% of triadic patent families in 2005 as in 1995. This is relatively low compared to the other countries considered.

The *OECD Review of Innovation Policy: South Africa* (2007) noted that a key challenge for the development of a knowledge-based economy in South Africa is a shortage of human resources, which is partly a legacy of the apartheid regime. Two areas in particular are emerging as concerns for innovation performance: the first is the gap between the supply of design, engineering and related managerial and technical capabilities and the demand for such resources generated by the increased rate of investment in the economy; the second is the capacity of university research to expand to meet demand, given the ageing of the research population and the weaknesses in the human resource "pipeline" of replacement cohorts.

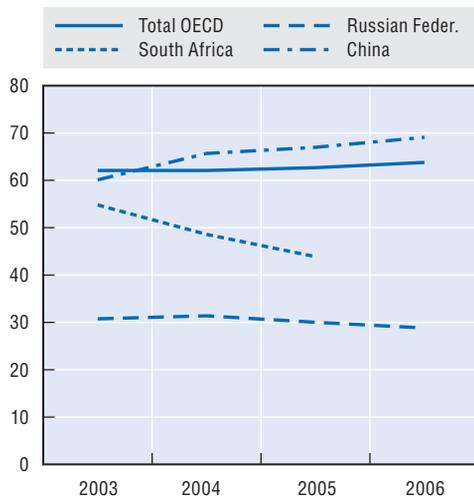
A further challenge is to strengthen innovation capabilities across a wider range of economic activities, including those of SMEs. This is vital for more knowledge-intensive, higher value-added and productivity-enhancing economic activity. Building on the existing contribution of business to R&D, as well as its activities in design, engineering and associated management activities, and supporting the accumulation and diffusion of knowledge resources throughout the economy, will be central to spreading economic activity and success more widely.

Science and innovation profile of South Africa



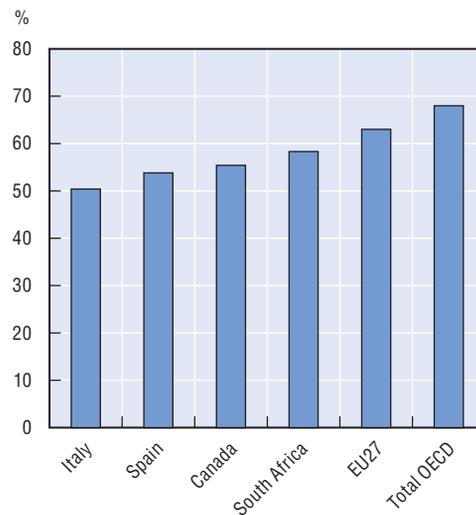
StatLink <http://dx.doi.org/10.1787/455008367655>

Percentage of gross domestic expenditure on R&D financed by the business sector



StatLink <http://dx.doi.org/10.1787/455008417116>

Share of gross domestic expenditure on R&D performed by the business sector, 2005



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