



**Dr Glenda Kruss**  
Centre Executive

## Centre for Science, Technology and Innovation Indicators

**CeSTII** adheres to national and international data quality standards, ensuring equivalence with internationally accepted practices of the Organisation for Economic Co-operation and Development (OECD), and developing contextually appropriate measures in Africa. It works closely with the Southern African Development Community and Africa-wide measurement research and policy communities. It plays a training and capacity building role for STI measurement in Africa, in partnership with the African Union Development Agency's (AUDA-NEPAD) African Science Technology and Innovation Indicators Initiative, the African Observatory in Science Technology and Innovation (AOSTI), and the SADC Social and Human Development Directorate responsible for STI programmes.

**The Centre for Science, Technology and Innovation Indicators (CeSTII) is part of the Human Sciences Research Council (HSRC). Serving South Africa for more than 50 years, the HSRC is Africa's largest research institute in the social sciences and humanities. It produces and disseminates knowledge that contributes to policy and programmes on poverty alleviation, solutions to reduce inequality, and innovation for employment creation. More than just a research generator, the HSRC's divisions and centres develop research for policy and impact. Collaboration and partnership is part of its ethos and the HSRC works with local, regional and international public, private and community entities.**

CeSTII contributes official statistics measuring science, technology and innovation (STI), a function usually performed by national statistical agencies in other countries. Over the past two decades, CeSTII has built up a rich database of longitudinal trend data on research and development (R&D) and innovation for use by policy-makers and researchers globally. The South African R&D Survey, business innovation surveys, and other policy relevant surveys are conducted regularly.

### Our work

CeSTII looks for new ways to interrogate R&D and business innovation data, to help address developmental challenges with respect to the health sector, the green economy, the oceans economy, building a capable state, and South Africa's priority economic sectors. It contributes new conceptual frameworks, designs and methodologies to measure innovation in the informal and agricultural business sectors, based on the methodology of the OECD's Oslo Manual Guidelines for Collecting, Reporting and Using Data on Innovation.

The Centre also aims to enhance the way surveys are conducted by experimenting with digital tools and new research methodologies.

CeSTII is an active contributor to the STI indicator measurement community in Africa and globally, a contribution that is underpinned by inclusive and sustainable development objectives.

## Focus areas

<b>Measuring R&amp;D capacity in South Africa</b>	The annual South African R&D Survey is a key tool to enhance the STI indicator system for evidence-based policy-making by providing comprehensive R&D performance statistics. This data can be used for more advanced statistical analysis and data modelling and informs complementary, in-depth research to engage with South African economic development and policy issues.
<b>Measuring innovation capacity in local firms</b>	A core research priority is to improve the quality and extend the focus of business innovation measurement in South Africa. The national business innovation survey is rolled out in three-year cycles, covering firms in the formal manufacturing, mining and services sectors, and now extends to commercial agricultural businesses.
<b>New indicator development</b>	The Department of Science and Innovation's new national STI indicator research agenda promotes innovation for sustainable and inclusive development. New indicator frameworks inform collaboration with the Africa Institute of South Africa, the National Advisory Council on Innovation (NACI), SADC, AUDA-NEPAD, AOSTI, and individual African countries by promoting indicators and measures appropriate to African contexts and in support of the Science, Technology and Innovation Strategy for Africa 2024 and the Sustainable Development Goals.
<b>Communication, networking, capacity building and data uptake of STI indicators</b>	Cross-cutting projects support, coordinate and advance the work of CeSTII, including a dedicated CeSTII Communication, Dissemination, Visibility and Advocacy Strategy with a strong digital focus. This expands outreach to engage with the right stakeholders for sustained impact, deepens digitalisation to enhance survey participation and response rates, and creates streamlined business processes for improved public data use and uptake.

- *CeSTII does STI research that speaks to new socio-economic challenges before, or in parallel with, policy processes. That means once policy is formulated, research is available to inform discussion and action. New measures and indicators of STI must be more appropriate and reflective of our developmental challenges in southern Africa. Previously, South Africa mostly adopted innovation and economic models from developed economies, but that benefits neither equality nor inclusivity. For example, European innovation surveys traditionally measure innovation in the manufacturing sector first, but in our context, African economies are still strongly agriculture based with a large informal sector.*

## Recent project snapshots

- Apart from the annual South African R&D Survey, two baseline surveys focused on innovation in agricultural and informal enterprises, contributing to a new STI measurement framework appropriate to the developmental challenges of the global south. Fieldwork for both surveys was completed in 2019, creating new datasets released in 2021. The CeSTII team will continue to deepen this process with new questions driving the analysis of existing R&D and business innovation datasets, and the design of new datasets. These provide insights informing new STI measures, and creative ways to address new STI policy imperatives.
- Using the STI Strategy for Africa 2024, which sets out six developmental challenges, including health, CeSTII looks at how well the country's innovation and R&D systems are oriented to address key priorities.
- In relation to COVID-19, the Centre partnered with Statistics South Africa to survey the impact of lockdown on company performance, including the impact on R&D and innovation performance. A next step is to design short instruments for R&D and innovation performers in South Africa to gauge the impact of COVID-19 on their R&D and innovation operations.
- In a quest to analyse survey data in new ways to respond to policy-relevant issues, CeSTII is working with the Department of Science and Innovation on modelling of the investment requirement for R&D investment targets in South Africa. Our work includes a review of trend data and micro- and macro-modelling scenarios, to propose and test the best models. The design of a research agenda to study the issues impacting on the achievement of national gross domestic expenditure on R&D and gross domestic product targets will follow, with the view to extend the work to other countries in the SADC region.

- *Our work has decision-making impact. For example, data from the annual South African R&D Survey are used continually – by, among others, the Reserve Bank, Cabinet, NACI – and in formats varying in scope and purpose from statistical reports, analytical reports, to fact sheets, policy dialogues and provincial policy fora targeting the private and public sectors.*

- *~ Dr Glenda Kruss, Centre Executive*