

SOUTH AFRICA**New scientometrics centre connects science to society****Munyaradzi Makoni****22 November 2014 University World News Global Edition Issue 344**

The Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy – SciSTIP – outlined fields of research and how it will carry out its work at a scientific launch conference held at Stellenbosch University in South Africa earlier this month. A major aim is to produce comprehensive reviews of science and technology – the first in 20 years. The Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy – SciSTIP – outlined fields of research and how it will carry out its work at a scientific launch conference held at Stellenbosch University in South Africa earlier this month. A major aim is to produce comprehensive reviews of science and technology – the first in 20 years.

The new centre of excellence’s “core mission is to study and analyse the state and dynamics of South Africa’s science system as well as its contribution to South African society”, according to Professor Johann Mouton, its internationally respected director.

Research will focus on scientometrics – the measurement of science indicators – science, technology and innovation or STI policy for development, human resources for STI, science communication and research evaluation.

Crucially, SciSTIP also aims to train Africa’s next generation of scientometricians and STI policy analysts.

Funded by South Africa’s Department of Science and Technology through the National Research Foundation, SciSTIP is one of five new centres of excellence announced by the government last February, bringing the total to 14 countrywide.

Its institutional co-hosts are the Centre for Research on Evaluation, Science and Technology, or CREST, at Stellenbosch and the Institute for Economic Research on Innovation, or IERI, at Tshwane University of Technology.

SciSTIP will closely work with the Centre for Higher Education Transformation – CHET – in Cape Town and the Centre for Science and Technology Studies at Leiden University in the Netherlands.

Dr Gansen Pillay, deputy chief executive officer of research and innovation support and advancement at the National Research Foundation, said SciSTIP would solve the problem of integrating science data in the country. “Every university is unique in this country, but every university has some competitive strength and some geographic advantage,” he said.

The centre at work

The centre will develop and produce indicators for South Africa’s research and innovation system, including the science and technology system. Researchers will compile STI indicators that are relevant for national planning.

Mouton said it had been more than 20 years since South Africa had a comprehensive science and technology review. The last two were produced in the 1980s and since then only smaller indicators have been produced.

“We hope that by 2016 or 2017 we will be able to bring out the innovation report and be able

to repeat the process every three years,” he said at the launch.

The STI indicators report will release statistics on human resources, knowledge transfer, institutional research networks and research performance at individual, team and institutional level.

Mouton said the centre of excellence would study changes shaping science, technology and innovation. While scientific research was acknowledged as an important driver of innovation, there was a gap in mapping the actors and activities taking place with innovations that result in technological change.

The country needed studies at a systemic level, he said. It is important to make sure that people understand levels of evaluation and specific fields.

Production of human resources for STI will be another area of attention. The centre will use metrics already produced by organisations such as the CREST and CHET, integrate existing data and develop new indicators.

“We will bring experts in evaluation studies from our masters and PhD studies of research and development, specific funding instruments and bibliometric assessments.”

Mouton told *University World News* that work had already started with librarians on bibliometrics, to increase their knowledge of bibliometric tools and use their skills to collect more information on usage of R&D.

Results from these and other studies will be used to strengthen higher education’s ability to develop and coordinate the linkages between policies and the activities of government, universities and external groupings.

Science and society

Dr Erika Kraemer-Mbula, a senior lecturer and research fellow at IERI, said South African policies were driven by a desire to address societal inequalities – particularly problems such as joblessness, high levels of poverty and malnutrition, rapid urbanisation and environmental challenges such as climate adaptation.

Policies were also shaped by international pressures, STI policy capacity and available information.

Further, there was a need to respond to African dynamics such as using STI for development, as espoused by the Science, Technology and Innovation Strategy for Africa – STISA-2024 – adopted by African heads of state this year, and the 10-year innovation plan 2008-2018.

Governments, she said, would make decisions directly or indirectly to promote and regulate STI activities, but the tendency to focus on individual instruments rather than all policies should be avoided. “It is important to understand the interactions and the combinations of these instruments,” she said.

A challenge, Kraemer-Mbula added, was that STI policy was dispersed across numerous government areas such as education, research, industrial policy, agriculture, environment and defence.

Also, implementation and effective use of STI policies was difficult to measure due to a lack

of dedicated resources for monitoring and evaluation and insufficient funding for STI policy programmes.

Further: “The state as the sole implementer of STI is affected by weak links to academic institutions, the private sector and broader society,” she said, calling for stronger links between the community producing and analysing STI indicators and the government.

She said the SciSTIP would engage in research that explored forms of innovation that capture the role of people and communities in solving problems that affect their own welfare. “It is important to make intelligent use of the indicators while understanding the limit of the measurement,” she said.

As the continental framework changes, she said, South Africa’s policy-making will be influenced by the connection to the bigger South.

“SciSTIP will engage in research that explores STI-related opportunities and challenges emerging from the new geopolitics, and better understand South Africa’s core competencies in STI and their relation to the Southern African Development Community, Africa and the bigger South,” she said.

Paul Wouters, director of the Centre for Science and Technology Studies at Leiden University, said that for scientometrics to contribute to the governance of science, discrepancies between the criteria and the social and economic functions of science had to be tackled.

He said the centre opened up opportunities to develop relevant methods of collecting information in a changing scientific environment. There was a need to find other means to evaluate the burgeoning scale of research, as qualitative research was no longer adequate. There was also a need to recognise the new types of work that researchers have to do.

Impacts

There will be a focus in SciSTIP on consolidating and deepening scholarship in the area of research impact and application. This will be done through case studies of successful research uptake and impact in a variety of settings.

Dr Phil Mjwara, director-general of the Department of Science and Technology, or DST, said SciSTIP’s outputs would be critical on the journey to inform new growth of the economy.

The DST’s medium-term strategy had three phases. In the first phase, from 2014-18, the department was focusing on increasing the funding target for research, science and technology to 1.5% of gross domestic product – currently spending is around 0.9% of GDP.

In 2019-23 the aim would be to accelerate efforts to support existing centres of excellence such as mining, manufacturing and agriculture, and ensure that innovation was pervasive across the state, private sector and society.

The third phase would be to drive a knowledge-based economy by developing high technology exports and exploiting South Africa’s comparative advantages.

“As DST we can’t travel this journey in a car without a dashboard. I believe the information to supply the dashboard will come from this centre,” Mjwara said.

“We want to know what the science and technology sector contributes to the economy. If we

want more money from the system, we need to show how this will contribute to the political agenda.”

He urged the centre to start thinking of how to develop the next generation of policy-makers. “There is a huge expectation for the centre; we hope it will rise to the occasion.”

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