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OVER the past five years, Africa's contributions to the world's research – that is, new knowledge – have varied from a low of 0.7% to the present, and highest, level of 1.1%.

There are many reasons for Africa's small contribution to world research. One of them, sadly, is that at least some of this new knowledge is produced by African scientists working beyond their own countries and continent.

Many have chosen to leave because they feel the facilities and funding opportunities are better than those at home.

It's also important to point out that the sum of knowledge generated each year, including Africa's contribution, is measured using research articles published by scientists and scholars in scientifically recognised journals.

This means that some of the work that is being done isn't getting the attention or credit it deserves – yet.

The journal system is not a perfect way of assessing scientific productivity. For now, though, it's a means that can be applied fairly to document peer-reviewed research from around the world.

These concerns aside, there is, I'm happy to report, much to celebrate about research in Africa.

For starters, the world's largest collection of peer-reviewed, African-published journals, is growing all the time. African Journals Online currently carries 521 titles across a range of subjects and disciplines.

Women researchers are also well represented, although there's still work to be done. Three out of 10 sub-Saharan researchers are women.

The continent's researchers are working on challenges as varied as astrophysics, malaria, HIV/Aids and agricultural productivity.

They are making significant advances in these and many other critical areas. The projects I talk about here are just a few examples of the remarkable work Africa's scientists are doing on and for the continent.

Africa is also establishing itself as a global player in astronomical research. The Southern African Large Telescope (SALT) is the largest single optical telescope of its kind in the southern hemisphere.

Work undertaken at this facility in the Northern Cape has resulted in the publication of close to 200 research papers.

The telescope has support from, and working relationships with, universities in 10 countries. Its recent work helped a team of South African and international collaborators to uncover a previously unknown major supercluster in the constellation Vela.

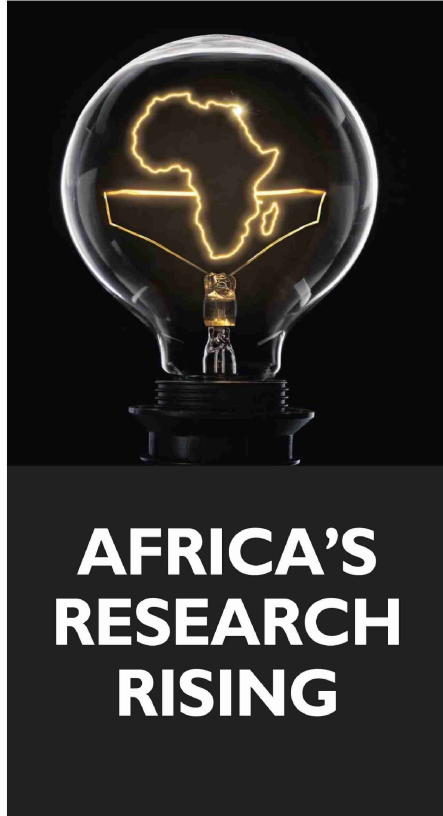
SALT has two siblings: MeerKAT, which is already producing results, and the Square Kilometre Array, which is still being developed.

In a very different sphere, Professors Salim and Quarraisha Abdoel Karim have won African and international awards for their groundbreaking and lifesaving work in the area of HIV/Aids.

Professor Glenda Gray, chief executive of the South African Medical Research Council, has been honoured by Time magazine as one of the world's 100 most influential people.

She, too, is a pioneer in HIV/Aids research.

In Kenya, dedicated research institutes are tackling agricultural challenges in areas like crop production and livestock health.



AFRICA'S RESEARCH RISING

Our continent's scientists are punching above their weight and changing the world

This not only boosts Africa's research output, but contributes greatly to rural development on the continent.

Elsewhere, Nigeria has established a number of research institutes that focus on a range of agricultural challenges.

Research is also being undertaken in the important area of oceanography.

Although it operates from the University of Cape Town, the African Climate and Development Initiative has been working as a partner in Mozambique.

There it is addressing the critical – and interrelated – challenges of climate change and adaptation responses for horticulture, cassava and the red meat value chain.

This is important work in one of Africa's poorest countries, which is battling drought and hunger.

Then there's also research "out of Africa". This involves discoveries about the human past and the origins of *Homo sapiens*.

Historically this sort of research was often done by people from outside Africa. Increasingly though, African scholars have come to the fore.

The scientists who discovered a new human ancestor and mapped a cave system that is serving up amazing fossil evidence are

following in giant footsteps: those of Robert Broom, Raymond Dart and Phillip Tobias.

What does all this tell us about research in Africa? Perhaps three ideas are worth considering.

First, while Africa and its universities, institutes and scientists need to make far greater contributions to world knowledge, high quality and important research is happening. Its overall contribution might be small, but smart people are undertaking important work.

Secondly, the range of research being undertaken is remarkable in view of the size of Africa's overall contribution: From galaxies to viruses; agriculture to malaria; from drought to oceanography.

Thirdly it is notable, and of great significance, that irrespective of the disciplines involved, the research is tackling both international concerns and those specific to the continent and its people's needs.

Yes, 1.1% is a small figure. What's happening, on the other hand, adds up to an impressive score card. – The Conversation

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