

Opportunities for African research institutions

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Recent decades have vividly shown that traditional definitions of research excellence and training do not automatically resolve the complex problems facing the future of society and the planet. This situation has been called a 'crisis of research effectiveness', considering the lack of progress on a number of critical issues, such as climate change, biodiversity loss and environmental degradation, over the past two decades.

This 'crisis' highlights the need for transdisciplinarity as a new frontier for research communities. This new paradigm strives towards a 'new form of learning and problem-solving involving cooperation between different parts of society and science in order to meet complex challenges of society'. Transdisciplinarity [...] is also at the heart of the recently launched Future Earth project (www.futureearth.info) of the International Council for Science (ICSU), which attempts to embrace such an approach to increase the impact of global change and sustainable development research.

Kueffer and colleagues from the Alliance of Global Sustainability at ETH Zurich (Switzerland) argue that transdisciplinarity will require a fundamental institutional and cultural re-orientation at research universities. They argue that both institutional innovations and structural optimisations will be critical in achieving these goals, while at the same time it is necessary to preserve the traditional strengths of disciplinary excellence and scientific rigour.

In his book *The Challenge of Developing World Class Universities*, Salmi concludes that, although there is a need for a range of institutional types, "...institutions will inevitably, from here on out, be increasingly subject to comparisons and rankings, and those deemed to be the best in these rankings of research universities will continue to be considered the best in the world." This factor, more than any

other, will determine the future of universities, as it will increasingly impact the migration of talent, funding and opportunities.

African research institutions are well placed to build effective transdisciplinary networks which focus on developmental issues. The problems faced by the continent have indeed placed particular emphasis on issues such as natural resource and diversity management, urbanisation and health, bioenergy, agricultural and forestry development, global change and food security.

The number of transdisciplinary networks with an African focus is growing. Examples include the Australia-Africa Universities Network which is currently hosted at the University of Pretoria and has a project portfolio covering food security, health, mining, education and public sector reform.

Some of these efforts are, however, in their infancy and face a number of challenges. Nonetheless, it is critical for African universities to persist with the development of transdisciplinary projects and networks, and for institutions to incorporate specific efforts in their strategic plans for this purpose. These activities will support higher impact research, locally and globally, which will enable better rankings in the globalised and competitive higher education environment.

Ultimately, the knowledge co-produced through transdisciplinary networks should help to accelerate development and address a number of critical challenges facing the continent.

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