



FUTURE AFRICA

Transdisciplinary Science Leadership for Innovation



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA





... There is a continent-wide dialogue on higher education transformation, including issues of differentiation, the building of continental centres of excellence, harmonisation, access and building a core of strong research universities. This dialogue is important, so that the university and higher education sector also make its own contributions towards Agenda 2063, the future of Africa and towards milestones to achieve this future.

**Her excellency Dr Nkosazana Dlamini-Zuma, African Union Commission Chairperson,
lecture at the University of Pretoria, April 2014**



Future Africa: unlocking the full power of African scholarship, collaboration and innovation

Message from the Vice-Chancellor and Principal of the University of Pretoria, Prof Cheryl de la Rey

There are a multitude of complex challenges that face the world and Africa. They include diverse issues such as climate change, food security, biodiversity loss and water resource management. Due to their complex nature, the traditional singular, linear approaches to science are no longer appropriate.



To address these problems, a transdisciplinary approach is required which integrates perspectives across disciplines, scales and sectors. Although the need for transdisciplinary research is being recognised globally, there is still a shortage of spaces that encourage and enable collaboration of scientists from different disciplines.

I believe that Future Africa addresses this need by positioning itself as a hub for African and global research networks.

At the University of Pretoria, we are convinced that the initiative will contribute to Africa's critical shortage of skills and accelerate progress in

science, technology and innovation. Just as complex problems cannot be resolved through linear thinking, the gap in skills development requires a generation equipped and ready to accelerate the scientific capacity development on the continent.

Future Africa will host a community of fellows and will attract local, African and international scholars, representing a range of disciplines. It will also be home to a number of postgraduate students as well as postdoctoral and research fellows.

Through the development of a culture of transdisciplinary engagement and creative project design, I am confident that Future Africa will develop

novel ideas and build scientific capacity around them. It will also help to shape a new generation of researchers and academics through mentorship and science leadership development programmes.

In providing a platform to promote the very best research and innovation, we believe that Future Africa will assist Africa to leap its current development trajectory in the technology and science sectors and nurture a new generation of world-class scholars on the continent.

“There is still a shortage of spaces that encourage and enable collaboration of scientists from different disciplines. Future Africa addresses this need by positioning itself as hub for African and global research networks.”



Future Africa — Connecting Africa and the World

New hub for transdisciplinary research will help build a more prosperous, equitable and sustainable future for Africa.

In a tranquil setting in the heart of South Africa's capital city of Pretoria, a new hub of scientific discovery and innovation for Africa is breaking ground and taking shape.

The University of Pretoria's new Future Africa campus will be the place where Africa's leading scientists and scholars from across the world and from a broad range of disciplines will come together to leverage the benefits of transdisciplinary research to address the grand challenges that face Africa and the world.

Issues of critical relevance to Africa will be tackled: from sustainable development and good governance, citizen participation and human rights, to advancing innovation for the bio-resource economy.

In a world where ideas and technologies evolve rapidly and the challenges we face are

multifaceted and transnational, Africa needs a new generation of original thinkers with international perspectives, yet with a scholarly vision and voice that is rooted in Africa.

The Future Africa campus will provide a dynamic living, learning and research environment where a community of scholars and other societal role players will engage to advance excellence in scholarship, dialogue and impact.

Here the continent's brightest young geneticists, chemists, economists, lawyers, engineers, social scientists and other specialists will work side by side in an environment that facilitates world-class creativity, collaboration and critical thinking.

Future Africa will:

- take a future-oriented perspective on skills development for a new generation of transformation-minded science leaders in Africa;

- actively build networks between leaders of science across Africa and the rest of the world; and
- develop interdisciplinary and multinational research teams who, together with societal structures beyond academia, can engage in impactful and responsible research to find innovative solutions to complex problems in Africa.

“Inspiring inquiry and innovation for a better tomorrow; nurturing the ideas that drive discovery and progress; and preparing for 21st century challenges that defy geographic borders and traditional narrow academic disciplines — this is Future Africa and it's taking shape today.”

Future Africa will have a cutting-edge campus dedicated to the process of fostering outcomes-oriented transdisciplinary research.

It will offer a dynamic living, learning and research environment where a community of scholars and a range of other leading minds can engage to advance excellence in scholarship, dialogue and social responsibility across disciplines, cultures and generations.

The Future Africa campus is aligned with initiatives such as Future Earth, the global research initiative that was launched at the UN Conference on Sustainable Development (Rio+20) in June 2012.

Both initiatives aim to develop knowledge to respond effectively to the risks and opportunities of global environmental change and foster increased sustainability in the coming decades.

Future Africa will aim to mobilise scientists in effective collaboration across natural and social sciences, humanities, economics and technology development, to find the best scientific solutions to multi-faceted problems.

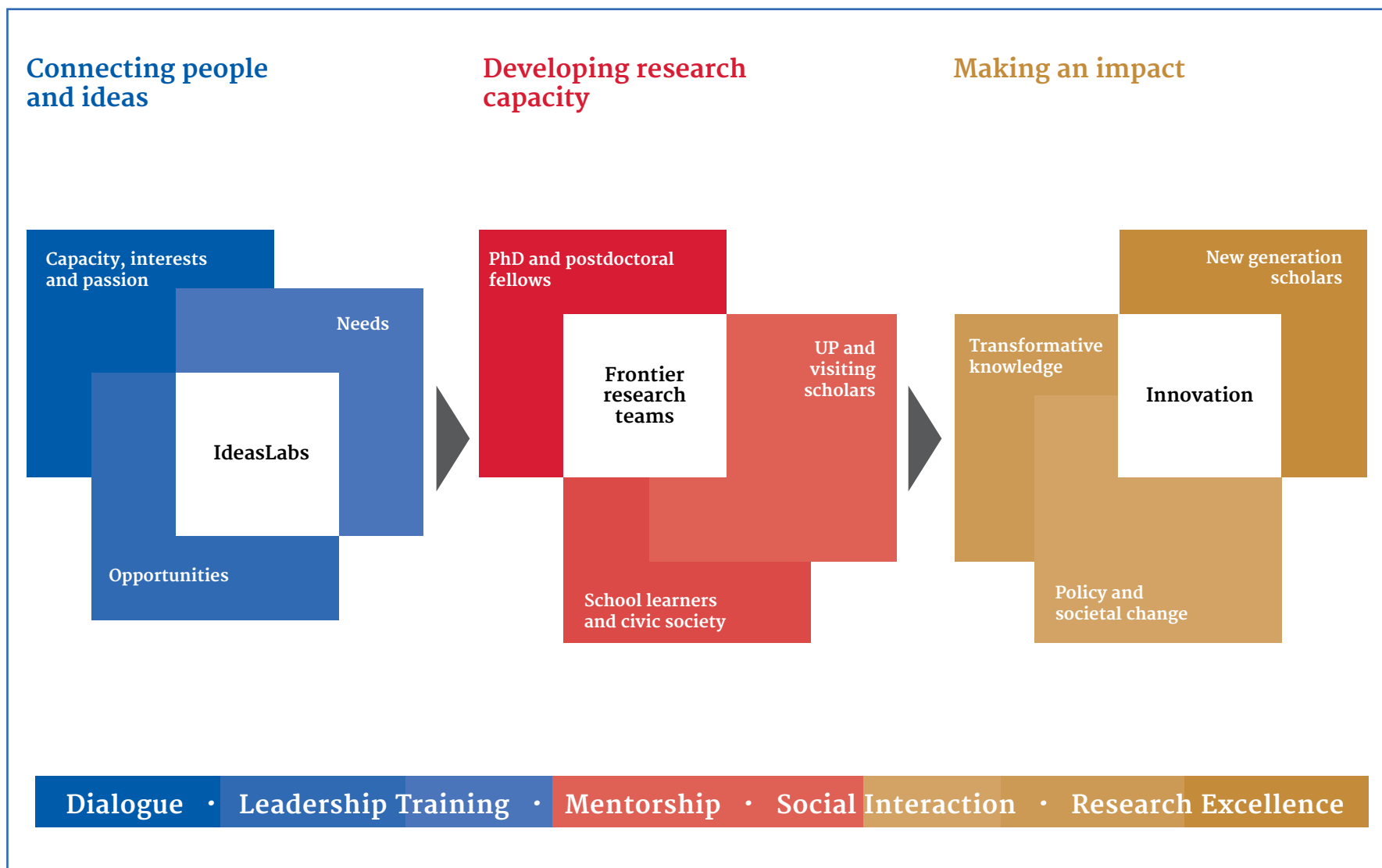
The Future Africa campus will give life to the initiative by offering an ideal setting to bring people together to develop innovative responses to Africa's most pressing challenges.

On-site facilities will include offices, living quarters for postgraduate students, accommodation for visitors and a dining facility/function venue. A Knowledge and Research Commons will host regular conferences, meetings and workshops.

Future Africa is a continental asset that will support the search for knowledge and lay the foundation for the industries of tomorrow — through pioneering, transdisciplinary research that helps generate solutions for healthy, sustainable and successful societies across Africa and the world.



The Future Africa platform



Research that Matters: from ideas to frontier research projects

The Future Africa platform will support innovative, frontier research projects from conceptualisation to execution.

IdeasLab-type workshops will bring together small groups of researchers, funders and other relevant societal representatives from across Africa and globally to engage on selected challenges that require transdisciplinary solutions.

The workshops will help to stimulate new thinking on the frontiers of science for transformation, producing theoretical frameworks, developing

novel questions or novel approaches to old and new emerging questions.

In parallel, and aligned with topics addressed in these workshops, a regular dialogue forum and seminar series will be run, inviting leaders in government and society, as well as leading local and visiting scholars.

We also envisage hosting the African Research Innovation Forum, an annual gathering of 'innovators' and leading scholars from all over the world.

It is expected that the IdeasLab workshops, transdisciplinary dialogues and the African Research Innovation Forum will yield a number of ideas that can be developed into innovative transdisciplinary projects.

The ultimate aim of the Future Africa platform is to have a dynamic programme on the new frontiers of research, with a special focus on adaptability, resilience and co-design of systems for sustainable and equitable development in Africa.







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. Transdisciplinarity ‘starts with tangible, real world problems’ in a joint endeavour through which ‘solutions are devised in collaboration with multiple stakeholders’.

Transdisciplinarity will require a fundamental institutional and cultural re-orientation at research universities...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.

Bernard Slippers, Coleen Vogel and Lorenzo Fioramonti, Global trends and opportunities for development of African research universities, *SA Journal of Science*, 2015:111



The Research Commons

The Knowledge and Research Commons will include:

- A 150 seat main conference hall designed to provide a modern environment and atmosphere capable of fostering interaction
- An expansion capability to the main conference hall which will allow it to accommodate larger groups up to 200 people
- State-of-the-art technology for online engagement with scholars and other leading minds from around the globe
- A suite of break-away rooms where brainstorming sessions and discussions in smaller groups can take place
- Two 50-seat executive lecture rooms to cater for smaller meetings and training sessions
- A fully-equipped dining hall to provide catering for residences, conferences and meetings

“Future Africa will help shape a new generation of researchers and academics. The project will also provide a platform to promote the very best research and innovation from and for Africa.”



The Knowledge and Research Commons

A collaborative space where great minds will meet, even to disagree

The Future Africa Knowledge and Research Commons will form the central core and public 'face' of the Future Africa campus. It will be a place where some of Africa's best minds meet — a vibrant space where scientists, politicians, civil society, community and business leaders can gather to discuss and prioritise problems, identify innovative research projects, share research results and ensure that viable solutions to continental challenges are developed and implemented.

The Commons will serve as an environment where bridges between scientific disciplines are actively built, encounters between scientists and leaders from African countries are facilitated, and dialogue, network-building and collaboration are stimulated.

It will be a place for training sessions, conferences, workshops, brainstorming, negotiations and an incubator for innovations. The Commons is also expected to become a popular facility for international conferences.

Apart from the use by Future Africa programmes, the facility will also be used for executive training by the University of Pretoria's business enterprises.

Income generation from ancillary activities such as training and conferences will allow for a sustainable approach to the financial management of the campus.



Eco-friendly design for a socially integrated space

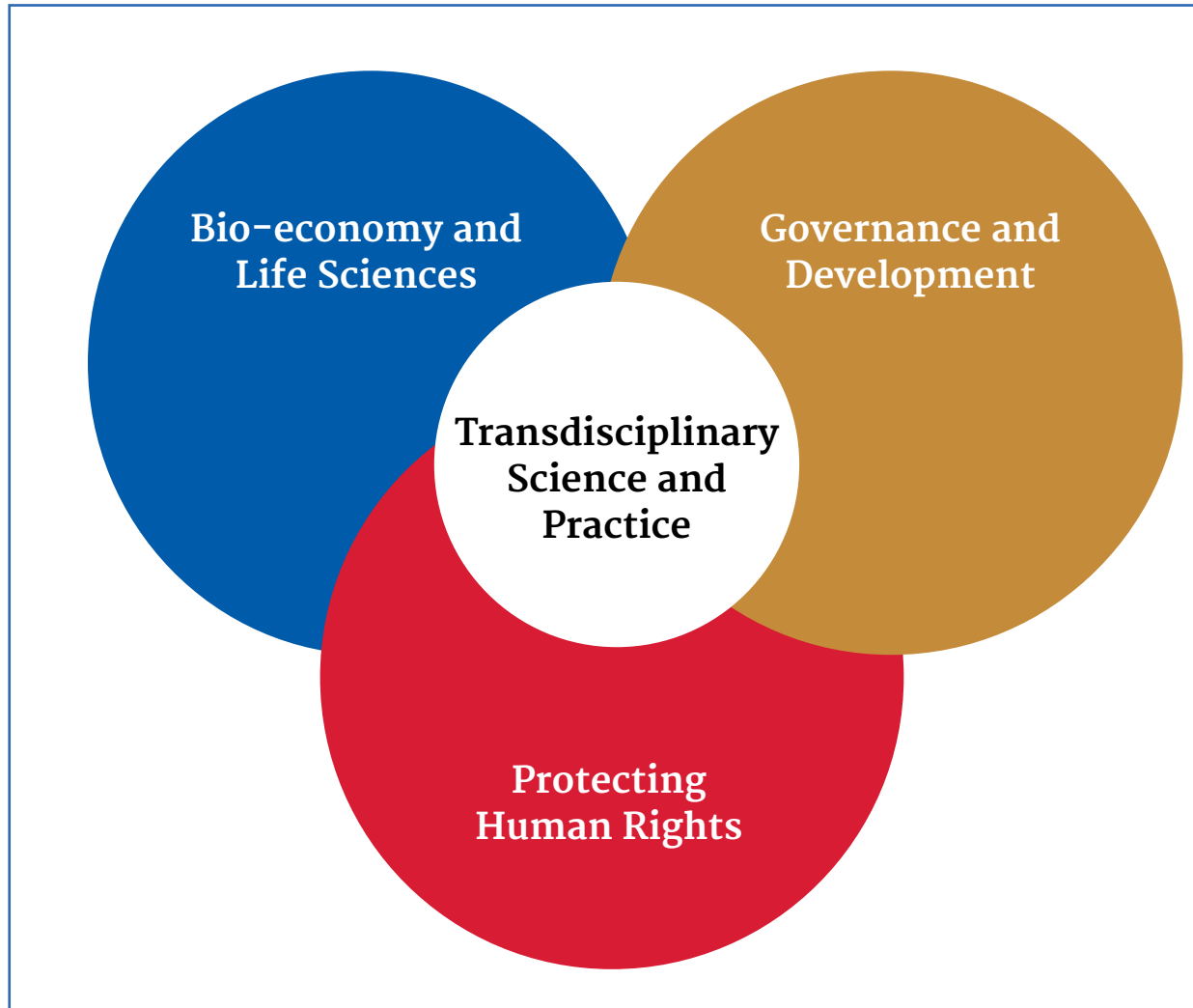
Situated at the foot of Strubenkop Hill in an African savanna habitat, environmental compatibility forms a key element in the design and planning of Future Africa.

The gardens are, for example, designed to celebrate the evolutionary history of African plants and will include African orphan crops, which will also be integrated in the organic food menus prepared and served in the dining hall.

Buildings are also designed to be cost effective and will be equipped with energy efficient technologies including among others solar panels.



Future Africa research focus areas



The Africa Science Leadership Programme

The Africa Science Leadership Programme (ASLP) aims to grow excellent mid-career African academics in the areas of collective leadership, team and research development and science-society engagement, with the intention of enabling them to solve the complex issues facing both Africa and the global community.

The programme creates a lasting network of science leaders on the continent, spanning not only across countries, but also across disciplinary boundaries. It develops an awareness and curriculum for leadership development in academia that can be applied in other institutions in Africa and beyond and will create a focal point for connection with science leadership training programmes in other parts of the world.

The ASLP was launched in 2015 in collaboration with the Global Young Academy, Know Innovation and various African Young Academies and with funding from the Bosch Foundation. It is an example of the types of programmes that Future Africa will develop.



Vidushi Neergheen-Bhujun
University of Mauritius,
Mauritius

I have never had formal training in leadership. This was a structured programme, but not in a traditional way. The programme was quite inspiring for me and I am taking back lots of things, especially the tools that I would like to implement into my daily activities.



Badre Abdeslam
Mohammed V University,
Morocco

It was such a wonderful week. The programme, the people, the activities, the goals, how we reach our goals, how we engage, the facilitators, the approach, the method... I don't think we should even call it a workshop or conference because it's too innovative to be addressed in such a traditional way.



Connie Nshewereirwe
Uganda Martyrs University,
Uganda

My vision has become much more focused and something I can really put my hands on now. It has really made the future seem more concrete in terms of what I can do, where I can do it and with whom I can do it.



Eshchar Mizrahi
University of Pretoria,
South Africa

I am delighted to have discovered this network of people. I did not expect the diversity and instant connection we had as Africans and the shared heart in thinking about solutions.



Alice Matimba
University of Zimbabwe,
Zimbabwe

I have always had ideas about things I want to do beyond my academic discipline, but Africa Science Leadership Programme was the first time I have had a platform to explore, describe and discuss them with a diverse group of people.



Your support will empower a collaborative effort where Africa's brightest minds will gather and engage to find solutions for the continent's complex challenges.

Partnership Opportunities

The University of Pretoria offers partnerships for individuals and organisations to co-invest in Future Africa.

Future Africa is a central hub where leaders from various sectors and from across the world will engage for the benefit of scientific development on our continent. Future Africa is home to various programmes and projects aligned with the vision of the University, and in particular the advancement of research and innovation strategies for Africa. These initiatives have specific individual requirements that have been integrated into separate financial plans, including:

- infrastructure development;
- training and education;
- skills transfer and development; and
- network creation and facilitation.

Organisations and individuals interested in forging a partnership with Future Africa, and joining our commitment to providing world class leadership

and opportunities to emerging scientists and researchers, are invited to discuss the needs of projects and programmes individually.

All the facilities will be equipped with high-end technologies to enable constant engagement with the rest of the world, in order to serve our mission of creating integrated networks for innovation and collaboration.

Future Africa encourages external funding for the overall initiative or selected programmes, as well as other forms of public-private partnerships. The investment opportunities may be structured as direct monetary donation, in-kind contributions and individual involvement based on skills and expertise.

The University undertakes to recognise the contribution of donors, sponsors and other contributors to this central hub for interactive learning and engagement between scholars and other leaders in the broader African society.

Contact Amelia Cilliers at amelia.cilliers@up.ac.za

“ We invite the entire University of Pretoria community – alumni, philanthropists, foundations, faculty, staff, students and friends – to join us in creating the Knowledge and Research Commons, as well as the IdeasLabs, fellowships, dialogue series and forums of Future Africa. There are many ways to participate, and no contribution is without value.



Searching for solutions (to today's global challenges) requires that the scientific community operate in fundamentally new ways... Developing effective solutions requires converging approaches, such as the integration of knowledge from the life, physical, social, and economic sciences and engineering... Research-performing and training institutions, such as universities and research institutes, have critical roles to play... it is essential that they develop appropriate training programmes and help stimulate multidisciplinary international collaborations.

**Philip Sharp, Nobel Laureate in Medicine, and Alan Leshner, CEO of American Association for the Advancement of Science,
Science 2014, 343:579**



It always seems impossible until it is done.

Nelson Mandela





Make today matter

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