



Stellenbosch

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IYUNIVESITHI
UNIVERSITEIT

forward together
sonke siya phambili
saam vorentoe



A Sustainable Africa: Partnerships for Progress

**Volhoubare Ontwikkeling Jaarverslag
INgxelo yoNyaka yoPhuhliso oluZinzileyo
Sustainable Development Annual Report
2022/2023**

Sustainable Development Annual Report 2022/2023

Across the globe, institutions of higher learning hold a unique and powerful position in shaping a sustainable future. They nurture and educate the next generation of leaders, policymakers, and professionals who will navigate these challenges and serve as crucial hubs of research, training, and development, actively seeking solutions to our most pressing global issues. For Stellenbosch University, this calls for a critical reevaluation of our existing approaches to address sustainability challenges within our systems. By embracing systemic change, we strive to become a university that embodies sustainability in every aspect of its being.

This year, with our second Sustainable Development Annual Report (2022/2023), we embark on an insightful exploration of Partnerships for **Progress** towards sustainability, guided by five crucial themes: **People, Planet, Prosperity, Peace, and Partnership**. These themes resonate with the United Nations' 17 Sustainable Development Goals (SDGs), the ambitious aspirations of the African Union's Agenda 2063, and its 20 Goals for a Peaceful and Prosperous Africa.

Stories hold the power to illuminate the essence of sustainability. Throughout this report, we weave together narratives from across environments, showcasing the dedication of our champions who relentlessly push the boundaries of sustainable practices. However, this report is not just for sustainability specialists; it is for everyone invested in our collective future.

The compilation of this report serves as evidence of the collaborative nature and partnerships that constitute our sustainability drive. We intend to showcase Stellenbosch University's initiatives and their potential to improve our community's well-being and have a ripple effect on national and continental sustainability landscapes. Through research, education, and community engagement, Stellenbosch University strives to catalyze positive change, contributing to a more equitable and resilient future for all.

The SDG/2063 Impact Hub is situated at the Centre for Collaboration in Africa at Stellenbosch University International:

✉ susdev@sun.ac.za 🌐 <https://susdev.sun.ac.za>

Queries can be directed to the Hub's Programme Manager,
Ms Corina du Toit at susdev@sun.ac.za

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Foreword

A Sustainable Africa: Partnerships for Progress

Partnerships are essential to support universities in realising their institutional goals and objectives and to drive change and progress in society. We are convinced that sustainable development is everybody's responsibility and cannot be achieved without collaboration.

Africa faces many challenges, but it is also home an abundance of natural resources, a young and growing population, and a rich cultural heritage. Harnessing these resources for sustainable development is the best way to tackle our challenges.

That much is clear from both the 2030 Agenda for Sustainable Development of the United Nations (UN), with its 17 Sustainable Development Goals (SDGs) to transform the world, and Agenda 2063 of the African Union (AU), aimed at making our continent peaceful and prosperous.

These two agendas have sustainable development at their core. Stellenbosch University (SU) is proud of its contribution in this regard – at the institutional level and in collaboration with our partners all over the African continent.

At the institutional level, SU's strategy is aligned with the United Nations' blueprint for sustainable development. As a leading research-intensive university, our Vision 2040 includes "advancing knowledge in service of society" and being a "proud African knowledge hub serving the continent through research, innovation and education".

We are committed to systemic sustainability, which includes people, places, economic prosperity, the environment, and responsible corporate governance. We are developing SU in a manner that respects ecological thresholds and enhances society and the natural environment to avoid depletion or degradation of natural resources and ensure diverse, resilient and

productive ecosystems for current and future generations.

In 2021, we established our Sustainable Development Impact Hub (SDG/2063 Impact Hub) to help us become more systemically sustainable and highlight SU's contributions to both the UN's and the AU's sustainable development agendas. The Hub is based within the Centre for Collaboration in Africa (CCA) at SU International to underline the importance we place on pursuing sustainable development in collaboration with others.

For example, together with 23 other higher education institutes, the Hub established the African Regional Forum on Climate Change, ahead of Cop27 in 2022.

Our strong involvement on our continent has resulted in bilateral agreements with numerous fellow African higher education institutions, which have proven invaluable to students and researchers over the years. In addition, SU supports thematic research and capacity development through our membership in several academic and research networks and partnerships across the continent.

For example, SU serves as a nucleus of the African Union New Partnership for Africa's Development Southern African Network of Water Centres of Excellence (AUDA-NEPAD SANWATCE), which coordinates important research and development in water and sanitation on our continent.

Furthermore, we are a founding member of the African Research

Universities Alliance (ARUA); we are proud to host its Centre of Excellence (CoE) in Energy, a multidisciplinary collaboration between 15 African universities to enhance the integrative links between renewable energy, water and food to promote sustainable agricultural development on our continent.

Prof Hester C Klopper
Deputy Vice-Chancellor: Strategy, Global and Corporate Affairs





Stellenbosch University

Stellenbosch University (SU) is committed to creating knowledge, furthering research and encouraging innovation in the service of science and society.

Vision 2040

SU will be Africa's leading research-intensive university, globally recognised as excellent, inclusive and innovative, where we advance knowledge in service of society.

Stellenbosch University is a prestigious and well-recognised, public, research-intensive university located in the town of Stellenbosch, South Africa. Founded in 1918, it is one of the oldest and most well-regarded universities in the country. It is renowned for its academic excellence, research output, and cultural significance. The University is known for the following topics;

Academic Reputation: Consistently ranked among the top universities in South Africa and is highly regarded internationally, SU offers a broad range of undergraduate and postgraduate programs across ten faculties and five campuses.

Multilingual Institution: Operates and teaches predominantly in Afrikaans and English, with some isiXhosa.

Research Excellence: Known for its strong research culture and numerous research centres and institutes dedicated to various fields of study, research at SU spans fundamental research to addressing real-world challenges. The university collaborates with international institutions to enhance its research capabilities.

Student Life: A rich campus life with extracurricular activities, sports, cultural events, and societies creates a rich student experience, aside from earning a degree.

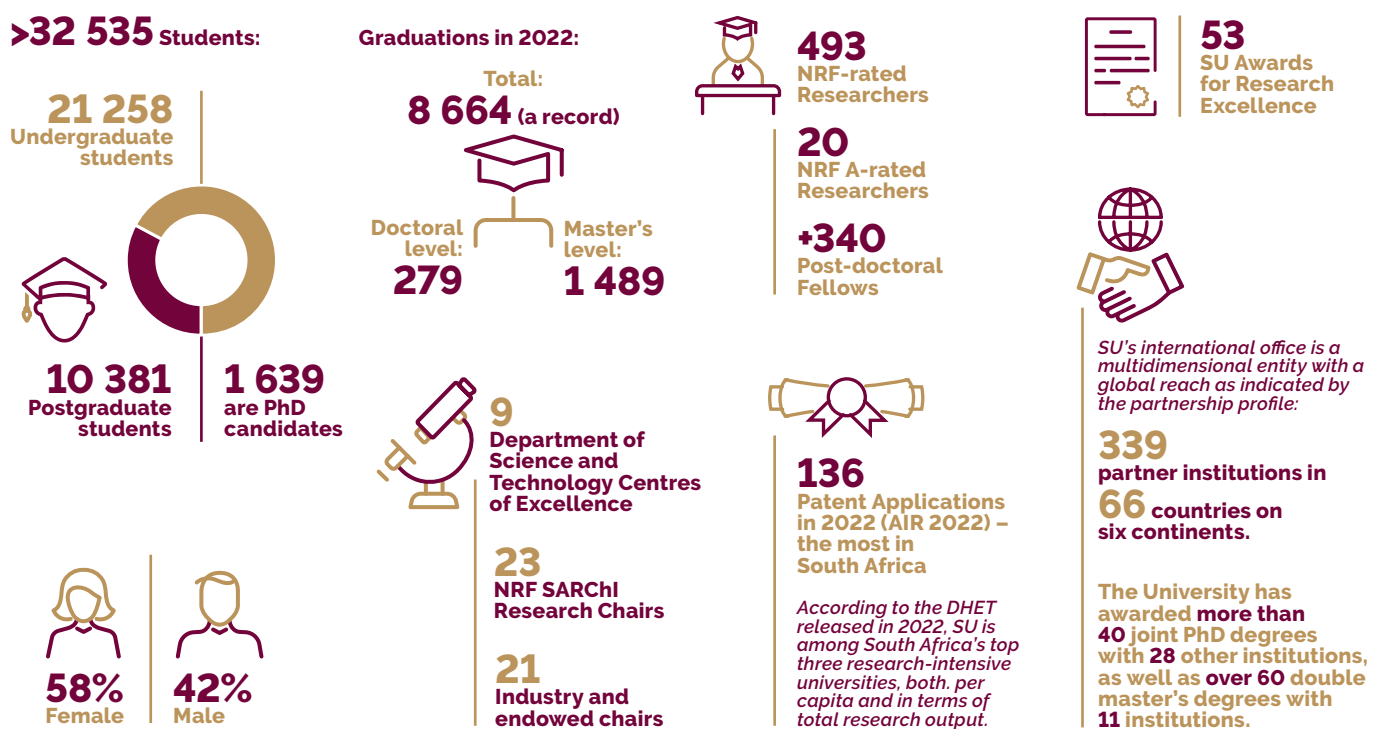
Cultural Heritage: One of the country's oldest and respected institute of higher learning, a heritage reflected in its architecture and traditions.

Social Responsibility: Committed to social responsibility and community engagement, SU addresses societal challenges and contributes to the development of South Africa and the African continent.

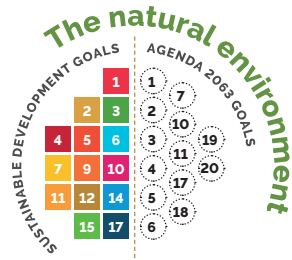
| CORE STRATEGIC THEMES | GAME-CHANGING THEMES | CROSS-CUTTING THEMES |
|--|--|---|
| <ol style="list-style-type: none"> 1. A thriving SU 2. A transformative student experience 3. Purposeful partnerships and inclusive networks 4. Networked and collaborative teaching and learning 5. Research for impact 6. Employer of choice | <ol style="list-style-type: none"> 1. Innovation and entrepreneurship 2. Academic renewal 3. HL escalation (Hybrid Learning) 4. Assessment 5. Business model for SU's schools and faculties 6. Delivery models and partnerships to unlock Africa and international potential. 7. Digital transformation | <ol style="list-style-type: none"> 1. Transformation 2. Internationalisation 3. Strategy and data analytics 4. Systemic sustainability 5. Governance 6. Matrix organisation |

Figure 1: The three themes guiding the strategy and implementation of SU's vision.

Key statistics



The five Strategic Research Areas



ASSOCIATED SU ENTITIES

- Centre for Invasion Biology
- Centre for Invasion Biology Research Chair: Managing Invasion in Protected Areas
- Centre for Renewable and Sustainable Energy Studies (CRSES)
- Stellenbosch University Water Institute (SUWI)
- SA Research Chair in Social-Ecological Systems and Resilience
- SA Research Chair in Integrated Wine Science
- SA Research Chair in Mathematical and Theoretical Physical Biosciences
- Scatec Solar Chair in Photovoltaic (PV) Systems
- SA Research Chair in Genetic Tailoring of Biopolymers
- Research Chair in Plant Health
- Postharvest Physiology Research Chair in Deciduous Fruit
- Hans Merensky Research Chair in Advanced Modelling of Eucalypt Wood Formation
- School for Climate Studies
- AIMS-Canada Junior Research Chair in Data Science for Climate Resilience
- Sasol Chair in Analytical Polymer Science



ASSOCIATED SU ENTITIES

- Centre of Excellence for Biomedical TB Research (CBTBR)
- South African Centre for Epidemiological Modelling and Analysis (SACEMA)
- Desmond Tutu TB Centre
- African Cancer Institute
- Institute of Sport and Exercise Medicine (ISEM)
- SA Research Chair in Innovative Rehabilitation
- SA Research Chair in Mycobacteriology
- SA Research Chair in Food Environments, Nutrition and Health
- SA Research Chair in Posttraumatic Stress Disorder (PTSD)
- SA Research Chair in Paediatric Tuberculosis (TB)
- SA Research Chair in TB Biomarkers
- SA Research Chair in Animal TB
- SA Research Chair in Mechanistic Modelling of Health and Epidemiology
- Sarah Turoff Endowed Chair in Schizophrenia Research
- SA Research Chair in Integrative Skeletal Muscle Physiology, Biology and Biotechnology
- Rand Water Chair in Public Health
- Centre for Epidemic Response and Innovation (CERI)
- Centre for Food Safety



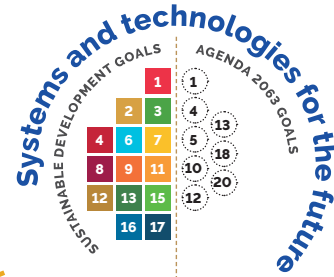
ASSOCIATED SU ENTITIES

- HF Oppenheimer Chair in Human Rights Law
- SA Research Chair in the Sociology of Land, Environment and Sustainable Development
- SA Research Chair in the Economics of Social Policy
- SA Research Chair in Property Law
- SA Research Chair in Gender Politics
- SA Research Chair in Violent Histories and Transgenerational Trauma
- Bureau for Economic Research
- Africa Centre for Dispute Settlement
- Unit for Religion and Development Research
- Centre for Applied Ethics
- Centre for International and Comparative Politics
- Africa Centre for HIV/AIDS Management
- Anti-corruption Centre for Education and Research of Stellenbosch University (ACCERUS)
- Law Trust Chair in Social Justice
- South African Research Chair in Mainstreaming Gender for Energy Security in Urban Poor Environments
- Centre for Research on Democracy (CREDO)
- Centre for the Study of the Afterlife of Violence and the Reparative Quest (AVReQ)



ASSOCIATED SU ENTITIES

- SA Research Chair in Science Communication
- Anton Mostert Chair of Intellectual Property
- Centre for Regional and Urban Innovation and Statistical Exploration (CRUISE)
- Centre for Science and Technology Mass Communication (CENSOCOM)
- Africa Open Institute for Music, Research and Innovation
- Standard Bank Centre for Agribusiness Development and Leadership
- Stellenbosch Institute for Advanced Study (STIAS)
- African Wildlife Economy Institute
- Centre for Applied Ethics
- Ton and Anet Vosloo Research Chair in Afrikaans Language Practice
- Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy (SciSTIP)



ASSOCIATED SU ENTITIES

- School for Data Science and Computational Thinking
- SA Research Chair in Sugarcane Biorefining
- SA Research Chair in Antenna Systems for the SKA
- SANRAL Chair in Pavement Engineering
- Chair of Computational Thinking for AI (CT4AI)
- SA Research Chair in Postharvest Technology
- Centre for Geographical Analysis (GSA)
- Institute for Futures Research
- Centre for Complex Systems in Transition (CST)
- Institute for Wine Biotechnology
- Institute for Biomedical Engineering
- Macrocomm Smart Utility Solutions Chair
- Research Chair in the Internet of Things (IoT)
- Rand Water Research Chair in Mechanical Engineering
- National Institute for Theoretical and Computational Sciences (NITHeCS)
- Research Alliance for Disaster and Risk Reduction (RADAR)
- AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation (AUDA-NEPAD CoE-STI)
- Capitec Chair in Applied AI

THE UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS



THE AFRICAN UNION'S AGENDA 2063 GOALS

1. A high standard of living, quality of life and well-being for all citizens
2. Well-educated citizens and skills revolution underpinned by science, technology and innovation
3. Well-governed and well-nourished citizens
4. Transformed economies
5. Modern agriculture for increased productivity and production
6. Blue/ocean economy for accelerated economic growth
7. Environmentally sustainable climate-resilient economies and communities
8. United Africa (federal or confederal)
9. Continental financial and monetary institutions are established and functional
10. World-class infrastructure crisscrosses Africa
11. Democratic values and practices, the universal principles of human rights, justice and the rule of law are entrenched
12. Capable institutions and transformed leadership are in place at all levels: cross-cutting with governance
13. Peace, security and stability are preserved
14. A stable and peaceful Africa
15. A fully functional and operational African peace and security architecture (APSA)
16. An African cultural renaissance is pre-empted
17. Full gender equality in all spheres of life
18. Engaged and empowered youth and children
19. Africa as a major partner in global affairs and peaceful co-existence
20. Africa takes full responsibility for financing her development

Figure 2: Stellenbosch University's five strategic research areas

How the two Sustainable Development Agendas align – and SU’s contributions

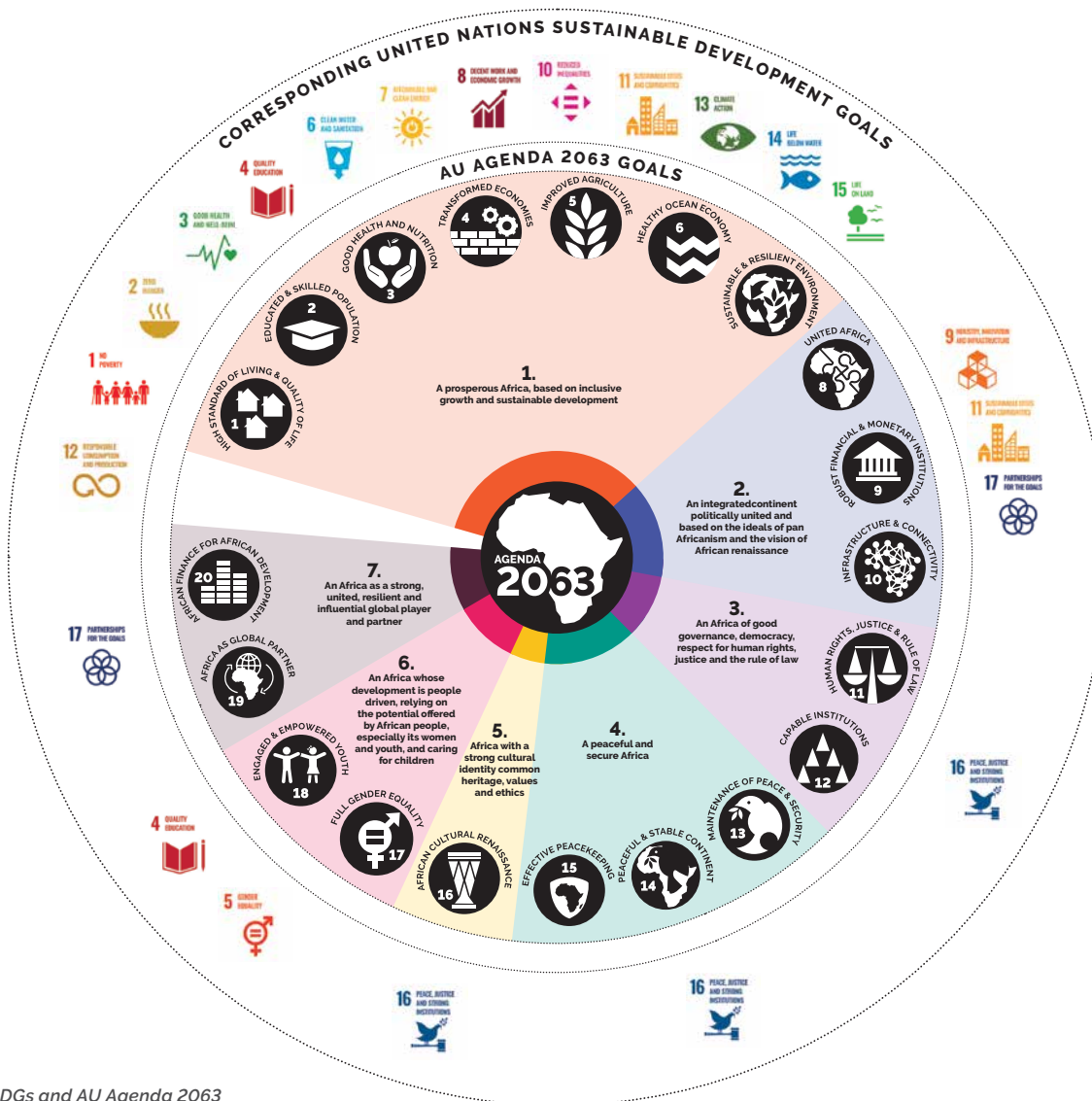


Figure 3: SDGs and AU Agenda 2063

In October 2015, the UN General Assembly adopted the 2030 Agenda, with 17 Sustainable Development Goals and 169 targets. The SDGs are intended to demonstrate the scale and ambition of this new universal Agenda, building on the Millennium Development Goals and completing what they failed to achieve. With the SDGs, we aim for universal inclusion to "leave no one behind." These integrated and interlinked goals all have a dimension of economic, social and environmental sustainability in areas of critical importance for humanity and the planet. It also breaks down silos and encourages cross-sectoral dialogue.

African Union’s Vision

The African Union Agenda 2063 is a pan-African plan with seven aspirations and 20 goals for a

peaceful and prosperous Africa, embedded in the Constitutive Act of the African Union’s Vision. Spanning 50 years with five ten-year implementation plans, it also describes several Flagship Programmes as an African-led vision to find transformative solutions to accelerate the economic growth and development needed to address past injustices and transform the continent to a key player on the world stage.

Alignment

Through the work of the SDG/2063 Impact Hub, we have aligned ourselves with the AU Agenda to address regional and continental priorities while addressing the global agenda through the SDGs and this report speaks to both the SDGs and the AU 2063 Goals. The two Agendas are highly aligned, with up to 90%

similarity: At their core both Agendas address the importance of developing the five 'Ps' as follows **People, Prosperity, Peace and Partnership** – without negatively impacting the **Planet**.

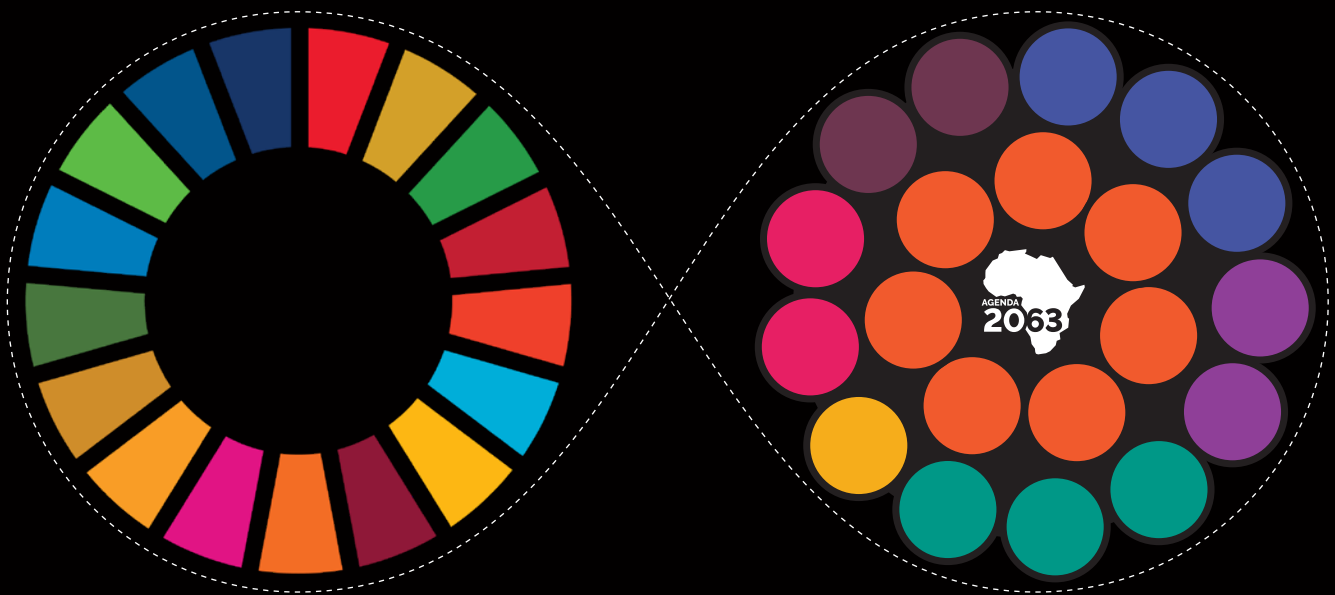
African Renaissance

In the next section we will discuss SU’s contributions to the SDGs with its corresponding AU Agenda 2063 Goals (See table at the end of the report for the full overlap), contextualised against these five Ps. In particular, the AU agenda does not speak to sustainability as clearly the UN does for SDG 12, Responsible Consumption. On the other hand, the UN does not speak to AU Goals 8 and 16, which address the need to promote African cultural values and an African cultural renaissance that promotes our rich culture and heritage.



Leave no one behind

Synchronising the UN's and AU's
Sustainable Development Agendas





People

As Africans, we carry the spirit of *uBuntu*, which encourages us to strive to show humanity to others. Universities have the opportunity and responsibility to address poverty through local and regional intervention, education, and financial support of enrolled students. Moreso, the skills and developmental training that will in future offer solutions to reaching the Goals.

The UN's 2030 Agenda and its 17 Sustainable Development Goals, and the African Union's Agenda 2063 Goals both prioritise people by aiming to eradicate poverty and hunger to ensure all individuals can realise their potential with dignity and equality in a healthy environment. These goals encompass the commitment to leave no one behind, emphasizing the well-being of all individuals worldwide. The first five SDGs provide critical targets for addressing the fundamental needs of people, from basic sustenance to health, well-being, education, and gender equality, promoting equal opportunities for women in areas such as employment, food, and education. To this end, Stellenbosch University is dedicated to nurturing a socially responsible and conscious generation that understands the profound importance of people in the journey towards a sustainable and equitable world.



SDG 1:
No Poverty: End poverty in all its forms everywhere — leave no one behind



AU Goal 1:
A high standard of living, quality of life and well-being for all

SU's Contribution to Poverty Eradication and an increased standard of living

There is a growing body of research and evidence globally - and from Stellenbosch University - that suggests that individuals and households that are excluded from the financial system lack the capability to embark on economic activities that will enhance and sustain their well-being. This implies that poverty-eradicating policies must include targeted interventions at enhancing financial inclusion as well. Three examples of research on financial inclusion at Stellenbosch that have led to policy engagements on using financial inclusion as one of the poverty reduction strategies are worth mentioning. These examples are based on work which drew on research on access to finance and its implications for household welfare and small enterprise productivity and consequently the importance of financial inclusion as a strategy within the economic development policy of developing countries. Related work includes field and policy workshops on the role of inclusive credit in enhancing the productivity and welfare on smallholder farmers in an Alliance for Green Revolution in Africa Danish International Development Agency (AGRA/DANIDA) and 2022 saw the publication of *Advanced Introduction to Financial Inclusion* to broaden the dissemination of the research and evidence the role of financial inclusion in poverty eradication.

Prof Charles Adjasi, Professor of Development Finance and Economics, University of Stellenbosch Business School



Outreach: Bridge the Gap

Since 2021, SU has held a Bridge the Gap campaign to raise funds to make a tangible difference in the lives of our student community and close the gap between talent and poverty constraints. This collective effort to uplift and care for one another is an excellent display of SU's institutional desire to serve its community. It also demonstrates SU's realisation that to achieve the ideals and targets to End Poverty, then a strong effort towards collaboration and coming together ought to be pursued. The 2022 Giving Day benefitted eight groups: #Move4Food, the Tygerberg Pantry Project, #Action4Inclusion, #GradMe, #Zim4Zim, #MatiesHaveDrive, End Period Poverty and Caught in the Middle.

Students and Learning

Of the 32,500 students enrolled at SU, more than 25% (8924) have received financial aid, almost half of students in the bottom 20% graduate with degrees. This is partly due to the financial assistance from The National Student Financial Aid Scheme (nsfas.org.za), the primary funder for SU students with R847 million, and NRF funding (R63 million) for postgraduate studies.

Financial Aid In 2022: Several foundations and funds have worked with SU to offer financial aid and assistance to students; these include: The Michael & Susan Dell Foundation, which supported 448 1st-generation students in 2022, the Allan Gray Orbis Foundation, the Crossley

Foundation, the Carl & Emily Fuchs Foundation that support the 'missing middle' students that do not qualify for National (NSFAS) funding, as well as the Russel Botman Bursary Fund, the Moshal Scholarship Programme, the Ikusasa Student Financial Assistance Programme the Feenix crowdsourcing programme, in addition to other sources of external funding earmarked for bursaries. These funding programmes are set to include accommodation, meals and study fees.

Student support: At an undergraduate level, the university administered R937 million in 2022. Most of this was NSFAS funding, including institutional funding, bequests and donations. The Postgraduate Bursaries office administered R268 million at a postgraduate level, of which the bulk was departmental funding. 60% of all scholarships were awarded to female students.

In 2022, the Stellenbosch Network held several events to promote entrepreneurship in the town of Stellenbosch and collaborated with SU on the Smart Township #Ideasforchange Challenge, as well as with the LaunchLab on Exploring Data Science & Entrepreneurship, in addition to other ongoing projects.



SDG 2:
Zero Hunger: End hunger, achieve food security and improved nutrition and promote sustainable agriculture



AU Goal 5:
Modern agriculture for increased productivity and production

SU significantly contributes to eliminating hunger and modernizing agricultural practices toward increased productivity and production of food.

The Faculty of AgriSciences at SU is making a notable contribution towards modernizing agriculture both locally and abroad, through the training of our next generation of agriculturalists that can turn science into practice, and through the establishment of purposeful partnerships. In 2022, the faculty remained the top faculty for agriculture and forestry studies in Africa, was ranked among the top 25 in the BRICS countries, and among the top 100 globally in the QS World University Rankings.

The faculty is committed to the sustainable use and ethical management of South Africa's natural resources to ensure the conservation thereof for future generations. The faculty also contributes to the local agricultural sector's competitiveness, and respond to the unique regional challenges related to food security, climate change, and sustainable resource utilization through the areas of Natural Resource Economics and Sustainability.

The establishment of partnerships and regional knowledge exchange systems in Africa remains a priority of the faculty, which affords the faculty with the opportunity to unlock academic opportunities for the faculty itself, and its partners and stakeholders.

Prof Danie Brink, Dean of the Faculty of AgriSciences (Photo: Anton Jordaan).



AgriSciences profile

Of the 8 666 students that graduated in 2022, the faculty produced 520 graduates, which included 8 awarded MSc in Sustainable Agriculture degrees.

Our campus population across our five campuses collectively generated 314 700 kg of food waste in 2022. Stellenbosch University Facilities Management (SUFM), has a food-waste reduction programme in residences, and all food waste is sorted at source, and the majority is sent to composting facilities.

Food on campus

SU is committed to ensuring that every student has access to the nutrition they need. Students are encouraged to apply for a food allowance online should they find themselves in a situation where they could benefit from this additional support. The Bridge the Gap fund provides funds, for initiatives like the #Move4Food campaign and the Tygerberg Pantry Project that mitigate food insecurity on our campuses.

Due to significant demand, residences and vendors in the student centre offer healthy food choices, including vegan and vegetarian options.

The following centres within the faculty *contribute actively to food security* through training to support modern agricultural practices.

SARChI Post-harvest Technology

The DST-NRF South African Research Chair (SARChI) in Post-Harvest Technology addresses post-harvest losses that contribute to food insecurity in South Africa. The Chair's research focuses on post-harvest technology and agricultural and biosystems engineering.

Southern Africa Food Lab

The Southern Africa Food Lab (SAFL) promotes creative responses to the hunger challenge through multi-stakeholder dialogue and action from the university to industry. The SAFL stakeholders include corporate, grassroots, NPO, academic, and government sectors that collectively address issues that influence the transformation of food systems, from farm to table.

Chair in Crop Health

The first South African Chair in Plant Health (established in 2020) is hosted in the Department of Agronomy, and focuses on research related to crop production. The Chair offers both novice and experienced agriculturalists with an opportunity to improve their skills set in order to be able to respond to industry-motivated needs, through the offering of short courses and leadership development opportunities.



HortiDemo Centre

The HortiDemo Centre, established in partnership with the Dutch government, was opened in 2022 and focuses on training, knowledge sharing, and entrepreneurship. The Centre intends to create new markets that will involve sustainable agricultural practices and technologies such as water efficiency, biological pest management, and post-harvest inspection and certification. Additionally, the Centre works towards increasing local production and availability of nutritious and safe food products to promote food security and access premium markets.

Centre for Food Safety

The Centre for Food Safety (CFS) represents an applied food science research consortium that is comprised of SU and the food industry. The CFS allows stakeholders to develop and exchange knowledge, experience, and expertise in food safety, food defence, and food processing.

The **Digital Aquaponics Training Program** aims to develop digital and interactive aquaponics study programs across the SADC region through a hybrid teaching approach.

DESERTFOODS International GMBH and partners in South Africa will provide **online courses**, scientific graduate studies, live practical training workshops, and virtual workshops to educators to facilitate the implementation and management of aquaponics systems. The program aims to attract a **socially diverse student** population, and intends to provide financial assistance, including scholarships, to individuals from underprivileged or previously **disadvantaged communities**. While tuition fees will be linked to the courses, the parties involved will offer several bursaries each year to support individuals facing financial difficulties.

SU and the International Food and Agribusiness Management Association (IFAMA) collaboration for agricultural training in Zambia

The Agrisciences Faculty is collaborating with IFAMA on a social impact study funded by SU, to determine smallholder farmer training needs in Zambia to develop training courses best suited to the needs of African smallholder farmers across Africa.

Fostering food system transformation in Africa

The Centre for Sustainability in Transition (CST) at SU, has been investigating food systems that are deeply intertwined with our current economic and energy systems, as well as being impacted by and having major impacts on biodiversity, water and climate systems. Food systems have deep links to identity and culture, as well as being a major source of livelihoods and employment along the food value chain. Through a **collaboration** between the CST, McGill University, the University of Guelph, Ensign Global College in Ghana, the Stockholm Resilience Centre, and the Global Change Institute at Wits University, **this IDRC-funded project** aims to identify key food-related initiatives or innovations (referred to as "seed initiatives"), that have the potential to transform food systems in Africa. Postdoctoral researcher, Dr Nyasha Magadzire, is the CST lead on this project which is being conducted in three coastal urban regions of Africa: **Cape Town, Accra and Mombasa**.



SDG 3:
Good Health and Well-being: Ensure healthy lives and promote well-being for all at all ages



AU Goal 3:
Healthy and well-nourished citizens

SU's contributions to promoting good health and well-being for citizens of all ages so that they lead healthy lives and are well-nourished include the following:

Of the 8 666 graduates in 2022, 1 029 (approximately 12%) were in the health and medical sciences fields.

SDG 3 and the African Union (AU) Agenda Goal 3 focus on promoting health and well-being, which is paramount for Africa, given the unique health challenges the continent is exposed to. Addressing a diverse range of health issues, including infectious diseases, maternal and child health, and non-communicable diseases, is crucial for African nations' development and prosperity. As seen with our innovative leadership during the COVID-19 pandemic, Africa has the potential to be a leader in global health by pioneering innovative healthcare solutions and serving as a source of expertise in managing and preventing diseases.

Partnerships

Working with partners from across the world, Stellenbosch University has emerged as a prominent contributor to global health, with the Faculty of Medicine and Health Sciences playing a pivotal role in addressing the COVID-19 pandemic alongside colleagues from other African countries. Our campus has world-class medical facilities and a strong network of researchers and healthcare professionals from dedicated teams engaged in crucial research to create accessible and affordable healthcare for all.

Stellenbosch University's commitment to advancing global health, mainly through continental and international partnerships, underscores its dedication to addressing pressing health challenges on a global scale. With the disruptions of COVID-19 still lingering slightly over 'normal' university operations, 2022 saw the full return of students to campus, which reflects the institution's adaptability and resilience in the face of trying times. This was also a testament to Stellenbosch University's role in providing the

research and innovation needed to manage Covid-19. Our colleagues at the medicine and health sciences faculty continued to provide society with impactful research, advice, policy inputs and comments on COVID-19, which the institution also used to facilitate a safe and sustainable return of students to campus. However, SU realised that members of our community still reserved acknowledgeable caution and concern; SU also institutionalised a blended model of in-person and Augmented Remote Teaching and Learning (ARTLA) for members of our faculty and students who were not yet ready or able to join us in person.

Collaboration

During the Covid-19 pandemic SU researchers, together with Minister of Higher Education, Science and Innovation DG Blade Nzimande, and the biotech investor of NantAfrica, to SU's FHMS Biomedical Research Institute (BMRI) facilities and the Centre for Epidemic Response and Innovation (CERI) at Tygerberg campus. CERI, which is headed by Prof Tulio de Oliveira, professor of Bioinformatics in the School for Data Science and Computational Thinking, will provide the genomic sequencing for the development and evaluation of vaccine therapies in South Africa and is envisioned to be the largest genomics surveillance facility in Africa. In May 2022, SU and CERI Researcher Prof Tulio de Oliveira and his collaborator, Dr Sikhulile

Moyo (laboratory director for the Botswana-Harvard HIV Reference Laboratory), were named among the top 100 most influential people of the year by TIME magazine for their work on to identify and report the emergence of the Covid-19 Omicron variant. They were also named the 2022 recipient of the South African Medical Research Council's Gold Medal. The achievements of Prof Tulio are not isolated to him alone but to the incredible team of colleagues and SU as an institution that facilitated this impactful research through infrastructure and support.

Ending vaccine inequity

In May 2022, the Director-General of the World Health Organisation, Dr Tedros Adhanom Ghebreyesus, paid a visit to the SU-FMHS Biomedical Research Institute, along with a high-powered delegation of European politicians and diplomats. They toured the CERI and immunology laboratories and the biorepository, where millions of genomic sequences will be stored. At a press conference afterwards, Dr Ghebreyesus lauded the skills base and the cutting-edge facilities that make the BMRI the ideal hub for developing vaccine therapies for COVID-19, malaria and many other dreaded diseases that plague our continent. He described the BMRI's work as the beginning of the end of the vaccine inequity against Africa during the pandemic.

"South Africa and Africa at large do not have to be mere followers in the science world. The long-term objective is to reverse the brain drain, attract leading experts, and grow local talent. And to be a big exporter of the best technologies related to vaccines, therapies and diagnostics to help the world," says De Oliveira.



Prof Tulio die Oliveira



Nursing and Midwifery students honing their practical skills



Prof Portia Jordan

“With only a few nursing education institutions in the country that were accredited to offer the postgraduate diplomas, SU contributed to specialist nurse training, which is an urgent and national priority in South Africa,” says prof Portia Jordan, executive head of the department.



Mental health @Work

As Stellenbosch aspires to be a holistic and thriving university, we aim to have a dynamic understanding of health and wellbeing. With a tough few years behind us, we realise the toll the pandemic and the effects of a struggling economy have had on the mental health of our colleagues and students. In 2022, the holistic health of SU students and staff remained a focus for the Centre for Student Counselling and Development (SCSD), that offer registered students at SU support and counselling services for free.

Teaching Nursing expands postgraduate programme offering

In 2022, the SU's Department of Nursing and Midwifery developed eight new postgraduate programmes for specialist training in nursing. This came as part of the revamp of the nursing offering and programmes at the University, which are now more strategically designed to groom practitioners in modern and dynamic nursing skills. The Department of Nursing and Midwifery implemented and graduated the 2nd cohort of

these specialist nurses, which was the first in the country.

The Department of Nursing and Midwifery then embarked on developing macro and micro curricula for each programme to meet the outcomes and competencies required by the South African Nursing Council (SANC).

SU launches Africa-centred infectious diseases programme with MSF

At the beginning of 2022, SU, in partnership with the international humanitarian organisation Médecins sans Frontières (MSF), launched a *first-of-its-kind* diploma programme in infectious diseases specifically tailored to the needs of the African healthcare context. This programme aims to bridge the gap in information on Tropical Infectious diseases that are particular from an African healthcare perspective.

This two-year diploma is presented in a hybrid learning format so that practitioners across the continent can take it. With five tailor-made modules, the resource limitations of the continent's infectious diseases

will be studied in detail and cross-cutting themes such as antimicrobial stewardship, infection prevention and control and the One Health Principle, which looks at health holistically – incorporating animals, humans and the environment. The modules are presented by a core group of FHMS staff with expert guest presenters from other institutions for some of the subject matter.

The launch of this essential programme also celebrated the intake of the first **17 students from nine African countries**: Nigeria, Mozambique, Cameroon, the Democratic Republic of Congo (DRC), South Sudan, Zambia, Ghana, Kenya and South Africa.

Wellbeing for SU means engaging in attitudes and behaviours that enhance quality of life and maximise personal potential. Wellbeing is implemented through the SU EAP, the Staff Health and Wellbeing Plan and various protocols and guidelines related to specific issues such as bereavement, workplace injuries, incapacity and substance abuse. The Institutional Committee for Staff Health and Wellbeing advances the health and wellbeing of all staff.



SDG 4:
Good Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



AU Goal 2:
Well-educated citizens and skills revolution underpinned by science, technology and innovation



AU Goal 18:
Engaged and empowered youth and children

SU contributes to quality education to ensure equitable and inclusive opportunities and empower our youth and children. This includes lifelong learning interventions, locally and regionally, relying heavily on advancements in science, technology and innovation to improve the skills of those reached.

The Faculty of Education at SU contributes significantly to research. Internationally and across disciplines, originality is an expected outcome of doctoral education. Her work has contributed substantively to the body of knowledge on doctoral education in general, specifically around conceptualising and operationalising the interplay between doctoral originality as a product and doctoral creativity as the underlying process. Central to the Faculty of Education's vision is a commitment to engage head-on with South Africa's educational challenges, reach out, teach better, and reimagine a broader system within which our country's children, students and adults can flourish. This is done by integrating and synergising quality research efforts with opportunities for institutional development, practical teaching and learning endeavours, and community interaction projects. **Beyond Education** is a project which contributes hugely to the educational challenges of subject-specific language and social needs.

Prof Liezel Frick, Department of Curriculum Studies and the director of the Centre for Higher and Adult Education at the Faculty of Education at Stellenbosch University



Students from the Faculty of Education taking part in a beach clean-up for Beyond Education, a social impact programme

Beyond Education

Beyond Education, a social impact programme launched in 2020, primarily for students to take ACTION and restore HOPE by being agents of social change in our local communities. It is about adding positive value to Stellenbosch University, but most importantly, it is about future educators making a difference in the world by helping someone in need.

The programme creates opportunities for students to get involved in community work, such as visiting children's homes, hospitals, animal shelters, running sandwich and stationary drives and even environmental projects (such as beach clean-ups). The primary purpose of this project is to empower students to act and restore hope by being agents of social change in local communities. It is a way for future educators to make a difference in the world by helping someone in need. In 2022, for example, the project made 2000 sandwiches in one day for distribution to Stellenbosch schools, homeless people and the night shelter.

Africa faces significant challenges, particularly in education, from children and young people to adults. South Africa struggles with low literacy rates, poor academic

performance and unfavourable rankings in global indices that assess the quality of education. Nevertheless, Africa is a continent of promise, optimism and untapped potential.

The Faculty of Education has an Environmental Education Programme (EEPUS), which aims to provide environmental education modules for the various programmes offered by the Faculty of Education and to undertake practical development and training projects that apply the principles of environmental education and in which students from different programmes can participate.

Lifelong Learning

SU offers a range of lectures and learning opportunities that are free and open to SU students and staff, as well as all alumni and members of the public.

These include inaugural lectures by SU academics and those offered by the Stellenbosch Forum on Research for Impact. Both platforms offer recorded versions of the lectures and, in some cases, an article.

The CST (Complex Systems in Transition) offers hybrid lectures open to the public and recorded



Above: Convenors of the Nobel in Africa – Nobel Symposia Series with launch MC, Claire Mawisa. From left: Erik Aurell (Physics 2022); Fredrik Almquist (Chemistry 2023); and Jacob Svensson (Economic Sciences, March 2024). The Physiology/Medicine Nobel Symposium is planned for October 2024 with convenor, Göran Hansson (not in the photo).



Left: Delegates at the ADA Summer School, taking part in the workshop "Preparing for the PhD" presented by Prof Sebastian Kernbach of St Gallen University in Switzerland.

for future access. Topics focus on sustainability and governance and include lectures such as *The Future of Energy: Can War Support the Transition to Fossil Fuel Alternatives?*

The highlight of SU's lecture offering in 2022 was the Nobel Symposia, a well-established series of high-level academic meetings attended by the world's leading scientists, held since 1965. In 2022, SU was the first institution to host these lectures

outside of Sweden and Europe, entitled Nobel in Africa: www.stias.ac.za/nobel-in-africa

In 2022, SU raised R8,1 million to pay off student debt; 84 undergraduate and 82 postgraduate students' debt was wiped out by loyal SU donors, allowing them to enter the workplace debt-free.

The African Doctoral Academy (ADA) and the Emerging Scholars

Initiative (ESI) at the Africa Centre for Scholarship at SU International hosted a series of virtual and face-to-face interventions for current and prospective doctoral students and their supervisors. Delegates came from universities across Africa and South Africa.

**SDG 5:**

Gender Equality: Achieve gender equality and empower all women and girls

**AU Goal 17:**

Full gender equality in all spheres of life

SU contributes to achieving gender equality and women and girl empowerment in several ways, while AU Goal 5 similarly speaks to achieving gender equality and empowering all women and girls.

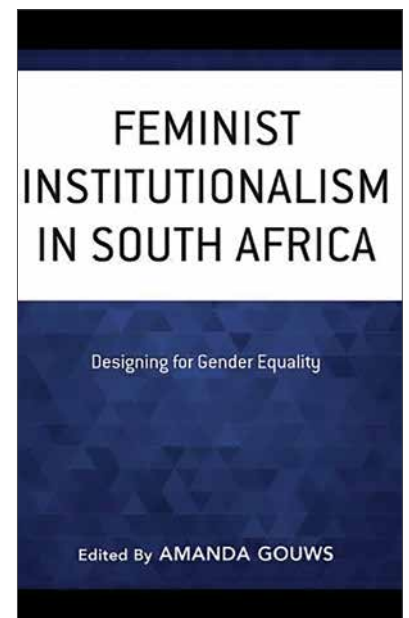
In a world that increasingly recognises the imperative of gender equality as it underpins social progress and economic development, Stellenbosch University is committed to promoting and advocating for this critical goal. It fosters inclusive growth, reduces poverty, and enhances overall resilience in the face of climate change and other global threats. Our report delves into the crucial role of gender equality, the progress made, the remaining gaps in achieving this goal in Africa, and the pivotal role that Stellenbosch University plays in advancing these objectives.

SU's, Prof Amanda Gouws, is a distinguished professor with a PhD in political science. Her areas of specialisation include South African politics, gender politics and political behaviour. Over the years, Professor Gouws has received several awards in her field in Africa and beyond. She has published extensively on issues of South African politics and gender politics. Since 2015, Professor Gouws has held the South African Research Chair Initiative (SARChI) Chair in Gender Politics. The Chair has three associated programmes focusing on recognition and redistribution, women's representation, and women's movements. Through the work of the Chair, Prof Gouws has graduated 14 Masters and four PhD students between 2015 and 2022.

Fast forward to 2022, and her research has resulted in the

publication of *Feminist Institutionalism in South Africa* (Rowman and Littlefield). In this book, Professor Gouws makes a broad appeal to scholars of feminist institutionalism, asking whether gender equality can be designed. Her edited volume provides insight into the successes and failures of the SA Commission for Gender Equality over 20 years and how research in this area can inform the institutional design of national gender machines and influence policymaking for women's equality. The research included in this collection provides valuable insights into various aspects of the institutional design of state structures designed to promote gender equality. It examines how institutions are co-opted, the instances of silence and collusion among women's representatives elected through gender quotas, and the dynamics within these institutions. In addition, the collection delves into the critical dimension of resource allocation to these institutions and assesses their influence on policymaking to achieve substantive gender equality for women. She has also published two other co-edited volumes during her tenure: "Nasty Women Talk Back" and "The COVID Diaries", both published by Imbaili Press.

Prof Gouws delivering a seminar at Uppsala University on "Citizenship as a gendered issue"





Professor Sibusiso Moyo

The appointment of Professor Sibusiso Moyo as a research leader at Stellenbosch University is a significant step forward for gender equality in STEM fields. Her commitment to promoting inclusivity and driving innovation is aligned with several Sustainable Development Goals (SDGs):

- **SDG 5:** Encouraging greater female participation in STEM
- **SDG 4:** Strengthening research excellence and accessibility through partnerships and diverse postgraduate opportunities
- **SDG 8:** Addressing youth unemployment by empowering the next generation of researchers to tackle modern challenges
- **SDG 9:** Fostering innovation and entrepreneurship.

Professor Moyo's appointment has the potential to have a holistic impact, and her leadership will create a more inclusive and impactful research environment. This marks a significant step forward for Stellenbosch University and the broader academic landscape.

The statistics for male and female graduates are published in our Annual Integrated Report each year. Out of 278 senior managers, 95 are female. In 2022, more than 3 500 women began their studies at SU, including more than 1 700 first-generation students. The 2017 Admissions Policy guides the University to create and sustain "an environment of inclusivity, transformation, innovation, diversity and maintaining excellence with a focus on the future". The Admissions Policy promotes access and success for students from diverse communities to create a diverse student body with the potential for academic excellence. At the same time, it states that no one should be excluded based on race, class, origin, gender, sexuality or disability.



SU alumna, Dr Patience N. Mbava, addressing women at the Women's Charter Report Back event

| | Total | Female | Percentage Female |
|--|-------|--------|-------------------|
| Number of graduates: Total | 8 664 | 5 054 | 58% |
| Number of graduates by subject area (STEM, Medicine, Arts & Humanities/ Social Sciences): Total | 4 700 | 2 790 | 59% |
| Number of graduates: STEM | 2 263 | 1 012 | 45% |
| Number of graduates: Medicine | 1 029 | 753 | 73% |
| Number of graduates: Arts & Humanities/ Social Sciences | 1 408 | 1 025 | 73% |

Figure 4: Breakdown of the female student population

Female students, current staff and alumnae can expect support from organisations such as SWAN (Stellenbosch Women Alumnae Network). It brings together female Matie alumnae from different backgrounds and industries worldwide through mentorship programmes, leadership training, roundtable discussions, and book club events. More extensive mentorship programmes are available to student communities and residences, particularly first-generation ones.

Overall, 58% of graduates in 2022 were female, and 0.14% identified as non-binary.

In line with its vision of being a thriving institution, offering a transformative student experience, and being an employer of choice, the status of women and transgender people at SU is further protected. Their progress is encouraged through the 2016 Policy on Unfair Discrimination and Harassment, which protects students and staff against unfair discrimination, harassment, sexual harassment and victimisation, and the establishment of procedures for dealing with complaints of unfair discrimination. Students and staff can report unfair discrimination and harassment, including sexual assault, gender-based violence and victimisation.

Planet

“Life on this planet has been profoundly impacted because of human induced climate change. In an era defined by rapid industrialization, technological advancement, and unprecedented population growth, the concept of environmental sustainability has emerged as a clarion call for responsible stewardship of our planet.”

– *SU Facilities Management's Environmental Sustainability Team.*



Environmental sustainability and stewardship for sustainable development are core concepts at SU that focus on responsible and conscious actions, aimed at preserving and improving the health and balance of our natural environment while meeting the needs of present and future generations.

These concepts are crucial and complex with a magnitude of intertwined challenges. Their profound impact on the earth's natural systems stems from the escalating issues of climate change, biodiversity loss, resource depletion and pollution. This has forced the campus community to rethink its relationship with the natural world.

This theme delves into collaborative initiatives forged through partnerships that transcend boundaries, fostering environmental stewardship, conservation, and sustainable resource management.

**SDG 6:**

Clean water and sanitation: Ensure availability and sustainable management of water and sanitation for all

**AU Goal 7:**

Environmentally sustainable climate resilient economies and communities

Clean water and sanitation are fundamental to sustainable development, and Stellenbosch University plays a significant role in addressing these vital components of global progress.

Access to clean water and adequate sanitation is a fundamental human right and a linchpin for health, education, economic growth and environmental sustainability. Stellenbosch University's contributions include researching innovative solutions to water and sanitation challenges, advocating for water management policies, and empowering communities through education and practical interventions. By fostering a multidisciplinary approach and collaborating with stakeholders, the University actively contributes to advancing water and sanitation solutions that are critical to the well-being and development of local and global communities. Doing so underscores the critical role that academic institutions play in achieving the United Nations Sustainable Development Goals, particularly Goal 6 – Clean water and sanitation to create environmentally sustainable, climate-resilient economies and communities, as seen in Agenda 2063.

Contribution to #CleanWaterAndSanitation

The research carried out in the Water Resources Laboratory (Department of Microbiology, Faculty of Science) can be directly linked to the Sustainable Development Agendas, which aim to achieve good health and well-being (SDG 3) for citizens of low- and middle-income countries through universal access to safe and affordable drinking water (SDG 6).

Prof Wesaal Khan and her team combine viability dyes with advanced molecular technologies

Prof Wesaal Khan



to accurately monitor the prevalence and persistence of microbial pathogens in environmental water sources. Their research spans innovations in water quality monitoring for accurate risk assessment and multi-barrier combination water treatment systems.

Traditionally, water quality is monitored by screening for the presence of indicator organisms using culture-based methods.

However, many pitfalls are associated with traditional monitoring, and cell integrity could be used to distinguish between viable and dead bacteria. Using this principle, Wesaal and her team were one of the first research laboratories in the world to combine the viability dyes ethidium monoazide bromide and propidium monoazide with quantitative PCR and amplicon-based sequencing to accurately monitor the prevalence and persistence of microbial pathogens in environmental water sources. They then apply risk assessment strategies to analyse the potential health impacts and infectious disease hazards of using environmental water for drinking and domestic purposes.

To effectively remove these disease-causing microorganisms from environmental water sources, the Water Resources Laboratory is investigating the use of predatory bacteria and bacteriophages (biocontrol) in combination with solar disinfection strategies. The interdisciplinary nature of their research projects (social and applied sciences) is essential. It ensures that community members in the areas surrounding SU are involved in many project phases again highlighting the value of collaborative work.

Members of the Water Resource Laboratory (Department of Microbiology) conducted community workshops with households in the Skoolplaas Farming Community. The workshops aimed to educate the participating households on rainwater quality and train the community members on the use and maintenance of the large-scale solar disinfection system, which had been designed as part of the Horizon 2020 European Funded WATERSPOUTT project.





Stanley Msiska and fellow Camp 2030 delegate, Stefani Terblanche.

A digital application developed by engineering PhD student Stanley Chindikani Msiska at SU, which provides information on the quality of water in supply systems, won third place at an international gathering in New York at Camp 2030, where more than 250 young leaders, from 61 countries presented solutions to achieve the SDGs by 2030.

The Centre for Sustainability Transitions (CST) is the lead knowledge partner for USAID/ Southern Africa's five-year (2018-2023) Resilient Waters programme, which aims to build more resilient and water-secure communities and ecosystems in Southern Africa through improved management of transboundary natural resources and increased access to safe drinking water and sanitation services. USAID funding facilitated the successful implementation of various activities in 2022. Interventions to date include a short course on Gender Equality and Social Inclusion (GESI) for sustainable transboundary water resource management. Participants gained the capacity to articulate strategies that contribute to mainstreaming GESI, ultimately working towards effective, sustainable

and inclusive water resource management that prioritises the principle of "leaving no one behind".

Through its Environmental Sustainability Plan (ESP), the University aims to conserve potable and irrigation water by reducing, reusing and exploring alternative sources through its water theme. The University has also installed signage, systems and educational programmes to help students and staff use water wisely on campus and at home.

They list the following targets:



40% reduction in potable water use (kl) compared to 2015 baseline



50% reduction in per-capita potable water use (kl) (staff and students) compared to 2015 baseline



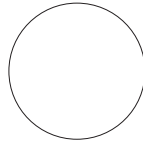
30% reduction in irrigation water consumption when using primary freshwater resources



10% reduction in the concentration of COD in water effluent from specified facilities compared to 2019 baseline



Interventions include planting water-hardy plant species, including local endemic species. As part of the Cape Floral Kingdom, it creates a pleasing environment. Landscape areas are designed to retain water, enabling water absorption and storage. Further, water savings are made by collecting and using rainwater in specific areas on campus.



A core commitment of pursuing global sustainable development is in safeguarding the planet from degradation through sustainable consumption, resource management, and urgent action on climate change to meet the needs of current and future generations.

The AU Agenda 2063 does not address this in their Sustainable Development Agenda for the continent – a telling sign that on average, Africa does not (yet) have unsustainable production and consumption patterns.



Figure 5: The journey to net zero

SU's contribution to #Responsible Consumption – What environmental sustainability and stewardship means to sustainable development at SU

Nicolette van der Eijkel Nicolette van den Eijkel, Director: Facilities Management and John de Wet, Manager: Environmental Sustainability, SUFM.

The Environmental Sustainability Plan (ESP), approved in 2022, provides a pathway for the campus community to embark

on a collective journey to reduce carbon emissions and impact on natural resources. This will be achieved through behavioural and operational changes. Environmental sustainability will become a core principle that permeates all aspects of campus life and will be deeply integrated into the operations and core business of the institution. The goal of the ESP is to ensure that SU achieves carbon neutrality by 2030 and net zero by 2050, supporting SU's strategic roadmap, Vision 2040.

SU's commitment to achieving these goals aims to address the global and local impact measured in greenhouse gas (GHG) emissions while reducing our contribution to the global temperature increase (1.5 degrees). This means reducing the current 84,453tCO₂e to a carbon-neutral campus by 2030 and net zero by 2050.

Enhancing biodiversity

This will ensure that SU aligns with the targets in the Paris Agreement (COP21, 2015), signed by our national government at the United Nations. By implementing these commitments, SU contributes to the 17 SDGs and, by extension, the AU's Agenda 2063 goals and aspirations. The result is an environmentally sustainable institution that actively contributes to planetary sustainability but is also more resilient, reducing operational costs, greenhouse gas emissions and ultimately the institution's carbon footprint, resulting in healthier, cleaner and more productive spaces while enhancing our biodiversity.

This journey will require the collective efforts of campus communities and individuals working together with the courage





to make difficult choices and the resilience to face setbacks. It requires a paradigm shift in how we produce, consume and dispose of goods, energy and water and how we design and develop infrastructure on our campuses.

The themes of the ESP plan include energy and emissions, water, waste, biodiversity and land use, travel and mobility, sustainable buildings, goods and services, and engagement. The ESP identifies several initiatives and targets for development and implementation, the most significant of which will contribute to environmentally sustainable development in 2023.

Conservation of resources

- Water activities include providing alternative water to all sites, reducing leakage and implementing conservation and efficiency projects.
- Energy includes switching to sustainable renewable sources, such as solar power, to reduce our dependence on fossil fuels and minimise their environmental impact.
- We are extending the 500kWp energy renewal programme with a further 100kWp solar.
- Implementation of energy-efficient LED lighting programme.
- Completed Energy Performance Certificate programme for 44 buildings.

- Change behaviour in academic and residential buildings.
- Reduce waste to prevent environmental degradation and harm to human health.
- Promote sorting at source in three bin systems, recycling and reusing materials.
- Improvement of the Stellenbosch Materials Recycling Facility and commissioning a new state-of-the-art waste facility on the Tygerberg campus.

Biodiversity Conservation involves protecting, managing and restoring diverse ecosystems and species to maintain a stable and resilient environment with a focus on fire management, recreation, sport, research, conservation and increased biodiversity. This includes restoration practices in our neighbouring areas of Stellenbosch on the Coetzenburg Mountain, Duthy Reserve, Eerste River, Krom River, and the Bellville Park and Tygerberg campuses.

- Motivate students to organise river clean-ups as part of their outreach activities to the SU student community.
- Develop environmental management plans to conserve areas on and off campus.
- Climate change mitigation and adaptation measures to reduce greenhouse gas emissions and mitigate the effects of climate change. We are developing SU's

carbon footprint measurement for 2021 and 2022.

- Compilation and submission of carbon tax and GHG for national reporting
- Certification of 18 buildings to GBCSA standards.
- Performance audits of 50 buildings.

Engaging the campus community through training, awareness campaigns and events to influence positive behaviour change. This included initiatives such as:

- A campus-wide tree planting programme to increase biodiversity
- Tours of the photovoltaic plant, materials sorting facility, grey water system and green buildings on campus
- Food gardens on the Stellenbosch and Tygerberg campuses
- Engagement with service providers to contribute to a sustainable campus
- Reduction of single-use items by providing reusable water bottles to all first-year students

SU also produces and distributes several annual reports outlining the University's accountability commitment. These include:

- The SU Institutional Annual Integrated Report 2022 outlines our institutional activities and outcomes.
- The newly established SDG/2063 Impact Hub has been producing an annual sustainable development report since 2022. The first edition, Sustainable Development for the Africa We Want, outlines the contributions we have made not only to the UN SDGs but also to the African Union's Agenda 2063 for a peaceful and prosperous Africa.
- **The Environmental Sustainability Plan** The Environmental Sustainability Team at SUFM has also released a 2022 report.

The Centre for Sustainability Transitions (CST), published their Annual Report 2021-2022 in the same year, detailing their contributions to trans-disciplinary sustainability research across their centre, including the work on their Sustainable Development Postgraduate Diploma, Masters and PhD programmes.



SDG 13:
Climate Action: Take urgent action to combat climate change and its impacts



AU Goal 5:
Environmentally sustainable climate resilient economies and communities



AU Goal 6:
Blue/ocean economy for accelerated economic growth

Stellenbosch University realises the many negative impacts that climate change will have not only to the planet but also to people. Thus SU is deeply committed to addressing climate change and pursuing global sustainability through research, teaching, sustainable campus practices and community engagement.

In pursuing global sustainability, Stellenbosch University is committed to fostering meaningful change and progress, exemplified by its unwavering commitment to Climate Action while keeping an eye on economic progress. Recognising the immense importance of climate action in Africa, Stellenbosch University's Sustainable Impact Report highlights the University's contributions to mitigating the effects of climate change, advancing research and education, and promoting sustainable development in the continent's communities and economies. In a region particularly vulnerable to the adverse effects of climate change, advancing climate action is not only a global imperative but a critical step in securing a more prosperous, equitable, and resilient future for Africa.

Initiative

SU's School for Climate Studies (SCS) has achieved much in its first year since its launch in June 2021 under the expert leadership of Prof Guy Midgley (Acting Director), who joined SU in 2014. Prof Midgley is an NRF A-rated researcher, formerly of SANBI (South African National Biodiversity Institute) and interim director of the C:IB (Centre for Invasion Biology). The transdisciplinary nature of the SCS's work has already paid dividends in a field as complex as climate change. Emphasising the importance of synergy in tackling climate change, he adds: "Climate change has a broad impact – on energy supply, land use, crop production, food security, urban design, housing design, water security, water quality. The list goes on. We will try to synergise and cross-fertilise the existing climate change expertise that has been built up in many silos at Stellenbosch University." As one of his first bridge-building efforts, Midgley is working to integrate the world-renowned C:IB with the SCS to enhance the capacity and reach

of both institutions. This would be one of the world's only centres to deliberately address climate and invasive organisms, using similar theories and approaches.

SCS Student Action

Fifteen Stellenbosch University students were officially recognised by Global Alliance of Universities on Climate (GAUC) as Global Youth Ambassadors in September 2022 after completing the ClimateX program, which was an intensive international programme on climate change and global climate governance. Stellenbosch has been a member of GAUC since 2022, joining fourteen other research-intensive and influential universities worldwide. The students were among 150 students from the 15 universities in the GAUC alliance who received their certificates during the global virtual campaign. The ClimateX Campaign aims to prepare today's youth to contribute to global climate governance systematically and sustainably to achieve the SDGs.

Olivia Jones, Nosipho Gqaleni, Yenziwe Mbuyisa and Kayleigh Murray, all postgraduate students in the Department of Botany and Zoology, were selected as GAUC ambassadors for 2022

Source: www.gauc.net (Global Alliance of Universities on Climate (GAUC))





Delegates at the Africa Regional Forum on Climate Change

The ClimateX Campaign was linked to the **Africa Regional Forum on Climate Change launch**. In September 2022, SU International's SDG/2063 and Africa Collaboration Grant supported the SCS in hosting the first Africa Regional Forum (ARF) on Climate Change in collaboration with GAUC. Discussions focused on the African agenda for COP27, which took place in Sharm El-Sheikh, Egypt, in November 2022. This hybrid forum was attended by 55 students and researchers from 17 African countries and local participants.

In his opening video address, SU Rector Prof Wim de Villiers said that while climate change had and would continue to have severe consequences for Africa and its people, these could be addressed through collaboration.

"We have the skills and competence to address the most pressing issues and a deep legacy of indigenous knowledge to draw on. With greater efforts to network and collaborate, we can do much more as an African academic community," he said.

During the ARF, the international cohort of students presented some of their innovative approaches and solutions to climate change challenges in Africa, focusing on SDGs such as sustainable and secure energy, finance, nature, biodiversity and food security, adaptation and resilience.

SCS Research Collaborations

A notable example is the collaboration of the SCS with the South African Environmental Observation Network and several German university partners. These projects measure ecosystem functioning under various land use types, with several PhD and master's students already working in this space. The SCS is also collaborating with the University of Cincinnati, funded by UNESCO,

to model climate risks to the hydrology and biodiversity of UNESCO heritage sites in Southern Africa.

The school will also contribute to teaching: "There is very clearly a desire to develop postgraduate studies of different kinds in response to emerging demands. We are also working to develop modules for remote teaching to be offered internationally," Midgley says. "There is a large gap in climate change teaching in Africa, and we can offer some good local content and understanding."

Experts in the Department of Botany and Zoology calculate the biodiversity risks of climate change by projecting its impacts on plant and animal species. Climate models project that if global greenhouse gas emissions are not drastically reduced over the next decade, there will be significant changes in the distribution of ecosystem types on land and an increased risk of extinction for 10% to 20% of endemic species.

In this regard, the SUWI's Dr Andrew Watson and others have considered how climate extremes in the Western

Cape influence conceptual rainfall-runoff model performance and uncertainty. In 2022, Watson and his collaborators published their research findings on hydrological variability in the province, calculated using a multi-catchment approach (for the Verlorenvlei, Berg, Eerste, Breede and Bot River catchments).

Prof Guy Midgley



Below: Prof Midgley's research group, the Global Change Biology Group, tracks the functioning of essential species in diverse southern African ecosystems, such as fynbos, savannas, open oceans and estuaries, and links the resilience of these systems to climatic drivers.





SDG 14:
Life Below Water: Conserve and sustainably use the oceans, seas and marine resources for sustainable development



AU Goal 5:
Environmentally sustainable climate resilient economies and communities



AU Goal 6:
Blue/ocean economy for accelerated economic growth

Water scarcity is one of Africa's greatest challenges. In South Africa, the problem is compounded by Invasive and Alien Plant Species (IAPS), estimated to consume approximately 3 300 billion m³ of water annually, or about seven per cent of South Africa's average annual runoff.

This consumption is almost equal to the total domestic and industrial consumption in South Africa's major urban and industrial centres. Therefore, South Africa's two main pieces of legislation aimed at conserving the country's water resources, the National Water Act (NWA) and the Mountain Catchment Areas Act (MCAA), satisfactorily address the threats IAPS poses.

We need a 'Blue Revolution', the water equivalent of the 'Green Revolution', referring to the sustainable management of water resources to achieve global water security for crop irrigation and human consumption.



Aquaponics: The work of the Aquaculture Unit at the SU Water Institute – creating blue economies

Aquaponics is a sustainable agricultural production method that combines aquaculture (the farming of fish) with hydroponics (the growing of plants without soil). Integrating two systems into one removes some unsustainable factors of running aquaculture and hydroponic systems independently. In conventional aquaculture, the excretions of the farmed animals can accumulate in the water, increasing toxicity. In an aquaponics system, water from an aquaculture system is fed into a hydroponic system where the by-products are broken down by nitrifying bacteria into nitrites and then nitrates, which are used as nutrients by the plants. The water is then returned to the aquaculture system. Aquaponics has the potential to contribute to several of the United Nations' sustainable development goals by addressing various social, economic, and environmental challenges. Aquaponics can provide a consistent, year-round source of fresh, nutritious food, including fish (animal protein) and vegetables (vitamins and

minerals). It can be implemented in various settings, including urban areas and regions with limited arable land.

Aquaponics minimises waste by efficiently using water and nutrients, supporting the circular economy. Life underwater can also be conserved; sustainable aquaponic practices can help protect aquatic ecosystems by reducing overfishing and the negative impacts of traditional aquaculture. While aquaponics has the potential to contribute to the Sustainable Development Goals, its success depends on several factors, including appropriate technology, training and supportive national policies.

In addition to promoting aquaponics as a sustainable food production technology, aquaculture staff in the Department of Animal Science have expanded their research and training focus on aquaponics as a technology in recent years. NASA and other space agencies have conducted experiments with aquaponics and are exploring its potential for future space missions. *(Provided by Henk Stander, Aquaponics).*



Our campuses:

SU has committed to managing these IAPS through our Invasive Alien Plant Species (IAPS) Management Plan on SU Campuses, 2020 - 2025. The NWA contains provisions relevant to the regulation of IAPS. It recognises South Africa's scarce water resources and calls for a "coordinated multi-sectoral" management approach. SU's Facilities Management (SUFM) uses these guidelines to ensure the removal of plants that harm the water supply of native species in the Cape Floristic Kingdom.

The Stellenbosch University Water Institute (SUWI) was established in 2010 in response to the enormous and unprecedented water-related challenges facing South Africa. It aims to address the severe challenges associated with the increasing demand for potable water and the serious health problems associated with contaminated water supplies. It also addresses environmental issues and concerns about economic development and growth.

Through a partnership with the Kayamandi River Partnership (KRP), an NPO, SU (through SUWI, Departments of Microbiology and Curriculum Studies) is contributing to the programme through our researchers and staff, as well as seed funding from our Division for Social Impact (DSI), to promote responsible water use behaviour among the communities living and working in the surrounding areas of in Kayamandi, Enkanini and Plankenbrug. It builds on sustainable partnerships, creates a culture of environmental awareness, and promotes water health through education and community development through science education. The Stellenbosch Municipality and the National Department of Human Settlements,



Water and Sanitation also support and contribute to the programme. In addition, the KRP pools information and resources with local communities, businesses, the municipality, NPOs and other collaborators, such as the Stellenbosch River Collaborative, to ensure the sustainability of water governance and management interventions in the area.

Current research projects in the Institute include:

- **Frauenhofer innovation platform for the water-energy-food nexus at SU.**
- **The Stellenbosch River Filter**
- **Building an early warning system for communitywide infectious disease spread**
- **SERPIC**
- **DIVAGRI**
- **The ICU Microbiome Project: the ecology of AMR**

Outreach: A digital training programme in Aquaponics for the Southern African development community

The Digital Aquaponics Training Programme aims to develop digital and interactive aquaponics study programmes across the SADC region through a hybrid teaching approach. DESERTFOODS International GMBH and partners in South Africa will provide pre-academic online courses, scientific graduate studies, live hands-on training workshops and virtual workshops for educators to facilitate the implementation and management of aquaponics systems.

The CST at our SPL has written *A New Deal for the Ocean*: a position on the need for ocean governance that will help prevent overfishing. This flows from its research on sustainability innovations and focus on marine and coastal climate risks and opportunities.

The Marine Lab, through the Centre of Excellence for Invasion Biology, does excellent research on marine alien species and the impact it has on the native biodiversity. This lab focuses primarily on understanding what regulates the spread and patterns of marine invasions and quantifying the impacts of these species around the South African coast.





SDG 15: Life on Land: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



AU Goal 5: Environmentally sustainable climate resilient economies and communities



AU Goal 6: Blue/ocean economy for accelerated economic growth.

Sustainable Natural resource management towards: Life on Land (SDG 15), speaks to the protection, restoration, and conservation of our terrestrial ecosystems – and the sustainable use of land. Additionally, the African Union (AU) Goals around the preservation of environmental sustainability also speak to the enhancement of resilient communities for sustained economic growth, with an emphasis on equity and just transitions to sustainability.

Colleagues in the Department of Conservation Ecology and Entomology at Stellenbosch University manifest these concepts through research, teaching and learning, and societal engagement. With a focus on conservation in utilised landscapes and their surrounds, the department contributes to conservation research and action in diverse landscapes. Through their work, they help to realise the AU vision, tackling questions on sustainability in agro-forestry, aquaculture, agriculture and in natural and protected areas. Economic demand to meet social needs must be addressed without compromising the natural viability of the agricultural landscape and the ecological systems in which they are located.

Conservation expertise

To achieve conservation in this context requires research in different areas. In Conservation Ecology and Entomology, expertise includes integrated pest management (using relationships between species to control pests and enable pollination), conservation of natural communities (conserving wild species and their natural habitats), restoration ecology (bringing natural habitats to a desired state) and systems ecology (studying complex interactions between species and their environments). In alignment with the SDGs and AU goals, the department also acknowledges the central role humans play in conservation drivers and outcomes.

Departmental research includes work on social-ecological systems, human-environment relationships and policy formulation.

Science is invaluable in addressing environmental challenges in Africa. However, it is increasingly being acknowledged that tapping into local knowledge systems is also crucial when trying to solve big questions like environmental sustainability: Dr Rhoda Malgas, a lecturer in the Conservation Ecology Teaching Programme emphasises the conservation of Fynbos biodiversity, and the land-user communities that rely on the land for their livelihoods. The research for her PhD, awarded in 2022, used a social-ecological systems approach to ensure sustainable biomass production of Fynbos-endemic rooibos and honeybush species. Both species are commercially produced for tea and other health-promoting products but have long use-histories amongst local people.

Sustainable livelihoods

The thesis centred on ecological sustainability of endemic plant species that sustain the livelihoods of wild-harvesters and small-scale producers in geographically delimited production areas. Retaining the original Afrikaans descriptions for plants and their habitats, Dr Malgas showed how ecological information can be locked up in local names and descriptions for plants and their uses, which can be analysed further using ecological principles and theories. Combining local ecological knowledge and science can then lead to deeper insights that can help land-users make choices and rules (governance systems) for sustainable use. Research sites in the Cape Floristic Region included Genadendal in the Overberg, Harlem in the Langkloof, the Suid Bokkeveld in the Northern Cape, and Wupperthal in the Cederberg, engaging local land-users in participatory research about their biocultural assets, the ecological attributes of their local vegetation, and conservation of Fynbos species more broadly.

She says: “Those are the regions where there are small-scale farmers

involved in either honeybush or rooibos production. I've always worked with small scale-farmers and in small rural towns. I really enjoy that kind of work and so the idea with the PhD is just to answer the question about sustainability, like how it is possible to sustain production in small-scale farming systems with people's local knowledge of the environment included in that practice in a way that is ecologically, socially, and economically viable.”

Using Ostrom's Social Ecological Systems Framework she described, characterised and analysed these socio-ecological systems. Using her findings, she identified pitfalls and pathways to sustainability, emphasising the role of good governance in ensuring systemic sustainability in Fynbos sectors.

Dr Malgas' work exemplifies the integration of environmental conservation with the needs and aspirations of local communities. She hopes her work will inform regulatory frameworks that take ecological and social imperatives into account, right across the value chain of wild-harvested Fynbos species.

In keeping with her passion for effecting change, Dr Malgas, together with peers from SU, is the founding director of the Small Things Fund. Started in 2015, the crowdfunding initiative, offers first-line support to first generation university students in aid of their academic success.

Dr Malgas



Invasive plants

The South African government has spent R7,1 billion (adjusted to 2020 values) between 1998 and 2020 to curb the spread of invasive plants, but we are still struggling to get them under control. What we need is a national strategy that focuses on clearly defined priority sites, improves planning and monitoring, and increases operational efficiency.

SU is doing its part: As with Life below Water, SDG 14, SUFM adheres to Clearing invasive Aliens in compliance with the National Environmental Management Biodiversity Act (NEMBA) and Invasive Species regulations.

One of the main reasons for SU to consider applicable laws and regulations is that Invasive Alien Plants Species (IAPS) are well known to pose ecological, social and economic challenges. These plant species are heavily threatening our rich biodiversity, deplete our scarce water resources, causing soil erosion, increase the risk of flooding and fires and damage to infrastructure.

Biodiversity and Land Use

Additionally, SU, through its ESP, aims maintain and design all landscapes to be resilient to environmental change and to improve biodiversity and the sustainability of open spaces through its Biodiversity and Land Use theme.

Specific targets include:

- Convert 90% (m²) of new landscaping to vegetation that is resilient to environmental change and that improves biodiversity
- Designate 5% (m²) of total landscapes as green areas and greenbelts
- Designate all new and upgraded landscapes in accordance with SU's principles

Dr Ian Kotze from the Department of Forest and Wood Science says that SA needs a national-level monitoring system that can provide accurate and reliable data on the abundance and distribution of invasive alien plants across the country

The Centre for Sustainability Transitions (CST) lists several cross-cutting project in their portfolio, that contributes to improving and conserving Life on Land. Notably the SARChI Chair in Social Ecological Systems and Resilience, awarded for the 2nd time to Prof Oonsie Biggs in 2020. Research within the Social-

Ecological Resilience theme at the CST focuses on understanding the dynamic interactions between social and ecological systems and their capacity to adapt, transform, and thrive in the face of change and disturbances. Work is carried out in four main themes, through various collaborative projects with both local and international partners, providing a multidimensional and comprehensive approach to addressing the challenges and opportunities in social-ecological systems and resilience.

Bii4africa project: The Bii4africa project is an initiative by the CST in partnership with the South African National Biodiversity Institute (SANBI) and made possible through a JWO research grant. Led by CST senior

researcher, Dr Hayley Clements, Bii4africa aims to bridge the gap between biodiversity informatics and biodiversity conservation in Africa. The project recognises the critical role of data and technology in supporting effective conservation efforts on the continent.

Transformative changes in invasive species management in South Africa: Led by postdoctoral researcher, Dr Julia van Velden, the CST has worked in close collaboration with the Centre for Invasion Biology to collect and analyse seeds of success in managing invasive species in South Africa. On the 4th of May 2022, the CST hosted a **workshop** in Stellenbosch aimed at exploring innovative initiatives in **managing invasive species** and their potential to shape the future of this sector.





Prosperity

Ensuring prosperity is a fundamental goal of the SDGs; we must emphasise that economic, social, and technological progress coexist harmoniously with nature to enable a fulfilling life for all. By balancing economic growth, social well-being and environmental protection, the sustainable development agendas create countless benefits and a fairer world for future generations, reflecting that sustainable economic success must be achieved through innovative approaches that reduce inequalities and promote fairness.

Institutions that integrate – or even embrace – sustainability into their innovation and business practices are becoming increasingly attractive to students and staff alike. Not only to ensure sound institutional practices but also to create long-term, systemic sustainability for their stakeholders.

Alongside drivers such as accessible, quality education to eradicate poverty, prosperity can also be alleviated through initiatives to promote affordable energy and climate-resilient communities; the creation of transformed economies for jobs and economic growth; the creation of industry and innovation with leading infrastructure; and the reduction of inequalities to promote a high standard of living for all.

**SDG 7:**

Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all

**AU Goal 7:**

Environmentally sustainable climate resilient economies and communities

The importance of affordable and clean energy for a sustainable future in a developing country cannot be overstated. It is critical for reducing carbon emissions, mitigating climate change, and ensuring economic growth and social well-being. South Africa has experienced severe electricity challenges, notably the ongoing load-shedding issue, underscoring the urgent need for sustainable, clean, affordable energy sources.

Stellenbosch University's strong focus on research and innovation is making significant contributions to sustainable energy solutions. The university is at the forefront of pioneering renewable energy technologies, energy efficiency initiatives, outreach projects, and energy policy research. Through collaborations with both public and private sectors, SU is actively driving innovation and advocating for the transition towards cleaner energy sources.

GreenX Engineering

GreenX Engineering, an SU and Innovus spin-out company based in Stellenbosch, offers a range of services to help businesses understand their energy consumption, its environmental impact, and how to optimise and reduce their electricity use. They do this through lighting installation and maintenance, energy audits, solar system design and energy performance certification - with the underlying use of smart energy meters. Users benefit from measuring their energy consumption with a dashboard and using it to inform energy policies and strategies. In 2022, Dr Jason Samuels, whose research focused on energy and cost savings in schools, led a project to equip the local Cloetesville Primary School with a solar panel system to reduce carbon emissions by 13 tonnes of CO₂. The system will save the school R20 000 annually while providing electricity to the grid. The school has an Energy Performance Certificate. The plan

is to roll out the project to other schools in the Western Cape to implement energy efficiency programmes using the Internet of Things (IoT). Two more schools in Stellenbosch have had their Solar systems installed – Cloetesville High School and Ikaya Primary School. Says Jason "The project is part of a collaboration between SU's Social Impact and the Faculty of Engineering to retrofit lighting at 25 free or low-cost schools in the Western Cape, reducing electricity costs and environmental impact. The schools have reduced their energy bills by 21-39%. Dr Samuels and GreenX hope to extend this energy management and lighting efficiency retrofit to more than 100 free schools in the Western Cape in partnership with the provincial Department of Education.

Keeping the lights on

To "keep the lights on", Stellenbosch has installed 58 diesel generators to power essential classrooms and buildings until 2022. The generators are

PVC installation on the roof of the Student Centre on Stellenbosch Campus.





Solar PV system installed at Cloetesville High School. The hybrid inverter, panels and batteries power the whole administration block.

expensive to run and contribute to SU's carbon footprint, as we use coal-fired electricity generated by our national power utility. To this end, and to reduce our dependence on fossil fuels, the University has taken out a green loan to install solar PV systems at our Stellenbosch, Bellville Park, Tygerberg and Worcester campuses, with a study underway to install solar power at student residences.

Environmental Sustainability Plan

The University, through its Environmental Sustainability Plan (ESP), aims to incorporate sustainable design principles in its Sustainable Buildings theme to reduce the environmental impact of the construction, refurbishment and operation of SU. The specific objectives are:

- i. Implement a standard based on Green Building Council South Africa (GBCSA) principles for sustainable construction and refurbishment.
- ii. To achieve a four-star GBCSA rating for certain new developments.
- iii. Establish Green Star portfolio certification for selected precincts
- iv. Performance rating of buildings based on top 50 energy users.

Just Energy Transitions at the CST

The Centre for Sustainability Transitions (CST) is an initiative brings together complexity thinking, sustainability science and transdisciplinary research methodology.

The CST is one of several knowledge partners of Eskom through the Eskom Power Plant Engineering Institute (EPPEI). Its research theme of 'Political Economy and Development' has a wide range of research initiatives aimed at shaping the pace, direction and governance of the Just Energy Transition (JET) in South Africa – and Africa as a whole. Research within the group includes:

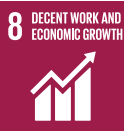
- exploring pathways for energy sector reform,
- examining governance mechanisms in the energy transition,
- understanding the role of local government in driving the transition,
- addressing social justice considerations,
- analysing energy policies,
- investigating institutional changes such as the unbundling of Eskom,
- studying value chains, and
- assessing how renewable energy can facilitate industrialisation.

They also conduct comparative analyses of South Africa's energy transition with other global South and North countries, providing valuable insights for informed decision-making and policy development.

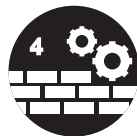
Additionally, Wendy McCallum from the CST presented the latest research from the Reconfiguring Energy for Post-COVID-19 Development (ReCODE) project at COP27 in Egypt, which aims to explore the role of development finance institutions (DFIs) in renewable energy investments that strengthen socio-economic recovery post the COVID-19 pandemic. The report emphasised the need for DFIs to play a crucial role in allocating capital to accelerate sustainable transitions.

CRSES

The Centre for Renewable and Sustainable Energy Studies (CRSES) offers degrees and accredited short courses in renewable energy, increase awareness through school outreach programmes, conferences and symposia, advocate for renewable energy and consult, all while performing high impact research in the fields of solar, wind, hydro, ocean, bio-energy and power systems.

**SDG 8:**

Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

**AU Goal 4:**

Transformed economies and job creation

In pursuing equitable, sustainable development, Stellenbosch University actively aligns itself with creating decent work and economic growth to create transformed economies.

As we navigate the complex landscape of global challenges, this goal stands as a beacon of progress, highlighting the importance of promoting economic growth and ensuring that it translates into decent work opportunities for all. Together with the African Union's Agenda 2063, which sets out a transformative vision for the continent, this goal is paramount in Africa. In Africa, where economic inequalities and labour market challenges often loom large, transforming job creation economies will contribute to realising a more equitable and prosperous future for all Africans.

Similarly, in her inaugural lecture, Prof Anita Bosch (Stellenbosch Business School in the Faculty of Economic and Management Sciences) talks about balancing just outcomes: Looking at work through the lens of women.

Financial independence

Prof Bosch said, "My work is about empowering women towards financial independence through workplace inclusion. It is also about shaping workplace practices and cultures to embrace and value the talents that women bring to the table. Financial independence gives you a voice and a choice. This is essential in recalibrating the power relations between women and men when considering gender in the binary."

Prof Anita Bosch
Research Chair – Women at Work; Professor:
Leadership and Organisational Behaviour



Stellenbosch
Business School

Winds of change: Trade as a catalyst for board gender diversity

A report from the Stellenbosch Business School Research Chair:
Women at Work

Anita Bosch
Shimon Barit



She is also the author and editor of a number of public reports, including the *Womensreport.africa*, *Women on South African boards: Facts, fiction and forward thinking*; *Gender pay gap guide for the already converted*; and *Winds of change: Trade as a catalyst for board gender diversity*.

Her publications have also appeared in academic books and journals such as the SA Journal of Business Management's special issue on Women in Business in Africa, the Journal of Managerial Psychology, the Journal of Personality Assessment, the International Journal of HRM and the Journal of Business Ethics.

Managing people

The University's Human Resources Management: Remuneration and Performance Management Policy (2011) sets the tone for managing our human resources at SU. It aims to create a system that uses transparent communication and non-discriminatory practices to create an internally equitable workforce. It also makes SU a competitive employer, calibrated against the external market percentile. SU's basic pay and benefits exceed the South African living wage.

The Employment Equity Policy 2016 outlines the university's dedication

to ensuring that we create and sustain an environment of inclusivity, transformation, innovation, and diversity and maintain excellence with a focus on the future. This will aid in addressing the inequalities of the past as well as positioning the University for the future.

The 2016 Policy on Unfair discrimination and harassment, in addition to the Policy on Remuneration and Performance Management, prevents discrimination based on sexuality, gender, age or nationality. However, it does not mention the status of refugees nor the responsible outsourcing of labour. The Employment Equity Policy (2016) ensures wage parity regarding race and gender.

Parity

A pay scale and benchmarking for tracking this parity across the university does not exist, but the university monitors the policy's uptake. Should employees feel they are not being treated fairly or experience other problematic experiences in the workplace, they can report it via the Equality Unit. Students and staff can report unfair discrimination and harassment, including sexual assault, gender-based violence and victimization. This has been available on an online platform since 2022.



Hands-on projects:

With the CoCreate Hub, launched in 2021, small local businesses were helped to develop and grow their businesses by providing affordable working space. Ranging from offering food and coffee to locally made goods, the Hub has since been proven a popular meeting place for locals. Innovus support the businesses in the Hub, responsible at SU for technology transfer innovation and entrepreneurial support and development alongside the LaunchLab, a business accelerator. Together, they offered hands-on entrepreneurial training, support and skills development, making 2022 the year that SU explored economy-stimulating initiatives for its staff, students and surrounding community.

Doris Viljoen, director at the Institute for Futures Research (IFR), writes that gig work – or short-term agreements between individuals and organisations - can be a way to become and remain economically active in SA. Organisations are increasingly open to assigning tasks to people outside their full-time employ. This has become more attractive in a fast-changing world filled with economic and other pressures. Digital technologies and increased connectivity make gig work possibilities. While this kind of work only appeals to some, it will continue to grow in SA and globally.

The Makers at the newly refurbished CoCreate Hub offer a welcoming gathering space that nurtures the vibrant entrepreneurial spirit at the Hub - while offering residents and visitors to the town the opportunity to buy, eat, and connect with locals. (Photos: Lizelle Lötter www.lizellelotter.co.za)

Green hydrogen: Green hydrogen is critical to decarbonising the economy and can potentially remove 10% to 15% of South Africa's carbon emissions. SU announced in December 2022 that we had allocated R12 million over the next three years for research into green hydrogen with funds from South Africa's Just Energy Transition Partnership (JETP) with the UK, US, Germany, France and the EU AIR 2022.





SDG 9:
Industry, Innovation, and Infrastructure:
Build resilient infrastructure,
promote inclusive and sustainable
industrialization and foster innovation



AU Goal 10:
World-class infrastructure that
criss-crosses Africa

At a time when industrial innovation is shaping the trajectory of nations as they build infrastructure to meet their development needs, SDG 9 Industry, Innovation and Infrastructure stand as a pillar of progress. At the same time, Goal 10 of Agenda 2063 contextualises this to encourage the pursuit of world-class infrastructure that connects the continent for progress.

These goals envision a world where resilient, inclusive and sustainable innovation and infrastructure drive economic growth, technological advancement and societal well-being. As the global community strives to bridge the infrastructure gap, Stellenbosch University aims to pioneer world-class innovation networks that span the African tapestry. Our commitment to development transcends borders and resonates with the spirit of Africa. With determination, innovation, and unwavering commitment, we aim to build infrastructure to cross this vast continent and pave the way for sustainable growth and resilience.

Tapestry of prosperity

Our vision is collaboration and transformation, weaving the threads

Anita Nel



of technology and knowledge into a tapestry of prosperity for all.

SU is one of the leading institutions nationally regarding the number of creative outputs submitted and subsidies awarded for its research. Key in its innovation drive is the university's commitment to start-ups and spin-offs through SU's Innovus; they are responsible for its technology transfer, innovation, entrepreneurial support, and development, as well as the commercialisation of innovation through licensing and the formation of spin-out companies. An initiative of Innovus, the LaunchLab has positioned itself as one of Africa's leading entrepreneurial development platforms. Through the work of Innovus and LaunchLab, SU strives to create an entrepreneurial culture with an institutional innovation mindset in both academic programmes and social entrepreneurship. This focus on creating an entrepreneurial culture has been bearing fruit, and Innovus launched 30 spin-off companies between 2014 and 2022, with six new spin-offs in 2022 alone. LaunchLab has incubated over 200 new businesses and created more than 540 direct jobs. At the same time, it doubled the size of its team and obtained shares in seven start-ups: three from SU and four from across Africa.

To help with the scaling of their projects, Innovus launched their new, instant start-up kit. The Kit is an online platform that guides entrepreneurs through the start-up process with tools,

documents, explanatory videos, and secretarial support services. Start-ups that use the kit receive personalised access to templates for anything from business plans and financial dashboards to board and shareholder meeting agendas and minutes, investor pitches, company valuations, employment agreements, licensing contracts and service-level agreements. The offering also includes tax forms and guidance on registering trademarks and patents.

SU's group of companies include a range of businesses that contribute to other SDGs in a wide range as follows:

SDG 2 – Zero Hunger

Livestock Management Database System (LMDS), an easy-to-use mobile application and web-based suite, supports emerging farmers in transitioning to commercial farming by providing them with the correct information at the right time. It facilitates real-time communication between farmers and extension officers so that experts can learn about farmer needs to generate custom solutions.

CubeSpace manufactures satellite components used by the likes of NASA

SDG 3 – Good health and Wellbeing (Scientia and Biocode).

Scientia Products – Scientia Products is a phytopharmaceutical and natural medicine company that translates unique and innovative research on African medicinal plants into commercially viable natural products.

Anita Nel, Chief Director: Innovation and Commercialisation:
“We are incredibly excited to see how our spin-out activity has multiplied since we set up LaunchLab, a dedicated space and support service for campus entrepreneurs. University research is generally aimed at making the world a better place and improving people’s lives. When that research results in a spin-out company, it becomes more than just a revenue generator but a business that contributes to well-being, sustainability and a better future. Our companies also contribute to the local economy and currently employ 386 people.”





The Makerspace in the SU Library

BioCODE Technologies develops solutions for early disease sensing by developing diagnostic solutions for inflammation and inflammatory conditions.

SDG7 – Affordable Clean Energy

Concentrated Solar Power (CSP) is a clean energy solution that produces almost zero waste or by-products. It uses mirrors or lenses to focus a large area of sunlight onto a small surface, converting solar radiation into intense heat driving turbines to generate electricity.

GreenX Engineering offers solutions for energy efficiency and energy projects, including data analytics, modelling, consulting and interventions through energy efficiency lighting, measurement and verification, and electrical systems optimisation. GreenX has helped save 50,000kW of electricity usage in 2022!

SDG 12 – Responsible Consumption and Production

Urobo Biotech developed an innovative enzymatic hydrolysis technology for bioplastic waste degradation and recycling to combat the global plastic pollution crises for recycling.

SDG 14 – Life below water

BioTrac: The BioTrac system achieves the monitoring of microbial fouling parameters (metabolic activity and surface adhesion) through the implementation of various IoT sensors and controllers. This monitors microbial changes to control microbial fouling of industrial water systems.

Sharksafe Barriers developed an eco-friendly barrier technology that uses magnetic and visual stimuli to deter shark species considered dangerous to humans. The technology aims at keeping people using beaches safe from sharks while simultaneously protecting the sharks.

In 2022, through the support of Innovus, Dr Dale Sparrow, through the Biography-Attributes-Schedule-Execution (BASE) architecture he developed at the Department of Mechanical and Mechatronic Engineering, has automated humans' administrative tasks and allows them to communicate with machines and systems in their environment. This led to a spin-off company, **Cybarete**, that will revolutionise how organisations, environments and industries utilise technological advancements made in the past decade.

Makerspace, a global concept around collaboration and creation, is in the SU Library and helps inventors prototype their designs. The resources include a 3D scanner and 3D printers, and it has helped students from engineering and science through to visual arts, and jewellery design create works with the guidance of the Makerspace team. The only cost to students and staff is the cost of the 3D printing materials.

The help-like structures of the SharkSafe Barrier™ form an exclusion barrier for sharks without impeding the movement of smaller fish.



© Daniel Botelho



SDG 10:
Reduced inequalities:
Reduce inequality within
and among countries



AU Goal 1:
A high standard of living,
quality of life and well-
being for all

The vision of eliminating poverty and creating a high standard of living with inclusivity, justice, and dignity, is a core theme in the SDGs and AU Agenda 2063.

This leads us to a vision where every individual is granted equitable access to opportunities, resources, and a life of dignity, measured by economic growth and the diminishing chasms of inequality that persist in our societies. SU's multidisciplinary approach to research, coupled with initiatives that champion inclusivity, diversity, and social justice, serves as a testament to our resolve through innovative research, inclusive education, and community engagement.

The annual Transformation Indaba of SU in 2022 was themed "Restitution Beyond Rhetoric." The event emphasised the university's dedication to tackling social inequality and promoting inclusivity through its ongoing transformation process. The Indaba showcased presentations from students, staff, and leadership, which evaluated progress towards existing goals and recognised the need for further action.

During the event, former Rector Chris Brink and other speakers discussed the significance of "changing consciousness" and carefully examining symbolic actions, such as the SU Restitution Statement. The students also shared their viewpoints on how they feel about being a part of the university. Furthermore, Professor Ronelle Carolissen expressed her personal experiences as a member of the faculty and urged for deeper involvement in addressing issues like microaggressions and their impact on people of colour.

By fostering open dialogue, acknowledging past injustices, and actively addressing current challenges, SU demonstrates its commitment to achieving genuine transformation and promoting inclusivity for all members of its community, aligning with SDG 10's focus on reducing inequalities.



Highlights:

First-generation students

| | |
|---|-------|
| Number of students starting a degree | 6 502 |
| Number of first-generation students starting a degree | 2 974 |

International students from developing countries

| | |
|--|--------|
| Number of students | 32 535 |
| Number of international students from developing countries | 1 684 |

Proportion of students with disabilities

| | |
|------------------------------------|--------|
| Number of students | 32 535 |
| Number of students with disability | 682 |

Figure 6: Diversity



SDG 11:
Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient and sustainable



AU Goal 10:
World-class infrastructure that criss-crosses Africa

Stellenbosch University stands at the forefront of fostering sustainable, Afro-centric cities and communities, aligning its vision with the essence of sustainable and vibrant cities with world-class infrastructure.

In the rapidly urbanising landscape of Africa, we recognise the critical importance of creating cities and communities that are not only resilient but also authentically rooted in the unique cultural and environmental context of the continent. Our programmes reflect a comprehensive approach encompassing urban planning, entrepreneurial development, environmental stewardship, and social inclusivity. By conducting innovative research, promoting sustainable infrastructure, and engaging with local communities, we strive to contribute to developing cities and communities that are vibrant, equitable, and harmoniously integrated with their surroundings.

Vibrant, Sustainable Cities and Communities with Stellenbosch Network: The #Ideasforchange Sustainable Stellenbosch Challenge

Stellenbosch Network is a cross-sectoral and inter-disciplinary membership organisation that brings people together in the town – from industry, government, and society to academia. They aim to share ideas, meet each other, and encourage collaboration and partnership to support inclusive economic growth for the greater Stellenbosch area. The critical role-players in the Stellenbosch Network include innovators, entrepreneurs, SMMEs, investors, local corporations, social entrepreneurship enterprises, incubators, academia, and local government. The founding members and co-founders include

Lizl Naudé



Stellenbosch University, Remgro, Capitec Bank, Wesgro, Winetech and Stellenbosch Municipality. The Network works closely with SU's commercialisation arm, Innovus and its incubator, Launchlab.

In 2022, the Stellenbosch Network partnered with the Sustainability Institute for the famous #IdeasForChange challenge for a Sustainable Stellenbosch. The challenge for innovators in Stellenbosch is to present their solution to a problem that our communities face, which may reflect a global or national challenge such as food security, energy and poverty. The competition was launched to uncover and support the development of innovative ideas, business models, and technology with the potential to improve citizens' quality of life, lessen the social and environmental impact of rapid urban development and enhance the sustainability of local ecosystems on which Stellenbosch is dependent.

All entries received a lecture at the Sustainability Institute, a tour of the facilities at the Sustainability Institute and a Value Proposition Masterclass. The submissions were judged by members of the Sustainability Institute, Stellenbosch Municipality, Ranyaka and SU's Launchlab. In a video, the three finalists for 2022 shared their ideas to make Stellenbosch more sustainable and contribute to a vibrant town and community.

The finalists included an NPO that manages a community food garden and collects organic waste from the



Finalist: Darrius Salvester from the NPO Uziko, in Jamestown

surrounding areas to compost and use in the garden. Another finalist upcycled waste into jewellery and homeware, while the other stores bicycles biometrically to tackle the issues of climate change, high petrol prices, crime and unemployment.

The winner, Lizl Naudé, owner of Lilly Loompa Homeware, was chosen by popular vote by the public. She says: "With all of the items we create, we want to restore hope. Addressing issues such as climate change proves that not all is lost and that there is still time to make an impact on our society."

Resilient Cities: RADAR presents community-based risk assessment training in Polokwane

The short-term insurer Santam commissioned the Research Alliance for Disaster and Risk Reduction (RADAR) in SU's Faculty of Arts and Social Sciences to train disaster management and fire service personnel in the Limpopo region on community risk assessment in October 2022. The training formed part of their flagship programme, Partnership for Risk and Resilience (P4RR). It aims to build societal resilience to disasters by enhancing the institutional capacity of selected districts and metros nationwide.



Peace

We are determined to promote peaceful, just and inclusive societies free from fear and violence. There can be no sustainable development without peace, and no peace without sustainable development.

Promoting peaceful, just and inclusive societies is an overarching goal for sustainability, as the link between peace and sustainable development is inextricable. The UN's 2030 Agenda and the AU's Agenda 2063 recognise that conflicts, terrorism and global challenges threaten peace worldwide and emphasise the importance of solid institutions over military action to promote and protect peace. This culminates in a call for international cooperation to strengthen justice institutions, emphasising that a harmonious and peaceful world is an essential foundation for sustainable progress.

AU places disproportionately more nuanced focus on peace and justice.



SDG 16:
Peace, Justice and Strong Institutions: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



AU Goal 12:
Capable institutions and transformed leadership in place at all levels, cross-cutting with Governance



AU Goal 14:
A stable and peaceful Africa



AU Goal 11:
Democratic values, practices, universal principles of human rights, justice and the rule of law entrenched



AU Goal 13:
Peace, security, and stability are preserved



AU Goal 15:
A fully functional and operational African peace and security architecture

Promoting peace, justice and strong institutions is paramount for Africa, a continent characterised by a complex historical landscape, ongoing challenges and a continuous quest for stability, democracy and good governance. Throughout Africa’s history, many nations, including South Africa, have undergone profound transformations, moving from periods of colonial rule, apartheid and conflict to the pursuit of justice, inclusiveness and peaceful coexistence.

The AU Goals make a strong case for a peaceful and just world through solid and accountable institutions, good governance, transformed leadership and the rule of law for a peaceful and prosperous Africa. These vital goals lay the foundation for peace, equitable development and the protection of human rights. By promoting transparency, effective legal systems and inclusiveness, they contribute to the continent’s ongoing journey towards justice, peace and a better future for all its people.

Pearl Mamathuba and Dr Kathryn Smith at the 10th African Society of Forensic Medicine International Conference in March 2023



Dr Kathryn Smith

VIZ.Lab and Social Justice: Reinstating personhood through the lens of forensic art

Stellenbosch University has emerged as the pioneering University in Africa in the art and science of forensic facial imaging. Dr Kathryn Smith, an interdisciplinary visual artist and curator in the Department of Visual Arts, is at the heart of this work. In 2021, she founded the forensic art imaging laboratory VIZ.Lab to advance forensic facial imaging and experiments with digital design and visualisation methods as an indispensable tool in research and casework. This interdisciplinary field bridges the worlds of art and science, concentrating on the crucial aspects of reconstruction, craniofacial analysis, and depiction, tailored for forensic and archaeological applications.

Dr Smith was joined by Pearl Mamathuba, a former police forensic facial compositing specialist and now a PhD

candidate and Lecturer in Fine Art. As the only academically trained forensic facial imaging specialists on the continent, they share an interest in reinstating personhood through the lens of forensic art. Advances in the field will be used to identify unidentified bodies as Smith is working with forensic officers in South Africa to improve photographic recording and processes of capturing information on missing and unidentified people.

Facial reconstruction

Smith explains, "For skeletal remains, a facial reconstruction might be the only opportunity to attempt to identify an unknown person. However, reconstructing a face from the skull is labour-intensive and time-consuming. So, suppose sufficient facial information is present to infer living appearance, even with facial trauma. In that

case, it is possible to digitally adjust a post-mortem photograph to restore a plausible and acceptable living appearance. This is much quicker and more reliable than reconstructing a face from a skull."

Through the work done to highlight research in such a visual way, Smith, who also chairs the Gallery University Stellenbosch (GUS) committee, is also finding new avenues to share their work. Following an exhibition for the "Biography of an Unchartered People project" in collaboration with Prof. Johan Fourie and LEAP, she is excited about the "possibilities for demonstrating the value of visual art for disseminating research" and making academic work accessible.

Global Alliance for Justice Education Conference: 11 – 15 December 2022

The Faculty of Law and the Law Clinic at Stellenbosch University hosted the Global Alliance for Justice Education (GAJE) Conference in partnership with the International Journal of Clinical Legal Education and the South African University Law Clinics Association for the first time in 2022. The conference theme was *Justice Education: Building Resilience and Strong Connections in Times of Global Challenges*.

Prof Thuli Madonsela



GAJE is an ALLIANCE of persons committed to achieving JUSTICE through EDUCATION.

The clinical education of law students is a critical component of justice education. Also, it works to advance other forms of socially relevant legal education, which includes the education of practising lawyers, judges, non-governmental organizations, and the lay public. Among the speakers were Prof Thuli Madonsela, inaugural Director of the Centre for Social Justice at SU, and renowned jurist Prof David Mcquoid-Mason from the University of KwaZulu-Natal. The event highlighted innovative approaches and research on educational methods promoting students' engagement, diversity and social justice. It demonstrated the role that SU is willing to play in the global pursuit of justice and lawfulness for all.

The Centre for Local Governance

The Centre for Local Governance at the SU School for Public Leadership (SPL): The SPL, through its various academic programmes and the provision of a range of degree training and consultancy services

to all three spheres of government, has developed a keen insight into the challenges that face local government in South Africa. It is apparent from these engagements that there are significant skills deficits in the sphere of local government.

While it is acknowledged that significant advances have been made since 1994, much more needs to be done to overcome the deep and seemingly intractable legacy of apartheid. In this regard, the SPL is vital in offering specifically focused and customised training programmes to enhance the performance of elected and appointed officials in local and provincial government.

Extensive consultation takes place with local government officials and councillors to ensure that the programmes offered by the CLG address demand and are appropriately targeted. The objective of the CLG is to improve the performance of local government through research, innovation, training and community interaction.

The Social Justice M-Plan is the SU Law Trust Chair in Social Justice's flagship project under the leadership of Prof Thuli Madonsela. It is a social justice acceleration project that seeks to catalyse progress toward social justice, focusing on ending poverty and breaking the back of structural inequality by 2030 – in pursuit of the constitutional social justice commitment as well as the South African National Development Plan, Africa's Agenda 2063 and the Global SDGs.



Partnership

SU aspires to mobilise the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

The pursuit of sustainability hinges on a revitalised Global Partnership for Sustainable Development, underpinned by global solidarity and tailored to the needs of the most vulnerable. Goal 17 symbolises the importance of partnerships in all 17 SDGs, echoing their integral role in achieving these goals. While the SDGs were established by member states within the United Nations, realising their objectives necessitates the collective efforts of all international entities and stakeholders, emphasizing the inclusive nature of sustainable development.



SDG 17:
Partnerships to Achieve the Goal: Strengthen the means of implementation and revitalise the global partnership for Sustainable Development



AU Goal 9:
Key continental financial and monetary institutions established and functional



AU Goal 19:
Africa as a major partner in global affairs and peaceful co-existence



AU Goal 20:
Africa takes full responsibility for financing her development

Stellenbosch University International (SUI) has been actively forging partnerships with other International Higher Education Institutions since 1993 with current Senior Director, Mr Robert Kotzé. In 2022, the University has 318 partner institutions in 64 countries with thriving research and collaboration agreements for our researchers, and strong exchange programmes for our students and staff alike.

The SDG/2063 Impact Hub

The SDG/2063 Impact Hub within the Centre for Collaboration at SUI was established last year to advocate for the visible uptake of both the UN Sustainable Development Goals (SDGs) and the AU Agenda 2063, with its seven aspirations and 20 goals for a peaceful and prosperous Africa. Other key activities of the Hub focus on communicating SU's contributions to the Goals and promoting sustainability literacy while further leveraging our international partnerships for progress in Africa and beyond.

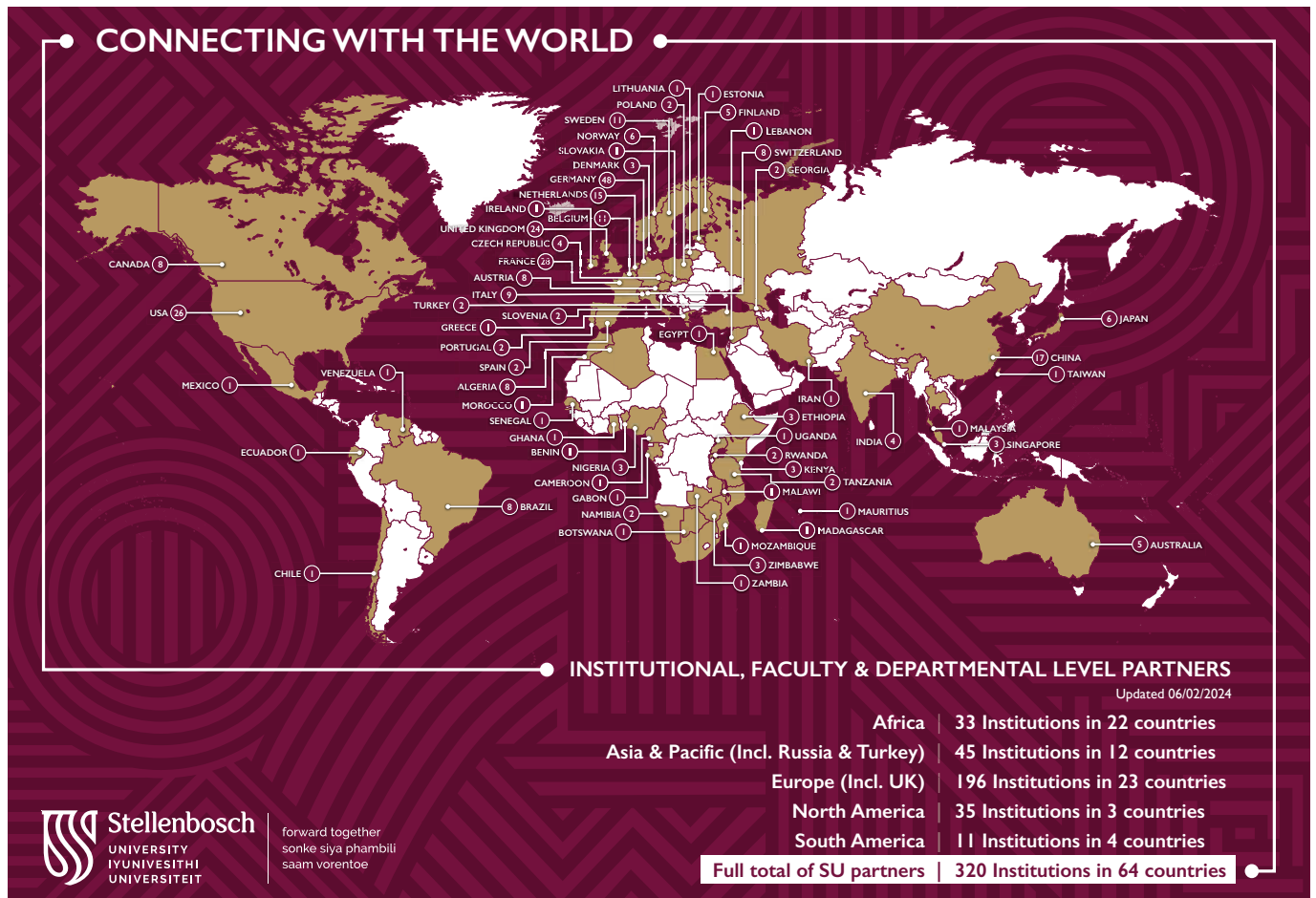
The Hub's first-year highlights include the following outputs, programmes and events.

In its first year (2022), the Hub aimed to identify and report on existing sustainability activities across our

various campuses. The Hub and the Sustainable Development Working Group conducted a systematic, university-wide scan of Stellenbosch University's operations to produce the first Sustainable Development Impact Report (SDIR). The SDIR formed the basis of the first 'Sustainability at Stellenbosch University' website (<https://susdev.sun.ac.za>), which documented SU's cross-cutting contributions to sustainable development. In November 2022, the Hub also published the 2021/2022 Sustainable Development Annual Report for The Africa We Want, the first such report for SU.

In addition to the African Regional Forum on Climate Change in preparation for Cop27 (as mentioned in Prof Klopper's introductory

Figure 7: Connecting with the world



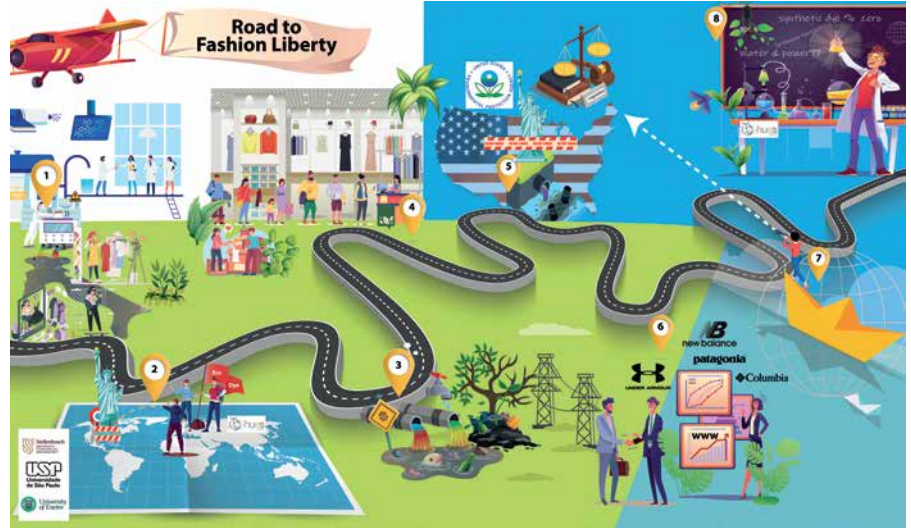


section), another first for SU was to participate in a global, virtual Future17 Sustainable Development Challenge with international partner institutions, using the SDGs as a framework to address real-world challenges for institutions, NPOS and Higher Education Institutions.

Corina du Toit, Programme Manager at the SDG/2063 Impact Hub, said: "It was an eye-opener to incorporate the AU's Agenda 2063 into our strategy when setting up the SDG/2063 Impact Hub. As a higher education institution in Africa that wants to position itself as a systemically sustainable institution, it would have been remiss of us to exclude the continental sustainability agenda. Throughout our reporting and awareness-raising, we are aligning the SDGs with the AU goals to ensure further integration of the two agendas at SU and in our communication with our partners."

The significance of the 2022 Sustainable Development Annual Report is that it showcases the University's efforts towards sustainability and is a document of unique storytelling, demonstrating African solutions at different scales to solve African problems. It is also a call to our international and local partners to join us in our quest for sustainability. By spreading this message and making sustainability reporting more visible, we aim to empower students and staff to be agents of change, collaborating and sharing knowledge in concrete ways.

Dr Munya Saruchera



The Road to Fashion Liberty: T-Hues' market entry into the United States. A Future17 project by Jesus Jimenez Ascencio (University of Sao Paulo), Rowan Holloway-Stephens (University of Exeter), Ntokozi Ngwenya, Morufa Raji, Melvi Todd (SU). Design by Cherice Torr.

The Future17 Sustainable Development Goals Challenge

In February 2022, SU offered its first cross-cutting sustainability literacy course, the Future17 SDG Challenge, in collaboration with QS World Rankings and Exeter University in the UK. SU was joined by the Chinese University of Hong Kong and the University of São Paulo (Brazil) to offer a genuinely global cohort. Virtual groups of students took part in virtual groups to solve business challenges set by institutions, using the SDGs as a framework. Mentors from the partner universities guided the student groups during the offerings in the first semester and repeated in the 2nd semester.

Overall, the SU groups, comprising final-year undergraduate as well as postgraduate students, were praised for the innovation, commitment, professionalism and outstanding ambassadorship for SU that they displayed. The prestigious three-month Future17 SDG Challenge Course is unique because it is driven by a consortium of universities from four countries, assisted by global challenge partners. The aim is to educate and equip students with the knowledge and skills to find innovative ways to turn sustainable development goals into reality, said Corina du Toit, Programme Manager: SDG/2063 Impact Hub and academic lead for the course.

Dr Munya Saruchera, a two-time mentor and Interim Director of the SUAfrica Centre for HIV/Aids Management, said of his experience:

The F17 SDG Challenge and acting as a mentor (a deep passion of mine) was a tremendous opportunity to feed my

soul and give back to an international community of young and thriving students from different universities who were at the cusp of their learning careers. Culturally, the experience was intensely rich as I had to engage and negotiate ways of working, leading and being accountable with students from China, the UK and SU who shared different cultural and disciplinary backgrounds. For my second cohort, I was co-mentoring with a colleague from the University of Exeter who was an engineer, and we were working with undergraduate and postgraduate students from SU, the UK and Brazil... I don't know what experience could be richer and more diverse regarding culture and discipline.

The challenges were negotiating acceptable and workable ways of working, finding mutual meeting times across different time zones, emotional generosity and balancing the mentoring role with my primary role as a lecturer and interim director of the Africa Centre where I work. The common denominator has been working and interacting with students, and the challenges have been finding the balance between non-key and critical work activities. But as they say, we always find time for what we are passionate about. Passion is not work; it is life, and everything else that comes from it is an unearned bonus.

The overall experience for me was the realisation that the F17 SDG Challenge is a reality, that different countries worldwide should come together and put their best efforts, with whatever resources and capacities they may or may not have, to address the SDGs alongside other countries. The collective spirit of humanity and a common future, bound together, is all it takes.



Afrocentric Sustainability Goals

We highlight the two AU goals that speak to specific development challenges that are not clearly in alignment with the UN SDGs: AU Goal 8: A united Africa, federal or confederal, and AU Goal 16: African cultural renaissance is pre-eminent. Both speak to our clear identification as Africans and our place in a global community.



AU Goal 8:
A United Africa, federal
or confederate

Africa stands at a critical crossroads in a world marked by shifting paradigms and calls for unity. The African Union's (AU) Agenda Goal 8 – A United Africa, whether federal or confederal – has emerged as a visionary initiative with implications reverberating across the continent.

For Stellenbosch University, an institution with a complex and controversial history, embracing this vision takes on a unique significance. The African continent is pivotal in its history, where unity, sustainability and shared progress are paramount. AU Goal 8 has profound implications for several dimensions of sustainability that are uniquely relevant to the continent. A united Africa can harness its vast economic potential and create a robust and resilient economic bloc. This unity promotes sustainable economic growth, trade, job creation and poverty reduction. It can address economic disparities and provide a strong foundation for shared prosperity, a fundamental aspect of economic sustainability. In addition, addressing the critical environmental challenges facing Africa, including climate change and biodiversity loss, requires joint action across national borders. Agenda Goal 8 also promotes social cohesion, inclusiveness and respect for the continent's diverse cultures, languages and identities. These principles are fundamental to promoting equitable societies where all citizens can enjoy improved well-being and social progress.

SIGLA (Security Institute for Governance and Leadership in Africa) at the Faculty of Military Science

SIGLA aims to position itself as one of Africa's premier leadership and governance institutions, striving to build leadership capacity and generate knowledge resources in the areas of security for sustainable development across Africa. SIGLA recognises that governance and leadership are necessary to sustain security and development. SIGLA's research activities on leadership and governance on the African continent focus on land, maritime and cyber security governance issues. Its specific focus grows a broader network aimed at research, service delivery, collaboration, partnerships and publications on security in Africa. To this end, SIGLA collaborates with researchers and practitioners working on the Safe Seas project on maritime security capacity building, the Stable Seas project on a maritime security index for Africa, and the UNODC Global Maritime Crime Programme. SIGLA also participates in IORA's Academic Grouping, focusing on the Indian Ocean Rim.

Their recent outputs focus on Maritime Cyber Security, and

include a book *Security governance and African ungoverned spaces: Understanding and addressing the void*. They are also working on the need for African governments to help protect submarine cable infrastructure for better cyber defence and energy-related infrastructure along the continent's coastline. For example, Prof Francois Vreÿ of Sigla has highlighted the importance of formulating a global framework of best practices in Africa and globally to protect submarine cable infrastructure, which has become such a vital part of the infrastructure of countries to function and prosper. However, as most infrastructure on the seabed is functionally invisible, this is a slow and challenging process.

Robust networks

Stellenbosch University aims to lead the way by engaging its scholars in research that supports the vision of a united Africa. The academic community is naturally concerned with this unity's socio-economic, political and environmental implications and contributes valuable insights to the discourse. This research contributes to evidence-based decision-making and policy development. SU also has a robust

international network that provides opportunities for collaboration with institutions across Africa. These networks help promote unity, sustainability and shared development within the academic and global communities. Stellenbosch University's historical complexities should support its commitment to transformation and sustainability. By embracing Agenda Goal 8, the University can be an exemplary part of the solution, transcending its past and paving the way for a more equitable and united Africa.

In 2022, the Centre for the Study of the Afterlife of Violence and the Reparative Quest (AVReQ) and the Responsibility Centre for Social Impact, Transformation and Personnel offered a new short course to deepen transformation at SU. This pilot was in response to student protests following a urination incident at SU. This introductory course aims to strengthen the capacity of course participants to internalise and sustainably implement the 2018 Restitution Statement, where SU acknowledges its inextricable connection with generations past, present and future. The course was run in two phases starting in late September 2022.

Provide expert advice to government

South African president Cyril Ramaphosa appointed three prominent SU academics – Prof Mark Swilling, Dr Morné Mostert and Dr Guy Lamb – as National Planning Commission (NPC) members in the Department of Planning, Monitoring and Evaluation.

Their appointments are effective for five years from 1 December 2021. The NPC was established in 2010 and tasked with producing a national development plan and long-term vision for the country. It also advises the Government on cross-cutting issues that influence the long-term development of South Africa. (2021 – 2026 Commissioners).



AU Goal 16:
African Cultural Renaissance
is pre-eminent

As the AU Agenda exclusively focuses on the sustainability aspirations of the African continent, AU goal 16, which envisions an 'African Cultural Renaissance is Pre-eminent', is a visionary endeavour. Cultural sustainability promotes transmitting traditions, languages, and knowledge across generations, enriching the continent's social fabric. Preserving and celebrating Africa's diverse cultural heritage can create inclusive societies where individuals can thrive from their identity.

Stellenbosch University, with its rich history and commitment to transformation, has actively embraced the ideals of the 'African Cultural Renaissance is Pre-eminent' goal. The university's commitment is reflected in various dimensions. Stellenbosch University has positioned itself as a leader in academic research and scholarship, supporting the renewal and promotion of African culture. The academic community at the university delves into cultural studies, languages, arts, and history, providing valuable insights that contribute to the preservation of African heritage.

SU International alone has several initiatives, programmes, and collaborations exclusively Africa-centred, such as the Africa Centre for Scholarship and the Centre for Collaboration in Africa (CCA), where the SDG/2063 Impact Hub is hosted. The CCA further host the secretariats the following networks:

PERIPERI U:

The 'Partners Enhancing Resilience of People Exposed to Risks' partnership is a partnership of 12 higher education institutions across Africa committed to advancing disaster risk-related scholarship to support sustainable development which was initially established in 2005. The CCA hosts the secretariat of the PERIPERI-U Network and advance the activities of the Network.

AUDA-NEPAD SANWATCE:

AUDA-NEPAD Southern African Network of Water Centres of Excellence (SANWATCE) is a network of higher education and research institutions conducting high-impact research and capacity

development in water and related sectors in Africa which was also established in 2005. The secretariat for SANWATCE is also hosted within the CCA at SUI. The network consist of 11 Southern African Universities and research institutions in addition, there are also five partner institutions in West Africa and four partner institutions in East Africa that have their own respective network secretariats.

ARUA:

The African Research Universities Alliance was launched in 2015 to boost the continent's research capacity and develop first-class postgraduate training that is geared towards addressing Africa's unique economic, social and developmental challenges. SU is one of 16 partner universities in this alliance and the proud host of the ARUA Centre of Excellence in Energy, supported by the CCA.

These institutions are established within the university so we can prioritise the uniqueness and particularity of our issues and aspirations as a continent. They were also established in realising how diversity in culture, traditions, and values are the continent's strongest points for innovation towards an African renaissance.

This unique goal is of utmost importance for Stellenbosch University, a place with a diverse history and aspirations for transformation; embracing this goal signifies a commitment to embracing the rich tapestry of African heritage. This commitment fosters vibrant, inclusive, and sustainable societies, ensuring that African culture remains pre-eminent in the hearts and minds of all.

Celebrating our Cultural Heritage

Stellenbosch University's campus is a historical town with heritage, natural and architectural beauty, and culture. It is also one of the top tourism destinations in South Africa, at the heart of the South African food and wine industry.

The town of Stellenbosch, SU's campus and the suburbs around the university are integrated. In addition to artworks found on campus, the town's arts scene benefits from some of the resources and programmes presented by the University's Drama and Music departments at the Faculty of Arts and Social Sciences. These include the Adam Small Theatre Complex for Theatre performances and the Endler Hall Conservatorium for a wide range of musical performances, including the SU Symphony Orchestra. The University Choir is especially popular: The Stellenbosch University Choir made up of 120 students studying at SU, has been ranked the No.1 mixed amateur choir for the top 1 000 choirs in the world for the past 12 years by Interkultur, the organisers of the World Choir games. Students come from various backgrounds and communities and represent the full spectrum of South Africa's diverse population.

University Art Museum

The University Art Museum hosts several art collections and cultural-historical and anthropological collections relevant to the town and its community, shown through exhibitions and film screenings. The Access to Visual Arts programme is primarily designed to broaden previously disadvantaged learners' access to the University, notably the University Museum and its associated Art Gallery. The programme is designed primarily to introduce learners to Art through school groups.

The SU Botanical Garden, in the historical centre of Stellenbosch, is the oldest university botanical garden in South Africa. This compact Garden, with greenhouses, hosts an enormous diversity of plants, both indigenous to South Africa and exotic.



SU Botanical Garden, created in 1922, hosts an enormous diversity of plants, both indigenous and exotic

Cultural Heritage: Die Woordfees

In 2022, South Africa had 11 official languages, all of which embody unique cultures and traditions. Since 2000, SU has hosted *Die Woordfees* (Word Festival) each year using both SU facilities and the town itself. It started as an all-night celebration of Afrikaans literature, but over the past two decades, it has grown into one of South Africa's largest multilingual arts festivals. The festival typically offers over 500 performances and events hosted in more than 70 venues in and around Stellenbosch.



Adam Small Theatre Complex



Access to Visual Arts Programme

Words Open Worlds

The outreach programme, Words Open Worlds (WOW), encourages learners to love words through reading, spelling competitions, writers' visits and creative writing projects. WOW reaches over 2 500 schools and 270 000 learners across South Africa annually. WOW also opens the world of tertiary education to young people from backgrounds of severe disadvantage by providing bursaries, academic support and mentorship to help them access and complete their studies at university. The project further delivers projects to record and preserve intangible cultural heritage such as local folklore, traditions, language, and knowledge.



Stellenbosch University Choir

Conclusion

I am incredibly proud of the work the SDG/2063 Impact Hub is doing at Stellenbosch University to raise awareness and strengthen institutional commitment to sustainable development.

In the compilation of this second annual report titled "A Sustainable Africa: Partnerships for Progress", we were guided by the core principles of People, Planet, Peace, Prosperity, and Partnership, as we have deliberately focussed on the theme of "Partnerships for Progress" throughout the narratives, showcasing the transformative power that comes from collaborative endeavours.

I am also delighted that we can highlight not only our commitment towards the 17 SDGs but also our commitment to the African Union's Agenda 2063 and its 20 Goals, as this is not only a strategic vision but also an acknowledgement of our historical context and a call to action for the sustainable future we desire as an institution of higher learning on the African continent.

What we say about sustainable development is more evident in what we do. From the partnership development initiatives of the SU Africa Platform to the support of several networks focusing on areas such as disaster risk reduction, water excellence and science, technology and innovation, to the assistance provided by the Impact Hub for others to realise their sustainable projects, the Centre for Collaboration in Africa has a solid track record.

This report is a reminder of the critical role of such partnerships in driving our actions and progress. We recognise that our collective strength is the key to overcoming obstacles and charting a sustainable course as we face the many challenges that lie ahead.

We sincerely thank our partners, stakeholders, and the entire university community for their unwavering commitment to advancing sustainable development, and we look forward to continued partnerships as we move towards a future where sustainability is not just a vision but a reality for all.
















































Dr Nico Elema

Director: Centre for Collaboration in Africa, Stellenbosch University International.



We recognise that our collective strength is the key to overcoming obstacles and charting a sustainable course as we face the many challenges that lie ahead.



| AFRICAN DEVELOPMENT GOALS | | UN SUSTAINABLE DEVELOPMENT GOALS | |
|---|--|---|--|
| 1) A Prosperous Africa, based on Inclusive Growth and Sustainable Development | Goal 1: A high standard of living, quality of life and well-being for all |  |   SDG 1: No Poverty SDG 10: Reduced inequality |
| | Goal 2: Well-educated citizens and skills revolution underpinned by science, technology and innovation |  |  SDG 4: Quality Education |
| | Goal 3: Healthy and well-nourished citizens |  |  SDG 3: Good Health and Well-being |
| | Goal 4: Transformed economies and job creation |  |  SDG 8: Decent Work and Economic Growth |
| | Goal 5: Modern agriculture for increased productivity and production |  |     SDG 2: Zero Hunger SDG 13: Climate Action SDG 14: Life Below Water SDG 15: Life on Land |
| | Goal 6: Blue/ocean economy for accelerated economic growth |  |    SDG 13: Climate Action SDG 14: Life Below Water SDG 15: Life on Land |
| | Goal 7: Environmentally sustainable climate resilient economies and communities |  |   SDG 6: Clean Water and Sanitation SDG 7: Affordable and Clean Energy |
| 2) An Integrated Continent Politically united and based on the ideals of Pan Africanism and the vision of African Renaissance | Goal 8: United Africa (federal or confederate) |  | – No SDG |
| | Goal 9: Key continental financial and monetary institutions established and functional |  |  SDG 17: Partnerships to achieve the Goal |
| | Goal 10: World-class infrastructure that crisscrosses Africa |  |   SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities |
| 3) An Africa of Good Governance, Democracy, Respect for Human Rights, Justice and the Rule of Law | Goal 11: Democratic values, practices, universal principles of human rights, justice and the rule of law entrenched |  |  SDG 16: Peace, Justice and Strong Institutions |
| | Goal 12: Capable institutions and transformed leadership in place at all levels, cross-cutting with Governance |  |  SDG 16: Peace, Justice and Strong Institutions |
| 4) A Peaceful and Secure Africa | Goal 13: Peace, security, and stability are preserved |  |  SDG 16: Peace, Justice and Strong Institutions |
| | Goal 14: A stable and peaceful Africa |  |  SDG 16: Peace, Justice and Strong Institutions |
| | Goal 15: A fully functional and operational African peace and security architecture |  |  SDG 16: Peace, Justice and Strong Institutions |
| 5) Africa with a Strong Cultural Identity Common Heritage, Values and Ethics | Goal 16: African Cultural Renaissance is pre-eminent |  | – No SDG |
| 6) An Africa Whose Development is people driven, relying on the potential offered by African People, especially its Women and Youth, and caring for Children | Goal 17: Full gender equality in all spheres of life |  |  SDG 5: Gender Equality |
| | Goal 18: Engaged and empowered youth and children |  |  SDG 4: Quality Education |
| 7) An Africa as A Strong, United, Resilient and Influential Global Player and Partner | Goal 19: Africa as a major partner in global affairs and peaceful co-existence |  |  SDG 17: Partnerships to achieve the Goal |
| | Goal 20: Africa takes full responsibility for financing her development |  |  SDG 17: Partnerships to achieve the Goal |
| | No AU goal | |  SDG 12: Responsible Consumption and Production |

Acknowledgements

This report made use of the following resources:

- Stellenbosch University Annual Integrated Report 2022
- Stellenbosch University Matieland 2022
- Stellenbosch University Faculty AgriSciences Annual Report 2022
- Stellenbosch University Department of Botany and Zoology Annual Report 2022
- Stellenbosch University Centre for Sustainability Transitions: Annual Report 2021/2022
- Stellenbosch University, Division for Research Development, Research for Impact 2022
- Stellenbosch University, Facilities Management Environmental Sustainability Plan 2020-2025
- Stellenbosch University Facilities' Management Environmental Sustainability Report
- Stellenbosch University 2022 Transformation Indaba Report
- Stellenbosch University Newsletters and News portal
- Various websites hyperlinked throughout the report
- The Alignment of the two Agendas : UNDP Africa Policy Brief, Volume 1, No. 1, January 2017

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Sustainability Reporting Team from left to right, Refloe Nkhasi, Yolanda Maphosa, Yenziwe Mbuyisa, Corina du Toit and Thuto Matuba.

The SDG/2063 Impact Hub, located at the Centre for Collaboration in Africa at Stellenbosch University International, advocates for the promotion and visible uptake of the UN's 2030 Agenda and its Sustainable Development Goals (SDGs), as well as the AU's Agenda 2063 with its Goals and Aspirations for a peaceful and prosperous Africa. Both the AU and UN Sustainable Development Agendas inform SU's Vision 2040, alongside the National Development Plan of SA.



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