



Wits' Contributions to Advancing the Sustainable Development Goals

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Since its establishment as a university in 1922, the University of the Witwatersrand (Wits) has been committed to advancing innovation and social justice. It is a values-led institution, which eschews expediency and financial gain that comes at a cost to humanity and the environment. The Sustainable Development Goals (SDGs), launched by the United Nations in 2015, are strongly aligned with the values embraced by Wits throughout its history and into the present. It is therefore unsurprising that there are numerous activities at Wits that contribute to advancing the SDGs in many different ways.

However, our efforts to explicitly link specific SDGs to our academic programmes, research and community engagements are more recent. In the past few years we have created the position of Pro Vice-Chancellor: Climate Change, Sustainability and Inequality and produced the Wits University Sustainability Strategy. Going forward, we are committed to foregrounding the ways in which we contribute to the SDGs with Wits students and staff through both formal and informal education, including campaigns, events, articles and engaging with the media.

In this document we have selected and described a number of Wits initiatives that show how we advance specific SDGs at institutional level, in our work with communities, industry and government and, more broadly, through national, regional and international collaborations.

Prof Imraan Valodia

Pro Vice-Chancellor: Climate Change, Sustainability and Inequality





1. INTRODUCTION

In 2015 the member countries of the United Nations approved 17 Sustainable Development Goals (SDGs) as the heart of its Agenda 2030. The Preamble begins by stating, “This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom.” The 17 SDGs are shown below.

SUSTAINABLE DEVELOPMENT GOALS



Achievement of these goals requires commitment and participation of people, organisations, businesses and governments across the world. This includes higher education institutions, which have an important role to play in advancing the goals both through research and community engagement and, for the long term, through the education of their students. The commitment of the University of the Witwatersrand (Wits) to the SDGs is clear in the *Wits 2033 Strategic Framework*. The introductory section of the framework states:

Our goal is to lead in:

- Growing the next generation of change-makers and global scholars;
- Innovating and pioneering knowledge;
- Using our knowledge and influence to advance society by tackling climate change and inequality, and promoting social justice and public health from the Global South;
- Strengthening democracy and governance in South Africa; and
- Transforming the global university landscape, taking our continental partners on this journey with us.

As a large, research-intensive university comprising over 40,000 students and 6,000 academic and support staff, Wits contributes towards advancing the SDGs in myriad ways. These include academic courses related to one or more SDGs, research conducted by academics and students in research groups and collaborations beyond Wits, and engagements with communities, industry, funders, governments and continental and international partners and role players. It is impossible to capture all of these contributions in a single document. Therefore, a selection of contributions is presented under three headings:

1. Institutional initiatives
2. Partnerships with community, industry and government
3. National, regional and international collaborations

Information related to academic and co-curricular programmes, institutional initiatives, research, and engagement beyond the University is presented under each heading. Three main sources of information were used: responses to a survey sent to all academic staff and heads of support units, information gleaned from the University website, and information supplied by individuals and members of a multi-stakeholder advisory group set up to guide the production of this report. Statistics on research publications as they relate to the SDGs are presented as an appendix and were provided by the Library. Detailed responses to the survey are available as a separate document. Not all of the initiatives described in the survey could be included in this document, so a selection was made that covers a range of SDGs and that falls into one of the three categories above.

In the future, we plan to enhance our data collection processes in order to obtain a more comprehensive picture of our many contributions to advancing the SDGs.



2. INSTITUTIONAL INITIATIVES

Wits has a Pro Vice-Chancellor: Climate Change, Sustainability and Inequality. Under his auspices, regular seminars with invited national and international speakers are held, there is an annual Inter-Faculty Symposium on Climate, Sustainability and Inequality, roundtable discussions on research conducted by Wits researchers related to specific SDGs are convened, and postdoctoral fellows are appointed who research questions relevant to climate change and a just transition to renewable energy sources. In 2023 he led a Wits team to COP 28 that hosted a panel discussion on the role of universities and the implications for evidence-based policymaking and climate justice.

In 2023 Wits produced the *Wits University Sustainability Strategy*. It spells out Wits' vision for sustainability in six areas: research and teaching, energy, water, waste, transport and infrastructure. It also provides an implementation matrix as to how, by whom and when this vision can be reached in the near (2030) and longer (2050) time frames, together with a budget.

2.1 Sustainability on campus (SDG 2, 4, 6, 7, 11, 12, 13)

The Services Unit, which reports to the Deputy Vice-Chancellor: Systems and Operations, is actively promoting a sustainable campus through a number of initiatives. One of these is to promote recycling of waste. In 2023 “reverse vending machines” were installed in a number of places on campus that accept plastic bottles and cans in exchange for credit on an app. Waste on campus is collected and moved to a single place on campus where it is sorted for recycling and compacted before being removed. Recycling bins have been set up in the residences and near food services. “Biobins” are being piloted in Wits residence kitchens, using the Japanese bokashi system, where food waste is put in the bins together with selected micro-organisms, which convert the food waste into compost. Food vendors on campus are required to use recyclable plates and cutlery. Wits also has a food safety management system, which includes a food safety committee. Environmentally friendly cleaning chemicals are increasingly being used. Water quality is being monitored and rain sensors are used to switch off irrigation systems when there is adequate rainfall.

An integrated approach to energy supply and usage has been adopted, with associated short and medium-term planning. This includes producing energy from sunlight where rooftop locations and size make it possible, both solar thermal energy, which is used for direct heating of hot water in student residences, and photovoltaic panels, which convert solar energy into electrical energy. Energy efficiency is being increased through systematically replacing older technologies with newer ones, such as for lighting, heating and cooling and certain machinery. Wits is also shifting from multiple, stand-alone systems to centralised energy supply systems for better load control, as well as introducing energy storage facilities.

Solar benches have been installed in a number of outdoor spaces where students tend to congregate. These consist of “picnic” tables and benches, with a roof on which solar panels are mounted. The solar panels enable students to charge their electronic devices while working at the benches. They also charge batteries, which provide energy after dark to students who want to work into the evening.

2.2 Promoting climate change awareness among students (SDG 2, 12, 13)

All new first year students attend a two-week, integrated academic and student life orientation programme immediately prior to the start of the academic year called Gateway to Success. One component of the programme is a Wits-approved, fully online, interdisciplinary short course called *Climate Change and Me*. In this course students learn about the climate emergency, role models for climate activism, particularly young people, and what they can do to mitigate the adverse effect of climate change.

The *Climate Justice Education Programme* is a co-curricular offering for students at all levels of study. The programme takes the form of presentations and a discussion series over a 6-week period. Each session lasts about two hours and is held once a week in the evenings. Sessions include a documentary screening followed by discussions, lectures and facilitated discussions, and a practical food planting session. Students receive official co-curricular recognition. There is also a student society called the Climate Justice Charter Movement.

Wits offers masters degrees programmes in Climate Change and Renewable Energy, in Interdisciplinary Global Change Studies and in Environmental and Resource Economics. It also offers masters and doctoral degree programmes in Environmental Law.

2.3 Food programme for students (SDG 1, 2, 3, 12)

The Wits Citizenship and Community Outreach Unit, part of the Centre for Student Development in the Student Affairs Division, runs the Wits Food Programme. Through this programme, 1000 hot meals are served daily to students in financial need and meal packs are distributed three times a week for needy students who can prepare food in their own time. The food packs are sponsored by a local food manufacturer and augmented by food drives on campus at special events, such as the annual Mandela Day celebrations. Wits also has six food gardens on its campuses, where student volunteers work with the Cooperative and Policy Alternative Centre (COPAC) to grow vegetables to supplement the dried food supplied in the food pantry and to stock a communal kitchen where students cook their own food. This is part of the Student Volunteer Programme and students receive official co-curricular recognition for their participation.

In 2023 the Services Department planted 16 fruit trees on campus to provide another source of healthy food.

2.4 Educational opportunities for support staff (SDG 4, 8, 10)

The Human Resources Development Unit oversees learning opportunities for support staff who have not had the opportunity in the past to complete their Grade 12 school leaving qualification. One of these learning opportunities is a learnership in Business Administration. So far, approximately 200 staff members from Services, Protection Services and Property and Infrastructure Management Department (PIMD) have moved through National Qualifications Framework (NQF) levels 2-4 and have now achieved the NQF level 4 exit point.

The Library also runs training for support staff on how to use the Library and the benefits they can derive.

2.5 Health and wellness for staff and students (SDG 3, 5)

The Counselling and Careers Development Unit (CCDU) in the Student Affairs Division provides a number of forms of support and development to bolster students' well-being. The initiatives are aligned to the Wits Mental Health Strategy. These initiatives include individual and group counselling, preventative advocacy, collaborative mental health and social justice awareness campaigns, peer education, online resources, presentations, career services and employability support and a 24-hour crisis line, run by an external provider and accessible by phone or through a downloadable app. Wits also has a Campus Health and Wellness Centre, staffed by primary health care nurses, psychiatric nurses, consultant psychiatrists and a medical doctor.

Wits runs an annual Staff Wellness Week every September, under the auspices of the DVC: People Development and Culture, which is open to all staff. Activities include health screenings, wellness talks, fitness activities, a fun walk or run and cooking demonstrations for healthy eating. The health screenings are part of a larger health screening and education programme called Screening and Testing Programme (STEPPS), a free service run by Pharmacy students and available to everyone on campus, staff and students. The physical act of screening creates health awareness among the general population and provides an impetus for lifelong health autonomy. The screening services initially available have been expanded with the addition of oral hygiene and audiology students.

Wits also has an Employee Wellness Programme, delivered free of charge to staff and their families by an external provider contracted by Wits. The programme offers counselling, advice for line managers on how to deal with challenges related to their staff, financial management support, legal advice and a wellness app that provides advice on physical health.

As part of promoting social justice for all, Wits has a Disability Rights Unit (DRU) and a Gender Equity Office (GEO). The DRU helps students receive appropriate accommodations to enable them to succeed at Wits. The GEO deals with all aspects of gender-based harm and the advancement of gender equity, providing support and resources and running campaigns.

2.6 Innovation and entrepreneurship (SDG 8, 9)

Wits is actively supporting and promoting innovation and entrepreneurship. Central to the *Wits Strategic Plan for Innovation 2022-2026* has been the establishment of the Wits Innovation Centre (WIC) in 2022. The WIC is led by the David Fine Chair in Innovation and a director, and reports to the Deputy Vice-Chancellor: Research and Innovation. Its role is to encourage, facilitate and support the connection between research and innovation. It drives innovation support and inspires the growth of an innovation mindset at Wits. It actively engages in strengthening research impact, external engagement, commercialisation, and entrepreneurship for the advancement of the community, the country, continent and the world.

The Wits Tshimologong Precinct, located just outside the Braamfontein campus, is a digital innovation ecosystem that drives entrepreneurship and grows the skills pipeline for the digital economy through collaboration with academia, corporates, government and entrepreneurs. It provides skills and on-the-job training for unemployed youth while accelerating the growth of digital enterprises at every stage of their business. It creates a pathway for students and entrepreneurs to showcase their work publicly and access commercial opportunities through training related to digital skills development, incubation and acceleration of digital startups and supporting access to networks, funding and markets. It hosts the annual Fak'ugesi African Digital Innovation Festival, showcasing the intersection of technology, art, and culture in Africa.

The festival is built on the belief that successful technological innovation in Africa must be deeply rooted in the continent's cultural practices and creative expressions. It is also home to one of IBM's Research Labs in Africa.

The Student Entrepreneurship Education and Development programme is a university recognised co-curricular programme, led by Student Affairs. The programme serves as a springboard for many student-led businesses. Aside from funding, the programme tackles some of the key challenges experienced by entrepreneurs leading some to fail without ever realising their goals or creating employment.

Academic degree programmes related to innovation include the Postgraduate Diploma in Science in the field of Innovation and Entrepreneurship, the Postgraduate Diploma and Master of Management in the field of Digital Business and the Master of Management in Entrepreneurship and New Venture Creation.

3. PARTNERSHIPS WITH COMMUNITY, INDUSTRY AND GOVERNMENT

3.1 Air pollution monitoring (SDG 3, 17)

Poor air quality has a significant effect on people's health. Wits has played a leading role in the development of a cost-effective air quality monitoring system based on sensors, Internet of Things and Artificial Intelligence. The system is called Ai_r and consists of a collection of small boxes containing sensors, a tiny computer and an antenna. Each box costs about \$100 to make. The boxes can be mounted on a windowsill of any building, where they take air samples and feed this data back to the Cloud in real time. Modelling and forecasts are made with artificial intelligence coupled to the Cloud. The relatively low cost and the connection of the sensors to the Cloud mean that real-time data on a very local scale and at a relatively low cost can be collected and used to inform when and where interventions are needed to improve air quality.

The Ai_r system is being developed and rolled out by the South African Consortium of Air Quality Monitoring, a multidisciplinary team of scientists with strong connections to policy makers and who are interested in improving air quality in South Africa. Wits is a founding member. The team of 25 people includes more than 20 years of experience as particle physicists in working with sensors, communications and artificial intelligence. The consortium was founded with the goal of bringing together government institutions, research institutions, and industry in a mutually beneficial ecosystem in order to deliver the Ai_r system. In the initial pilot, the devices were installed in strategic locations in Johannesburg where there are tens of thousands of vehicles driving past every day, as well as on campus.

3.2 Promoting social justice through engagement with the law (SDG 16)

The Centre for Applied Legal Studies (CALS) undertakes research, advocacy and strategic litigation organised according to five intersecting programmes, namely, Business and Human Rights; Civil and Political Justice; Environmental Justice; Gender Justice and Home, Land and Rural Democracy. CALS' programmes leverage intellectual, legal and political skills in pursuit of human rights. Fundamental to this is CALS' ability to engage in rigorous research as the basis for effective rights-based strategies. Equally important is its ability to build relationships with communities most affected by deprivation of rights. Relationship-building with state institutions and other civil society organisations is ongoing in the work CALS undertakes.

The Wits Law Clinic provides access to justice to the poor by offering pro bono legal services to underprivileged members of the community who qualify for legal aid. It provides specialised assistance to clients on a range of legal problems such as divorces and guardianship matters, labour matters, contractual claims, delictual claims, evictions, housing, land related matters as well as refugee, immigration and citizenship matters. It is staffed by



admitted legal practitioners who provide exceptional teaching, professional legal services and research, whilst maintaining partnerships with other organizations and stakeholders. It runs six specialized units headed up by supervisors who are admitted Legal Practitioners. The units are assisted by candidate legal practitioners as well as final year law students who are allocated to the various units. The Practical Legal Studies course is a full-year course for final-year LLB students. Final year law students consult with actual clients, open files, draft legal documents, attend court and litigate actual cases, all under the close supervision of qualified legal practitioners at the Wit Law Clinic. Practical Legal Studies aims to teach law students how to apply and think about the law in practice.

3.3 Water and sanitation research, development and policy (SDG 6,11,17)

The Centre in Water Research and Development supports research in all aspects of water, such as acid mine drainage, sanitation challenges, environmental law, and climate change, through the lens of the global South. The research covers systems and the environment, water recovery, society and education. One successful project is the *Accessible Greywater Solutions for Urban Informal Townships in South Africa* (URBWAT), which is a project studying the implementation of treatment wetlands in an urban megacity slum context. Through URBWAT, three constructed wetlands have been built in a shanty portion of Alexandra township, Johannesburg to establish a microbial consortium using plants that essentially eat chemical components in discarded wastewater, thereby treating grey water run-off that ultimately leads to the Jukskei River. Postgraduate students and researchers from Wits and abroad carry out community-based research and education, related both to the science and the attitudes and experiences of the community.

Another project is called Acids to Value, involving treating acid mine drainage, which is an enormous problem in disused mines in South Africa. That means cleaner water entering rivers and underground water basins used for subsistence farming, avoiding polluted waters eventually entering dams and putting strain on existing water treatment infrastructure. Wits researchers work with MACUA (Mining Affected Communities United in Action). The project also aims to derive value from the mining wastewater by extracting valuable rare earth elements and producing viable concrete aggregates and biofuel as by-products of the treatment process.

Wits staff were also involved in developing the Sanitation Policy for the City of Johannesburg.

3.4 Health monitoring and support for rural populations (SDG 3, 17)

The Wits Rural Public Health and Health Transitions Research Unit of Wits' School of Public Health and South African Medical Research Council collaboration has a field research centre in the rural northeast part of South Africa, Agincourt. The Agincourt health and socio-demographic surveillance system (HDSS), established in 1992, comprises 31 villages and approximately 120,000 people. This platform links to clinical data from primary care clinics and district hospitals, generating robust data on rapidly transitioning populations. Its mandate is to partner with host communities and local institutions to better understand and respond to the dynamics of health, population and social transitions in rural South and sub-Saharan Africa, in order to mount a more effective public health, public sector and social response and thereby inform national, regional and global health and development policy and practice. It supports observational and interventional studies across the life course, health systems research and

development, and policy evaluations. It is a unique source of information on Southern African population dynamics including mortality and cause-of-death, fertility and pregnancy outcome, internal migration, and their proximal and distal determinants. The Unit is a founding node of the South African Population Research Infrastructure Network contributing its first director, served as a satellite secretariat of the International Network for the Demographic Evaluation of Populations and Their Health, and leads multicentre studies within South Africa and across the sub-Saharan African region. Many Agincourt-related studies involve other HDSS / cohort-based platforms in sub-Saharan Africa, at times extending to South Asia. In South Africa it also interacts with Statistics South Africa, Department of Science and Innovation, the Department of Planning, Monitoring and Evaluation in the Presidency and the Treasury,

3.5 Micro-scale electricity supply to rural communities (SDG 7, 9, 10, 11, 17)

Staff and students from Wits developed PowerBricks, which provide solar energy plus battery energy storage on a very small scale to people living in deep rural areas, unable to connect to the electricity grid. The Powerbricks are modular and expandable, so users can increase their energy supply according to their needs and finances. A company called Peco Power was formed jointly by Wits and a social impact investment firm. Peco Power is a South African OEM (Original Equipment Manufacturer) that researches and develops renewable energy products. Its vision is to improve the quality of life for people within Africa by providing affordable and sustainable access to energy.

3.6 Community development through the arts (SDG 1, 2, 3, 4, 6, 10, 11, 12, 17)

The Film and TV Department in the Wits School of Arts collaborates with members of two local communities, Eldorado Park and Kliptown, in initiatives that promote education and community development. Go Green Go Clean is a community-led public eco-park project led by an Eldorado Park resident. He and fellow volunteer workers have created a vibrant eco-park with lawns, walkways, mural art, indigenous medicinal plants, and a safe space for children, along a one kilometre servitude that was a dangerous dumping site and drug haven for decades. The Wits Film and Television Department has been working in partnership with the Go Green, Go Clean project since 2022, documenting and publicising their work and collaborating on film and art projects.

The Beehive Culture Worx is a community-based film and animation education and production initiative, which has developed community-based methodologies for film production in the creation of one short film and two feature films. "Mense Phola Hier", their latest feature film, was co-written by Prince Massingham (Kliptown resident) and Neo Monyamane (ex-Wits student), and over 90% of cast and crew were community members from Kliptown and Eldorado Park, with a number of current and graduated Film and TV students also participating, and a Wits lecturer doing the production. The Beehive Culture Worx has also developed animation workshops for children and youth aged 6-30, in partnership with Animation SA and Wits Film and Television.

3.7 Wits Rural Facility and Rural Knowledge Hub (SDG 3, 4, 11, 13, 15, 17)

The Wits Rural Facility (WRF), comprising 350 hectares of savannah and associated wildlife, was established in 1989. It serves as a base for rural-focused research, student training, and community outreach in the deep rural Bushbuckridge region of the Limpopo Province. WRF strives to provide world-class infrastructure and services to enable high quality, multi-disciplinary, problem-based research, student learning, and civic engagement, to meet the development challenges faced by South Africa and the rest of the sub-continent. The Wits Rural Knowledge Hub (WiRKH), located at the WRF, provides intellectual, organizational, and infrastructural support for interdisciplinary research, training and knowledge brokerage, in support of evidence-based action for positive change, particularly in rural areas. It serves as a knowledge synthesis centre, connecting the “spokes” of diverse research efforts in the region and as a knowledge broker, linking science to action for sustainable development. The research themes are: human demography, public health, education, sustainable rural livelihoods, savanna ecology, socio-ecological systems and socio-economic development.

3.8 Researching education and labour (SDG 4, 7, 8, 9, 10, 17)

The Centre for Researching Education and Labour (REAL) is a research centre in the Wits School of Education. It conducts cutting edge research, offers teaching programmes and provides support to policy makers and regulatory institutions on areas of theoretical, practical, and policy concern focused on the complex relationships between education, knowledge, work, the economy, and society with an aim to promote social, economic and ecological sustainability and a more just society.

Under the South African Research Chairs Initiative (SARCHI) chair in Skills Development, it leads a number of research projects focused on improving the ways in which the education and training system produces skilled workers, as well as the ways in which workplaces support skills development and the ability of workers to use their skills to the maximum. Recently, REAL staff worked with the South African National Energy Association to develop the South African Energy Skills Roadmap, and with the Presidency to write and help implement skills-related aspects in the Just Energy Transition Implementation Plan. REAL staff are working with the Presidential Climate Commission to investigate potential new work streams related to climate resilient development and adaptation, focusing on community water quality monitoring and wetland rehabilitation. They also reviewed the Economic and Management Sciences (EMS) and Business Studies Curriculum for grades 9 to 12 to investigate how to integrate sustainable development. They then developed a training programme for teachers of these subjects on the integration of Education for Sustainable Development into the core curriculum.

3.9 Collaborations with the City of Johannesburg and the Gauteng Province (SDG 7,10, 11)

The Gauteng City-Region Observatory (GCRO) is a partnership of Wits, the University of Johannesburg (UJ) and the Gauteng Provincial Government (GPG). GCRO receives a core grant from the GPG, and the two universities provide significant in-kind support. While the GCRO is based at the two universities, it is also charged with extending links to all the higher

education institutions, as well as knowledge councils, private sector think-tanks, research NGOs and information exchange and learning networks operating in the city-region. Behind the motivation for setting up the GCRO is a vision for a fast growing and dynamic urban region, that through better planning and management and improved co-operative government relations between the sections of government responsible for its parts, will become more functionally integrated, spatially coherent, economically competitive, creative, innovative, environmentally sustainable and socially inclusive. Better planning, management and co-operative government relies on improved data, information, analysis and reflective evaluation essential to the setting of clear strategic agendas shared across government, and between government and its civil society and business partners. The Gauteng City-Region Observatory is charged with building this strategic intelligence. The GCRO provides direct policy support to government in leading the development of the city-region, but also reflects, through rigorous peer-reviewed academic scholarship, on city-region developments.

The Gauteng Research Triangle (GRT) is a partnership between Wits, the University of Johannesburg and the University of Pretoria. Its aim is to change Gauteng in ways that will improve the lives of the poor. In its first major project, Initiative for the Study of Population, Infrastructure and Regional Economic Development (GRT – INSPIRED), it provides a health and demographic surveillance site, and one of the nodes of the South African Population Research Infrastructure Network (SAPRIN).

The Centre for Urbanism and Built Environment Studies’ (CUBES) research focus is on material built-environment issues affecting the poor in cities and towns in South Africa. CUBES leads a variety of research programmes that consider how urban citizens, and in particular, marginalised peoples, are affected by the material realities of cities, built environments at different scales, access to urban goods and spaces, and contestations over urban physical and political orders. CUBES’ mission is to contribute to socio-spatial justice, urban resilience and impactful, transformative built-environment strategies through engagement and grounded research. CUBES is driven by a deep concern for social and spatial justice, confronting inequality and how this articulates urban areas. It embraces participatory, democratic, transdisciplinary and comparative approaches promoted under initiatives such as the right to the city, spatial justice and the right to development. Housing is a key thematic area within CUBES. Its activities include institutional and community partnerships, and research programmes that engage students from different degree programmes.

3.10 Involvement with schools (SDG 4)

Wits works with high school teachers and learners in many different ways. The Schools Liaison unit, which reports to the Registrar, visits hundreds of schools every year to advise learners and teachers about admission requirements, career opportunities, degree courses offered at Wits, fees and funding, student life on campus and the University’s core function. Other services include presentations to Grade 9, 10, 11 and 12 learners, participation in University open days, parents evenings, career exhibitions, career evenings and campus tours.

The annual Wits Integrated Experience is a Wits approved short course held every year on campus for Grade 11 learners. The course exposes learners from schools across Gauteng to real-life scenarios and problem-solving exercises that develop their 21st-century skills, such as critical thinking and creativity, in finding solutions to otherwise disruptive problems. It also helps learners make better-informed decisions about subject choices, careers and higher education programmes that open opportunities to participate in the future world of work.

A number of Wits schools host demonstrations and workshops for learners. For example, the Wits Neuroscience Research Lab in the School of Human and Community Development hosted Grade 9 learners in its Virtual Reality Lab.



4. NATIONAL, REGIONAL AND INTERNATIONAL COLLABORATIONS

4.1 The African Engineering and Technology Network (SDG 4, 8, 9, 17)

The African Engineering and Technology Network (Afretec) is a pan-African collaboration of technology-focused universities from across the African continent, led by Carnegie-Mellon University Africa. The purpose of Afretec is to create a platform for technology-focused universities in Africa to drive inclusive digital growth by collaborating on teaching and learning, knowledge creation, and entrepreneurship activities within the area of engineering and technology. The objective is to support and promote social impact, diversity, inclusion, and sustainability as well as the United Nations Sustainable Development Goals (2015-2030) and the Africa Agenda (2015-2063). Wits is one of eight participating African universities. The Senior Deputy Vice-Chancellor: Academic is a member of the Board and the Dean of Science is one of the network coordinators.

4.2 Wits-Edinburgh Sustainable African Futures (WESAF) doctoral programme (SDG 4, 8, 10, 11, 12, 13, 17)

WESAF is a joint initiative of Wits University and the University of Edinburgh, funded by the Mastercard Foundation, to advance research capacity amongst African academics and higher educational institutions while grappling with the critical issues of sustainable development in their fields of interest. WESAF's understanding of sustainability is anchored in a theoretical framework that recognises that sustainable development must be socially just while respecting environmental limits. To enable a sustainable future in Africa, it is essential to explore and promote an African-driven sustainability agenda as part of collaborative decision-making processes, which include local communities and knowledge. This requires indigenous understandings and management of a range of complex, interconnected challenges in the development of suitable solutions that are sensitive to both the vulnerabilities of the countries of the Global South, and their long histories of resilience in the face of protracted adversity. The WESAF Doctoral Programme provides research training to equip Fellows (primarily academics already holding tenured positions at African universities) to complete interdisciplinary doctoral research on areas related to sustainability on the African continent. The blended Programme is designed to enable Fellows to complete primarily online masters followed by a primarily online doctorate, with in-person sustainability schools at the two universities.

4.3 Wits-TUB-UNILAG Urban Lab Programme (SDG 11, 17)

The Wits-TUB-UNILAG Urban Lab Programme is built on a partnership agreement between the University of the Witwatersrand (Wits), the University of Lagos (UNILAG) and the Technische Universität Berlin (TUB). The Urban Lab runs a Postgraduate SDG School, in the form of an enhancement of the postgraduate training offered in the School of Architecture and Planning at Wits, in close collaboration with the Habitat Unit at TUB and Centre for Housing and Sustainable Development at UNILAG. The programme enables scholars from across the sub-continent to participate in the Master of Urban Studies in the field of Urban Management at Wits as well as PhD studies at both Wits and UNILAG. Beyond collaboration around the respective urban management masters degrees at TUB, Wits and UNILAG, the programme is designed to facilitate international exchange of ideas between research institutions and includes strengthening the network of urban studies academics on the African continent.

This collaboration seeks to contribute to the implementation of the SDGs and the New Urban Agenda (NUA) of 2016 on the sub-Saharan African continent. The New Urban Agenda (NUA) in particular calls for integrated approaches to urban planning and management as a central element of an “Urban Paradigm Shift”.

4.4 African genetics and precision medicine (SDG 3)

The Sydney Brenner Institute for Molecular Bioscience collaborates with researchers in South Africa and other African countries to map, store and analyse data on the genetics of people in Africa. Given that homo sapiens originated in Africa, combined with very diverse ecologies and climate zones across the continent, the genetic diversity of Africans is greater than that of populations anywhere else on earth. That means that health protocols, including the use and dosage of various drugs, that have been established in populations with much less genetic diversity are unlikely to be appropriate for widescale adoption in Africa. A wealth of health-related data are also becoming available through the identification of genes associated with, for example, immunity to certain diseases and DNA repair processes.

4.5 African Centre for Migration & Society (SDG 1, 3, 5, 8, 10, 11, 16, 17)

The African Centre for Migration & Society in the Wits School of Social Sciences is Africa’s leading scholarly institution for research and teaching on human mobility dedicated to shaping global discourse on human mobility and social transformation. It is involved in multiple research projects that address various societal challenges through a migration lens. This includes numerous international partnerships and funded research programmes. It is an independent, interdisciplinary and internationally engaged centre focusing on the relationships among human movement politics, poverty, and social transformation. While oriented towards southern Africa, the Centre conducts collaborative scholarly and policy-oriented work across sub-Saharan Africa, and has partnerships in Asia, Europe and the Americas. It offers Africa’s only post-graduate degrees in migration and displacement studies and provides training to students and professionals on a number of topics, including the sociology of migration, mobility and health, human rights, and research methods. While maintaining its scholarly independence, the Centre regularly partners with organisations in government and civil society in identifying data needs, conducting research and shaping policy. Centre staff are also regularly called on to provide expert advice and commentary to international organisations, governments, and the media.

4.6 Future Ecosystems for Africa (SDG 6, 10, 11, 13, 14, 15, 16, 17)

Future Ecosystems for Africa is led by the Global Change Institute and the School of Animal, Plant and Environmental Sciences at Wits University, funded by the Oppenheimer Generations Research and Conservation, and working with project partners from across the African continent and the globe. The work enables African scientists to inform global efforts to improve biodiversity, conservation, social well-being and climate mitigation on the continent in ways that capture the priorities and experience of the African people. The guiding principles are:

- Future Ecosystems for Africa recognizes the power of science in steering development in Africa toward nature-supporting paths.
- We aim to strengthen the evidence describing ecosystem dynamics and identifying tipping points in ecosystem function in a way that captures the priorities and experience of African people.
- In doing so, we also aim to highlight the value of unique African ecosystems and support and amplify African voices in global science-policy platforms.
- However, we also recognise that a purely positivist scientific approach and the information generated by this approach are insufficient to meet current challenges. This approach must be integrated into a wider programme driving transgressive change across economic, social, and environmental spheres.
- With this in mind, the programme takes a transdisciplinary approach that recognises the value of indigenous and local knowledge systems, and strives to embed a post-colonial agenda in its praxis.

4.7 Strengthening the capacity of Africa’s national evaluation systems (SDG 16,17)

The Wits Centre for Learning on Evaluation and Results (CLEAR) in the Wits School of Governance is working with the Twende Mbele Programme, comprising six core African countries that are sharing learnings on how effective monitoring and evaluation systems at all levels of government can strengthen government performance. CLEAR is one of two regional capacity development partners that strengthens evaluation capacity through research, training, peer learning, and technical assistance.

4.8 Priority Cost Effective Lessons for System Strengthening (Priceless) (SDG 3, 17)

PRICELESS SA undertakes research and provides evidence that demonstrates how to improve health and life expectancy in South Africa and across sub-Saharan Africa. Its priority areas are: maternal and child health, non-communicable diseases, nutrition in the first 1,000 days, preventing road traffic injuries and deaths, health-promoting policies, and health systems and health systems reform. It provides formal, degreed postgraduate teaching in health economics and decision science and short courses and workshops on vaccine economics targeted for policymakers, public health professionals and academics. It engages with policymakers, the public and the media to strengthen insight and expertise for setting priorities for South African health.

4.9 Wits Entrepreneurship Clinic (SDG 8)

The Wits School of Business Sciences is host to the Wits Entrepreneurship Clinic. It partners with the University of Edinburgh (UoE), the Wits Tshimologong Digital Innovation Precinct and the African Circular Economy Network (ACEN). In a world where the employment landscape, and even the nature of work, is changing rapidly, in part because of technology developments, including Artificial Intelligence tools, entrepreneurship should be encouraged and supported. The clinic assists aspiring student entrepreneurs to identify viable entrepreneurial opportunities and acquire the knowledge to set up and run a business. It also helps identify possible funding sources and assists with meeting relevant compliance requirements.

4.10 Wits Global Change Institute (SDG 6, 11, 13, 17)

The Global Change Institute (GCI) conducts research that underpins informed action for adaptation and innovation in the rapidly changing Southern African region. It addresses problems related to global change, climate change and sustainability in a multidisciplinary and transdisciplinary manner. It helps to co-create, understand and inform global change solutions at various levels of decision-making (in business, industry and government – municipal, provincial, national) and functions as an enabling platform utilising research to support progressive change through collaborative efforts with stakeholders. One such effort was the recent creation of the City of Johannesburg Adaptation Framework for climate variability and change. Currently it is co-leading the Resilience and Preparedness to tropical cyclones across Southern Africa (REPRESA), an international initiative to fight the impact of tropical cyclones in southern Africa and Madagascar. GCI members serve on advisory boards, science councils, steering committees and civil society organisations, at national and international level.

4.11 UNESCO Chair in Teacher Education for Development and Diversity (SDG 4, 17)

The *UNESCO Chair in Teacher Education for Development and Diversity* connects a global network of scholars, policymakers and practitioners in teacher education. Dialogue opportunities and knowledge dissemination are crucial to this community as a way for teacher education to promote just and sustainable educational futures. Publications are grouped into five broad themes:

- i Social and environmental justice in and through education
- i Pre-service teacher education and lifelong professional learning
- i Teaching and learning for diverse learners and diverse educational contexts
- i Comparative and international perspectives in teacher education
- i Transformation, innovation, digital technologies, and decolonial futures in teacher education.

4.12 Wits Reproductive Health and HIV Institute (RHI) (SDG 3,17)

The focus of the Wits RHI is research related to HIV, sexual and reproductive health and vaccine preventable diseases. It collaborates with the South African Medical Research Council and the World Health Organisation and is a strategic partner of the United Nations Population Fund. Its strength lies in its multi-disciplinary and holistic approach to improving health outcomes at a local and global level through research, technical assistance, advocacy, policy development and health systems strengthening. It identifies health problems through sound epidemiological methods and qualitative research, uses a range of analytic and research methods to generate evidence, and tests and evaluate interventions in a real-world setting.

4.13 Vaccines and Infectious Diseases Analytics Research Unit (VIDA) (SDG3, 17)

VIDA conducts cutting-edge scientific research aimed at saving lives across Africa and low and middle-income countries (LMIC) through translational research that informs local and global policy recommendations on infectious diseases and the use of next-generation and novel vaccines. VIDA is an internationally recognised, African-led research unit in the field of epidemiology of vaccine preventable diseases, and clinical development of life-saving vaccines.

4.14 Wits Health Consortium (SDG 3, 17)

Wits Health Consortium (Pty) Limited is a wholly Wits-owned company established to serve as a legal entity through which the University, and primarily the Faculty of Health Sciences, can conduct contract or sponsored research, entrepreneurial and philanthropic funded activities and services (including clinical services). This enables clinical researchers and health academics to undertake ground-breaking projects and establish commercially viable operations. The Consortium links specialist researchers with some of the world's top donors, sponsors, and philanthropists. It services numerous research entities that operate in South Africa, across the African continent, and in the USA and Europe, which enhance the lives of people around the world.



5. SDG 17 Partnerships for the goals

In the earlier sections of this document, partnerships with numerous organisations, institutions and government bodies were identified. In this section, several specific aspects of partnerships are highlighted, and illustrated by referring to some of the initiatives described earlier.

5.1 Wits staff involved in advisory bodies and policy development

Many Wits staff members serve on committees and advisory bodies for governments, NGOs and local, national and international organisations. A small selection of such staff whose work relates to several different SDGs is shown below.

Prof Imraan Valodia, Pro-Vice Chancellor: Climate, Sustainability and Inequality and Director of the Southern Centre for Inequality Studies, Professor of Economics

Serves on the Competition Tribunal, the Presidential Economic Advisory Council, the National Minimum Wage Commission, the Academy of Science of South Africa (ASSAf) Standing Committee on Science for the Reduction of Poverty and Inequality, the United Nations Research Institute for Social Development (UNRISD), UNAIDS Global Council on Inequality, AIDS, and Pandemics, Women in Informal Employment: Globalising and Organising (WIEGO), and the Global Development Institute.

Prof Stephanie Allais, South African Research Chair of Skills Development, and Professor of Education at the Centre for Researching Education and Labour in the School of Education

- Special Advisor to the Minister of Higher Education and Training
- Member of the expert panel to review the South African National Qualifications Framework
- Member of the Standing Committee on Skills of the South African Human Resource Development Council
- Advisor to the National Planning Commission in its work on the post-school system
- Leader of the development of a 15-year plan for the Post-School Education and Training System
- Development of a skills plan for the post-COVID-19 economic reconstruction and recovery programme in South Africa
- In 2021 led a five-part high profile set of Policy Dialogues funded by the European Union aimed at improving transitions from education to work by networking colleges and universities with government and industry representatives.

Professor Nithaya Chetty, Executive Dean, Faculty of Science

Vice-President of the International Union of Pure and Applied Physics (IUPAP). IUPAP led the declaration of the International Year of Basic Sciences for Sustainable Development 2022. IUPAP then led the declaration of the International Decade of Sciences for Sustainable Development by driving the formation of a coalition of countries to take the proposal to UNESCO and the UN. Chair of IUPAP Working Group 21, Physics for Climate Change Action and Sustainable Development.

Mr Jerome September, Dean of Student Affairs

- National Executive Committee member of the South African Association for Senior Student Affairs Professionals
- Independent trustee on the board of the Old Mutual Education Trust
- Member of the Universities South Africa (USAf) Strategy Group on Transformation
- Member of the Ministerial Task Team on Matters of Sexual Harassment and Gender-based Violence and Harm in Universities.

Professor Shabir Madhi, Executive Dean, Faculty of Health Sciences

National Advisory Group for Immunization in South Africa; World Health Organization Strategic Advisory Group of Experts on Immunization; Bill and Melinda Gates Foundation: Global Health Program Scientific Advisory Committee; Scientific Advisory Committee RIGHT Foundation, South Korea; Member SAC LeDuq Foundation Group A streptococcus vaccines; Board member: International Society for Pneumococcal and Pneumonia Disease.

Professor Craig Sheridan, Director of the Centre in Water Research and Development

Member of the International Institute of Environmental Studies; Member of the Working Group of the national Department of Water and Sanitation's Platform for a Water Secure Gauteng; Member of reference groups for the Water Research Commission.

Professor Colleen Vogel, Global Change Institute

Member of the World Weather Research Programme Scientific Committee; co-author of the Africa chapter of the 4th International Panel on Climate Change Assessment Report; International Human Dimensions Programme committee; World Weather Research Programme Science Committee; Future Earth Future Africa Leadership Science Cluster Lead; Weather and Climate Information Services Early Warning for Southern Africa (WISER- EWSA) Science Committee; World Meteorological Organisation; lead author of a chapter in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Transformation Assessment.

Professor Helen Rees, Executive Director of the Wits Reproductive Health and HIV Institute

South African Health Products Regulatory Authority Chair; Ministerial Advisory Committee on COVID-19 vaccines; National Advisory Group on Immunisation (NAGI) HPV vaccines Working Group; National Institute for Communicable Diseases (NICD) Scientific Advisory Committee; IBM Research Africa (JHB) Advisory Committee; World Health Organisation (WHO) African Regional Immunisation Technical Advisory Group on Immunisation; WHO International Health Regulation Emergency Committee on Polio; WHO IHR Emergency Committee on COVID-19; WHO Strategic Advisory Group of Experts on Immunisation (SAGE) Working Group on Ebola Vaccines.

5.2 International collaborations involving data generation and collection related to the SDGs

A number of the initiatives described in Section 4 involve collaborating internationally to collect and analyse data related to advancing various SDGs. These include:

- African genetics and precision medicine (4.4)
- African Centre for Migration & Society (4.5)
- Wits Global Change Institute (4.10)
- Wits Reproductive Health and HIV Institute (4.12)

5.3 Collaborations and research that contribute to developing best practice related to the SDGs

A number of the initiatives described in section 4 involve international collaborations and research related to developing best practices associated with various SDGs. These include:

- Wits-Edinburgh Sustainable African Futures (WESAF) doctoral programme (4.2)
- African Centre for Migration & Society (4.5)
- Future Ecosystems for Africa (4.6)
- Strengthening the capacity of Africa's national evaluation systems (4.7)
- Priority Cost Effective Lessons for System Strengthening (4.8)
- UNESCO Chair in Teacher Education for Development and Diversity (4.11)
- Vaccines and Infectious Diseases Analytics Research Unit (4.13)

5.4 Cross-sectoral dialogue related to the SDGs

A number of the initiatives described in section 3 involve cross-sectoral dialogue and collaboration related to the SDGs. These include:

- Air pollution monitoring (3.1)
- Water and sanitation research, development and policy (3.3)
- Researching education and labour (3.8)
- Collaborations with the City of Johannesburg and the Gauteng Province (3.9)

5.5 Collaboration with NGOs and communities to advance the SDGs

Wits staff and students collaborate with numerous NGOs and community-based organisations to advance SDGs. A number of initiatives are described in sections 2 and 3. These include:

- Wits Food Programme (2.3)
- Promoting social justice through engagement with the law (3.2)
- Community development through the arts (3.6)
- Health monitoring and support for rural populations (3.4)

5.6 Education related to the SDGs within the University

The Introduction to this document refers to Wits' commitment to sustainability. In section 2, there is a description of educational initiatives that help students develop an understanding of the importance of addressing climate change, in particular. Worth mentioning again is the *Climate Change and Me* course, part of the compulsory Gateway to Success orientation programme, taken by the approximately 6000 new first year students who begin their studies at Wits every year. Section 1 also refers to courses and programmes that address broader issues of sustainability.



6. Conclusion

In this document we have described some of the many ways in which Wits is contributing to advancing the SDGs. Going forward, we plan to be more explicit in making the links between the many important and worthwhile initiatives undertaken by Wits and specific SDGs that they contribute to, and to make these more widely known within the Wits community and beyond.





APPENDIX: Wits SDG Impact Overview

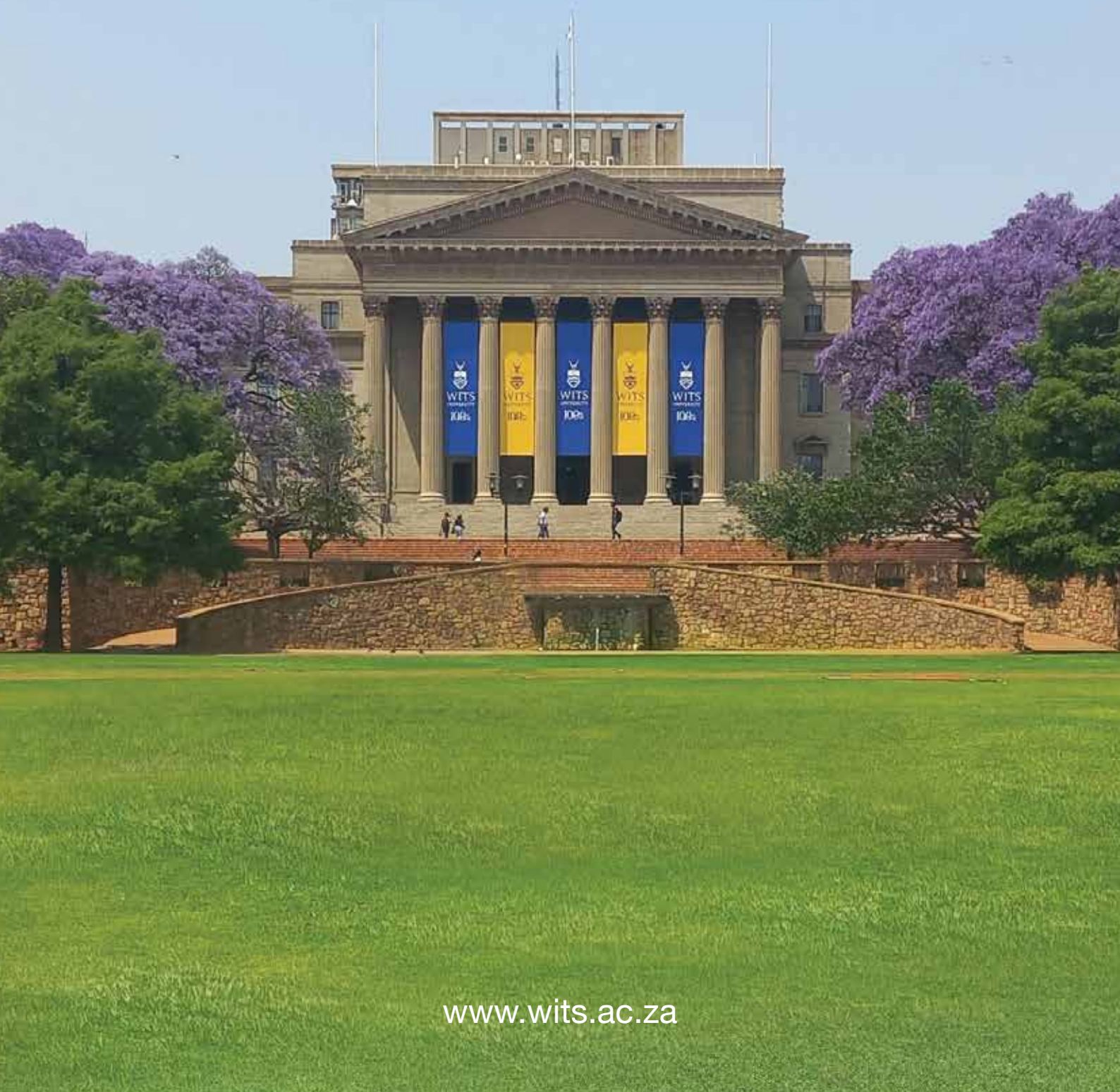
Publications by SDG for the University of the Witwatersrand

Entity: University of the Witwatersrand · Within: All subject areas (ASJC) · Year range: 2019 to 2024 · Data source: Scopus, up to 12 Aug 2024

SDG	Scholarly Output	Field-Weighted Citation Impact	Citation Count
SDG 1: No Poverty	476	1.27	4,322
SDG 2: Zero Hunger	568	1.23	5,635
SDG 3: Good Health and Well-being	7,434	1.87	116,152
SDG 4: Quality Education	568	1.17	3,164
SDG 5: Gender Equality	1,678	1.33	15,821
SDG 6: Clean Water and Sanitation	533	1.36	6,587
SDG 7: Affordable and Clean Energy	709	1.27	7,572
SDG 8: Decent Work and Economic Growth	677	1.35	6,927
SDG 9: Industry, Innovation and Infrastructure	649	1.68	7,824
SDG 10: Reduced Inequality	1,039	1.55	9,673
SDG 11: Sustainable Cities and Communities	665	1.36	6,326
SDG 12: Responsible Consumption and Production	417	1.35	5,299
SDG 13: Climate Action	601	2.06	9,108
SDG 14: Life Below Water	156	1.46	1,765
SDG 15: Life on Land	544	1.41	8,076
SDG 16: Peace, Justice and Strong Institutions	965	1.80	15,856



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