UNIVERSITY OF CAPE TOWN
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UCT Environmental Sustainability Strategy (Revision 0, 2020)

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"Environmental Sustainability is a key component of UCT's Vision 2030 and a critical part of developing students that are ready to unleash their human potential."

- Vice Chancellor,
Prof. Mamokgethi Phakeng

"We are committed to seeing UCT's operations transformed to become environmentally sustainable and to being a leader in this context on the African continent."

- Chief Operations Officer,
Dr. Reno Morar

"UCT is committed to setting ambitious goals for its campuses of Net Zero Carbon, Energy, Water and Waste-to-landfill by 2050. A key component to this strategy is enabling the campus to become a Living Lab for our students and staff as we work towards these transformative goals."

- Director: Environmental Sustainability,
Mr. Manfred Braune

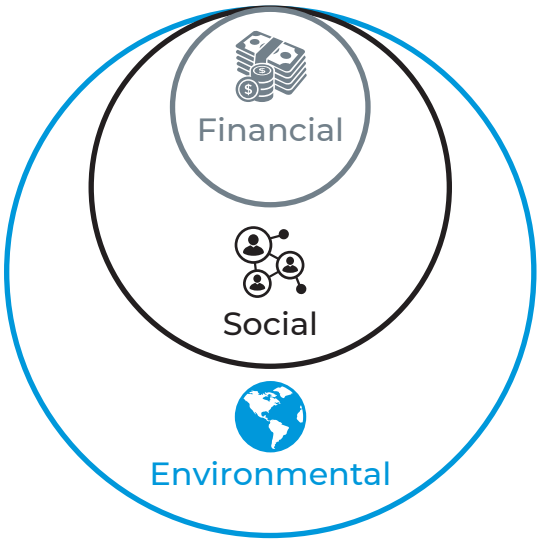
Background and Context

Universities are incredibly important institutions that support and deliver on national and global environmental sustainability objectives, and UN Sustainable Development Goals (SDGs). The university of Cape Town (UCT) has several world leading research hubs and departments that are closely aligned with environmental sustainability, as well as various faculties and departments that do so. Through these, UCT has produced and contributed very significantly to research and to growing human capital on matters of environmental sustainability.

UCT has for many years demonstrated that it aims to be a university that is committed to environmental sustainability at various levels going back to the Talloires Declaration of 1990[1]. Over the years, UCT's activities and follow through on this has been somewhat sporadic and fragmented; yet the intent and commitment has never wavered. To give this commitment greater focus and attention, UCT in 2018 created a dedicated Directorate in the Office of the Vice Chancellor and in April 2019 appointed a Director for Environmental Sustainability to lead this function. One of the first activities is to develop UCT's strategy for environmental sustainability, for which a draft version is summarised in this executive summary.

The approach to the environmental sustainability strategy is to build on the prior commitments and actions at UCT, and the strong sustainability related academic and research activity that UCT leads. The Environmental Sustainability Directorate within the Office of the Vice Chancellor will give direction and build momentum for the permanent integration of environmental sustainability in all spheres of the university. A well-functioning Environmental Sustainability Directorate will allow for a phased approach to implementation with resources and budget allocations that grow over time to support this strategy. Through consultation with UCT's Executive and broader senior management team, students and various key internal and external stakeholders this strategy will be refined, further developed and gain support from all spheres of UCT. The strategy will align and support UCT's values and form a key part of UCT's Vision 2030.

Three Levels of Sustainability
Triple Bottom Line



What is Environmental Sustainability?

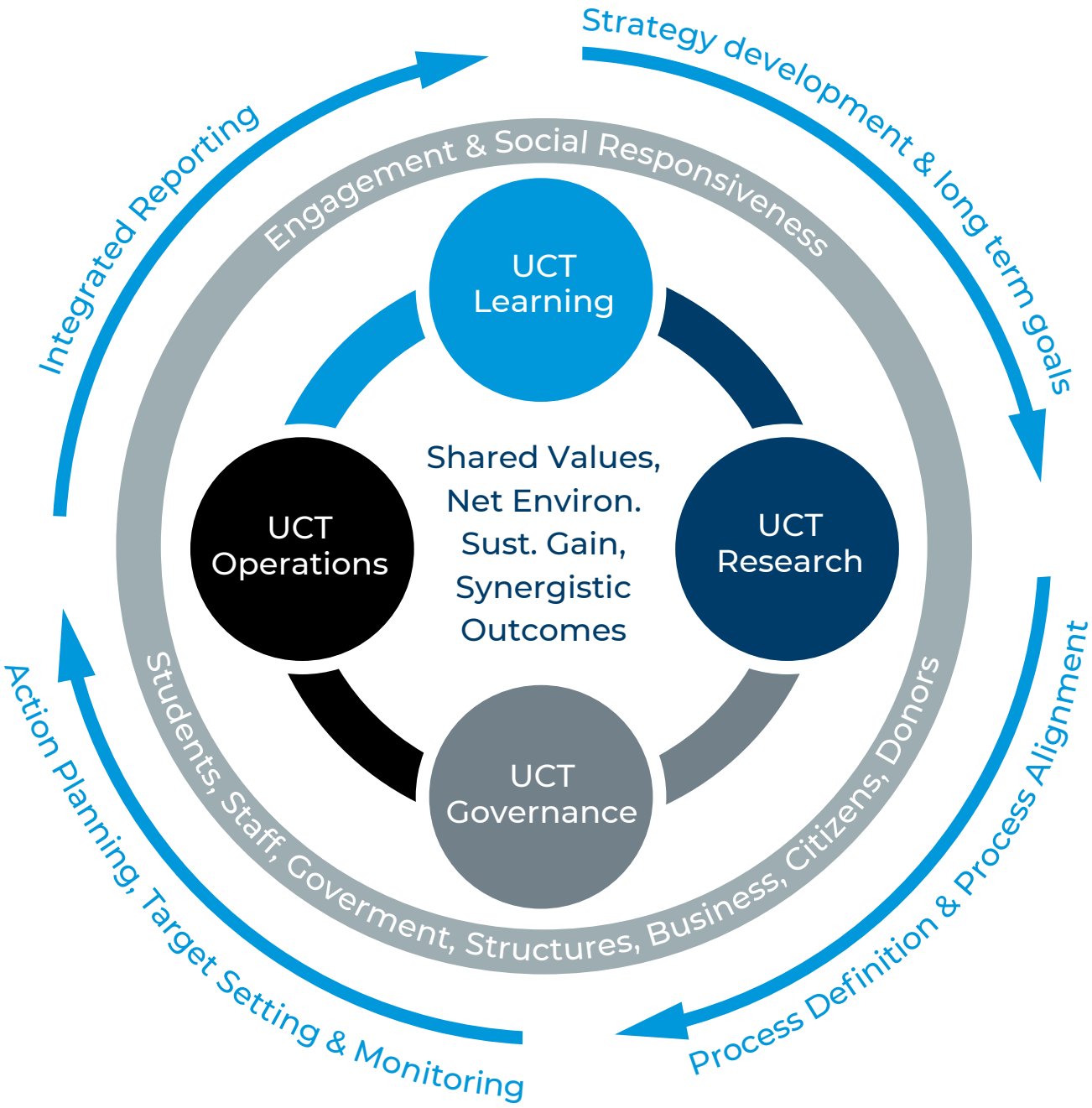
The role of humans interacting directly or indirectly with the natural environment to preserve and protect it, so that nature and humans can thrive in this generation and for the generations to come.

UCT is committed to contributing more broadly to the UN's 17 Sustainable Development Goals (SDGs). This environmental sustainability strategy supports UCT's contribution towards the SDGs.

[1] Twenty-two presidents, rectors, and vice chancellors of universities from all over the world convened at the Tufts European Centre in Talloires, France from October 4-7, 1990 to discuss the role of universities and, in particular, the role of university presidents in environmental management and sustainable development. The Talloires Declaration 10 Point Action Plan is from the Association of University Leaders for a Sustainable Future. Creators and Original Signatories included UCT's Vice-Chancellor Stuart Saunders. The Declaration is a consensus statement authored by 31 university leaders and international environmental experts representing 15 nations from the global North and South.

Overview of the Strategy

The environmental sustainability strategy can be illustrated through the below diagram, which is expounded on in the description that follows:



Learning at UCT

1) The intention is for every student that passes through UCT to receive some basic training in environmental sustainability, to encourage all students to be active citizens in protecting the environment on and off campus.

2) Faculty or curricula specific courses will be created or further developed, where appropriate, to strengthen the coverage of course content on environmental sustainability related aspects that have a direct or indirect relationship to a field of study.

Research at UCT

1) Intensify, strengthen and further promote existing environmental sustainability related research.

2) Create a Living Lab experience via research linked to campus facilities and campus property related projects that support on-site real-life environmental sustainability research opportunities[1].

3) Strengthen links and awareness of environmental sustainability in any research that occurs at UCT.

Governance at UCT

1) The appropriate governance structures will be created or modified to support UCT's strategy for environmental sustainability, which cuts across all aspects of the university from its facilities, human resources, student life, procurement, application of finance and general UCT culture.

2) Environmental Sustainability will become integrated into governance and operations at UCT.

Environmental sustainability must be a key active component of UCT's Vision 2030, at a time when urgent global environmental action is required. A vision statement for environmental sustainability must be crafted as part of the development of the 2030 vision.

[1] Living Labs

Operations at UCT

1) UCT aims to create and maintain a healthy environment in which students, staff and visitors can flourish, through its outdoor and indoor spaces that increase linkages and access to natural vegetation, daylight, external views and fresh air, and minimise and eliminate the amount of toxins and harmful products in buildings.

2) UCT will aim to reduce energy consumption, carbon emissions, water consumption and waste-to-landfill to a net zero state by approximately 2050 for the overall university, which will require approximately 2-5% reductions annually off a 2020 baseline (smaller increments in earlier years and larger increments in later years). These annual targets are incredibly ambitious for a tertiary institution such as UCT which require complete commitment from all stakeholders, especially UCT leadership. The long-term goals align with best practice and UN goals for climate change mitigation (Paris Agreement).

3) UCT will integrate various other green campus elements that support UCT's aim to be a global leading green campus, including aspects such us walkability and fossil free mobility, biodiversity, digital & data connectivity, sustainable food and sustainable procurement.

4) UCT will lead a steady structured shift towards responsible investment, including towards a steady reduction in fossil fuel intensive investments, both in its endowment and pension fund investments. (This has both operational and governance implications).

Engagement & Social Responsiveness

1) Students are the primary beneficiary of the university, and the purpose of the environmental sustainability strategy is to foster an environment in which more and more students actively engage with and support environmental sustainability on and off campus – the strategy will aim to increasingly grow student involvement and engagement in environmental sustainability.

2) Staff are critical enablers and leaders at the university, and thus play a leading role in taking ownership and responsibility to ensure that the university's environmental sustainability strategy is implemented and continues to gain ground whilst students transition through their university experience – the strategy will aim to increasingly grow staff involvement and engagement in environmental sustainability.

3) The environmental sustainability strategy will play a significant role in impacting the community that interfaces with the university through its students, staff, media and its existing community programs, to become extended beneficiaries of the strategy. This will also allow relevant community organisations the opportunity to engage with the university in support of the strategy, sometimes adhoc and informally and sometimes in a more formal partnership (IARU, ISCN, WWF, Green Building Council SA, Greenpop and acuho-i are a few examples of the more formal relationships). The strategy will aim to increasingly grow community (external stakeholders) involvement and engagement in environmental sustainability through UCT programs and activities. The strategy is one that supports the safety, health and well-being of humankind and the natural environment, and thus is well aligned to UCT's social responsiveness drive.

The Strategy has Shades of Green & Long Tearm Goals

The strategy allows for shades of green, acknowledging that not everything can be dark green, and has long term goals. Actions must be underpinned by a good social return and a good financial return for UCT.

Net Zero by 2050 for these aspects:

Carbon[1]/ Energy

Water

Waste to Landfill

2-5% Reductions anually from 2020

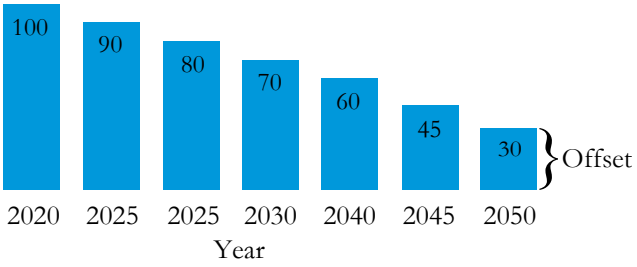
Example of a Long Term Goal Translated into Immediate Action- Energy/ Carbon

Contributors likely from:

30% Existing Operations & Maintenance
30% Infrustructure Investment
10% Behaviour Change
30% Carbon Offsets / Energy Purchase

Net Zero Carbon by 2050 Scenario:

Approximately 2-5% reduction per annum
Reduction down from 100%



A detailed business case will be developed for the various scenarios and pathways to Net Zero by 2050 for carbon, energy, water and waste, to understand the capital and operating cost impacts, and resource requirements vs different scenarios for reductions.

Aligning UCT Strategy with Local and Global Standards & Trends

"achieve a zero-carbon building standard by

2030"

Page 288 of South Africa's NDP 2030

"all new buildings to be net zero carbon by 2030 and all existing buildings by 2050"

[1] This commitment refers to scope 1 & 2 carbon emissions, although scope 3 will also be recorded and reduced, although the long term goals are not yet clear.

A Key Objective of UCT- Reducing Greenhouse Gas Emissions

Scope 1: Direct Emissions

Aircon Refrigerants gas

Jammie Shuttle & UCT Vechicle Fleet

UCT Average % over the past few years: 3%

Scope 2: Indirect Emissions - Purchased Electrictricity

Building Energy Consumption

UCT Average % over the past few years: 74%

Scope 3: Other Indirect Emissions

Air Travel, Car Hire, Procurment of Goods, Waste

UCT Average % over the past few years: 23%

Project Examples

UCT Solar Photovoltaic Project

- In 2020 UCT has undertaken a detailed feasibility study accross all campuses to determine the potential for solar photovolic systems.

- UCT now has a detailed report including cost estimates for 30 buildings /sites on which a system would be feasible, representing about 2.5MWp of UCT's overall maximum electrical demand.

- In 2021 UCT will be exploring funding and finance options and start planning the roll-out, while rooftop PV will already be rolled out on one or two new construction projects in 2021, such as the new d-school on middle campus.

Water Sustainability Project Underway

In 2018 UCT received R70 million from DHET while UCT contributed R10 million towards this project.

- A detailed sustainable water management strategy has been developed that maps out various scenarios and a business case to enable UCT to become a Net Zero Water campus by 2050. Per DHET grant, the initial implementation for this funding tranche is focused on student residences where water consumption is greatest.

- While the initial focus over the first 3-5 years will mostly be on student residences, UCT will need to consider what additional funding and projects are rolled out over the next 30 years in line with the detailed business to achieve the broader strategy objectives.

Project Examples

Green Buildings

UCT has for a few years now had a policy in place that every new building constructed must be a green building of at least 4 Stars certified by the Green Building Council South Africa (GBCSA) using the Green Star standard.

Green buildings are resource efficient, reduce the impact on the environment and are healthier for people. Having UCT's new buildings certified by the GBCSA allows for an independent audit of the project team's green building design and gives assurance to UCT of the green building credentials of the project.

The following UCT buildings have been certified as green buildings by the GBCSA:

- New Lecture Theatre, Upper Campus (2017).
- GSB Conference Centre, Breakwater Campus (2019).
- Avenue Road Student Residence, Middle Campus (2020).

A number of other buildings under construction are targeting green building certification.

- Project photo: the new d-school on middle campus is targeting a 6 Star Green Star rating, which according to the GBCSA is world leadership.

UCT online course for all students on Environmental Sustainability

- The development of an online course on environmental sustainability is planned. Ideally it should be a blended medium course but this may not be practically feasible.
- It could include some kind of environmental sustainability related community service.
- The aim is that it contributes to a student's overall credits at UCT, to produce a well-rounded citizen.
- It is important to analyse the success of other universal courses offered at UCT before starting and deciding how to implement this to achieve maximum reach.

Living Labs

The concept of UCT's campuses being a Living Lab[1] for students and staff is a central component to the environmental sustainability strategy. The concept has taken root at many universities and is based on the idea that research and learning can occur through the campus facilities and projects/operations happening on these facilities - research and learning does not need to be limited to the classroom and the laboratory with only academic staff leading this work. The Living Lab approach creates greater collaboration between academic staff, students and staff that are managing the facilities and operations on campus. There are just so many fantastic learning and research opportunities that are linked to the real life experiences of the day to day operations of a campus such as UCT - below are a few examples of Living Lab ideas already under development:

- **UCT Photovoltaic Installations**
  This project will allow for the opportunity for permanent data feed and research by the department of electrical engineering, on UCT's various photovoltaic installations.

- **UCT Water Sustainability Project**
  This DHET funded project allows for significant collaboration with UCT's Future Water Institute and the EBE faculty, which in turn will create a number of wonderful water related Living Lab research projects on campus.

- **UCT Intergrated Pest Management**
  The department of Biology is exploring the potential to do some ongoing monitoring of rodents and small animals on campus to help UCT understand the impact of its pest managment. This work is closely tied with how UCT manages its waste and "pests" on site, as these have an impact on the surrounding wildlife.

[1]https://campusaslivinglab.org/wp-content/uploads/2019/06/new_RZ_Living_Lab_handbook_9.5.19.pdf

Implementation of the Strategy

The Environmental Sustainability Directorate, as well as in various existing UCT faculties and departments will require resources for the successful implementation of the strategy. It is expected that the speed of implementation in each of the above five spheres (shown on page 4) will vary depending on the resources including financial allocations to support this. The final strategy will be translated into annual implementation plans and projects, that are budgeted for and resourced within various departments or within the Environmental Sustainability Directorate, depending on the most appropriate approach to the operational roll-out of a project. The 2020 & 2021 resourcing and initial financial budgetary allocation is designed to serve as an initial launch of the directorate. While the directorate is in its formation stage and only has 1-2 staff members, it will mostly be focused only on the "operations" aspect of the strategy and less so on the teaching, research, governance and engagement elements of the strategy. As the directorate achieves greater momentum and some of the projects gain impetus, planned and sustained investment will be required for the work of the unit to grow and achieve success with the environmental sustainability strategy.

Over the next 3-5 years the unit will need additional capacity, in the order of 3-5 key team members, to help ensure that the strategy is able to grow in implementation. The strategy will also require individual departments investing time and money into their own sustainability objectives that support the strategy.

In developing and implementing the strategy the following steps will form part of a continuous implementation cycle:

1) Review the strategy and long term goals and policy, where necessary
2) Process definition & resource alignment.
3) Target setting, action planning, assigning responsibility, implementation and monitoring.
4) Integrated reporting with reference to the strategy and long-term goals. This could include integration into other broader integrated reporting, for example into a future UCT integrated SDG reporting framework.

It is important that UCT considers 'return on investment' as a key metric - this metric can be used to understand the financial implication of an initiative or project within the strategy. While a 'return on investment' measurement will never be the only criteria used to make decisions, it must remain an important consideration to include in the decision-making process. The social cost and environmental cost will also be major drivers for such decisions.

Key Dependencies and Shared Responsibility

How will the strategy be integrated into departments

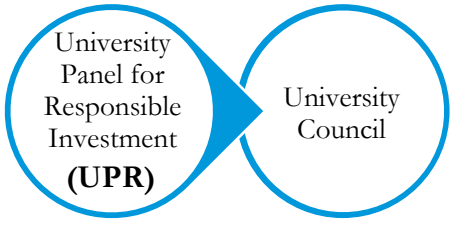
The following is anticipated:

- The Environmental Sustainability Directorate (ESD) prepares strategy, feasibility and concept plans, and in some cases leads procurement.
- For capital projects, P&S would take over the project management function of the implementation, with the ESD retaining a watching brief (for example).
- Faculty & Departments will need champions to drive sustainability within their deparments, to support the overall UCT strategy.

Governance Structures to be Refined and Reviewed to Consider ES Unit

Current Sustainability Governance link for UCT properties/ Facilities

Current Sustainability Governance link for UCT Endowment Fund



Consider what sustainability related governance is required in relation to research, teaching, ICTS, other finance issues etc.

The following are some key considerations in terms of goverance and location of the Environmental Sustainability Directorate:

- Environmental Sustainability is a cross-cutting function at UCT.
- Currently the directorate is positioned in the Office of Vice Chancellor under the Chief Operating Officer.
- Consider what reporting line makes most sense for not just operations, but for the other elements of the strategy, namely teaching, research, governance and engagement.
- Consider what goverance structures need to be created or adjusted to incorporate environmental sustainability as a key cross-cutting function of UCT.

Conclusion

It is essential for UCT to be a leading academic institution when it comes to living up to its values and public commitments, which include environmental sustainability. For this reason, the development and support of this environmental sustainability strategy requires engagement with and full support from the entire UCT community, especially leadership. If one were to summarise the vision of this strategy in one sentence, it could be:

"UCT is an academic institution that values environmental sustainability and has developed an integrated approach to enable every sphere of the university to play its part in building a thriving natural and social environment that can support a safe and healthy life on earth for this generation and for generations to come."

Related Resources

- **Contact:**
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  UCT Director: Environmental Sustainability, in the Office of the Vice Chancellor
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- **Web page link for sustainability at UCT:**
  https://www.uct.ac.za/main/explore-uct/sustainability

- **Past Carbon Footprint Reports for UCT:**
  https://www.uct.ac.za/main/explore-uct/sustainability/downloads

- **UCT's Sustainable Water Management Strategy:**
  http://www.uct.ac.za/sites/default/files/image_tool/images/328/explore/sustainability/UCT_Water-Management-Strategy_Executive-Summary.pdf

- **Sustainability in research & teaching at UCT:**
  - **African Climate & Development Initiative**
    http://www.acdi.uct.ac.za/
  - **African Centre for Cities**
    https://www.africancentreforcities.net/
  - **Future Water Institute**
    http://www.futurewater.uct.ac.za/
  - **Institute for Wildlife & Communities in Africa**
    http://www.icwild.uct.ac.za/
  - **Oceanography**
    http://www.sea.uct.ac.za/
  - **Climate Systems Analysis Group**
    http://www.csag.uct.ac.za/
  - **Environmental & Geographical Science Department**
    http://www.egs.uct.ac.za/
  - **Faculty of Engineering and the Built Environment**
    http://www.ebe.uct.ac.za/
  - **Environmental Humanities South**
    http://www.envhumsouth.uct.ac.za
  - **Environmental Health**
    http://www.publichealth.uct.ac.za/phfm_environmental-health
  - **Energy Systems Research Group**
    http://www.epse.uct.ac.za/esrg