

Central University of Technology, Free State

Sustainable Development Report 2012

THE CUT VISION OF SUSTAINABLE DEVELOPMENT

The vision of CUT as a sustainable university is to become a teaching, research and learning environment which maximizes and mainstreams environmental, economic and social sustainability in all its operations and educational activities.

4 June 2012

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1. CUT Sustainability Strategy

The Central University of Technology, Free State (CUT) has decided to implement sustainable development as central to its strategy and everyday operations. This is not something new, but the consequence of our responsibility for the region, the country and the world, as well as our Vision 2020, which is to make CUT an “isle of innovation” that will help to shape the future. Corporate Social Responsibility (CSR) in the sense of responsibility to the society and its future will be our guideline in following the principles of sustainable development as stated at the world conference on this subject held in Johannesburg in 2002.

It has been decided to implement sustainability in the university and to convert CUT to a university of sustainable development within the next five years. This is not to be a marketing label, but will change the way of operation, thinking and acting inside and outside the campus.

Within its fields of activity, the following four major areas have been identified in which CUT will be active in fostering socio-economic development and the protection of resources and the environment:

- Analysing and optimisation of operations and all activities that may have a direct impact on the economic and social life on campus and on the consumption of energy and resources, as well as the environmental quality of the campus. Students and staff will be supported in projects contributing to the creation of a green campus.
- Optimisation of the direct impact on the community and region, local schools and regional education by the direct interaction of staff and students and by organisational support for local and regional organisations at any level with respect to sustainable development.
- Education for sustainable development is considered to be the most important potential impact of a university in this regard. Methods and contents of teaching and learning will be reconsidered and where necessary adapted to enable and encourage students/graduates to act in support of sustainable development.
- There will be engagement in research to support sustainable development. Research activities will be enhanced in fields that are relevant to the impact on a livable future by the university, its students and the community it serves. The knowledge created at CUT will support sustainability by means of publications, knowledge transfer, incubation and projects.

Compiled by: Prof. T Z Mthembu
Vice-Chancellor and Principal

2. Sustainability Management Approach

2.1 The responsible University

The natural environment influences all living and non-living components thereof. Thus it impacts human life, social systems, business systems, and depending on the way we interact with the environment, even the air that we breathe and the food that we eat.

South Africa, coming from a non-sustainable dispensation, needs to adapt its ways if it is to ensure a sustainable future for future generations. The responsibility that CUT has with respect to this is enshrined in the Constitution which pledges an environment which is not harmful to health or wellbeing, that is protected for use by current and future generations. Hence there are clear business and legal reasons for CUT to take measures to limit its environmental impact and the CUT Board is responsible for ensuring that the university develops an overarching sustainability policy and strategy that articulates the standards it will strive to achieve in relation to its environmental impact.

CUT is a responsible university by being responsive to the needs of all stakeholders, both within and outside the university. It strives to align all its operations, including its educational activities, with the principles of sustainable development by being responsive to the needs of all stakeholders, now and in the future.

Students and graduates of CUT function on campus, within their different communities, as well as in the economic and the scientific world. Hence, their inputs are experienced at all these levels. This relationship of CUT and its graduates with the environment is shown in figure 1 below.

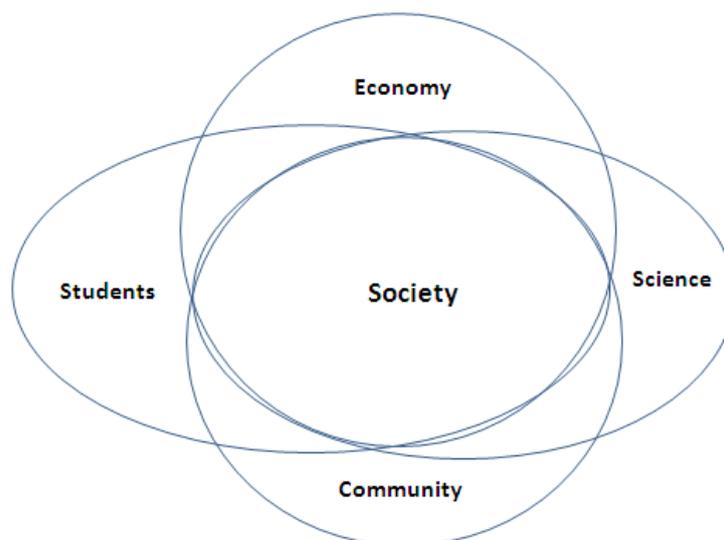


Figure 1: CUT as a responsible university

The effect of CUT as an educational entity, and its educational involvement in sustainable development, takes place by means of the dissemination of knowledge, the contents of its curricula, community engagement and applicable research. This is shown diagrammatically in figure 2 below and is aimed at ensuring excellence in sustainable development both on and off campus, whilst the importance and

underlying principles thereof are inculcated in all its students through the academic process.

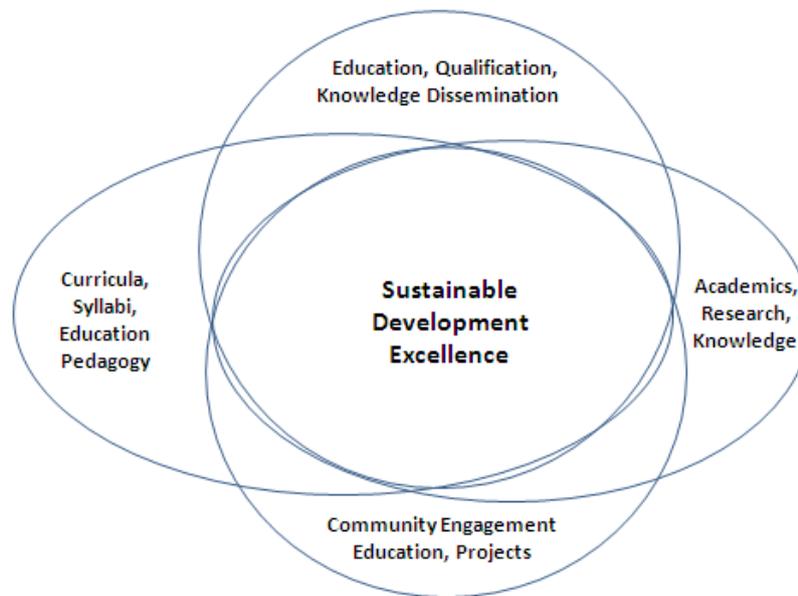


Figure 2: The relationship between educational activities at CUT and excellence in sustainable development

2.2 Development and Implementation of a Sustainability Policy

CUT developed a draft overarching environmental policy. Once this has been formally approved, it should be institutionalized by integrating its standards by means of an environmental programme which forms part of business performance and risk management strategies. The management programme, with direct accountabilities with regard to resource efficiency, waste management and pollution, should ensure that the internal stakeholders are aware of the university's impacts and responsibilities.

CUT conducted a baseline assessment of its educational, societal and environmental impacts to aid in the identification of relevant sustainability risks and opportunities. However, environmental risks should not be considered in isolation, but should be integrated with financial and social risks. This study informed this annual sustainability report, whilst the contents of subsequent reports will be more comprehensive as sustainability is rolled out by CUT and additional information becomes available through the enhancement and continued roll-out of the sustainability indicator system.

The following are typical issues to be considered with respect to sustainable development:

- Assessment of the financial, infrastructural and staffing situation at the University with respect to the continued successful functioning of CUT in meeting its statutory obligations.
- A possible reduction in the amount of electrical energy and fossil fuels used.
- The local generation and use of alternative, clean energy.

- Waste reduction and optimal use of recycling.
- Doing business with likeminded companies.
- Striving towards the functional integration of the utilization of the environment to achieving sustainability.
- Development of, and contribution towards technologies that reduce adverse environmental impacts.
- The complete integration of sustainable development into the curricula of all academic programmes taught at CUT.

An appropriate environmental management system should be developed and implemented effectively. This should include the following four aspects:

- The sustainability policy should be relevant and achievable in both the short and long term.
- Provision of the proper assessment of the university's environmental impact, with particular reference to its impact on waste and pollution, effectiveness of resource utilization and climate change.
- The functional integration of the management of environmental issues in all aspects of its operations. The university's environmental management systems should be relevant, functional and effective as well as integrated into all aspects of the university's activities.
- An appropriate format of reporting should be compiled and availed to Council and other internal structures, as well as to external stakeholders. Over time, reporting should include an outline of the environmental management system and independent verification.

This should be complemented with a sound financial and operations sustainability programme and monitoring mechanism.

2.3 SD Project Plan

Activity	Date
Project commences	November 2010
Kickoff meeting and launch of project team	February 2011
Analysis of present situation	March 2011
Compilation of Project plan	March 2011
Definition of sustainability policy	April 2011
Sustainability programme compiled for 2011	April 2011
Sustainability programme compiled for 2012	December 2011
Approval of sustainability framework	March 2012
Preliminary sustainability report for 2011	March 2012
Sustainability report 2011 published (external)	May 2012
Preliminary Sustainability report 2013	February 2013
Sustainability report 2013 published	February 2014
University for Sustainable Development	January 2014

2.4 SD Portfolio

The role of CUT as a responsible university is to positively affect the environment in terms of sustainable development in four concentric circles of influence as represented in the following schematic diagram:

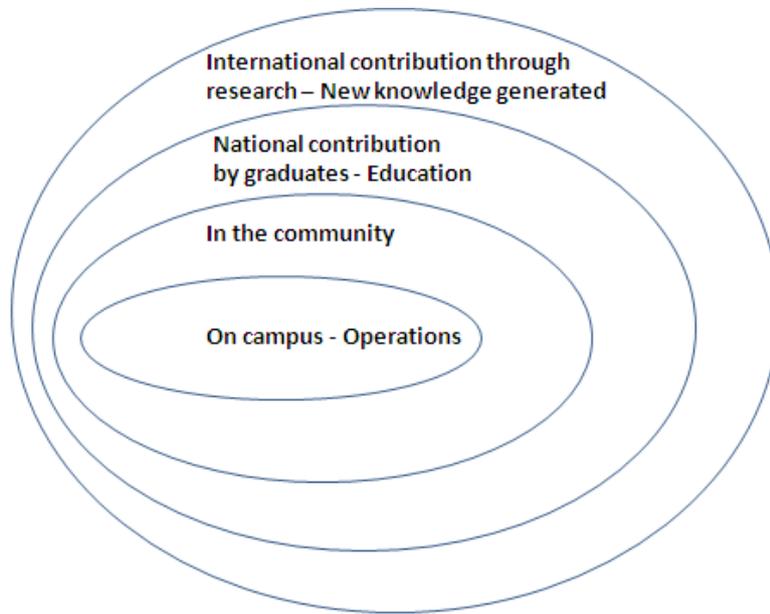


Figure 3: Diagrammatic representation of CUT’s role in sustainable development.

The following table represents a more comprehensive representation of the manner in which the SD portfolio is being implemented.

Table 1: The SD portfolio of CUT

	Overall Holistic Intergenerational	Environment Resources	Economics Management	Social Political Intragenerational
Site Level Campus	Sustainability@CUT	Green Campus	Economic Sustainability	Blue Campus
Local/ Regional Community Development	Cooperation programmes	Climate protection programme	Entrepreneurship Sustainable Economy	Community Engagement

Regional/ National Education Cooperation	ESD in curricula	Energy Engineering for Sustainability	Entrepreneurship	ESD in teachers education
National/ Global Research Cooperation	Cooperation programmes SD in Research	Sustainable Energy Water	Corporate Social Responsibility	Research in socio-economic aspects of sustainability

2.5 Sustainable development indicators

Core performance indicators have been derived from the inputs of institutional sub-teams. These have been populated inconclusively in this report, but this will be much more complete in subsequent editions of this report as its assessment becomes increasingly possible.

Description	Responsible Unit	Value
Organisation of SD activities:		-
Staff and resources devoted to SD	Technology and Innovation	1 Dedicated member of staff and 2 part time
Number of people actively involved in the sustainability project	All institutional units	Selected representatives of all units are involved
Operations:		
Electric energy consumption per student	Operations	Since the electrical energy usage cannot be measured individually, this characteristic will become properly quantifiable only once a university-wide Building Management System (BMS) has been implemented
Water consumption per student	Operations	Since the water usage cannot be ascribed to individual activities or buildings, this characteristic will become properly quantifiable only once a university-wide water management system is in place
Access for all (barrier free campus, transition) Percentage	Operations	Five buildings require lifts to provide access to such
SD culture and awareness amongst staff and students	Student Affairs	60% of respondents in a survey on student perceptions on SD indicated that they are familiar with the concept.
Cleanliness of the campus (survey result)	Operations	This aspect was not formally assessed
Direct impact:		
Number of SD projects	All units	15 projects including that 40% of all CUT computer servers are virtualised
Number of community engagement projects	Community Engagement	Three projects

with a substantial element of SD		
Education for SD:		
Relevant Course subjects and topics	Faculties, Academic Development	<ul style="list-style-type: none"> • 22% of respondents in the staff survey indicated that a substantial part of CUT's teaching includes topics related to SD. • 10 qualifications include a substantial element of SD
Number of students registered for subjects with a substantial SD component		This information is not available
WIL done in the community on SD issues	Faculties	None yet
SD done as an element of Service Learning	Faculties	Two programmes formally include elements of SD
Student environmental declaration available?	Student Affairs	Not yet available
CUT portrayed to feeder schools as an SD University	Student Affairs	To be included as a standard element of marketing
Research and knowledge transfer:		
Number of research projects linked to sustainability that were completed	Faculties	One
Technology transfer activities	Technology and Innovation	One project completed
Communication:		
Number of press releases on sustainability	Marketing with the help of SD Office	One
Quality of SD information on CUT website	Marketing	Only one article on SD is displayed on CUT website
Number of SD posters distributed	SD Office	None

It is imperative that monitoring methods and management control systems be implemented to determine the effectiveness of steps taken in support of SD in general and the project in particular. The effectiveness of such can only be ascertained through the definition and use of a comprehensive set of SD indicators covering all aspects of the Universities operations.

3. Sustainable Development Report

3.1 Sustainable Development Project Team

A Sustainable Development Project Team with representation from all operational units has been established to manage the implementation of the project with the support of the Sustainable Development Office. Each unit established a separate sub-team to drive the process in its area of responsibility.

3.2 General Management and Monitoring of Project Execution

The Sustainable Development Project is an additional assignment for the Technology and Innovation Office with assistance in the form of an overall project leader, Prof. Ulrich Holzbaur from Aalen University of Applied Science, and Ms. Zelda Uwah, the local manager of the project. These individuals are supported by the Director: Technology and Innovation as local co-project leader, whilst his secretary provides administrative support with the roll-out and execution of the project.

During the period of reporting the SD Office developed the following documents to be used with regard to the SD Project:

Description	Status
An information booklet on the Sustainable Development Project.	Distributed amongst all operational units.
Sustainable Development Policy.	A draft version of the document has been forwarded to MANCOM for feedback.
Sustainable Development Framework.	A draft version of the document has been forwarded to MANCOM for feedback.
The format for the Annual SD Report.	Format completed, report being compiled.
Application form for the possible approval of funding of SD projects.	Completed and distributed on campus.
Assessment criteria for determining a benchmark for SD at CUT.	Completed for inclusion in the annual report. To be populated.
Determination of the awareness of staff and students of SD and its importance.	Two surveys were done by Ms Uwah and its results processed.

At its spring meeting, the German National Committee of UNESCO has awarded the title of a "Project of the United Nations Decade for Education for Sustainable Development" for 2011/12 to the project "Sustainability@CUT".

Herewith UNESCO acknowledged the joint effort of Aalen University of Applied Sciences in Germany and Central University of Technology, Free State, to implement a system for sustainable development at CUT.

This award was the result of implementing sustainable development as a central characteristic of the educational strategy and everyday operations of CUT. The long-term aim of the project is to transform CUT to a University of Sustainable Development, supporting sustainable development internally, locally and globally.



Figure 4: Prof. Mthembu, vice-chancellor and principal of CUT, receiving the UN award for the SD Project of CUT from Prof. Holzbauer.

Discussions with all important stakeholders within the university have led to an initial institutional plan and the different organisational units are now working on their implementation concepts. As indicated in the CUT Sustainability Strategy by Prof. Mthembu above, four major fields of activity have been identified to give a common structure to the efforts of organisational units and faculties to foster socio-economic development and to contribute to the protection of resources and environment, viz.:

1. To analyse and optimise operations and all activities that may have a direct impact on the economic and social life on campus and on the consumption of energy and resources, as well as the environmental quality of the campus. This will also involve students' activities.
2. To optimise the direct impact on the community and region, local schools and regional education by immediate interaction of staff and students with such in the implementation of sustainable development activities. Organisational support is to be given in this regard to local and regional organisations at any level.
3. To aggressively introduce Education for Sustainable Development into the curricula. To rethink and revise methods and contents of teaching and

learning to enable and encourage the students to act in support of sustainable development.

4. To engage in research in support of sustainable development. To support sustainability by means of publications, knowledge transfer, incubation and projects.

In 2002 the United Nations (UN) proclaimed the years 2005 to 2014 the World Decade of Education for Sustainable Development. International initiatives in this regard is aimed at helping to embed the principles of sustainable development in education worldwide. UNESCO has been appointed the international Sustainable Development lead agency for the Decade.

On the basis of a unanimous resolution of the German Parliament, the German Commission for UNESCO (DUK) is implementing the UN Decade of Education for Sustainable Development in Germany with the support of the Federal Ministry of Education and Research. The UN Decade of Education for Sustainable Development in Germany is being implemented under the patronage of the Federal President of the Federal Republic of Germany, Horst Köhler.

Successful and innovative projects in Education for Sustainable Development have the opportunity to be introduced for recognition as an “Official German Project for the UN Decade”. These awards help make the Decade's concerns more visible.

3.3 Mission of Sustainability

Whilst there are various definitions of sustainable development being used by students of sustainability – most of which are very similar in essence - the following is considered as representative of CUT’s understanding of this field of study and activity:

Sustainable development meets the needs of the present generation without compromising the ability of future generations to meet their own needs. It offers a vision of progress that integrates immediate and longer-term objectives, local and global action, and regards social, economic and environmental conservation and protection issues as inseparable and interdependent components of human progress.

3.4 Marketing and Communications

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

- Number of press releases on sustainability
- Quality of SD information on CUT website

Programmes and Actions

- One newspaper article on renewable energy was published during the period of reporting.
- An introductory article on the launch of the Sustainable Development Project can be accessed on the CUT website.

General

A formal mass communication system should be developed and implemented for the SD Project as an effort to acquire the buy-in of all CUT staff and students. Currently there is insufficient visibility of the Sustainable Development Project on campus. In addition efforts should be made to include reference to SD as a central business and educational philosophy for CUT in all public and institutional speeches by senior staff.

There is a serious need to upgrade the CUT website so as to include more evidence of SD as a central theme of the university whilst it may be beneficial to compile a funding proposal to partially finance the long-term roll-out of the project. In addition a series of posters on the topic is to be developed by arts students and displayed on notice boards around campus.

3.5 Operations, IT and Logistics

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

- Electric energy consumption per student
- Water consumption per student
- Access for all (barrier free campus, transition) Percentage
- Cleanliness of the campus
- Number of SD projects executed by unit

Programmes and actions

Use of Electrical Energy on Campus

A free walk-through survey on the usage of electrical energy on campus that was done in 2010 did not provide adequate information to determine which strategies would provide the highest cost saving impact. Hence the appointment of consultants to do a full audit of electricity usage and advising on savings measures and the implementation thereof is required. This will inform possible implementation of measures that can be taken to decrease the use of electrical energy by CUT to heat water (particularly in residences) Such measures may include implementation of building management systems and the use of alternative energy, heat pumps, power factor correction, etc.

The optimal utilisation of standby generators to ensure continued functioning of essential operations during power outages must also be reconsidered.

Recycling

Good progress has been made in planning the placement of recycle bins on campus. This practice, linked with an awareness campaign, will commence early in 2012. The target is to cover 30% of both campuses with recycle bins.

All grass cuttings are availed to the Mangaung nursery

Information and Communication Technology (ICT)

Server Virtualisation:

During 2011 ICT have decommissioned 12 physical servers and converted its function to a virtual environment. This move cut down on power and cooling requirements. Currently 40% of CUT servers are virtualized. It is aimed to have a minimum of 50% of CUT servers virtualised by the end of 2012.

Computer Management:

A tender was issued for a system to automate computer management on campus. The tender was approved in January 2012. This will allow us to centrally set policies regarding power saving on computers when it is not in use – such as PCs going automatically into sleep mode if not used for an extended period of time..

General

All new buildings are built to make use of natural light to lower electricity use. Where relevant, solar power will be used for water heating. Operations are in the process of developing a set of standards for the air conditioners

There is currently no formal SD awareness program within Facilities, but all planning take into consideration sustainability, both in terms of financial and environmental aspects.

A major challenge faced is the inability to measure power usage against targets. Buildings do not have separate meters. With the BMS system (described above) it is also being planned that buildings will have separate meters to measure building utilisation. It is also planned that aircon, power outlets and lights be separated to allow for separate management.

The possible replacement of geysors, including the fitting of special shower heads to ensure the use of less water, by solar powered heating are being considered. This will include the heating of water on the sport fields. These activities are planned with the assistance of Eskom.

The possible utilisation of bore-hole water for the flushing of toilets are considered whilst plans are underway to develop a standard set of specifications for lighting – especially terrain lighting.

3.6 Faculty of Engineering and Information Technology

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

- Relevant Course subjects and topics
- Number of students registered for subjects with a substantial SD component
- WIL done in the community on SD issues
- SD done as an element of Service Learning
- Number of community engagement projects with a substantial element of SD
- Number of research projects linked to sustainability that were completed

The following projects were executed in the different schools of the Faculty:

School for Mechanical Engineering & Applied Mathematics

Commercial Solar Greenhouse Project – use solar energy to heat greenhouse in winter and blackout techniques to reduce solar energy in summer – planning to run first trial runs this coming winter on cut flowers. The school for Electrical Engineering and Computer Systems collaborates in this project.

School for Electrical Eng & Computer Systems

The following projects were done:

- Development of a sun follower system for optimal efficiency of solar energy collectors.
- A project on solar and wind energy.
- Paper read at an international conference:
Wind system as power solution for network operators in the D.R.Congo

Two new academic programmes are under development, viz.

- Diploma in Sustainable Energy Advising
- Higher Certificate in Renewable Energy Technologies

School for Civil Engineering & Built Environment

During the 2011 academic year the School initiated the following research clusters with sustainable development issues in mind:

- Sustainable Water Resources and Environment: Currently there are on-going research projects and two postgraduate students are working in this area.
- Sustainable Highways and Transportation Engineering: Currently there are two postgraduate students working in this area.
- Sustainable Urban Planning and Integrated Infrastructure Development: Currently there is one postgraduate student working in this area.

General

The sustainable development project, and the effective integration of its principles into all engineering programmes, is an opportunity to elucidate the fact that engineering has a net positive effect on the socio-economic situation, without causing a substantial deterioration of the environment.

3.7 Faculty of Management Sciences

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

- Relevant Course subjects and topics.
- Number of students registered for subjects with a substantial SD component.
- WIL done in the community on SD issues.
- SD done as an element of Service Learning.
- Number of community engagement projects with a substantial element of SD.
- Number of research projects linked to sustainability that were completed.

School of Government Management

- One Unit in the second semester year module Public Service Delivery I PSD12AB focuses on Sustainable Development.
- A Clean CUT Campus campaign was launched. A group of students compiled an action plan for the implementation of the Clean CUT Campus Campaign. Representatives of the same student group presented the Action Plan to the newly appointed Student Council and Mr LP Kokoana during as well as, under the guidance of Mr Logan Munsamy, to members of the Mangaung Metropolitan Municipality during November 2011.

Tourism Management

- Four Tourism Management subjects include components of sustainable development.
- One MTech project in sustainable development is being done.

Hospitality Management

- One subject of this course has got a substantial SD contents.

Tourism Hospitality & Sport Projects

Title of Activity	Description	Status
Recycling of waste paper	Waste paper donated to community organisations	Ongoing
Used Arch file donation	BDC Travel: recycled to students	Oct 2011
Strongbow	Capacity building project in eco-tourism and sustainability	2011-2014

Strongbow workshop	Industry experts from all over SA addressed delegates	Aug 2011
Conference attendance:	Three staff members attended the Sustainable Tourism Summit	July 2011

School of Entrepreneurship, Business Development and Accounting

- The SD infusion in the current programs is low and to a certain extent difficult to separate from the normal subject specific contents.
- The program in Project Management is largely based on SD principles.
- The program Internal Auditing, with special reference to the KING 3 reporting system on corporate governance, is largely aligned with the over arching SD characteristics.
- The booklet Sustainable Development@CUT was distributed amongst programme heads with the understanding of sharing the ideas with colleagues and looking at the possibility to incorporate a SD approach in the core curricula.
- It is a challenge to establish a SD paradigm in these programmes because it was previously more linked to the natural and hard core' sciences.



Figure 4: Attendees at a sectional sustainable development meeting of Management Sciences. From left to right: Prof. GD Jordaan, Prof. P le Roux, Mr. L Munsummy and Prof. U Holzbaur.

3.8 Faculty of Health and Environmental Sciences

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

- Relevant Course subjects and topics.
- Number of students registered for subjects with a substantial SD component.
- WIL done in the community on SD issues.
- SD done as an element of Service Learning.
- Number of community engagement projects with a substantial element of SD.
- Number of research projects linked to sustainability that were completed.

3.9 Faculty of Humanities

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

- Relevant Course subjects and topics
- Number of students registered for subjects with a substantial SD component
- WIL done in the community on SD issues
- SD done as an element of Service Learning
- Number of community engagement projects with a substantial element of SD
- Number of research projects linked to sustainability that were completed

Academic Unit	Design Technology and Visual Art
Project name:	Saving Planet Earth from an Art and Design student's perspective
Description of project:	<p>The students formed groups of no more than 4 students per group and created their own version of a super hero to save planet earth. This super hero's design must have strong South African and CUT roots. This part of the project will contribute to their subject Two Dimensional Design.</p> <p>The final stage of this project was the 3D building of the super hero consisting of used material in group format to teach the students how to work in a group which is a graduate attribute of this university. The final project is displayed at the School of Design Technology and Visual Art.</p>

Results achieved

The following photograph shows the so-called “aqua trach super hero” constructed by arts students from recyclable material collected from campus. Its purpose is to remind everybody that passes to implement the three R’s in their everyday life, viz. Re-use, reduce and recycle.



Academic Unit	National Diploma: Fine Art
Project name:	Humanity’s misappropriation of the environment
Description of project:	Students were tasked to expose the abuse of the world by humans. It was to consist of at least three paintings. This series will be of such a nature that it will reflect a progression that alludes to man’s gradual destruction of the environment.
Details of Sustainable Development elements of the project	The project brief regards social, economic and environmental conservation and protection issues as inseparable and interdependent components of human progress and is therefore in line with the definition of sustainable development.

Results achieved

This represents an example of a student's work in meeting the assignment as defined above. In it the gradual hypothetical deterioration of a piece of the environment is shown.



Teachers Education

General

Emphasis was placed on informing staff of this unit about the importance of educating their students in the principles of sustainable development since it will be incumbent on these graduates to establish an awareness of SD amongst their learners once they are teachers.

3.10 Curriculum Development

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit:

Number of staff actively involved in the sustainability project.

Number of research projects linked to sustainability that were completed.

Relevant Course subjects and topics introduced into curricula.

The presence of WIL done on SD issues.

The presence of SD in Service Learning.

Programmes and actions

This unit should monitor the integration of SD principles in all curricula. It has also been decided that SD should form part of the core curricula of all qualifications which are to be implemented in future. This should preferably include at least one programme offering with a strong element of sustainable development, normally supplemented by additional subject-specific course content. To ensure that this

issue receives the necessary attention some SD content must be specified in the curricula and formally assessed.

As the re-curriculation of all programmes gather momentum for official registration later during 2012, this unit should become increasingly involved in monitoring the incorporation of SD in all curricula.

The possibility of defining a certain awareness of sustainability by CUT students as an additional graduate attribute is being considered.

3.11 Students Affairs

Sustainability Indicators

The following sustainability indicators have a direct bearing on this operation unit

- Student environmental declaration available?
- CUT portrayed to feeder schools as an SD University?
- SD culture and awareness amongst students.
- Cleanliness of the campus.
- Number of SD projects done by students.
- Number of community engagement projects with a substantial element of SD done by students.

This operational unit was involved as follows in the SD projects:

Project / Activity	Project/activity objective	Target / Partners	Indicator /Outcome
Community service sustainability meeting	Deepening SD culture and awareness amongst students; Encouraging them to support projects relating to SD.	All student associations.	Close to 30 organisations out of 55 attended; This is an on-going developmental matter and associations will be funded based on relevance and responsiveness of the projects to SD.
Induction meeting on SD.	To introduce the SD office with the view of raising awareness on issues of Sustainable Development;	SRC-BFN Campus	14 SRC members including one outgoing President attended; SRC understood and contextualized

	SRC was encouraged to adopt projects that are relevant to latter in their year plan-2012		principles for the insertion of SP programme in the year plan-2012.
Community work focusing on environment: Cleaning campaign	To instill a sense and culture of community service and involve student leadership in community work initiatives.	Bochabela Location next to Pelonomi Hospital 28 students from different associations and all officials of the Governance and Student Life Unit volunteered; <i>(coverage in local newspaper: Free State Bulletin November 2011 publication)</i>	Students cleaned portion of the stream running between the Hospital and the residential area; Residents residing opposite to the stream were encouraged to keep the area clean. Standing relations established with the Municipality: Department of Solid Waste Management.
Collaborating with SD on engaging the municipality	Building sound relations with Municipality on ecological sustainability projects.	SD Office, GSLU jointly partner with Municipality	CUT is due to receive coded bins for recycling purpose from the Municipality.
Committee for Clean Free State Campaign	To create public awareness in fighting littering; Promotion of cleaning the vicinity (home & workplace); To practice recycling; caring for natural environment and assisting in reducing carbon footprint.	Stakeholders (hawkers, business, education institutes, students, NGO's.	Manager: Governance and Student Life Unit was elected as a member of a steering committee to deal with operational aspects.

General

The Deputy Registrar: Student Services expressed the intention to increasingly infuse the activities of the Student Representative Council with sustainable development matters.

4. Sustainable Development Surveys

The Sustainable Development Office at the Central University of Technology, Free State conducted surveys of both the staff and students to determine the overall awareness and knowledge regarding sustainability and the importance thereof. Two different questionnaires were developed for staff and students. A total of 200 students completed the questionnaires. The student survey was divided into the following five sections:

1. Gender
2. Programme of Study
3. Age
4. Understanding of the Sustainable Development concepts
5. Description of Sustainable Development keywords

The staff survey was more detailed and divided into the following sections:

1. Gender
2. Operational unit where employed
3. Age
4. Understanding of the Sustainable Development concepts
5. Description of Sustainable Development keywords
6. SD in curriculum
7. Research
8. Operations
9. Community engagement

The SD Staff questionnaire was circulated to the following units on both the Bloemfontein and Welkom campuses (where applicable):

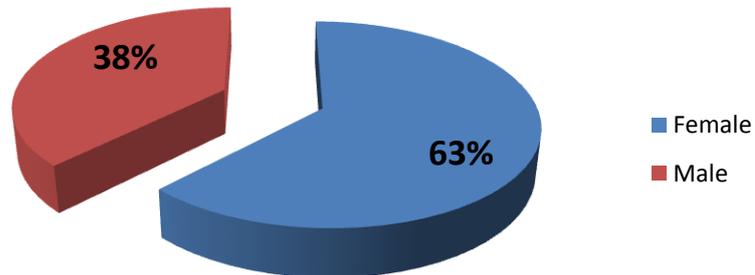
- Human Resource Systems
- Management Sciences Faculty
- Health and Environmental Sciences
- Engineering Faculty
- Humanities Faculty
- Library

A total of 92 completed staff questionnaires were received by the sustainable development office.

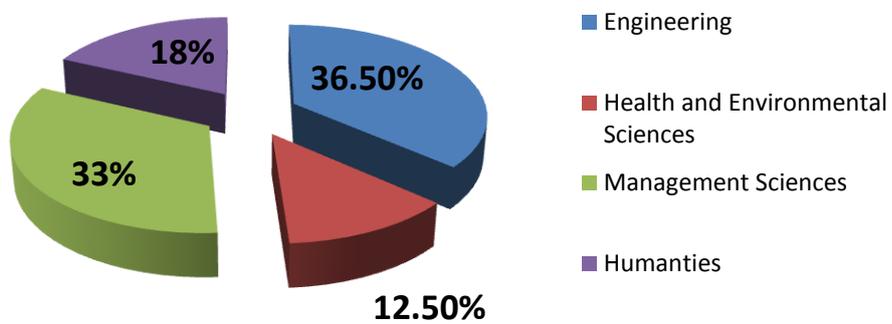
4.1 Results: Student Survey

A. Gender

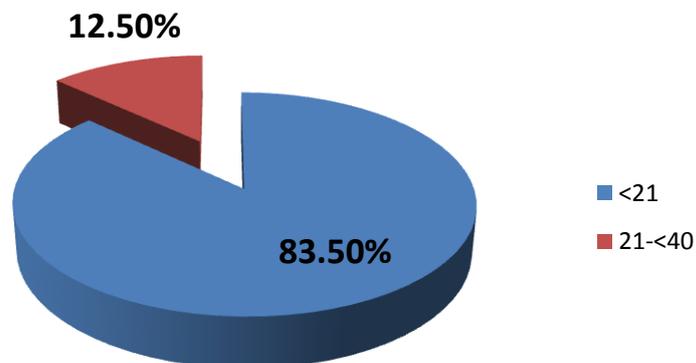
- Female: 125 out 200 – 63%
- Male: 75 Out 200 – 38%



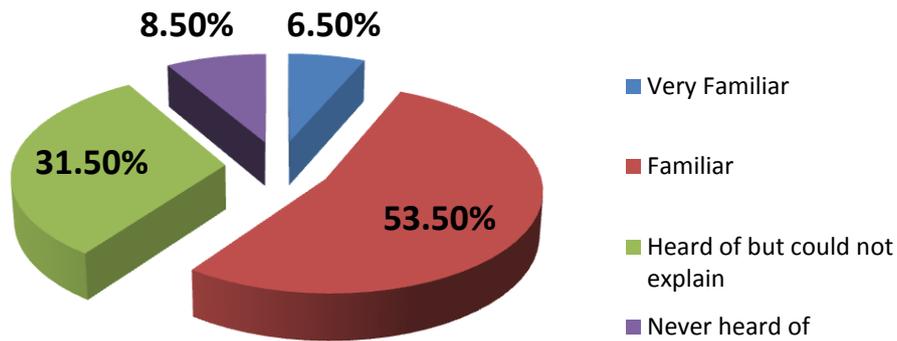
B. Faculty of enrollment



C. Age



D. Sustainable Development Concepts



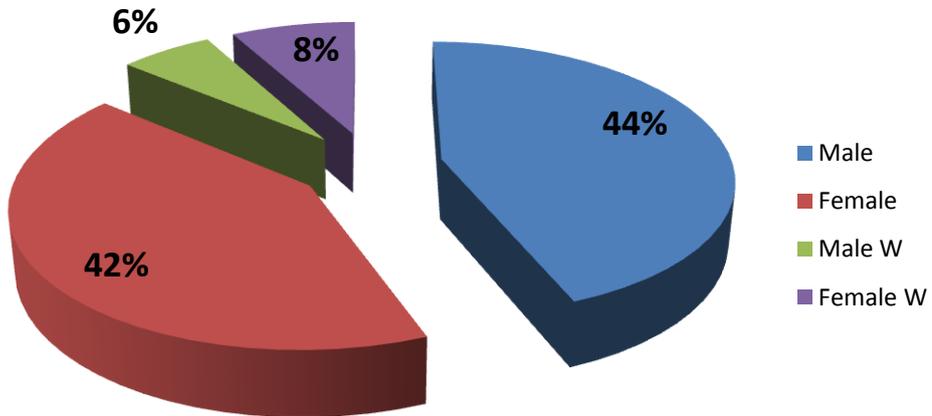
E. Students perception of Sustainable Development (Keywords)

Very Familiar	Familiar	Heard of but could not explain	Never heard of
Housing	Conserve the environment	Growth	Farming
Employment	Environmentally friendly	Development	Environment
Communities	Improving the country	Future	Community
Farming	Developing the country	Saving	Housing
Hands-on	Preservation	Recycling	
Passion	Health	Re-using	
Responsible	Education		
Desire	Resources		

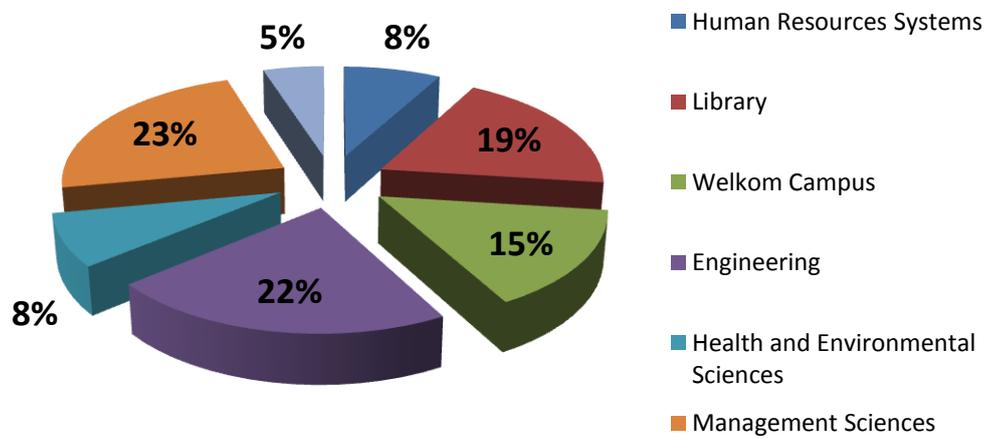
The survey, conducted with a small group of students, indicates a great need to inform / educate students regarding sustainable development concepts as well as the need for it. Most of the students couldn't really express or explain the concept and the few which could, did not have in-depth knowledge of the concept at all.

4.2 Results: Staff Survey

A. Gender

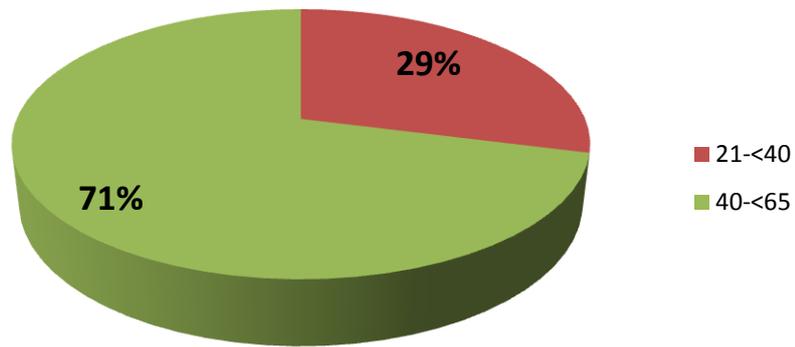


B. Operational Unit response to SD Survey

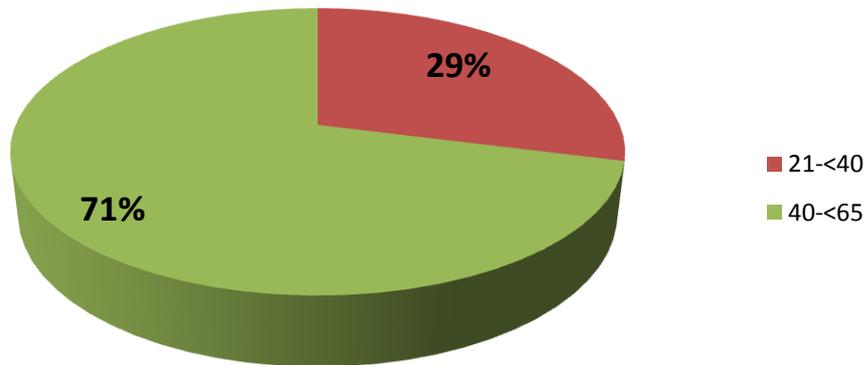


C. Age

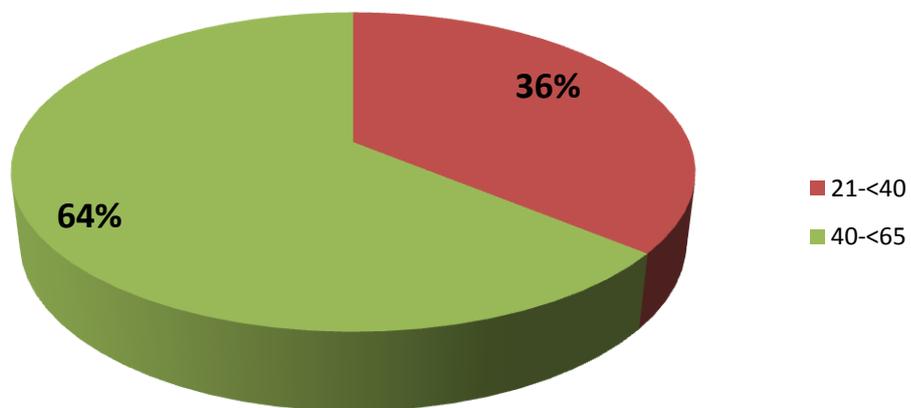
Library Staff



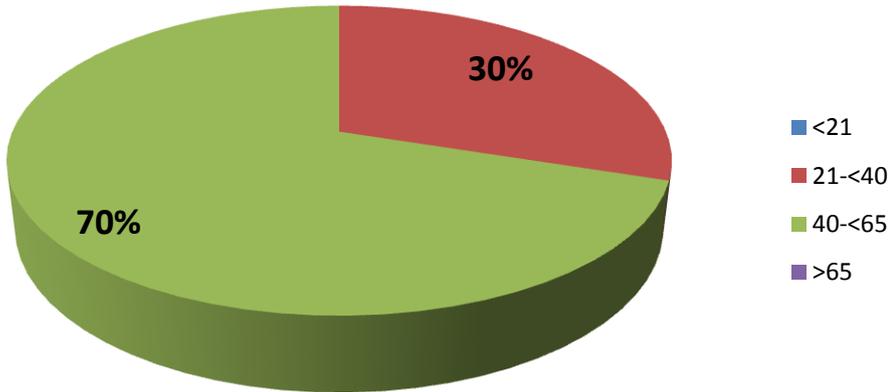
Human Resource Systems Staff



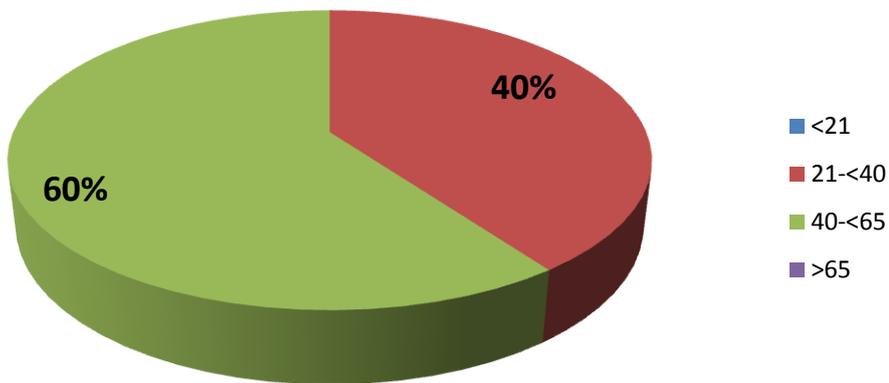
Welkom Campus Staff



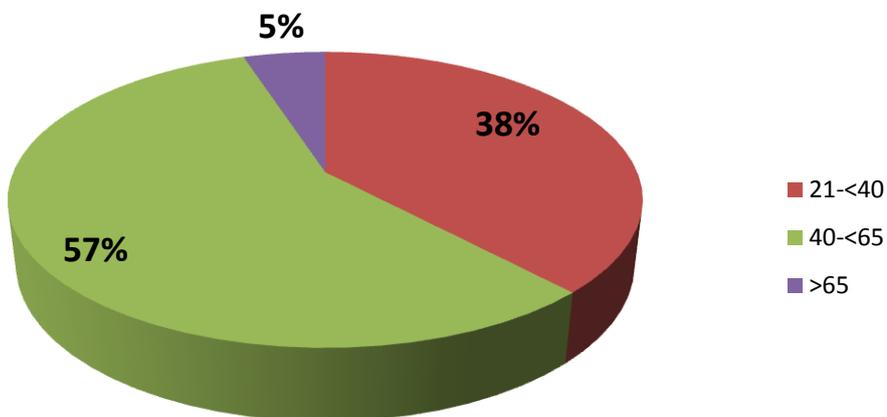
Faculty of Engineering and IT Staff



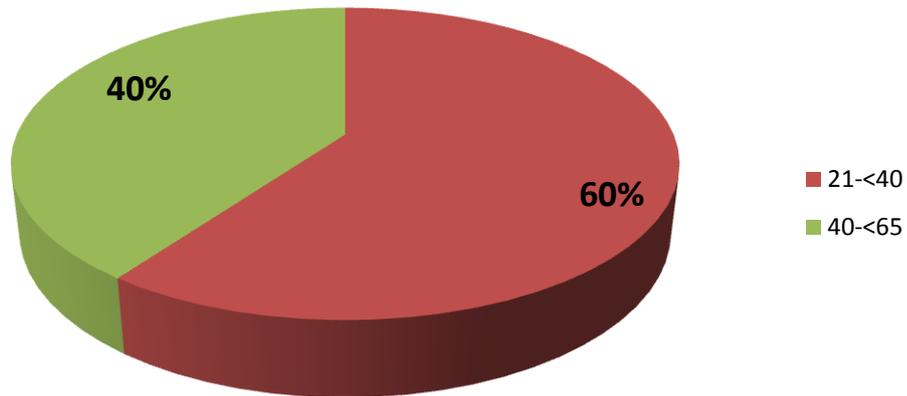
Faculty of Health and Environmental Sciences



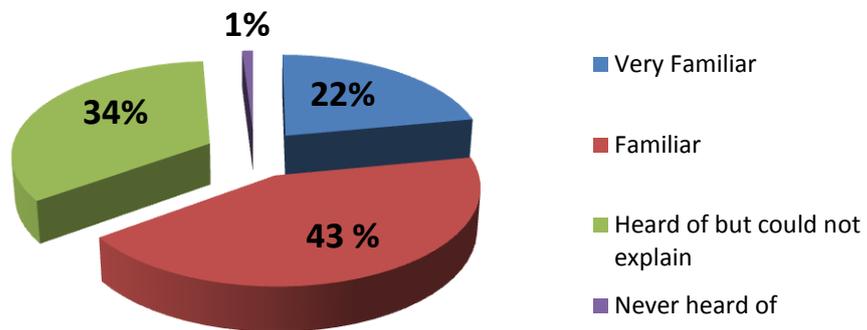
Faculty of Management Sciences



Faculty of Humanities



D. Understanding of SD concepts by Staff



E. Staff perception of Sustainable Development (Keywords)

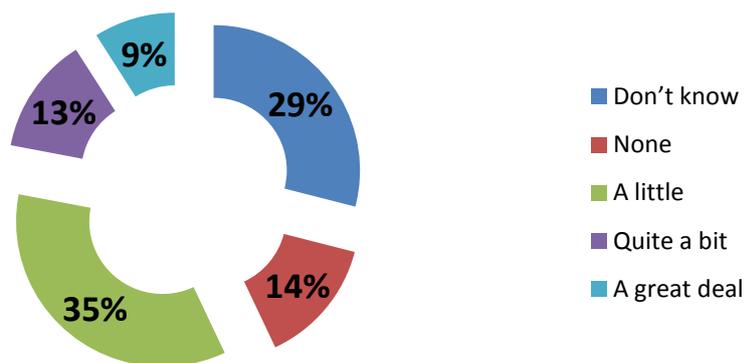
Very Familiar	Familiar	Heard but could not explain	Never heard of
Preservation	Stewardship	Growth	
Conservation	Green campus	Development	
Future needs	Preserve environment	Future	
Recycling	Ethical conduct	Saving	

Renewable Energy	Green production of goods	Recycling	
Resource use	Recycle, Re-use	Re-using	
Environmental Friendly	Renewable resources	Well-being	
Think Green / Blue	Innovation	Save resources	
Attitude change	Development	Alternative lifestyle	
Community / Social needs	Efficiency	Social justice	
Economic impact	Building Design	Globalization	
Global warming	Transformation	Human rights	
Self regeneration	Eco-friendly	Viable	
Poverty alleviation	Technology		
	Integrated learning		
	Community participation		
	Accountable leadership		
	Public / private partnerships		
	Bio-physical system		

F. Curricula:

Survey question: **Indicate to which extent your programme addresses topics relating to sustainability**

Topics relating to SD in programme

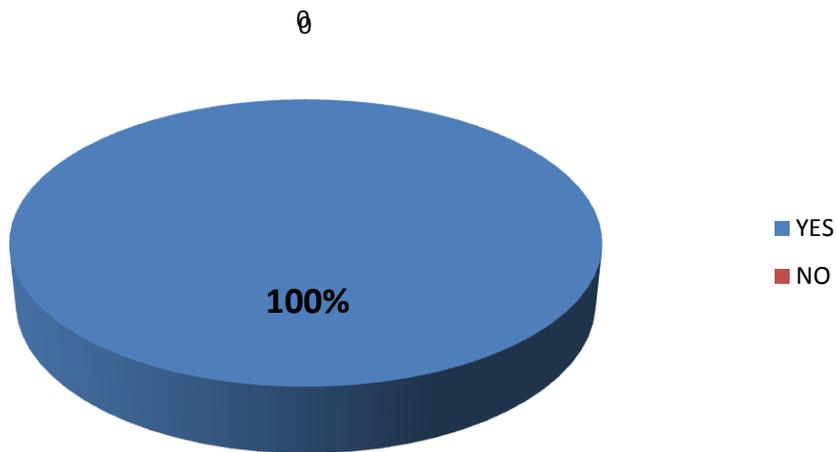


Survey question: **Identify courses taught CUT with a substantial SD content and nationally curriculated courses relating to SD not taught at CUT.**

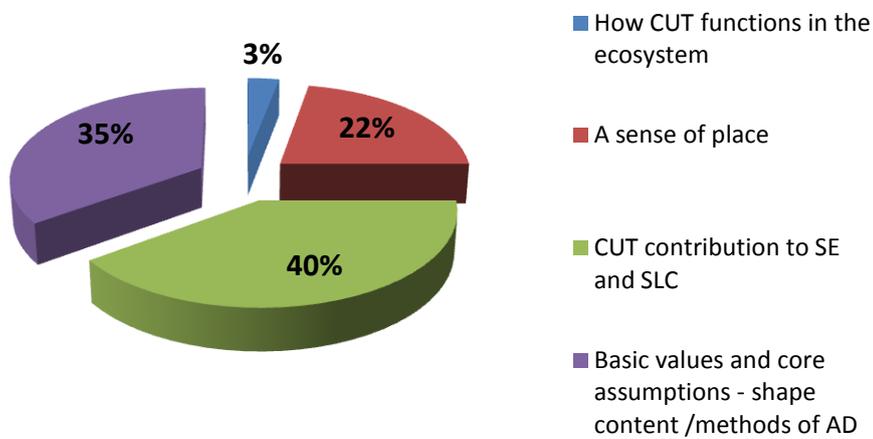
On this question the following responses were received:

List of courses taught CUT with a substantial SD content	Nationally curriculated courses relating to SD not taught at CUT
Human Resources	Mining Engineering
Project quality	Green building design
Economics	Rehabilitation and maintenance of infrastructure
Management IV	Recycling material for construction material
All Technology subjects at diploma level	Natural Resource management
Urban and rural planning	Human Evolutionary needs
Architecture	Practical / creative problem solving
Civil Engineering	Generic skills
Project Management	Academic life skills
Agricultural Management	Renewable and sustainable energy
Environmental Health	Ethics
Fire Technology	
Biology Education	
International Marketing	
Information Technology	
Internal Audit III	
Industrial relations	
Tourism Development	
Organisational behaviour	
Labour Law	
Electronics	
Information systems	
Accommodation Management	
Business Ethics	
Sports Management	
Building	

Survey question: Should SD issues be integrated into undergraduate courses?



Survey question: SD requires critical thinking; which of the following does CUT attempt to teach its students?



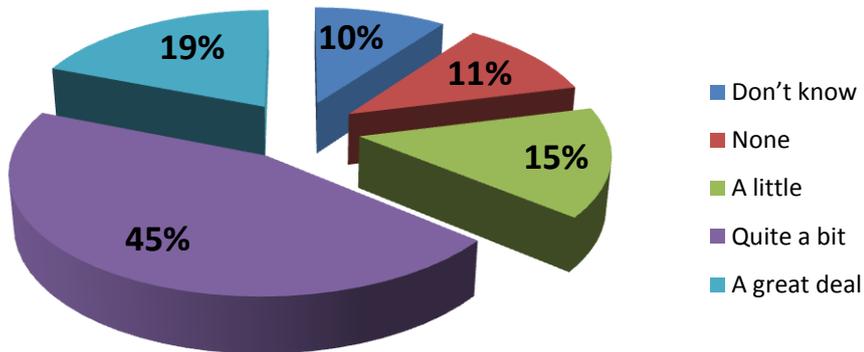
SE – Sustainable Economy

SLC – Sustainable Local Communities

AD – Academic discipline

G. Research

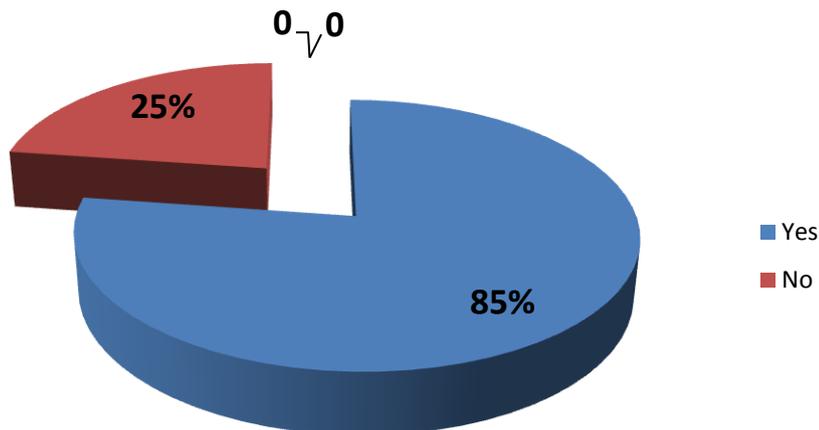
SD research in faculties



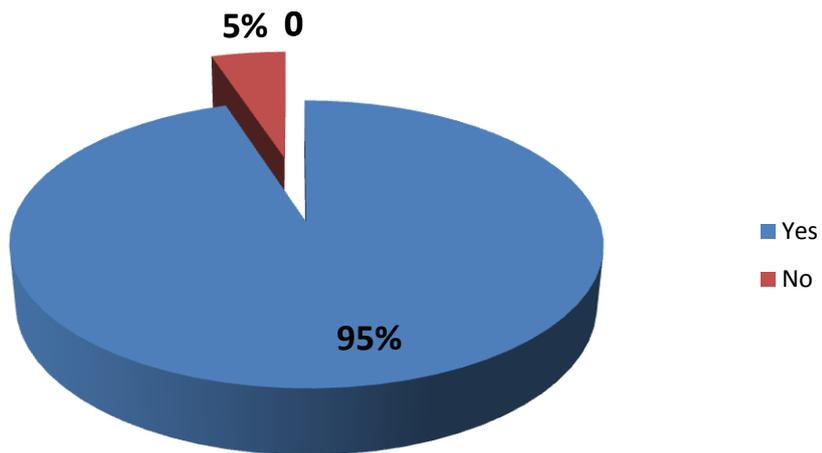
When asked what percentage does research in their unit on sustainability issues more than 90% of the respondents answered that they weren't sure as this type of information is not communicated to all. The respondents also were UNSURE if colleagues would be interested to do research on sustainability issues.

H. Operations

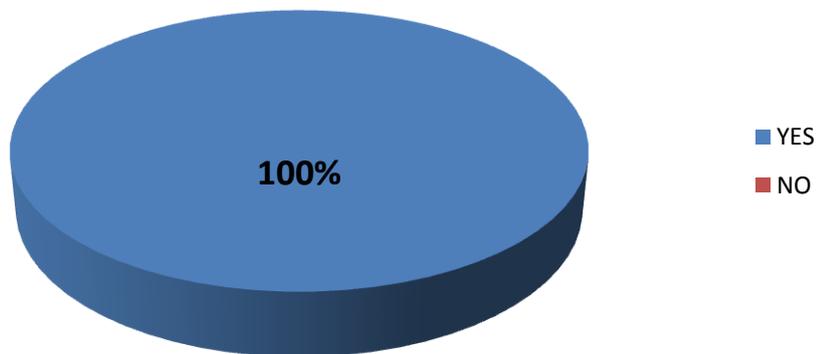
Does CUT follow Green design principles in building construction?



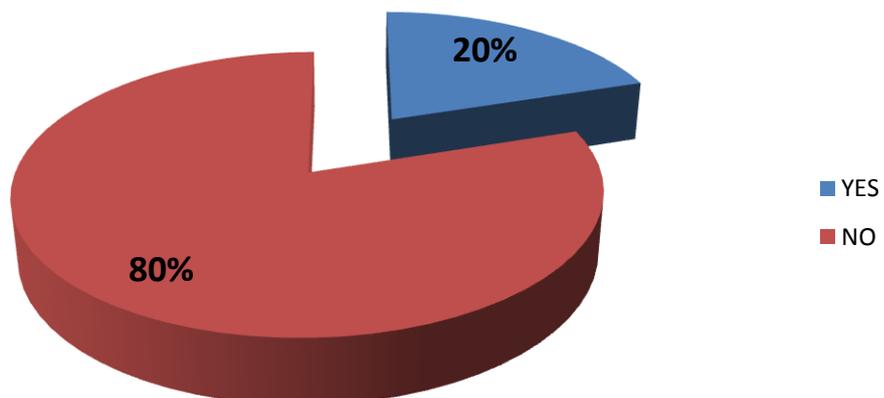
Do you aid in energy conservation practices at the institution?



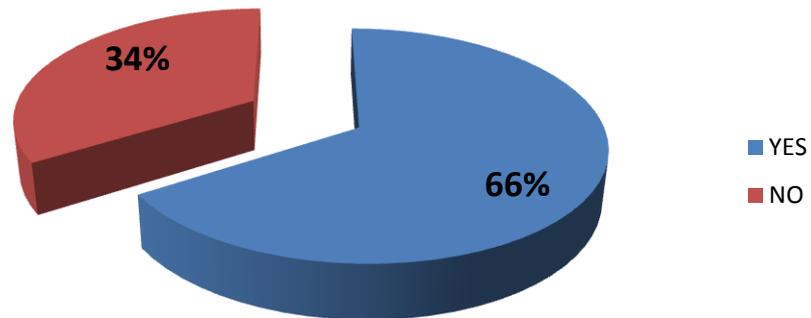
Do you aid in waste reduction practices at the institution?



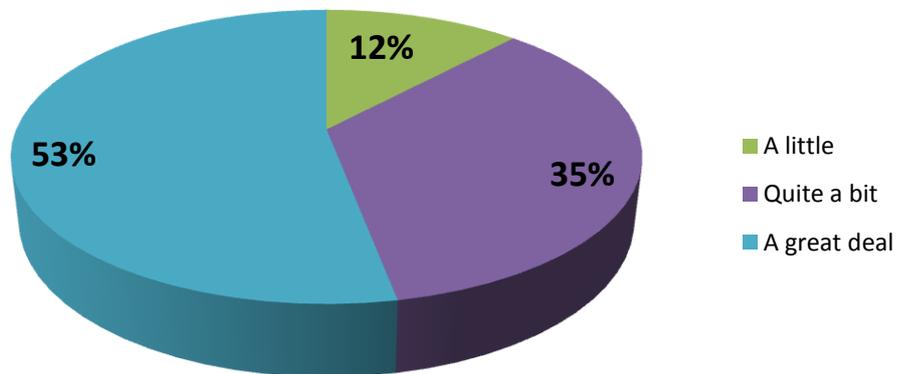
Do you aid in recycling of solid waste at the institution?



Do you aid in water conservation at the CUT?

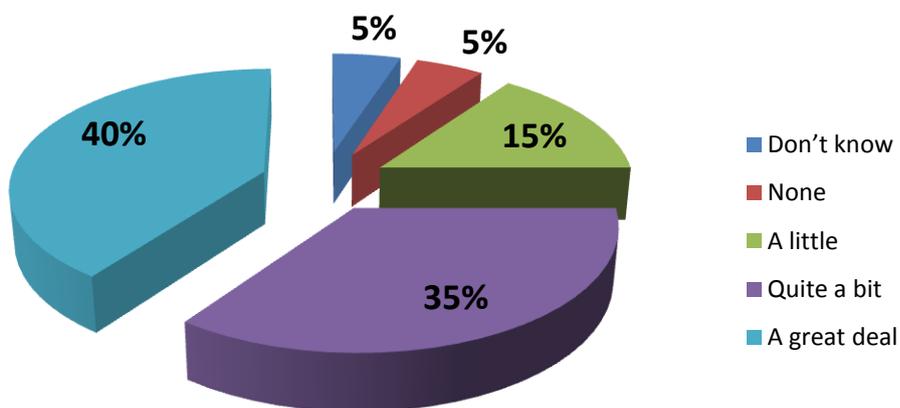


To what extent are operation practices integrated into the educational and scholarly activities of the school?



Community Engagement

To what extent is your unit involved in SD engagement through formal partnerships or relationships at local, regional, national or international level?



What sustainability community engagement projects exist in your program or unit?

- a) Training of small contractors in tendering (Mr. M Border)
- b) Construction Training
- c) Built Environment unit working towards having a CE cluster
- d) Emergency Medical Services (EMS) advisory board under leadership of EMS programme entails sharing of information with regard to changes in the market place and whole school system.
- e) Tourism Town of the Year
- f) Entrepreneurship development
- g) Teacher Education teaching local school learners about ecological sustainability integrated into their curricula
- h) Blue campus project
- i) Library and Information Centre takes books to waste paper company and donate books to schools (in conjunction with Asset Control unit)
- j) Information Systems students were engaged in community outreach program to develop websites for local NGO`s in Welkom
- k) Hotel School involved with various Hotels for service learning.

4.3 Summary of Staff and Student Surveys

The feedback received from the respondents definitely indicates that the CUT community needs to have more contact sessions to inform colleagues on Sustainable Development issues. The SD unit plans on attending school meetings in conjunction with the Curriculum Development unit to aid academics understand issues relating to SD and how these can be integrated in their daily teaching activities and community engagement projects. Most important of all, a sense of ownership needs to be adopted by all staff at the CUT regarding sustainability issues for the University to achieve its goal of being a known and recognized as a Blue Campus.

5. Partnerships

CUT actively pursues intellectual interaction with other universities both in Africa and elsewhere. This forms the foundation of inter-institutional co-operation in research and other academic matters – such as the Sustainable Development Project and curriculum of new qualifications in alternative energy.

Moderate progress has been made in establishing external partnerships with non-academic entities respect to the SD Project. Examples of this are discussions that have been held with Eskom on possible assistance in implementation of measures to reduce CUT's use of electrical energy, as well as Manguang municipality which indicated a preparedness to furnish CUT with a number of recycling rubbish bins and possibly solar panels for supplementary heating of geysers on campus.

6. Discussion of the report

It is imperative that better synchronisation is required between the sustainable development initiatives that are taken by the different organizational units in order to reap the benefits of synergy, as well as to avoid unnecessary duplication of effort and expense. An effective, uniform, campus-wide marketing image must be established to optimise buy-in by the CUT community as a whole. This will be enhanced if sustainable development is introduced as a CUT philosophy to all new staff during their induction programmes.

A fair and responsible procedure should be implemented to ensure procurement from SD sensitive suppliers wherever possible.

February 2011 was the starting date of the Sustainable Development Project of CUT. Much has been accomplished during this time, but much more still needs to be done to convert CUT into a truly responsible university with sufficient educational SD input for its graduates. It is expected that the sustainability indicators will be improved upon and better quantified in future. It is also advisable that the general sustainability of the university per se in terms of staff, students and finances must be interrogated more comprehensively in subsequent reports of this nature.

- The general response to the launch of the SD project was very positive.
- It is obvious that the large number of critically important projects that are running at CUT – such as STEPS – initially put extreme pressure on the staff, and in particular academic management. This probably caused a decrease in the amount of effort that could initially be availed for this cause.
- One of the primary expected outcomes of the SD project is a fundamental change in the CUT curricula, resulting from the implementation of STEPS and the HEQF. Hence its timing is critical and any delay in the roll-out of this project will largely nullify its purpose.
- Vision 2020 describes the long-term aims of CUT, stipulating its transformation into an institution focussing on social and technological innovations in the socio-economic nature of our region and country. This also implies innovation aimed at economic and environmental sustainability of the community. Hence, it is expected that, considering the importance of Vision 2020 to the future of the university and as innovation receives increasing attention, it will be reported on more comprehensively in future – necessitating a substantial revision of the sustainable development indicators.
- A preliminary set of SD evaluation criteria has been defined. This now needs to be assessed comprehensively to establish a benchmark against which to determine progress with the project. This would only be possible with an increased awareness by operational units of the importance of the SD project to CUT and their active involvement in its implementation. In addition specific target dates should be set for attaining the primary elements of the criteria.
- There is a challenge of introducing an integrated system of key quantified targets of CUT's effect in the areas of the ecology, economy and social spheres. The present unavailability of such unfortunately limits the scope of reporting of this report.

- The Sustainable Development Policy and Framework should be used as source documents for the development of an environmental management system. In this manner aims can be formulated for the university regarding a possible reduction in the use of energy and other resources, the decline of emissions and the avoidance of waste, as well as documenting the converting, storage and use of polluting substances – including the specifications of required disposal. This would necessitate the centralised planning and implementation of a series of projects at addressing these issues.
- In future mention can also be made of social welfare indicators with reference to the availability of cultural, and recreational (sport) facilities and programmes – and participation in such. Likewise reference can be made to psychological support provided to staff and students.
- The project team has to ensure increased efforts at marketing SD principals across campus. The university’s sustainable development efforts should be promoted such that it is perceived by external bodies as an important player in the SD community. This might serve as a springboard for CUT to position itself with respect to external financial support in this regard.

Authorship and Acknowledgements

This document constitutes written and other inputs received from representatives of the different operational units of the university, as assembled by the following members of the Sustainable Development Project Team.

Each and every contributor to the document is thanked by the Project Team and authors for his or her inputs. Without their inputs it would have been impossible to compile the document. The contributions are appreciated.

CUT management is also thanked for their initiative in formulating this project and resourcing it according to needs.