


## ANNUAL REPORT 2012

### Sustainability Research Unit Entity Leader: Christo Fabricius

Faculty: Science

This annual report and the audited financial statement were approved by the Faculty on  
the \_\_\_\_\_ day of \_\_\_\_\_ 20..

	Print name	Signature	Date
Entity leader	<b>Christo Fabricius</b>		<b>16 April 2012</b>
Finance			
Chairperson of Governing Board (If applicable)	<b>N/A</b>		
Chairperson: Faculty RTI Committee/ Faculty Board			
Dean			
DVC: RE (when applicable)			

## **1. Mission / purpose**

The Sustainability Research Unit (SRU) was established in 2009 and develops the capacity for the sustainable management of ecological, social and economic systems through user-inspired research, training and policy-related work. The SRU raises awareness of sustainability issues amongst stakeholders. The Unit will bring together decision makers and researchers from various institutions such as Universities, local municipalities and the private sector to address challenges collaboratively, thereby adding value to existing expertise and financial resources.

The SRU focuses on four related activities:

1. Develop useful information systems and models, based on good science, to enable decision makers to understand the long term consequences of land and water use plans, policies and strategies;
2. Provide scientific information about the causes, impacts, consequences and good ecosystem management practices related to climate change;
3. Develop and implement practical strategies that can promote sustainability in urban development, tourism, agriculture, forestry, fisheries, and biodiversity conservation, and to promote the sustainable long term use of land and water and sustainable food production;
4. Offer training courses to raise the awareness of decision makers at all levels of the impacts of climate change, what can be done about it, and which practices should be avoided.

The principles guiding the SRU's work are:

- It takes a long term approach, inspired by the principles and practices of resilience and adaptive co-management;
- The users (decision makers and resource users) must inspire the work;
- Resources (funds and expertise) must be pooled;
- Approaches must be inter-disciplinary, with a strong "evidence-seeking" focus because of the complex nature of the challenges being addressed and the high levels of uncertainty;
- Its impact must build the capacity of government, municipal and civil society decision makers through data collection, awareness creation, learning, training and implementation.

### **1.1 Alignment with vision and mission of the NMMU**

The SRU's focus is on the provision of scientific information and practical strategies to promote sustainability. Thus, the Unit aligns itself with the NMMU vision of generating cutting edge knowledge for a sustainable future. The principles guiding the SRU, and in particular its inter-disciplinary approach to complex challenges of high level uncertainty furthermore align the SRU with the NMMU vision.

The SRU's principles of post-graduate training, inter-disciplinarity, awareness creation, learning, training and implementing align the Unit's focus and principles with the NMMU mission of offering a diverse range of quality educational opportunities. The sustainability focus and attention to building capacity of government, municipal and civil decision makers will make a critical and constructive contribution to regional, national and global sustainability as prescribed by the NMMU mission.

## **2. Governance structures**

The SRU reports to the George Campus Academic Board, and this is functioning well. After 2012 reporting will be to the Science Faculty board.

## Staff members

In 2012 members of the SRU included Prof Christo Fabricius (leader), A-Prof Raymond Auerbach; Dr Jaco Barendse (post-doc), Ms Bianca Currie (Lecturer, PhD researcher), Ms Jeanette Pauw (part-time Lecturer, statistician). The Unit also had six Masters and two PhD students. Dr Dirk Roux, a Research Associate employed by SANParks, is based within the SRU and makes a substantial contribution to our capacity.

### 2.1 Governance Structure meetings

Quarterly faculty board meetings took place.

### 3.1 Human resources issues

Dr Jaco Barendse was appointed as post-doc.

## 4 Goals / targets for the year under review

### 4.1 Statement of goals / targets

#### *Academic outputs*

SRU members published three peer reviewed papers and made seven conference presentations at national and international symposia. Three unpublished reports were produced. Two BTech students, seven Masters and two PhD students were supervised.

<i>Student</i>	<i>Supervisor</i>	<i>Degree</i>	<i>Department / School</i>
M Whyte	Fabricius	MTech (Nature Conservation)	SNRM
V Sonn	Fabricius	MTech (Nature Conservation)	SNRM
K Tshivhase	Fabricius, Underwood	MTech (Forestry)	SNRM
W Loftus	Fabricius, L. Foxcroft	MTech (Nature Conservation)	SNRM
A Vlok	Roux	MSc	Botany
A Pontier	Roux, Adams	MSc	Botany
B Currie	Fabricius	PhD (part-time)	Botany
G von Maltitz	Fabricius	PhD (part-time)	Botany
W Matthee	Milton	MSc	Botany
A Crisp	Currie, Fabricius	BTech	SNRM
S Mc Cullough	Currie, Fabricius	BTech	SNRM

#### *Awareness raising and community engagement*

The Unit continued its work with the Green Campus Forum and played a role in Green Campus Week. It hosted a public workshop on invasive alien plant threats, and published two articles on education for sustainability in popular media.

#### *National and international academic engagement*

The SRU collaborated on proposals and joint research project proposals with SANParks, CSIR, Stellenbosch University, Stockholm University, University of Exeter, Arizona State Univ, and CIRAD in France. We also worked closely with Eden District Municipality, George Municipality, WWF and the Garden Route Initiative.

#### 4.2 Strategies employed to achieve goals/target

Strategies included hosting stakeholder workshops, visiting national and international research partners, and recruiting new students by funding BTech projects and raising Masters and PhD bursaries.

#### 4.3 Output

See *Annexure A*.

#### 3.4 Self-assessment of achievement of goals/targets

The Unit's strongest growth is in the area of post-graduate recruitment and in forging national and international linkages. Post-grad numbers have grown by more than 50%, with continued interest.

### 4. **Highlights and special achievements**

- Recruitment of Jaco Barendse as a post-doc for the SRU through a collaborative funding arrangement with SANParks
- Strong presence of the SRU at the Southern African Society of Aquatic Scientists meeting
- Successful submission of a Water Research Commission proposal with CSIR, WWF and SANParks
- Emerging links with national and international role players and the Resilience Alliance in particular
- Submission of a consortium proposal to Belmont Forum and successfully going through to Round 2
- Sabbatical of the entity leader during 2012, and his scientific visits to the Stockholm Resilience Centre in Sweden, UNESCO in Paris and CIRAD in Montpellier, and submission of three papers for peer review.

### 5. **Finances**

#### 5.1 Financial review

The entity is dependent on external grants and to a lesser extent on NMMU Council funds.

*Opening balance:* at the beginning of 2012 the SRU started with an opening balance of R 388K. However, 177K of this was erroneously allocated during 2011 and was thus deducted early in 2012, leaving a *real* opening balance of ~ R 211K.

*Income:* The SRU received ~R 496K during 2012, of which R 207K was from NMMU and R 289K from external grants.

*Expenditure:* Our expenditure (excluding the deduction of 177K) was R 461K. Most of this (R 327K) was on student bursaries, and R 89K on operating expenses. So we made a small 'profit' of about R 34K.

*Closing balance:* At the end of 2012 we had a nice balance of R 245 823.

#### 5.2 Financial statements

## INCOME STATEMENT OF SUSTAINABLE RESEARCH UNIT GEORGE

UNIT NAME: Sustainable Research unit - George  
UNIT LEADER: C.Fabricius  
FACULTY: Science  
COST CENTRE(S): H285

INCOME STATEMENT FOR PERIOD :	Year 2012	Year 2011
Opening Balance	388,477	275,604
<b>INCOME</b>	<b>495,743</b>	<b>325,962</b>
Council research funds	136,970	44,405
Private grants received	288,773	-
Salary contribution received	70,000	281,557
<b>EXPENDITURE</b>	<b>638,397</b>	<b>213,089</b>
Salaries	44,891	110,365
Student bursaries	327,500	-
Operating expenditure	266,006	102,724
Closing Balance	<u>245,823</u>	<u>388,477</u>

Signed off by Finance Dept.

Name: P.J.S. Knoesen

Signature: P.J.S. Knoesen

Title: Director - Corporate Accounting

Date: 2013/04/05.

The account for the SRU is H285.

### 6. Additional information

None to report.

### 7. Mandatory Summary for Senate

The SRU is steadily achieving its stated goals. Post-graduate numbers have grown exceptionally well and the Unit is looking forward to a productive 2013. Highlights for 2012 were the successful application for a collaborative WRC grant with CSIR, submitting a international collaborative proposal to Round 2 of the Belmont Forum, and strengthening our national and international ties. SRU members produced three peer reviewed papers, two scientific reports and presented eight conference papers during 2012.

**The annual report must be DATED AND SIGNED by the Director, Manager or Head of the Entity, the Chairperson of the Governance Structure, and the Dean.**

**ANNEXURE A  
RESEARCH OUTPUTS/ACTIVIES (insert year)**

<b>OUTPUTS/ACTIVITIES</b>	<b>NO</b>	<b>DETAILS</b>	<b>STAFF INVOLVED</b>	<b>OTHER (Specify)</b>
<b><u>CONFERENCES</u></b>				
International Conferences (Published Papers)				
National Conferences (Published Papers)				
International Conference (presented but not published papers)	1	4th International EcoSummit on Ecological Sustainability – Restoring the Planet’s Ecosystem Services, Columbus, Ohio, 30 September to 5 October 2012.	Dirk Roux	
National Conference (presented but not published papers)	7	<ul style="list-style-type: none"> <li>• SA Association of Aquatic Scientists, Cape St Francis</li> <li>• Complexity Forum, Stellenbosch</li> <li>• Orange River Basin</li> <li>• Annual Savanna Science Network Meeting, Skukuza</li> <li>• Seafood Symposium of the Marine Stewardship Council and Southern African Sustainable Seafood Initiative (WWF)</li> </ul>	Jaco Barendse; Bianca Currie; Christo Fabricius; Wynand Loftus; Dirk Roux; Verouschka Sonn	
International Conferences (only attended)				
National Conferences (only attended)				
<b><u>JOURNAL ARTICLES</u></b>				
International indices (ISI & IBSS)	3	<p>Cundill, G., Cumming, G., Biggs, D. &amp; Fabricius, C., 2012. Soft systems thinking and social learning for adaptive management. Conservation Biology 26:13-20.</p> <p>Nkhata BA, Mosimane A, Downsborough L, Breen C and Roux DJ. 2012. A typology of benefit sharing arrangements for the governance of social-ecological systems in developing countries. Ecology and Society 17(1): 17. <a href="http://dx.doi.org/10.5751/ES-04662-170117">http://dx.doi.org/10.5751/ES-04662-170117</a></p> <p>Ryan, P.G., Glass, P.G., Glass, T., Barendse, J. &amp; Cuthbert, R.J., 2012. Eradication of New Zealand flax Phormium tenax on Inaccessible and Nightingale Islands,</p>		

		Tristan da Cunha. Conservation Evidence 9:58-62.		
DoE list of South African Journals				
Other Peer-reviewed Journal Articles				
<b><u>BOOKS AND BOOK CHAPTERS</u></b>				
<b><u>RESEARCH REPORTS</u></b>	2	Crisp, A.G. 2012. Identifying the knowledge gap: stakeholders and alien invasive plants. Sustainability Research Unit, NMMU, BTech research project.  Mc Culloch, S.J. 2012. Identifying Knowledge Gaps: Stakeholder Views With Regard To Alien Invasive Plants. Sustainability Research Unit, NMMU, BTech research project.		
<b><u>CREATIVE OUTPUTS</u></b>				
<b><u>MASTERS AND DOCTORAL DEGREES COMPLETED</u></b>				
Masters by Coursework and Treatise				
Masters by Research	1	Whyte, M. <i>Social Network Analysis of stakeholders in the Duiwenhoks water catchment.</i> MTech (Nature Conservation)		
Doctoral Degrees				
<b><u>HUMAN CAPITAL DEVELOPMENT</u></b>				
Emerging (Staff & PG Students)	12	Bianca Currie Jaco Barendse Graham van Maltitz Peet Botes Abigail Crisp Steve Faulconbridge Wynand Loftus Samantha McCullough Willem Mathee Verouschka Sonn Kutelani Tshivhase Aneri Vlok		
Established Researchers	4	Christo Fabricius, Sue Milton, Jeanette Pauw, Dirk Roux,		
<b><u>ACADEMIC ENGAGEMENT</u></b>		Stakeholder workshops on invasive alien plants Programme for Ecosystems and Society (PECS) Complexity Forum Resilience Alliance		
<b><u>GRANTS RECEIVED</u></b>		<ul style="list-style-type: none"> <li>• NMMU post-doc grant</li> <li>• NMMU Council salary grant for research assistants</li> <li>• Rhodes</li> </ul>	Christo Fabricius Dirk Roux	

		University DST-NRF Global Grand Challenges grant <ul style="list-style-type: none"> <li>• NRF Community Engagement grant</li> <li>• SANParks post-doc grant</li> </ul>		
<b><u>KNOWLEDGE PRODUCTS</u></b>				
Intellectual Property				
IP Commercialisation				
Disclosures				
<b><u>OTHER (Specify)</u></b>				