

**SUSTAINABILITY RESEARCH UNIT
GEORGE CAMPUS**

**Research Output Report
2011**



ENTITY LEADER :
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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.

Alignment with the vision and mission of the NMMU

With the SRU focus being on the provision of scientific information and the development of useful information systems and models and practical strategies to promote sustainability, 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 involvement in events such as the Sustainable Farming study group, Garden Route Initiative and various research projects (Tierkop Research Project) guided by the principles of inter-disciplinarity, awareness creation, learning, training and implementing align the research unit 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. Collaborative working relations with SANParks, Stellenbosch

University, Rhodes University, CSIR, WESSA, Eden District Municipality, George Municipality and the private sector are getting stronger.

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 2011 members of the SRU included Prof Christo Fabricius (leader), Ms Bianca Currie (Lecturer, PhD researcher), Dr Wietsche Roets (Research Associate, water resources specialist), Ms Jeanette Pauw (part-time Lecturer, statistician), Dr Suzanne Milton (Research Associate), Professor Raymond Auerbach and Dr Dirk Roux who joined the SRU in 2011.

Goals / Targets for the year under review

The major SRU aims for 2011 were a) continue with the Green Campus awareness raising programmes, b) Raise funds for sustainability research; and c) recruit post-graduate students and post-docs.

Awareness raising

- SRU members played a coordinating role during the annual Green Campus week and Green Campus Initiative (GCI). The GCI and its associated forum creates a platform where students can learn how to limit their environmental footprint, influence the surrounding communities, and make a difference in the way natural resource utilization is performed at the George campus.
- SRU coordinated a two-day 'Technology for Sustainability' expo, in partnership with the George municipality and the George business community. This included a seminar on Friday, 22 and Saturday 23 July, offered an ideal networking opportunity for budding entrepreneurs and businesses. It was also a platform to profile and celebrate the technological excellence and entrepreneurial skills to be found in this region. SRU students shared their innovative projects with visitors in NMMU's own sustainability exhibit, fully embraced the opportunity to profile the innovative projects they are involved in as part of their studies.
- Raymond Auerbach coordinated a 1-day seminar on sustainable technologies as part of the NMMU / George Municipality Technology for Sustainability exhibit.
- Raymond Auerbach coordinated and hosted a regional workshop on Sustainable Land Reform attended by emerging and established farmers and government officials.
- Christo Fabricius coordinated a public lecture by Maarten de Wit and public seminar on Garden Route Earth Stewardship.
- SRU members organized lunch-hour lectures on sustainable tourism (Dr Duan Biggs of James Cook Univ, Australia), conservation planning (Dr Mathieu Rouget, SANBI), and resilience and society (Prof Garry Peterson, Stockholm University).

National and international liaison

- SRU members (Fabricius, Roux and Currie) played prominent roles at an ICSU workshop Ecosystems and Society held in Stellenbosch at the Stellenbosch Institute for Advanced Studies (STIAS) and Stockholm University.
- SRU joined forces with the Centre for Complexity at Stellenbosch University in successfully applying for an NRF Knowledge Fields Development grant to establish a Complexity Forum. Fabricius is part of the Complexity Forum organizing committee.

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- SRU entered into an MoU with South African National Parks for collaborative research in the Garden Route, starting with a jointly-funded post-doc position.
 - SRU collaborated with Rhodes and Fort Hare in successfully applying for a DST project on Water and Society.
 - Bianca Currie, in collaboration with Rhodes University and the Swedish Development Agency SEDA participated in an Education for Sustainable Development international training programme

Fund-raising: [to be reflected in 2012 financial statements]

- MoU with South African National Parks to fund a post-doc position on a 50-50 basis (R 270 000 per annum for 3 years)
- NRF grant for community engagement – 2 Masters and one PhD bursary plus running expenses - R 80 000 running expenses plus 3 bursaries
- DST /NRF Global Change and Society grant for Water and Society research in collaboration with Rhodes – two bursaries plus R 118 000 running expenses

Outputs

- Four peer reviewed papers
- Three popular articles on sustainability
- Seven papers at national conferences
- Three lunch-time lectures
- One public lecture and seminar
- A Technology for Sustainability exhibit, student display and seminar
- SRU members also played key roles in the NRF Winter Research School offered at the George Campus
- Students registered in 2011: Bianca Currie (PhD); Michelle Whyte (MSc); Kutelani Tshivhase (MTech)
- Fund-raising: see financial statements

Self assessment of achievement of goals / targets

We are very satisfied with the SRU's progress on all fronts. The recruitment of a vibrant student group and strengthening of inter-faculty relations as well as a stronger international profile are next.

Highlights and special achievements

The highlights of the year were the increase in peer reviewed papers and conference presentations, significantly increased collaboration with universities and civil society, and the allocation of additional NRF funding under the Global Change and Society theme. A second achievement was the strengthened relationship with SANParks, culminating in Dr Dirk Roux's inclusion in the SRU and the MoU to appoint a jointly funded post-doc. A third achievement was co-initiating a Complexity Forum with the Centre for Complexity at Stellenbosch University and raising R 200 000 from NRF for this purpose. On the financial front an additional R 480 000 was raised for Masters, Doctoral and post-doctoral research via Dept of Science and Technology and NMMU. The SRU is also making significant progress with community engagement through the sustainable farming initiative and its involvement in the Garden Route Initiative and Garden Route Biosphere Reserve. The next phase will be to significantly extend the SRU's local, national and international research collaboration.

Finances

Financial statements [funds raised during 2011 will be reflected in 2012 financial statements]

| INCOME STATEMENT FOR PERIOD : | Year 2011 | Year 2010 |
|-------------------------------|---------------|---------------|
| Opening Balance | 41 223 | 29 000 |
| INCOME | 13 907 | 30 498 |
| Council research funds | 13 907 | 30 498 |
| EXPENDITURE | 54 716 | 18 275 |
| Salary contribution paid | 1 557 | - |
| Operating expenses | 53 159 | 18 275 |
| | - | - |
| Closing balance | 414 | 41 223 |

Signed off by Finance dept

Name : P. J. S. KNOESEN .

P.J.S. Knoesen

Signature : 2012/05/28.

Mandatory Summary for Senate

During 2011 the SRU focused on two key objectives: increasing publication outputs, raising awareness amongst students and the public on sustainability issues, raising additional enabling funds, and forming national and international partnerships. Outputs included four peer reviewed papers, three popular articles and seven papers at symposia. In addition, two public workshops and four public lectures on sustainability issues were delivered. Formal partnerships in the form of jointly funded projects and MoUs were formed with the Centre for Complexity at Stellenbosch University, South African National Parks and the Institute for Water Research and the Environmental Education and Sustainability Unit at Rhodes University. Informal research partnerships were forged with Stockholm University, CSIR, CSIRO in Australia, Eden District Municipality, Dept of Environmental Affairs and the South African National Biodiversity Institute while informal engagement partnerships were formed with emerging and commercial farmers, the South Cape business sector, Eden District Municipality, George Municipality, Dept of Agriculture Forestry and Fisheries and Western Cape Agriculture. The SRU is going from strength to strength and has entered a phase of rapid growth.

RESEARCH OUTPUTS/ACTIVITIES 2010

| OUTPUTS/ACTIVITIES | NO | DETAILS | STAFF INVOLVED |
|---|-----------|--|-------------------------|
| CONFERENCES | | | |
| International Conferences (no published papers) | | Three papers delivered at COP 17 in Durban. | Auerbach |
| National Conferences (no published papers) | | Sustainable Land Reform Workshop which SRU organised with Government input | Auerbach;Fabricius |
| | 1. | Fabricius C. 2011. "Sustainable Forestry in 3D", International Forestry Student Association Symposium, Saasveld | Fabricius |
| | 2. | Fabricius, C. 2011. Presentation: Programme on Ecosystems and Society, ICSU and NRF workshop, STIAS, Stellenbosch (3 papers delivered) | Currie; Fabricius; Roux |
| | 3. | Currie B. 2011. Presentation: Programme on Ecosystems and Society, ICSU and NRF workshop, STIAS, Stellenbosch | Currie |
| | 4. | Roux, D. 2011. Presentation: Programme on Ecosystems and Society, ICSU and NRF workshop, STIAS, Stellenbosch (3 papers delivered) | Roux |
| | 5. | Roux D. 2011. Transdisciplinary research: A response to increasingly complex social-ecological challenges (invited). 2011 Biodiversity Planning Forum, Protea Wilderness Resort Hotel, Wilderness. 8-11 March 2011. | Roux |
| | 6. | Roux D. 2011. Advancing knowledge in a community of practice: Implications for Insaka (invited keynote). International Symposium on Benefit Sharing in Social-Ecological Systems, Kaazmein Lodge, Livingstone, Zambia, 17-20 May 2011. | Roux |
| | 7. | Roux D. 2011. Trends in research and management of freshwater ecosystems (invited). Water Research Commission 40 Year Celebration Conference. Emperor's Palace, Kempton Park, South Africa, 31 August to 1 September 2011. | Roux |
| JOURNAL ARTICLES | | | |
| | 1 | Brink, M., Cameron, M., Coetzee, K., Currie, B., Fabricius, C., Hattingh, S., Schmidt, A. and Watson, L. 2011. Responsible management through improved governance in the game industry. <i>South African Journal of Wildlife Research</i> 41: 110-119. | Fabricius, Currie |
| | 2 | Biggs D., Turpie J., Fabricius C. and Spenceley A. 2011. The value of avitourism for conservation and job creation: an analysis from South Africa. <i>Conservation and Society</i> 9(1): 80-90. | Fabricius |
| | 3 | Schoon, M., C. Fabricius, J. M. Anderies, and M. Nelson. 2011. Synthesis: vulnerability, traps, and transformations—long-term perspectives from archaeology. <i>Ecology and Society</i> 16(2): 24. [online] URL: http://www.ecologyandsociety.org/vol16/iss2/art24/ | Fabricius |
| | 4 | Roux DJ and Foxcroft LC. 2011. The development and application of strategic adaptive management within South African National Parks. <i>Koedoe</i> 53(2), Art. #1049, 5 pages. Available at | Roux |

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|---------------------------------------|---|---|-----------|
| | | http://www.koedoe.co.za/index.php/koedoe/article/view/1049/1216 | |
| POPULAR ARTICLES & REPORTS | 1 | Currie B. 2011. Sustainable practice - a core value at NMMU George. Sustainability Research Unit, NMMU | Currie |
| | 2 | Fabricius C. 2011. Universities as catalysts for sustainability. Sustainability Research Unit, NMMU | Fabricius |
| | 3 | Fabricius C. Sustainable land reform: comment on the Green Paper on land reform. Sustainability Research Unit, NMMU | Fabricius |
| <u>ACADEMIC ENGAGEMENT</u> | | <p>Bianca Currie collaborated with Rhodes University and Stockholm University in an NMMU Student Mobilization Change Project (as part of the SIDA Education for Sustainable Development International Training Programme)</p> <ul style="list-style-type: none"> • The Student Mobilization Indaba • The Agent of Change Workshop • The SRU launched a Social Learning Study Group which involved masters, BTech and undergraduate students in discussions about social learning for sustainability. • The SRU invited three prominent experts to deliver lunch-hour lectures and • Organized a prestige public lecture and two public seminars on sustainability issues • Coordinated a Technology for Sustainability exhibit • Played a key role in the NRF Winter Research School | |



CHRISTO FABRICIUS
(Campus Principal)