


ANNUAL REPORT 2015

SUSTAINABILITY RESEARCH UNIT

Faculty Science

This annual report and the audited financial statement were approved by the Faculty on the _____ day of April 2016.

	Print name	Signature	Date
Entity leader	Professor Christo Fabricius		12 April 2016
Finance	Mariam Jogee-Jamal		April 2016
Chairperson of Governing Board (If applicable)			
Chairperson: Faculty Board/ Faculty RTI Committee			
Dean	Professor Azwinndini Muronga		April 2016
DVC: RE (when applicable)	Professor Andrew Leitch		April 2016

1. **Mission / purpose**

The Sustainability Research Unit (SRU) was established in 2009 as the first dedicated inter-disciplinary research group focusing on the sustainability of complex social ecological systems in the Garden Route, Western Cape of South Africa. It recognises the need to cross the boundaries of the social and ecological disciplines in order to promote the sustainable management of social ecological systems. The entity develops the capacity for the sustainable management of ecological, social and economic systems through user-inspired research, training and policy-related work and raises awareness of sustainability issues amongst stakeholders. It joins decision makers and researchers from various institutions such as universities, local municipalities and private sector to address challenges collaboratively; thereby adding value to existing expertise and financial resources.

1.1 Alignment with vision and mission of the NMMU

SRU applies a collaborative inter- and trans-disciplinary approach to face the complex challenge of ecological management in the Garden Route and in doing so, value the contribution and collaborative efforts of internal and external stakeholders, co-designing practical solutions to face the complex challenges. The conceptual framework that informs our work has its theoretical foundations in social learning theory, adaptive collaborative management, complex adaptive systems and collaborative adaptive stewardship.

SRU supports the NMMU vision by providing students with a challenging and supportive learning environment and fostering holistic student development. This is achieved through the relevance of study topics to real world issues, teaching practical research skills and developing students' ability to collaborate in a wider research community under the protection of experienced supervision, mentorship and financial support. Through these postgraduate studies, students are able to deepen their problem solving, reasoning and critical thinking skills.

The SRU contributes to the NMMU 2020 vision's strategic goal of becoming a recognised institution for encouraging, supporting and rewarding vibrant research, scholarship and innovative culture by focusing on strategic research through partnerships, collaboration and networks with national and local institutions and stakeholders.

This entity supports the NMMU 2020 vision strategic goal to position the university as an engaged institution that contributes to a sustainable future through critical scholarship. SRU uses a number of different engagement techniques such as interviews, focus groups, suitability dialogue and participatory mapping in order to strengthen existing partnerships with public and private sector as well as form new relationships with interested and effected parties.

The NMMU 2020 vision strategic goal to develop and sustain a transformative institutional culture that optimises the full potential of staff and students, is well supported by the SRU through valuing and encouraging teamwork amongst staff, students and stakeholders, as well as the monitoring and evaluation of staff, student and stakeholder expectations and experiences through dialogue and reflective sessions during and after engagement activities.

The entity also contributes to realizing the NMMU 2020 vision strategic goal to formulate and implement a financial growth and development strategy to enhance long-term sustainability and competitiveness. Since its inception, SRU has been successful in securing income from external and research funds, enabling the entity to operate and provide study opportunities to postgraduate students.

2. Governance structures

The SRU reports to the Dean of Science and the Science Faculty. It has a Management Committee consisting of Professor Christo Fabricius, Professor Janine Adams, Dr Dirk Roux and Ms Bianca Currie that meets three times per annum to address strategic and operational matters.

2.1 Governance Structure meetings

Manco meetings for were held on the following dates:

Meeting dates	Significant outcomes
4 December 2015	It was noted that SRU played a significant role at the PECS capacity development programme in Stellenbosch November 2015. When Christo Fabricius represented the MAGIC team at the ESPA conference in London, it was noted that SRU's community engagement work is of a high standard. A succession plan is required for SRU's leadership position.
17 February 2016	A decision was taken to involve SRU research associates more and to host a Symposium to showcase their work. SRU has an increased focus on obtaining funding from external sources during 2016 and beyond.

3. Staff Members

The following are names and positions of staff members of the entity:

Name	Position
Professor Christo Fabricius	Leader
Ms Bianca Currie	Deputy Leader
Professor Janine Adams	Manco member
Ms Jeanette Pauw	Statistician
Dr Dirk Roux	Research Associate & Adjunct Professor
Dr Hervé Fritz	Research Associate
Professor Peter Novellie	Research Associate
Professor Robert Fincham	Research Associate
Dr Jeanne Nel	Research Associate
Dr Chloé Guerbois	Post-doctoral fellow
Dr Yashwant Rawat	Post-doctoral fellow
Samantha McCulloch	Stakeholder Relations Officer
Corita Loubser	Administrative Coordinator

The following postgraduate students were supported during 2015:

Name	Degree
Maretha Alant	PhD candidate, Zoology
Andrew Jackson	MTech Nature Conservation

Bianca Currie	PhD Botany
Kutelani Tshivhase	MTech Forestry
Lisa Heider	PhD Botany
Peet Botes	MTech Nature Conservation
Rosie Gerolemou	Master of Science Geography
Samantha McCulloch	MTech Nature Conservation
Tatenda Mapeto	PhD Forestry (supervisor: Prof Josua Louw)
Thea Buckle	MA Media and Communications
Verouschka Sonn	MTech Nature Conservation

3.1 Human resource changes

- Dr Jaco Barendse, Post-doctoral fellow, completed his contract with the SRU
- 3 x Research Associates were appointed during 2015
- 1 x Post-doctoral fellow was appointed during 2015
- Ms Corita Loubser was appointed as SRU Coordinator early 2015

4 **Goals / targets for the year under review**

4.1 Statement of objectives

Our primary objectives were to:

- Increase peer reviewed papers;
- Employ more research associates;
- Host post-graduate capacity development events;
- Host community engagement events;
- Deliver on tender contracts awarded by external partners; and
- Increase financial income from external partners.

4.2 Strategies employed to achieve objectives

Objectives	Strategy/activities
Increase peer reviewed papers	Appointed 3 x research associates and 1 x post-doctoral researcher. Published 13 peer reviewed papers during 2015.
Employ more research associates	Appointed 3 additional research associates during 2015
Host post-graduate capacity development events	Post-graduate students attended 6 capacity development event
Host community engagement events	SRU hosted a community dialogue about the conditions of our Wilderness rivers and the impact on the community; a community hacking day; sustainability dialogues; received media coverage; established a blog site; hosted "virtual social-ecological systems lab" meetings with Sanparks; and attended various community meetings
Deliver on tender contracts awarded by external partners	SRU initiated actions to deliver on contracts with the CSIR and the Department of Environmental Affairs. These also include Masters and PhD bursaries.
Increase financial income from external partners	SRU submitted tender bids for various external opportunities that would include Masters and PhD bursaries.

4.3 Output

4.3.1 Academic output

SRU members delivered the following academic output during 2015:

- Thirteen (13) peer reviewed papers, including three book chapters;
- Published five conference papers;
- Convened two sessions at an international conference;
- Chaired a session at the international Ecosystems and Poverty Alleviation (ESPA) science meeting in London;
- Organised and facilitated the International Council for Science's PECS capacity development programme in Stellenbosch;
- Hosted the MAGIC team of international researchers in South Africa and chaired the sessions;
- Hosted a SAEON round table discussion at the George Campus;
- Collaborated in joint projects with CSIR, Sanparks, University of Exeter, CIRAD, CNRS, Department of Environmental Affairs, Rhodes University, Stellenbosch University and SAEON;
- Supervised seven Masters and three PhD students during 2015; and
- Attended three capacity development workshops during the year.

4.3.2 Community engagement output

SRU hosted the following community engagement events during 2015:

- A community dialogue about the conditions of our Wilderness rivers and the impact on the community
- A community hacking day to raise awareness for removal of alien invasive species
- A community sustainability dialogue about risks and vulnerability of coastal living
- A sustainability dialogue with Sanparks "re-imagining engagement in the Garden Route"
- A dialogue with various stakeholders about alien plant management priorities
- Published three articles and received four citations in the media
- Established a blog site for the Kaaimans to Touw forum and
- Attended various community meetings, visits to farmers and site visits with stakeholders.

4.3.3 Projects and funding output

SRU submitted proposals for the following projects and funding from external sources:

- R1.84 million proposal submitted to Water Research Commission
- R22 million collaborative proposal submitted to Department of Environmental Affairs in collaboration with Wildlands Trust
- R6 million proposal submitted to Department of Environmental Affairs
- Proposals for two post-doctoral fellows submitted to the Claude Leon Foundation.

4.3.4 Academic capacity development output

- Regular journal club meetings
- Writing workshops and retreats
- Ecosystems and society learning event
- Three RCD workshops attended.

4.4 Self-assessment of achievement of goals/targets

All objectives for 2015 were achieved.

4. **Highlights and special achievements**

SRU were awarded the NMMU Engagement Excellence Award for 2015.

5. **Finances**

5.1 Financial review

The SRU has received funding from Department of Environmental Affairs and CSIR which are part of existing multi-year contracts.

5.2 Financial statements

The SRU had a closing balance of R 1.316 million by beginning 2016.

INCOME STATEMENT OF SUSTAINABILITY RESEARCH UNIT

ENTITY NAME : SUSTAINABILITY RESEARCH UNIT
 ENTITY LEADER : PROF C.FABRICIUS
 COST CENTRES : L307, L293, L276, L345, H285, H392, G640, L321, N276, N410

INCOME STATEMENT FOR PERIOD :	Year 2015	Year 2014
Opening Balance	301 446 <i>N1</i>	451 996
INCOME	1 981 191	750 893
NRF funded income	933 815	529 673
Council research funds	41 390	71 680
Private Grants Unrestricted	1 005 986	149 540
EXPENDITURE	965 918	943 248
Operating Expenses	342 408	472 843
Capital Expenditure	36 354	38 950
Bursary Awards External Funds	376 200	253 650
Salaries	141 099	177 806
Student bursaries	950	-
Program Admin/Agent Fee	68 908	-
Surplus/(Loss) for the year	1 015 273	(192 355)
Closing Balance	1 316 719	259 641

N1 : The opening balance for 2015 has been adjusted to include the opening balance on cost centres G640, N276 and N410

Signed off by Finance Dept.

Name : Mariam Jogee-Jamal

Title : Director Corporate Finance

Signature : 

Date : 2016-03-08

*All amounts for 2015 as per ITS at 2016/03/08
 All amounts are in ZAR.*

6. Additional information

The SRU had its five year review in April 2015 and received a positive feedback report from the review panel with some recommendations for implementation. A key recommendation is that the SRU should become a compact global Centre for Environment and Society

7. Mandatory Summary for Senate

The SRU had a successful 2015 based on the fact that the entity has achieved its objectives, maintained its student numbers and increased its financial income and research output. Academic output increased whilst community engagement output was maintained.

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)

OUTPUTS/ACTIVITIES	NO	DETAILS	STAFF INVOLVED	OTHER (Specify)
CONFERENCES				
International Conferences (Published Papers)		N/A		
National Conferences (Published Papers)		N/A		
International Conference (presented but not published papers)	1	<i>“Walking with stakeholders through catchments.”</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Dr Dirk Roux	
	2	<i>“The role of agency science in obtaining the evidence base for conservation management and policy.”</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Dr Dirk Roux	
	3	<i>“Cross-scale connections for systemic conservation governance: Enabling feedbacks from global targets to local action and back.”</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Dr Dirk Roux	
	4	<i>“Enabling environments for collective action.”</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Dr Jeanne Nel	
	5	<i>“Knowledge co-production and boundary work to promote implementation of conservation plans.”</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Dr Jeanne Nel	
	6	<i>Fabricius, C. 2015. MAGIC: the wicked problem of multi-scale adaptations in coastlines.</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Professor Christo Fabricius	
	7	<i>Fabricius, C. 2015. Landscape stewardship: repairing the fragmented connections.</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Professor Christo Fabricius	
	8	<i>Fabricius, C. 2015.</i> PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Professor Christo Fabricius	

	9	<i>Stakeholder engagement: time to connect</i> . Presented at PECS capacity development workshop, PECS 2015 Conference: Social-ecological dynamics in the Anthropocene. Spier Estate, Stellenbosch, 3-5 November 2015.	Professor Christo Fabricius	
	10	<i>Fabricius, C. 2015. Bridging agents, boundary objects & metaphors: entry points to heal fragmented peopescapes. Ecosystems and Poverty Alleviation (ESPA) Science Meeting, London, November 2015 (www.espa.ac.uk)</i>	Professor Christo Fabricius	
National Conference (presented but not published papers)		N/A		
International Conferences (only attended)		N/A		
National Conferences (only attended)		N/A		
JOURNAL ARTICLES				
International indices (ISI & IBSS)	1	Cundill G, Roux DJ and Parker JN. 2015. Nurturing communities of practice for transdisciplinary research. <i>Ecology and Society</i> 20 (2): 22. [online] URL: http://www.ecologyandsociety.org/vol20/iss2/art22/	Dr Dirk Roux	
	2	Roux DJ, Kingsford RT, McCool SF, McGeoch MA and Foxcroft LC. 2015. The role and value of conservation agency research. <i>Environmental Management</i> 55(6): 1232–1245.	Dr Dirk Roux	
	3	Roux, D.J., Nel, J.L., Fisher, R. and Barendse, J. 2015. Top-down conservation targets and bottom-up management action: creating complementary feedbacks for freshwater conservation. <i>Aquatic Conservation: Marine and Freshwater Ecosystems</i> .	Dr Jeanne Nel & Dr Jaco Barendse	
	4	Nel, J.L., Roux, D.J., Driver, A., Hill, L., Maherry, A., Snaddon, K., Petersen, C., Smith-Adao, L.B., Van Deventer, H., and Reyers, B. 2015. Knowledge co-production and boundary work to promote implementation of conservation plans. <i>Conservation Biology</i> , DOI: 10.1111/cobi.12560.	Dr Jeanne Nel & Dr Dirk Roux	
	5	Reyers, B., Nel, J.L., O'Farrell, P.J. and Nel, D.C. 2015. Navigating complexity through knowledge coproduction: mainstreaming ecosystem services into disaster risk reduction. <i>PNAS</i> , doi/10.1073/pnas.1414374112	Dr Jeanne Nel	
	6	Barendse J, Francis J. 2015. <u>Towards a standard nomenclature for seafood species to promote more sustainable seafood trade in South Africa.</u> <i>Marine Policy</i> 53: 180-187.	Dr Jaco Barendse	
	7	Fabricius, C., and T. Pereira. 2015. Community Biodiversity Inventories as	Professor Christo	

		Entry Points for Local Ecosystem Stewardship in a South African Communal Area. Society & Natural Resources:1–13. http://dx.doi.org/10.1080/08941920.2015.1014591	Fabricius	
	8	Phair, N., Barendse, J., Smith, M.K.S. & von der Heyden, S. 2015. Molecular analysis confirms genetically distinct populations of two indigenous estuarine fish species in isolated coastal lake: implications for the management of introduced ichthyofauna. <i>Conservation Genetics</i> doi:10.1007/s10592-015-0701-9	Dr Jaco Barendse	
BOOK CHAPTERS	1	Bohensky, E., Evans, L., Anderies, M., Biggs, D. and Fabricius, C. 2015. Principle 4: foster complex adaptive systems thinking. In: Principles for Enhancing the Resilience of Ecosystem Services, edited by R. Biggs, M Schulter and M Schoon. Cambridge University Press. http://www.cambridge.org/za/academic/subjects/life-sciences/natural-resource-management-agriculture-horticulture-and/principles-building-resilience-sustaining-ecosystem-services-social-ecological-systems	Prof Christo Fabricius	
	2	Fabricius, C., and B. Currie. 2015. Adaptive Co-Management. Pages 147–179 in C. R. Allen and A. S. Garmestani, editors. Adaptive Management of Social-Ecological Systems. Springer Netherlands. http://dx.doi.org/10.1007/978-94-017-9682-8_9	Professor Christo Fabricius and Bianca Currie	
	3	Pittock J, Finlayson M, Roux D, Arthington A, Biggs H, Harrison I, Blom E, Flitcroft R, Froend R, Hermoso V, Junk W, Kumar R, Linke S, Nel J, Nunes da Cunha C, Pattnaik A, Pollard S, Rast W, Thieme M, Turak E, Turpie J, van Niekerk L and Viers J. 2015. Managing fresh water, river, wetland and coastal estuary based protected areas. In: Worboys GL, Lockwood M, Kothari A, Feary S and Pulsford I (eds) Protected Area Governance and Management, ANU E-Press, Canberra, Australia, pp 569-608.	Dr Dirk Roux	
	4	Currie, B. 2015. Chapter 12. Nelson Mandela Metropolitan University George Campus Student Mobilisation Change Project. In: Lotz-Sisitka, H. et al. (Eds) Mainstreaming Environment and Sustainability. African Universities: Stories of Change. Rhodes University Environmental Learning Research Centre.	Bianca Currie	
	5	Fabricius, C., and B. Currie. 2015. Adaptive Co-Management. Pages 147–179 in C. R. Allen and A. S. Garmestani, editors. Adaptive Management of Social-Ecological Systems. Springer	Prof Christo Fabricius and Bianca Currie	

		Netherlands. http://dx.doi.org/10.1007/978-94-017-9682-8_9		
RESEARCH REPORTS				
CREATIVE OUTPUTS				
<u>MASTERS AND DOCTORAL DEGREES COMPLETED</u>	1	M.Tech Nature Conservation: Peet Botes <i>"The management of chacma baboons and humans in a peri-urban environment: A case study from Nelson Mandela Metropolitan University's George Campus."</i>	Prof Christo Fabricius	
	2	M.Tech Nature Conservation: Samantha McCulloch <i>"Assessing the absorptive capacity of three environmentally mandated public-sector organisation."</i>	Prof Christo Fabricius & Dr Dirk Roux	
	3	M.Tech Nature Conservation: Andrew Jackson <i>"Investigating the effectiveness of microcatchments at enhancing transplant survival in a Nama-Karoo riparian ecosystem restoration trial."</i>	Bianca Currie	
	4	BA Media, Communication and Culture & MA Coursework: Thea Buckle <i>"Media and communication influences on farmers' views of water conservation in the Garden Route, South Africa."</i>	Professor Christo Fabricius	
Masters by Coursework and Treatise		N/A		
Masters by Research		N/A		
Doctoral Degrees		N/A		
<u>HUMAN CAPITAL DEVELOPMENT</u>				
Emerging (Staff & PG Students)	1	Hosted a Postgraduate Orientation Workshop	Bianca Currie	
	2	Attended a thesis writing seminar	Students & staff	
	3	Attended regular journal club meetings	Students & staff	
	4	Attended writing retreats	Students & staff	
	5	Attended an Ecosystems and Society learning event	Students & staff	
	6	Attended three RCD workshops	Students & staff	
Established Researchers	1	Presented at the Academic Engagement Colloquium, Port Elizabeth	Bianca Currie	
	2	Academic Engagement Publication Writing Retreat, Port Elizabeth	Bianca Currie	
<u>ACADEMIC ENGAGEMENT</u>	1	Participation in Kaboega Journals 2015	Students	
	2	Served on the International Project Advisory Panel of the UK's Ecosystems	Prof Christo Fabricius	

		and Poverty Alleviation (ESPA) project		
	4	Hosted the MAGIC team of international researchers from UK and France in South Africa and chaired the sessions	Prof Christo Fabricius & students	
	5	Hosted an international visitor from CSIRO, Australia	Prof DIRK ROUX	
	6	Hosted a SAEON round table discussion at the George campus	Prof Christo Fabricius & Dr Dirk Roux	
	7	Hosted and facilitated a Sanparks dialogue	Prof Christo Fabricius & Dr Dirk Roux	
	8	Facilitated an Environmental Stewardship module to first year SNRM students	Prof Christo Fabricius	
	9	Facilitated a Freshwater Ecology module to B.Tech Nature Conservation students	Prof Christo Fabricius & Dr Dirk Roux	
<u>COMMUNITY ENGAGEMENT</u>	1	Hosted a community dialogue about the conditions of our Wilderness rivers and the impact on the community	Staff & students	
	2	Hosted a community hacking day to raise awareness for removal of alien invasive species	Staff & students	
	3	Hosted a community sustainability dialogue about risks and vulnerability of coastal living	Staff & students	
	4	Hosted a sustainability dialogue with Sanparks “re-imagining engagement in the Garden Route”	Prof Christo Fabricius & Dr Dirk Roux	
	5	Hosted a dialogue with various stakeholders about alien plant management priorities	Prof Christo Fabricius	
	6	Published three articles and received four citations in the local media	Prof Christo Fabricius	
	7	Established a blog site for the Kaaimans to Touw forum	Students	
	8	Attended various community meetings, visits to farmers and site visits with stakeholders	Staff & students	
	9	Attended and presented at a SLCI workshop in George	Staff & students	
<u>GRANTS RECEIVED</u>	1	DEA NRM funding: R1 121 600 CSIR: R222 596.00 Various NRF grants		
<u>KNOWLEDGE PRODUCTS</u>				
Intellectual Property		N/A		
IP Commercialisation		N/A		
Disclosures		N/A		
<u>OTHER (Specify)</u>				