

APPLICATION FORM: NMMU ENGAGEMENT EXCELLENCE AWARDS

(CONSULT THE NMMU ENGAGEMENT EXCELLENCE AWARDS POLICY AND READ THE APPLICATION FORM BEFORE COMPLETING THE TEMPLATE IN ORDER AVOID A DUPLICATION OF INFORMATION.)
COMPLETE THIS FORM IN TYPESCRIPT. PROVIDE ONLY THE INFORMATION REQUESTED.

SECTION A: Application category					
<ul style="list-style-type: none"> Indicate with an X in the appropriate box the award you are applying for. Your application will only be considered for the award you have applied for 	<p><input type="checkbox"/> Engagement Excellence Award – Science, Technology and Engineering</p> <p><input type="checkbox"/> Engagement Excellence Award – Social Sciences and Humanities</p> <p><input checked="" type="checkbox"/> Engagement Excellence Team Award</p> <p><input type="checkbox"/> Engagement Excellence Project Award – Science, Technology and Engineering</p> <p><input type="checkbox"/> Engagement Excellence Project Award – Social Sciences and Humanities</p> <p><input type="checkbox"/> Emerging Engagement Excellence Awards <i>(note that Professors and Associate Professors are not eligible for this category)</i></p>				
Surname of Applicant/Team Leader	Fabricius				
First Name	Christo				
Initials	C				
Title	Professor				
Telephone numbers	044-8015121 / 5111				
E-mail address	christo.fabricius@nmmu.ac.za				
Employment position held at NMMU	Leader: Sustainability Research Unit				
Faculty	Science				
Department	The SRU resorts under the Dean of Science				
Division					
Immediate line-manager	Prof C McClelland				
Eligibility: Are you permanently employed and/or on a long term (3 years or more) fixed contract? (indicate with an X)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Permanent</td> <td style="width: 50%; text-align: center;">Fixed term contract</td> </tr> <tr> <td style="text-align: center;">x</td> <td></td> </tr> </table>	Permanent	Fixed term contract	x	
Permanent	Fixed term contract				
x					
If this is an application for one of the Engagement Excellence Project Awards, provide a brief title and description of the project (250 words maximum)	Title:				
If this is an application for either the Excellence Awards or the Emerging Award, provide a brief description of your engagement activities and initiatives (250 words maximum)	Description:				
If this is an application for the Engagement Excellence Team Award, provide	Staff:				
<ul style="list-style-type: none"> the names of all staff members and students participating the nature of their involvement 	1. Prof Christo Fabricius – Leader, strategic development, conceptual development, engaged research, teaching of environmental stewardship. 2. Bianca Currie – Research on community				

- a brief description of the team's engagement initiatives and activities (250 words maximum)

- participation. Co-leadership of SRU. Teaching of environmental education.
3. Adjunct Prof. Dirk Roux – SANParks. Research Associate. Engaged research, teaching in freshwater ecosystem management.
 4. Dr Jeanne Nel – CSIR. Research Associate. Collaborator & research
 5. Prof. Janine Adams - Strategic advice.

Students:

1. Mr. Peet Botes – Masters research. Baboon-human co-existence on the George Campus.
2. Ms. Dorothea Buckle – Masters researcher – MA Journalism & Media Studies. Farmer engagement. Web site maintenance. Media liaison.
3. Ms. Abigail Crisp. MTech (Nature Conservation). Development practitioner's views of ecological infrastructure in the Garden Route. (Graduating 2015).
4. Ms. Lisa Heider – Phd researcher: Stewardship of social-ecological systems, and environmental identity in the Garden Route.
5. Ms. S Mc Culloch – MTech (Natural Resource Management). Stakeholder liaison, research on stakeholders' absorptive capacity in Eden District Municipality.
6. Ms. Aneri Roos. MSc (Botany). Inventory of stakeholders and their narratives around the Wilderness Lakes. (Graduating 2015).
7. Ms. Verouschka Sonn – MTech (Nature Conservation). Research on George residents' perceptions of water quality.
8. Ms Kate Southey. MSc (Zoology). Research on practitioners' prioritization of conservation areas. (Graduating 2015)
9. Mr. Kutelani Tshivhase – MTech (Forestry). Research on township residents' use of forestry resources.

Description:

The team shares the responsibility for the research, consultation, engagement, education, community participation and practical application of Ecosystem Stewardship for Sustainability in the Southern Cape. Together, they develop the capacity for the sustainable management of ecological, social and economic systems through user-inspired research, training and policy related work. They bring together decision makers and researchers from various institutions to address challenges collaboratively.

In 2014 the team participated in information, educational, consultative and participatory events with external stakeholders like the Garden Route Initiative (GRI), Southern Cape Landowners Initiative (SCLI),

	<p>CapeNature, SANParks, Eden District , George and Knysna municipalities, Rhodes University, WESSA, ratepayers associations, farmers and community leaders.</p> <p>The team initiated and implemented 34 direct engagement events with community leaders and civil society including government, NGOs and the private sector. These engagements took the form of participatory action research using sustainability dialogues, interviews and surveys, and presentations, capacity development workshops and training courses to provide feedback.</p> <p>This engaged research resulted (in 2014) in 9 peer reviewed papers, 5 papers in press, 6 papers in review; 3 research reports; and 3 articles in popular media to raise awareness. Individuals presented papers at 16 national and international symposia in France, Netherlands and Australia.</p> <p>Academic staff supervised and co-supervised 5 BTech, 9 Masters and 4 PhD students during 2014.</p> <p>The team was responsible for teaching a 6-week module in Environmental Stewardship, involving more than 400 first-year students in Agriculture, Forestry, Game Ranch Management and Nature Conservation.</p>
<p>Are your Engagement activities/projects/initiatives registered on the Engagement Management Information System (E-MIS) on SharePoint?</p> <p>If <u>not</u>, please ensure that they are before you submit this application.</p> <p>Applications that are not registered and updated on the E-MIS will not be considered for Awards.</p> <p>The most recent date on E-MIS for each project update (achieved when 'submit' is clicked) must be in 2015.</p> <p>Provide the exact titles (as featured on the E-MIS) for all of the Engagement activities/ projects/ initiatives with which you are involved.</p> <p>Visit http://caec.nmmu.ac.za/Engagement-Information-and-Development/Engagement-Management-Information-System</p>	<p>Yes.</p> <p>Title:</p> <ol style="list-style-type: none"> 1. Ecosystem Stewardship for Sustainability

SECTION B: Engagement categories

- *You are required to describe and report in detail on a minimum of two engagement categories (these are 1, 2, 3 and 4 below) in order to be considered for an award.*
- *If you or your team are involved in three or four of the engagement categories, report in detail on all of these categories.*
- *Applications that describe and can provide evidence of engagement activities across all four categories are encouraged.*
- *Refer to section 5 of the attached Engagement Excellence Awards policy which provides a guideline on the specific activities you should report on under each of the categories you have chosen.*

Report on your:

1. Engagement through Community Interaction, Service and Outreach:

Highlights:

- During 2014, we were involved in the following community and stakeholder engagements:
 - Conducted 18 participatory mapping workshops with communities in the Wilderness Catchment area;
 - Hosted a Sustainability Dialogue: “The Silo Effect” with SANParks, Eden District and George Municipalities;
 - Hosted a Sustainability Dialogue on “Barriers and Bridges to Community Participation” with Knysna stakeholders;
 - Hosted a Sustainability Dialogue with post-graduate students on ‘Engaged research for social-ecological complexity’ during the SAPECS Winter School
 - Facilitated 4 South Cape Land Initiative (SCLI) workshops about stewardship for invasive alien plant management and also presented papers and keynote addresses at the Initiative;
 - Presented on separate occasions to SANParks, Wilderness Park Area Forum, Eden District Municipality, Wilderness Ratepayers Association and Touw River Conservancy on “Ecological Infrastructure”;
 - Coordinated a Fynbos Forum panel discussion;
 - Participated in Dept. of Environmental Affairs-NRM management planning workshop;
 - Partner with SAPECS in hosting a “Good Anthropocene” workshop in Stellenbosch;
 - Presentation to CapeNature, Eden District municipality and Garden Route National Park on “Absorptive Capacity and its relevance to learning organisations for adaptive to environmental change”;
 - Co-published and distributed a brochure on “A Journey Map for Increasing Citizen Engagement”; three articles in popular media; and numerous press releases.
- The continues to host ongoing stakeholder workshops to inform communities about sustainability, their research findings, consult regarding solutions and create awareness amongst people about environmental stewardship and sustainability. As part of the individual research projects contributing to the overarching project, the students and supervisors engage with farmers and community members that are being affected by social-ecological sustainability challenges in the Garden Route.
- Poverty stricken communities are being engaged in workshops, participatory learning, and solution seeking about poverty alleviation through ecosystem conservation. The team establishes learning relationships with individuals, share concerns and together, seek solutions for a sustainable future. The interaction and learnings from these engagements contribute to closing the gap between ecology and the social implications. During 2014, the team facilitated 34 meaningful engagement events with community leaders including government, NGOs and private sector.
- These interactions not only inform and educate, but also strengthen relationships with Garden Route partners like Garden Route Initiative (GRI), Southern Cape Landowners Initiative (SCLI), CapeNature, SANParks, Eden District, George and Knysna municipalities, Rhodes University, WESSA, FutureWorks, the Botanical Society, rate payers organizations, farmers and community leaders.
- The team is particularly satisfied with its role as process facilitator in regular workshops of the Southern Cape Landowners Initiative, the SA Programme for Ecosystems and Society (www.sapecs.org) and the SANParks Garden Route Social-Ecological Systems Laboratory. The team hosted and facilitated a Social-Ecological Systems Winter School for postgraduate students from many universities in July 2014 (see <http://www.sapecs.org/2014/07/sapecs-winter-school-turns-up-the-heat-in-the-garden-route/>)
- In addition, three Sustainability Dialogues were hosted with external stakeholders during which attendees consult on sustainability issues. These dialogues have become a cornerstone of our

engagement (see http://www.researchgate.net/publication/261600677_SUSTAINABILITY_DIALOGUES, downloaded >60 times).

- Practical outputs of the project include direct facilitation to transform the practice of ecosystem stewardship in the Garden Route. A suite of conceptual models, methods and frameworks are being developed and is in the process of being compiled in a community engagement workbook. This will form the basis for a capacity development workshop at the international PECS conference of ICSU in November 2015.
- The team partnered with NMMU and Glenwood High School, George, to host the 2014 ScieEx exhibition, which has become a popular annual event educating high scholars about science for a sustainable future.
- Relevant information were shared with the Garden Route readers in numerous popular media articles and press releases to raise awareness about the buffering capacity of ecological infrastructure and how it improves the quality of life for the citizen and communities. In addition, articles were published in SANParks Management Brief and Wild News.
- **Annexure 1.1: Letter from Eden District Municipality**
- **Annexure 1.2: Letter from CEO of SANParks**

Report on your:

2. Engagement through Teaching and Learning:

Highlights:

- The team hosted the following teaching and learning activities in the Southern Cape during 2014:
 - The team collectively designed and offered an Environmental Stewardship module to all Natural Resource Management first year students (Agriculture; Forestry; Game Ranch Management; Nature Conservation);
 - Team members C. Fabricius, D. Roux, A. Crisp, A. Roos and J. Barendse collectively taught a Freshwater Ecology module to BTech students, using 'engaged learning' principles supplemented by innovative learning methods such as group learning, student activities and field trips;
 - SRU students collectively hosted an annual postgraduate orientation workshop for all George Campus post-graduate students;
 - Team members collectively hosted and facilitated an annual Social-ecological Systems Winter School for postgraduates and academics from NMMU and other SA Universities;
 - Team members took turns in offering fortnightly sustainability Journal Club meetings; and fortnightly writing workshops, to which all George Campus postgrads are invited;
 - Hosted statistical training workshops for postgrads;
 - Team members Roos, Crisp, McCulloch and Currie co-organized a Science Faculty postgraduate symposium for PE and George campus students;
 - Fabricius and Roux hosted and facilitated a SANParks publications seminar as well as a strategic dialogue;
 - Fabricius participated as mentor in the IIASA-NRF Young Scholars Support Programme;
 - The team took collective responsibility for the mentoring and well-being of 4 BTech, 9 Master's and four PhD students. [The team's philosophy is to take collective responsibility for each other's learning through group learning, support networks and providing moral and material support].
- The team's principles of post-graduate training, inter-disciplinarity, awareness creation, learning, training and implementation aligns the team activities with that of 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 through teaching and learning provides a constructive contribution to regional, national and global sustainability.
- **Annexure 2: Environmental Stewardship module offered to all first-year students in SNRM**
- **Annexure 3: Programme of Post-graduate Orientation workshop**
- **Annexure 4: Programme of SAPECS Winter School**

Report on your:

3. Engagement through Profession/Discipline-Based Service Provision:

- Through its research, the team renders a service to the public via contracts with funders like Department of Environmental Affairs, SANParks, CSIR, Water Research Commission and the National Research Foundation, where research findings and solution recommendations will directly contribute to the individual, city and environment.
- The team leader (Fabricius) serves on the International Project Advisory Panel of the UK's Ecosystems and Poverty Alleviation (ESPA) project (www.espa.ac.uk), served on the Scientific Committee of the Resilience 2014 conference in Montpellier and was Science Director of the Resilience Alliance (www.resalliance.org) in from 2012-2014. Prof Fabricius also served on the editorial committees of Ecology and Society as well as Koedoe. Dr Roux serves on the editorial committee of Conservation Letters and Koedoe.
- The team maintains international relationships and had international visitors Professor Carl Folke of the Stockholm Resilience Centre and Dr Herve Fritz of CNRS and Claude Bernard University of Lyon, in George during 2014.
- Professor Fabricius participated as supervisor in the IIASA-NRF Young Scholar's Support Programme in South Africa and Austria.
- Team members were acknowledged for their commitment. Professor Fabricius received the SANParks regional Koedoe award for research excellence in 2014. Andrew Jackson received the Best Student Input award at the annual conference of the Land Rehabilitation Society of South Africa. Maretha Alant received recognition for the best presentation at the Fynbos Forum meeting, whilst Kate Southey was runner-up for the best student presentation at the Fynbos Forum. Profs Fabricius and Roux presented keynote addresses at the 2014 Fynbos Forum.
- **Annexure 5: Evidence of awards.**

Report on your:

4. Engagement through Research and Scholarship:

- Highlights:
 - Fabricius is Lead Principal Investigator of an international Belmont Forum project on coastal vulnerability, with community engagement it its core (see <http://www.georgeherald.com/news/News/General/67867/NMMU-prof-leads-international-study>)
 - SRU received a 3-year community engagement grant from NRF
 - SRU, SANParks and CSIR collaborating on stakeholder engagement for ecological infrastructure management. Three Master's students funded and supervised under this project.
 - 3-year contract from DEA for technical support and monitoring of invasive plant management
 - 9 peer reviewed papers published in 2014, with a further 5 papers in press and 6 in review; 16 conference papers on community engagement.
- The team's central focus is on participatory action research and engagement with stakeholders in order to provide scientific information and practical strategies to promote sustainability. Our research approach and activities are in line with the NMMU vision of generating cutting edge knowledge for a sustainable future. Also supporting this vision, is the team's inter-disciplinary approach to complex challenges of high level uncertainty. 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. The team is developing novel theoretical frameworks around these concepts which have been summarized in peer reviewed journal papers and book chapters; toolkits and a workbook that is in press.
- The team collaborated on proposals and joint research projects with CSIR and SANParks and with academic institutions like Stellenbosch, Stockholm, Exeter, Arizona State, CIRAD and CNRS. We shared learnings with Stellenbosch Institute for Advanced Studies, the Food and Agriculture Organisation of the United Nations and the International Institute for Applied Systems Analysis.
- During 2014 the team collaborated with national and international research partners, participating in national and global research projects. A good example is the Souther African Programme for Ecosystems and Society (SAPECS), affiliated to the International Council for Sciences PECS

programme, where SRU students and staff are playing strong supporting roles as founding members (see attached letter by Dr Biggs of SAPECS).

- The team published 9 peer reviewed papers, 3 research reports, and have 5 papers in press, 6 papers in review and 5 papers in advanced stages of preparation on stewardship, adaptive co-management, engagement and complexity.
- Individuals presented papers at, in total, 16 national and international symposia in France, Netherlands and Australia. Fabricius served on the international scientific committee of the Resilience214 symposium in Montpellier.
- We continuously build research capacity on the George campus by hosting journal club and writing workshops to assist postgraduates with research and thesis writing, as well as encourage undergraduates to continue with research studies.
- Sustainability Research Unit staff supervised 5 x BTech, 9 x Masters and 4 x Phd students during 2014.
- The team was awarded a three-year NRF Community Engagement Grant (2015-2017) for engaged research on the theme '*Integrated models and tools for stakeholder engagement in ecosystem stewardship*'. We were furthermore awarded a 3-year contract to provide technical support and monitoring services for the Dept of Environmental Affairs NRM Programme, and are participating in a Water Research Commission project on Ecological Infrastructure, with CSIR.
- **Annexure 6. Letter from research collaborator: SAPECS coordinator at Stellenbosch University.**
- **Annexure 7. Letter from research funder and partner: CSIR**

SECTION C: Descriptions

1. Describe the impact your Engagement activities have made on stakeholders/beneficiaries/communities and provide details on how these activities are acknowledged/recognized by:

1.1. External communities/stakeholders/beneficiaries: (not staff and students of NMMU)

- SRU has been acknowledged at various events for their quality research and education output to various stakeholders in the Southern Cape. See attached letters of recommendation by CSIR, SAPECS, Eden District Municipality, SANParks and SCLI). Fabricius received the SANParks Koedoe Award for excellence for collaborative research (see <http://www.sanparks.co.za/about/news/default.php?id=56138>)
- Since its inception, SRU has been awarded substantial research contracts for engaged research by external institutions like CSIR, SANParks, Department of Environmental Affairs, Water Research Commission and the National Research Foundation. This is perceived as a positive reflection on the activities of SRU.
- Individuals and communities have been informed, educated and influenced by the team about ecological stewardship and sustainability issues, which is visible through a change in actions and in an increased participation in dialogue and information sharing sessions. See, for example, <http://www.georgeherald.com/news/News/General/130383/News-forum-to-tackle-invasive-plants>
- Practical poverty alleviation in local communities due to conservation, has had a direct impact on community members. We work closely with a community conservation initiative, the House of Judah, in the Knysna township
- Scholars have been educated about science and sustainability for the future.
- People have been impacted and changed, assisting the transformation to a stewardship ethic in the Southern Cape.

Annexure 8: SRU's work in Knysna township

<p>1.2. Internal communities/stakeholders/beneficiaries: (staff and students of NMMU)</p>	<ul style="list-style-type: none"> • The high quality output rendered by the team is acknowledged by NMMU management through their continued financial support of the Sustainability Research Unit (SRU). • The postgraduate student numbers have grown from 2 to 15 since inception of SRU. • Encouraging feedback is received from students about the learning and growth opportunities offered by SRU. • 3 x Masters and 1 x PhD will graduate in 2015. • The Social-ecological Winter School for postgraduates was well attended with good feedback from students. It will become an annual event from 2015 onwards. • By popular demand, the Science Faculty postgraduate symposium will be hosted annually. • First year students benefit from knowledge shared by experienced researchers during classes with BTech students. <p>(See Annexures 2-4)</p>
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<p>2. Describe how your Engagement activities contribute towards faculty/department/entity engagement goals and objectives. <i>(Refer to your Department/Faculty/Entity's strategic plan here)</i></p>	
<p>The Sustainability Research Unit (SRU) develops capacity for the sustainable management of ecological, social and economic systems through user-inspired research, training and policy-related work. It raises awareness of sustainability issues amongst stakeholders and offer solutions based on participatory research. Congruence exists between the unit and its many collaborators and partners, working towards conserving the planet's natural resources for future generations.</p> <p>In short, its four focus areas are to develop information systems and models based on science, to provide scientific information about good ecosystem management practices related to climate change, to develop and implement practical strategies that promote sustainability across all spheres to promote the long term use of natural resources and to offer engagement initiatives to stakeholders to raise the awareness of individuals, corporates and institutions.</p> <p>In order for SRU to achieve its objectives, it is dependent on regular engagement with all partners, stakeholders and collaborators. Therefore, the engagement activities referred to above all contribute to achieving SRU's goals and objectives.</p> <p>The SRU has contributed to post-graduate supervision in the departments of Botany, Zoology, Journalism and Media studies and School of Natural Resource Management and is currently in the process of registering a Master's student in Geographical Sciences. Funds have been raised for collaborative research with Depts of Botany, School of NRM and Geographical Sciences.</p> <p>Annexure 9. Extract from Science Faculty Newsletter</p>	

<p>3. Describe how your Engagement activities contribute towards the achievement of the NMMU Vision 2020 Engagement Strategic Goals and Objectives. <i>(Refer to the attached NMMU Engagement Strategic Goals and Objectives)</i></p>	
<p>SRU's focus is on the provision of scientific information and practical strategies to promote sustainability, which is aligned with NMMU's vision of generating cutting edge knowledge for a sustainable future. The principles guiding SRU, and in particular its inter-disciplinary approach to complex challenges of high level uncertainty, directly supports the NMMU vision. The team's principles of post-graduate training, trans-and inter-disciplinarity, awareness creation, learning, training and implementation aligns the team activities with that of the NMMU mission of offering a diverse range of quality educational opportunities. As prescribed by the NMMU mission, the SRU's sustainability focus and attention to building capacity of government, municipal and civil decision makers make a critical and constructive contribution to regional, national and global sustainability.</p>	

4. Describe how your Engagement activities contribute towards: (Refer to any relevant media coverage, representation on boards or committees, scholarly publications, conference presentations etc.)

4.1. Addressing the needs of society and various external communities served by NMMU:

- SRU published 3 popular articles in the George Herald, SANParks Management Brief and Wild News
- Professor Fabricius serves on the International Project Advisory Panel of the UK's Ecosystems and Poverty Alleviation (ESPA) project (www.espa.ac.uk)
- Professor Fabricius served on the Scientific Committee of the Resilience2014 in Montpellier
- He was Science Director of the Resilience Alliance (www.resalliance.org) from 2012-2014.
- He serves on the editorial committees of Ecology and Society as well as Koedoe
- Dr Roux serves on the editorial committee of Conservation Letters and Koedoe

4.2. Profiling and promoting the NMMU as an engaged university:

- SRU published regular articles in the Talk @ NMMU Talk newsletter
- SRU presented a published paper at the Southern African Marine Science Symposium (SAMSS)
- It presented papers at the following international conferences:
 - 4 papers at the Resilience 2014 conference, Montpellier, France
 - A paper in Rotterdam, Netherlands
 - A paper at the World Parks Congress 2014 in Sydney, Australia
- It presented papers at the following national conferences:
 - Keynote address at the Fynbos Forum 2014
 - 2 papers at the SAWMA conference 2014
 - A paper at the Land Rehabilitation Society of Southern Africa (LaRSSA)
 - 2 papers at the Fynbos Forum 2014
 - 2 papers at the Southern African Wildlife Management Association Symposium in Port Elizabeth
- SRU published 9 peer reviewed papers, 3 research reports, 6 journal articles, have 5 papers in press, 6 papers in review and 5 papers in advanced stages of preparation.
- Regular press releases profile the SRU's work.

Annexure 10. Examples of popular articles

5. Describe how you have successfully integrated engagement into the Teaching and Learning and Research functions of the university. (Refer to sections 5.1, 5.2 and 5.3 of the Engagement Excellence Awards Policy as a guideline)

The team is responsible for two flag-ship courses: the Environmental Stewardship course, which is offered annually to all first-year students in the School of Natural Resource Management; and the Freshwater Ecology BTech course. As from 2015, the SRU also takes responsibility for the Conservation Management BTech course. All these activities are founded in the insights gained from our community engagement work, for example student learning often takes the form of dialogues, based on our Sustainability Dialogue experiences. The annual post-graduate capacity development workshops draw heavily on our methods in participatory action research. The team draws in our academic networks to offer specialized lectures, for example by Prof Folke of the Stockholm Resilience Centre, Mr Myles Mander, and Dr Le Maitre of CSIR. All the Master's and PhD students in the SRU currently conduct engaged research and interact with stakeholders in a mutual learning loop on a regular basis.

(See Annexures 2-4)

6. Provide details of scholarly outputs/contributions made to a body of knowledge as a result of your engagement activities. (Refer to publications, new teaching programmes, technical reports, conference proceedings, etc.)

Apart from the peer reviewed papers mentioned earlier, our community engagement is leading to new conceptual frameworks published or submitted in papers on participatory monitoring; adaptive co-management; complexity and stewardship. We receive recognition for these conceptual advances through invitations to

present keynote addresses at conferences (see previous sections) and by being awarded an NRF grant to develop integrated tools and methods. Our novel conceptual framework for participatory vulnerability assessment, for example, has been instrumental in receiving a Belmont Forum award (see <https://igfagcr.org/funded-projects/multi-scale-adaptations-global-change-and-their-impacts-vulnerability-coastal-areas>). These concepts and frameworks are a direct result of the feedbacks received from and learning conducted with communities and officials in our study area, the Garden Route.

Examples of conceptual contributions founded in engaged research include:

- Fabricius C. and Cundill G. 2014. Learning in adaptive management: insights from published practice. *Ecology and Society* 19 (1): 29.
- Fabricius, C. and Currie B. (in press). Adaptive co-management. In: Allen C. and Garmestani A. *Adaptive Management of Social-Ecological Systems*. Springer, Berlin.
- Roux D. 2014. "Transdisciplinarity for systemic learning: who to learn with, what to learn about and how to learn." *Resilience 2014*, Montpellier
- Cilliers, P., H. C. Biggs, S. Blignaut, A. G. Choles, J. S. Hofmeyr, and G. P. W. Jewitt. 2013. Complexity, Modeling, and Natural Resource Management 18.
- Brown, K., S. O'Neill, and C. Fabricius. 2013. Social science understandings of transformation. Pages 100-107 in ISSC and UNESCO. *World Social Science Report 2013, Changing Global Environments*. OECD Publishing and UNESCO Publishing, Paris.

7. Describe the important role performed by you or the team in:

7.1. The leadership and management of the engagement activities and initiatives:

Professor Fabricius and the senior research team within SRU fulfill a strategic role in providing guidance, support and stewardship to the postgraduate students educating and teaching them research, communication, engagement and life skills. Of late, management has become involved with undergraduate students in order to create awareness for natural resource management and sustainability and to encourage them to continue with postgraduate studies. The management team empowers the students to learn and experiment freely in a secure and safe environment, enabling them to learn beyond the classroom walls. This contributes to developing students into responsible and compassionate citizens, which is aligned with the NMMU vision. Of particular relevance is the leading role the team is played in three landmark initiatives: the MAGIC (Multi-scale Adaptations to Global change in Coastlines); the SA Programme for Ecosystems and Society (SAPECS); and the Southern Cape Landowners Initiative (SCLI). See attached letters of recommendation.

7.2. The level and extent of partnerships/collaborations/networks/linkages formed internally and externally:

a. Internally (*inter-departmental, inter-faculty and interdisciplinary*):


The SRU is supervising post-graduate students in the departments of Botany, Zoology, Journalism and Media studies and School of Natural Resource Management and is currently in the process of registering a Master's student in Geographical Sciences. Funds have been raised for collaborative research with Depts of Botany, School of NRM and Geographical Sciences. The team teaches an Environmental Stewardship module and a Freshwater Ecology module to all SNRM first-years. The team has also played a leading role in the Green Campus initiative, and develops the capacity of all post-graduate students on Campus through fortnightly journal club meetings, writing workshops and an annual postgraduate orientation workshop.

b. Externally (*at local, national and international level*):

- The team collaborated on proposals and joint research projects with CSIR and SANParks and with academic institutions like Stellenbosch, Stockholm, Exeter, Arizona State, CIRAD and CNRS. We shared learnings with

	<p>Stellenbosch Institute for Advanced Studies, the Food and Agriculture Organisation of the United Nations and the International Institute for Applied Systems Analysis.</p> <ul style="list-style-type: none"> • During 2014 the team collaborated with national and international research partners, participating in national and global research projects. A good example is the Southern African Programme for Ecosystems and Society (SAPECS), affiliated to the International Council for Sciences PECS programme, where SRU students and staff are playing strong supporting roles as founding members • The team works closely with SANParks, the Southern Cape Landowners Initiative, and Eden District Municipality on the ground. • See attached letters of recommendation (Annexures 6 and 7).
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SECTION D: Signature

Applicant Signature		Date	13 March 2015
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SECTION E: FOR OFFICE USE
(Administered by the Centre for Academic Engagement and Collaboration and the NMMU Engagement Committee)

Resolution regarding application from Awards Committee:	
Feedback to applicant:	

SECTION F: Portfolio of Evidence

Attach any relevant documents as a portfolio of evidence to support your application. **Limit this portfolio of evidence to a maximum of 20 pages.** This can include photographs, promotional material, commendations from stakeholders/beneficiaries etc., publication references, (extracts from) annual or project reports to funders/sponsors etc., or any other relevant materials that may serve as evidence.

List of supporting documents submitted along with this application as addendums:

Please ensure that the documentary evidence below is clearly cross-referenced with the relevant section and number in the application template, for example Section B1 or Section C4.

Annexure 1.1. Letter of support from local government (Eden District Municipality)

Annexure 1.2. Letter of support from SANParks

Annexure 2. Environmental Stewardship first-year course

Annexure 3. Postgraduate orientation workshop programme

Annexure 4. NMMU-SAPECS Winter School programme

Annexure 5. Evidence of awards

Annexure 6. Letter of support from collaborator

Annexure 7. Letter of support from funder and collaborator

Annexure 8. Working with disadvantaged communities

Annexure 9. Contribution to Science Faculty newsletter

Annexure 10. Examples of popular articles

NAVRAE: Mr V.Gibbs-Halls
ENQUIRIES:

KONTAKNR 044 803 1529
CONTACT NO

VERW: 8/3/15
REF:

KANTOOR:
OFFICES:

DATUM 10 March 2015
DATE



To whom it may concern

Dear Sir / Madam

RECOMMENDATION FOR THE NMMU COMMUNITY ENGAGEMENT AWARD

1. The following letter serves as an official endorsement for the NMMU Research and Sustainability Unit (SRU) as worthy recipients of the NMMU Community Engagement Award.
2. The Eden District Municipality continue to enjoy a productive and beneficial relationship with the SRU which includes effective partnerships involving a myriad of community programmes and numerous public engagement programmes.
3. The SRU remain very helpful to advise, give guidance and seek solutions through robust research interventions involving many environmental issues in our district for which we remain both grateful and appreciative.
4. The Eden District Municipality have no hesitation in recommending the SRU as deserved recipients of this prestigious award commensurate with their professional, pro-active and sustainable approach towards applying science to the benefit of our receiving environment.

Yours sincerely

A handwritten signature in blue ink, appearing to read "G. Louw", is written over a horizontal line.

MR. G. LOUW
MUNICIPAL MANAGER



South African
NATIONAL PARKS

GARDEN ROUTE NATIONAL PARK
P O Box 3542, Knysna, 6570

Tel: (044) 3025618

Fax: (044) 3025627

E-mail: jill.bunding-venter@sanparks.org

Motivation:

To: Whom it may concern

From: Jill Bunding-Venter : General Manager of the Garden Route National Park

Date: 18 March 2015

Re: Nomination of the Sustainability Research Unit (SRU) for a NMMU Engagement

Award:

To whom it may concern

As part of the suite of national parks managed by South African National Parks (SANParks), the Garden Route National Parks (GRNP) consists of the former Tsitsikamma, Knysna and Wilderness national parks and the longest contiguous indigenous forests. With its fragmented nature, spanning two District and nine local municipalities, private land and Cape Pine forests, it has to be managed in a cooperative governance style.

Being the first one of this nature with Southern Africa, it is leading the way in pioneering a new approach to conservation in connecting society to the biosphere through stewardship approaches. Thus over the past five years, SANParks researchers and managers have worked closely with the SRU in strategic planning for ecosystem management, community engagement, joint funding of a post-doctoral researcher, and regular workshops to put our vision of 'connecting society' into action. The GRNP has in particular worked closely with Bianca Curry in ascertaining the reach and effect of its public participation processes and this study in turn has informed the organisations' thinking in stakeholder engagement.

In 2014, SANParks awarded a coveted Kudu Award to Prof Christo Fabricius, Head of the SRU, in recognition of the SRU's invaluable contribution to SANParks, both in research and connecting the tertiary institution, local government and society at large with conservation outcomes both inside the recognised geographical boundaries and buffer zones.

SANParks hopes that this partnership will go from strength to strength and is committed to continue working with the SRU in pursuit of social-ecological sustainability in the Garden Route, and nationally.

Yours in conservation.

Jill Bunding-Venter
General Manager: Garden Route National Park

Introduction to Environmental Stewardship

Coordinator: Prof. Christo Fabricius, christo.fabricius@nmmu.ac.za

July 2014

Purpose

This class is aimed at first-year students in Agriculture, Nature Conservation, Game Ranch Management, Forestry and Wood Technology. The purpose is to raise awareness amongst first year students of the links between the planet's ecosystems, its resources and human well-being, thereby stimulating the development of a lasting environmental stewardship ethic amongst students.

Rationale: why this class is important

Society's awareness of the threats to Earth's ecosystems and the feedbacks between earth's resources and human well-being has increased exponentially over the past two decades. An understanding of the boundaries or safe operating space of our planet, and local ecosystems, has become a prerequisite in every industry, not only natural resource management. We believe that every NMMU student should have a deep-rooted awareness of and sense of responsibility towards our planet and its ecosystems, and be aware of the consequences of their actions and that of their industry for the long term future of ecosystems and society. This class is a compulsory element of all qualifications in the School of Natural Resource Management and possibly other academic units in NMMU. It is hoped that the sub-module will be sufficiently stimulating and entertaining to be memorable to students. We therefore purposefully deviate from conventional teaching and learning practices. The impact of the class on students' awareness, attitudes and behavior should thus be monitored.

Learning outcomes

After completing the class, students should be able to:

1. Have an emerging understanding of key ecosystem and human-wellbeing concepts such as sustainability; planetary boundaries; stewardship; responsible ecological citizenship; the feedbacks between environmental problems, economic problems and social problems; governance systems, decision making and ecosystem stewardship; ecological footprints and consumption patterns; the ethics of ecosystem stewardship.
2. Understand their responsibility to the natural environment
3. Consider and debate their responsibility towards the environment
4. Have a grasp of 'working' ecosystem stewardship initiatives and the financial realities of it
5. Make a difference in their future work place
6. Become opinion leaders on environmental stewardship in their respective fields

7. Begin to assess the short term advantages, disadvantages and trade-offs of economic or political decisions against the long term health of ecosystems and people.
8. Participate in, synthesize and evaluate contemporary dialogues about the future of our planet's ecosystems.

Detailed description

Lectures		
	Forestry & Wood Technology	Nature Conservation, Agriculture, Game Ranch Management
SESSION 1: INTRODUCTION <ul style="list-style-type: none"> • What is environmental stewardship? • Examples of environmental stewardship • Differing world views and interpretations of stewardship • READINGS 	Mon 21 July, 16:05-17:25	Thu 24 July, 14:35-15:55
SESSION 2: SKETCHING THE PROBLEME <ul style="list-style-type: none"> • Planetary boundaries • Environmental drivers and trends • Opportunities and responsibilities as environmental stewards 	Mon 11 August, 16:05-17:25	Thu 14 August 14:35-15:55
SESSION 3: LOOKING AT SOLUTIONS <ul style="list-style-type: none"> • Case studies of environmental stewardship in game ranch management, forestry, agriculture • Examples of personal environmental stewardship (group work) 	Mon 18 August 16:05-17:25	Thu 21 August 14:35-15:55
Dialogues		
Friday 22 August, 13:05-16:00	Personal environmental stewardship	Organizational environmental stewardship
Friday 29 August, 13:05-16:00	Organizational environmental stewardship	Personal environmental stewardship
Independent study of prescribed materials:	4 hours	
Preparation of assignments:	3 hours	
Assessments:	1 hour	

- Assessment: Assignments and exams will comprise 10% of a module's semester and exam mark

Teaching and learning strategies

- Students are divided into two clusters: a) Forestry and Wood Technology; and b) Game Ranch Management, Nature Conservation and Agriculture
- Theory will consist of three double periods of 90 minutes each, focusing on key issues in environmental stewardship from the perspectives of different disciplines; followed by
- Two structured 3 hour minute dialogue sessions
- Students will complete individual syntheses of the take-home messages emerging from each dialogue.
 - Students would need to submit two syntheses each, in the form of a worksheet
- Dialogues: on two practical days (after theory had been completed)
 - Topic A: *personal* environmental responsibility; Topic B: *organizational* environmental responsibility. These sessions will run in parallel
 - Dialogue panels comprise two students from each Programme, plus two academics = 12 people
 - Students in the audience will receive a worksheet to complete
 - Students will participate in break-out group discussions, do discuss content of worksheets
 - Worksheets will be used as proof of attendance, and to assess student performance in both theory and practicals.

Core content

- Ecosystems and their services from an agriculture; conservation and forestry perspective, respectively
- The links between ecosystems, human well-being and the future of our planet through an agricultural, business, conservation and forestry lens
- Sustainability and resilience in agriculture, business, conservation and forestry
- Examples of stewardship initiatives and programmes in Forestry, Agriculture, Conservation and Game Ranch Management

Assessment

Students will be assessed on their ability to synthesize the strong and weak points of the respective dialogues, using a pre-designed worksheet. The completed worksheet together with a short exam question could contribute 7-10% of a module mark.

Further reading

Everyone

Welcome to the Anthropocene” <http://www.stockholmresilience.org/21/research/research-videos/4-12-2012-welcome-to-the-anthropocene.html>

Chapin, F.S., Carpenter, S.R., Kofinas, G.P., Folke, C., Abel, N., Clark, W.C., *et al.* (2010). Ecosystem stewardship: sustainability strategies for a rapidly changing planet. *Trends Ecol. Evol.* 25, 241–249. Available from http://www.lter.uaf.edu/pdf/1389_Chapin_Carpenter_2009.pdf

Agriculture

McEwan, C. & Bek, D. (2009). The political economy of alternative trade: Social and environmental certification in the South African wine industry. *J. Rural Stud.*, 25, 255–266 <http://dro.dur.ac.uk/6065/1/6065.pdf>

Sayre, N.F., McAllister, R.R.J., Bestelmeyer, B.T., Moritz, M. & Turner, M.D. (2013). Earth Stewardship of rangelands: coping with ecological, economic, and political marginality. *Front. Ecol. Environ.*, 11, 348–354. <http://www.esajournals.org/doi/pdf/10.1890/120333>

Forestry

Forest Stewardship Council Fact-sheet. <https://ic.fsc.org/preview.about-fsc.a-779.pdf>

Marx, A. & Cuyppers, D. (2010). Forest certification as a global environmental governance tool: What is the macro-effectiveness of the Forest Stewardship Council? *Regul. Gov.*, 4, 408–434. <http://link.springer.com/article/10.1007/s13280-012-0377-z/fulltext.html>

Sayer, J.A. & Maginnis (2005). *Forests in landscapes: ecosystem approaches to sustainability*. Eartscan. Book can be downloaded for free from http://cmsassets.dev.getunik.net/iucn/downloads/2005_018.pdf - page=188

Game ranch management

Brink et al. 2011. Sustainable management through improved governance in the game industry. *South African Journal of Wildlife Research* 41: 110-119. http://reference.sabinet.co.za/sa_epublication_article/wild_v41_n1_a12

ENVIRONMENTAL STEWARDSHIP DIALOGUE

22 August 2014

Please answer the following questions in groups of 5, for 30 minutes during the practical session.

Then submit your answers to aneri.roos@nmmu.ac.za by 5 September 2014

In the relationship between myself and my environment:

- 1. What do I really want?**
 - What would a good long term outcome be, for the environment and society?
- 2. Fundamentally, what is the real challenge?**
 - What lies at the heart of the problem?
 - What is *my* role, in contributing to the problem?
 - What is preventing me from achieving this good outcome?
- 3. Is there a new way of seeing this?**
 - Which new possibilities do I see?
 - Which new opportunities exist?
- 4. What are my roles and responsibilities?**
 - In contributing to a solution
- 5. What can I do, with the resources I already have?**
 - Right now, in my role as NMMU student
 - In future, when I enter the work place.

6. My pledge

I, _____, understand my roles and responsibilities in environmental stewardship.

I therefore make a commitment to:

a) subscribe to these ethical stewardship principles:

and

b) undertake the following actions and activities:

NMMU George Campus POSTGRADUATE START-UP WORKSHOP

19 – 23 January 2015
NMMU George Campus at Saasveld

When: Monday 19 to Friday 23 January 2015

Where: Campus Conference Room

Format: Facilitated interactive discussions, readings, small group sessions, dialogues, report-backs, including contributions by senior post-graduates, advance reading, informal field trip to be announced

Outcomes:

1. Introduce new post-graduate students to the challenges and procedures of post-graduate studies.
2. Confirming roles and responsibilities of students and supervisors.
3. Lay the foundation for a future group learning culture amongst students and supervisors at the George Campus.

Monday 19 January		Facilitator	Reading (hyperlink)
12:00	Arrival, light lunch		
Afternoon	Welcome to NMMU		
	Welcome to the George Campus		
	Introductions, participatory programme formulation	Christo Fabricius	
	The basics of a Master's degree at NMMU: unpacking the NMMU post-grad policy and guidelines	Tessa? Video link	
	The post-graduate process and procedures	Bianca	Application process NMMU post-graduate policy Ethics and research conduct policies
	Obtaining ethics approval	Tatenda, Thea, Lisa, Andrew	Powerpoint presentation
	"My research journey" (Volunteer senior post-grads)		
	DISCUSSION		
16:30	GROUP PHOTO		
Evening (18:15)	Braai and social function (Students and supervisors)	Caterers	Please bring own refreshments
Tuesday 20 January			
Morning (09:00)	Dialogue 1 <i>Assumptions; Expectations; Fears; Uncertainties</i> Lecturer dialogue: "What it is like to supervise and work with postgraduate students" Christo, Dirk, Bianca, Jos	Christo	
11:00	BREAK		
11:30	<i>Invitation 1:</i> Adapting to a new work ethic (Bianca) Master's: a new ball-game Contract with supervisor DISCUSSION	Bianca Christo	To be provided
13:00	LUNCH		
Afternoon	<i>Invitation 2:</i> Making peace with complexity (Dirk) <i>Invitation 3:</i> Finding focus <ul style="list-style-type: none"> - Fast and slow thinking - Mindfulness - Office and e-mail etiquette - Participatory exercise: "when I am focussed..." (Christo) - How we think and learn (Christo) DISCUSSION	Dirk	Powerpoint
15:30	BREAK		
16:00	Background to field excursion		

Wednesday 21 January			
08:00 (sharp) All day	<i>Excursion:</i> 09h30 – Leisure Island Nature Reserve & discussion about Knysna Buffer Zone (Maretha) 13h00 – Lunch at Frontline Fishing 14h30 – Peet Joubert – Salt Marsh Rehabilitation 15h00 – Redbridge Micro Brewery tour	All students should please participate	
Thursday 22 January			
Morning (09:00)	<i>Invitation 4:</i> A new paradigm: useful indicators of relevant research; research as an adaptive process (Dirk) <ul style="list-style-type: none"> - Developing your research profile, Staying abreast. The tools of growing your research (Jaco) <i>Invitation 5:</i> <ul style="list-style-type: none"> - Working on your own yet collaboratively. Roles and responsibilities (Christo) <i>Invitation 6:</i> Communicating your ideas without confusing everyone	Dirk Jaco Christo Dirk	
11:00	BREAK		
11:30	<i>Invitation 6 ..(continued)</i> Writing for society	Thea	
12:30	How to make effective use of IT support on Campus	Garth / Trevor	
13:00	LUNCH		
14:00 Group 1: (new postgrads)	<i>Invitation 7:</i> <ul style="list-style-type: none"> - Writing a good proposal. <i>Invitation 8:</i> <ul style="list-style-type: none"> - What to do if you need help 	Bianca	To be provided
14:00 Group 2 (senior postgrads)	<i>Invitation 9:</i> <ul style="list-style-type: none"> - Finishing off well: - Structuring and planning your thesis; - Writing papers - Writing like a pro 	Christo	Murray, R. (2013). <i>Writing For Academic Journals</i> , 3E. McGraw-Hill International. Murray, R. (2011). <i>How to write a thesis</i> . McGraw-Hill International. https://medium.com/advice-and-help-in-authoring-a-phd-or-non-fiction
15:30	BREAK		
16:00	Accessing research funding	Christo	
16:30	Open		
Friday 23 January			
Morning (09:00)	Student dialogue 2 – talking about a priority challenge that emerged during the week	Sam	http://www.researchgate.net/publication/261600677_SUSTAINABILITY_DIALOGUES
	Student Dialogue 3 <ul style="list-style-type: none"> - 'The rules of work' - Activities that would encourage learning and social interaction: ideas and suggestions 	Sam / Christo	
11:00	BREAK		
11:30	Some avoidable stumbling blocks to be mindful of on your research journey	Keith	
12:00	Writing exercise: write your proposal or thesis abstract¹	Christo	https://medium.com/advice-and-help-in-authoring-a-phd-or-non-fiction/writing-informative-abstracts-for-journal-articles-9cf929c6bd75
13:30	APPRECIATION	Christo	
14:00	Closure and way forward		

¹ On Wednesday 28 January every student will be required to present **6 slides** to summarize either their research proposals (in the case of new students); or research outcomes (in the case of senior students)

Ecosystems & Society Winter School program, 30 June to 4 July 2014

Date	Time	Activity
Mon 30 June		Arrival and registration
	18:00	Welcome and introduction to field trip and case study (Saasveld Dining Hall)
		Meet & greet dinner
Tue 1 July	<i>07:00</i>	<i>Breakfast</i>
	08:00	FIELD TRIP: Wilderness Rivers case study
	<i>18:30</i>	<i>Dinner</i>
Wed 2 July	<i>7:00-</i>	<i>Breakfast</i>
	8:30	Lead presentations:
		i. Introduction to complexity (Rika Preiser)
		ii. Wicked problems and trans-disciplinarity (Dirk Roux, Heila Lotz-Sisitka)
		iii. Social-ecological systems and resilience (Oonsie Biggs)
		iv. Engaging with stakeholders (Christo Fabricius)
	<i>10:30</i>	<i>Tea</i>
	11:00	FOOD-FOR-THOUGHT & DIALOGUE 1: Where to start (Georgina Cundill)
	11:20	Dialogue in break-out groups
	12:30	PLENARY Report-back
	<i>13:00</i>	<i>Lunch</i>
	14:00	FOOD-FOR-THOUGHT & DIALOGUE 2: Conceptualising your research (Oonsie Biggs)
	14:20	Dialogue in break-out groups
	15:30	PLENARY Report-back
	<i>15:45</i>	<i>Tea</i>
	16:00	FOOD-FOR-THOUGHT & DIALOGUE 3: Collaborative relationships (Luthando Dziba)
	16:20	Dialogue in break-out groups
17:30	PLENARY Report-back	
<i>18:30</i>	<i>Dinner</i>	
	<i>Fireplace dialogue (Luthando Dziba)</i>	
Thu 3 July	<i>7:00</i>	<i>Breakfast</i>
	8:30	FOOD-FOR-THOUGHT & DIALOGUE 4: Designing your project (Georgina Cundill & Sheona Shackleton)
	8:50	Dialogue in break-out groups
	10:00	PLENARY Report-back
	<i>10:30</i>	<i>Tea</i>
	11:00	FOOD-FOR-THOUGHT & DIALOGUE 5: Collecting data (Heila Lotz-Sisitka)
	11:20	Dialogue in break-out groups
	12:30	PLENARY Report-back
	<i>13:00</i>	<i>Lunch</i>
	14:00	FOOD-FOR-THOUGHT & DIALOGUE 6: TBA (Open agenda) (priorities to be defined)
	<i>15:30</i>	<i>Tea</i>
	16:00	General discussions and report-backs
	<i>18:30</i>	<i>Dinner</i>
	<i>Discussion: practical tool for restoration of ecosystem services (optional) (Cobus Theron, EWT)</i>	
Fri 4 July	<i>7:00</i>	<i>Breakfast</i>
	8:30	REFLECTION: Recap, way forward and closure
	10:30	TEA & refreshments. Departure

Annexure 5. Awards

September 2014



ACCOLADES ... Sustainability Research Unit Director **Prof Christo Fabricius** (right) won the research initiatives and innovation award in this year's SANParks regional awards. The award acknowledges the catalytic role Prof Fabricius and the unit is playing in the Garden Route to advance sustainability-thinking. According to SANParks scientist, **Dr Dirk Roux** (left), who is also a research associate of the unit, Prof Fabricius's strong emphasis on participatory research has contributed towards building capacity for learning and adapting.

Annual Fynbos Forum



NMMU staff, students and research associates were well-represented at the recent Fynbos Forum – an annual scientific gathering of leading Western Cape researchers and practitioners who work in the Cape Floristic Region, also known as Fynbos.

Close to 200 participants working on social, ecological and species conservation attended the 2014 Forum, held in Knysna in August.

George Campus academics, namely Sustainability Research Unit's **Prof Christo Fabricius**, **Bianca Currie** and Botany master's student **Aneri Roos**, delivered the opening address on "Local participation and ecosystem stewardship in the Garden Route".

Sustainability Research Unit's **Dr Dirk Roux** presented a keynote address

on "The role of wetlands in setting targets for conservation action", while Natural Resource Management's **Drs Corli Coetsee** and **Ben Wigley** presented on "Boundaries between forest and Fynbos", while Natural Resource Management's **Dr Tineke Kraaij** delivered a keynote address on "Fire ecology in Fynbos".

Zoology PhD student **Maretha Alant** won the prize for the best conference presentation for her work on "Landscape connectivity and mammal movements in the buffer zone of Garden Route National Park", while MSc Zoology student **Kate Southey** was runner-up for the best student presentation for her work on "Conservation priorities in the Garden Route".



NORTH-SOUTH UNIVERSITY
NORTH-SOUTH UNIVERSITY
NORTH-SOUTH UNIVERSITY

13 March 2015

To whom it may concern,

Letter of support for NMMU Sustainability Research Unit

I have engaged with researchers at the Sustainability Research Unit (SRU) at NMMU for a number of years and would hereby like to offer my strongest support towards their application for the NMMU engagement award.

I would like to specifically highlight the central contribution that SRU has made to the development of the Southern African Program on Ecosystem Change and Society (SAPECS, www.sapecs.org). SAPECS is an international, transdisciplinary research program that aims to advance stewardship of social-ecological systems and ecosystem services in southern Africa, and involves around 25 leading social-ecological researchers working in the southern African region.

Prof Christo Fabricius and Dr Dirk Roux have been central figures in supporting and guiding the development of SAPECS, both in an advisory capacity as well as providing leadership on key activities within the network. Specifically, Prof Fabricius played a key role in helping frame the initial science program for SAPECS and scope its potential future development options during the inception of the program in 2012. This framework has proven very robust and still guides the program today. Dr Roux has similarly provided much valued mentorship and support in relation to the ongoing development and management of the SAPECS network, and has since 2013 led the development of the Transdisciplinary and Mainstreaming theme of SAPECS, one of five overall themes that form the overarching research framework for SAPECS.

Furthermore, Prof Fabricius and Dr Roux took the initiative to develop and host the first SAPECS winter school at Saasveld during 30 June – 4 July 2014. This event was attended by 21 postgraduate students working in the area of social-ecological systems



Rig asseblief alle korrespondensie aan die Registrateur/Please address all correspondence to the Registrar
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and resilience, and additionally involved 5 facilitators and 7 lecturers from across the SAPECS network nationally. This was a landmark event in the development of SAPECS, and has led to the formation of a national network of students who are engaged in ongoing discussions and peer-support. A number of students and lecturers at SRU, specifically Bianca Currie; Sam McCulloch; Thea Buckle; Aneri Roos (née Vlok), were deeply engaged in the organization and running of this event, which was executed in a highly professional manner, and is expected to provide the foundation for future winter school events.

We foresee the much valued and highly productive collaboration between SRU and SAPECS continuing and growing in strength into the future. Specifically we foresee Prof Fabricius and Dr Roux continuing to play key mentorship and leadership roles in guiding the development of the network and initiating key activities and research programs. In addition, we expect a growing number of students and lecturers at SRU to become engaged in the SAPECS network and student network in future.

Please do not hesitate to contact me if you require further information.

A handwritten signature in black ink, appearing to read 'Oonsie Biggs'.

Dr Reinette (Oonsie) Biggs
Branco Weiss Society in Science Fellow

Coordinator: Southern African Program on Ecosystem Change and Society (SAPECS)
Research Associate: Centre for Studies in Complexity, Stellenbosch University
Theme Leader: Social-Ecological Regime Shifts, Stockholm Resilience Centre, Sweden

Email: oonsie@sun.ac.za. oonsie.biggs@su.se





CSIR Natural Resources and Environment

PO Box 395 Pretoria 0001 South Africa
Tel: +27 12 841 2911
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Email: query@csir.co.za

10 March 2015

To whom it may concern

Letter of support for the NMMU Sustainability Research Unit

I have worked with and interacted with the NMMU Sustainability Research Unit for the last three years in my capacity as the Research Group Leader of the Biodiversity and Ecosystems Service Group at the CSIR. These interactions have been both formal collaborations on research projects and informal where we have contributed at the same forums and meetings, with both staff, Christo Fabricius and Dirk Roux, and well as students Sam McCulloch, Thea Buckle, Aneri Roos (née Vlok) and Abigail Crisp.

The most recently interactions between my research group and the NMMU SRU have been around a three year Water Research Commission project which we are jointly engaged in focused on understanding the Wilderness Catchment Social Ecological System. I have found the SRU project deliverables here to be of a very high standard, delivered on time according to plan, and the experience of working with this group to be an absolute pleasure. I believe that the CSIR has benefited from this collaboration and we would like to pursue future research projects with this group.

Please feel free to call me should you wish to discuss this matter further.

Yours sincerely

Dr Patrick O'Farrell
Research Group Leader
CSIR - Natural Resources and the Environment
Email: pofarrell@csir.co.za
Telephone: +27 (0)21 888 2460

Annexure 8. Working with disadvantaged communities



Figure 1. Working with the House of Judah in Knysna on community conservation projects



Figure 2. Participatory mapping with Touwsranten residents

Sustainability Research Unit as catalyst for Ecosystem Stewardship in the Garden Route

The SRU plays an important role in making stakeholders aware of their roles as environmental stewards. They are currently working with farmers, associations, local communities and officials in the Wilderness area to stimulate a culture of stewardship. To them, stewardship means voluntarily caring for the environment, making sure resources are equally distributed and that nobody is unfairly deprived of access to resources, and caring for the interests of society as a whole, including future generations. Stewardship is an ethic of caring for the earth and its resources, reducing consumption and taking action to care for the environment and the interests of society.

The SRU continuously engages with society by organizing deep and open conversations, which they call 'Sustainability Dialogues', with stakeholders. These dialogues may include small group meetings where people are asked to identify places of special value to them, as well as threats to such areas. They also include group meetings, where role players with different interests get together in their Sustainability Cafés to share their fears and aspirations.

Dialogues even include individual and small group conversations, addressing various associations and forums, and facilitating open conversations and listening to, rather than just talking to people.

During 2014 the postgraduate students and staff hosted three large panel discussions, conducted scores of group conversations, and interviewed scores of individuals and community leaders. They appointed a dedicated Knowledge Broker, and attended every available community meeting, even if only to show a presence but mostly to facilitate conversations. Participatory mapping exercises with farmers, ratepayers associations, township residents and conservation interest groups were also conducted.

Regular articles are written and published in local community newspapers, or information is fed to journalists to raise awareness. This year for the first time the postgraduate students and staff jointly taught a module in Environmental Stewardship to first-year students in Agriculture, Forestry and Conservation, respectively, in the hope

that some of them will embrace the stewardship ethic and take it with them when they leave NMMU.

All this information is being captured in databases and Geographic Information Systems, and used later, almost like a 'mirror', to reflect stakeholders' fears, special interests, values and aspirations to them. The end result of all this will be the formation of catchment management forums that are truly representative of the different interest groups in society, and that play an active role in managing the Garden Route's ecosystems for the benefit of everyone.

"This is a long term project, founded in the theories of social learning, common pool resource management, motivational theory and adaptive co-management. Apart from publishing our insights and new social learning theories in peer reviewed journals, our vision is that 10 years from now there will be a revolution in the way land users manage their ecosystems, together, around a common stewardship vision," said Prof Christo Fabricius.



Annexure 10A: Article in Wild News and information pamphlet

Nature's services are useful buffers against natural disasters

by Prof Christo Fabricius

The George and Eden District Municipality, industries, farmers and residents of Wilderness are constantly planning for and developing our engineering infrastructure such as tarred roads, walkways, bridges, pipelines and dams in the Garden Route. An important aspect of this planning is the role infrastructure plays in disaster mitigation. But we tend to forget that natural ecosystems also provide infrastructure that can reduce the impacts of droughts, floods and fires.

The natural buffers against environmental damage to landscapes come in the form of ecological infrastructure such as river and wetland vegetation, soils stabilized by healthy vegetation, coastal dunes and floodplains. The ecosystem's job is to act as a defense against shocks, surprises and disturbances caused by rivers in flood, long droughts or abnormal sea surges. These natural buffers also act as sponges, regulating sediments and nutrients and slowly releasing them back into the system.

Healthy ecosystems improve environmental resilience and enhance the ability of the environment to 'bounce back' quickly after disturbances. They provide valuable protection against nature's surprises to property and production systems. Healthy natural infrastructure is crucial to our well-being and protection. It also protects our conventional infrastructure such as roads, croplands and houses. One of the most important functions of this type of infrastructure is that it enables us to produce different types of land use side by side, such as a combination of tourism, housing, farming, conservation and forestry.

Degraded ecosystems, on the other hand, provide less protection against shocks which make ourselves and our property more vulnerable to environmental degradation. Nature's infrastructure can quickly become degraded through processes such as invasion by alien plants, water pollution, poorly planned developments that are too close to rivers and wetlands, The degradation is often an unintended result of 'siloed' planning and short term adaptations that have overlooked the protecting services of our natural environment.

Many land users, in partnership with government and local authorities in the Garden Route, are aware of these vital services that nature can provide and making special efforts to protect their natural ecosystems. The Department of Environmental Affairs is investing in public work programmes such as Working for Water, Working for Wilderness, Working on Fire and Working for Land. These initiatives, undertaken in partnership with our local and provincial authorities with the help of private land owners, SANParks, non-profit organizations and universities will go a long way to restore our natural infrastructure, thereby reducing our risk to natural disasters.

With these challenges in mind, the Sustainability Research Unit at Nelson Mandela Metropolitan University's George Campus at Simonsvlei (NMMU) have partnered with the Council for Scientific and Industrial Research (CSIR) on a long term 'action research' project. We are busy assessing how natural infrastructure can best be managed so as to assure a healthy future for the Wilderness rivers and the landscapes around them to enhance the area's water security and resilience to floods and droughts. An added benefit is that at the same time, priceless biodiversity and natural beauty of the Wilderness area can be secured for future generations.

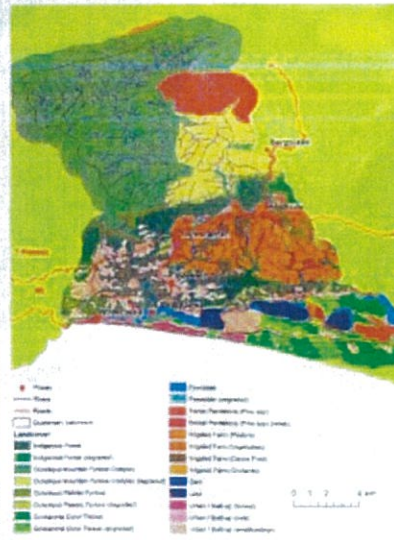
The CSIR-NMMU research team are specifically interested in



Invasive alien plants leave river banks more vulnerable to erosion



An example of the unintended consequences of short term planning. The manipulation of the mouth and upstream with negative impacts on the functioning of the river and connected lake system.



Map of the study area

understanding and mapping the localities that are most vulnerable to fire, drought, erosion of the river banks, sea water surges along the beach and estuary, and pollution. We want to build an understanding of how the negative environmental impacts can be prevented or reduced, and are talking with local land users and property owners who have a great deal of wisdom and expertise to share. We are interested to document the impacts of alien plant infestations, replacement of natural vegetation by croplands, grazing pastures and plantation forestry, and the ability of river systems to absorb floods and cope with droughts. Examples of the issues we wish to understand are: How do fertilizers, chemical sprays and manure affect water quality? How are dunes affected when their natural vegetation is replaced by housing or golf courses? And how do rivers, wetlands and dunes with healthy natural vegetation compare to those where natural infrastructure has become degraded?


We are working very closely with land users, developers,

municipal officials and residents who have an influence on how the Touws, Duine and Little Karoo rivers, and those rising along the mountains and lakes near Wilderness. We are particularly eager to have those conversations with telegraphers, associations, farmers, growers, conservationists, park rangers, managers and all organizations involved in the management of ecosystems along rivers, wetlands, the coastline and estuaries in the Wilderness area and its catchment. We would also like to talk with landowners or groups who have taken it upon themselves to prevent erosion, such as by planting clearing alien plants, covering up the coast, changing the farming practices or designing the housing developments.

The NMMU and CSIR believe that conversations with local stakeholders and the research data we collect would assist the affected people living in the area served by the Wilderness rivers. In particular, these interactions would support useful and informed inputs into policy and management processes being planned for these rivers so as to ensure a healthy future for the local environmental infrastructure.

Interested individuals and organizations who believe they can benefit from the project, or who would like to contribute are welcome to contact Professor Christo Fabricius of the NMMU Sustainability Research Unit (christo.fabricius@nmmu.ac.za), or Dr Kaunda Schapbach (k.sch@csir.co.za) or visit our web site www.nmmu.ac.za/csir.

Annexure 10B: Brochure – A Journey Map for Increasing Citizen Engagement




WATER RESOURCE CHALLENGE ?

A JOURNEY MAP FOR INCREASING CITIZEN ENGAGEMENT

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What will you find in this guide? These are the various sections in this guide:

SECTION 1 It's about describing key terms that you will come across as you begin mapping out your journey.	SECTION 2 It's about the tools and approaches you can use as you embark on your journey. Which tools and approaches you use will depend on a number of factors, such as the challenge you're facing, the context, your background, experience, time available, etc.	SECTION 3 It's a case study where all the tools and approaches described in this guide have been used.	SECTION 4 It's a list of additional resources that you can refer to throughout your journey.	This guide brought to you by 
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ABOUT THIS GUIDE

This guide is for citizens who want to spark higher levels of involvement and participation by fellow citizens and community members in response to a water challenge in your community or area. This guide is designed to get you started on your journey towards increasing engagement and participation around your community's challenge. It is not an in-depth guide intended to provide you with the answers to your challenge. But it does provide you with the tools to map out your journey, choose the route that you would be able to take, get on the road and to then look out for certain signposts on the way.

HELP

This guide is designed to engage you to help engagement with increasing the extent to which fellow citizens are engaged and involved with the water problems in your community or any challenge you believe about water more often than in the past. Who is a citizen? The simple answer is anyone. This could be a resident in a community. This could be a young child. This may be a worker. This could be an employee of a local business. Anyone can bring ideas, resources and energy.

What can you do?

Many people believe that the government or some authority should be the ones creating engagement or the challenge we face. The reality is that they don't always. For where they don't have an offer, you need to encourage and motivate citizens and fellow community members to get involved.

What is a water challenge?

Water is also a topic that has been the focus of much of your life. Issues with water in South Africa take on many forms. Typically they occur in the form of water quality and supply. There are the more technical aspects of water. However, because water is the lifeblood of humanity, water challenges impact people, so there are also social aspects to water. They involve not just family and your community members. In addition to quality and quantity, water issues can also be about the infrastructure that exists to provide water, such as the dams, that you get from water in your area, the way in which water is managed and the way water impacts on you in the water management system.

This guide will give you the tools to be part of a journey to have an effective and social water management system.

So let's get started ...

SECTION 1

WHAT IS STAKEHOLDER ENGAGEMENT?

What is a stakeholder?

A stakeholder is any person or group of persons that can benefit from ecosystem services, either positive or negative, provided by the natural resource as well as those individuals or groups that have an effect or interest on the management of the natural resource.

Simply put, a stakeholder is anyone who has a stake in the management and preservation of a local water resource. Stakeholders receive a benefit from the water resource. Examples are, but not limited to, tap water for drinking, washing, household uses and cooking, irrigation for farming, fishing from rivers and lakes, water sports and leisure. A stakeholder grouping is a group of interested and affected people who are an informal group, like a group of residents, or a formal group, like a water forum or club.

What does disengagement look like?

As you embark on this journey of increasing stakeholder engagement you will need to understand the symptoms of disengagement. They are:

- Meeting fatigue
- Apathy to significant water issues
- A lack of relevance of water-related issues
- A perceived lack of power and agency
- A lack of sufficient leadership
- Ineffective communication and a lack of follow through, i.e. initiatives are started but never seem to achieve anything

Why do people disengage?

Like with the choice to engage, people have varying reasons for choosing to disengage. Typically, the reasons are:

- Bad experiences in previous phases of personal engagement.
- A lack of hope that anything can or will be done to solve the problem.
- A displacement of responsibility e.g. the government must do something about this.
- Absolving of responsibility e.g. What can I do?
- Frustration due to little or no interaction from authorities.

What is benefit sharing?


Most of the engagement by stakeholders surrounding natural resources is rooted in the sharing of the benefits that are derived from the ecosystem services provided by the natural resource. Benefit sharing is defined as the process where people cooperate in optimising and equitably dividing the goods, products and services connected directly or indirectly to the water or arising from the use of the water. Essentially, benefit sharing equates to a form of social commitment to channel some kind of return, be they monetary or non-monetary, back to a range of designated participants.

The complexity of stakeholder engagement.

People often make the assumption that a water challenge is a technical problem that requires a technical solution. For example, in areas where water quality is an issue, the most common suggestion is to treat the water with appropriate chemicals. While this may be valid, it is often not the entire solution needed. This is because water is an inherently social resource (see Benefit Sharing). This means that we often need to consider both technical and social solutions to water problems.

The mix of technical and social problems often results in what are known as adaptive challenges. The differences between technical and adaptive challenges are:

<p>Technical problems are:</p> <ul style="list-style-type: none"> • Easy to identify • Often had themselves to quick and easy solutions • Often can be solved by an authority or an expert • Require change in just one or a few places • People are generally receptive to technical solutions • Solutions can be implemented quickly 	<p>Whereas adaptive challenges are:</p> <ul style="list-style-type: none"> • Difficult to identify/ easy to deny • Requires changes in values, beliefs, roles, relationships & approaches to work • People with the problem do the work of solving it • Requires change in numerous places • People often resist acknowledging adaptive challenges • "Solutions" require smart experiments & new discoveries
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SCLI Letter of support: NMMU Community Engagement

Recognizing the threat posed by invasive alien plants in the Southern Cape, as well as the challenges posed in controlling and eradicating it, Prof Fabricius has been publicly vocal on the matter and expressed the need for a forum dealing with the matter at a high level

Subsequently, Prof Christo Fabricius, has been a founding member of the Southern Cape Landowners Initiative (SCLI) both in his personal capacity as well as that of heading up the Sustainability Research Unit (SRU), since 2010.

Aimed at serving as a public platform for all land owners and land managers involved in the control and eradication of invasive alien plants, the SCLI is stake holder driven, and require constant collaboration, facilitation and input from founding members such as Prof Fabricius.

The SRU/ SCLI leading to direct intervention

The formation of Natural Infrastructure Services

Understanding challenges in coordinating the management of invasive species, as well as that of implementing government sponsored interventions; Prof Fabricius again was instrumental in the establishment of Natural Infrastructure Services (NIS).

NIS is a not- for profit entity created out of SCLI, and today act as Implementing Agent for the Department of Environmental Affairs, Natural Resource Management Programmes' *Working for Water* Programme.

Eskom/ NRMP Conservation Corridors

Playing a pivotal part in SCLI, Prof Fabricius supported an initiative to establish weed- free conservation corridors based on the footprint of Eskom servitudes, but widened by *Working for Water*, into plant migration corridors.

The Conservation Corridors is arguably one of the most significant conservation efforts in the

In association with:





Southern Cape in recent times.

High-risk fire areas working group

Bringing together the Southern Cape Fire Protection Agency, Eden District Disaster Management, George Municipality, Knysna Municipality and Eskom in finding common ground in recognizing (and dealing with) invasive species as a potential threat to infrastructure and human safety/ Security.

Kaaimans to Touw Rivers Forum (KTT)

Following through on what is a SRU deliverable, Prof Fabricius recognized the opportunity to engage the SCLI to form a collaborative body to look into the effect of interventions in managing invasive species in the catchment area between the Kaaimans and the Touw rivers.

Already this combined initiative has succeeded in gaining strong support from entities such as DEA, SANRAL, Cape Nature, SANParks, private conservancies and private landowners

In conclusion

SCLI, as much as it represents those active in environmental affairs in the Southern Cape, would like to express our support for the SRU to be awarded the NMMU Community Engagement Award.

In association with:

