

## 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"> <li>• Indicate with an X in the appropriate box the award you are applying for.</li> <li>• Your application will only be considered for the award you have applied for</li> </ul>	<b>X Engagement Excellence Award – Science, Technology and Engineering for an Individual</b>		
<b>Surname of Applicant/Team Leader</b>	Auerbach		
<b>First Name</b>	Raymond		
<b>Initials</b>	RMB		
<b>Title</b>	Prof		
<b>Telephone numbers</b>	5017 (084-567-1250)		
<b>E-mail address</b>	Raymond.auerbach@nmmu.ac.za		
<b>Employment position held at NMMU</b>	Assoc Prof, Soil Science & Plant Production		
<b>Faculty</b>	Science		
<b>Department</b>	School of Natural Resource Management, George		
<b>Division</b>	Agricultural Management Programme, George Campus		
<b>Immediate line-manager</b>	Prof Jos Louw		
<b>Eligibility: Are you permanently employed and/or on a long term (3 years or more) fixed contract? (indicate with an X)</b>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">Permanent X</td> <td style="text-align: center; width: 50%;">Fixed term contract</td> </tr> </table>	Permanent X	Fixed term contract
Permanent X	Fixed term contract		
<b>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)</b>	<p><b><u>Title:</u></b> <b>Africa feeding Africa through engaged science</b></p> <p><b><u>Description:</u></b> Five major elements contribute to this project:</p> <ol style="list-style-type: none"> <li>1 Long-term research trials on George Campus (4 M students).</li> <li>2 Applied research with 1.5 million organic farmers in Uganda and Zambia (3 D students).</li> <li>3 Work with the Centre of Excellence in Food Security on value chains, environmental impacts of agriculture, climate change, quality management, food production and AgriParks.</li> <li>4 Work with a network of organic farmers and gardeners, mainly in southern Africa, on semi-commercial food production and access to markets through Participatory Guarantee Systems (PGS) through the local Eden PGS and the SA PGS Association.</li> <li>5 Interactions with Regeneration International, IFOAM-Organics International, the Sustainable Organic Agriculture Action Network (SOAAN), the South African National Accreditation Service (SANAS), the South African Organic Sector Organisation (SAOSO) &amp; several universities.</li> </ol>		
<b>Are your Engagement activities/projects/initiatives registered on the Engagement</b>	<p><b><u>Titles:</u></b></p> <ol style="list-style-type: none"> <li>1. Kos en Fynbos food gardens</li> </ol> <p>This project was registered on 26 April 2016 on E-MIS</p>		

<p><b>Management Information System (E-MIS) on SharePoint?</b>          If <u>not</u>, please ensure that they are before you submit this application.          Applications that are not registered and updated on the E-MIS will not be considered for Awards.          The most recent date on E-MIS for each project update (achieved when 'submit' is clicked) must be in 2015. I presume <b>2016 is OK?</b>          Provide the exact titles</p>	<p><b>Although the full registration process was completed, and I have a copy of the engagement/ layouts/15/Print.FormServer print-out, I am not sure whether the system captured my input.</b></p> <p><b>I therefore did not try to register any of the other projects.</b></p>
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**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: (Portfolio of Evidence items are referenced "PoE#"; please refer to the separate PoE)**

**1. Engagement through Community Interaction, Service and Outreach:**

- a) *Kos en Fynbos* project (urban gardens around George): working with two hundred local gardeners, first at Blanco, where I sponsored the first garden competition which then was supported by WESSA, Western Cape Department of Agriculture, the George Herald and various other groups. Working with Dr Zille North (Dept Health at Blanco Clinic), Chris Godfrey (WESSA), Auntie Eve Stoffels and seven other representatives of local garden initiatives, Monica Vacarro (Landmark Foundation) and George Municipality (PoE 1 & 2).
- b) *Eden Participatory Guarantee System (PGS)*, a local organization which I chair which brings together organic producers, sellers and consumers; we visit participating farms at no cost to them and in our own time, and assess their production in terms of compliance with organic principles, thus building bridges between producers, sellers and consumers. This works at local level, as long as there is direct contact between producers and consumers. We work with *FarmFresh Direct* and with the Sedgefield and George Farmers' Markets, and collaborate with other PGS groups through the SA PGS Association (PoE 3).
- c) *South African Participatory Guarantee System Association* is a not-for-profit network of PGS groups, of which I am co-founder and currently Treasurer, which has registered organic standards and provides a credible over-arching body to guide local PGS groups, and which liaises with the national organic body SAOSO, and serves with SAOSO on OSSIC (Organic Sector Strategy Implementation Committee), the body set up for liaison with government's national Dept Agric, Forestry & Fisheries (DAFF), which I helped found but which I was instructed to leave because teaching and research have to come first (PoE 4).
- d) *South African Organic Sector Organisation (SAOSO)* and OSSIC have helped to develop a national policy on Organic Farming in the time when, as Director of the Rainman Landcare Foundation, I helped to set up SAOSO and OSSIC. I still have some input through SOAAN and SANAS and have assisted with the development of PGS – SA PGS Assn still reports to OSSIC through SAOSO (PoE 5).
- e) *Sustainable Organic Agriculture Action Network (SOAAN)* is a network formed by the Rainman Landcare Foundation with the Worldwide Fund for Nature (WWF), *Navdanya* Seed Exchange Foundation, the Swiss *Forschungsinstitut fuer Biologische Landbau (FiBL)*, the International Centre for Research into Organic Farming Systems (ICROFS) in Denmark and Organics International – IFOAM. This body has now grown far larger and acts as an international think-tank for the organic sector globally (PoE 6). My contribution has been in three main areas: PGS development (PoE 5), development of farm-level scientific indicators of sustainability (PoE 7 & 8) and the development of Organics 3.0 (PoE 9).
- f) *South African National Accreditation Service (SANAS)* is the national body which accredits educational institutions (delegated to SAQA), laboratories, factories and other bodies supposedly adhering to standards set up by the South African Bureau of Standards (SABS). The organic sector has developed national standards over the past 15 years, but these have been blocked by certain elements of agribusiness with vested interests. SANAS has now come in to assist by training and appointing four Technical Experts (I am

one of these) who have to inspect Organic Certification Bodies before they are accredited through ISO 17065. I delivered the keynote address at the launch of this service (PoE 10) after being appointed as Technical Expert for accreditation of organic certifying bodies (SANAS report: PoE 11).

- g) *S Haddad Agricultural Services (Pty) Ltd* is a George-based company selling agricultural equipment and providing soil fertility and cultivation advice to commercial farmers in the Southern Cape and beyond. Sandy Haddad and his son Sidney have for many years assisted community gardens with ploughing services and advice, and have supported Michele Schubert in her work with community gardeners (initially through the Western Cape Dept Agriculture, and later independently). S Haddad & Co have teamed up with us as industry partners, allowing us to leverage five years of support from the National research Foundation (NRF) through their partnership with DAFF in the Research and Technology Fund (RTF). NRF-RTF funded our work in 2014 and have now guaranteed funding for 2016, 2017 & 2018. In all, the NRF-RTF grant funding amounts to R1690,000 thanks to the contribution of R285,000 in ploughing assistance over the five years from S Haddad. Other assistance from Hygrotech (Seeds and sponsorship of an M student), BASF (biological and chemical pest and disease control products) and SSK Agri Garden Route (fencing materials and fertilisers) was leveraged with help from Sandy and others.
- h) *George Urban AgriPark* is an initiative that Prof Jan Raats and I proposed, first to the George Municipality, and then (with the help of Campus Principal Quinton Johnson) to the Eden District Municipality at the suggestion of the NMMU Vice Chancellor. The Centre of Excellence for Food Security (CoE-FS) has awarded some research and development funding for this project to me (PoE 12), and for a review of the government's plans to spend R2.1 billion on 27 AgriParks (including R45 million in the Eden District).
- i) *Ratanang AgriPark & Community Garden, Limpopo* is one of the projects for which I have carried out soil analysis and made recommendations on how soil fertility can be improved; this was to be a joint project with CoE-FS, but as our Limpopo partners have not delivered their outputs, this is unlikely to continue.
- j) *A Business Plan for small commercial farmer Eric Swarts, Lynedoch* was compiled by B Tech students who attended a module which I delivered to the Stellenbosch University Sustainability Institute (where I am an Extra-ordinary Professor, and deliver an annual module on Systems and Technologies for Sustainable Agriculture), and the SI asked students to evaluate lecturers (PoE 13).
- k) *Visits by Woolworths Head of "Farming for the Future", Kobus Pienaar* have continued since he attended the same course as part of his M Phil in sustainable development through Stellenbosch University (School of Public Management); Kobus is arranging for WW farmers to visit the George Campus Research Trials so that they can review our efforts to close the yield gap between organic and conventional agricultural production; Kobus now gives a guest lecture as part of my annual module presentation (this year this will occur in May, see PoE 14).
- l) *Visits to Permaculture garden and farmer training at NMMU George* continue, managed by Michele Schubert and supported by George Municipality (Carli Bunding Venter, Economic Development Manager); see Michele Schubert's report (PoE 15).
- m) *Work with student doctors at George Hospital* Dr Zille North (W Cape Dept Health Clinic Doctor at Blanco) has worked with me, Chris Godfrey, ex-colleague Anthonie du Toit, Monica Vaccarro of the Landmark Foundation, and a large number of gardeners from Blanco, Pacaltsdorp, Touwsrante and other areas. Recent months have seen Michele Schubert running workshops on permaculture gardens for many stakeholders – see photo report PoE 16. Michele is paid as a research and engagement assistant in my Centre of Excellence in Food Security project, and she also helps with the organization of student practicals at the permaculture garden, and liaison with farmers of all sorts.

#### **Report on your:**

##### **2. Engagement through Teaching and Learning:**

- a) As already reported above, teaching of farmers, of B Tech students at NMMU and of Stellenbosch M Phil students has happened extensively over the five years which I have taught at NMMU.
- b) Developing both the Stellenbosch M Phil module and the module delivered to nutrition students at the Muenster University in 2014 with Prof Carola Strassner contributed to my professional development as a teacher; I also serve on the Board of Study for the Master of Science in Sustainable Agriculture at Stellenbosch University; I am often asked to chair the annual Board meetings.

- c) On average, I receive two requests per month to supervise masters students, almost all of which I have to decline; I have helped five M students to graduate so far, and currently have three doctoral students and four masters students in the process.
- d) When I first arrived at NMMU it took me a year to get permission to set up a working agricultural meteorology facility, and due to various bureaucratic problems, this facility still only functions on an *ad hoc* basis, and will now be superseded by the Fire management facility, but at least first year students have had an annual practical where they have been shown the basics of how AgMet readings are made, and their importance to farmers.
- e) It took me two years to get permission for a permaculture garden where students could experience compost making, planting of vegetables and design of crop rotations, and a further year to find funding, enlist the help of expert John Turner to persuade colleagues of the importance of this facility and its relevance for other disciplines through a consultative process, and to design a baboon-proof, student friendly structure; this garden functions well, and first year students do two four-month practicals, one in the first semester (Plants I) and one in the second semester (Soils II), with assistance from Michele Schubert (paid through the NRF-RTF project, as there are no funds for technical assistants for AgMan).
- f) Now that the long-term organic comparative farming systems research trials have been set up, both the Soils II class and the B Tech Plant Production IV class have a venue where they can see the effects of the control treatment (symptoms of plant nutrient deficiencies), of conventional fertilization (rapid initial growth, pest and disease susceptibility), and of organic production systems (slower initial growth, better quality in certain crops, improved water use efficiency).
- g) My masters students are now able to assist with teaching; during 2015, N'wa-Jama Mashele was appointed as a tutor, other helped with Supplementary Instruction (SI). This year Jama is teaching Plants I (the NMMU failed to offer her a transformation post, so she will leave in June to do her PhD elsewhere). Marike Swanepoel is tutoring students this year, and Viwe Cutu and Luxolo Dyakopu (B Tech Plants Major students) are providing SI assistance. Catherine Eckert has explained her work on Water Use Efficiency, and other (part-time) M-students give talks when they are on campus.
- h) My post-grads have brought nine co-supervisors and co-promoters, and their trans-disciplinary expertise has contributed greatly to the quality of my teaching and the depth of my teaching resources (PoE 17).
- i) I have been able to interact with the Faculty of Education in helping them to set up a PGCE in Agricultural Science and Agricultural Management which was offered in 2014; one of the graduates subsequently asked me to supervise her (Livhuwani Malaba), and Dr Keith Arnold co-supervised her until he left for Dubai; of the five masters students who have graduated, one was through Forestry, one through Nature Conservation, one with W Cape Dept Agriculture, one with AEON in PE and one was Belgian, co-supervised by Dr Gareth Haysom, then of SI (Stellenbosch) and now of UCT; my work has been trans-disciplinary in many different ways, and it has been very difficult to convince colleagues that this is a good thing!
- j) Student evaluations of my teaching have been very positive, and I have contributed to the popularity of our Ag Man Diploma here at George, with a number of students coming specifically because of the Ecological Agriculture focus which I have developed.
- k) When I arrived at George at the end of 2010 there were 85 students in the AgMan programme; this grew steadily to 2015, and there are now over 150 students. Applicants grew from 80 in 2010 to 962 in 2016; this has been foolish development, as we are now allocated fewer staff to manage the extra students than what we had in 2011 (2 assoc profs, 1 senior lecturer, 1 lecturer and 1 technician, plus eight part-time lecturers; we now have 1 assoc prof, 1 senior lecturer and 1 lecturer, no technician and only five part-time lecturers); my third stream income therefore has to cover all of my engagement work and some of the teaching (I am paying for experiential learning assistance, technical assistance with practicals and half of a part-time lecturer's cost from my third stream income).
- l) My teaching experience with Sustainability Institute, Stellenbosch University (Faculty of Agriculture), Muenster University and many farmer organisations, has enriched my teaching, and allowed me to reflect on farmer training; with help from the Engagement Directorate, I have reflected on teaching *praxis*, as I will report later in this application. I have made a number of changes to my subjects, our experiential learning approach, the agricultural management programme and post-graduate supervision.

**Report on your:**

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

- a) As mentioned, the SANAS, SAOSO, OSSIC, IFOAM and SOAAN work is all related to my particular field of specialization, and I provide discipline-based services to all of these organisations (see above & PoE 4-11).
- b) I am regularly invited to chair conference sessions, give keynote addresses and give guest lectures and seminars, both here and overseas (PoE 18, 19, 20, 21, 22).
- c) I have been a member of the Soil Science Society of SA since 1982, and of the International Soil Science Society since 1983; I joined the Soil Association of SA in 1969 and helped found IFOAM in 1972; after returning from my training in Australia (1973-76), I helped found (and was initial Secretary/Treasurer of) the Southern African BioDynamic Agriculture Association, as well as a number of other bodies relating to organic agriculture, soil science, farming and community development; I am a life member of the KwaZulu-Natal Agricultural Association (KWANALU).
- d) The African Union Commission awarded me with a life-time achievement recognition as a "Champion of Ecological Organic Agriculture in Africa (see PoE 23 & 24) at the third African Organic Conference in Nigeria in 2015.
- e) The Food and Agriculture Organization (FAO) invited me to be the scientific editor of the ten best papers presented at the second African Organic Conference in Lusaka in 2012 (subsequently published as a book, see PoE 25); they asked me to include my keynote address, and to co-author several chapters.
- f) I did not attend the above conference in Nigeria, as I had been invited to deliver three papers in South Korea, as mentioned before, including the keynote address on farmer education and training; the paper which I presented was subsequently re-worked at a Research Engagement Writing retreat in January 2016, and it has been submitted to a journal for publication; the abstract is included as PoE 26.
- g) The new organization Regeneration International invited me (and paid my costs for travel) to attend their founding meeting in Costa Rica in 2015, and they invited me to formulate "The Law of the Soil" which was presented and accepted at the plenary as an output to honour the Year of the Soil (PoE 27 & 28).
- h) The US organic farming magazine "Acres USA" interviewed me after the Regeneration International meeting and published a nine-page article in their October 2015 edition, which shows the NMMU in a very positive light as a fully engaged university, addressing the problems of sustainability, food security and transformation in South Africa, and providing leadership for African sustainable development (PoE 29).
- i) NMMU Engagement Directorate awarded me with a prize for the best 10 line engagement story in October 2015, outlining how the engagement work got started at George, in spite of fairly fierce resistance in various quarters.
- j) Visiting academics from Germany (Profs Siebenhuener, Strassner and Moellendorf; Dr Siebert) and from Sweden (Dr Rundgren) and Switzerland (Prof Niggli and Drs Willer and Lernoud) have invited me to work on joint research proposals, currently under consideration for funding.

**Report on your:**

**4. Engagement through Research and Scholarship (in the 5 and a half years I have been here):**

- a) Published three peer-reviewed reports on pre-NMMU work with Water Research Commission.
- b) Masters student Vuyo Nteyi (with W Cape Dept Agric's Dr Mike Ferreira (PoE 30).
- c) Poster presented at Soil & Crop Society Conference in Grahamstown, 2014).
- d) Paper published by Nteyi, Auerbach and Ferreira in Soil and Plant, Feb 2016 (PoE 31).
- e) Masters student Steve Faulconbridge (through Nature Conservation, George with Mike Cameron).
- f) Masters student Albert Ackhurst (through Forestry with Prof Jos Louw); innovation prize.
- g) Paper presented to Combined Conference at Tramonto, 2015 (Ackhurst, Auerbach & Louw).
- h) Paper (Ackhurst, Auerbach & Louw) prepared but rejected by Soil and Plant; reworking for another journal).
- i) Masters student Wim Troosters from Belgium (Prize for best M Tech student, 2014).
- j) Paper (Troosters, Auerbach & Haysom) accepted by Value Chains group, CoE-FS, presented 2015.
- k) Adapting paper for peer-reviewed publication, 2016.
- l) Paper based on preliminary work presented at Organic World Conference, Korea 2011 (Auerbach, Troosters & Hauptfleisch).
- m) Paper presented to Combined Conference at Tramonto, 2015 (Auerbach, Troosters, Nalunga & Chitalu).

- n) Paper presented to Organic World Congress on African Organic Research (Auerbach, Kadzere, Nalunga & Chitalu, 2015, revised version of earlier joint paper with Irene Kadzere, Durban Youth in Agriculture summit).
- o) Masters student N'wa-Jama Mashele (with Prof Maarten de Wit, AEON, NMMU PE).
- p) Poster presented to Combined Conference at Tramonto, 2015 (Mashele and Auerbach).
- q) Paper published in SA Journal of Geology (Mashele and Auerbach, March 20116 – PoE 32).
- r) Students registered 2015: Chitalu, Nalunga & Munthali (D); Eckert, van Niekerk, Malaba & Swanepoel (M).
- s) Grant, CoE-FS 2014-16 (R1,050,000, PoE 12).
- t) Grant, RTF-NRF 2014 (PoE 33), and 2016-18 (PoE 34).
- u) Peer-review by FiBL and ICROFS of our research design, and exposure of post-graduate student Jama Mashele to Europe and European long-term organic farming systems research (see PoE 35).

### 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:

<p>1.1. External communities/stakeholders/beneficiaries: (not staff and students of NMMU)</p>	<ul style="list-style-type: none"> <li>a) <i>Kos en Fynbos</i> prize started the growth of the movement</li> <li>b) <i>AgriPark</i> proposal to George focused energy</li> <li>c) <i>Appointment</i> as Extraordinary Prof at Sus Inst, UStell</li> <li>d) <i>CoE-FS proposal with UWC</i> won NRF approval &amp; funds</li> <li>e) <i>Article for Ecology &amp; Farming</i> on PGS showed potential</li> <li>f) <i>SOAAN founding membership</i> supported movement.</li> <li>g) <i>Eden PGS establishment</i> assisted local farmers.</li> <li>h) <i>Workshops</i> with medical students, gardeners, local schools, other organisations, have seen a broad community of practice emerging in the Southern Cape and also we have become part of a larger research community internationally.</li> <li>i) <i>FAO book</i> gave platform to African Organic Researchers</li> <li>j) <i>Doctoral support</i> gave research opportunity to NOGAMU</li> <li>k) <i>Doctoral support</i> helped <i>OPPAZ &amp; Zambian Organics</i></li> <li>l) <i>Masters support for SDC study (Troosters)</i> publicized <i>KZN organic work</i>.</li> </ul> <p>Recognition: AU Award, Keynote invitations, SANAS Technical Expert, CoE-FS major project, Oldenburg joint project, FiBL joint project invitation, Regeneration International invitation, SOAAN</p>
<p>1.2. Internal communities/stakeholders/beneficiaries: (staff and students of NMMU)</p>	<ul style="list-style-type: none"> <li>a) Teaching appreciated (student evaluations)</li> <li>b) On-going requests to act as supervisor (2 per month)</li> <li>c) B Tech students have access to agric research</li> <li>d) AgManDip students have practical facilities (increasing number of applications to study AgMan in George)</li> <li>e) Requests to address local radio (RSG), interviews in George Herald, invitations to talk at Outeniqua High, Glenwood High, etc.</li> <li>f) Request by Prof Richard Haines &amp; Dr Eddy Russell to assist with IFAD Climate Change project (3 papers)</li> <li>g) Constant stream of staff and students asking for advice on post-graduate study possibilities.</li> <li>h) Many requests to supervise masters and doctoral studies have to be turned down as I do not have spare capacity.</li> </ul>

**2. Describe how your Engagement activities contribute towards faculty/department/entity engagement goals and objectives. (Refer to your Department/Faculty/Entity's strategic plan here)**

Science faculty does not see Engagement as an important focus; Acting Dean of Science instructed me that first priority is teaching and research; engagement should only be done if there is spare time.

Nevertheless, my work attracted the attention of the Academy of Sciences of South Africa (ASSAF) who asked me to write a chapter for their "Green Technologies Report" on Sustainable Agriculture (PoE 36).

The W Cape Premier's Adviser on the Green Economy (Jenny Cargill) came to visit to discuss "Agriculture and the Green Economy", and then sent a delegation to look at my recommendations on the George Urban AgriPark. It has been a source of great disappointment to me that my School and my Faculty have been rather scathing about my engagement work, so much so that I lodged a grievance against the DoS SNRM and appealed to the DVC (Research and Engagement) about the rejection of two sabbatical applications. I believe this is a symptom of the disdain for engagement of a developmental and transformational kind prevalent in the SNRM and the Faculty of Science in general. Engagement with commercial industry is praised but not with developmental transformation efforts. They are often dismissed as "unscientific", and general books (such as my FAO book of Organic Case Studies) as "coffee table books of no scientific value".

Nevertheless, several colleagues have told me that they find my continuing efforts inspiring, even though there is little support for many of these initiatives, and the opportunities for trans-disciplinary work are few.

**3. Describe how your Engagement activities contribute towards the achievement of the NMMU Vision 2020 Engagement Strategic Goals and Objectives. (Refer to the attached NMMU Engagement Strategic Goals and Objectives)**

Strategic Goal 1: As a pioneer of engagement in the Science Faculty, I have made colleagues aware of the existence of the goal of promoting engagement as a legitimate research activity at NMMU. I attended an Engagement Writing Workshop, and presented a number of papers on the Scholarship of Teaching and Learning (paper to HELTASA in 2013 was developed into the paper presented in South Korea in 2015 (PoE 26)). My work with CoE-FS also promotes food security as an area requiring scholarly activity to advise on African food security. Objective 1.1 – the main reason for applying for this award is to show science colleagues that there may be some recognition for engagement activities. I hope that this application will also help to document some of the outreach and engagement activities (objectives 1.2 – 1.5).

Strategic Goal 2: I have spent much of my energy over the past twenty years responding to societal needs, and since I joined NMMU, I have attempted to focus on the areas appropriate to the green economy, transformation, environmental sustainability, food security and adaptation to climate change. As can be seen from this application, I have worked towards the integration of engagement, research and innovation, in spite of lack of support and sometimes active obstruction.

Objective 2.1 – I have implemented a range of activities aimed at engaging in NMMU focus areas, and I have worked closely with the Campus Principal to identify the most effective ways of interacting with local authorities. Objectives 2.2 & 2.3 – With our Marketing Department, in particular Alet van Tonder, I have given interviews and written advertorial highlighting how our work is relevant to local issues; I have worked with Earthday, Soil Day, Arbour Week, Water Week and other celebrations to promote school awareness and student engagement.

Strategic Goal 3: The above has shown how engagement is integrated throughout my teaching and research activities, and the various proposals I have developed show that I have applied Objectives 3.1, 3.2, 3.3 and in particular to Objective 3.4 to my third stream income generation activities, and in building networks of applied scholars, and providing the opportunities to practitioners to write up their applied research and conceptualise it as part of sustainable development.

Strategic Goal 4: In taking up issues of public good research into food security, not supported by the traditional sponsors of agricultural research (seed multinationals, fertilizer companies and agro-chemical suppliers), I have incurred the wrath of many vested interests, but also secured a place at many policy development think-tanks. The fora in which I engage must make it obvious how I support Objectives 4.1 to 4.4 in my work.

My work with the ASSAF on Green Technologies in South African Agriculture summarized the current state of the art in sustainable agriculture, even though the technocratic edits introduced several errors into my text!

Strategic Goal 5: I have outlined my networks with local, southern African, African and international research bodies, and the recognition from the African Union Commission (PoE 23 & 24) shows these have been seen. Objective 5.1 - I arranged for M Sc student N'wa-Jama Mashele to visit ICROFS, FiBL, Oldenburg and Aarhus University in 2014, and I am setting up a similar trip for Marike Swanepoel with the help of Prof Maarten de Wit. His AEON and Earth Stewardship activities have supported my research. I have worked closely with government through SAOSO & OSSIC (PoE 4 & 6) and have written guidelines for how governments can support organic agriculture (see South Africa chapter of UNCTAD publication, PoE 37).

Objectives 5.2 to 5.4 – Through my international post-graduate students, and my teaching at other institutions I have tried to keep the doors open, and to foster and sustain partnerships with a wide range of groups, and with donors and funding organisations. I have been called upon to review a number of funding applications, and to assist with many project evaluation, and also acted as external examiner for many SA universities, and as co-supervisor or external examiner for several overseas universities.

**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:**

- a) My work with CoP 17 (Durban 2014) described elsewhere has had major impacts, and my association with Regeneration International and SOAAN (PoE 6, also PoE 27) helped to develop CoP21 in Paris.
- b) I have been part of the international organic and agro-ecology communities for more than forty years, and I am accepted as a leader in these fields.
- c) Already in 1994 I was elected by the Southern and Eastern African Farming Systems Research (FSRE) and Extension Association as Member of the International Board of the International FSRE Association.
- d) Through my writing for the Academy of Science of SA (ASSAf) – “The state of green technologies in South Africa (see <http://www.assaf.co.za/wp-content/uploads/2015/01/8-Jan-2015-WEB-526305-ASSAF-Green-Tech-mail.pdf>), where I summarized the state of the art in the chapter “Green technologies in the agriculture sector” I have brought best practice to the attention of scientists.
- e) Through my chapter on Organic Farming in South Africa in the United Nations Commission on Trade and Development publication “Best practices for organic agriculture” (see [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiezdTkwnMAhVnL8AKHedID5gQFggdMAA&url=http%3A%2F%2Fwww.unep.ch%2Fetb%2Fpublications%2FUNCTAD\\_DITC\\_TED\\_2007\\_3.pdf&usq=AFQjCNEEVXjyt2AhCzqE\\_3wffvYA7GgqsA&sig2=cNjJtYpFqJkptfzxbVHFSA](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiezdTkwnMAhVnL8AKHedID5gQFggdMAA&url=http%3A%2F%2Fwww.unep.ch%2Fetb%2Fpublications%2FUNCTAD_DITC_TED_2007_3.pdf&usq=AFQjCNEEVXjyt2AhCzqE_3wffvYA7GgqsA&sig2=cNjJtYpFqJkptfzxbVHFSA)) I have brought some of these ideas to policy makers, as part of an international team, including many subject matter experts.
- f) Working with SANAS and SABS, as well as SAOSO, SA PGS Assn and Eden PGS, I am assisting in developing and applying organic production standards in the industry, both locally and nationally (for a report on the launch of the organic standard (since delayed by SANS), see <http://sanas.co.za/gen-pdfs/Media%20Release%20Organic%20Agricultural%20Production%20and%20Processing.pdf> ).
- g) My work with *Kos en Fynbos* has seen the George Herald adopt this project (for reports on a recent (2015) version of the *Kos en Fynbos* garden competition which Michele Schubert and I helped to start, see <http://www.georgeherald.com/news/News/General/138422/Kos-en-Fynbos-Competition-winners>).
- h) Prof Richard Haines asked me to assist with a project on helping small scale farmers in the eastern Cape to adapt to climate change; this project is funded by the International Fund for Agricultural Development (IFAD), and involves preparing a number of studies; I am project leader for three of these.
- i) I am working closely with the George Campus Principal to support the development of an AgriPark for the George/Eden District; the CoE-FS has also asked me to review the Government approach to AgriPark development as part of the “AgriParks and Organic Vegetable Production” project which I lead.

j) My work in Africa has seen the production of the FAO book mentioned earlier (PoE 25), and this has led to three doctoral studies in Uganda and Zambia, trying to assess how these two organic sectors grew, and what is needed for further growth; this will also inform strategies for South Africa.

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

- a) The work mentioned above with ASSAf, UNCTAD, IFAD, CoE-FS and other bodies is done under the banner of the NMMU, and there were many reports of my appointment as a first of its kind in Africa (see, for example, the Organic World Report available on [http://www.organic-world.net/index/news-organic-world.html?tx\\_ttnews%5Btt\\_news%5D=498&cHash=a7649fee0576439e53805974b6676319](http://www.organic-world.net/index/news-organic-world.html?tx_ttnews%5Btt_news%5D=498&cHash=a7649fee0576439e53805974b6676319); this quoting a report in the NMMU news of August 2014; there is widespread interest in my research projects.
- b) The many invitations to present keynote addresses and lectures internationally have given NMMU broad exposure.
- c) Visits from Woolworths (Kobus Pienaar, Farming for the Future), Bochum University (Ann Siebert, researching food gardens), three professors from Oldenburg (trans-disciplinary research), Profs Foster Muchenje and Kennedy Dzama from Stellenbosch and (part of the CoE-FS team) and Dr Dyosi from NRF, the Minister, Deputy Minister and Director-General of the National Department of Agriculture, Forestry and Fisheries, and the D-G and senior staff of the Western Cape DoA (who were all present for the signing of a MoU between government and the NMMU in 2015), and many others who choose to visit to see what is going on with our long term organic farming systems research trials on the George Campus.
- d) Last year there was an extensive interview about my research programme in the well-known American sustainable farming magazine Acres USA; this reviewed my work and showed NMMU in a particularly positive light, and resulted in a number of responses and enquiries (see PoE 29).
- e) Our work with the CoE-FS has given us a presence in this (the largest) Centre of Excellence; my three research projects are all linked to the CoE-FS work, and they give me access to experts in 15 universities and the Agricultural Research Council.

**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)**

As previous sections have demonstrated, local farmers and students are using the Permaculture Garden and the long-term research site as a learning centre. Both of these facilities were set up by me (with a lot of help from colleagues, but also a lot of opposition)!

I organize an academic orientation practical for the first year students each year; after they have been on a tour of a few farms and research facilities in the area, the next week sees us discussing the variety of cultural backgrounds and the varying challenges faced by students from different backgrounds.

The third practical is specifically for the Plant Production I class, where they make compost and plant vegetable crops in the permaculture garden. The *Kos en Fynbos* gardeners then visit and critique the gardens, and there are many practical suggestions (from these experienced, non-academic gardeners) about pest and disease management, but also good interaction about soil fertility (see PoE 38).

In the second semester, a far more ambitious and carefully organized practical session sees the students apply their knowledge of soil fertility and plant production. They use the compost which they made in the first semester, and this time, they are marked on the quality of their garden plan and its execution (the first practical applies my theory of *praxis*, as applied in my engagement writing retreat paper on farmer training (PoE 39).

The exchange of learnings from non-academic gardeners builds respect for non-book experiential learning, and provokes debate about practical knowledge, experiential learning, and theory, and seems to back up my theory that it is more effective to extract good theory from good practice, rather than to start from a theoretical perspective. It does mean that the students are thrown back on their own resources in the first practical, and there is usually a lot of grumbling and quite a few disasters – this is the real world of agricultural production!

**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.)**

- a) Conferences with papers presented – many, some already mentioned
- b) Seminars presented – many, some already mentioned

- c) While still Director of Rainman Landcare Foundation, developed eight registered agriculture modules
- d) New teaching programmes: PGCE bridging course; Stellenbosch M Phil module; Muenster Module
- e) Conference proceedings: Organic World Congress, South Korea 2011
- f) Conference proceedings: Bonn SOAAN Sustainability Workshop, 2012, abstract & chaired 2 sessions
- g) Conference proceedings: Carnegie III conference paper, September 2012
- h) Conference proceedings: Organics 3.0 conference in South Korea, 2015 (three abstracts)
- i) Numerous reports published (including 3 peer-reviewed WRC reports in 2011 with former colleagues)
- j) Vuyo Nteyi paper published (Plant & Soil) PoE 31
- k) Jama Mashele paper published (Season 1, SAJG) PoE 32
- l) Wim Troosters paper accepted by CoE-FS
- m) Albert Ackhurst draft paper rejected, re-drafting paper
- n) Baseline paper drafted (RA-JM-CE) will publish when I have time
- o) Anthonie du Toit & Prof Rozanov paper on soil organic matter through his Stellenbosch M Sc
- p) FAO book, Scientific Editor & author of two chapters, see PoE 25
- q) Paper on long-term trials, Season 2 (Jama and I are preparing this)
- r) Paper on long-term trials, Season 3 (I will write this up when I have time)
- s) Paper on farmer training (PoE 38)
- t) Proposed paper, with Braam: Pests and diseases
- u) Proposed paper, with Catherine: Water use efficiency
- v) Proposed paper, with Marike: Crop production, year 3
- w) Proposed paper, with Robert: Zambian organic crop production
- x) Proposed paper, with Jane: Supporting 1.2 million Ugandan organic farmers
- y) Proposed paper, with Munshimbwe: Improving governance in a rapidly growing Zambian organic sector
- z) Proposed paper, with Livhuwani: School gardens and food security

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

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

- a) SAOSO co-founder
- b) SA PGS Assn co-founder, now Treasurer
- c) Eden PGS founder and chair
- d) SANAS Technical Expert on Organic Certification
- e) SOAAN co-founder and Steering Committee
- f) IFOAM Organic 3.0, collaborator (through SOAAN)
- g) George Urban AgriPark (champion)
- h) *Kos en Fynbos* (supporter with Michele Schubert)

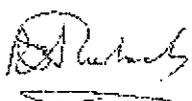
**7.2. The level and extent of partnerships/collaborations/networks/linkages formed internally and externally:**

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

- a) Three projects with prof Richard Haines and IFAD
- b) Fellow of AEON (African Earth Observatory Network) and receiving funds from AEON through *Inkaba* programme for two post-graduate students
- c) Education: worked with them to develop the PGCE agricultural science teacher programme, and devised the bridging course to prepare students (they used the permaculture garden to learn to manage teaching gardens)
- d) Internal: Conservation/ wood technology (owl boxes for permaculture gardens pest control – rats and mice)
- e) Green Campus Initiative on George Campus (management of compost and nutrient cycling, renewable energy)

<p><b>Externally</b> (at local, national and international level):</p>	<ul style="list-style-type: none"> <li>f) The eight areas mentioned in 7.1 above</li> <li>g) Work with Prof Jan Raats on AgriParks (Fort Hare)</li> <li>h) Work with Rhodes EBRU (sewage treatment and algae ponds as part of George Urban AgriPark R&amp;D design)</li> <li>i) Stellenbosch Univ: Sustainable Agriculture M Sc SASA Board of Study (usually asked to chair meetings) PoE 22</li> <li>j) Sustainability Institute: Extraordinary prof (SI uses my Rainman courses, external examiner, I run one module for their M Phil in Sustainable Development) PoE 14</li> <li>k) BioDynamic Agricultural Association of Southern Africa – founder member, first Secretary/ Treasurer</li> <li>l) Soil Science Society of South Africa (&amp; Intl SSS)</li> <li>m) FiBL joint Swiss/ South Africa organic database proposal</li> <li>n) Oldenburg, joint proposal to German Government</li> <li>o) Muenster, course in Nutrition and Sustainable Farming Systems (module developed with Prof Strassner)</li> <li>p) External examiner UCT and work with Dr Gareth Haysom (Value Chains paper) &amp; Prof Lesley Green (Anthropology)</li> <li>q) Free State External examiner (Prof Leon van Rensburg)</li> <li>r) UKZN work with Prof Albert Modi (Dean), external examiner, &amp; Prof Simon Lorentz (helps with hydrology research here)</li> <li>s) UNISA external PhD examiner</li> <li>t) Muenster University external examiner, Prof Strassner</li> <li>u) UWC CoE FS, Prof Ben Cousins, post-grad workshops</li> <li>v) Experiential learning programme at NMMU George works with various farmers, Green Road, etc., one year practical</li> <li>w) UC Berkeley – Dr Anne Thrupp (Berkeley Food Centre) and Prof Miguel Altieri (Agro-ecology), collaborators</li> <li>x) Columbia University – Prof Pedro Sanchez (AGRA MVP)</li> <li>y) Maryland U – Ray Weil (author Nature &amp; Properties of soils)</li> <li>z) Costa Rica: <i>Finca nueva luna</i> EcoLodge (Regeneration International founding meeting was held there)</li> </ul>
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**SECTION D: Signature**

Applicant Signature		Date	26 <sup>th</sup> April 2016
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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.

1. Auerbach Portfolio of Evidence summary (pdf), with some pictures, links, lists and certificates to substantiate the information supplied in the application, listed with PoE numbers as numbered in the application above.
2. *Addenda* (25 in number) with corresponding numbers: PoEs 9 to 21, plus 23, 25, 27 to 35, 38  
So: 9, 10,11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 38.

## Portfolio of Evidence for Raymond Auerbach (Engagement Excellence)

PoE numbers given below are cross-referenced to the application form; bracketed PoE pdf numbers relate to the supporting documents supplied as *addenda* as requested in the application form).

PoE 1 *Kos en Fynbos George Herald website:*

<http://www.georgeherald.com/news/News/Agri-Focus/159814/Kos-en-Fynbos-enthusiasm-spreads>

PoE 2 Brochure *Kos en Fynbos* available from Engagement Directorate.

<http://caec.nmmu.ac.za/caec/media/Store/media%20coverage/NMMU%2010%20Year%20Anniversary%20Engagement/10%20yr%2010%20lines%20Auerbach%20report/George-Campus-Food-Security-Project-Raymond-Auerbach.pdf>

PoE 3 Eden PGS Founding Meeting minutes

### **Eden Organic Participatory Guarantee System**

#### **Minutes of Founding Meeting.**

Following on the Seminar held at the Saasveld (George) Campus of the Nelson Mandela Metropolitan University (NMMU) in September, the Action Committee met on Saturday 20<sup>th</sup> November 2010 (at the Scarab Market Garden) as mandated by the Seminar Group:

Janet Gracie (Tsiba College and The Green Company); Francine Rubin (Tsiba College);

Tevon Thom (Timberlake Organics); Maryna Bosazza (Scarab Organic Garden);

Christina and Raymond Auerbach (Rainman Landcare Foundation & NMMU).

It was agreed that the Eden PGS is hereby constituted (full formal name as above).

The principles on which Eden PGS is founded are as follows:

- 1 Feed the soil, not the plant.
- 2 Find the right plants and animals for your farm.
- 3 Do not use poisons, chemical fertilisers or genetically engineered seeds.
- 4 Care for consumers, sellers and fellow organic producers.

Eden PGS accepts as the basis for its operation the IFOAM PGS document, and the IFOAM definition of organic farming, together with the four IFOAM Principles of organic farming (see [www.ifoam.org](http://www.ifoam.org)).

Eden PGS will work closely with the Knysna Municipality, with Eden District Municipality, and with the Municipalities of George, Mossel Bay and Plettenberg Bay, and will assist local producers with organisation, training, marketing and research. It will work closely with the Sustainable Resources Unit of NMMU, with Tsiba College, with Rainman Landcare Foundation, with Wild Oats Market, with Scarab Market, with The Green Company, with Timberlake Organics, with FarmFresh Direct, with Southern Cape FET College, with Sedgfield Sita Slow and with whatever other local organisations and producers in the Southern Cape wish to join us in supporting ecologically sound production, socially sound co-operation, and economically sound business practices.

Eden PGS will convene a meeting at Tsiba's Eden Campus to discuss a programme of action, and this committee will press forward with preparing a list of prospective organic producers, sellers and consumers. Eden PGS will issue a press statement announcing its formation, and inviting producers who wish to join to undergo (free of charge) a farm inspection. Eden PGS will develop a programme of services and co-opt inspection committees (comprising consumers, sellers and producers).

PoE 4 SA PGS Assn procedures (weblink):

<http://www.greenafricadirectory.org/listing/pgs-south-africa/>

PoE 5 Article explaining PGS in Africa in *Ecology and Farming*:

Participatory guarantee systems in Africa by Joelle Katto-Andrighetto & Raymond Auerbach; in *Ecology and Farming* No 45 (2009), pp.49-52 (IFOAM, Bonn).

PoE 6 SOAAN Founding document **Sustainable Organic Agriculture Action Network (SOAAN) Terms of Reference February 2012**

### **I. Purpose, Scope and Outcomes**

The Sustainable Organic Agriculture Action Network (SOAAN) exists to develop a reference and program that positions organic agriculture and its related supply chains as a holistic, sustainable approach to the production of food and fiber for all of human society. Working together as an alliance of likeminded organizations, members can use the SOAAN's outputs to jointly and individually impact the world's practices around the production and consumption of agricultural products. Through these efforts, good organic production can become a real and significant institutional alternative to conventional agriculture and its related policies, and members of SOAAN can be seen as increasingly desirable partners.

The scope of the SOAAN's work encompasses all aspects of agricultural production and downstream product supply chains, centering around the products themselves, but also taking into consideration the infrastructure on which their production, distribution, and consumption depends. In addition to these ecological aspects, the human aspect of all of these interactions is taken into consideration. All together, SOAAN's efforts reflect and respect the IFOAM Principles of Organic Agriculture.

Tangible products of the SOAAN's work may include but are not limited to:

- A reference document, guide, or norm that describes best practices of sustainable organic production and value chains;
- Means and materials with which leaders in the organic movement can strategically position organic agriculture and the organic movement as having a critical and central role in world ecological stewardship, economic, and social development;
- A strategy brief that organic actors worldwide can use to advance their own efforts;
- Foundational educational materials for the dissemination of organic knowledge, research, and training;
- Reporting mechanisms whereby progress and achievement of sustainable practices may be communicated and/or assessed; and
- Communication materials related to any or all of the above.

### PoE 7 Measurable sustainability indicators for organic farms

A paper presented by Raymond Auerbach to Organics 3.0 conference in Goesan, S Korea, 2015.

Presentation available at:

[http://www.ifoam.bio/sites/default/files/raymond\\_auerbach\\_south\\_africa\\_-\\_sustainability\\_indicators.pdf](http://www.ifoam.bio/sites/default/files/raymond_auerbach_south_africa_-_sustainability_indicators.pdf)

### PoE 8 South Korea conference programme (see pdf PoE 8)

Auerbach keynote for the session on Farmer Training, later developed as a paper at the Engagement Writing Retreat held in PE in January 2016, and since submitted for publication (see PoE 26).

### PoE 9 Organics 3.0 conference programme (see pdf PoE 9)

Two papers presented, also in South Korea the next week, on Organic research in Africa, and on Scientific indicators of sustainable practice at farm level.

### PoE 10 SANAS Launch Programme (see pdf PoE 10)

Auerbach Key-note speech.

### PoE 11 SANAS report (see pages 3 & 4 of the March 2015 edition of SANAS newsletter, available at [http://home.sanas.co.za/?page\\_id=184](http://home.sanas.co.za/?page_id=184))

Auerbach (Technical Expert for SANAS) gives keynote at Organic Standards System roll-out.

### PoE 12 CoE Grant Letter (see pdf PoE 12)

R1,050,000 allocated for 2014 to 2016 for Project 140103 (Organic vegetables and AgriParks).

### PoE 13 SI Lecturer Evaluation (see pdf PoE 13)

Evaluations by M Phil students at Sustainability Institute of Raymond Auerbach as lecturer.

### PoE 14 Sus Inst Programme (includes Kobus Pienaar) (see pdf PoE 14)

Programme for M Phil “Systems and Technologies for Sustainable Agriculture” module to be delivered by Raymond Auerbach in May 2016; Kobus Pienaar (Head of Woolworths “Farming for the Future” programme, and former student in the module in 2014), will also give a lecture.

### PoE 15 Report on *Kos en Fynbos* visit to permaculture garden (see pdf PoE 15)

The *Kos en Fynbos* gardeners asked for research into how the lower yields often experienced in organic farming could be improved, and what the best crop rotations for the Southern Cape would be; their questions (and international best practice) helped shape our research programme; Michele Schubert reports on a visit to the research trials in March 2016.

#### PoE 16 Practical with medical students at George Hospital (see pdf PoE 16)

Michele Schubert works with medical students at George Hospital establishing a permaculture garden with help of Dr Zille North; all three of us were founders (with the gardeners) of the *Kos en Fynbos* movement, after ex-colleague Anthonie du Toit and WESSA leader Chris Godfrey initiated this, and I helped get the first gardening competition going; the link between nutrition and health is a major part of my research, and in particular, of my engagement research, work.

#### PoE 17 List of post-graduates and co-supervisors (see pdf PoE 17)

My research is trans-disciplinary; this has caused conflicts with my line manager and with the Dean of Science. Trans-disciplinary work requires a range of skills, and these are reflected in the diversity of co-supervisors involved. Making the link between engagement and research often causes conflict between more narrowly defined “pure” researchers, who cannot see the value of engagement; an acting Dean of Science told me that my first responsibility is teaching, then peer-reviewed research publications; engagement may only happen if there is spare time after that.

#### PoE 18 ICROFS programme (see pdf PoE 18)

Masters student Jama Mashele and I visited Europe so that experienced researchers could peer-review my long-term research trial design; first stop was ICROFS in Denmark, where I presented a seminar on our research approach, and visited their long-term research trials.

#### PoE 19 FiBL programme (see pdf PoE 19)

Third stop on the European tour mentioned above was the Swiss Organic Research Institute (FiBL), where we also visited the long-term DOK research trials.

#### PoE 20 Oldenburg programme (see pdf PoE 20)

In between the Danish and Swiss visits mentioned above, we spent two days at our NMMU-partner University in Oldenburg, where I gave a seminar on our research and engagement work in Africa.

#### PoE 21 Muenster programme (see pdf PoE 21)

Before Ms Mashele joined me on the European trip mentioned above, I presented a course on Sustainable Agriculture and Nutrition at our partner university in Muenster, with Professor of Nutrition and School Feeding expert, Carola Strassner.

#### PoE 22 SASA Board, Stellenbosch Opening Address

I was asked to join the Board of Study for Stellenbosch University’s Sustainable Agriculture M Sc degree, and we helped to develop the curriculum, and to set up the programme in 2012 and 2013. Once the students arrived, I was flown down to give an Introductory Keynote address to the first group of students who had commenced their studies; the e-mail from Julia Harper is the invitation:

**From:** Harper, JR, Mrs <[jrs@sun.ac.za](mailto:jrs@sun.ac.za)> [<mailto:jrs@sun.ac.za>]  
**Sent:** 06 February 2014 01:52 PM  
**To:** Auerbach, Raymond (Professor) (George Campus)  
**Cc:** Dzama, Kennedy, Prof <[kdzama@sun.ac.za](mailto:kdzama@sun.ac.za)>  
**Subject:** Opening few words/mins at launch of New Sustainable Agriculture Masters | 10 Feb, Stellenbosch  
**Importance:** High

Dear Raymond,

I hope this finds you well? Its been a while ... and we are all still waiting to hear about the Centre of Excellence!! Anyway we wait and see ...

On Monday we are having a tea at 3pm to celebrate the launch of the New Sustainable Agriculture Masters programme for which you are on the Board. We wondered if you would be willing to consider coming to give a few words for a few minutes at the start of the tea to celebrate its commencement? We would of course cover all travel costs to Stellenbosch and accommodation.

Let me know if this is possible and I'll get Abigail onto the travel arrangements.

Looking forward to hearing from you. Kind regards,

Julia Harper Food Security Initiative Manager

Stellenbosch University/Universiteit Stellenbosch

+27 (0)725350204 [www.sun.ac.za/foodsecurity](http://www.sun.ac.za/foodsecurity)

### PoE 23 African Union nomination (see pdf PoE 23)

In 2015 I was nominated by African Organic Farmers and Researchers as an "Ecological Organic Agriculture Champion" the nomination was ratified before the Third African Organic Conference, and the award was made at the conference in Nigeria; text of the nomination (and criteria) as an Ecological Organic Agriculture Champion of Africa (October 2015) is given in the extract from the award document, sent to all African Organic Agriculture stakeholders. The actual award certificate is shown in PoE 24 below.

## PoE 24 African Union Certificate of Recognition: Outstanding Contribution



## PoE 25 FAO book press release and link to download (see pdf PoE 25)

At the Second African Organic Conference, the Food and Agricultural Organization (FAO) asked me to act as scientific editor for a book containing the ten best papers of the conference, as well as my keynote address. This book has been very well received, but was dismissed by DoE evaluators as having little scientific merit; my line manager described it as a “coffee-table publication”. The link between applied research and the development of strategies to address African food security is not understood by science administrators either here at NMMU or in Pretoria.

## PoE 26 Abstract from paper on farmer training

The paper written at the Engagement Writing Retreat held in Port Elizabeth in January 2016 has been submitted as a journal article; the abstract is given below:

### Effective experiential learning in agro-ecology under climate change

RMB Auerbach ([Raymond.auerbach@nmmu.ac.za](mailto:Raymond.auerbach@nmmu.ac.za))

Agricultural Management, School of Natural Resource Management, Nelson Mandela Metropolitan University – George Campus, Western Cape 6529, South Africa.

#### Abstract

This practitioner reflection reports on twenty years of training agro-ecological farmers in various African contexts. It argues that good theory should be drawn out of good practice, to help farmers to adapt to climate change while producing nourishing food sustainably. Currently, training is often provided by agri-businesses with an interest in promoting the use of their inputs, rather than concentrating on empowering farmers to develop environmentally sound farming systems using locally available resources. Three organic training systems are examined: On-farm systems exposed trainees to farm management and marketing, but not in their familiar context. Training on-site at community gardens was effective only when there was good mentorship and project support. In a

university diploma context, 18 months of theory with regular practical activities prepared students for a year of on-farm practical learning. This was supported by guided reflection, and followed by six months back in the classroom, integrating theory and practice. In all three systems, learners were challenged with practical activities, after which theory was developed. Organic systems were found to help learners to use locally available resources, especially water, more efficiently. Exposure to good practice helped learner farmers to understand and integrate good theory into their practice, while practical challenges helped learners to understand what theory means, and how it should be adapted to the local context.

### [PoE 27 Regeneration International \(see pdf PoE 27\)](#)

Regeneration International is an organisation formed in Costa Rica in 2015 in order to bring together scientists, activists and communications experts to exert evidence-based pressure on policy makers, so that there better-informed decisions are made on climate change and agricultural development. The current situation, where agri-business interests such as Monsanto (GMO seed and herbicide) and chemical fertiliser companies exert enormous pressure on governments, and donors (such as the Gates Foundation, major investors in GMO technology) make donations with many strings attached, requires a public interest response aimed at showing what action is needed to change the way things are done. Because of my research, and my contributions to CoP 17 in Durban (where I represented NMMU and [with the World Food Program and IFOAM] hosted a session on “Reducing the vulnerability of small scale farmers to climate change”), I was invited to the Costa Rica founding meeting, and asked by Vandana Shiva to draft a short document on the “Law of the Soil” for the year of the Soil (2015) – see PoE 28.

### [PoE 28 Law of the Soil \(see pdf PoE 28\)](#)

This is the one page document drafted for the Regeneration International meeting, and which was also used at the Paris CoP 21 (December 2015) meeting, where, historically, governments agreed that action should be taken to limit global warming; we will wait to see what action (if any) arises from this commitment, but the voice of civil society, backed by science, was heard at CoP21.

### [PoE 29 Acres USA Interview \(see pdf PoE 29\)](#)

After my contributions to CoP 19 and CoP 21, and my participation at the Regeneration International founding workshop in Costa Rica, the Agro-ecology magazine Acres-USA interviewed me and published a nine-page summary of the interview, which shows NMMU in a very good light as a leader in environmental research and an innovative organisation where inter-disciplinary research is encouraged. This interview has drawn forth many responses from the public, and a number of invitations which I have had to turn down, as my sabbatical was refused on the grounds that it is non-urgent and not a priority for somebody who is on deferred retirement! There seems to be little appreciation among Science Managers at NMMU for how engagement work could lead to really good collaborative research, and how it has already (in my case) led to the development of research networks around the world, and to excellent peer-reviewed research which has already produced publications of various types (including two peer-reviewed journal articles in the last three months). Without an understanding of the nature of trans-disciplinary engaged research, NMMU science managers are actually inhibiting the development of excellence in scientific engagement.

### [PoE 30 Vuyo poster \(see pdf PoE 30\)](#)

Student Vuyo Nteyi was part of the Young Professionals Programme at the W Cape Dept Agric, and I supervised his work with Dr Mike Ferreira as co-supervisor. Vuyo presented this poster at a science conference in 2014, but tragically died in a car accident before graduation. The poster is PoE 30, and the paper which he had almost finished before his death was completed by me and W Cape DoA colleagues, and published in SA Journal of Soil and Plant in February 2016 (see PoE 31).

[PoE 31 Abstract – Vuyo Raymond paper published in SA Jnl of Plant & Soil, Feb 2016:](#)  
(Full paper is PoE 31 pdf file)

## South African Journal of Plant and Soil

[Select Language](#)



[Translator disclaimer](#)



### Online First Articles

## Crop rotation and tillage system effects on reducing ryegrass occurrence in spring wheat

[Sinovuyo M Nteyi<sup>ab</sup>](#), [Raymond MB Auerbach<sup>a</sup>](#), [Michael I Ferreira<sup>b\\*</sup>](#) & [Johan Labuschagne<sup>b</sup>](#)

### [Publishing models and article dates explained](#)

- Received: 24 Apr 2015
- Accepted: 21 Nov 2015
- Published online: 01 Mar 2016

### [Alert me](#)

## Abstract

Under the Mediterranean climatic conditions of the Western Cape province, the Swartland region is intensively cropped, producing spring wheat (*Triticum aestivum* L.), but due to ryegrass competition, yield is reduced. In addition, ryegrass has developed resistance to herbicides. This necessitates the use of integrated weed management practices for suppressing ryegrass in wheat fields. The objectives were to quantify and qualify the impact of crop rotation and tillage systems used in combination with reduced herbicide input and to determine whether these could reduce ryegrass population numbers. Analyses of variance of data were used to determine crop rotation×tillage system response in field and shade-netting experiments. Wheat monoculture, in both tillage systems, was

associated with the highest ryegrass population increase in both years. The results of both the field and shade-netting experiments showed that there was no significant difference between minimum-tillage and no-tillage in reducing ryegrass numbers. Results obtained from the shade-netting experiment indicated that the three crop-rotation treatments under minimum-tillage differed significantly from the control. In the field wheat–medic–wheat–medic rotations under no-tillage outperformed all other rotations, followed by wheat–lupin–wheat–canola under minimum-tillage. It is essential to use competitive crop sequences that decrease particular weed population numbers.

PoE 32 Paper published in SA Journal of Geology, March 2016 (see pdf PoE 32)

This is the abstract of the final version of a paper by Jama Mashele and me on the first season of the long-term research trials on the George Campus, as accepted by SAJG and published in March 2016.

PoE 33 RTF 2014 Grant Letter (see pdf PoE 33)

Grant letter for R790,000 for 2014 to start the research in Uganda and Zambia.

PoE 34 RTF 2016-18 Grant Letter (see pdf PoE 34)

Grant letter for RTF-NRF 2016 to 2018: three years each R300,000 = R900,000.

PoE 35 Student Jama Mashele’s report on a trip to Europe (see pdf PoE 35)

Jama Mashele graduated with her MSc in April 2016 and published a paper in the SA Journal of Geology in March 2016 (see PoE 32); she reports on what she saw on the European trip which she did with me to visit other long term comparative organic trials in Denmark and Switzerland where our designs were peer-reviewed by experienced experts.

PoE 36 ASSAf reference: “The state of green technologies in South Africa,” 2014.

<http://www.assaf.co.za/wp-content/uploads/2015/01/8-Jan-2015-WEB-526305-ASSAF-Green-Tech-mail.pdf>

PoE 37 UNCTAD Best practices for organic policy, 2008; full reference:

[http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewiSj9qJx73MAhVFJcAKHSxXCZkQFggdMAA&url=http%3A%2F%2Fwww.unep.ch%2Fetb%2Fpublications%2FUNCTAD\\_DITC\\_TED\\_2007\\_3.pdf&usg=AFQjCNEEVXjyt2AhCzqE\\_3wffvYA7GgqsA&sig2=NmTL03XOEjnyWslY83oQ](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewiSj9qJx73MAhVFJcAKHSxXCZkQFggdMAA&url=http%3A%2F%2Fwww.unep.ch%2Fetb%2Fpublications%2FUNCTAD_DITC_TED_2007_3.pdf&usg=AFQjCNEEVXjyt2AhCzqE_3wffvYA7GgqsA&sig2=NmTL03XOEjnyWslY83oQ)

## **Annex 6. South African Case Study (Dr Raymond Auerbach)**

(in: Best Practices for Organic Policy: What developing country governments can do to promote the organic sector, 2008. UNEP-UNCTAD Capacity Building Task Force on Trade, Environment and Development [CBTF], United Nations Conference on Trade & Development, UN Environment Programme. UNCTAD/DITC/TED/2007/3)

### PoE 38 Pictures of orientation and academic practicals (see pdf PoE 38)

M Sc graduate Jama Mashele facilitates a student diversity orientation practical; M Sc student Marike Swanepoel harvests cabbage; M student Catherine Eckert with Co-Supervisor Prof Simon Lorentz from UKZN in the long-term research trials; Catherine Eckert uses the new moisture probes to assess water use efficiency.

I started work at NMMU in August 2010, but was allowed to continue with a planned (and fully externally funded) trip to Europe, where I concluded a collaboration agreement with the Swiss Organic Research Institute (FiBL) which has led to very fruitful collaboration. We are currently completing a joint application for a major project, and they reviewed (and helped us to improve) our long-term research design. From January 2011, I was asked to take on the role of AgMan Programme Co-ordinator, which I did for three years; I have also managed the Experiential Training Programme since 2011, and been responsible for Soil Science and Plant production.

I have introduced an Academic Diversity practical for all first year students, which is held as the second practical of the year (after the Orientation Practical, which takes them around the George and Oudtshoorn areas). After seeing something of the local agro-biodiversity, the students are challenged to discuss the differences in their backgrounds. This year (2016), facilitation of the prac was by post-graduates Jama Mashele and Marike Swanepoel, and B Tech students Viwe Cutu and Luxolo Dyakopu (all four are supported by research grants from projects of mine or of Prof Maarten de Wit's). Students discussed how they travelled to NMMU, what sacrifices had to be made to get them here, what the best (and worst) experiences they had had so far were, and how they had been affected by the #FeesmustFall activities. There was lively debate, and for their third practical (Plant Production I) they prepared compost and planted vegetable crops in the permaculture garden.

A number of students have interacted with visitors from the *Kos en Fynbos* movement, and co-supervisors from UKZN, NWU, ARC, Uganda Martyr's University, University of Zambia and Stellenbosch have given us access to a wide pool of academic expertise. The support of Prof Maarten de Wit, Prof Quinton Johnson and the Research Office, as well as many other staff members is gratefully acknowledged.

In spite of my grumbles about the difficulties of setting up and carrying out trans-disciplinary engaged research at NMMU, it has been possible to get a huge amount going in a relatively short space of time, and I am very grateful for the exciting opportunities which I have been able to make realities in these very full five and a half years!



# REGIONAL CONFERENCE ON MARKETING & INNOVATION IN ORGANIC FARMING

02-03 October, 2015 | Goesan County, South Korea

85 Munmu-ro, Goesan-eup, Goesan-gun,  
Chungcheongbuk-do, South Korea

FRIDAY  
02  
OCTOBER

13:30 – 15:30

## EXTENSION & EDUCATION

**PROF. RAYMOND AUERBACH (South Africa)**  
Quality innovations in organic training

**MRINILA SINGH (Nepal)**

Factors impacting adoption of organic farming in Chitwan district of Nepal

**BOONJIRA TANRUANG (Thailand)**

Organizing an organic supply chain in Thailand

**KHEM RAJ DAHAL (Nepal)**

Agricultural knowledge management for organic farming through education and training in Nepal

**AJITH DAMMIKA TENNAKOON (Sri Lanka)**  
Organic tea

**PABLITO M. VILLEGAS (Philippines)**

Experimental learnings in climate change mitigation & adaptation through organic & ecological farming

15:30 – 16:00

Coffee Break

16:00 – 18:00

## FARMING STRATEGIES

**ASHUTOSH UPADHYAYA (India)**

Conceptual framework of integrated organic farming model for an acre farm plot

**DR RAM SWAROOP BANA (India)**

Nutrient management through organics in pearlmillet & cluster bean under sole & intercropping systems

**USHA CHAUHAN (India)**

Comparative impact of monoculture & polyculture farming system on the biodiversity of natural enemies of arthropod pest in horticulture ecosystems

**LUIS FERNANDO ZELADA BRICEÑO (Perú)**

Use of municipal and agricultural wastes in agriculture as soil conditioner and fertilizer

**ISAAC NUNOO & BENEDICTA NSIAH**

**FRIMPONG (Ghana)**

Factors affecting adoption of organic cocoa farming in Ghana

**PROF. TED C. MENDOZA (Philippines)**

Detrashing sugarcane stalks: The 1st critical step to the shift to organic farming in sugarcane production

18:00 – 18:30

## DAY 1 - CONCLUSIONS & CLOSING

18:30 – 21:00

Official dinner & cultural performance

08:30 – 09:00

## REGISTRATION

09:00 – 09:45

## OPENING CEREMONY

**MARKUS ARBENZ**

Executive Director, IFOAM - Organics International

**RALPH HOUTMAN**

Marketing and Rural Finance Officer, FAO Regional Office for Asia and the Pacific

09:45 – 10:15

Coffee Break

10:15 – 12:30

## DIRECT MARKETING SOLUTIONS

**DR. S.M. RAFIUL HUGUE (Bangladesh)**

Innovation through Quick Response (QR) code

**MRINILA SINGH (Nepal)**

Local organic market in urban and semi-urban areas: A case study of Kathmandu valley & Chitwan district of Nepal

**EKADASHI NANDI (India)**

Short chain markets & consumer relationships

**NIKKI LAORDEN (Philippines)**

Is there a market for organic vegetables in Davao city?: The "organic" paradox

**HANA INDIRIANA (Indonesia)**

Key elements of community development to support direct marketing solutions

**GRACE GERSHUNY (USA)**

The organic revolution, or you can't dismantle capitalism with a marketing plan

**MICHELE MACCARI (Italy)**

Combining Organic Agriculture and Fairtrade certification with geographical indications

12:30 – 13:30

Lunch

SATURDAY

OCTOBER



Lunch

13:00 – 14:00

FIELD TRIP

14:30 – 18:30

Visit Heuksalm Organic Seed Bank, pilot farms & organic grain factory  
Visit an organic veggie farm

08:30 – 10:30

FARMING STRATEGIES

**PROF. OKEMWA EZEKIEL (Kenya)**  
Future of organic agriculture & food security in Africa

**HARIDAS VARIKOTIL RAMAN (India)**  
P6 approach for cultivator - consumer - connectivity

**NORA LILIANA PUPPI (Argentina)**  
Argentina organic production - Importance & evolution of family farmers

**ACE CERILLES (Philippines)**  
Gahung-gahung organic cassava farming system

**SALMA HASSANI ELAMIN (Sudan)**  
Khartoum participatory guarantee system & farming strategies

10:30 – 11:00



Coffee Break

11:00 – 13:00

SYSTEM INNOVATIONS



**SINJI HASIMOTO (Japan)**  
The innovation culture in the Tekei system

**WAK GEUM SOON AND JI YOUNG (Korea)**  
Innovating consumer's behavior for health & sustainability

**MICHELE MACCARI (Italy)**  
Poverty alleviation through value chain building: A case study from Africa

**DR. SHAIKH TANVEER HOSSAIN (Bangladesh)**  
Innovation priorities for productivity increases in organic South Asia

**MARKUS ARBENZ (Switzerland)**  
Reforming organic systems globally



The conference will be taking place in Jungwon University where accommodation will also be arranged at 50 USD per room per night. You can find more information about the venue [HERE](#).



TICKETS COST 100 €.

TO REGISTER PLEASE [CLICK HERE](#).

If you also register for the Organic 3.0: The Next Phase of Organic Development – Visions, Trends and Innovations, you pay 150 € for both.

\* PROGRAM SUBJECT TO MINOR CHANGES



# ORGANIC 3.0: THE NEXT PHASE of ORGANIC DEVELOPMENT - VISIONS, TRENDS & INNOVATIONS

09 11 October, 2015 | Goesan County, South Korea

85 Munmu-ro, Goesan-eup, Goesan-gun,  
Chungcheongbuk-do, South Korea



The conference will be taking place in Jungwon University where accommodation will also be arranged at 50 USD per room per night. You can find more information about the venue [HERE](#).

FRIDAY 09 OCTOBER

08:00 – 09:00

Registration

09:00 – 09:30

Official Welcome & Opening

ANDRÉ LEU (Australia)  
President, IFOAM - Organics International

09:30 – 10:00

Keynote Address: The Future of Agriculture

FRED KIRSCHENMANN (USA)  
Leopold Institute for Sustainable Agriculture

10:00 – 10:30

Coffee Break

10:30 – 13:00

Organic 3.0 Perspectives & Approaches

FRED KIRSCHENMANN (USA)  
Leopold Institute for Sustainable Agriculture

ROBERTO UGAS (Peru)  
Universidad La Molina

JOSTEIN HERTWIG (Sweden)  
BERAS

URS NIGGLI (Switzerland)  
FiBL

RAYMOND AUERBACH (South Africa)  
Nelson Mandela University

ANTONIO COMPAGNONI (Italy)  
ICEA

13:00 – 14:00

Lunch

14:00 – 16:00

Making our Case - Demonstrating Impact

Research Round Table:

URS NIGGLI (Switzerland)  
FiBL

NIELS HALBERG (Denmark)  
ICROFS

Metrics Round Table:

SUSANNE PADEL (UK)  
Organic Research Centre

GABI SOTO (Costa Rica)  
Universidad de Costa Rica

Farming Round Table:

HELMY ABOULEISH (Egypt)  
Sekem

TOBIAS BANDEL (Germany)  
Soil & More

16:00 – 16:30

Coffee Break

16:30 – 18:00

Making Technical Innovations Common Practice

EDITH LAMMERTS VAN BUEREN (Netherlands)  
Louis Bolk Institut

- GENETICS AND BREEDING -

URS NIGGLI (SWITZERLAND)  
FiBL

- THE LANDSCAPE OF TECHNOLOGY -

JOHN FAGAN (USA)  
Earth Open Source

- ETHICS OF TECHNOLOGY -

RAYMOND AUERBACH (South Africa)  
Nelson Mandela University

SATURDAY

OCTOBER

08:30 – 10:30

**Uniting with Like-Minded Movements & Engaging Consumers**

TOM MACMILLAN (UK)  
Soil Association

VICTOR GONZALVES (Spain)  
Sociedad Española de Agricultura Ecológica

ALEX MONROE (USA)  
Edible Impacts

SHI YAN (China)  
Shared Harvest CSA

JACOB MALHOUSE (Canada)  
Big Room

SPEAKER (Korea)  
Slow Food or Hansalim

10:30 – 11:00



Coffee Break

11:00 – 13:00

**From Niche To Mass Conversion**

Case Studies & Debate:

VIC TAGUPA (Philippines)  
SAFECCC

TSEWANG DORJI (Bhutan)  
Ministry of Agriculture

KERRY COCHRANE (Australia)  
Ecological Agriculture Australia Association

ANDRÉ LEU (Australia)  
IFOAM – Organics International

13:00 – 18:00



Lunch, Visit to farms & Expo

SUNDAY

OCTOBER

08:30 – 10:00

**Organic 3.0 Framework**

DAVID GOULD (USA)  
IFOAM – Organics International

TOBIAS BANDEL (Germany)  
Soil & More

KATHERINE DIMATTEO (USA)  
Sustainable Food Trade Association

DANIEL BÄRTSCHI (Switzerland)  
BioSuisse

10:00 – 11:00

**Organic 3.0 Infrastructure**

GODEFROY JORDAN (FRANCE)  
Starting Dot

JOCHEN NEUENDORFF (GERMANY)  
bioC

PEGGY MIARS (USA)  
Organic Materials Review Institute

11:00 – 11:30



Coffee Break

10:00 – 11:00

**Organic 3.0 Network**

DANIEL BÄRTSCHI (Switzerland)  
BioSuisse

ANTONIO COMPAGNONI (Italy)  
ICEA

TOBIAS BANDEL (Germany)  
Soil & More

SHI YAN (China)  
Shared Harvest CSA

GABI SOTO (Costa Rica)  
Universidad de Costa Rica

13:00 – 14:30



Lunch

14:30 – 16:30

**Organic 3.0 Implementation**

ZHOU ZEJIANG (CHINA)  
Organic Food Development Center

WANG YUE-WEN (TAIWAN)  
National Taiwan University

ASHISH GUPTA (INDIA)  
Organic Farming Association of India

KATRINA HEINZE (USA)  
General Mills

16:30 – 17:00



Coffee Break

17:00 – 18:00

**Closing Ceremony & Conclusion**

ANDRÉ LEU (Australia)  
IFOAM – Organics International

URS NIGGLI (Switzerland)  
SOAAN

\* PROGRAM SUBJECT TO MINOR CHANGES



TICKETS COST 100 €.

TO REGISTER PLEASE [CLICK HERE](#).

If you also register for the  
**Regional Conference on Marketing  
& Innovation in Organic Farming,**  
you pay 150 € for both.



## AGENDA

### ROLL-OUT WORKSHOP FOR SANAS ACCREDITATION PROGRAMME FOR

#### Organic Agricultural Production and Processing (OAPP)

26 MARCH 2015

08:30 to 13:30

1.	Registration	08:30 – 09:05
2.	Opening and Welcome <i>Mr. Tumelo Ledimo, SANAS</i>	09:00 – 09:10
3.	Overview of SANAS <i>Dr. Elsabe Steyn, SANAS</i>	09:05 – 09:35
4.	Why Organic Agriculture in 21 <sup>st</sup> Century? The scientific basis. <i>Prof Raymond Auerbach, NMMU</i>	09:35 – 10:20
5.	The involvement of Directorate FSQA of DAFF <i>Mr Niel Erasmus, DAFF</i>	10:20 – 10:45
	<b>Tea / Coffee</b>	<b>10:45 – 11:00</b>
6.	SANS 1369 Overview <i>Ms. Diana Callear, Afrisco</i>	11:00 – 11:40
7.	ISO/IEC 17065 Accreditation Standard <i>Ms. Victoria Wagener, SANAS</i>	11:40 – 12:00
8.	Accreditation Process for Certification <i>Mr. John Ndalamo, SANAS</i>	12:00 – 12:20
9.	Questions and Closing	12:20 – 12:40
	<b>Lunch</b>	<b>12:40 – 13:30</b>

# WhatsUP @ sanas

Newsletter of the South African National Accreditation System

South African National Accreditation System

March 2015



## CONTENTS

From the Editor's desk.....Pg 01	Roll-out workshop for a SANAS accreditation programme for the Road Transport Management System (RTMS) SANS 1395 Certification.....Pg 05	What is an Electronic Signature?.....Pg 07
Message from the CEO.....Pg 02	SANAS among the first African accreditation bodies to become a signatory to the AFRAC MRA.....Pg 06	Marketing and communication eve.....Pg 10
Honouring retired staff member Christinah Leballo.....Pg 02	Assessor recognitions.....Pg 07	Here's how SANAS accreditation keeps South Africans safe!.....Pg 10
Organic Agricultural Production and Processing (OAPP) SANS 1369.....Pg 03		New staff profiles 2015.....Pg 11



from the  
**Editor's**  
desk



## IT'S BEEN A BUSY START TO THE YEAR! WELCOME TO THIS EDITION OF WHATSUP@ SANAS.

Whatsup@SANAS – a roundup of all you need to know about what's been happening at SANAS over the past few months.

This newsletter is packed with news about things we're really proud of, like the fact that we have become one of the first signatories to the AFRAC MRA, as well as a visit by some esteemed guests from the Portfolio Committee of Department of Trade and Industry (**the dti**).

In this edition, you'll also read more about who was recognised at the assessor conclaves, as well as **the dti's** annual open day, in which we took part. Plus, we've included an article that gives you the low-down on electronic signatures. And, in our Did you know? section, we've got some interesting information on how SANAS helps ensure workplace safety and fresh drinking water.

As always, we value your feedback and suggestions for articles. Please contact us by emailing: [tshenolom@sanas.co.za](mailto:tshenolom@sanas.co.za)

We hope that you enjoy reading this edition of Whatsup@SANAS as much as we enjoyed putting it together!

### **Best wishes**

Tshenolo Molamu  
SANAS Communications Manager



## MESSAGE FROM THE CEO

Once again, SANAS has come to the end of a very successful financial year. We are now well on our way towards achieving our 2000 accredited facilities goal for 2020.

In addition to the growth in accreditation numbers, the extension of accreditation scopes for accredited facilities also contributed to the increase in assessor units.

Thanks to the hard work of the SANAS team and our pool of technical assessors and experts, which has grown to over 250, we have successfully delivered on our mandate.

### Recognition for SANAS

We were honoured that the Portfolio Committee of the Department of Trade and Industry visited the SANAS offices in January 2015 during their study tour. In their final report, they recognised the important role that SANAS plays to support South Africa's economic growth and social development.

### New accreditation programmes

As part of our involvement in the

implementation of the Industrial Development Action Plan (IPAP), SANAS launched three new accreditation programmes namely for Food Safety System Certification (FSSC), Organic Agricultural Production and Processing and Road Transport Management System (RTMS).

### WTO TBT meeting

I was fortunate to have been invited to attend the WTO TBT meeting. Delegates acknowledged that accreditation of conformity assessment bodies makes it possible for trading partners to trust the results of inspection and certification bodies and laboratories that are required by regulators and importers.

### A first for SANAS

During September 2014, SANAS became one of the first signatories to the African Accreditation Cooperation Mutual Recognition Agreement. This applies for the scopes of Test, Calibration and Medical laboratories, Inspection Bodies and Certification for management system, and environmental management system.



**Ron Josias**

In 2015, SANAS will be peer evaluated for the 5th time by ILAC and IAF. We are confident that we will be successful.

Thank you to all our accredited facilities, as well as the accreditation communities for your continued support in making SANAS successful.

Wishing you everything of the best for the next financial year!

## HONOURING RETIRED STAFF MEMBER CHRISTINAH LEBALLO

SANAS staff members gathered to celebrate and honour the contributions of one of its key senior staff members, Christinah Leballo, as she retired from SANAS after 12 years of service at the end of January 2015.

Christinah started at SANAS as a Lead Assessor. She was then promoted to Programme Manager B-BBEE, and later to Senior Manager: Testing, Certification and B-BBEE, the position she held at the time of her retirement.

Christinah has served in various committees, including being a member of the faculty at the 11th OECD Training for GLP Inspectors in Japan (October 2013) and an IAF MLA MC and MLA Group Member. She also conducted peer evaluations for ILAC, IAF and AFRAC.

From May 2012 to April 2014, Christinah was chairperson for the OECD Working Group on GLP, a role she played diligently. She was the first person from a non-OECD country to chair the committee.

Christinah was an international ambassador for SANAS and a world-class accreditation expert who did groundbreaking work in the medical, B-BBEE and testing accreditation programmes in South Africa.

We would like to recognise the substantive leadership and mentorship role that Christinah played in SANAS' growth and development, as well as its regional and international recognition.

We appreciate Christinah for the excellent



**Christinah Leballo**

work she has done and continues to do. When others are thinking of retirement, she is now volunteering in her community. We salute you.

# ORGANIC AGRICULTURAL PRODUCTION AND PROCESSING (OAPP) SANS 1369

South African National Accreditation System (SANAS) launched a new accreditation programme for the certification bodies that will be certifying Organic Agricultural Production and Processing (OAPP) in accordance with the South African National Standards SANS 1369 on 26 March 2015.

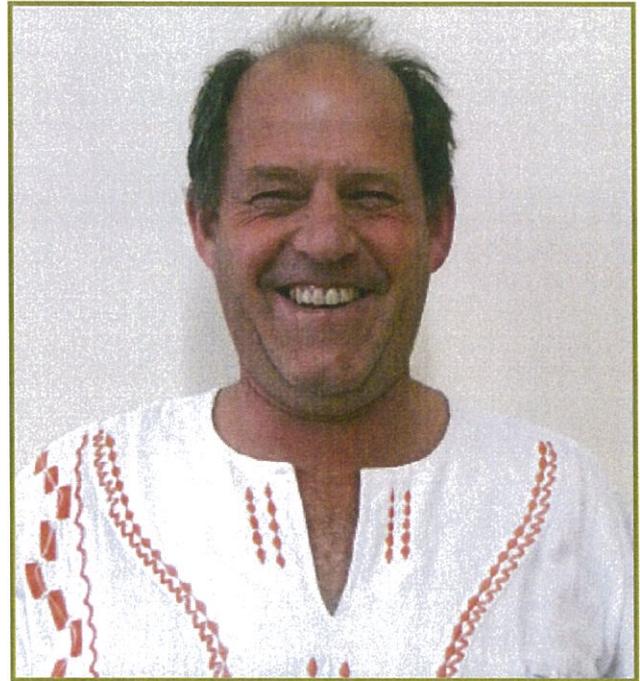
The roll-out of this new accreditation programme for Organic Agricultural Production and Processing (OAPP) for certification bodies, is the result of work done by a SANAS working group of technically knowledgeable experts in the organic agricultural production and processing environment, who developed the SANAS Technical Requirements that addresses the scope of accreditation and the minimum qualification and experience required in the OAPP.

Stakeholders involved in the Organic Agricultural Production and Processing attended the launch including representatives from government, retailers such as Checkers, Pick and Pay and Woolworths also attended, as well as interested certification bodies.

## Background

In recent years the world has seen a growing awareness about health and environmental issues. Consumers worldwide are becoming concerned about the quality and safety of food that they eat. They are also concerned about the effect of pesticides, fertilizers, livestock effluent and veterinary drugs on their health. Organic agriculture is considered to be a viable solution to most of these concerns that have emerged from society.

Professor Raymond Auerbach from NMMU who has been working in the field of organic agriculture for more than four decades, confirmed that consumers in South Africa are also increasingly concerned about the quality and safety of the food that they eat. The development of the South African National Standard SANS 1369 - Organic Agricultural Production and Processing and the SANAS accreditation programme for the certification bodies that will certify Organic Agricultural Production and Processing is a huge step forward to formalise organics in South Africa. He also highlighted that organic agricultural production and processing is a vehicle for sustainable development. He is of the view that a combination of science with social and environmental activism is needed if agriculture in South Africa and Africa is to move into an era of prosperity, based on increased resilience and sustainability.



**Prof Raymond Auerbach**

In this regard, the Industry Policy Action Plan 2013 (IPAP 2013) of **the dti** identified Organic Agricultural Production and Processing as a food sector that represents a high-value niche sub-sector with the potential to create 20,000 jobs over five years in both the primary agriculture and agro-processing stages of the value chain. Moreover, since South Africa currently imports a significant proportion of the organic food demanded by consumers, there are both import replacement and export opportunities for this sub-sector.

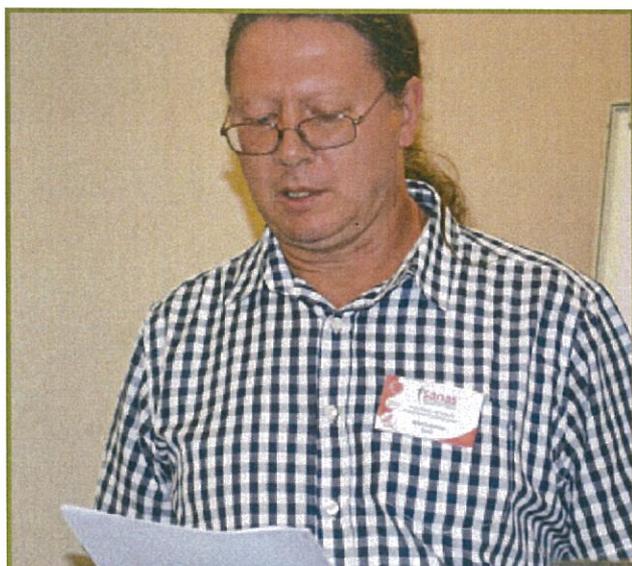
## SANS 1369 Organic Agricultural Production and Processing

Due to the growing demand in this high-value niche sub-sector, locally and globally, South Africa has developed a national standard for organic agricultural production and processing. The standard defines organically produced and processed product and the certification requirements for the organic agricultural production and processing. The South African Bureau of Standard (SABS), Organic Agricultural Product and Processing (SANS 1369) standard will be implemented by the producers and processors of organic product as defined in the standard.

Once the implementation has been achieved and the conversion period has been served they then can apply for certification from a SANAS accredited certification body.

Mr Niel Erasmus from the Directorate Food Safety and Quality Assurance of the Department of Agriculture, Forestry and Fishery talked about the involvement of the department in the Organic Agricultural Production and Processing. In terms of the Agriculture Product Standards Act of 1990 the Department is responsible for the following:

- Set quality standards for agricultural products - Grades, classes, composition, packing, marking and labelling;
- All the quality standards require that no misleading claims may be indicated on the agricultural products and;
- Must provide proof of "organic" – any certification against any standard.



**Mr Niel Erasmus**

He confirmed that the fundamental principles of the South Africa Organic Agricultural Production and Processing standard are:

- Enhanced biological diversity within the whole system;
- Increased soil biological activity;
- Maintenance and improvement of long term soil fertility;
- Recycling of waste of plant and animal origin in order to return nutrients to the soil, thus minimising the use of non-renewable resources;
- Relying on renewable resources in locally organised agricultural systems;
- Promoting the healthy use of soil, water and air as well as minimising all forms of pollution thereto that may result from agricultural practices;

- Handling of agricultural products with emphasis on careful processing methods in order to maintain the organic integrity and vital qualities of the product at all stages.

### Consumer protection

The roll out of this SANAS accreditation programme will also give consumers who buy Certified Organic farm products, certainty that they are actually buying organically produced products because it would have been certified by a technically competent organic certification body that has been accredited by SANAS. This programme also supports the consumer protection provided for by the Agriculture Product Standards Act, 1990 (Act No. 119 of 1990) for the misleading or misrepresentation of the information on the labelling.

### Accreditation by SANAS

Accreditation is internationally and nationally recognised as a reliable and transparent method of confirming the technical competence of Conformity Assessment Bodies (CABs) such as certification bodies, testing laboratories and inspection bodies. SANAS as sole accreditation body of the Republic of South Africa provides formal recognition of CABs technical competence to perform certification, testing and inspection functions as per their scope of accreditation. SANAS is also recognised internationally by the International Laboratory Accreditation Cooperation (ILAC) and International Accreditation Forum (IAF).

Accreditation has proven necessary to reduce the risk of inaccurate results and enhance public confidence and assurance in the results that are produced from the CABs that are accredited. With this new accreditation programme that was rolled out on 26 March 2015, SANAS will be providing third party attestation of the technical competence of the certification bodies that will be certifying Organic Agricultural Production and Processing in accordance to SANS 1369. The SANAS accredited CABs will be Certifying Organic Agricultural Production and/or Processing on how they have fulfilled the requirements stated in the SANS 1369. The certification will be based on the tangible evidence of the Organic Agricultural Production and Processing as articulated in the SANS 1369. Certification Bodies (CB) that are to provide certification services according to (SANS 1369) will be accredited according to ISO/IEC 17065. SANAS will give recognition of technical competence of the CB, to certify organisations according to the Organic Agricultural Production and Processing standard.

# ROLL-OUT WORKSHOP FOR A SANAS ACCREDITATION PROGRAMME FOR THE ROAD TRANSPORT MANAGEMENT SYSTEM (RTMS) SANS 1395 CERTIFICATION

South African National Accreditation System (SANAS) launched a new accreditation programme for Road Transport Management System (RTMS) Certification on 19 March 2015 in Pretoria. The roll-out of this new accreditation programme for RTMS Certification Bodies, is the result of work done by a SANAS working group of technically knowledgeable experts who developed the SANAS Technical Requirements that addresses the scope of accreditation and the minimum qualification and experience required in the RTMS.

Stakeholders involved in road freight and passenger transportation who will be implementing RTMS and require certification, as well as certification bodies and other relevant stakeholders such as representatives from the Department of Transport and RTMS National Steering Committee attended the launch.



**Mr Oliver Naidoo, Dr Paul Nordengen, Mr Tumelo Ledimo and Mr Adrian Van Tonder**

Despite concerted and ongoing efforts for an effective law enforcement strategy by the road and traffic authorities, the sharp increase in heavy vehicle traffic and the effects of overloading continue to be a major problem on South African roads. Overloading causes premature road deterioration and, together with inadequate vehicle maintenance, high levels of driver fatigue and poor driver health care programs, contributes significantly to South Africa's poor road safety record.

In view of the above, the South African road freight and passenger transportation industry started to look at a possible solution and the finalisation of the Road Transport Management System (RTMS) SANS 1395 and the SANAS accreditation programme for Road Transport Management System (RTMS) Certification is considered to be a mile stone for the industry and for stakeholders who are involved in the sector.

## Self regulation

Dr Paul Nordengen, from the CSIR explained that the Road Transport Management System (RTMS) is a self-regulation initiative that has already shown outstanding results since its implementation and supports the Department of Transport's National Overload Control Strategy. He pointed out that the objective of the implementation of RTMS is meant to contribute positively to road safety, preserving the road infrastructure and increasing productivity. Some of the benefits that have been achieved by the over 8000 RTMS certified vehicles and can be achieved by others include;

- A reduction and minimisation of overloading;
- Prevention of road damage and preserving our infrastructure;
- Enhancing the safety of heavy vehicles on our national roads;
- Taking care of truck drivers' health (Driver Wellness Initiatives);
- Reduction of traffic violations (e.g. reducing speeding incidents);
- Improving efficiency in various industry supply chains;
- Active promotion of skills development within the transport sector; and
- Companies measuring their performance and taking responsibility for the impact of their activities on our public road networks.

## Road Transport Management System (RTMS) SANS1395 Certification

Mr Oliver Naidoo is of the view that the implementation of this SANS 1395 family of standards will play a critical role in the economic growth by ensuring efficient road freight transport between the country's centres of production and its shipping ports and vice versa, which boosts competitiveness.

He explained that each organisation, Consignor/Consignee or Operator, that implements SANS 1395, will be required to develop appropriate processes, systems and measurement methods that would enable it to demonstrate compliance to this standard. He also advised that it is imperative that RTMS is implemented in a manner that is sustainable and that will achieve the following objectives:

- Improved road safety;
- the reduction of road crashes;
- the optimised payload efficiency;
- the maintenance of roadworthy vehicles; and
- improved driver wellness and training.

Mr Adrian van Tonder who is the RTMS National Steering Committee Chairperson gave a presentation on the history of the RTMS, the RTMS Scheme Rules and the scheme structure as well as the RTMS symbols. The work on RTMS started in 2004 with a Programme called Load Accreditation Programme (LAP). In 2006 the name was changed to RTMS. From 2007 until today RTMS certified vehicles on South Africa's roads have grown from 74 to over 8000. He also emphasised like Dr Nordengen that

RTMS is an industry-led, government-supported, voluntary, self-regulation scheme. Regarding the scheme structure, he also went on to detail the relationships between the RTMS scheme owner, the consignor/consignee/operators, the certification bodies and SANAS.

SANAS also explained the requirements for the accreditation of certification bodies as specified in ISO/SANS 17021 and in the

## SANAS AMONG THE FIRST AFRICAN ACCREDITATION BODIES TO BECOME A SIGNATORY TO THE AFRAC MRA

SANAS has become one of the first AFRAC MRA signatories. This followed the MRA Committee's verification of the supporting ILAC MRA and IAF MLA Signatory Certificates of EGAC, TUNAC and SANAS. These three accreditation bodies were accepted as the first AFRAC MRA signatories.

The MRA signing ceremony was held on 26 September 2014, during which certificates were presented to the AFRAC MRA signatories in the following scopes:

- Calibration ISO/IEC 17025;
- Inspection ISO/IEC 17020;
- Testing ISO/IEC 17025 & Medical ISO 15189;
- Management Systems Certification ISO/IEC 17021;
- Quality Management Systems Certification ISO 9001; and
- Environmental Management Systems Certification ISO 14001.

The signing of the first AFRAC MRA is an important step towards AFRAC attaining its international recognition by ILAC and IAF. The attainment of AFRAC's international recognition will benefit the South African market and African continent by ensuring the protection of Africa's markets, environment and the health and safety of its people. It will also boost intra-regional trade in Africa. AFRAC aims to attain this international recognition by 2017/18.

SANAS will continue to support the AFRAC objectives and will continue to provide leadership as the Chair and Secretariat are hosted by SANAS.

The AFRAC Secretariat underwent an Internal Audit of its Management System by an AFRAC Internal Auditor in December last year. A management review is also scheduled for May 2015 in Kenya to review AFRAC's management system and set the strategic direction for AFRAC for the next five years.



**Left to Right: Mr Moez Boughalmi (AFRAC MRA Chair), Mr Prags Govender (SANAS Board Chair) and Mr Ron Josias (SANAS CEO and AFRAC Chair) receiving the AFRAC MRA Signatory Certificate**

AFRAC will submit its application for peer evaluation to ILAC and IAF in June 2015. The Internal Audit and Management Review will form part of the submission to ILAC and IAF for AFRAC's peer evaluation.

# ASSESSOR RECOGNITIONS

During the assessor conclaves held in March 2015, SANAS CEO Ron Josias acknowledged the assessors who took part in the AFRAC peer evaluation in December 2014. The assessors in attendance were recognised and presented with certificates of appreciation.

The assessments, witnessed by the evaluation team, were either an initial assessment or re-assessment in each scope that was part of the Peer Evaluation, i.e. Medical, Testing, Calibration, Inspection and Certification. The selection of the assessment team members followed the normal SANAS processes, where assessors with the appropriate qualifications, expertise and experience for the scopes were selected.

## Medical: NHLS Public Health Laboratory

- LA: Mponeng Poo
- TA: Rafiza Vally

## Inspection: OTIS and Liftek

- LA: Eben Smit
- TA: Sanjeev Singh
- TA: Robert Nesmith

## Certification: SATAS and SAZ

- LA: John Ndalamo
- TA: Verna Olivier
- TA: Reuben Govender
- TA: Daniel Mawela

## Testing: Bemlab

- LA: Kenalebeng Obes
- TA: Tebogo Selekolo
- TA: Christiaan Fouché
- TA: Piet van Niekerk

## Calibration: Rhomburg and SABS

- LA: Francois du Toit
- TA: Cheryl Lynn Korasie
- LA: Hanlie Coetzee
- TA: Tjaart Labuschagne

# WHAT IS AN ELECTRONIC SIGNATURE?

By: Miyoba Sichimwi



An electronic signature, or e-signature, is any electronic means that indicates either that a person adopts the contents of an electronic message, or more broadly that the person who claims to have written a message is the one who wrote it. By comparison, a signature is a stylised script associated with a person.

Source: [www.wikipedia.org](http://www.wikipedia.org)

The demand from business or commerce, for electronic signatures to be used and accepted led to the enactment of the Electronic Communications and Transaction Act of 2002.

Here is an extract from Section 13 of the ECT Act:

### 13. Signature

- 1) Where the signature of a person is required by law and law does not specify the type of signature, that requirement in relation to a data message is met only if an advanced electronic signature is used.
- 4) Where an Advanced Electronic Signature has been used, such signature is regarded as being a valid electronic signature and to have been applied properly unless the contrary is proved.

Source: [www.acts.co.za](http://www.acts.co.za)

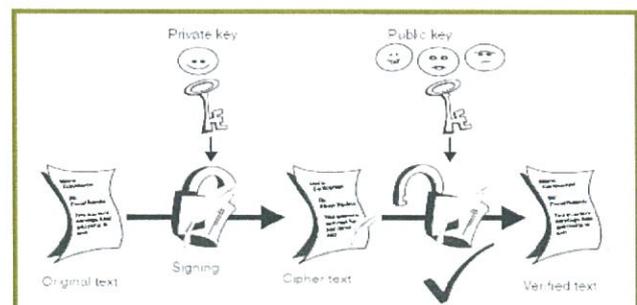
However, in order to fulfil their potential of enabling business and commerce, electronic signatures had to be developed to meet more than legal requirements such as the ECT Act. Now, advanced electronic signatures meet industry requirements and Information Security principles such as:

- Confidentiality;
- Integrity;
- Non-repudiation;
- Assurance, etc.

Advanced electronic signatures are the equivalent of a handwritten signature, and thus can be relied upon for most forms of business transactions such as signing contracts, approvals and certifying copies of important documents.

So, what is an advanced electronic signature? An advanced signature is a digital signature created with a digital certificate from an accredited authentication service provider after following a face-to-face identification process with the subscriber.

Source: [www.lawtrust.co.za](http://www.lawtrust.co.za)





A digital signature is created by attaching a digital certificate, which needs keys to be verified, as depicted in the above diagram. This proves the authenticity of the electronic signature applied to a document.

This feature cannot be altered without the consent of interested parties, and confirming the owner of the signature to be the person he/she purports to be.

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## MARKETING AND COMMUNICATION EVENTS

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### 1. Portfolio Committee visit

The Department of Trade and Industry (**the dti**) Portfolio Committee of Parliament visited SANAS offices on 27 January 2015. This is the Portfolio Committee responsible for Trade and Industry. Members of Parliament from the various political parties were there too.

SANAS used the opportunity to introduce the executive and staff members to the Committee. SANAS CEO Ron Josias made a presentation on SANAS activities and its links with other similar international bodies.

Staff members brought the Portfolio Committee up to date with the current status of the pool of over 1500 accredited bodies,

the new accreditation programmes that were rolled out, as well as the work that SANAS is doing in the SADC region and the rest of Africa. The Portfolio Committee report noted the important role that SANAS plays to support economic and industrial development.

### 2. the dti open day

SANAS took part in **the dti** annual open day on 27 February 2015. We used the opportunity to showcase and promote the use of SANAS-accredited conformity assessment bodies and also to create awareness of the role of SANAS in supporting the manufacture and export of South African goods, as well as the health, safety and protection of consumers and the environment.

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## HERE'S HOW SANAS ACCREDITATION KEEPS SOUTH AFRICANS SAFE!

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### SANAS supports occupational hygiene in the workplace

Did you know that an employer is responsible for occupational hygiene in the workplace?

South African employers are required to anticipate, evaluate, control and prevent hazards that may result in injury, illness or affect the well being of workers. These include Noise-Induced Hearing Loss, Hazardous Chemical Substances and Hazardous Biological Agents.

Employers must invite a Department of Labour-Approved Inspection Authority (AIA) to monitor that the workplace complies with the various occupational hygiene regulations.

SANAS' responsibility is to assess against international standards that the inspection body has registered occupational hygienists in its employ and that they have the equipment prescribed by the international standards and the Department of Labour. These are the requirements before the bodies may be accredited by SANAS and approved by the Department of Labour.

### SANAS supports safe drinking water in South Africa

Getting safe drinking water is not as easy as opening a tap. Did you know that there are complex issues and a range of areas that require tight control to ensure safe drinking water?

Often water, whether from the tap or a bottle, needs to be tested to ensure the quality and to confirm that it is pollutant or contaminant free.

The testing takes place in SANAS-accredited laboratories, which give confidence in test results.

If bottled water is labelled, the claims made on the label need to be confirmed by tests that are done at a SANAS-accredited laboratory.

Sea and river water are also tested in SANAS-accredited laboratories.

# NEW STAFF PROFILES 2015

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**Bhekisile Ndlovu**  
Project Coordinator  
(Research and Development)  
22 March 2015



**Zanele Mbiza**  
Supply Chain Administrator  
12 January 2015



**Gabriel Mwanza**  
IT Manager  
22 March 2015



**Tshifularo Ramuedzi**  
Quality Management Systems  
Trainer  
2 February 2015



**Manic Nkuna**  
Administrator  
5 January 2015

Physical addresses  
the dti Campus  
77 Meintjies Street  
Sunnyside, Pretoria  
0002

SANAS Knowledge  
Transfer Centre  
121 Muckleneuck Street  
Nieuw Muckleneuk  
Pretoria

Private Bag X23  
Sunnyside  
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South Africa

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School of Government Building, University of the Western Cape, Robert Sobukwe Road, Bellville, 7530, Western Cape;  
Tel 021 959 3846

Agricultural Sciences Building University of Pretoria, Car Lynnwood and University Roads, Pretoria, 0002, Gauteng;  
Tel 012 428 614

28<sup>th</sup> October 2014

Dear Prof. Auerbach

**Award of DST-NRF Centre of Excellence Project Grant**

We are happy to inform you that your project proposal “Vegetable production in community operated Agriparks” submitted to the DST-NRF Centre of Excellence in Food Security has been accepted and we are able to offer you funding from our 2014 budget allocation. Please use the following identifier in correspondence relating to this project: Project 140103: Agriparks.

We are only able to approve funding from the CoE-FS's 2014 budget that can be spent during the remainder of this year and until the end of 2015. We will be requesting approval from our Steering Committee for your 2015 budget on 28<sup>th</sup> November, 2014. If approved you will be able to spend those funds from January, 2015. We have provisionally allocated the following amounts for your project for 2015 and 2016 based upon your submission. Note that at this stage we are unable to fully fund your project and you are encouraged to seek additional funding from other sources.

Year	Direct Costs	Bursaries & Fellowships	Total Allocation
2014	R310 000	R80 000	R390 000
2015	R198 000	R160 000	R358 000
2016	R182 000	R120 000	R302 000
Total	R576 500	R360 000	R1 050 000

As the CoE-FS spans 20 Participating Institutions, we have decided to adopt a standardised approach to project management. This will ensure consistency and transparency as well as facilitate our reporting to the NRF. We will make use of Work Packages to identify components of the projects that are assigned deadlines, deliverables and resources for their execution. Work Packages should describe the activities to be undertaken, identify the resources that will be required and identify the effort and duration of the activities. Please revise the information that has been provided in the section dealing with the research activities and adapt these accordingly. There are many examples of Work Package design that can be used, and this is a link to one developed for academic research:  
<http://www.jisc.ac.uk/fundingopportunities/projectmanagement/planning/workpackages.aspx>.

Due to delays in finalising the MOU with the NRF, the 2014 and 2015 budgets will run concurrently. It is therefore important to have clarity on what activities and deliverables fall under each budget year. We require an indication as what funds are being requested under each Work Package per year so that we can clearly identify what project deliverables will be delivered under the 2014 budget. We request that you separate the Work Packages and deliverables being funded from 2014, and those for which funds will be requested from the

2015 budget. You should re-submit any revisions for the 2015 allocation to Prof. Kennedy Dzama before 10<sup>th</sup> November, 2014.

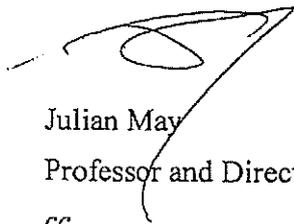
The CoE-FS is funding a related project in the Processing Programme: Project 140204: Indigenous Crops. Prof. Gyebi Duodu at the University of Pretoria is leading this Project that includes work on the processing of vegetables. We encourage you to make contact with Prof. Duodu at [gyebi.duodu@up.ac.za](mailto:gyebi.duodu@up.ac.za).

Finally, the allocation is subject to the submission and acceptance of Research Protocols for each Work Package. Research Protocols should provide detail on the intended study design: the sampling methods (where applicable); the research instruments, techniques, tests and indicators; human and animal subjects participation (where applicable) and approval by an institutional ethics committee (where applicable); and detailed resource requirements. Note that running costs will be released to you in three tranches: 40 percent on signing, 40 percent on approval of the Research Protocol and 20 percent on submission of the annual deliverables. In view of the amount that has been requested for soil and plant analysis and for the activities in Limpopo, we request that you provide us with an indicative budget that shows further detail concerning the envisaged costs. This can be submitted as an addendum to the proposal.

This project can now move to the final stage in which an MOU will be signed between UWC and the Nelson Mandela Metropolitan University and a contract will be written for this specific project. You should notify the NMMU office that you are about to be funded by the DST/NRF COE in Food Security, and that the standard NRF procedures will apply. Student bursaries will be arranged through the CoE-FS administrative staff at UWC who will load the student's information onto the NRF's system for their approval.

We look forward to working with you in what promises to be an exciting project in a challenging programme of activities over the next ten years.

Yours truly,



Julian May

Professor and Director: DST-NRF Centre of Excellence in Food Security

cc.

Prof. Sheryl Hendriks, Co-Director

Prof. Kennedy Dzama, Production Principal Investigator

Dr. Naushad Emmanbux, Processing Principal Investigator

## SHORT COURSE EVALUATION

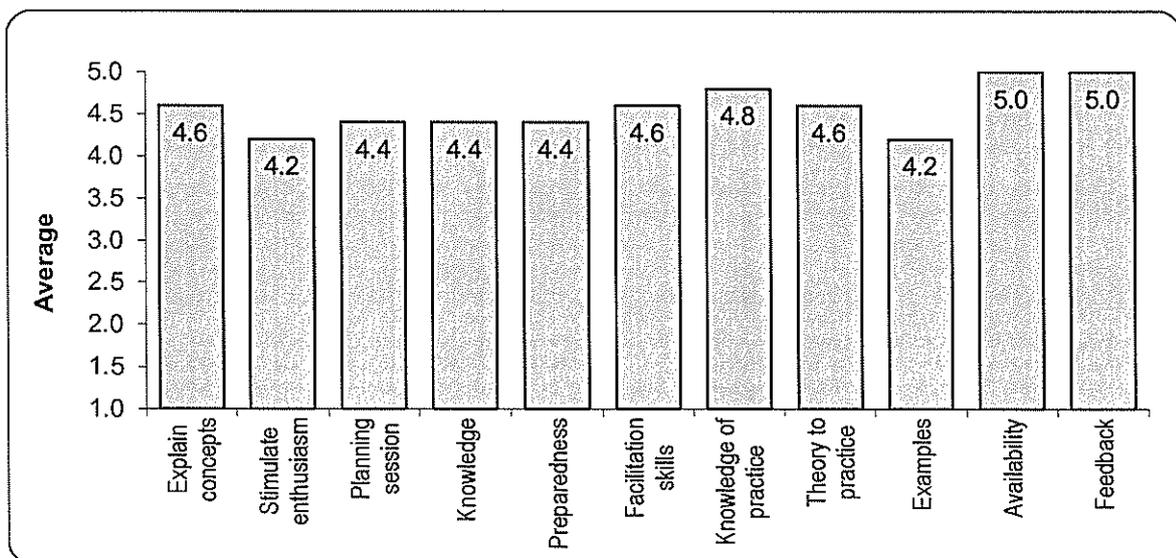
Course name **SYSTEMS & TECHNOLOGIES FOR SUST. AGRICULTURE**  
 Course number **3817**  
 Date **17-06-2014**  
 Facilitator **RAYMOND AUERBACH**

Number of respondents 5

Facilitators evaluation		Average (1)	Number			
			Poor	Average	Excellent	NA
1.	The ability to explain difficult theoretical concepts	4.6	0	0	5	0
2.	Ability to stimulate enthusiasm	4.2	0	1	4	0
3.	Planning of class session	4.4	0	1	4	0
4.	Knowledge of the topic	4.4	1	0	4	0
5.	How was the facilitator prepared?	4.4	0	0	5	0
6.	Facilitation skills	4.6	0	0	5	0
7.	Knowledge of how the practice works	4.8	0	0	5	0
8.	Linking theory with practice	4.6	0	0	5	0
9.	The use of practical examples in class	4.2	0	0	5	0
10.	Availability of facilitator for discussions	5.0	0	0	5	0
11.	Feedback on questions	5.0	0	0	3	0
12.	Professional conduct	4.7	0	0	3	2

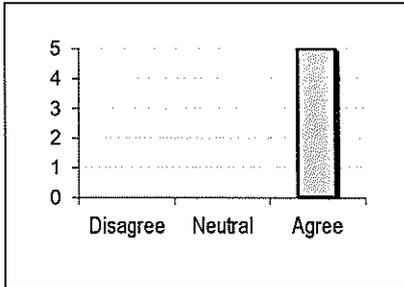
(1) Feedback on facilitators on a scale of 1 to 5 (1= Very poor and 5 = Excellent):

In the table above Very poor and Poor are grouped as Poor and Above average and Excellent as Excellent

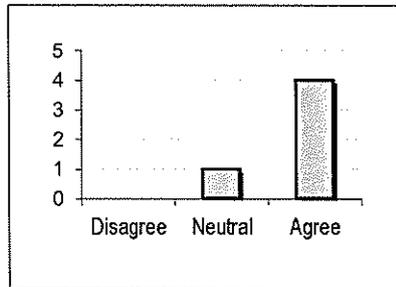


Facilitator: RAYMOND AUERBACH

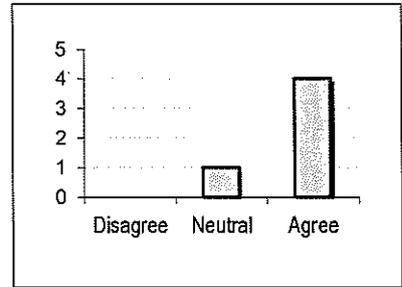
1. The ability to explain difficult theoretical concepts



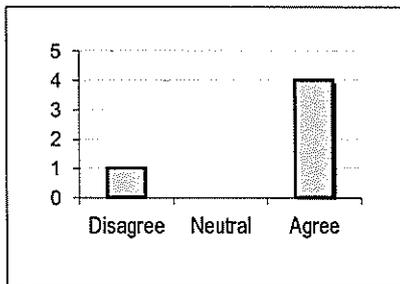
2. Ability to stimulate enthusiasm



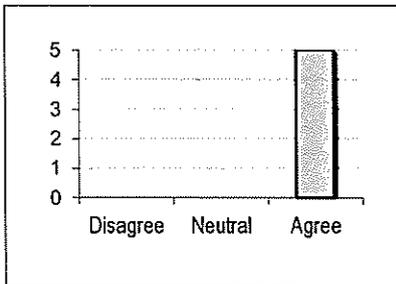
3. Planning of class session



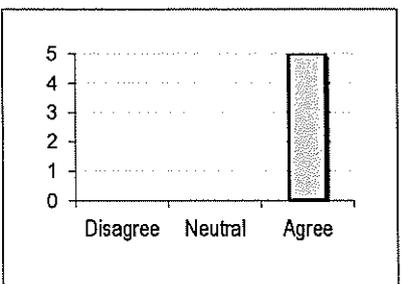
4. Knowledge of the topic



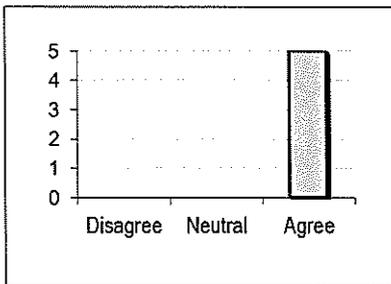
5. How was the facilitator prepared?



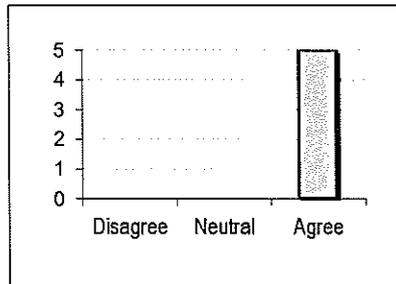
6. Facilitation skills



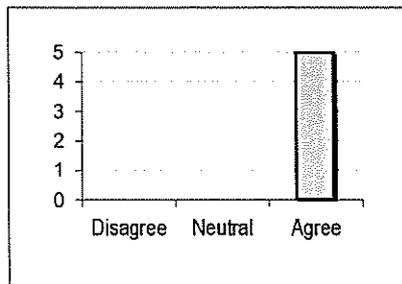
7. Knowledge of how the practice works



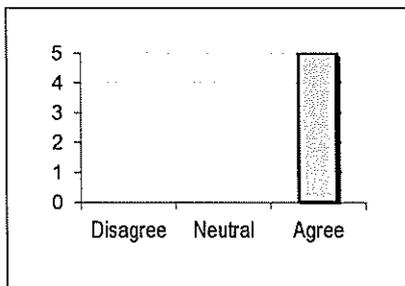
8. Linking theory with practice



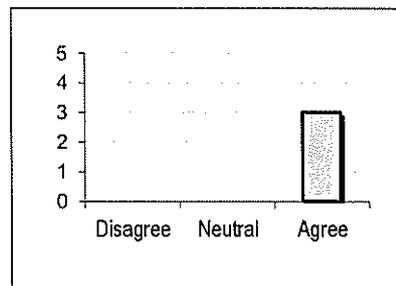
9. The use of practical examples in class



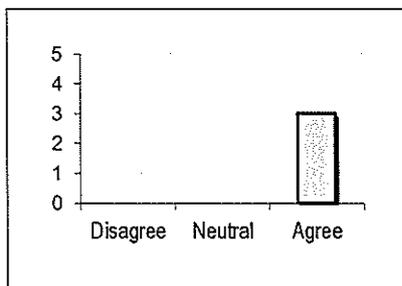
10. Availability of facilitator for discussions



11. Feedback on questions



12. Professional conduct



Systems and Technology for Sustainable Agriculture						
Course Leader Prof Raymond Auerbach						
Course Facilitator Miss Candice Kelly						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
08:15		Meeting in Hall	Meeting in Hall	Meeting in Hall	Meeting in Hall	
08:30	Welcome and Introductions	Community Work	Community Work	Community Work	Community Work	
09:00						
09:15				Depart Site Visit	Depart Site Visit	
09:30	What is wrong with our food system? - Raymond	Agro-ecology, BioDynamics and Organics - Raymond	Large-scale sustainable farming - Kobus Plenaar (Woolworths)	Depart Site Visit	Site Visit: Spier Biodynamic Farm - Angus	Group Presentations
10:00			Tea/Coffee Break	Site visit: Talk by Johan Reyneke; tour of Reyneke Wines and lecture by Raymond; Exercise in Goethean Observation (take paper and pens to draw!)		
10:30			Lecture: Raymond		Wrapping up - Raymond	
11:00	Tea/Coffee Break	Tea/Coffee Break	Tea/Coffee Break		Lunch	Lunch
11:30	Why do we need organic farming? - Raymond	Glyphosate - Three versions of reality about Roundup herbicide   Raymond				
12:00						
12:30						
13:00	Lunch	Lunch	Lunch			
13:30						
14:00	Group Work	Group Work	Group Work	Tea/Coffee Break	TO BE CONFIRMED: site visit: Organic small-scale farm: Neil	
14:30						
15:00						
15:30	Tea/Coffee Break	Tea/Coffee Break	Tea/Coffee Break	Group Work	Tea/Coffee Break	
15:45			BioDynamic Farming - A system from a different paradigm. Raymond	Group Work	Group Work	
16:30	Video and Discussion					
17:00						
17:30	Day ends 17:15	Day ends 17:15	Day ends 17:15	Day ends 17:15	Day ends 17:15	Day ends 17:15

SHORT ROOM  
Permaculture Supply Chains  
- Elizabeth - Janet Gracie  
Kruger (WITS) (Green Road  
DCC 9, SA

<p>Current readings for next day (Additional readings will be given in accordance with course progress and focus)</p>	<p>(1) Auerbach, R. (2013). Transforming African Agriculture: Organics and AGRA, pg. 16 – 34. (Chapter from book that will be provided as reader in class).  (2) Papers and news reports on Glyphosate</p>	<p>(1) Koohafkan, Holt-Giminez &amp; Aitieri on Agro-Ecology (PDF available on SUNLearn)</p>	<p>(1) Paull, J. (2011). Biodynamic Agriculture: The journey from Koberwitz to the world, 1924 – 1938. Journal of Organic Systems. Vol. 6 (1); pp. 27 – 41.  (2) Readings on Permaculture (Rainman Short Course material)</p>		
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## Demonstration at garden in Delville Park for *Kos en Fynbos (K'nF)*

Date: 9<sup>th</sup> March 2016



Venue: Magda's neighbour Susan's garden - few houses down the road on the corner

We were over 20 K'nF members that met at Magda's house, where cardboard, dry and wet grass cuttings, compost and seedlings had been collected. We carried all we needed over to Susan's house. At the garden site we discussed what the vegetable garden's requirements are: open to the sun (not too much shade), slope - how to work with a slight slope making the beds on the contour - catching run-off water so that it can sink into the ground for deep root development, therefore healthier plants etc. We then found the best position for the new bed. That day we were demonstrating sheet-mulch bed-making so we made the bed on top of kikuyu lawn. The cardboard and newspapers were soaked in water, and layered on the lawn, a thick layer of mulch was applied, and then we made pockets in the mulch, cut a hole in the cardboard with a knife, filled the pockets with compost and planted spinach, onion, cabbage and beetroot seedlings. The school children were returning from school, they watched from the fence with interest, so we invited them to help too. Great excitement, as small hands joined the adults', in planting the healthy seedlings. Once the area was planted up we watered well.



Then we found the best location for the compost heap. Before making the compost heap, we prepared the compacted soil by loosening it with a fork, watered and then added first a layer of bulky maize stalks for aeration, then alternately layers of dried grass, freshly cut wet grass, kitchen scraps and comfrey. As we did not have manure, we discussed how beneficial manure is, which kinds are best and how to access it. But when manure is not available comfrey, yarrow and other herbs can be used as an activator. We also watered the layers as

we built the heap. More dried grass cuttings were found a street down, where the municipality had cut the verges so this grass was collected and added to the heap, the final layer was a layer of dried grass, Susan was told how she could judge when the compost was broken down enough to be used.



Before we left Susan's house we shared seeds, everyone who attends K'n F gatherings brings something to share, so this time we shared pumpkin, broad bean, bush bean, pea, chilli, beetroot, fennel and many more seeds amongst ourselves.

Then we went back to Magda's where our meeting to plan for the next few months was held, here we enjoyed a cup of iced tea made from local herbs; mint and lemon verbena.

## Workshop at NMMU for *Kos en Fynbos*

Date: 12 March 2016

Twelve members managed to attend the workshop, most of us met at my house and piled into two cars to drive up to campus, to the Permaculture Garden. There we met up with more members of Kos en Fynbos, who had arranged their own transport.

Firstly we ran through the programme for the day: Meet and greet, walk around the garden, learning from observing, answering questions, the main focus was on the students' crops as they demonstrated crop rotation and crops with different nutritional requirements.

It had been two weeks since the Plant Production Students – did their Soils 1 Practical so we were able to see heavy feeder plants: cabbages and broccoli, light feeders: onions, beets and carrots and the legumes: broad beans and peas planted/sowed and were at this stage growing well.

Hand-outs were distributed to the participants and we worked our way through them:

- We honed in on soil building; started with compost making, what ingredients are required, the availability of what is needed, tips on where to acquire the dry (carbon) and wet (nitrogenous) 'ingredients'. Heaps are advocated as they are easier to build and spread once decomposed. The arduous task of first digging a hole to do composting in was shared and it was agreed that heaps are much easier.
- Then we dealt with the uses of mulch, sheet-mulched beds and how to make various plant teas. Comfrey is grown in this garden so we used that as an example of a nutritious fertilizer tea that gives growing plants many micro-nutrients and minerals, they need.
- After a short break we discussed companion-planting and a chart of the most useful companions that grow in our area was handed out. Not only do certain vegetables grow better in close proximity to others but many herbs encourage better growth and health in neighbouring vegetables, so this was also discussed.
- Watering was also a topic, in Permaculture the making of permanent beds - the positioning of these beds is important as the harvesting of water flowing through the garden encourages deep roots and therefore less vulnerable plants, less reliant on