



Disaster Management Training and Education Centre for Africa

May 2015 Newsletter

Inside this issue

Page 2

DiMTEC Block Course

UAV's

Ecosystem-based disaster risk reduction

Page 3

Geospatial technologies and space-based solutions

Page 4

Kenya Horizon 2020 proposal writing workshop

UNCCD Scientific conference 2015, Cancun, Mexico

Drought policy and plan meetings, Mexico City, Mexico

Page 5

Burkina Faso Early Warning workshop

European visits

Page 6

DiMTEC Alumni

Neville van Rensburg

Anthony R Kesten

Kehinde Balogun

Dr Mmaphaka Tau

Page 7

DiMTEC 2015

Schalk van der Merwe in Nepal

Northern-Cape Drought Plan

Advanced Diploma, Masters and PhD welcoming functions

What's on?

Page 8

Contact details

Graduation December 2014 and April 2015

Best wishes to DiMTEC Class of 2015!

Both our Advanced Diploma and Master's students are approaching the May/June exams. If you worked hard during the first half of this year, you should be well prepared. Generally, our students perform well during exam times and we're looking forward to the same good results. However, it is never too late to put in a last effort and with the cooler weather, the best place to be is behind your books!

May the success-stories of our alumni be an inspiration to you. We mention a couple in this newsletter and will do so for the remainder of 2015 as part of our 10 year celebration. But you're bound to come across former DiMTEC-students in government, NGO's and at many international conferences. You've got a good example to follow—so get studying and score well. Because you can!

Welcomed with style

Earlier this year, DiMTEC hosted social events to greet all our students and to allow you to get to get acquainted [pictures on page 7]. This year, we welcomed a strong group of Advanced Diploma, Master's and PhD students. Accordingly, we are looking forward to good research projects and qualified disaster managers who can make a real difference in Africa, and the world.

All our students are encouraged to join our Facebook pages as well as creating professional networks among each other. Moreover, be sure to keep us posted on your accomplishments.

10 year celebration

This year started with a rush—and there is much more to come. By now you would have realised that there is a dire need for advancement within the disaster management field. There are so many scientific and creative ways to contribute to the successful mitigation of disaster risk, and one of the aims of our centenary activities is to actively contribute to disaster risk reduction efforts.

In an attempt to do so, we will be hosting a variety of seminars and workshops addressing key disaster management themes. During these information sessions, the aim is to develop feasible strategies and encourage policy improvement.

2015 DiMTEC Block Course

DiMTEC presented a Block Course on Vulnerability and Disaster Reduction from 2 – 13 February 2015 in Durban, South Africa. Once again, this course was invaluable for all attendees whose exiting knowledge was refreshed and expanded, while being introduced to exiting new developments in disaster risk management. Among the facilitators were:

- Dr Andries Jordaan –University of the Free State, DiMTEC, Bloemfontein, South Africa
- Dr Joerg Sarzinsky – United Nations University, Institute for Environmental & Human Security, Bonn, Germany
- Dr Renaud Fabrice – United Nations University, Institute for Environmental & Human Security, Bonn, Germany
- Dr Restas Agoston – National University of Public Services, Institute for Disaster Management, Budapest, Hungary
- Mr Lucian Banitz – Unmanned aerial vehicle specialist, Skycap, Bethlehem, South Africa
- Ms. Alice Ncube – University of the Free State, DiMTEC, Bloemfontein, South Africa
- Mr. Vincent Ngubane – Ethekewini Metropolitan Municipality Disaster Management Centre

Three of the information sessions presented during the block course are highlighted below.

UAV's—Dr Agoston Restas

Dr Restas proposed the use of Unmanned Aerial Vehicle (UAV) technology for faster decision making in any disaster prevention and response activity. He took special interest in the use of UAV and fires. Not only can these devises aid in fire detection and monitoring, but also be applied for prescribed fires – a much more suitable method than using the traditional helicopter, he says. It is cheaper, more flexible and can function equally effective in both day and night missions.

Furthermore, UVA can be used in surveillance activities. "Surveillance is very useful for governments and law enforcement to maintain control, recognise and monitor threats and prevent or investigate criminal activities," Dr Restas says. UVA's can be used for

critical infrastructure monitoring like railways, telephone and power lines. It is especially useful in search and rescue operation in inaccessible terrain, for example, mountain rescues.

UAV aerial photos can aid in precision farming by giving farmers an overall view of their crops. "Having an 'eye in the sky' allows farmers to estimate crop health," Dr Restas explains. "They can see where more water is needed and identify infestations."

UAV's are much more than model planes – equipped with autonomous navigation, cameras, transmitters, transponders, sensors and GCS, it is ready to work. They come in different sizes, large, medium, small and micro and low cost version allow the use thereof by in various situations.



Above: Dr Jordaan and Dr Restas at a UAV demonstration

Ecosystem-based disaster risk reduction— Dr Renaud Fabrice

Dr Fabrice elaborated on the state of our ecosystems noting that we are living beyond our means and that climate change and nutrient pollution is a growing threat to ecosystems. "Approximately 60% of the ecosystem services examined are begin degraded or used unsustainably, including fresh water, capture fisheries, air and water purification and the regulation of regional and local climate, natural hazards and pests," he said. The 2 billion people living in dry regions face intense vulnerability to the loss of ecosystem services, including water supply.

2015 DiMTEC Block Course

It is virtually certain that increases in the frequency and magnitude of warm daily temperatures will occur in the 21st century and it is likely that the frequency of heavy precipitation or the proportion of total rainfall from heavy falls will also increase in the 21st century. However, there is only medium confidence that droughts will intensify in the same period and only low confidence in projections of changes in fluvial floods. Increasing exposure is key in extreme events linked to climate change, Dr Fabrice says, also noting that vulnerability is not well accounted for.

Dr Fabrice also introduced attendees to the World Risk Index that seeks to answer the following questions:

- How probable is an extreme natural event, and will it affect people?
- How vulnerable are the people to natural hazards?
- To what extent can societies cope with acute disasters?
- Is a society taking preventative measures to face natural hazards to be reckoned with in the future?

Although Africa's exposure to hazards such as earthquakes, storms, floods, drought and sea level rise ranges from very low to very high in different regions, the larger part of Southern Africa has low exposure whereas North-west Africa has medium to high exposure. Worrying, however, is that generally the entire Africa has a very high susceptibility to risk. A Lack of coping capacity and adaptive strategies for the continent are both generally rated as very high. Accordingly, vulnerability is also generally very high.

However, Dr Fabrice notes, the World Risk Index only shows a theoretical concept and therefore the information values is limited in that it does not reflect reality. "Data for drought and sea level rise have methodological uncertainties and indicators only present a snap-shot. The level of abstraction disallows the deduction of concrete measures," he says. Furthermore, data availability on local and global scale is a general concern and the spatial scale is limited for some data. "Qualitative approaches should complement the quantitative results," he advises.



Above: DiMTEC Block Course attendees in the Disaster Management Centre Joint Operations room in Durban

Geospatial technologies and space-based solutions—Joerg Szarzynski

Dr Szarzynski discussed early warning systems and geospatial technologies in support disaster risk reduction and emergency response. "Remote sensing is the analysis of an object without physically making contact with it – for example analysing images taken by earth observing satellites or aerial photos," he explained.

Against the background of severe disasters, including the 2004 Indian Ocean Tsunami, he painted a picture of how various satellite imagery can aid emergency response activities. It can, for example, help to establish the most suitable area for refugee camps, identify water sources and show accessibility to an area.

However, this lifesaving technology has a dark side. The large amount of satellites orbiting around results in massive amounts of space debris. Hence new regulations were put in place to ensure that satellites exit orbit 25 years after launching. Once again emphasising the responsibility we need to take for all our actions – taking much more into account than the here and now. Therefore, Dr Szarzynski very appropriately closed his information session with a quote from Marshal McLuhan: "There are no passengers on Spaceship Earth. We are all crew!"

International relations

Kenya Horizon 2020 proposal writing workshop

During March 2015, DiMTEC director Dr Andries Jordaan, attended a workshop in Kenya as part of a research team for a Horizon 2020 project. Prof Brigitta Schütt, vice rector of Freie Universität Berlin, leads this project valued at more than R100 million. It is proposed to be a five-year project, including case studies in Greece, Kenya and South Africa. Dr Jordaan was invited as specialist in drought and flood risk, and for his expertise in agriculture development and risk reduction by means of good agricultural practices. Universities from Germany, Greece, Kenya and South Africa, and private sector consultants comprise the taskforce of this project that focuses on integrated catchment management.



Above: Horizon 2020 team at Great Rift Valley in Kenya

3rd UNCCD Scientific conference 2015, Cancun, Mexico

Earlier this year, Dr Jordaan attended the 3rd UNCCD [United Nations Convention to Combat Desertification] scientific conference in Cancun, Mexico. He was one of only two South African scientist invited to this conference. Dr Jordaan delivered a presentation pertaining drought vulnerability in Uganda and the Northern Cape. The conference addressed three major challenges: **Diagnosis of constraints:** How to best characterise and understand vulnerability and adaptive capacities to the consequences of climate change? **Responses:** How to build efficiently on available knowledge, success stories and lessons learnt? **Monitoring and assessment:** What are the new monitoring and assessment methods available?



Above: Delegates at the 3rd UNCCD Scientific conference 2015, Cancun, Mexico

Drought policy and plan meetings, Mexico City, Mexico

In Mexico City, Dr Jordaan engaged in very informative discussions with Mario Lopez-Perez, head of CONAGUA. Professor of Applied Climate Science, Don Wilhite, suggested that Dr Jordaan visits Lopez-Perez at Conagua in Mexico. Lopez-Perez is responsible for Mexico's drought plan, and their climate and circumstance are very similar to South Africa's. This valuable information will greatly assist in finalising South Africa's drought indicators that Dr Jordaan and a task team are responsible for. Furthermore, CONAGUA, in collaboration with the FAO (Food and Agriculture Organisation) and WMO (World Meteorological Organisation) agreed to present a drought workshop for the SADC (Southern African Development Community).



Above: Dr Jordaan and Mario Lopez-Perez at CONAGUA's (National Water Commission) office.

International relations

Burkina Faso Early Warning workshop

UNESCO arranged an Early Warning workshop in Burkina Faso during March of 2015. The purpose of this workshop was to develop an early warning system for extreme natural events. This early warning system will be utilised for West and North Africa.

Delegates who contributed to this very important intervention included the British Meteorological Services and experts from UNESCO and Kenya.

Dr Jordaan was invited to assist with the facilitation of the workshop and to deliver a presentation on drought early warning.



Above: Delegates attending the Disaster Early Warning Workshop Burkina Faso

European visits

En route to Dresden, Dr Jordaan met with Prof Brigitta Schütt, vice rector of Freie Universität Berlin. During his visit, he also met with Prof Martin Voss from the university's Disaster Research Unit. Unlike DiMTEC, they only do research at their centre. Accordingly, Dr Jordaan and Prof Voss engaged in discussions regarding possible collaboration. This could entail research, teaching and student exchange.

In Dresden, Dr Jordaan attended the Dresden Nexus Conference where he did a presentation on drought vulnerability. The conference was organised by UNU-Flores, Technische Universität Dresden and Leibniz Institute of Ecological Urban and Regional Development.

Over the course of three days, three thematic topics were covered: climate, urbanisation and population growth. The 2015 Dresden Nexus Conference focused on the contributions of a nexus approach to the management of water, soil and waste. UNU-Flores defines the nexus approach as follows:

"The Nexus Approach to environmental resources' management examines the inter-relatedness and interdependencies of environmental resources and their transitions and fluxes across spatial scales and between compartments. Instead of just looking at individual components, the functioning, productivity and management of a complex system is taken into consideration."

The following questions were addressed:

- How can environmental resources such as water and soil be maintained and enhanced under the conditions of global change?
- How can a more efficient and sustainable use of the resources water, soil and waste be facilitated given the limited resources availability and environmental decline?
- How can international development partners be engaged for the promotion of research, capacity development and implementation of a nexus approach which would be instrumental to achieving the SDGs?
- How can a transition towards a green economy be facilitated, especially with regard to agriculture, considering the intricate linkage of soil, water and waste management?



Above: Dr Jordaan and Prof J Rhyner from the UNU

DiMTEC alumni

Neville van Rensburg

Neville van Rensburg graduated from DiMTEC in 2009 with a Master's Degree. He is currently the Provincial Rescue and Disaster Coordinator at Metro Emergency Services in the Western-Cape. The focus of his position is major rescue and disaster response. During the course of his career, Van Rensburg learnt that proper preparedness and assessment systems are vital. One of his career highlights was responding to the Japan earthquake. "Disaster management needs to be a passion," he advises DiMTEC students. "And it is all about what you make of it."

Below: Neville van Rensburg



Anthony R Kesten

Anthony R Kesten graduated from DiMTEC in 2005. He is the Head of Centre: Ekurhuleni Metropolitan Municipality: Disaster Management. For Mr Kesten, managing the Duduza Tornado disaster was a career highlight and he has the following advice for DiMTEC students: "To really understand what disaster management is about, you must read and read and read. But that is just book-knowledge, and disaster management requires more. You must perform basic disaster management functions on a practical level to integrate knowledge with strategic thinking. Failure to do so, creates frustration for those who understand what it involves. It also causes unnecessary delays, as thinking and experience clash because experience far outweighs book knowledge."

Below: Anthony R Kesten



Kehinde Balogun

Ms. Balogun obtained her Master's Degree from DiMTEC in July 2012 and is currently enrolled for a PhD. In 2011, she visited the United Nations University, Institute for Environment and Human Security [UNU-EHS] for a 3-months stay to finalise her Master's thesis. She made such an impression, that she is currently working at the UNU-EHS as a Research Assistant in the Environmental Migration and Social Vulnerability and Adaptation [EMSVA] section supporting the Capacity Development for Hazard Risk Reduction and Adaptation [CATALYST] project and the Loss and Damage in Vulnerable Countries Initiative. She does research on various projects related to disaster risk reduction and climate change adaptation. She also supports the execution of these projects.

Below: Kehinde Balogun from the UN University and Dr Jordaan



Dr Mmaphaka Ephraim Tau

Dr Mmaphaka Ephraim Tau graduated from DiMTEC in 2008 with a Master's Degree. He is the Acting Deputy Director-General: Forestry and Natural Resources Management, Department of Agriculture, Forestry and Fisheries (DAFF). According to this accomplished individual, he mastered the inextricable link between development and disaster risk management through DiMTEC's guidance. "Strive to be the BEST you can be through your passion on your studies," he advises current students, and concludes with the words of my motivational writer, J.C Maxwell: "A passionate person without great talent will outshine a talented person without passion".

Below: Dr Mmaphaka Ephraim Tau



DiMTEC 2015

Schalk van der Merwe in Nepal



DiMTEC student, Schalk van der Merwe assisting in Nepal after the earthquake during April. Note how his course material travelled along in order to finish assignments due! In true DiMTECtor spirit.

Northern-Cape Drought Plan



Candidates trained by Dr Jordaan to implement and execute the Northern Cape drought plan. The Northern Cape is the first province in South Africa with an official drought plan.

Advanced Diploma, Masters and PhD welcoming functions



Above: DiMTEC Advanced Diploma students 2015



Above: Dr Jordaan with DiMTEC PhD students

What's on?

World conference on disaster management 8-11 June 2015 – Metro Toronto Convention Centre, Toronto, ON Canada

<http://www.wcdm.org/programs.html>

Disaster Risks Sciences & Management Conference 2-3 March 2015 – Polokwane, Limpopo, South Africa

<http://www.univendrmc.co.za/index>

XIV World Forestry Congress 7-11 September 2015 – Durban, KwaZulu-Natal, South Africa

<http://www.fao.org/forestry/wfc/en/>

DMISA Conference 2015 9-10 September – Hartenbos, Western Cape South Africa

<http://www.disaster.co.za/>

Find us at...

Dr Andries Jordaan: Director
JordaanA@ufs.ac.za

Johanes Belle: Lecturer / Bursary manager
BelleJA@ufs.ac.za

Olivia Kunguma: Lecturer / Master's Programme Coordinator
KungumaO@ufs.ac.za

Alice Ncube: Lecturer / Short Course Coordinator
NcubeA@ufs.ac.za

Germie van Coppenhagen: Senior Assistant Officer
VCoppenhaG@ufs.ac.za

General enquiries

Annelene van Straten: Senior Assistant Officer
dimtec@ufs.ac.za
[t] +27(0) 51 401 2721
[f] +21(0) 51 401 9336

Physical Address:

Room 3.102, Frist Floor, Agriculture Building
Main Campus, University of the Free State
Nelson Mandela Road
Bloemfontein, 9300
South Africa

Postal Address

DiMTEC
UFS Internal 66
PO Box 339
Bloemfontein, 9300
South Africa

Graduation December 2014 and April 2015



Because We Can

