

SA-YSSP Final Colloquium: 20-21 February 2014
CR Swart Auditorium

20 February 2014

8.30 - Welcome and introduction to proceedings

Prof Martin Ntwaeaborwa

8.40 – Message from Director General and CEO of IIASA

Prof Pavel Kabat

Project Theme and supervisors	Time	Presenter	Project Title
THEME 15. WATER FUTURES AND SOLUTIONS			
<p><u>Supervisors</u> Prof. Jacqueline Goldin <i>Department of Earth Sciences, UWC, Cape Town, South Africa</i></p> <p>Dr. Sylvia Tramberend <i>Water Program, IIASA, Laxenburg, Austria</i></p> <p>Dr. David Wiberg <i>Water Program, IIASA, Laxenburg, Austria</i></p>	9:00	Ms. Fatima Sumbul from India. PhD student at Aligarh Muslim University	Strategic Importance of water governance in virtual water trade

THEME 2. SYSTEMS ANALYSIS FOR SUSTAINABLE GREEN CITY DEVELOPMENT

Supervisors:

Dr. Dillip Kumar Das

Department of Civil Engineering, CUT, Bloemfontein, South Africa

Dr. Michael Thompson

Risk, Policy and Vulnerability Program, IIASA, Laxenburg, Austria

Prof. M. Bruce Beck

*Wheatley-Georgia Research Alliance Professor & Eminent Scholar
Environmental Informatics & Control Program, Warnell School of
Forestry & Natural Resources, University of Georgia, USA*

9:20	Mr. Stephen Eromobor from Nigeria. PhD student at Central University of Technology, South Africa	Dynamic modelling for sustainable built infrastructure for education complex neighbourhoods in South Africa.
9:40	Mr. Everardt Burger from South Africa. PhD student at Central University of Technology, South Africa	Re-Engineering of public transportation systems for suitable green city's in central region of South Africa.
10:00	Mr. Innocent Chirisa from Zimbabwe. PhD student at Central University of Technology, South Africa	Prospects for nutrient-water-energy recovery and reuse in Harare metropolitan, Zimbabwe: case for systems dynamics and material flow modelling

THEME 3. UNDERSTANDING INDIVIDUAL AND COMMUNITY RESPONSES TO SLOW AND SUDDEN-ONSET CHANGE: DRIVERS AND OPTIONS FOR BUILDING RESILIENCE IN THE EDEN DISTRICT OF SOUTH AFRICA

Supervisors:

Prof. Christo Fabricius

Sustainability Research Unit, NMMU, South Africa

10:20 **Mr. Emmanuel Mavhura** from Zimbabwe.
PhD student at Bindura University of
Science Education, Zimbabwe

Rural communities' livelihoods and
their resilience to floods

Dr. Reinhard Mechler

*Risk, Policy and Vulnerability Program, International
Institute for Applied Systems Analysis (IIASA), Laxenburg,
Austria*

THEME 4. TRANSFORMATION OF THE SOUTH AFRICAN ENERGY SYSTEM: TOWARDS ENVIRONMENTAL LEADERSHIP AND PARTICIPATORY GOVERNANCE

Supervisors:

Dr. Vain Jarbandhan

*Department of Public Governance, University of
Johannesburg, Johannesburg, South Africa*

Dr. Nadejda Komendantova-Amann

*Risk, Policy and Vulnerability Program, International
Institute for Applied Systems Analysis (IIASA), Laxenburg,
Austria*

10:40 **Mr. Romao Xavier** from Mozambique. PhD
student at University of the Witwatersrand,
South Africa

Participatory governance in the
transformation of the South
African energy sector: critical
success factors for environmental
leadership

TEA 11:00 - 11:20

THEME 6. ECONOMIC GROWTH UNDER ENVIRONMENTAL CONSTRAINTS: TOWARD A LOW CARBON FUTURE IN SOUTH AFRICA

Supervisors:

Dr. Clovis Noutchie

School of Mathematical and Physical Sciences, North-West University, South Africa

11:20 **Mrs. Onawumi Adeyinka** from Nigeria.
PhD student at KNUST, Ghana

Strategic land use practice to combat greenhouse gas emission (GHGs).
Comparative analysis of South Africa and Ghana

Dr. Matthias Jonas

Advanced Systems Analysis Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

11:40 **Mr. Given Mutimudye** from Zimbabwe.
PhD student at University of the Witwatersrand, South Africa

Integrating the greenhouse effect in economic growth: strategic concerns for South Africa

THEME 7. MITIGATION OF AIR POLLUTION AND GREENHOUSE GASES

Supervisors:

Prof. Charles Mbohwa

*Faculty of Engineering and the Built Environment,
University of Johannesburg, Johannesburg, South Africa*

12:00 **Mr. Noor Jamal** from Pakistan.
PhD student at University of
Flensburg, Germany

Techno economic and environmental
analysis of electrification options in low
income remote/rural areas of South
Africa

Dr. Hans-Holger Rogner

*Energy Program, International Institute for Applied Systems
Analysis (IIASA), Laxenburg, Austria*

12:20 **Mr. Erkkä Rinne** from Finland.
PhD student at VIT Technical
Research Centre of Finland

Value and usage of energy storages with
large-scale variable generation

Prof. Manfred Strubbegger

*Energy Program, International Institute for Applied Systems
Analysis (IIASA), Laxenburg, Austria*

12:40 **Ms. Hui Zhang** from China.
PhD student at Nanjing University,
China

Air pollution control of coal-fired Power
Plants in South Africa

13:00 **Mr. Nathaniel Tindall** from USA.
PhD student at Georgia Institute of
Technology, USA

Understanding the energy systems of
South Africa: an analysis of energy
demand, reduction and environmental
impact

LUNCH 13:00 – 13:40

THEME 8. DOMESTIC ENERGY ACCESS AT THE BOTTOM OF THE PYRAMID: HEALTH, SOCIAL, ENVIRONMENTAL AND ECONOMIC ASPECTS OF SOLID BIOMASS FUEL USE AND POTENTIAL FOR CHANGE IN SOUTHERN AFRICA

Supervisors:

Prof. Harold John Annegarn

Department of Geography, Environmental Management and Energy Studies, University of Johannesburg, South Africa

Dr. Shonali Pachauri

Energy Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

Dr. Zbigniew Klimont

Mitigation of Air Pollution and greenhouses Gases Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

- | | | |
|-------|--|--|
| 13:40 | Mr. Takunda Mambo from Zimbabwe. PhD student at Energy Research Centre, University of Cape Town, South Africa | Political transformation and multidimensional energy poverty in Zimbabwe |
| 14:00 | Mr. Tafadzwa Makonese from Zimbabwe. PhD student at University of Johannesburg, South Africa | Systems analysis of residential coal combustion and ambient air quality in the South African coal-burning region |

THEME 14. WORLD WATER SCENARIOS INITIATIVE: SOUTHERN AFRICA CASE STUDY

Supervisors:

Prof. Yali Woyessa

*Department of Engineering, Central University of
Technology, Free State, South Africa*

Dr. David Wiberg

*Water Program, International Institute for Applied Systems
Analysis (IIASA), Laxenburg, Austria*

14:20 **Mr. Onalenna Gwate** from Zimbabwe.
PhD student at Lupane State University,
Zimbabwe

14:40 **Ms. Johanna Schild** from Netherlands.
PhD student at VU University Amsterdam,
The Netherlands

Dynamics of land cover change and
its impacts on stream flow in the
Modder river basin: a case study of
C52A quaternary catchment

Analyzing the impact of rainwater
harvesting on water flow regulation
in the Modder river catchment

THEME 19. EXPLORING THE POPULATION-ENVIRONMENT-DEVELOPMENT NEXUS AND DIFFERENTIAL VULNERABILITY IN SUB-SAHARAN AFRICA

<p>Supervisors:</p> <p>Prof. Andre Pelser <i>Department of Sociology, University of the Free State, Bloemfontein, South Africa</i></p> <p>Dr. Raya Muttarak <i>Wittgenstein Centre for Demography and Global Human Capital, Vienna, Austria</i> <i>World Polution Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria</i></p>	<p>15:00</p> <p>15:20</p>	<p>Alfred Murye from South Sudan. PhD student at University of the Free State, South Africa/ University of Swaziland, Swaziland</p> <p>Gerald Simeon Meke from Malawi. PhD student at University of Malawi, Malawi</p>	<p>The Socio-Economic role of marula harvesting in poverty alleviation amongst rural people in Swaziland</p> <p>Contribution of forest co-management to rural livelihood in Zomba-Malosa Reserve</p>
--	---------------------------	--	--

CLOSING REMARKS 15:40 Prof Martin Ntwaeaborwa

COLLOQUIUM DAY 2

21 February 2014

8:45 Welcome by Dr Henriëtte van den Berg

Project Theme and supervisors	Time	Presenter	Project title
THEME 11. STABILITY AND COMPLEXITY OF ADAPTIVE ECOLOGICAL NETWORKS			
<p>Supervisors: Dr. Cang Hui <i>Centre for Invasion Biology, Department of Botany and Zoology, Stellenbosch University</i></p>	9:00	Ms. Savannah Nuwagaba from Uganda. PhD student at Stellenbosch University, South Africa	The role of adaptive foraging behaviour in food-web emergence and biodiversity maintenance
<p>Dr. Ulf Dieckmann <i>Evolution and Ecology Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria</i></p>	9:20	Mr. Jonas Olof Wickman from Sweden. PhD student at Umea University, Sweden	The impact of spatial structure on evolutionary food-web formation
	9:40	Ms. Yinghui Yang from China. PhD student at Lanzhou University, China	Commonness and rarity in ecological communities
	10:00	Mr. Liu Haoqi from China. PhD student at Xinjiang University, China	Habitat loss, habitat fragmentation and biodiversity impacts

THEME 12. DYNAMICAL SYSTEMS IN ECOLOGY: MODELS, ANALYSIS AND SIMULATIONS

Supervisors:

Prof. Jacek Banasiak

*School of Mathematics, Statistics and Computer Sciences,
University of KwaZulu-Natal, Durban, South Africa*

10:20 **Ms. Milaine Tchamga** from
Cameroon. PhD student at
University of Cape Town, South
Africa

Dynamical system in ecology: models,
analyses, and simulations

Prof. Alexey Davydov

*Advanced Systems Analysis Program, International
Institute for Applied Systems Analysis (IIASA), Laxenburg,
Austria / Steklov Institute, Russia*

TEA 10:40 – 11:00

THEME 9. ASSESSING COMPETING LAND USE OPTIONS FOR FUEL, FOOD AND FIBRE IN SUBTROPICAL AND TROPICAL AFRICA

Supervisors:

Prof. Barend Erasmus

*School of Animal, Plant and Environmental Sciences,
University of the Witwatersrand, Johannesburg, South
Africa*

Ms. Aline Mosnier

*Ecosystem Services and Management Program,
International Institute for Applied Systems Analysis
(IIASA), Laxenburg, Austria*

11:00 **Mr. Simon Nampindo** from
Uganda. PhD student at
University of Massachusetts,
USA

Competing land use options and securing
ecosystem services: implications for
sustainable management of Greater Virunga
Landscape

11:20 **Mr. Mulubrhan Gebremikael** from
Ethiopia. PhD student at the
Norwegian University of Life
Sciences, Norway

Impacts of resettlement on rangeland woody
vegetation and ecosystem services

THEME 16. INTEGRATING INDIGENOUS KNOWLEDGE INTO MATERNAL AND CHILD HEALTH PROGRAMS IN SOUTHERN AFRICA

Supervisors:

Prof. Cheryl Nikodem

School of Health Sciences, University of Fort Hare, East London, South Africa

Prof. Andrew Noymer

World Polution Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria and Public Health, University of California, Irvine, USA

11:40 **Mr. Abraham Alemayehu Gatta** from Ethiopia. PhD student at University of South Africa, South Africa

12:00 **Mr. Blessing Silaigwana** from Zimbabwe. PhD student at University of KwaZulu- Natal, South Africa

Integration of gender and indigenous decision making power in reproductive health policies: a systematic review of evidence

Efficacy of medicinal plants for treatment of soil-transmitted helminthic parasites: a systematic review

THEME 17. NEW APPROACHES TO MEASURING AGEING IN SOUTH AFRICA

Supervisors:

Prof. Warren Sanderson

World Polution Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

Dr. Serguei Scherbov

World Polution Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

Prof. Nancy Phaswana-Mafuya

Human Sciences Research Council (HSRC), Pretoria

12:20 **Mr. Witness Chirinda** from Zimbabwe. PhD student at University of the Western Cape, South Africa

Estimation of healthy life expectancy in South Africa

12:40 **Ms. Mercy Shoko** from South Africa. PhD student at University of the Witwatersrand, South Africa

Universality of Ageing in Southern Africa: a case of South Africa's population groups

LUNCH 13:00 – 13.40

THEME 1. EXTRACT OF AFRICA: TOWARDS THE EQUITABLE AND ECOLOGICALLY-SOUND GOVERNANCE OF MINING AND DRILLING

Supervisors:

Dr. Ikechukwu Umejesi

*Department of Sociology, University of South Africa,
Pretoria, South Africa*

Dr. Michael Thompson

*Risk, Policy and Vulnerability Program, International
Institute for Applied Systems Analysis (IIASA), Laxenburg,
Austria*

13:40 **Mr. Kgothatso Shai** from South Africa. PhD student at University of Limpopo, South Africa
Oil for Africa's development and US energy security: shared or competing interests?

THEME 18. EDUCATIONAL REFORM AND SOCIAL JUSTICE

Supervisors:

Dr. Petronella Jonck

*Management Sciences, Central University of
Technology, Free State, Bloemfontein, South Africa*

Dr. Anne Goujon

*World Polution Program, International Institute for
Applied Systems Analysis (IIASA), Laxenburg, Austria*

14:00 **Ms. Lanoi Maloiy** from Kenya.
PhD student at University of South
Australia, Australia

14:20 **Mr. Emnet Tadesse Woldegiorgis**
from Ethiopia. PhD student at
University of Beyreuth,
Germany

Women political leaders in East Africa:
enabling and inhibiting factors

Regional Higher Education reform initiatives
in Africa: a comparative analysis with
Bologna process

THEME 10. RESILIENCE MEASURES IN ECOSYSTEMS AND NETWORKS

Supervisors

Dr. Ursula Scharler

*School of Life Sciences, University of KwaZulu-Natal,
Durban, South Africa*

Prof. Brian Fath

*Advanced Systems Analysis Program, International
Institute for Applied Systems Analysis (IIASA),
Laxenburg, Austria
Department of Biological Sciences, Towson University,
Maryland, USA*

14:40 **Ms. Delin Fang** from China. PhD
student at School of Environment,
Beijing Normal University, China

Network environ analysis for a socio-
economic water system: case study of
Ganzhou district in Northwest China

THEME 5. ENERGY EFFICIENCY IN A SUSTAINABLE MINING INDUSTRY

Supervisors:

Dr. Bessie Monchusi

Centre for Mining Innovation, CSIR, Pretoria, South Africa

Dr. Marek Makowski

Advanced Systems Analysis Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

15:00 **Ms. Thakane Ntholi** from South Africa. PhD student at Nelson Mandela Metropolitan University, South Africa

Geothermal power potential of deep gold mines

CLOSING REMARKS

15:20 Prof David Katerere