



Plenary

Chair: Ian Rushworth

SAEON Cathedral Peak global change monitoring platform: Update on activities

*Sue Janse van Rensburg^{*1}, Colin S Everson¹, Paul J G Gordijn¹, Tim G O'Connor¹,
Michele L Warburton², Trevor Hill³, Jemma Finch³*

¹South African Environmental Observation Network, KwaZulu-Natal, South Africa; ²Centre for Water Resources Research, University of KwaZulu-Natal, South Africa; ³School of Agriculture, Earth and Environmental Sciences, University of KwaZulu-Natal, South Africa. Email: sue@saeon.ac.za

In 2011 the South African Environmental Observation Network, under the National Research Foundation, initiated the Grasslands Forests Wetlands (GFW) Node. Mandated with performing long term environmental observation aimed at detecting and understanding Global Change impacts, the GFW node undertook to revitalize historic long term streamflow and weather monitoring systems initiated in the 1950's at the Cathedral Peak Research Catchments in the uKhahlamba Drakensberg Park, World Heritage Site. In a water scarce country, determining the impacts of Global Change on key water catchments of the country is important for informing a sustainable development trajectory juxtaposed with increasing demand. We report on the progress made on research infrastructure, the instrumentation network, data being generated and the contextual framework within which this is being grown. Two automatic weather stations and a network of rain gauges have been deployed on historic sites and four of the original weirs have been refurbished and instrumented. In addition to the historic monitoring network, an eddy covariance system, COSMIC ray probe and large aperture scintillometer have been deployed to collect detail data on energy, carbon and water fluxes. In conjunction with data on physical parameters generated by the instrument array, significant progress has been made on biodiversity monitoring including the resampling of historic vegetation plots and initiating invertebrate surveys. Collaboration with universities and government plays a vital role in bringing added value to Cathedral Peak Monitoring platform, ensuring relevance, assisting with transforming data into useable outputs as well as providing additional support to the platform's activities. Outputs from student projects covering paleo, hydrological, carbon and vegetation studies demonstrate how this platform is serving as a living laboratory for student advancement and knowledge generation.

Keywords: Global change, long-term, weather, climate, land-use



International Livestock Research Institute (ILRI) in Southern Africa

Sikhalazo Dube^{1} and Siboniso Moyo²*

¹International Livestock Research Institute (ILRI), Zimbabwe; ²International Livestock Research Institute (ILRI), Ethiopia.
Email: s.dube@cgiar.org

The International Livestock Research Institute (ILRI) is one of the 15 Centres of the Consortium of the Consultative Group for International Agricultural Research (CGIAR). ILRI is a not-for-profit CGIAR Centre employing about 600 staff from over 40 nations, including over 120 internationally recruited staff representing some 30 disciplines. ILRI has its headquarters in Nairobi, Kenya, a principal campus in Addis Ababa, Ethiopia, and offices in other countries of East Africa (Tanzania, Uganda), West Africa (Mali, Nigeria), southern Africa (Mozambique, Zimbabwe), South Asia (India, Sri Lanka), Southeast Asia (Laos, Thailand, Vietnam) and East Asia (China). ILRI seeks to improve food and nutritional security and to reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock—ensuring better lives through livestock. ILRI works in strategic partnership with others – CGIAR Centers, national livestock research institutes and veterinary services, advanced research institutes and universities, public, private and civil society development organizations and community leaders - to generate and synthesize knowledge and approaches that can help poor people cope with economic and environmental vulnerability and take advantage of growing livestock opportunities. Through such partnerships, ILRI seeks to influence changes in processes and technologies, which support innovation at all levels. The research questions in southern Africa are at the core of ILRI's global strategy which seeks “better lives through livestock” by addressing poverty and food security in ways that are productive for human health and nutrition, sustainable and equitable. Key development challenges to which ILRI can meaningfully contribute in Southern Africa are as follows:

Productivity: To improve food security, human nutrition and health, incomes and rural livelihoods of the peoples of this region

Sustainability: To decrease vulnerability and enhance resilience of people, communities and systems (especially in marginal areas)

Rangelands management: Rangelands form the base from which production occurs, the continued neglect of this fact in research and development has seen implementation of unsustainable livestock production practices premised on the genetics of livestock with limited regard to the contribution of the environment of the expression of that genetics. Most rangelands in Southern Africa are considered to be degraded or deteriorating; needing significant attention to rehabilitate or reverse deterioration. ILRI has the capacity to map and characterize the rangeland for livestock production with ability to assist in the management that will ensure sustainability of use and production.

Keywords: rangelands, food security, global, livelihoods, southern Africa



IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

Luthando Dziba

CSIR, Natural Resources and the Environment, South Africa. Email: ldziba@csir.co.za

A new platform has been established by the international community -the 'Intergovernmental Platform on Biodiversity and Ecosystem Services' (IPBES). IPBES was established in April 2012, as an independent intergovernmental body open to all member countries of the United Nations with the overall objective to provide policy relevant knowledge on biodiversity and ecosystem services to inform decision making. The members are committed to building IPBES as the leading intergovernmental body for assessing the state of the planet's biodiversity, its ecosystems and the essential services they provide to society.

IPBES provides a conceptual framework recognized by both the scientific and policy communities to synthesize, review, assess and critically evaluate relevant information and knowledge generated worldwide by governments, academia, scientific organizations, non-governmental organizations and indigenous communities. The four agreed functions include knowledge generation, assessment, policy support tools and capacity building. The implementation of the IPBES work programme involves a global pool of experts conducting assessments of such information and knowledge in a transparent and collaborative way. IPBES is unique in that it will aim to strengthen capacity for the effective use of science in decision-making at all levels. IPBES will also aim to address the needs of Multilateral Environmental Agreements that are related to biodiversity and ecosystem services, and build on existing processes ensuring synergy and complementarities in each other's work.



ARC-Animal Production Institute



The Animal Production Institute of the Agricultural Research Council (ARC) is focused on successful livestock production. The Institute is able to meet producer's needs through research, development and technologies specifically developed for South African conditions.

ANIMAL BREEDING AND IMPROVEMENT

- Beef Cattle Improvement
- Dairy Cattle Improvement
- Pig, Poultry and Small Stock Improvement
- Breeding and Genetics
- Germplasm Conservation and Reproductive Biotechnologies

RANGELANDS AND NUTRITION

- Rangeland Ecology
- Rangeland Management
- Forage Production and Management
- Ruminant Nutrition
- Monogastric Nutrition

FOOD SCIENCE AND TECHNOLOGY

- Meat Science
- Dairy Processing
- Qualitative and Quantitative Analysis



Private Bag X2,
Irene, 0062,
RSA

Tel: +27 (0) 12 672 9111
Fax: +27 (0) 12 665 1563
www.arc.agric.za

