



No 1 (Jan 2016)

From the Editor:

Communication is the essence of a CoP's success. More and more I see developments in GEO, GEOGLAM, JECAM, Sentinel 2 Agriculture and other projects or initiatives that can positively impact on this CoP and national agricultural monitoring. This prompted the idea of a succinct periodic newsletter that I hope will at least alert CoP participants about latest developments, opportunities and potential contributions. The success of any such newsletter depends on readers willingly sharing news items and updates. The regularity of the newsletter will depend on the flow of material for inclusion. Once I receive enough for an issue, I will publish.

Meet your SA GEO Agricultural CoP Co-Chairs

Following the SA-GEO symposium of 20 October 2015, the following persons have been nominated as Agricultural CoP co-chairs for 2016.

- Dr. Mike Wallace (Western Cape Department of Agriculture) <mikew@elsenburg.com>
- Dr. Clement Adjorlolo (SANSA) cadjorlolo@sansa.org.za
- Dr Johan Malherbe (ARC) Johan@arc.agric.za
- Dr Nicky Knox (Namibia Polytech) nknox@polytechnic.edu.na
- Ms Wiltrud Durand (ARC) pdurand@mweb.co.za
- Mr Matlala Boshomane (Department of Agriculture Limpopo) matlala.boshomane@gmail.com
- Mr Terry Newby (ARC) terry@arc.agric.za

We wish them well in their endeavours to keep the CoP active and productive. Do contact any of the co-chairs with suggestions and information.

Current relevant Projects, Activities, Initiatives

- **GEOGLAM** (<http://www.geoglam-crop-monitor.org/index.php>)

There are currently two components to GEOGLAM, a crop monitoring component and a rangeland (RAPP) component. A GEOGLAM

(global) bulletin is prepared monthly for AMIS (<http://www.amis-outlook.org/amis-about/en/>) A monthly contribution from South Africa is submitted, after approval from the Crop Estimates Committee of DAFF, for inclusion in the GEOGLAM bulletin.

RAPP (<http://www.geo-rapp.org/>) is a new initiative under GEOGLAM and South Africa is considering hosting the next GEOGLAM RAPP workshop in 2016. (Contact Clement Adjorlolo cadjorlolo@sansa.org.za for more information).

JECAM (www.jecam.org)

The Free State Province is registered as South Africa's JECAM site (with two sub-sites near Bothaville and Bethlehem). Terry Newby is currently the SA JECAM site co-ordinator.

The annual JECAM Science workshop was held in Brussels from 16-17 November 2015. At this meeting each JECAM site was asked to present a progress report. The Sentinel2 Agric project and the SIGMA project, both of which used JECAM sites as study areas were discussed as well as the JECAM guidelines for in situ field data collection. These guidelines are available on the JECAM website and CoP participants are encouraged to start using them.

A joint across-site RADAR experiment is planned and should South Africa wish to participate, the JECAM secretariat needs to be informed. (*feedback to me – ed*)

- **Sentinel 2 Agriculture Project** (<http://www.esa-sen2agri.org/SitePages/Home.aspx>)

This ESA supported project has developed a system that uses regular (5-10 day) S2 and/or Landsat imagery to generate the following products: 1) a cropland mask, 2) a crop type map of main crops, 3) weekly LAI and NDVI and 4) a phenology development graph. South Africa's JECAM site was used as a study site in this project and the country is a candidate for the calibration and validation of the system.



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- **SIGMA Project** (<http://www.geoglam-sigma.info/Pages/default.aspx>)

The SIGMA (EU FP7) project has three main objectives: 1) assess crop land changes, globally, regionally and locally, 2) Assess changes in agricultural production levels and 3) Analyse environmental impacts of agriculture and cultivation practices. The South African JECAM site was one of the study sites for this project and this project has also expressed interest in using South Africa as a validation site.

- **AgMIP / SAAMIP projects** (<http://www.agmip.org/southern-africa/>)

This project, supported by UKAid, USDA and others, has a climate change focus and aims at comparing models in order to contribute to adaptation strategies. It also has a strong networking focus. AgMIP and GEOGLAM as projects have undertaken to collaborate. The Southern Africa Agricultural Model Intercomparison and Improvement Project (SAAMIIP) of AgMIP uses the South African JECAM site as one of their study sites.

- **Umlindi Newsletter** (<http://www.arc.agric.za/Pages/Newsletters.aspx>)

This monitor, produced by the ARC, reflects crop condition and drought information on a monthly basis. Data for the monitor is sourced from various coarse resolution imagery and in situ AWS records, including the local GEONetcast system.

- **MESA** (<http://www.mesasadc.org/>)

Monitoring of the Environment for Security in Africa (MESA) has as overall objective to support African decision-makers and planners in designing and implementing national, regional and continental policies and development plans towards sustainable development. ARC is a partner in providing

the drought monitoring service to this project. MESA also provides an agricultural monitoring service to SADC countries.

- **Crop Watch for South Africa (CW4SA)**
CW4SA is a project co-ordinated by SANSI and will evaluate a crop monitoring system using Sentinel 2 data.

- **Student Projects.**

A number of MSc students are researching topics relevant to agricultural monitoring. Their titles are reflected below:

Using Earth observation data and GIS to assess sugarcane yield forecast limiting factors: A case study of nutritional deficiency in small-scale growers

The influence of agricultural activities on UMfolozi catchment wetland area, KwaZulu Natal, South Africa

Analysis of crop yield parameters derived from remotely sensed imagery, in-situ measurements and crop simulation models

Assessment of maize production risk using remote sensing and GIS in Free State province, South Africa

Detailed object-based crop type mapping in an intensively cultivated area.

We wish them well with their research!!.

- **Final Word**

This is the first issue of a SA GEO Agricultural CoP newsletter. The completeness of information is dependent on you, the readers, so send the editor snippets to complete the picture. The community would value a complete set of relevant projects and activities. The next issue will add to this list.