



Agenda of the 3rd CRAM Workshop

Crop and Rangeland Monitoring

26-30 September 2011

**Regional Centre for Mapping of Resources for
Development**

Kasarani Road, 00618 Thika Road, Nairobi KENYA.

General Context

Crop and rangeland monitoring plays an increasingly crucial role at the light of the high volatility of global markets and recurrent soaring food price crises which impact our global economy and directly affect the livelihood of the poorest. A large part of Sub Saharan Africa is chronically food-insecure due to complex interaction of low or variable crop and livestock production with other livelihoods and nutrition factors. This situation is likely to worsen in the context of climate change, increasing frequency of extreme events or man-made crisis. There is a consensus that hunger has to be fought both in its emergency aspects (humanitarian aid) and its underlying causes, in particular by longer term programs or policies increasing agricultural production and rural development, improving market infrastructures, providing to small farmers a better access to land, credit or insurances.

Crop and rangeland monitoring have the huge challenge of providing accurate, objective, timely information answering to various needs, identifying hot spots and assessing severity of humanitarian crisis, better manage markets (import, export, or local purchase), monitor national / regional agriculture and trade policies, provide advisory on the best way to assess Climate Change issues.

The 3rd CRAM Workshop is jointly organised by JRC, FEWSNET, RCMRD, SERVIR and FAO, with a contribution of the GEO "Global Agricultural Monitoring" Community of Practice.

The Workshop builds on the experience of the previous two CRAM workshops (2003 and 2007) and is aimed at providing a platform of technical exchange for the community of experts involved

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in agriculture monitoring for food security. Also it will permit to answer better the requests and needs of the food security analysis community and its links with users and decision makers. The Workshop will be hosted by the Regional Centre for Mapping of Resources for Development (RCMRD) and will involve participants from the whole of sub-Saharan Africa. African and international experts will present the current state of the art of crop and pasture monitoring, and yield forecasting activities at national and regional level and will give room to technical discussions and exchange of experiences. I attached to this letter the proposed agenda of the workshop.

Main Objectives

The main objectives of the workshop can be summarised by

1. To take stock of the technical progress towards efficient Crop and Rangeland Monitoring systems in Africa (and in general) ;
2. To assess the use of existing remote sensing derived and rainfall estimation products;
3. To facilitate the coordination and collaboration between various existing Early Warning and monitoring systems;
4. To contribute to an overall reinforcement of National and Regional Capacities in this field;
5. To involve African Partnership in the GEO community of practice on “ global Agricultural Monitoring” in general and in particular in its JECAM activities (Joint Experiment on Crop and Agriculture Monitoring).

Overall Agenda

The 3rd CRAM workshop is structured around a plenary conference and various side events:

- **The CRAM conference “Crop and rangeland monitoring”**, 26—28/ 09 (2,5 days);
- **3 parallel training sessions on “Crop monitoring tools and info. Systems”** 28—30/ 09 (2,5 days);
- **A GEO JECAM seminar (Joint Experiment on Crop and Agriculture Monitoring)**, 28/09 (1/2 day);

English is the official language of the CRAM workshop.

Participation

The audience of the plenary conference is estimated to 80-100 persons, with the following origin:

- Circa 70 African experts from Sub Sahara, both from East Africa + SADC (30) and ECOWAS (15) regions, as well as representatives from national and international organisations based in Nairobi:
- 20 experts from International Organisations (JRC, FAO, FEWSnet, WFP...) and 5 invited experts from other parts of the globe.

The training side events are dimensioned for circa 45 participants, including teachers; the JECAM event could welcome between 30- 40 participants.

Agenda – Plenary conference

Monday	26 September 2011
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8:00 *Registration of participants*

9:00 – 10:00 *Opening Ceremony*

Welcome addresses

- *RCMRD*
- *Workshop organizers – JRC*

Goodwill messages

- *European Union*
- *USAID*
- *IGAD*
- *FAO*

Opening Speech

- *Minister of Environment and Mineral Resources, Kenya Govt.*

10:00 - 12:30 Session 1: Information needs in front of present and future challenges in economic and environmental context.

Contents: The session addresses expectations and needs of decision makers and stakeholders towards food security information systems. What is really needed from crop and rangeland monitoring community, what are good examples and what information is missing? What's new from the "G20 Global Agricultural Monitoring" initiative?

Chair / organizers: James Odour (ALRMP) (tbc)/ Gideon Galu

Keynote: NEPAD

Speakers: Presentations by:

- Wilbur Ottichilo, MP, Kenya Government (tbc)
- Jaspat Agatsiva, Director DRSRS
- Dr. Romanus Mukabana, Director KMD
- Chris Justice, University of Maryland, GEO Ag Co-Chair: *"GEO-GLAM: Africa"*

10:30 - 11:00 Coffee Break**12:30 – 14:00 Lunch Break****14:00 - 18:00 Session 2: Current crop monitoring and Early Warning Systems in Sub Saharan Africa**

Contents: Review of the existing crop monitoring and early warning systems in Sub Saharan Africa from the national to the regional and international scale. Selection of case studies with use of the products, limitations and future challenges presented by: i) National level monitoring eg. Somalia, South Africa, Sudan (SIFSIA), CSE; ii) Regional level monitoring eg. AGRHYMET, AMESD SADC Thema, RCMRD Servir, ICPAC...; iii) International level monitoring eg. FEWSNET, JRC, GIEWS; iv) Use of EWS data for mapping and response, eg. IPC...

Chair / organizers : Maalim Mahooub / Felix Rembold and Jim Verdin

Keynote: Gary Eilerts, USAID

Speakers: Presentations by:

- Seydou Traore, AGRHYMET: *"Crop Monitoring and Early Warning in West Africa: The AGRHYMET experience"*
- Rogerio Bonifacio, WFP VAM: *"Agricultural season monitoring for WFP applications"*
- Blessing Siwela, SADC FANR: *"SADC Agricultural Information Management System (AIMS): monitoring regional crop and livestock performance"*
- Farai MARUMBWA, AMESD SADC: *"The agricultural service of the AMESD SADC Thema"*
- Tamara Nanitashvili, FSNAU: *"Livelihood-based early warning system for Somalia"*
- Elijah Mukhala, SIFSIA South Sudan: *"Food Security Information System for South Sudan"*
- Ahmed Abdulkarim, SMA, North Sudan (tbc)
- Matheos Hunde, Ethiopia MOA (tbc)
- Terry Newby, ARC: *"The South African crop estimation and early warning system"*
- Sven Gilliams, GMFS project: *"ESA's Crop Monitoring and Early Warning Service"*
- Ashutosh Limaye, SERVIR project: *"SERVIR Hydrologic Early Warning System for East Africa"*.

15:30 - 16:00 Coffee Break

18:00 Conclusions of the first day

Tuesday 27 September 2011

8:30 - 10:30 Session 3 Rainfall measures and estimates: New datasets available; Comparison of models and validation; Improving observation networks, integrating station data with satellite fields

Contents: Review of currently available and new rainfall data and rainfall estimates. Does these data meet the needs of the CRAM community and how. What are the main limitations of ground observation networks and estimates; where do they agree and disagree? What are the best practices and way forwards to improvement ?

Chair / organizers: Chris Funk / David Grimes

Keynote: David Grimes

Speakers: Presentations by:

- Tufa Dinku, IRI: *"Improving data availability, access and use"*
- Elena Tarnavski, TAMSAT, University of Reading: *"MARSOP and TARCAT projects"*
- Oscar Rojas, FAO: *"FAO rainfall estimates for Sudan"*
- Chris Funk, FEWSNET, UCSB: *"Evaluating the drought monitoring capabilities of rainfall estimates for Africa"*
- Hussein Gadain and Peris Muchiri, FAO – SWALIM: *"Automatic and Manual Monitoring of weather conditions with specific focus on droughts"*
- Jai Singh Parihar, ISRO India: *"Early Season Crop Prospect Assessment Using Satellite Data Based Rainfall Estimates"*

10:30-11:00 Coffee Break

Session 4 (11:00-12:30): Rangeland and Livestock monitoring

Contents: the session should address specific methods used for rangeland monitoring and progress made since 2007, including livestock tracking, near real time monitoring, migration, increased pressure on pastoral resources... Lessons learnt and main challenges should also be discussed.

Chair / organizers: Joseph Matere FAO/ Frédéric Ham (ACF)

Keynote: Jan De Leeuw, ILRI – Kenya: *"Remote sensing applications in support of drought early warning and NRM in rangeland environments"*

Speakers: Presentations by:

- Jonas Ardö, Lund University – Sweden: *"Estimating primary productivity of semi arid rangelands using MODIS data"*
- Giancarlo Pini and Eduardo Marinho, JRC: *"Livestock watering availability and accessibility based on remote sensed small water bodies: a pilot study"*
- Corinna Riginos, Kenya: *"An Introduction to the Monitoring Rangeland Health Guide"*
- Frédéric Ham, ACF-E – Spain: *"Development of a Pastoral Early Warning System in Sahel using GIS and Remote sensing tools"*
- Ben Sonneveld SOW VU – Netherlands: *"Monitoring rangelands and pastoralists' trekking routes in the Afar, Ethiopia."*

12:30 - 14:00 Lunch Break

14:00-15:00 Session 4 (continues): Rangeland and Livestock monitoring

15:00 - 15:30 Coffee Break

Session 5 (15.30 - 18:00): Crop monitoring, new data and approaches

Contents: the session illustrates new methods and information available for crop monitoring and how they respond to specific user's needs.

Chair / organizers: René Gommès

Keynote: James Rowland, USGS: *"Crop Monitoring for Famine Early Warning -- data, delivery, and analysis tools"*

Speakers: Presentations by:

- Eduardo Marinho and Christelle Vancutsem – JRC: *"From vegetation onset to sowing dates: aggregating pixel-level detection around villages into departmental-level statistics"*
- François Kayitakire – JRC: *"Mapping the crop production systems of the Horn of Africa: presentation of the CPSZ-2 project results"* and *"Mapping crop land areas in Africa combining existing datasets and their validation using a web-based collaboration tool"*
- Oscar Rojas - FAO NRC and Felix Rembold - JRC: *"Drought monitoring with coarse resolution remote sensing at the African continent level"*

- Oscar Rojas – FAO NRC: *"AgrometShell and MOSAICC new software development of FAO for assessing the impact in agriculture of climate vulnerability and climate change"*
- René Gomme – JRC: *"Weather index based crop insurance: a giant with clay feet?"*
- Zoltan Balint – FAO SWALIM: *"Drought monitoring and mitigation – Are we prepared?"*
- Steffen Fritz – IIASA: *"Improving global and African crop masks via product integration and expert elicitation"*

18:00 Conclusions of second day

20:00 Dinner offered by the organizers

Wednesday 28 September 2011

8:30 - 10:30 Session 6: Regional climate change and adaptation

Contents: the session should focus on assessment of trends and potential impacts for Sub Saharan Africa, preparation of regional scenarios. What is useful, what are the best approaches and tools – for instance for downscaling - to be used for the region?

Chair / organizers: R. Mukabana / Chris Funk & Laban Ogallo

Keynote: Chris Funk, FEWSNET, UCSB: "FEWS NET Climate Change Data Sets and Analyses: Using observations to guide adaptation"

Speakers: Presentations by:

- Laban Ogallo – ICPAC – Kenya
- Joseph R. Mukabana – KMD - Kenya
- James Kinyangi – CGIAR CCAFS - Kenya

10:30 – 11:00 Coffee Break

11:00 – 13:00 Round table discussion and conclusions

Contents Summary and main results on how to support and improve national / regional capacities. General recommendations and way forwards. Roadmap & actions in view of future CRAM activities.

Moderator and main reporter: Henry Josserand + EU

Contributors: Chairmen of the sessions, representatives of FAO, FEWSNET, JRC and RCMRD.

Official closing of the conference

Announcement and overview of the training / side events.

Draft Agenda - Training Side-events

Parallel session will be held by different organizers from Wednesday 28th afternoon to Friday 30th noon as follows:

Wednesday 28 th afternoon	Thursday 29 th morning	Thursday 29 th afternoon	Friday 30 th morning
JRC training	JRC training	JRC training	JRC training
FEWSNET training	FEWSNET training	FEWSNET training	FEWSNET training
JECAM side event	SERVIR training	GEOWIKI training	

JRC training 28-30 September 2011

Organizers: Felix Rembold, Trainers: Felix Rembold, Ferdinando Urbano, Hendrik Boogaart, Dominique Haesen (tbc)

Wednesday 28 September

Training Module 1: MARS Viewer

14:30 – 17:30 Use of remote sensing and agro- meteorological data for crop monitoring.
Production of Anomaly maps and seasonal profiles

Thursday 29 September

Training Module 2: SPIRITS (Software for Processing and Interpreting Raster Image Times Series)

9:00 presentation of the tool

10:00 access to input data: E-station, Devcicast, FEWSNET data portal...

- **Practical session 1**

11:00 importing input data from different sources

12:00 computing the historical average and anomaly maps

12:30 Lunch

- **Practical session 2**

14:00 – 17:00 exercises

Friday 30 September

Training Module 2: continuation of SPIRITS

9:00 Using seasonal profiles, the SPIRITS database

10:00 Extracting seasonal profiles for combinations of administrative regions and crop masks.

12:30 Lunch

FEWSNET training 28-30 September 2011

Organizers: Gideon Galu, Trainers: Gideon Galu, Tamuka Magadzire

Wednesday 28 September

Introduction to GeoWRSI and Rainfall Monitoring and Administrative Issues

09:00-10:00 Topic 1: GeoWRSI Overview & Installation of GeoWRSI tool (1 hr)

Activity 1: Overview of GeoWRSI tool, Resource Materials Available on CD/training folder/DVD

Activity 2: Slideshow Presentation & Video (discussion on potential applications)

Activity 3: Installation of GeoWRSI

10:30-13:00 Topic 2: Rainfall monitoring and Improved Estimates using GeoWRSI [2.30 hours]

Activity 1: Introduction to rainfall estimates (video/presentation)

Activity 2: Introduction to the FEWSNET IRE Technique (presentation)

Activity 3: Demonstration on improvement of rainfall estimates using GeoWRSI

Activity 4: Running the IRE using available raingauge and NOAA/CPC data for the sample datasets and examining outputs (Guided Exercise)

14:00 – 17:00 Topic 2 continued: Improvement of Rainfall Estimates (IRE) [3 hours]

Thursday 29 September

Crop Water Balance Modeling and Output products interpretation

09:00-10:00 Topic 3: Water Balance modeling – an overview (1hour)

Activity 1: Presentation review + Video

Activity 2: Demonstration of crop water balance calculations, with description of various interfaces and outputs.

10:30-13:00 Topic 4: Adjusting Crop Water Balance input parameters (1.5 hours)

Activity 1: Demonstration of how to change the crop water balance parameters, in particular: Planting dates and LGP

Activity 2: Exercise to change crop water balance parameters in line with common knowledge for the crop growing season.

Activity 3: Exercise to re-run the water balance for climatological period using adjusted WB parameters

14:00-15:30 Topic 5: Contextual interpretation of the model outputs

Activity4: understanding the model outputs and contextual interpretation of the products .

Friday	30 September
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Water Balance Modeling & Crop Yield Regression Modeling**09:00-10:00 Topic 6: Yield regression modeling using GeoWRSI (1 hour)**

Activity 1: Demonstration of complete process of yield regression modeling

Activity 2: Exercise on development of yield regression models using sample data

10:30-13:00 Topic 8: Yield regression modeling using GeoWRSI (cont) (2.5 hours)

Activity1: Development of local yield regression models

Activity 2: Estimation of yield and production for 2008/09 and 2009/10 seasons

Wrap-up and closure

GEO JECAM Side event

Coordination and Support: Pierre Defourny UCL / Ian Jarvis

Wednesday 28 September (afternoon)

14:30 GEO Agriculture Task : building a community of practices in agriculture remote sensing, Chris Justice, UMD

14:50 Presentation of JECAM concept and objectives by Ian Jarvis, Agriculture and Agri-Food Canada

15:10 A JECAM candidate site in Mali : presentation, data collection and availability by Pierre Sibiri Traoré, ICRISAT (tbc)

15:30 A JECAM candidate site in South Africa (tbc)

16:00- 17:30 3-4 presentations by Regional centres or national pilot ??

SERVIR training

Coordination and Support: Ashutosh S. Limaye, VP61/ Earth Science Office, NASA Marshall Space Flight Center

Thursday 29 September (morning)
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9:00 – 10:30 SERVIR data sets and hydrologic modelling

10:30 – 11:00 Coffee Break

11:00 – 12:30 clip and ship tool which allows users to specify geographic areas and download the data.

GEOWIKI training

Coordination and Support: Steffen Fritz, IIASA, Vienna.

Thursday 29 September (afternoon)
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14:00 to 14:30 Improving cropland maps with Geo-wiki

14:30 to 15.30 Hands-on session to improve African cropland

15.30 to 16.00 Break (or we take 15 minutes of this and talk about validation)

16.00 to 17.00 Hands-on session on validation and info on how you will be able to access the improved hybrid map and use for your own studies