

## Joint Expert Meeting on Pasture Analysis and Remote Sensing

# 5<sup>TH</sup> GEOGLAM RAPP WORKSHOP

16 & 17 May 2017

In **FRASCATI, Italy (close to Rome)**

At **ESRIN** Via Galileo Galilei, 00044 Frascati RM, Italy (**ESA's Centre for Earth Observation**)

**GEOGLAM RAPP** (Rangeland And Pasture Productivity), led by CSIRO, is a global initiative under GEO, the inter-governmental Group on Earth Observations. As a sub-component of GEO's "GEOGLAM" (GEO Global Agricultural Monitoring Initiative) flagship initiative, RAPP aims to provide the global community the means to regularly monitor the condition of the world's rangelands and pasture lands on a routine basis, and assess their capacity to sustainably produce animal protein in real-time, at global, regional and national levels.



### OBJECTIVES:

- Strengthen the RAPP Community of Practice and reaffirm the community's involvement
- Review progress and development of the Global Monitoring system (RAPP Map),
- This workshop will be data and product-focused, with emphasis on the EU Sentinels, and Radar & Hyperspectral technologies which RAPP may use and apply:
  - Sentinel data (eg. biomass, grassland types, grassland quality & grassland condition)
  - Sensors: S1, S2, S3, L8, Radarsat and hyperspectral;
  - Assessment of rangeland carrying capacity and sustainability
- Increase transfer of knowledge & technology, and identify future collaborative work involving researchers from Europe.
- Outline activities at RAPP global pilot sites and data needs
- Review the strategic vision for the future (including funding synergies)

### PARTICIPANTS: the envisioned audience (~25/30 people to be personally invited) includes:

- European researchers with expertise in pasture, remote sensing and particularly those with a potential interest in participating in research within the GEOGLAM RAPP framework.
- Members of the global pasture research community and GEOGLAM RAPP, particularly RAPP pilot site representatives.

## AGENDA

### DAY 1 : TUESDAY 16<sup>th</sup> MAY 2017

#### WELCOME – Introduction & Context

8:30 **REGISTERING**

*Moderator: Dr Alex Held (CSIRO)*

*Rapporteurs: tbd*

9:00 **WORKSHOP OFFICIAL WELCOME**

Opening from: Dr Benjamin Koetz (ESA) and Dr Alex Held (CSIRO)

9:20 **GEOGLAM Update**

Michel Deshayes (GEO Secretariat)

9:35 **Rangeland and Pasture Productivity (RAPP) updates**

Flora Kerblat (CSIRO, Australia)

9:50 **GEOGLAM RAPP Visualizer/Interactive Platform online**

Dr Juan Guerschman, (CSIRO, Australia) – *(Feedback/questions/discussions in the afternoon)*

10:30 **COFFEE BREAK and GROUP PHOTO**

#### RAPP updates (products, pilot sites) and EO requirements & strategy

10:45 **Updates & upcoming activities on RAPP pilot sites (part I):**

~ 15 min

- **South Africa** - Dr Clement Adjorlolo (SANSA, South Africa)
- **USA** – Dr Feng Gao (USDA, USA)
- **Brazil** - Rubens Lamparelli (Unicamp, Brazil)

11:30 **QUESTIONS/DISCUSSIONS ON PILOT SITES and on-going work validation**

12:00 **LUNCH**

*Moderator: Dr Cornelis van der Waal*

*Rapporteurs: tbd*

13:00 **Updates & upcoming activities of RAPP pilot sites (part II):**

~ 15 min  
each

- **Argentina** (REMOTELY) – Carlos di Bella (INTA, Argentina)
- **Brazil** (REMOTELY) - Laerte Guimarães Ferreira (LAPIG, Brazil)
- **Colombia** (REMOTELY) – Miguel Arango Argoti (CORPOICA, Colombia)

13:50 **Soil & carbon aspects in rangelands**

JF Soussana (INRA, France)

14:20 **QUESTIONS/DISCUSSIONS on pilot activities**

15:00 **COFFEE BREAK**

15:15 **Data Requirements Definition and Data Services Options for RAPP**

(REMOTELY) Dr Brian Killough (NASA, and CEOS SEO, USA)

#### SENSORS sessions

*Moderator: Benjamin Koetz (ESA)*

*Rapporteurs: tbd*

15:30 **Sentinel 1, 2 and 3**

~ 3\* 15 min

Pierre Potin, Bianca Hoersch and Susanne Mecklenburg (ESA, Italy)

16:30 **GROUP DISCUSSION on Sentinels supporting RAPP products**

ALL ATTENDEES - Key technical characteristics and data requirements for an operational RAPP global monitoring system?  
Additional layers to the RAPP Map? Data Cube opportunities?

17:30 **END OF THE FIRST DAY**

18:00 **COCKTAIL AT ESRIN – all participants**

## DAY 2 : WEDNESDAY 17<sup>th</sup> MAY 2017

### In situ MEASUREMENTS ACTIVITIES and APPLICATIONS

*Moderator: Dr Clement Adjorlolo (SANSA)*

*Rapporteurs: tbd*

8:45

#### DAY 1 SUMMARY

Dr Alex Held, (CSIRO, Australia)

9:00

#### Local activities related to RAPP

~ 15 min  
each

- **Namibia** - Progress with herbaceous biomass modelling (based on Modis NDVI and ALOS SAR data) and dry season fodder flow calculations - Dr Cornelis van der Waal (Agricultural Ecological Services, Namibia)
- **Balkans** - Promote the uptake of EO services and data in response to Balkan and Central Europe needs in order to contribute to the implementation of GEOGLAM RAPP in this region of interest - Dr George Zalidis (University of Thessaloniki, Greece)

9:40

#### Crowdsourcing Farmer's Data through A Mobile App

Dr Steffen Fritz (IIASA, Austria)

10:00

#### Protecting livestock herders from the impact of drought: the Index-Based Livestock Insurance (IBLI) program

Dr Francesco Fava (CGIAR-ILRI International Livestock Research Institute, Kenya)

10:20

#### GROUP DISCUSSIONS on applications & end users of RAPP, and in-situ measurements?

11:00

#### COFFEE BREAK

*Moderator: Marc Paganini (ESA)*

*Rapporteurs: tbd*

11:15

#### Hyperspectral products: example of application

Retrieving Rangeland Essential Biodiversity Variables using Hyperspectral Remote Sensing and the potential for Sentinels - A. Skidmore (ITC, Netherlands)

11:35

#### Example of Sentinel-1 use for grassland monitoring

Kaupo Voormansik (University of Tartu, Estonia)

11:55

#### Working with biomass data to assess livestock production in rangelands

Dr Anne Mottet/Felix Teillard (FAO, Italy)

12:20

#### QUESTIONS/DISCUSSION on Applications of Sentinels' data for RAPP

13:00

#### LUNCH

### Discussions and future activities for RAPP

*Moderator: Dr Alex Held (CSIRO)*

*Rapporteurs: tbd*

14:00

#### UNSDGs and GEOGLAM RAPP opportunities (UNCCD work on the indicator 15.3.1 & Data cube)

Alex Held (CSIRO)

14:20

#### GROUP DISCUSSIONS - New products and activities for RAPP

Potential pilot studies and sites for Sentinel-1-SAR grassland biomass product development and validation; Retrieval of grassland quality, nutritional quality (hyperspectral requirements)?

15:15

#### COFFEE BREAK

15:30

#### GROUP DISCUSSIONS - Future Directions/Strategy and Wrap up

Recommendations for R&D activities for product development of biomass, grassland types; Data and capabilities needed for rangeland carrying capacity; New European partnerships (co-lead?); Future resources for advancing RAPP

16:30

#### WORKSHOP CLOSING

## Thanks for attending the workshop!

Please let us know if you do **NOT** want to share your presentation material



## Welcome pack

A « welcome pack » with more information has been distributed along with this agenda.

## Main contacts

### From **ESA** (local hosts, at ESRIN in Frascati)

Dr Benjamin Koetz (Exploitation & Services Division, Project Section)

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### From **CSIRO** (co-organizers, in Australia)

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