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## **WORKSHOP REPORT: GEODATA FOR AGRICULTURE AND WATER**

### **I. Workshop objectives**

On May 21<sup>st</sup> 2014, the “**Geodata for Agriculture and Water**” took place at Umubano Hotel. The event aim at introducing the new **G4AW (Geodata for Agriculture development and Water management) facility**; and will fund innovative projects that use the satellite data in agricultural development and water management to improve food security.

### **II. Workshop participation & Organization**

The workshop was well attended. In total 51 people representing Government Ministries and agencies, Dutch Embassy, NGOs (International and Local), Insurance Companies, Financial institutions, Agri-Business companies, and Telecommunication Companies, attended the workshop. The list of all participants is in Annex B.

The Geodata for Agriculture and Water programme is implemented by the Netherlands Space Office (NSO) on behalf of the **Netherlands Ministry of Foreign Affairs**. Agri-ProFocus Rwanda played a role in the preparation, organization and facilitation of the workshop in collaboration with Netherlands Water Platform (NWP).

### **III. Workshop Programme**

The programme of the day comprised many sessions and presentations. The full workshop programme is in Annex A.

### **IV. Introductory remarks**

The workshop was marked by the presence of 3 speakers: Mr. Raphael RURANGWA, Director of Planning at MINAGRI; Mrs. Teddie Muffels, the Agricultural Counselor at the Embassy of the Kingdom of the Netherlands and IVO Walsmit, the NSO advisor.

In addressing her opening key note, Mrs. Teddie Muffels outlined some areas of interventions of the Dutch Embassy in Rwanda, especially in the area of food security:

- Feeder roads
- Nutrition
- Agriculture sector Development Facility with ICCO
- Capacity building of the Private Sector
- Potato sector with Rwanda Agriculture Board
- Etc.



*On the photo: Mrs Teddie Muffels, addressing her speech to the participants*

She mentioned that the G4AW will be added to other funds availed by the Netherlands, and that the embassy is ready to provide information to all who need it.

The Director of Planning in MINAGRI, Mr. Rurangwa Raphael officially opened the workshop. In his remarks, he hailed the Netherlands Ministry of Foreign Affairs for its contribution to the improvement of Food Security in Rwanda, and advised the participants to make good proposals and access use the facility. According to the Mr. Rurangwa, opportunities are enormous; there are so many farmers who need information related to weather predictions. He continued by stressing that the G4AW facility will help Rwanda to

overcome different risks to agriculture mainly the climate change. He mentioned some insurance companies like Syngenta and MicroEnsure which are already operating in risks-mitigation and who need more satellite information. He concluded his speech by again the EKN and NSO for good initiative and wished good luck to everyone in finding good partnerships especially with the private sector to create more jobs which one of the objective of the EDPRS II.

## **V. G4AW Overview**

The keynote speech was addressed by the MSO Advisor, Mr. Ivo Walsmit who introduced the G4AW facility to the participants.

In his presentation, he highlighted that the overall objective of the G4AW facility is to contribute to improved food security and access to water in the 15 G4AW partner countries by providing food producers with relevant information, advices or (financial) products through operational information chains using satellite data, hence increasing the agricultural sector output in the participating countries.

To reach this objective the G4AW Facility will develop:

- I. A platform that supports the formation of partnerships between participating public organizations, research institutes, private sector operators, NGO's, and farmer cooperatives satellite data/service operators, private (agricultural) sector, transmission operators.
- II. A programme that promotes and supports private investments for putting large-scale demand-driven satellite-based information services into operation.

He continued by a presentation on how the satellite based information services are improving Food Security. Several key effects of climate change on food & water security, as extensive rainfall, drought, etc. were mentioned.

He showcased the Infogineering Model which explains how spatial data, information and knowledge help to make the right decisions. Without data there is no information, without information there is no knowledge, without

knowledge there is no good decisions and without decisions there is no economic growth.

He then demonstrated the role of micro insurance projects in alleviating the risks in agriculture. He also showed how the satellite images can be used to monitor crop growth and water stress (locating poor irrigated zones) and how from such information, it can be advised on when and how to irrigate.

### **V.1 Benefits of using satellite data**

Satellite data are used for various purposes but in agriculture they are used because:

- Satellite data are objective, consistent, cross border
- In many places there are no or few (local) monitoring infrastructure
- With satellite data you can 25+ years' time series (geostationary satellite, Landsat)
- There are many new satellites (to be) launched, no or low cost



*Photo: IVO Walsmit, NSO Advisor*

## **V.2. Requirements for a G4AW application**

- User demand / information needs
  - Possible service provision
  - Partnership
  - Business model
  - Cooperation Agreement
- Projects using radar technology are also eligible

## **V.3. PPP (Public-Private-Partnerships)**

To reach easily the needs of smallholder farmers, people must operate not individually, but in intermediate organisations. They have to associate them with other partners and create a sort of consortium of organisations / companies:

- Partnerships can propose projects that put these information services into operation through public-private types of partnerships which will cover the complete information chain from satellite data as basic input to end user information products. The information services will provide food producers with timely, accurate, and understandable satellite-based information, advices and/or (financial) products. This user-tailored and demand-driven information will allow food producers to make the right decisions in sustaining and increasing their production and livelihood.

The G4AW partner countries are: Bangladesh, Benin, Burundi, Colombia, Ethiopia, Ghana, Indonesia, Kenya, Mali, Mozambique, Rwanda, South Africa, South Sudan, Uganda, and Vietnam

- Association with other countries is allowed, as long as it strengthens the consortium in creating synergies between partners.
- A partnership agreement for the project execution has to be signed among the partners.

The consortium of Private and Public organizations can be made with:

- Intermediates; Min. of Agri., NGO, value chain organization, other
- Data/information service provider(s)
- Knowledge institutes
- Meteorological Offices
- Organizations active in ICT
- Mobile telecom provider, banking, insurance, nutrients, commodity value chain
- Government to ensure access to local data and license-to-operate

#### **V.4. How to tender and deadline**

Mr Ivo informed the participants the facility's Total Grant which is 40 million Euros. The first offer of 10 million is over, which means that for 2014-2015, the facility is left with 30 million Euros. He then explained how the process will be running, mentioning the key dates and projects' requirements:

- The project should at least reach a minimum number of food producers of 200,000
- 10 % more production or income
- 10% less input (water, fertilizer, etc.)
- Satellite data are at the start of the information chain; entire information chain is covered from satellite data to food producer
- Public-private partnership (local embedding); note: associated ownership, business model and sustainable services after project closure
- Applicant is a Dutch organization
- Application deadline: March 27, 2015

#### **VI. Presentation of Quick Scan Findings**

Mr. Antoine TWAGIRUMUKIZA, the consultant who was hired by Agri-ProFocus Rwanda to make a quick scan of some G4AW related projects, gave a presentation on the current situation of the use of satellite data in Rwanda. In his presentation, he showed that there are *already* some *on-going G4AW relevant activities* and/or projects, showed a *list of local organizations and stakeholders relevant for G4AW*, described the *main challenges for agricultural development* in Rwanda (climate change, acidity of soil, population density and livelihood, low use of inputs and commercialisation, inadequate water and irrigation development, limited access to financial services, etc.)

He indicated some information suppliers and other stakeholders active in the Rwandan Agricultural Sector, some of them are:

- Ministry of Agriculture and Animal resources
- Rwanda Agricultural Board (RAB),
- National Agricultural Export Development Board (NAEB),
- Marshland and hillside irrigation projects (LWH/RSSP),
- Kirehe Watershed Management Project (KWAMP),
- Centre for Geographic Information System of University of Rwanda (CGIS),
- Rwanda Natural Resources Authority (RNRA),
- Rwanda Meteorological Agency,
- National Institute of Statistics of Rwanda (NISR) and
- Ministry of Local Government (MINALOC).
- Etc.

The consultant also shared the main challenges for agricultural development:

- Acidity of soil
- Population density and livelihood
- Low use of inputs and commercialization
- Climate change
- Insufficient post-harvest management
- Limited access to financial services
- Inadequate water and irrigation development
- Insufficient infrastructure for animal production, processing and storage

The quick scan report was found very informative by the participants; they however suggested looking for more accurate data. The consultant was advised to approach the MINAGRI for inputs and include them in the report.

## **VII. Group discussions on possible businesses cases**

Though there was a plan to divide participants in small groups, they suggested having discussions all together. Below is a list of challenges that were identified by participants:

- a. Small land owning sites
- b. Lack of information

- c. Erosion
- d. Lack of Human resources
- e. Lack of Clear Institutional framework
- f. Illiteracy of farmers
- g. Acidity
- h. Affordability
- i. Data collection equipment
- j. Limited access to research results
- k. Disseminating info
- l. Inadequate use of land
- m. Pest + Disease

After identifying those challenges, Climate change, Access to Knowledge, Land use, Water management, Infrastructure and Access to Finance were mentioned as priorities. Participants then chose to work on two of them, just to exercise on how they can develop a project proposal.



- **Water Management**

In Rwanda as elsewhere in the world, water is used for many activities. It is used for animal feeding, industrial activities, drinking, irrigation, etc. However the main issue remains its effective management and distribution.

Through the use of satellite data, participants found that they can suggest some solutions to the above mentioned challenge. Some of those solutions are:

- An efficient land use
- Spatial planning
- Improve irrigation and agricultural drainage system
- Land cover
- Involve and work with many stakeholders
- Crop monitoring

- **Access To finance**

Access to Finance was also indicated as another hindrance for the agricultural development.

Agricultural Finance is also facing effects of climate change. Mr ODHIAMBO who is Head of Business Development & Client Services at KCB Bank mentioned that the biggest problem is that farmers lack the sense of practicing farming as business. They need to be more business oriented. Risks are on both sides: on Financial Institutions, but also on farmers.

Proposed solutions by the participants:

Participants found that satellite data can be used to solve the access to finance challenge by:

- Improving the lenders' experience
- Availing climate change monitoring information
- Developing a good crop monitoring system
- Creating awareness
- More advice
- Helping farmers to become more business oriented in their projects.

In summary, a joint action between banks, insurance companies and farmers can help to mitigate risks in agriculture and allow farmers to access finance.



### **VIII. Way Forward, and Follow-up actions**

Closing the workshop, Mr. Ivo invited anyone who is willing to apply to the fund, to begin by registering his company/organization on NSO's website ([www.spaceoffice.nl/spacedirectory](http://www.spaceoffice.nl/spacedirectory)) for a better matchmaking with Dutch companies and send draft proposals as early as possible to void stress of last minute submissions.

A representative of Rwanda Meteorological Agency informed the participants that in Rwanda Meteorological Agency have many unused data. He invited them to come and visit the Agency and get data for their project.

- More info on NSO website: [www.spaceoffice.nl/g4AW](http://www.spaceoffice.nl/g4AW)
- E-mail: [g4aw@spaceoffice.nl](mailto:g4aw@spaceoffice.nl)

## **Annex A: G4AW workshop programme**

### **How to contribute to improved food security for smallholders in Rwanda Geodata for Agriculture & Water (G4AW)**

**Matchmaking & information Day  
Wednesday May 21, 2014  
Location: Umubano Hotel, Kigali**

<b>09.00 – 09.30</b>	<b>Arrival, registration</b>
<b>09.30 – 10.00</b>	<b>Welcome and general introduction</b> Netherlands Embassy/Ministry of Agriculture Netherlands Space Office
<b>10.00 – 10.30</b>	<b>Satellite based information services for Food Security</b> (NSO: agricultural cycle and satellite information)
<b>10.30 – 11.00</b>	<b>Coffee break</b>
<b>11.00 – 11.30</b>	<b>Stakeholders, user needs and opportunities in Rwanda</b> (Agri Pro Focus/Consultant: Presentation Quick scan)
<b>11:30 – 12:00</b>	<b>G4AW Facility: Goals &amp; How to tender?</b> (NSO: G4AW overview)
<b>12:00 – 13.00</b>	<b>Lunch</b>
<b>13.00 – 13.15</b>	<b>G4AW possible business cases (selected from Quick Scan)</b> (Facilitator)
<b>13.15 – 14.00</b>	<b>Match making 1</b> (Facilitator: interest in cases, solutions, own role)
<b>14.00 – 14.30</b>	<b>Coffee break</b>
<b>14.30– 14.45</b>	<b>Conclusion: Information chain and good partnership</b> (NSO: examples of advisory and financial service chain)
<b>14.45-15.45</b>	<b>Drinks</b>

## Annex B: List of participants

No.	Name	Organisation	Type of organisation	Location	E-mail	Tel
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