



# Space for Food Security

The digitalisation of  
smallholder agriculture and  
pastoralism

*The role of user engagement,  
capacity building and  
entrepreneurship*

June 10, 2021 - Ruud Grim (NSO)



**G4AW**  
GEODATA FOR AGRICULTURE AND WATER

Netherlands  
**Space**  
Office



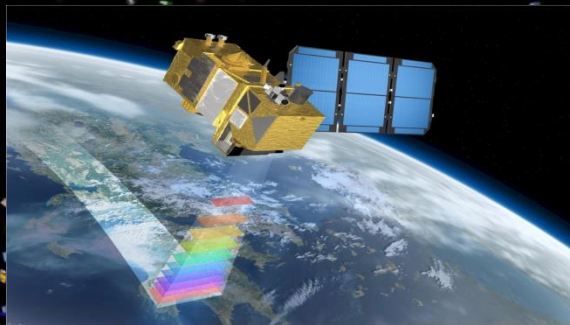
## **Digitalization:**

- **Connectivity increases**
- **More public & private-owned satellites**
- **Increasing technologies (AI, ML, crowd sourcing)**
- **More emphasis on data policies**





**Sentinel-1**



**Sentinel-2**



**Sentinel-3**

**Open and free satellite data**



Since 2014, the Geodata for Agriculture and Water ([G4AW](#)) improves food security in developing countries by promoting the creation of digital advisory and/or financial services based on use of satellite data.

- 4,5 mio farmers and (agro-)pastoralists farmers
- 60 (+30) mio €
- 25 projects
- 15 countries



*Netherlands Space Office (NSO) is executing this programme, commissioned by the Dutch Ministry of Foreign Affairs.*



#### NUMBER OF FOOD PRODUCERS

**3,827,100**

Participating and trained  
in using G4AW services



**30,4%**

Female users  
(direct reach)



**44,3%**

Young users  
(direct reach)

**1,418,900**

With improved livelihoods

Contributing to:



**1,142,800**

Subscriptions of G4AW services



**4,807,000** ha

Land managed by reached farmers

## Key programme elements:

- Building trust with users
- Understanding their needs
- Innovation (new services)
- Capacity building
- Training
- Public Private Partnership
- Entrepreneurship
- M&E and customer satisfaction



# GCA Food Security: G4AW as early adaptor

## Goals for 2025

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### **Build enabling policy and institutional frameworks**

for climate-resilient local and regional markets that benefit small-scale producers in 10-15 countries. Also, engage with 20 Africa-wide institutions to ensure South-South learning.

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### **Catalyze sustainable and resilient African food markets**

by scaling up the private sector-led initiatives on climate-resilient value chains in 4 African countries, by 2030 mobilizing \$1 billion private investments for implementation in 10 African countries.

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### **Scale up access to Digital Climate Advisory Services**

for at least 300 million farmers globally, including at least 20 African countries, and associated services, for farmers and their service providers.

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## Services:

Routing of herds  
(avoiding agri zones)  
Market information

## Channels:

Call center (Orange)

## Results:

STAMP (2019):  
>75k pastoralists  
MODHEM (2020):  
>65k pastoralists

Scaling to Niger  
(starts June 2021)

### Impact STAMP

Lower mortality rates for cows (23.9%)  
Less herd loss: 160 euro (saving)



STAMP (Mali) / MODHEM (Burkina Faso)



## Services:

Drought insurance  
(localized)

## Channels:

Local insurance companies  
Farmers cooperatives  
AIC, Planet Gaurantee

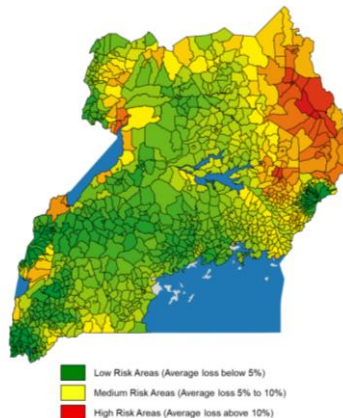
## Results:

farmers insured  
67,000 (2018)  
150,000 (2020)

### Insured versus Uninsured

Less selling assets at distress before  
drought windows (4% / 21%)  
Leaving farm for other work (4% / 15%)  
Lower own consumption (16% / 35%)

Uganda Risk Rates (Generic Product)



SumAfrica (Uganda, Mali)





## Services:

AgriCoach, Nutrition Coach,  
Online fertilizer and seeds  
savings, payment and  
credit, HealthCoach  
(Covid-19)

## Channels:

G50 'Extension officers'  
Mobile device app

## Results:

~170.000 smallholder  
families in Burundi  
2021: scaling to 400.000  
(2.3 mio people)



## Impact:

Farmers rating on AgriCoach

**9.3** out of 10



**227%**

Bean productivity (double)



**65%**

Increase in application of GAP's



GAP4A (Burundi)



## Services:

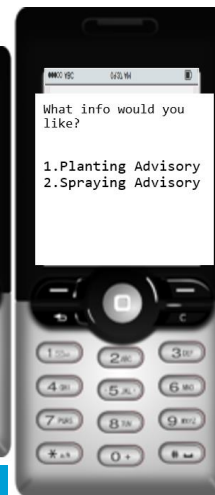
Weather information  
Agri advisory  
(planting, spraying)

## Channels:

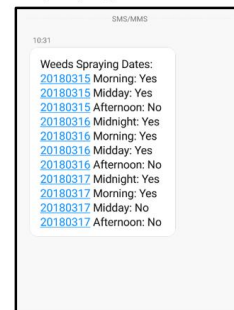
Android App  
USSD  
Extension officers  
"Resellers"  
In 11 languages

## Results:

>300k farmers reached  
>scaling potential is large



Example of output for info  
about spraying for weeds



Rain for Africa (South-Africa)



## Services:

Weather information & alerts

Agri advisory for 3 crops  
(planting, fertilizer, irrigation)

Land suitability (B2B)

## Channels:

Agent services

Android Telegram

Mobile movies

## Results:

Started June 2019

408 agro agents registered



@KresBot



Bom dia Willianne! 🌸 ♀ Parece que chuva média hoje e amanhã.  
Só uma dica 🙌  
Hoje e amanhã são adequados para preparar terreno.  
Espero que ajude 😊

[meu site pessoal](#)



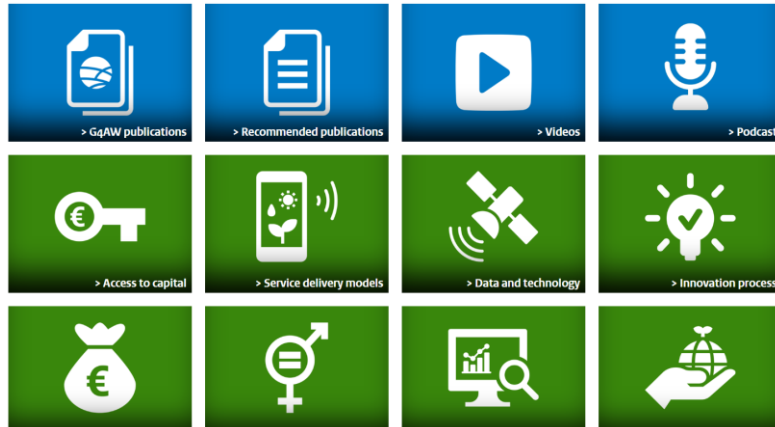
Mavo Diami (Angola)





Inform and inspire a wide audience:

- (International) policy makers
- Providers of satellite data & services
- Financial institutions / impact investors
- NGOs
- More...



## Outreach

Find G4AW resources





## Questions?

## Discussion:

- How can you support scaling?

## What's next?



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#### **Scale up access to Digital Climate Advisory Services**

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# Thank you for your attention!

The G4AW is a programme  
commissioned by:



Ministry of Foreign Affairs of the  
Netherlands





## Lessons Learned G4AW

- Two stage project
- Implement user-centered approach & digital inclusion using active M&E
- Bundling of services provide benefits (e.g. free advisory with buying inputs)
- Education & trust remain crucial success factor (e.g. farmers are more risk taking rather than to pay for insurance)

### Stimulating smallholders' access to emerging AgTech and FinTech markets, Part 1: Users and Services, Summary Report 2021



Space for Food Security  
Stimulating smallholders' access to  
emerging AgTech and FinTech markets

Part 1: Users and Services: Summary Report

- Weather information and forecast crucial
- Better soil data needed for good fertilizer advice
- Develop service delivery to be flexible for adaptations and scaling



## Lessons Learned G4IFF

NpM Geodata for AgTech and FinTech; what have we learned?, March 2021



### **Geodata, a paradigm shift for inclusive finance!**

- Geodata for credit scoring improves the current business process.
  - Higher production, increased repayment rate, improved prediction of non-payment, reduced processing time, and reduced operational costs.
- The number of farmer customers is increasing, but revenue generated is still relatively low. Reaching scale is a condition to break even or make a profit.
  - High upfront costs of service development
  - More investment needed to reach scale



## **True Clients:**

This episode deals with the basic: how relevant are services based on satellite data for smallholder farmers?

## **The Power of Coalition:**

This episode deals with the challenges that PPPs face: is there a recipe for a good partnership?

## **Catalyzing Inclusive Finance:**

The third episode deals with the role of satellite data in increasing financial inclusion: how does this work?

## **More?**

## Podcasts

### **Why:**

- People are tired of webinars and can listen while walking
- Large and active audience
- Relatively affordable
- Good dynamics: critical but controlled
- People focus on the actual story being told





# AgriCloud App



**AgriCloud**  
Weather Impact  
Everyone

UNINSTALL

OPEN

100 Downloads  
4.2  
Weather  
Similar

Farm specific advice for farmers and extension officers in South Africa

WHAT'S NEW  
Improved login functionality

READ MORE

