

From Early Stage to Scale Sustaining results of G4AW Program



G4AW Regional Workshop 17th and 18th May 2018



From Early Stage to Scale Sustaining results of G4AW Program

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Acronyms

AGRA	Alliance for Green Revolution in Africa
CropMon	Crop Monitoring Support Services
CTA	Technical Centre for Agricultural and Rural Cooperation
EARS	Environmental Analysis and Remote Sensing
EKN	Embassy of the Kingdom of the Netherlands
FI	Financial Institutions
GAP4A	Good Agricultural Practices for All
GIACIS	Geodata for Innovative Agricultural Credit Insurance Schemes
ICS	Investing in Children and their Societies
IFDC	International Fertilizer Development Center
KCCA	Kenya Civil Aviation Authority
MoFA	Ministry of Foreign Affairs (Netherlands)
MUISS	Market-led, User-owned ICT4Ag-enabled Information Service (MUIIS)
ICT	Information Communication Technology
NADiRA	Nurturing Africa Digital Revolution for Agriculture
NGOs	Non Governmental organisations
NSO	Netherlands Space Office
NUCAFE	National Union of Coffee Agribusiness and Farm Enterprises
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
STARS	Spurring Transformation for Agriculture through Remote Sensing
SIKIA	SAGCOT integrated Knowledge and Information for Agriculture
SMS	Short Message Service
SUM - Africa	Scaling Up Micro-insurance in Africa
PPP	Public Private Partnership
WUR-PPS	Wageningen University Plant Production Systems Group

Summary

On 17th and 18th May 2018 NSO and MoFa in collaboration with WaterWatch Cooperative and AgriProFocus organized a regional workshop to share results, lessons learned and prepare for the next phase of market introduction to create impact at scale of G4AW projects. The key question at the workshop was whether G4AW is ready for the market and what conditions are necessary to accelerate integration of the Geodata-based services in the market in the East Africa region?

The workshop consisted of several sessions with the opening remarks made Sanne Willems, the First Secretary of Food Security at the Embassy of the Netherlands in Nairobi. Sanne stressed on the need to find the missing elements to bring G4AW to scale. Sanne's challenge to the G4AW projects was, G4AW being a 60 million Euro from 'satellite to fork' project. How do they translate it to benefit the farmer since data alone is not enough?

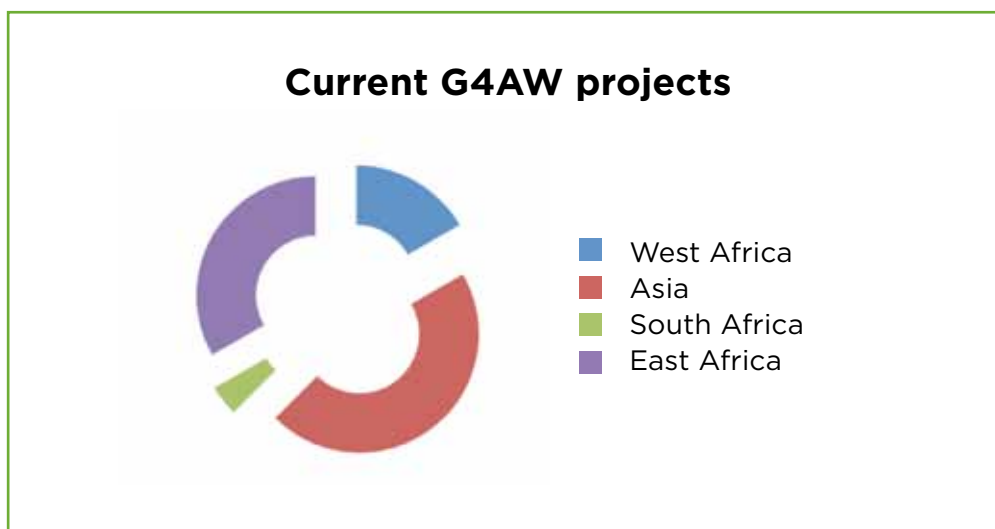
Adri Bakker of the Netherlands Space Office shared an update on the overall objective of the G4AW programme. From Bakker's update, G4AW aims to improve food security in developing countries by using satellite data for advice and decision making. He noted that the use of satellites has added value, including ability to be used by multiple users, with near real time results, homogenous data and a global access. Adri challenged the participants present to ensure that they steered away from competition and challenge, make the workshop a marketplace of ideas for scale up of G4AW results.

Sharing experiences within the G4AW-projects in East Africa, gave a number of important lessons to improve the uptake and scaling conditions:

- **Proof of market:** Most G4AW projects have developed a good 'proof-of-concept' but are struggling to develop a sound business model and struggle to bring the product at scale to the market. This was attributed to the fact that the design of the projects lacks a clear business model from the start as new markets have to be created,
- **Transitional Period:** Generally three year duration for the projects is not sufficient to move the projects to scale. More time is needed because a new market - of G4AW - is being created in the countries.
- **Inclusiveness:** Within the G4AW projects during the first years of implementation parties were focused on developing a single service to reach scale. The reality however shows that stand-alone services are difficult to market while integration of services in existing or other services and applications have better chances. Services developed by G4AW projects could then be complementary to what already exists and is trusted by farmers.
- **Focus on farmer in the value chain:** The focus in the G4AW projects is on reaching smallholder farmers. This is understandable as the program intends to reach impact with these type of farmers. However smallholder farmers are part of a broader value chain and it is important to develop services within the context of these value chains. It is favourable to focus on intermediates businesses instead of the smallholder farmer.
- **Business environment:** Many projects come into a more serious business mode only towards the end of the project hence this might impact on sustainability of the solution and therefore the uptake of services.
- **Willingness to pay:** Farmers are not always able and/or willing to pay for the offered specific services.

1. Introduction

In 2014 the Netherlands Space Office (NSO) and the Dutch Ministry of Foreign Affairs (MoFa) launched the 'Geodata for Agriculture and Water' (G4AW) program. The goal of the program is more effective use of inputs, improve output of agricultural, pastoral and fishing sector and increase sustainable food production. G4AW Program aims at least 10% increase in food production and/or income, where possible in combination with at least 25% more effective water use and at least 10% more effective use of inputs such as fertilisers, seeds and pesticides. G4AW promotes and supports private investments for large scale, demand driven and satellite-based information services. It provides a platform for partnerships of public organisations, research institutes, private sector operators, NGO's, farmer organisations, satellite data/service operators, the private (agricultural) sector and transmission operators. A mid-term review of the program carried out in 2016 indicated that the outlook in some projects is positive while a number of issues also need further attention¹. Out of the 23 G4AW projects being implemented, only GIACIS is complete, but more will finish the coming year.



On 17th and 18th May 2018 NSO and MoFa in collaboration with WaterWatch Cooperative and AgriProFocus organized a regional workshop in Nairobi Kenya, to share results, lessons learned and prepare for the next phase of market introduction to create impact at scale of G4AW projects. The key question at the workshop was whether G4AW is ready for the market and what conditions are necessary to accelerate integration of the Geodata-based services in the markets in the East Africa region. The Regional Workshop was chaired by Harry Derksen (Waterwatch Cooperative).

OUTLINE OF THE REGIONAL WORKSHOP

- Opening and keynote by Netherlands Embassy in Nairobi
- Introduction to G4AW programme and its objectives
- G4AW projects in East Africa
- General context in which G4AW works
- Way forward: what is needed to scale results from G4AW projects?

¹ <https://g4aw.spaceoffice.nl/en/about-g4aw/publications/>

1.1. Keynote, Sanne Willems, Embassy of the Kingdom of the Netherlands

Sanne Willems, First Secretary Food Security at the Dutch Embassy in Kenya made the opening remarks noting that G4AW is one of the initiatives financed by the Ministry of Foreign Affairs. In addition to the different programs funded by the Ministry directly, the Embassy in Kenya is supporting different value chains (horticulture, dairy and aquaculture). Particularly the Embassy supports agri-food and water sectors where a number of Dutch companies are operating in.

On Aid to Trade Ms Willems emphasized that the policy transition of the Dutch government from aid to trade and investments in middle income countries means that less aid will be made to Kenya which is now a middle income country; more focus will be on trade between the two countries. Despite this shift the Government of Netherlands recognizes that Kenya is still grappling with high unemployment rates hence there is focus on supporting initiatives such promoting youth in agriculture to address unemployment.

Regarding G4AW, Sanne stressed on the need to find the missing elements to bring G4AW to scale. Sanne's challenge to the G4AW projects was, G4AW being a 60 million Euro from 'satellite to fork' project. How do they translate it to benefit the farmer since data alone is not enough?



Delegates during networking coffee

1.2. G4AW Facility State of Affairs, Adri Bakker, Netherlands Space Office

Adri Bakker of the Netherlands Space Office shared an update on the overall objective of the G4AW programme. From Bakker's update, G4AW aims to improve food security in developing countries by using satellite data for advice and decision making. He noted that the use of satellites has added value, including ability to be used by multiple users, with near real time results, homogenous data and a global access. The programme aims to improve food production and income of smallholder farmers through more efficient use of inputs and weather information. A number of public private partnerships exist to stimulate entrepreneurship, achieve financially sustainable (advisory and finance) services at the end of the program which the projects need to tap into.

There are 23 projects running in 14 countries. For these projects to reach a critical mass of farmers will be dependent on a number of success factors:

- Business model employed
- Specific market problem
- Delivery mechanisms
- Embedding in local context
- Understanding user needs
- Added value of geo data among others

Adri asked the participants present to ensure that they steered away from competition and challenge, make the workshop a marketplace of ideas for scale up of G4AW results.



Delegates during the plenary

2. G4AW Projects East Africa

This section gives a summary of the different projects in East Africa at the workshop. Each project gave a description of the intervention, the target of the project and lessons from the project (the pain, the gain and promise of the project). The presentations focused on finding the potential for scale up from the early stage results.

• Market-led, User-owned ICT4Ag-enabled Information Service (MUIIS)

The MUIIS project is being implemented in 4 regions consisting of 50 districts in Uganda, with a consortium of partners led by CTA. The project seeks to reach over 350,000 small holder farmers with weather alerts, agronomic tips, index based insurance and loans/credits. The targeted value chains are; maize, soya bean, sesame, and beans. As at 2018, over 233,000 farmers had been directly reached, and 5 out of 10 farmers reached were women. 150,000 farmers had been digitally profiled as of December 2017 and 35% of them are under 35 years. The key lesson from MUIIS was the need for the use of media (different channels and platforms) to communicate to the target audience and to attract relevant partners in the projects. Other lessons are:

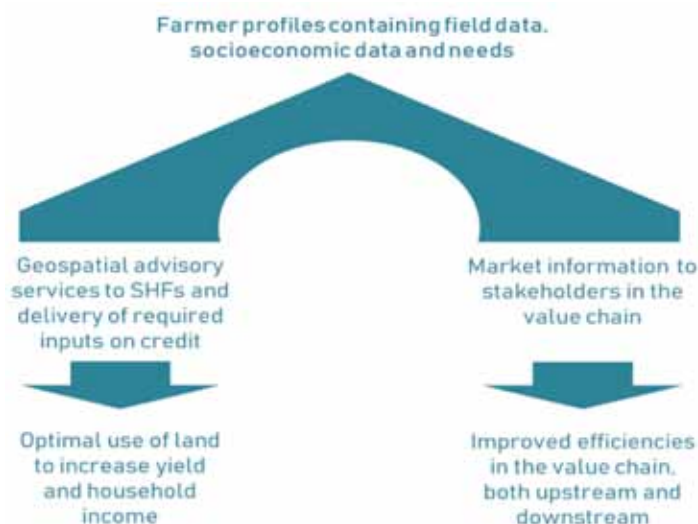
- Whilst partnership is critical, focus should be the goal of what needs to be achieved,
- For **complex partnerships**, management and operational issues should be resolved from the outset,
- It is important to capitalise on **human resources** within the communities,
- It is important to involve **business minds** that can turn the ideas to profit and
- Before making a decision on ICTs to be deployed should be only after **baseline/user needs assessment**

For more information find it at [MUIIS](#).

• Geodatics

Geodatics is a social business start-up that integrates geodata, satellite data and farm typologies into tailor made advice for smallholder farmers. Geodatics aims to provide more than 200,000 smallholder farmers with tailor made fertilizer advice, market information and farm management support. This will help optimize nutrient application and increase their farm income and production. The partners in Geodatics are; ICS (Investing in Children and their Societies, Netherlands), Agrics Kenya, Agrics Tanzania, Biomass Research (Netherlands), Manobi (Senegal) and WUR-PPS (Netherlands). The project started in September 2015 and ends in December 2018.

Through Geodatics, farmers are provided with tailor-made nutrient advice, based on farmer profiles, soil conditions, climate, weather patterns and yield potential. Farmers are also provided with inputs on credit. This ensures that the farmers are using optimal nutrient strategies for their individual situation for improved yield and return on investment.



The lessons learned while implementing this project:

- Smallholder farmers are not a homogeneous group therefore information services must be offered in a value chain approach
- The gap between content and market has to be bridged for scale up to take place
- It is challenging to connect a technically sound product to the client's reality since most farmers might not be in a position to afford
- The product seems too complex for many farmers
- Communication through digital devices has not worked out well, hence need to find a new approach

To read more go to [Geodatics](#).

• Geodata for Innovative Agricultural Credit Insurance Schemes (GIACIS)

This project seeks to expand financial service delivery to smallholder farmers in Ethiopia with a Geodata-driven risk-mitigation (insurance) product that offers a basic safety net to protect them against weather related perils. In partnership with local financial institutions, the insurance product offers a bundled credit facility to purchase agricultural inputs. Although scale has not yet been achieved; there has been government ownership of the product and ecosystem more than expected. Farmers have also demonstrated ownership of the product since it serves their needs. This shows that a good product and partnership with the right actors is critical for success.

Farmers however cite the inability to link with credit and absence of premium subsidy as their disappointment in the product. At present, no credit has been linked to the product, however if the project goes to scale, the business case is viable for all.

Key lessons from this project are:

- Public Private Partnership (PPP) is the best for agricultural insurance
- Intensive awareness creation/ product training is must
- Single Peril Index (drought) only may not be sustainable
- Sustainable satellite data should be ensured and local technical capacity in managing satellite data developed as part of sustainability of the project.

For more on this project, go to [GIACIS](#).



Workshop participants interacting between sessions

• **Good agricultural practices for all (GAP4A)**

This project started in 2018 led by Auxfin International, seeks to provide advisory services via a new integrated technological platform, with apps such as:

- Crop selector (what to grow),
- Activity timer (when to grow) and
- Good agricultural practice (how to grow).

The consortium partners include Auxfin International, Waterwatch Cooperative, Nextview, Weatherimpact, eLeaf, Auxfin Burundi, R2000+, IFDC, Ministère de l’Agriculture et de l’Elevage Burundi.

The project is in inception phase; not much experience could be shared.

Strong points in the design of this project are:

- Good consortium partners with sufficient expertise and motivation are essential,
- Technically real and fairly detailed project plan makes a business case,
- Clear business agreements upfront,
- Partners have background of building commercial products therefore are not interested in one-off products.

• **Crop Monitoring Support Services (CROPMON)**

CROPMON aims to develop and make available an affordable information service that provides farmers –including smallholders– with information that helps them to make improved farm management decisions during the growing season.

By May 2018, CROPMON had managed to have an operational SMS service reaching 12,000 farmers through texts on a weekly basis. In addition, CROPMON has established proof of

concept and received positive feedback from end users. Strong points and constraints include;

- Steady growth in numbers,
- Proven continuous improvement in accuracy/value of the service,
- Slow start in the first project year,
- Difficulty in realizing a business setup.

Despite these achievements CROPMON anticipates that farmers' willingness/ability to pay may prove a challenge moving forward. But opportunity lies in the potential of adding information service to existing products or services.

Lessons from CROPMON:

- Strong points: there is need for a fast learning curve (this enables implementers take action early, learn, adapt, try again hence perfect the product).
- Weak points: Unclear long term vision of the CROPMON beyond the current funding.
- Technically the service is ready, but is being expanded and improved to fit specific needs of different users groups.
- At present, farmers willingness/ability to pay may prove a problem
- There is need to add information service to existing products or services to enable wider usage and attract investments.

For more visit [CROPMON](#)

• **Scaling Up Micro-Insurance in Africa (SUM-Africa)**

SUM-Africa uses satellite-based information to provide low-cost drought(index) insurance for smallholder farmers in Mali and Uganda. SUM-Africa is based on realisation that climate change and recurring drought severely affects crop production in Sub-Saharan Africa, keeping farmers stuck in poverty. Insurance can play a key role in escaping this poverty trap. Insurance is also expected to unlock credit, allowing farmers to invest in better inputs and to increase production and income. The project is led by EARS BV and other consortium members.

By 2018, SUM-Africa had:

- Insured 50,000 farmers with drought index coverage in 2017 alone,
- Developed cooperation with several aggregators for continued scale up and
- Proven business case

Some of the achievements of SUM-Africa include:

- Managed to obtain government support (Uganda)of 50% premium subsidy for smallholder farmers
- Scaling strategies identified
- Unlocking of agricultural credit with financial institutions and
- There is initial positive feedback on product performance.

What are the lessons learned from SUM-Africa?

- There is necessity of supportive institutional framework for example the government subsidy has helped demonstrate the need and viability of the SUM-Africa
- Bundling of product with other services (e.g. credit linked) is necessary if the intervention has to be sustainable
- There is need to focus on commercial commodities / well organized value chain (in this instance National Union of Coffee Agribusiness and Farm Enterprises - NUCAFE)
- Integrating product into existing organizations and financial infrastructures is important and
- More sensitization and awareness is necessary for greater success

For more visit [SUM-Africa](#)

• SAGCOT Integrated Knowledge and Information for Agriculture (SIKIA)

The SIKIA project is being implemented by a partnership, consisting of five partners that complement each other's skills and interests. TechForce Innovations (The Netherlands) is the lead partner. Other partners are:

- Alliance for Green Revolution in Africa (AGRA, Kenya),
- Kilimo Trust (Tanzania),
- Kadaster International (The Netherlands)
- Milan Innovancy (The Netherlands)

SIKIA targets to reach 125,000 smallholder rice farmers (with 0.5 to 2 hectares who farm at least 2 seasons a year) within the SAGCOT area of Tanzania with information in geo-based weather forecasts. The SIKIA project has a close connection with farmers through its partners hence are able to get buy in for the project. In addition, a critical aspect of this project is the ability to get multiple data sources and compact partnership with external technology experts for specific activities.

Lessons from SIKIA:

- Local stakeholders in Mbeya have a high motivation for geo-based weather information
- It is important to work in coordination with local governmental institutions for success
- There is need to understand and consider rice crop calendar, in terms of what is known theory versus what is practice.

For more information visit [SIKIA](#).



Delegates following the proceedings between sessions

2.1. The general context in which G4AW works

This session sought to share insights from other stakeholders present on developments, trends and the context within G4AW works. To understand the context three G4AW partners shared their experience and expertise relating to provision of information to small holder farmers.

i. Financing agriculture: Equity Group

Equity Group experience in financing agriculture was shared by Jacqueline Chepkoech of Equity Group Foundation. Equity Group seeks to be a champion of socio-economic prosperity by providing modern and inclusive financial services. Equity Group pioneered provision of financial services to small holder farmers in Kenya. Despite this, Jacqueline noted that agriculture is still perceived to be risky because of several factors:

- Low productivity at farm level, where many times most small holder farmers practice subsistence farming
- There is still high dependence on rain fed agriculture
- Market systems at time do not work well

Relating to the need for geo data within the agriculture sector, she noted that the impact of G4AW is felt when;

- Farmers get near accurate information on crop and weather,
- The accuracy in information can lead to farmers increasing their yields hence become attractive to financial service providers.

G4AW can help banks and other financial institutions get comprehensive, accurate and reliable information on weather and climate. This can help financial institutions choose where to invest in. Data should be transformed to information hence help farmers easily make decisions based on the available information.

While concluding, Jacqueline posed two questions for the G4AW projects;

- What are you offering us to de-risk more?
- How do we ensure the information on G4AW get to farmers?



Group sessions during the workshop

ii. Geodata for African smallholder agriculture: promises and pitfalls

Pierre Sibiri Traore' from Manobi made a presentation on the promises and pitfalls of Geodata targeting smallholder farmers. Pierre's presentation focused on two cases which sought to provide small holder farmers with information through geo-data. The cases cited were;

Spurring a transformation for agriculture through remote sensing (STARS) Project

This is a research project which looks at ways to use remote sensing technology to improve agricultural practices in Sub-Saharan Africa and Asia. One of the value proposition in this project is promoting transparent land tenure information systems by providing subscription based rural land tenure information can enable farmers be more productive.

Some of the lessons from this project are;

- The determinant of small holder productivity and performance is often not what we think. Variability in quality and timing of agronomic operations often overrides seed type, fertilization rate, climate and soils.
- There is need to focus on the entire value chain and not the farm.
- Farmers are very good at optimizing their resources.

Nurturing Africa Digital Revolution for Agriculture (NADiRA)

This project seeks to accelerate Africa's agricultural transformation through the incorporation of Earth Observation in digital smallholder value chains. The theory of change in this project is:

- mainstreaming of satellite imagery, connected objects and mobile field data inside digital service platforms will facilitate real-time monitoring of agricultural practices, farmer compliance and field-scale performance,
- It will thus reduce investment risks for agro-industrial stakeholders interested in contracting smallholders, notably bankers, insurers, input suppliers and food processors.

The main lesson from the NADiRA project is that while small holder farmers are risk averse, bankers are even more risk averse.

Key lessons and takeaways from Sibiri's presentation are:

- It is important to understand the context, nurture and demand for digital technologies before investing in them
- Most small holder farmers most of the time will not buy the services offered
- For geo-data services to succeed there is need to take a holistic value chain approach. This helps in achieving relevance and distributes costs for geo-data and technology services

iii. Beyond Projects; reaching millions

Ronald Lanjouw from Waterwatch Cooperative focused on the question how we can reach millions of smallholder farmers with our geodata-based solutions. At present most companies in the field of G4AW operate on a project-to-project based approach using subsidies mainly from governments and international institutions. This allows these companies to proof their concepts, carry out pilot programs and develop their business until the moment they are ready for the market.

Larger Agribusiness companies see the value of working with large sets of data to do predictive analysis. The market is more and more demanding transparency and traceability: where do their products come from and under what circumstances are these being produced. Customers demand more and more sustainable products: healthy food and free from child labour. The biggest challenge most AgriBusiness companies face is that they have no direct connection with the smallholders from whom they source their products.

3. Key actions to promote scaling up of G4AW

Participants discussed in an interactive session the way forward. Five themes were discussed in five groups about ways that G4AW projects can move from early stage to scale. Each group discussed the five issues below consecutively and made the outcome a nice array of opinions.

i. Business models

This group focused on which business models within the projects are working and how these models can be used to promote the scale of the G4AW projects. This group brought to fore the fact that most G4AW projects had not fully developed their business model since most did not have a private sector partner who could scale the model beyond the initial funding. Most projects were yet to establish revenue streams, for this to be established there is need to have entrepreneurs at the helm of the projects. Most of the projects need to partner with agribusinesses in order to be able to define a more sound business case.

ii. Competition or cooperation

This group was informed by the fact that there are many initiatives within the geodata for agriculture and water field, but the question is how to foster cooperation to enable the scale up of G4AW. This session concluded that the role of the funder and fund distributor is to facilitate collaboration, as cooperation cannot come naturally. The regional workshop presented an opportunity for fostering cooperation among the different G4AW projects. While there is need to foster cooperation/collaboration, the question is, how far should cooperation go? In the discussion, there was consensus that cooperation should give way to competition among private sector companies to enable scale of the business models that have proof of concept and business case. The challenge for cooperation and collaboration is that most private sector companies have their intellectual property to protect and generally the companies cannot share specifics of their business models. They should be aware of common values in developing new products and reaching new frontiers together.

iii. Agribusiness in G4AW

In understanding the scale of G4AW projects, this group focused on the how agribusinesses can contribute to this. Most G4AW projects as designed currently have a huge focus on small holder farmers as opposed to agribusinesses. Some of the recommendations from this session include

- There is need to include agribusinesses in the design and implementation of projects to enable easy scale and ownership by agribusinesses.
- Support farmers in terms of finance and expertise and make them see what the value is in using geo data to make decision on farming practices.
- To achieve scale there is need to include both small holder farmers and agribusinesses in the design of solutions/services through a pull approach as opposed to a push approach taken by many projects.

iv. Investments in G4AW

It is necessary to have clear approach on how to attract investments in G4AW to ensure the scaling of the results from the pilots. The major question during this session was who pays for Geodata for agriculture and water? To be able to demonstrate to value chain actors the need to invest in Geodata, it is necessary demonstrate to the actors how geodata can be instrumental in increasing the productivity of small holder farmers hence increased profits for the actors. This could include focusing on the need to de-risk the agriculture value chain.

To attract more investments in geodata for agriculture and water, it is necessary to ensure necessary technical capacity of potential users of Geodata to transform the data into information that can be used for decision making. But even with increasing capacity, it is also to package the information for different stakeholders to allow them invest in the data for instance banks would be interested in how geo data can help them increase or maximize profits while insurance companies are interested in how data can help them know how this will affect their payouts and claims. Government on the other hand can use geo data for planning purposes.

v. Strategies and enabling policies

Part of the discussion topics was legal, organisational, fiscal, informational, political, and cultural aspects that have impact on the capacity of projects to implement their work in a sustained and effective manner in their respective countries of operation. There is a need for governments to put in place supporting legal frameworks on new technologies (e.g. drones, cloud-based information). In Kenya for example a company or individual needs a license to be able to import or use drones, and a clearance from KCAA, despite the understanding that drones eg. in combination with satellites are faster and more reliable than traditional data collection methods. It was argued that the use of drones despite being used widely in developed countries, many developing countries are not receptive to them due to a number of factors.

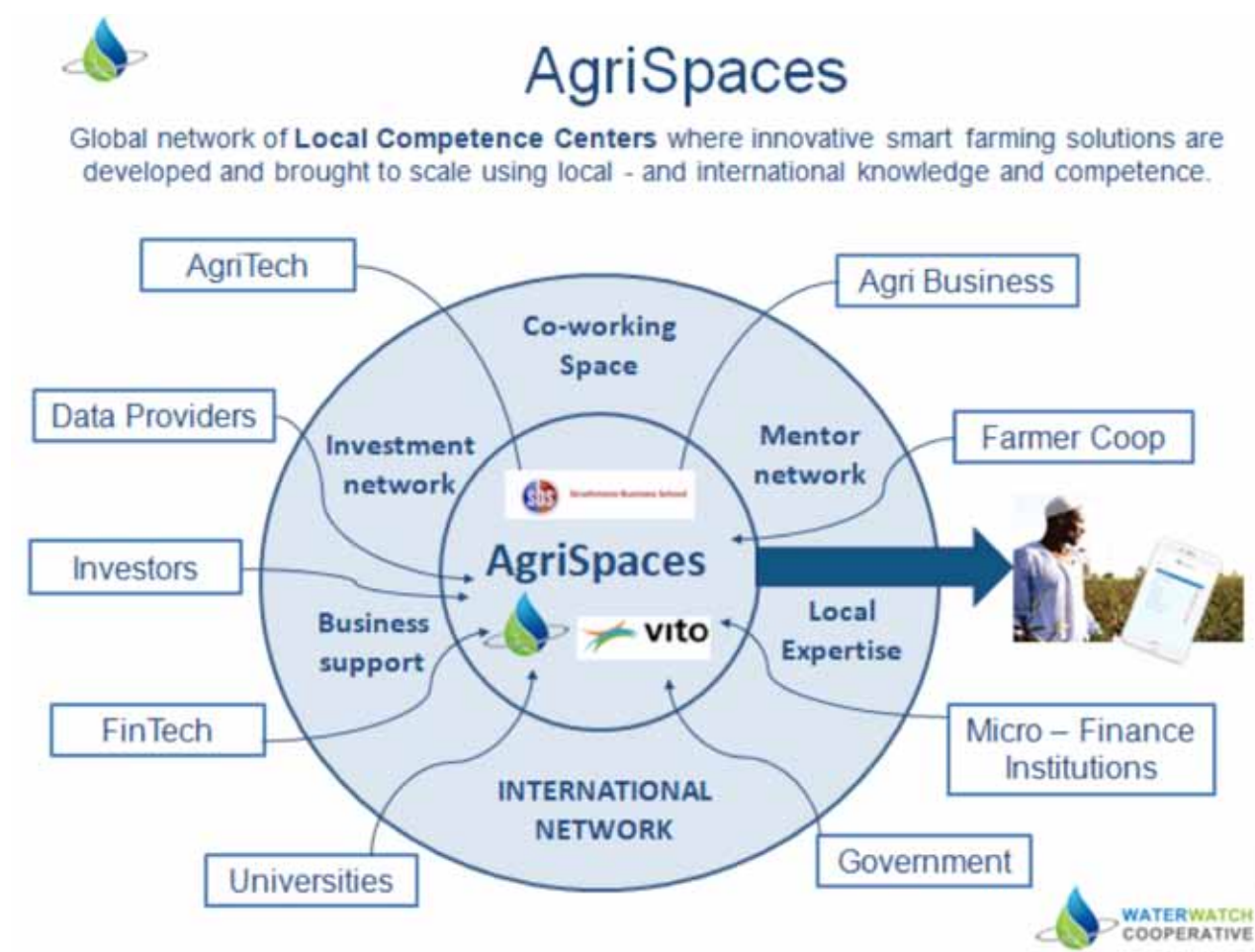
Secondly, the participants agreed that a partnership with governments is critical as they have the capacity to support in extension services and sharing information to many farmers through their devolved offices. Linked to this is the argument that in order to successfully push innovations, the public sector is critical, because at early stage of the projects it is essential in driving the demand for these products and services.

Thirdly, it was proposed that geodata use be integrated into the education curricula in addition to meteorology. For agriculture sectors to be innovative, commercially oriented and modern, components of geodata will need to be introduced to schools in order to spur interest in agriculture among the youth.

Institutionally and at project level, it was proposed that business mindset of win-win for all stakeholders need to be considered. This will therefore ensure that partners put all their efforts in ensuring success of the projects, and farmers on the other hand will feel satisfied with the services provided. Most importantly, the groups argued for more time to implement the necessary milestones within the project implementation.

4. AgriSpaces

Despite the opportunity presented by G4AW projects, the challenge lies in scaling of the results. It is against this backdrop that WaterWatch Cooperative has come up with the AgriSpaces concept to promote the scale of the initial results of G4AW projects by providing a global network of Local Competence Centers where innovative smart farming solutions are developed and brought to scale using local - and international knowledge and competence. AgriSpaces will ensure that the G4AW projects which have already passed proof of concept and working on a proof of market attract investments hence are integrated in the market guaranteeing scale-up.



The G4AW projects in East Africa have been – and still are – instrumental in the further development of essential Geodata-based services to smallholder farmers in East Africa. However the gap between the G4AW-projects and the market is still too big. It needs more time and effort to bring the G4AW products to create impact at scale and in a sustainable way.

Participants of the workshop therefore see the need for a follow-up and AgriSpaces can play the role in the further development creating a space for government, NGO's, tech-companies and other actors in the agricultural value chain to further develop these services. If G4AW intends to be a game-changer it needs to connect to other game-changers such as Uber and MPesa. Questions around the concept of AgriSpaces – location, business model – need to be worked out further the coming months.

5. Concluding remarks

In unpacking the key points of improving uptake and scaling up of G4AW, Adri Bakker of NSO emphasised the following key points:

- i. Proof of concept is not a challenge but bringing the services to a market is the challenge since many times the target market is still immature or not ready for the offered solutions. From the projects we can conclude that there is potential for Geodata in East Africa but the three year project period is not sufficient to ensure the move from early stage to scale. Therefore, a transitional period has to be defined.
- ii. There is still a gap between supplier and client of geo data hence less opportunity for scaling.
- iii. Many projects come into a business mode at the end of the project hence this might impact on sustainability of the offered solutions (proof of concept).
- iv. Projects should focus at first not only on experimenting and piloting for a proof of concept but also from the start with a clear and realistic scale up strategy.

6. Annexes

6.1. List of participants

Name of participant	Organisation
Adri Bakker	Netherlands Space Office
Alexander Valeton	Yielder
Alphaxrd Ndungu	Terrafina
Aron Fenu	Nestle
Belinda Kaimun	Acre Africa
Benjamin K Addom	CTA
Bjorn Eggens	Extra Reality
Boniface Akuku	KALRO
Carel Jaspers	Q point BV
Charles Warria	DFID/KMT
Cornelis Heesbeen	Auxfin
David Marcelis	SoilCares Research
David Njenga	IFDC
Denis Acobi	Mercy Corps
Diana Gitonga	Bayer Crop Science
Dorina Prech	AgriProFocus
Elisabeth Hijnekamp	Rabobank
Elizabeth Maina	IPS Kenya - Frigoken
Emily Oseno	Potato Project WUR
Erick Khamala	LocateIT
Francis Vanderhaeghen	VITO
G Okeyo	National Potato Council of Kenya
Gerald Githinji	Former Deputy Governor - Kiambu County
Gerbren Haaksma	Waterwatch Cooperative
Gibson Langat	Koppert Biological Systems
Gidsaf Wachira	Agri-Wallet (Dodore Kenya)
Grace Ndegwa	KIFFWA
Gustaaf van der Mheen	Agrics
Harry Derksen	Waterwatch Cooperative
Henry Mibei	CABI - PRISE
Hermen Westerbeeke	Rhea group (Kampala)
Hillary Otieno	One Acre Fund
Ido Livne	Milan InnoVincY
Jacqueline Chepkoech	Equity Group Foundation
John Jaoko	East Africa Grain Council

Joost van der Woerd	EARS
Kenneth Katungisa	UNFFE
Kirigai Kamau	CANIS
Lade Araba	Convergence
Lawrence Kenduiywa	Acre Africa
Lincoln Opio	Terrafina
Luchiri Omoto	Upande
Maureen Kuboka	Koppert Biological System
Maureen Munjua	AgriProFocus
Megeressa Miressa	Kifiya
Michiel Laheij	Lahey Consultancy
Mila Luleva	SoilCares Research
Munya Daka	Agro Consortium
Oswald Miriti	Cereal Growers Association
Patrick Vercauteren	EARS
Pauline Haaksma	GH Consultancy
Peter Kimiri	IFDC
Pierre Sibiri Traore	Manobi
Purity Kendi	Student Maseno
Rachel Ajambo	Kilimo Trust
Richard Bett	FAO
Risper Chepkonga	Kenya Seeds
Robert Mwaluseke	Kilimo Trust
Roel van Hoolst	VITO
Ronald Lanjouw	Waterwatch Cooperative
Rosemary Okello	Strathmore Business School
Sanne Willems	Netherlands Embassy Nairobi
Sebastian Oggema	SNV
Shadrack Agoki	AgriProFocus
Sonali Reparelia	Rabobank
Steven Gajadin	TFI
Teresa Wambugu	Holland Green Tech
Violanda de Man	ICS
Victor Esendi	AgriProFocus
Willie Ngomi	GSMA
Winnie Wairimu Rugano	ACRE
Zadock Adika	Equity Group Foundation

6.2. Program

Day 1:- lead (NSO)	
08:00 - 08:30	Registration of participants
Start and Introduction (Moderator - Harry Derksen)	
08:30 - 08:45	Welcome Opening by MoFa/ Netherlands Embassy in Nairobi - Sanne Willems
08:45 - 09:00	Introduction to the program and its objectives State of affairs Geodata for Agriculture and Water (G4AW)-Facility. - Adri Bakker
Part I: Projects	
09:00 - 09:10:00	Introduction of G4AW projects: <ul style="list-style-type: none"> a. goal project; b. lessons learned; c. business model challenges; d. Future prospects and conditions for successful market integration.
10:00 - 10:30	Networking coffee break
10:30 - 11:30	Continuation of G4AW projects
Part II: General context in which G4AW works	
11:30 - 12:40	Three introductions to developments in the field of Geodata for Agriculture and Water (G4AW) <ol style="list-style-type: none"> 1. Potential of geodata for African smallholder agriculture - Pierre Sibiri Traoré, Director of Research and Development at MANOBI and ICRISAT. 2. Adoption of G4AW by agribusiness - Ronald Lanjouw, partner at Waterwatch Cooperative. 3. The involvement of the finance sector in G4AW in East Africa - Equity Group Foundation
Intermezzo 12.45 - 14.00	Lunch and Market Booths with promotion of projects and supporting agents; <ul style="list-style-type: none"> • 8 G4AW projects • Rabobank • Uganda - UK IPP flood project • ACRE • Yelder • AGRA • Kilimo Trust • AgriSpaces Nairobi

Part III: Way forward: Business development Enabling conditions/Synergy and Cooperation	
14.00 - 15.30	<p>Discussion in 5 groups of 15 at 5 tables:</p> <ol style="list-style-type: none"> 1. Business Models – which business models are working; use of block chain technology considered? Moderator: Pierre Sibiri Traoré. 2. Competition or Cooperation – many initiatives initiated in the field of G4AW. What is the space for cooperation? – Moderator Maureen Munjua. 3. Role of AgriBusiness in G4AW – focus exclusively on smallholder farmers or involve Agribusinesses? – Moderator Ronald Lanjouw. 4. Investments in G4AW – What is necessary to make the step from subsidies to investments? Moderator: Zadock Adika. 5. Strategies & Enabling policies – What do we expect from governments, i.e. in the area of the promotion of open data and earth observation in agri. Moderator: Adri Bakker <p>Each table had 1 subject and 1 (fixed) moderator) and gathers ideas and suggestions. Each group has 15 min at a table, then moves on the next one. The moderator at the table clusters ideas</p>
15.30 - 16.00	Tea Break
16.00 - 16.30	Presentation of the results: 5 min per table
16.30 - 18.00	Network drinks
<p>Day 2: AgriSpaces Nairobi – lead Waterwatch Cooperative</p> <p>Goal:</p> <ol style="list-style-type: none"> 1. Explore the feasibility for AgriSpaces, a Center of Excellence in East Africa to support and develop geodata-based services for Agrifood & Water to create impact at scale. 2. Participants commit themselves to working with AgriSpaces 	
08.00 - 08.30	Registration of participants
08.30 - 09.00	Welcome and introduction to the program and its objectives
09.00 - 09.15	Recap of Day 1 – Adri Bakker NSO
09.15 - 09.45	Presentation of AgriSpaces
09.45 - 10.15	Networking coffee break
10.15 - 12.30	<p>Design Thinking Session to work on :</p> <ul style="list-style-type: none"> • Which problems we want to solve in agriculture & water, • What are the opportunities and threats, resume of yesterday's result, • How can AgriSpaces contribute in fully using the opportunities, • How can G4AW projects in East Africa link to AgriSpaces to; <ol style="list-style-type: none"> a. share and promote their results; b. learn and develop models
12.30	Closure and lunch



Information:

G4AW: <https://g4aw.spaceoffice.nl/en/>
NSO: <https://www.spaceoffice.nl/en/>

AGRIPROFOCUS: <https://agriprofocus.com>
WATERWATCH: <https://waterwatchcooperative.com>