

# Geodata for Agriculture and Water: *Insights & Reflections from G4AW*

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Geodata for Agriculture and Water (<u>G4AW</u>) improves food security in developing countries by using satellite data.





- 4,5 mio farmers
- 60 (+30) mio €
- 2014-2021
- 23 projects
- 14 countries

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







# **Topics**

- Innovation process
- Project success criteria
- Business development
- Finance
- M&E
- Knowledge sharing & communications



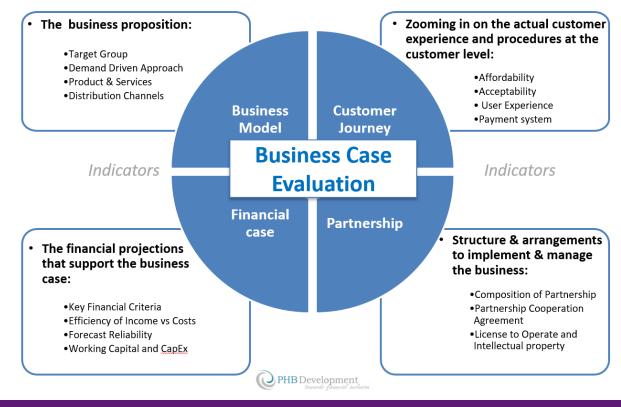






From publicprivate partnerships to businesses

Not a straightforward road, many challenges & adaptations required

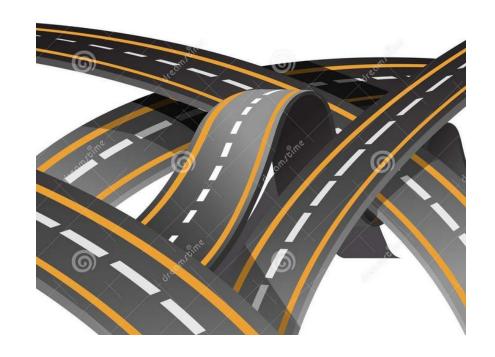






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#### Reflections on G4AW & innovation process

- (Too) ambitious
- Revolutionary approach to stimulate business-driven activities in emerging economies
- Farmers seen as client, not as aid beneficiary





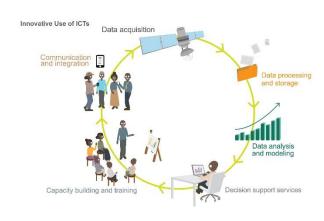






# Reflections on G4AW partnerships

- Average 6 partners is considered effective, essential roles
- User engagement & training
- Suppliers (EO data, field data, Ag / Fin. Models)
- ICT integration
- Service provider









# Partnerships / business development: evolution over 3 tenders

- 1st (2014): knowledge/research supply driven
- 2nd (2016): socio-economic development driven (NGOs)
- 3rd (2017): business driven













# Reflections: Opening new markets

- Scale potential (satellite, mobile/ICT connectivity)
- Attracting new agri & finance businesses
- Much appreciation, many innovations would not have started without G4AW subsidy



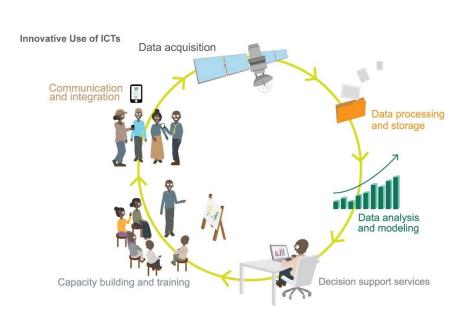






#### Success criteria: customers & clients

- Customer intimacy is crucial
- Smallholder willingness to pay is low
- B2B clients











# Services offered (initial survey)

- Weather-related: local forecasts, warning extreme events
- Finance-related, including insurance: credit profiling, risk reduction
- Market-related: information on market prices & buyers & sellers (not geodata related, but high priority of farmers)
- Certification-related: advice + sustainability monitoring
- **Disaster**-related: weather & flood risk assessment & early warning
- Good Agricultural Practices-related: e.g. pest & disease
- + Climate-related: climate adaptation advice







#### Reflections: Product-Market fit

- Customer uptake only with proven added value
- Growing season: >half year
- Use of 3G/4G connectivity allows for two-way communications
  - Farmer profiling
  - Verification (agile development)









# Reflections: Use of geodata

 Needs substantial development, testing & verification





More localized weather forecasts:



Agro-advisory: but also with also wi





















#### Success criteria: business

 Sustainable business models crucial (e.g. freemium, inclusive models)

Local service provider
& license-to-operate

**Service** 

**Products** 

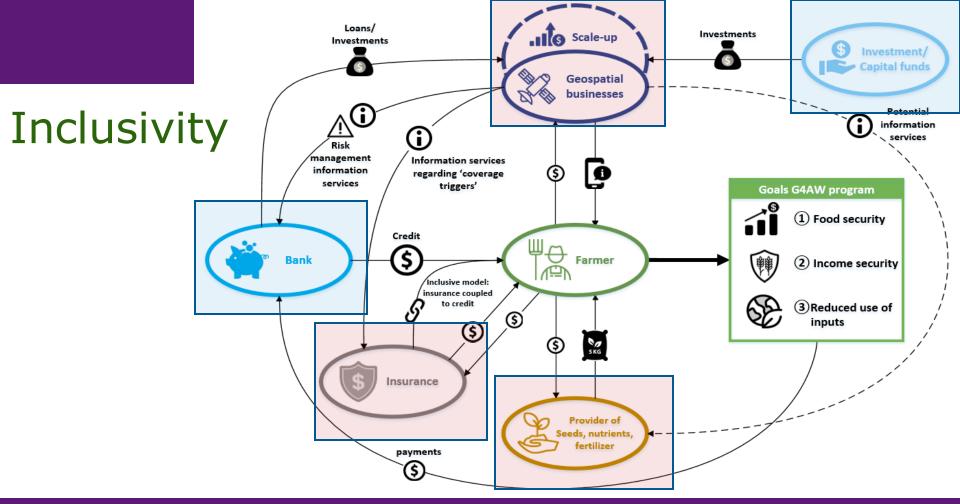
Free service

**Premium service** 











#### Business models in G4AW

- #1 Direct pay: the customer pays for the service provided (on a subscription or case-by-case basis);
- **#2** Freemium model: free general service provision;
- **#3** Loyalty model: free service provision (add-on to another service)
- Inclusive model: the service is bundled with other services
- Service model: the customer pays a (subsidised) fee or no fee at all for service provision and another stakeholder subsidizes.

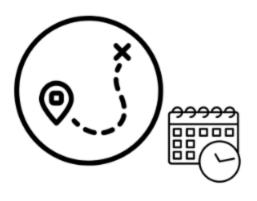






# Business development

- Business development takes time, >3 years
- Who is / will become business owner & service provider?
- More focus on B2B
- BC for each supplier in chain











grant

#### Finance

- Too few attention on long term finance (Call 1 & 2)
  - Valley of Death
  - No scaling / investments plans
- Future: B2B and additional grants
- Access to finance difficult





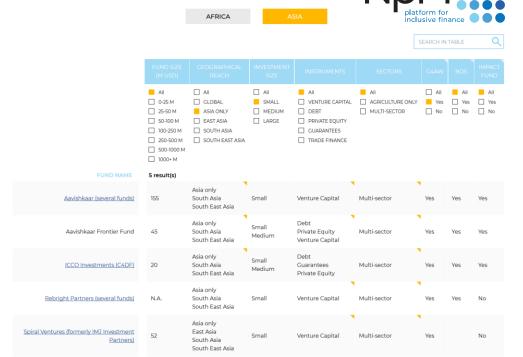




# Access to Finance

- Support through NpM website
- URL





CHOOSE REGION:



#### G4AW M&E Results 2018

#### Output:

- # food producers direct reach: 959,000
- # food producers trained: 179,000
- # food producers indirect reach : 6.8 million

#### Outcome:

- # food producers with improved production: **523,000** (2017: 67.000)
- # food producers with less use of inputs: **395,000** (2017: -)









# Observations & insights from M&E

'Farmers reached'



OUTCOME, IMPACT



- Field measurements & other citizen data important
- Specialist for M&E essential in partnership or business









# Knowledge sharing

- Knowledge sharing within and between projects is key!
- G4AW is appreciated very much by stakeholders











# Knowledge sharing & communications

- G4AW website
  - Blogs
  - Publications
  - Videos
- G4AW Linked in
- Twitter
- Thematic and/or regional workshops











# Looking forward

- G4AW "Transition Document" for projects ending
  - What is status of service & business
  - What supportive actions are needed?
    - > Political
    - > Business / market development (ownership, business case)
    - > Technical development
    - > Finance
  - Develop / scale-up / replication
- By project lead and NSO project advisor







### Thank you

G4AW is a programme commissioned by



g4aw@spaceoffice.nl





# Cross-cutting categories



Type of service	Number of projects that apply this service in round 1 & 2 (17 projects)	Number of projects that plan to apply this service in round 3 (6 projects)	Total number of projects
Finance-related	4	4	8
Weather-related	11	5	16
Disaster-related (floods)	3	2	5
Market-related	5	2	7
Certification-related	1	2	3





# Good agricultural practices



Type of service	# projects	# projects	Total number
	call 1 & 2	call 3	of projects
Crop monitoring	8	4	12
Crop selection & calendar	3	3	6
Fertiliser application	7	1	8
Pests & diseases	8	4	12
Harvest advice	0	2	2
Irrigation advice	2	2	4
Soil-related advice	5	4	9
Biomass availability & quality	2	0	2
Water availability	2	0	2



