

Government and Industry:

Opening new Markets using Satellite Data for
Smallholder Farmers and Pastoralists in
Developing Countries

GEO-ICT: Emerging technologies for value addition and
risk mitigation, Global Challenges and Opportunities,
Hyderabad, 01-24-2017

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Challenge



G4AW

GEODATA FOR AGRICULTURE AND WATER

Netherlands
Space
Office

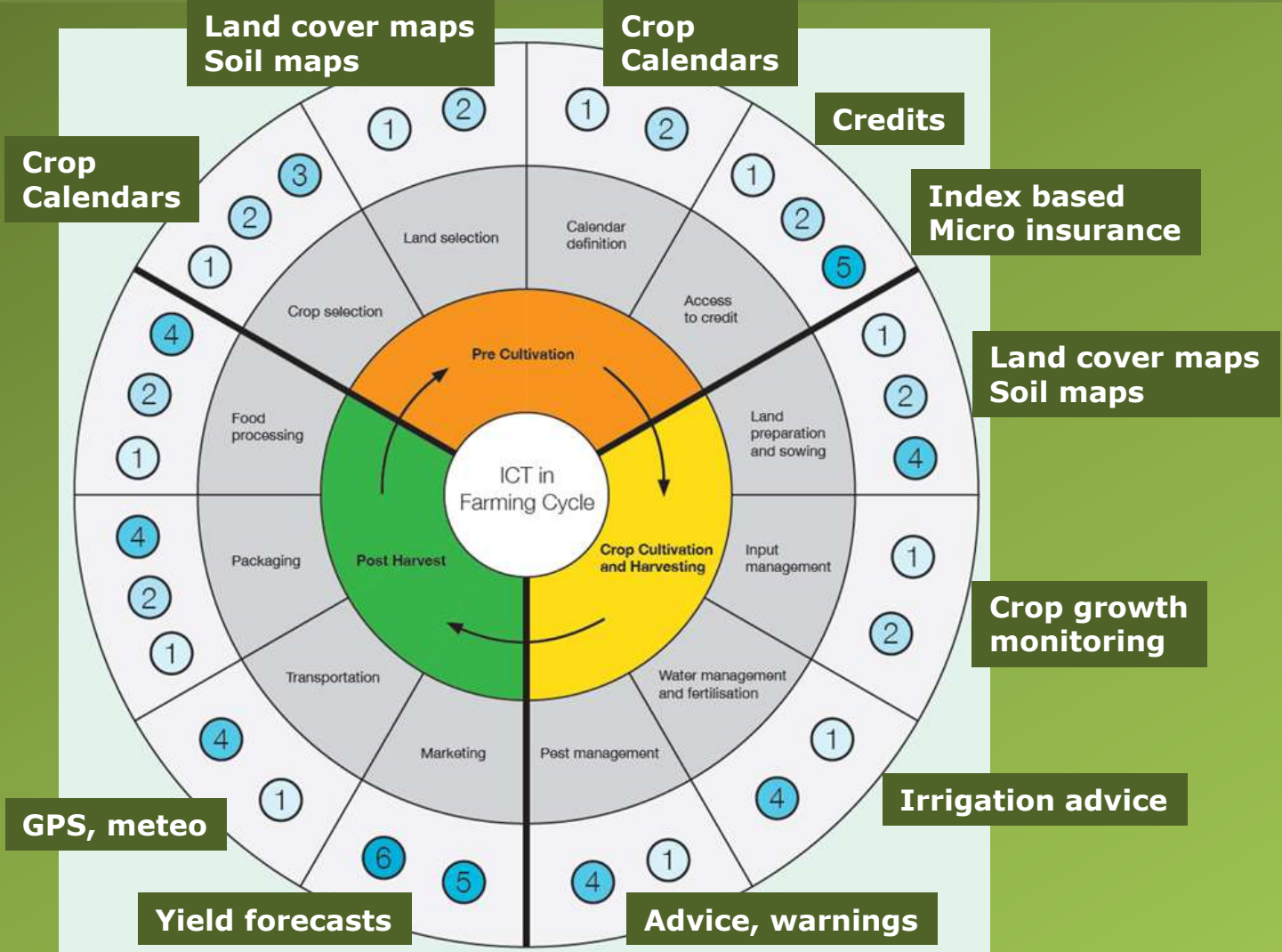
GEOSPATIAL
WORLD
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- World population
- Food production
- Climate change

- Need: better informed decisions at farmer level

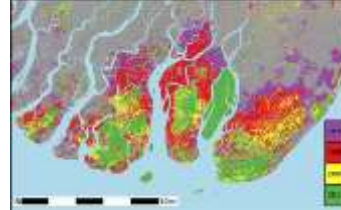
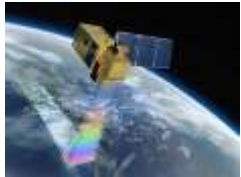


- ① Information systems including DSS/MISS/GIS etc
- ② ICT-enabled learning and knowledge exchange
- ③ Modelling solutions
- ④ Sensory and proximity devices
- ⑤ ICT-enabled networking solutions
- ⑥ Online commerce tools (eCommerce/mCommerce)



Technology Enablers

Major (technology) enablers for service provision



Satellite and other
sensor systems

Operational
infrastructure

Value adding
services

Distribution
channels

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



- 3 Calls
- 60 mio €
- 2014-2021

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

G4AW objectives



- User demand driven (information, not data)
- Improve food production and income of smallholders, more efficient use of inputs
- Organize public private partnerships
- Stimulate entrepreneurship
- Achieve financially sustainable (advisory, insurance) services at end of project
- 17 projects running in 10 countries reaching 5-10 million farmers (objective > 3 million)

Project: Sat4Rice



Partnership & project objectives



Nelen & Schuurmans

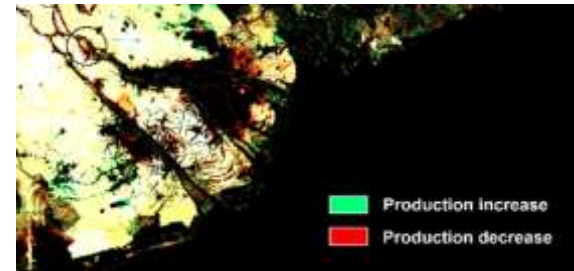


Outcome	Year 1	Year 2	Year 3
Total number of food producers using product or service	6000	87000	300000
Number of food producers with improved food production	6000	87000	300000
Improvement of food production (% yield or production increase)	5-10	5-10	5-10
Improvement in effective use of water (%)	40	40	40
Improvement in effective use of seeds (%)	50	50	50
Improvement in effective use of fertilizer (%)	30	30	30
Improvement in effective use of pesticides (%)	30	30	30
Improvement in income	10	10	10



Business Model

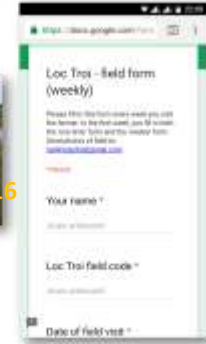
- **Improve revenues:**
 - Higher yields lead to higher income for both farmer as well as Loc Troi Group
 - Higher productivity due to more specific appliance of fertilizer & pesticides
 - Economy of scale: applicable to much larger areas
- **Decrease costs:**
 - Labor, logistics and financial processes can be improved
 - Less losses due to pest & disease, flooding or salinity
 - Lessen environmental burden of pesticides & fertilizer
- **Additional revenue stream:**
 - Free for Loc Troi farmers > providing a USP for other farmers to join Loc Troi
 - Paid service for non-Loc Troi farmers or other rice-related companies



Project: Sat4Rice

Information services

- Rice Crop Growth Monitor
 - Improving yields to improve income
- Pest & Disease Early Warning
 - Combining parameters for better predictions
- Flood Warning
 - Early warning against losses due to natural
- Drought & Salinity
 - Timely preparation and possible crop change



Granted projects: success factors

- **Business model:** Various models being deployed
- **Market:** Tackle a well-defined and specific problem
- **Solution:** Part of a portfolio of services, focus remains on a core offer with added value for client
- **Channel:** They build on already existing delivery mechanism(s)
- **License to operate:** embedding in the local context
- **Maturity:** a reproduction of an already (elsewhere) validated service



Lessons learned from running projects

- Local, active and strong **business partners** (business owner)
- **Previous cooperation** of project partners (trust)
- Role of **aggregators** for reaching users (scale up)
- Actively searching **synergy** with other organizations and ongoing activities (efficiency & effectiveness)

*Lessons
Learned*

Conclusions



- New markets are being developed
- Public private partnerships are supportive
- Innovation in organization and service provisions
- Role of business owner and aggregator are essential
- Governmental support often needed/required
 - Financially (too risky)
 - License to support
 - Access to data
 - Reaching farmers

Questions?



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G4AW Program



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Thank you for
your attention

G4AW is a programme
commissioned by



Ministry of Foreign Affairs of the
Netherlands

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