New technologies: What are opportunities and challenges for private sector development?
Rice in Asia: the **most important crop.**
Rice alone accounts for over 30% of the total crop value in Asia.
90% of the world’s rice is produced and consumed in Asia. Over 70% (900 million) of the world’s poor are in Asia.
But only few information available on where it is grown and the yields it is delivering. Despite its economic weight.

Better information on rice areas as well as actual and forecasted yields is the basis for effective food security policy and risk management measures.

Remote sensing technology can achieve that...
Sensing how rice is growing from space

What is remote sensing?
The ability to detect and interpret change on the earth’s surface without direct observation various wavelengths across the visible and infrared parts of the spectrum – usually using satellite or airborne images.

We’ve come a long way since the beginning of the 20th century:
Julius Neubroner had the idea of stripping a 75-gram camera to a pigeon. This technique was not only used in the art context but also by the military.
Regular observations with satellites provide valuable information used in policy planning.

- Use for land planning.
- Use of irrigation improvements or pest & disease control.
- Use for yield forecasts and assessments.
Can satellites help to mitigate government and farmer risks?

**Government Needs**

1. Fiscal security
2. Income provision to farmers
3. Protection to farmers

**Farmers’ risks**

1. Flood
2. Drought
3. Lack of irrigation
4. Pest and diseases

*Data provided by GIZ Philippines, 2010*
Government seeks better information rice growth... and plan for expected yields or shortcomings thereof. Local insurers offer crop insurance....

...protecting farmers against natural catastrophes

- satellite imagery
- yield forecasting
- insurance product

remote sensing-based information and insurance for crops in emerging economies
Help Governments and NGOs to better plan for food crises through better crop monitoring.

Increase efficiency and effectiveness of crop insurance solutions and turn it into a viable business also in emerging markets.

**Who is RIICE?**

**Aims**

1. Help Governments and NGOs to better plan for food crises through better crop monitoring.
2. Increase efficiency and effectiveness of crop insurance solutions and turn it into a viable business also in emerging markets.

**Timeline**

- **02/2012**: Technical proof of concept; «dry-test» of satellite-supported insurance products
- **05/2015**: Nation-wide upscaling of yield monitoring in collaboration with governments. Selected implementation of insurance.
- **04/2018**: 

**Partner**

- **Sarmap**: Satellite data procurement & processing
- **IRRI**: Ground validation & yield modelling
- **GIZ**: In-country support in three countries; implementation, access to policymakers, insurance product development
- **Allianz**: In-country support in two countries
Multi-stakeholder projects work differently

Push & Pull: Partners need a solution, not a technology

Stakeholder engaged in risk mitigation strategies look for a solution. Pitching a particular project does not meet their needs.

Irrationality of client needs: The best solution can still lose out to politics

Governments decide for a solution for political reasons, not necessarily to address a particular scientific challenge. Politics is the gatekeeper.
News to use: Eventually all will be public

Open source will be the order of the day

- Private partners will find it more difficult to hold on to exclusivity
- Governments will have to make public the results of development work
Technology-adaptation is complex
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What is the advantage of remote sensing?

- Optical remote sensing
- Synthetic aperture radar (SAR)
Making **crop insurance** part of an integrated RIICE risk management approach.

**Government’s and farmers options**

- Disaster relief programmes
- More productive crops
- Better information on yield
- Insurance

**FARMERS’ BENEFITS**

- Stabilized income and hence worthy for agricultural credits
- Less vulnerability and hence more money available for securer life
- Less likely to migrate to cities