Entry No. IRRC-0119

Category	: International Rice Research Conference
Select Theme	: Disruptive technologies and innovations
Endorsement email	:
Keyword 1	: Satellite technology and remote sensing
Keyword 2	: Mobile advisory technology
Keyword 3	: Public-private partnerships
Title of Entry	: Near real time monitoring of rice growth with satellite technology supports ICT4Agriculture
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: ICT can play a major role in improving rice farmers' livelihoods while supporting sustainable value chains. Mobile phone applications provide tools for advisory services, market information, data collection, etc. Actors across value chain benefit from new insights and key analytic to improve the efficiency and sustainability of their operations. Satellite data can support ICT for Agriculture through systematic large scale information on crop growth and performances. The constellation of Sentinel satellites launched by the European Space Agency in recent years offers an unprecedented access to free satellite images at high spatial resolution (10-20 m) and frequent revisit (5-12 days). A new rice crop growth monitoring service has been developed by SarVision and the University of Wageningen with radar images from the Sentinel constellation. Growing rice fields are automatically mapped and classified according to the rice growth stage (seedling, tillering, booting, flowering, milking, ripening, harvested). Maps are refreshed weekly, a few days after satellite image acquisition. A forecast for the next two weeks is also provided. Flooded fields are also automatically mapped, indicating fallows before transplanting or failed crops. Ongoing developments aim at including crop biomass and yield estimation. Quality assessment with field reference data show that rice growth stages are monitored with a rate of accuracy superior to 90%. The system provides near real time geo-statistics on rice cultivated areas, growth stages and flooding, feeding digital platforms and mobile applications. Extension officers have access to up to date information for prioritizing advisory tasks. Information on pests and diseases risks is extrapolated from satellite data and weather data and provided to farmers. Agro-businesses have access to new analytics to improve logistics, increase knowledge on their market and engage farmers. Failed rice crops are tracked and related to flooding events, past and current rice crop cycles are recorded to support finance and insurance services for rice farmers. The service is being implemented in Vietnam (https://sat4rice.wordpress.com/), Bangladesh (http://idss.com.bd/), Myanmar Indonesia and Tanzania by public-private partnerships involving agro-businesses and public authorities, with the support of the G4AW program (https://g4aw.spaceoffice.nl/en/) funded by the Dutch Ministry of Foreign Affairs and implemented by the Netherlands Space Office. Read more»

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