

Category	: International Rice Research Conference
Select Theme	: Disruptive technologies and innovations
Endorsement email	:
Keyword 1	: Satellite technology and remote sensing
Keyword 2	: Modeling and systems biology
Keyword 3	: Artificial intelligence/computer learning
Title of Entry	: High resolution rice yield mapping using low altitude remote-sensing (LARS), ORYZA crop growth model, and machine learning
Presenting author	: Tri Deri Setiyono
Presenting author email	: t.setiyono@irri.org
Co author 1	: Deiveegan Murugesan, Gene Christopher Romuga, Aileen Maunahan, Emma D. Quicho, Nasreen Islam Khan
Co author 2	: Luca Gatti, Massimo Barbieri, Francesco Holecz
Affiliation presenting author	: International Rice Research Institute (IRRI)
Affiliation 1	: International Rice Research Institute (IRRI)
Affiliation 2	: sarmap
Select only one type of presentation	: 15 minute oral presentation

**Abstract** : Crop yield is a very important variable in agriculture. Success in rice farming is often measured in term of crop yield. For rice varietal promotion program, crop yield is an important criterion for farmer to adopt new variety. Challenges in estimating rice yield come from the fact that this variable is complicated by interacting biophysical and socio-economic factors. Rice yield varies from field to field, season to season, and year to year. Whereas the existing Synthetic Aperture Radar (SAR)-based rice yield estimation system implemented in the Remote-Sensing based Information and Insurance for Crops in Emerging economies (RIICE) and Philippines Rice Information System (PRISM) is capable of estimating yield at acceptable accuracy of greater than 85% at sub-district level granularity, a new approach is needed to allow remote-sensing and crop modeling technology to achieve accurate and precise yield estimation at farm level. We are presenting component of this new approach namely the use of low altitude remote-sensing (LARS) data from UAV to generate leaf nitrogen concentration (LNC) and leaf area index (LAI) time series for correlating Satellite remote-sensing data and ground data. Both LNC and LAI time series data will be assimilated into crop yield simulator using ORYZA crop model through the use of machine learning approach and the updated version of rice yield estimation system (Rice-YES) interface.

[Read more»](#)

## Uploaded Files »

No files found.

