IDSS

Intelligent Decision Support System for farmers

2015 - 2019

The objective of the Intelligent Decision Support System (IDSS) project was to give reliable and timely advice to farmers in Bangladesh. This improves the farmer's decision making for the entire production cycle, de-risks farming operations and improves profitability. The IDSS service is made available through a mobile application called Fosholi.

IDSS focusses on the following crops: maize, potato, rice, vegetables (including tomato) and wheat.

The IDSS partners are ACI Limited (a Bangladeshi agricultural input and trade company and the lead partner), SNV Bangladesh (a development organisation), the Department of Agricultural Extension, Ministry of Agriculture of Bangladesh, Nelen & Schuurmans (a Dutch IT company, specialised in water management) and SarVision (a Dutch remote sensing company, specialised in radar).

Provided Services

IDSS provides a platform for the farming community with services related to advice, agricultural inputs and buying and selling. The types of services are agricultural input loans, crop management advice, crop selection advice, crop yield information, fertiliser advice, flood mitigation advice, good agricultural practices, market information, pest and disease information and advice, weather information, connection the nearest government agricultural extension officers and information on dealers. Weather information is the service most appreciated by farmers. Farmers, who use Fosholi, spread weather alerts to their neighbours, thereby benefitting the whole community.

The platform and the associated mobile app are called Fosholi. The app is developed for the Android operating system and is supported by the government of Bangladesh. Behind the app is a service architecture that makes use of the Lizard database of Nelen & Schuurmans. The data is combined with expert agricultural knowledge to provide advice on e.g. crop suitability and pest and diseases.

Satellite images, such as MODIS and Sentinel-1, are downloaded, processed, and classified for the whole country to map land cover, crop growth stage and detect pest and disease outbreaks. Time series of imagery and scenarios of flood hazards are also available for the whole country. ACI regularly collects field data through a smartphone app to improve the quality of the information provision.

Impact

The goals of the project have been achieved with significant impact among the farmers. Crop yields (for rice) of the beneficiaries were reportedly increased by 9% to 16% in the two growing seasons of 2018. A user survey showed that farmers are positive about the provided services and the Fosholi app. They indicated that they made decisions based on the information provided by the app. Training and feedback continues to improve service delivery.

ACI works closely with the Ministry of Agriculture and local NGOs to scale up the services. To make the services feasible, new client groups need to be added, such as commercial farmers. At this point there is insufficient support for inclusion and further development of the remote sensing based services.

Business Model

The IDSS partnership provides services for three types of customers: the ACI Sales Business Units (SBUs), other companies and farmers. Four services are provided to the SBUs of ACI and charged for: sales leads of agricultural inputs, instant messaging, app content subscription and management fees, and remote sensing and GIS. IDSS charges the SBUs per service and/or report and expects to generate a revenue of € 3.5 million by 2025.

App-based campaigns and promotions, remote sensing and GIS data analytics services, and traceability and anti-counterfeit detection are the services provided to other companies. Farmers can take a subscription, which entitles them to receiving agronomic expert advice around the clock. Until now the advisory services focussed on mass circulation, targeting all crop farmers, with emphasis on rice. Commercial farmers of cash crops need very specific and one-on-one advice and this could be an interesting target group for future revenue generation.

Funding of the business is still a constraint, service provision is now mainly own investment. As indicated above, new models are therefore explored, including a freemium model and generating income from advertising and selling data and insights.

ACI is the owner of the IDSS services and software. ACI is maintaining and updating the digital platform of IDSS gateway to disseminate the services.

300,000 farmers subscribed to the services

66,770 hectare covered

4,200 farmers club events organised

300 awareness shows at schools organised

>1,700 project-related staff trained

100,00 farmers (unique users) received direct training and technical support

**Numbers are approximations based on M&E results.*

Get inspired

The Geodata for Agriculture and Water Facility is a grant programme by the Netherlands Ministry of Foreign Affairs within the policy priorities for food security and water, which is executed by the Netherlands Space Office (NSO). G4AW established 25 public private partnerships in 15 countries to develop and support satellite based information services which positively impact the lives of smallholder food producers in developing countries.

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