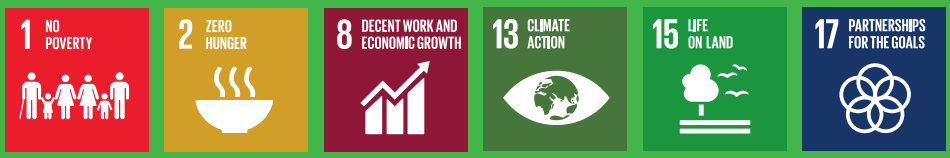
SMARTseeds

Improving production, income and food security of vegetable farmers in Indonesia

2016 - 2020

The objective of SMARTseeds (information services for sustainable vegetable farm management) is to implement a financially sustainable information service that supports vegetable farmers to increase productivity, income, food security, and optimise the inputs of water, fertiliser, and pesticides. Utilising geodata and remote sensing technology, SMARTseeds provides location-specific information to farmers delivered via mobile app. Geodata is also an essential component of business-to-business services via the SMARTseeds geodata intelligence dashboard.

The services are provided for chilli, tomato and cucumber in the Indonesian provinces East Java, Central Java and Lampung. After the project ended, the services expanded to new regions, such as



Sumatra and Eastern Indonesia, and new crops, such as onions and potatoes.

The project lead was ICCO Cooperation South East Asia, now part of Cordaid (Netherlands), supported by Indonesian partners Bogor Agricultural University (IPB), PT East West Seeds Indonesia (EWINDO), and Dutch partners Akvo, a data solutions organisation, Nelen & Schuurmans, an IT company, and the Faculty ITC of the University of Twente.

Provided Services

The location-specific information services that SMARTseeds provide are: soil and fertiliser advice, weather forecasts, farm profiles, digital information on good agricultural practices, and pests and diseases advice. In addition, SMARTseeds offers a digital marketplace for vegetables, daily information on prices and the opportunity for online consultation with agricultural experts. In addition, an irrigation advice feature helps farmers to use water more efficiently.

The services are delivered through a mobile app called SIPINDO.

The SMARTseeds Geodata Intelligence Dashboard provides businesses with vegetable maps based on satellite imagery, weather and forecast maps, soil profiles maps, regional daily vegetables price information, farm and farmer profiles and road access maps. These services run on the Lizard platform of Nelen & Schuurmans. Earth observation is used for vegetable mapping and, to a lesser extent, for the weather forecasts.

Business Model

SMARTseeds operates a freemium business model for farmers. Most of the services provided in the SIPINDO app are free, while some features, such as chatting with experts, are made premium. Free users can subscribe to a premium membership for € 10 per year or € 1 per month.

For businesses an inclusive and loyalty business model is used: vegetable buyers, agri-input suppliers and distributors, micro-finance institutions (MFIs) and fintech providers, the government, NGOs, and education and/or research institutions have access to the digital infrastructure for use by the farmers in their networks. SMARTseeds charges a fee for every farmer member that uses the app and receives the information services. The dashboard is currently on a trial period with the first paying customer, the EWINDO commercial team.

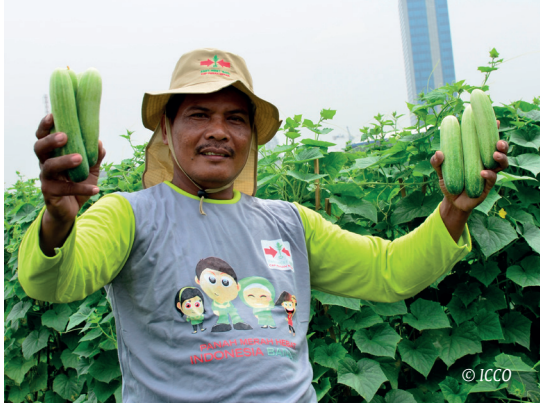
The SMARTseeds information service is owned and operated by a spin-off social enterprise named SIPINDO of which ICCO, EWINDO, IPB, and Nelen & Schuurmans are the founding partners. EWINDO is responsible for marketing and reaching out to paying customers. Although there is a willingness to pay, meeting the quality level expected by potential customers is still a challenge.

Impact

The biggest achievement of SMARTseeds is giving farmers easy access to reliable information, which normally would be difficult to get for them. The demonstration farms show clear positive results, but the services need to be improved and made easier for farmers to understand to really make an impact. To achieve this the digital services need to be supported by stimulating farmers' communities of practice and to work on continuous improvement of the services and communication with the farmers.

For example, users expressed that the SMARTseeds fertiliser advice was useful but is only applicable under ideal conditions (i.e. with ideal soil conditions, ideal seedlings, and in ideal areas that are relatively free from pests and diseases).

On the positive side, the SMARTseeds endline survey showed that by following the advice from the SMARTseeds information services, farmers have seen an average increase in productivity and an increase in efficiency of water use. Moreover, by having access to the weather forecasts of SMARTseeds, farmers are able to better plan their planting and mitigate the risks of harvest failure. This has led to increased resilience and food security in the communities.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SIPINDO develops new services, such as fertiliser recommendations for rice and maize and expands to new areas. SIPINDO improves the design and display of the app and the pests and diseases database. SIPINDO engages with more than 50 organisations and companies in Indonesia, e.g. cooperation with third parties to use machine learning for detecting pests and diseases with image recognition.

14,000
directly trained farmers (of which 13% female)

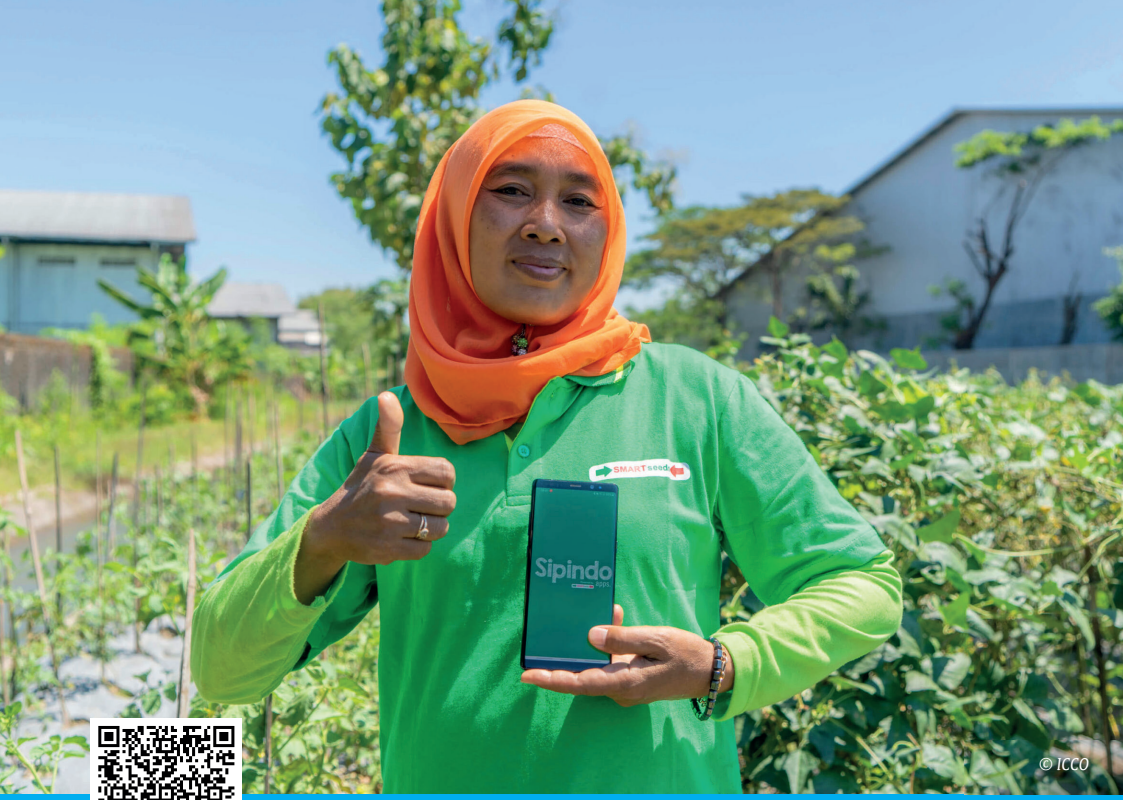
Approximately 20,000
active users, who retained SIPINDO on their phone

22%
increase in productivity reported by surveyed farmers

65,000
smallholder farmers registered

9 - 15% increase in efficiency of water input usage reported by surveyed farmers

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



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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.

g4aw.spaceoffice.nl

G4AW
GEODATA FOR AGRICULTURE AND WATER

Netherlands Space Office

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