Smart Farmer program

dtac has been implementing the Smart Farmer program for the last decade to strengthen Thai farmers through innovations and digital technology. The program aims to help move farmers forwards to become Farmers 4.0 and assume their position as the backbone of the country’s economic development.

Today, farmers are facing challenges with consumer behavior and market mechanisms as the landscape of the agricultural sector continues to evolve. Information technology and communications play a major role in enhancing the potential of the sector starting from SMS and mobile applications to cutting-edge technologies like the Internet of Things (IoT), Artificial Intelligence (AI), Big Data and Machine Learning.

dtac places importance on the development of digital technology and innovations to tackle weaknesses and meet the demands of small farmers including those who need skills to benefit from technology as well as young farmers. The results of the Smart Farmer project and its performance now that it has reached its 10th year of implementation are as follows:

1. Achieved the goal of providing “Commercial Agriculture” training to 20,000 small farmers in 7 provinces. This was undertaken in partnership with the Department of Agricultural Extension, Ministry of Agriculture and Cooperatives and enabled farmers to acquire knowledge and skills in accessing target customers and setting reasonable prices. According to a survey, participating small farmers were able to increase their income by 25% after starting online marketing.

2 Developed technological innovation as a tool for small farmers to manage cultivation effectively. In 2018, dtac developed Farm Man Yum (Precision Farming) technology which comprises the Farm Man Yum service and Farm Man Yum IoT.

Farm Man Yum service

dtac and social enterprise the Samnuek Rak Ban Kerd Co., Ltd. (RBK) jointly created the Farmer Info application in 2013 as a tool to provide useful information and knowledge for farmers. Four years later, dtac entered into an additional partnership with Ricult (Thailand) Co., Ltd., one of the dtac accelerate startups, to develop a new function of the Farmer Info application called Farm Man Yum Service or precision farming. This tool focuses on precise and personalized weather forecasting and allows farmers to manage their cultivation effectively. dtac introduced Farm Man Yum to farmers in 2018.

Nowadays, Big Data is changing the world. For that reason, Ricult adopted satellite imagery and Machine Learning to process weather forecasting. The Farm Man Yum service comes with 3 key features.

1 Personalized weather forecast that allows users to get the weather customized for their specific land, not just a district or province and which includes temperatures, probability of precipitation, and rainfall amount in easy-to-understand wording. In addition, the service displays the rain forecast for the next 7 days and is recognized as the most personalized weather forecast service in Thailand.

2 Satellite imagery enables farmers to monitor their crop health by giving them a bird’s eye view. This feature helps with early detection of such problems as nutrient deficiencies, pests and disease, allowing users to actively mitigate risks and manage their fields in a timely manner to protect yields.

3. Crop advice will help farmer better plan ahead by providing tips and knowledge through easy-to-understand infographics. This feature, which includes a notification system, will help farmers plan each crop from pre-cultivation to harvest. The service currently covers 7 types of crops and will be further expanded in the future.

dtac and its strategic partners tested the Farm Man Yum service with 25 maize and cassava farmers on a total growing area about 1,000 rai in Saraburi and Lop Buri provinces. Results from using the Farm Man Yum were:

- Increased yields of 400 kilograms per rai

- Reduced crop damage by 44%

- Increased income of 2,520 baht per rai

Those interested in the Farm Man Yum service can download the Farm Info application from both the App Store and Google Play. A 60-day free trial is provided and subscription rates start at 30 baht monthly with 35% going to Samnuek Rak Ban Kerd, 35% to Ricult and the remaining 30% to dtac.

A total of 2,118 users signed up for Farm Man Yum between its launch in October 2018 and the end of that year.

The Farm Man Yum service is one of dtac’s key strategies based on its CSV principle. In addition to using a business mechanism to solve problems of small farmers who have constraints in accessing state-of-the art technologies to manage cultivation, Farm Man Yum enables and reinforces the potential of farming as a business and helps drive national development.

IoT-based Farm Man Yum

dtac has partnered with the Department of Agricultural Extension, Ministry of Agriculture and Cooperatives and the National Electronics and Computer Technology Center (NECTEC) under the National Science and Technology Development Agency (NSTDA), to develop a farm model using Internet of Things (IoT) technology. This aims to boost production efficiency, lower costs and better control cultivation quality. Trials of the systemhave been undertaken on 30 farms in 23 provinces. Fam Man Yum comprises sensor devices which are installed in greenhouses to measure humidity in soil and the air, and sunlight. The sensor processes all the data and sends these back to farmers’ smartphones or tablets in real time. This allows farmers to monitor crop performance, maintain close control and instantly solve any problems.

dtac collaborated with NECTEC to evaluate the efficiency of Farm Man Yum innovation through 10 pilot farms and found that:

- Farmers increased both crop quantity and quality by 20%.

- Farmers reached a consensus of “Excellent” and believed that IoT technology would help increase capacity for better cultivation.

- Farmers rated display monitors as “Excellent”. They said the system was easy to use and helped manage farms through communications devices even they are outside the farm area.

- Farmers also gave an “Excellent” rating to the easy use of equipment and installation by themselves on receiving advice or the instruction manual.

- Farmers rated the precision of the equipment as “Good”. If the IoT device was installed in the right locations and used correctly, it would provide high precision data.

In addition, the evaluation indicated that the Farm Man Yum program could create a positive attitude among farmers and encourage them to adopt technology for farm management. It also demonstrated that the use of technology is not complicated as expected. Farmers are not required to have specialized knowledge and because the cost is lower than in the past, small farmers are able to use technology too.

Furthermore, dtac has developed a set of Farm ManYum equipment to control the cultivation process through an automatic system. dtac offers the equipment set and sensor system at an affordable price for farmers and these products became available for sale early in 2019.

Sam Nuek Rak Ban Kerd Farmer Award

The Annual Sam Nuek Rak Ban Kerd Farmer Award (Smart Farmer Award) was initiated through a partnership between dtac, the Department of Agricultural Extension and the Ruam Duay Chuay Kan Sam Nuek Rak Ban Kerd Foundation to recognize individual farmers or groups of farmers as a model of modern farmers. The project has been implemented for 10 consecutive years. In 2018, dtac organized the Smart Farmer Award under the concept “The Leader of Sustainable Change” to seek out young farmers with the potential to be agents of change. The key attributes of modern farmers are:

1 Skills to manage farming areas, workers, funding, cultivation and production of agricultural raw materials

2 Agricultural product processing skills to meet the needs of consumers and that conform to agricultural product and food standards. The farmers use knowledge, creative ideas and apply local wisdom combined with innovations to develop the agricultural sector. They are dedicated to upgrading agricultural products to offer customers better quality.

3 Professional skills to carry out a business plan and marketing strategies. They are ready to share lesson learns and transfer successful experiences to the public. They deserve to be a model of farmers 4.0.

In addition to moving forward in accordance with the Thailand 4.0 policy, which drives grassroots agricultural sector through the utilization of technology and innovations, the Smart Farmer program is also a strategy that meets the UN Sustainable Development Goal 10: Reducing Inequalities within and among countries. It supports the government to achieve its goal of increasing the income of the poorest percentile of the population so that it rises above the national poverty line.

The award-winning smart farmers in 2018

The winner

Khun Pimwarat Ruengpracha

Owner of Pimwarat Strawberry Farm, Suphan Buri

The first runner-up

Khun Lalida Khamwichai

Owner of Na Chaidan Farm in Sa Kaew

The second runner-up

Khun Aryasith Laochai

Owner of Araya Farm in Roi Et