

iPMobile - SMS Combating the *Tuta* Pest

The *Tuta* Absoluta arrived in Nepal in 2016, *Tuta* is a moth that can devastate tomato plants and has the potential to cause significant yield losses for farmers. Because tomatoes are one of the most important vegetable crops in Nepal, iDE with support from the USAID IPM Innovation Lab and pilot support from the Data Driven Farming Prize (DDFP) is working quickly with the government to combat this pest. We have identified SMS text messaging to communicate effective control measures based on economic thresholds to farmers through local, trusted channels.



Lalit Shah, USAID IPM Lab / Data-Driven Farming Prize manager holds a Tuta tomato pest pheromone water trap. Top & Bottom Tuta caterpillar.

Commercial Pocket Approach. Over the last 10 years, iDE has been enabling smallholders to become commercial farmers. We've worked closely with USAID, other donors, and the Nepal government to develop smallholder commercial pockets that facilitate enough volume to:

- Establish rural Collection Centers that provide market access and many services to farmers, including detailed climate-smart crop calendars, linkages to services, and government.
- Establish last mile supply chains for agricultural technologies through Community Business Facilitators (CBFs). CBFs are entrepreneurial farmers trained by iDE who provide support to rural farmers and work closely with Collection Centers. They receive a commission on the sale of agricultural inputs including safe Integrated Pest Management (IPM) technologies from district-based agricultural product suppliers.
- Commercial Pockets generally encompass 200 to 2,000 farmers usually within about a 1 hour walk to a Collection Center.

We've observed, however, that it's very difficult to get information to smallholder farmers and that they are reluctant to act on information from untrusted distant sources. To overcome this problem, iDE tested the use of sending locally generated SMS messages to farmers with technical information. We had Collection Center managers send SMS text messages containing general recommendations for crops to their farmer members. The results were positive. We saw increased sales of agricultural inputs and an expansion of commercial agriculture. Cell phone coverage is high in Nepal with most farmers having cell phones and most families include



"Sending messages on insect pests and diseases are much more effective," said Laxmi Rana, manager of the Rangaun vegetable collection center.

members who can read messages sent in Nepali.

With these initial findings, and the Data Driven Farming Prize (DDFP), there's an opportunity to scale this program utilizing Collection Centers to locally monitor pests and disease through local leader farmers. When pests/disease are detected at levels that will cause economic loss they notify the Collection Center manager. The manager then sends SMS text messages to all farmers who are members of the Collection Center to inform them of safe Integrated Pest Management (IPM) solutions. IPM is an environmentally friendly method of controlling pests that uses a variety of control practices to reduce the amounts of chemical pesticides used. The messages contain the contact numbers of the CBFs who market the IPM technologies and provide technical support to their customers. In Nepal, through the USAID IPM Innovation Lab program working with the government, iDE has developed safe packages that utilize pheromone traps, botanical/bio-agent pesticides, and netting to prevent insects from spreading viruses and causing damage, and many other technologies.



"Farmers frequently call my cell phone asking for more messages, My transactions with farmers have increased" said Rupa Thapa, CBF in Ranagaun

Pilot Phase

For the pilot phase of the Data Driven Farming Prize, iDE selected a community to work through the USAID IPM Innovation Lab program. The community has a small vegetable Collection Center with about 100 members and two CBFs marketing agricultural and IPM technologies. Working with the Collection Center, we enabled the farm leaders to monitor pest economic threshold levels using low cost pheromone traps. When thresholds were exceeded, leaders sent SMS messages to 160 small farmers within the area of the Collection Center.

Scaling! Building on the pilot, we're exploring a partnership with the Agriculture Enterprise Center (AEC) of the Nepal Chamber of Commerce. The AEC is in a good position to take on a coordination role for the private sector and integrate solutions in their SMS/ICT platforms, enabling them to recover costs. The AEC also sent 100 messages (at their own cost) to farm leaders who, in turn, represent about 2,500 farmers in areas impacted by the *Tuta* pest. Over 10% of the farm leaders were contacted for follow up support within a week of receiving the SMS. In the scaling phase, we'll work with AEC, Collection Centers, and national and district agriculture input suppliers to profitably establish SMS systems managed by AEC in two districts. This will be the basis for AEC and private partners to expand to new areas of Nepal.



"Information on the insect pests and diseases via my cell phone is effective," said Sharada Rana, a local farmer who markets her produce through the Ranagaun Collection Center and received the SMS.

iDE Nepal has been working in Nepal since 1992 focusing on increasing smallholder income thru developing locally manufactured technologies and commercialization. www.idenepal.org
(Photos by **Bimala Rai Colavito, iDE Volunteer**)