

Rodents and Rice: Cambodian Farmers Find Safe and Productive Ways to Fight Furry Pests



Integrated Pest Management Innovation Lab
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Leng Nget, a smallholder farmer, displays rodent barriers in his rice field.

This post is written by Sara Hendery, Communications Coordinator for the Feed the Future Innovation Lab for Integrated Pest Management.

Four years ago in Takeo, a southern province of Cambodia, farmer Leng Nget was sleeping next to his rice. He was listening for the sound of feet and wires — the quiet, scurrying sound of rodents and potential failure of the electrical system meant to capture them.

Rats significantly impede rice growth and threaten food security in Cambodia by feeding on germinating seeds and maturing plants. In Takeo, recent estimates of rodent damage in rice fields has climbed up to 22 percent. Farmers rely on rodenticides and electric fences, but the management techniques have dangerous downsides. The electrical system needs to be checked regularly in the evenings as it often short circuits, and there are incidents of farmers getting shocked by the electricity as well.

In 2015, the [International Rice Research Institute \(IRRI\)](#), in collaboration with the [Feed the Future Innovation Lab for Integrated Pest Management \(IPM IL\)](#), began testing a locally adapted barrier system to both protect rice from rodents and decrease labor time in Cambodian fields.

“When we used electricity,” Nget said, “we had to sleep in the fields the whole night for three months. When we use the plastic barriers and traps, we just check the traps in the mornings. It saves us time and we now have higher yields too.”

The trap barrier system requires a plastic barrier either around a trap crop or simply across a rodent's typical pathway, as well as wire cages that trap rats. Once caught, rodents can be sold or eaten. Results from trials of the barrier system have been extremely positive: rodent damage decreased to just 6 percent, rice yields increased by up to 32 percent, and farmer income increased by up to 169 percent.

Rodenticide use has significantly decreased due to the system. Nget sprays his fields with IPM IL-promoted *Trichoderma* and *Beauveria* to help boost plant defense mechanisms against additional threats like insect pests and disease.

Nget said he “sees no challenges with the system” most likely because he combatted any initial challenges head-on and early. When he observed that the original recommended traps were too expensive and too large to fit along the edge of the field, he created a more compact, cheaper version. He is now commissioned to make traps for other farmers, who catch several rats every night with the modified versions.

“The extra money helps us pay for special family social events, like weddings and funerals, and contribute to village donations,” Nget said.

Additionally, in a study conducted in Cambodia by [Women and Gender in International Development](#) at Virginia Tech, initial results suggest women were generally not involved in conventional rodent management that involved electric fences, but with the use of the trap barrier system, women are more active in the process of setting traps and collecting trapped rats, which reduces the labor burden on just one farmer.

“Following the recommend practices has saved my husband time,” one female farmer from the study remarked. “He has more time to go check on another rice field. It has made my work easier too. Now I just check the traps.”

Nget no longer listens for scurrying feet and wires at night. In fact, he listens for an entirely different sound, the sound of a full house—the greatest benefit of the trap barrier system, he said, is less time on the field, more time with family.

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