

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Pest management
Keyword 2	: Ecological approaches
Keyword 3	:
Title of Entry	: Reducing rodent damage to rice in Cambodia through locally-adaptive rodent management strategies
Presenting author	: Alexander M. Stuart
Presenting author email	: a.stuart@irri.org
Co author 1	: Parameas Kong, Khay Sathya
Co author 2	: Rathmuny Then, Rica Joy Flor
Affiliation presenting author	: International Rice Research Institute, Los Banos, Philippines
Affiliation 1	: Cambodian Agricultural Research and Development Institute (CARDI), Phnom Penh, Cambodia
Affiliation 2	: International Rice Research Institute, IRRI-Cambodia Office, Phnom Penh, Cambodia
Select only one type of presentation	: 3-5 minute flash talk
Abstract	: Rodents are a major pest of rice throughout Southeast Asia, causing both pre- and post-harvest losses that can cause significant impacts to smallholder farmers' livelihoods and to food security. In Cambodia, where 90% of the cultivated land is used for rice production, a recent rice crop health survey recorded a mean of 10% rodent damage across four surveyed provinces. In one village in Takeo province, the mean damage level was 22%. In areas with such high rodent damage, farmers often indiscriminately apply acute rodenticides and electric fencing, despite their awareness of the hazardous risks to people and other animals. In addition, these strategies generally have limited success. To help smallholder farmers minimize rice yield losses from rodent pests using less hazardous approaches, adaptive research experiments were established in two villages in Takeo province. In each village, three replicate 5-hectare sites were selected for treatment and three for control. In each treatment site, groups of farmers implemented ecologically-based rodent management (EBRM) methods over two rice cropping seasons. The management methods were adapted based on the local situation and preferred practices of farmers and included maintaining basic hygiene in field margins, synchronous planting of rice crops, community rat hunts, no electric fencing and either a Linear Trap Barrier System (LTBS) with limited and targeted bromadiolone rodenticide application (Kandaul village) or a Community Trap Barrier System (CTBS) with no rodenticide treatment along with an LTBS near refuge habitats (Ro Vieng village). During each cropping season, over 100 rats were trapped at each treatment site and mean rodent damage levels were reduced from 20-35% in the non-treatment sites to less than 6% in the treatment sites. Rice grain yields were also 20-32% higher

in the treatment sites than in the non-treatment sites, giving at least a 50% increase in farmers' net income. These results provide strong evidence of the benefits of EBRM for rice farmers in areas where rodent damage is high. Through a cross-learning platform, these findings are now being disseminated to farmers across Cambodia and used to develop an integrated package of recommendations that can be specifically tailored to particular conditions.

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