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Emergency clamp-down launched on devastating threat to cassava industry and farmers

Download Pictures here. Contact: Georgina Smith (CIAT) +855 (0)962462568 or g.smith@cgiar.org

(SIEM REAP, DECEMBER 11th) Scientists and government authorities are this week ramping up efforts to contain and clamp-down on serious pests and diseases threatening "devastating" impact on a leading food security, cash and bio-energy crop in Cambodia.

In Southeast Asia, cassava is the second most widely cultivated crop after rice. The crop supports an estimated 40 million people, and underpins a steadily growing local starch and biofuel industry. In Cambodia, cassava provides feedstock for the processing sectors in Vietnam and Thailand. The value of cassava products traded from Cambodia is estimated to be over US$250 million.

But rapidly emerging pests and diseases pose a significant threat to farmer's yield and income, and to local industry. "New pests and diseases have spread rapidly through the Southeast Asia region," said Kris Wyckhuys, an entomologist in Asia for the International Center for Tropical Agriculture (CIAT).

Cassava is cultivated by many poor farmers. In Cambodia, the destructive cassava witches' broom, a systemic disease that results in 10-15% yield loss and 20-30% loss in starch content, spells disaster for farmers. In some key cassava cropping areas of Cambodia, virtually all cassava fields are affected by this disease, with in-field incidence at worryingly high levels.

The disease causes leaf yellowing, leaf proliferation and stunting of cassava plants, and occasionally causes plant death. "Studies are still underway, but initial data suggests devastating impact of this disease on cassava production, particularly for a country such as Cambodia" said Dr. Wyckhuys.

Deputy Director General at The General Directorate of Agriculture under the Ministry of Agriculture Forestry and Fisheries (MAFF) in Kampong Cham, Ms. Chan Phaloeun, said: "This situation can seriously impact Cambodian cassava farmers and bring down the national starch

industry. Several cassava factories are particularly concerned about the disease impact on the profitability of their business, and fear an ultimate shut-down of their operations," she added.

Dr. Men Sarom, vice-rector at the Royal University of Agriculture in Phnom Penh, said: "It's vital we act now to safeguard the livelihoods of our cassava growers and the local cassava industry. Today we bring together some of the top researchers in the region to address concerns and find a way to fight these threats together."

Dr. Keith Fahrney, CIAT's agronomist in Asia, said: "In Cambodia, most cassava is processed by large-scale starch factories. Fresh roots and dried chips are also exported to factories in Vietnam and Thailand." Wet starch used locally for making noodles now comes from medium-scale factories.

As starch is one of the primary final products, reduced starch content of diseased roots means processors need to buy more cassava roots, and farmers are paid a lower price for their product. The disease also causes roots to become sticky, taking longer to dry and turning starch a yellow-brown tinge instead of the industry-required white, he added.

Since its introduction from South America centuries ago, cassava in Southeast Asia has enjoyed a pest and disease-free past. But intrusions of several insect pests and cassava-thwarting diseases are on the increase. While active prevention carries some potential to manage the disease, there are currently no control options. Once the disease has struck, farmers are doomed - there is very little they can do to tackle cassava witches broom and save their crop, say experts.

As cassava is propagated vegetatively, stakes cut from infected plants will fuel the spread of pests and diseases. Farmers are often entirely oblivious to the disease and how to recognize infected planting material. Hence, the trade and active purchasing of infected cassava stakes continues unhampered and further fuels disease spread. All too often, farmers only find out the crop is infected when it's too late – when it's time to harvest and sell the roots.

It's vital to find ways to disinfect stakes or ensure completely healthy materials, and put systems in place to actively distribute and promote certified disease-free seed to Cambodian farmers. This week's efforts to raise awareness and share information brings together cassava experts, local government officials and extension officers to hammer out an emergency action plan to tackle the disease and stamp it out.

In Vietnam, a research alliance has been formed to address cassava witches broom. State-of-the-art technology is used to pin-point insects suspected to spread the disease and the feasibility of a pregnancy-like diagnostic kit is being evaluated.

The alliance is committed to developing stake disinfection protocols and actively preventing disease spread. Researchers at CIAT and regional partner institutions are fine-tuning cassava

tissue culture protocols and exploring options for demand-driven clean seed systems in the region, as well as training local farmers on symptom recognition and disease management - vital for sustainable disease control efforts, say experts.

The jury is out on what exactly is accelerating and aggravating Southeast Asian cassava pest and disease problems. Researchers say that although climate change is often blamed, movement via cross-border trade in non-certified planting materials is a much bigger driver. The rapid arrival of these threats only bolsters the likelihood that others are on the way, researchers warn.

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The International Center for Tropical Agriculture (CIAT) is a not-for-profit organization that conducts socially and environmentally progressive research aimed at reducing hunger and poverty and preserving natural resources in developing countries. www.ciat.cgiar.org

For more information or to arrange interviews contact:
Georgina Smith +84 0962462568 or g.smith@cgiar.org (GMT+7) Website: www.ciat.cgiar.org