



The Stakes are High: Cassava boom and looming crisis in Southeast Asia



Phal Sophy

Southeast Asia's billion-dollar, climate-smart crop on the rise

On his new motorbike, Phal Sophy makes his way towards his cassava plot in the fading sunlight. A cassava farmer in Cambodia's Tboung Khmum Province, his recent harvest was hit by drought, and this latest inspection is to check that this season's crop will germinate.

"I planted cassava, then there was no rain, so it didn't germinate," he said, adding that he lost a whole season of income for his family. Then he heard about a training workshop in his village, and decided to join and learn how to improve his cassava yield and income.

Cassava, he learned, is actually pretty drought resilient – depending on the way it's planted, and other conditions like soil type. "I learned what to do during different weather conditions. If there is a lot of rain, I should make a ridge and grow cassava along the top so it doesn't get water logged," he said.

"This time, I want to plant some cassava vertically, so the stake can take in more moisture from the soil if it is dry," said Sophy. "If I don't, I could lose everything," he said, inspecting his field. Sophy grows cassava since he is convinced it's his family's best option for a good income.

So far, he has invested his income in a motorbike – for trips to the market, hospital, or school – and English lessons for a year for his son and daughter. "My parents were poor so I couldn't study English. But I think English is important for the new generation to get a good job," he said.

Changing environment; changing options

Sophy is one of around 40 million people across Southeast Asia who depend on the annual production of about 75 million tons of cassava grown on four million hectares. Although often not consumed directly, cassava provides a cash income, putting food on the table and paying for household necessities.

Demand for cassava – and prices – are on the rise. The value of cassava products traded from Cambodia is around US\$250 million. What's more, the market is broad, the crop can be stored in the soil throughout the year if it can't be sold - and it's relatively climate hardy.

Yet research has shown that cassava intensification could have dramatic environmental costs if it's not managed

properly. And farmers face mounting challenges in cultivating cassava profitably: from declining soil fertility to climate shocks, emerging pests and diseases and volatile market prices.

Since 2009, supported by the International Fund for Agricultural Development (IFAD), international and national researchers in Cambodia, Lao PDR and Vietnam have provided training for cassava farmers to tackle these challenges on all fronts, reaping impressive results.

Improving technical know-how

In Cambodia, Training of Trainer courses – complete demonstration and field activity courses on sustainable cassava production – have been provided by CIAT staff together with the Ministry of Agriculture, Forestry and Fisheries throughout the country, with considerable impacts.

For example, more than 100 extension staff linked to the IFAD-funded Rural Livelihoods Improvement Project (RULIP) in Ratanakiri, Preah Vihear and Kratie provinces received training through demonstrations and on-farm trials, delivered by CIAT.

Topics on the training curriculum included management of high-yielding, improved cassava varieties; land preparation and weeding techniques; appropriate use of fertilizers; soil erosion control; intercropping for alternative incomes, and soil fertility and pest and disease management options.

Through Training of Trainer workshops, messages about improved cassava management have spread throughout Cambodia. In Tboung Khmom Province,



Huong Sokhang

Huong Sokhang – a group leader of 30 farmers since 2013 – now saves US\$200 in fertilizer each harvest and has boosted her yield by five tons per hectare, after learning how to apply fertilizer more efficiently.

To market: linking farmers with supply chains

To fully realize the benefits of improved management, farmers need sustainable links with traders, buyers, and industry. Considerable efforts have been made to improve cooperation between factories, government departments, and farmers – not only in Cambodia but in Vietnam and Lao PDR as well. Learning Alliances were established so that stakeholders from across the three countries could meet and share learning experiences.

In Vietnam, demand for cassava starch for a wide range of products – from noodles and pharmaceutical products to cosmetics – is thriving. In 2013, exports in Vietnam reached



3.1 million tons of cassava, fetching US\$1.1 billion, with the bulk supplied by smallholder farmers.

In Quang Binh Province, along Vietnam's central coast, the provincial Department of Agriculture and Rural Development is working with factories and farmers to apply recommended fertilizer rates in "learning plots," selected by project staff in focus communes, linking the private sector and farmers.



Hoang Van Min, Vice Director, Department of Agriculture and Rural Development in Quang Binh Province, said: "There have not been any projects linking farmers and the private sector before.

"We're very confident that the information gained will enhance and support policy and business relationships."

This new approach linking farmers with markets, while improving production

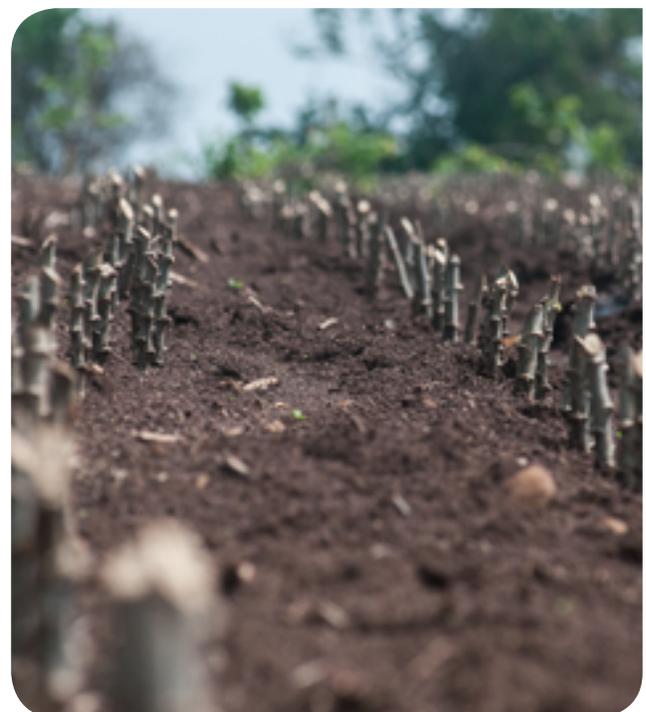
techniques, will be included in the cassava development strategy of the province, he added. "Farmers understand more about the private sector, and department staff received practical and valuable training," he added.

Expanding social opportunity

In Lao PDR, Boun Pone, a banana, peanut, and bean farmer, has now increased his cassava production following a training activity to improve his cultivation. "In terms of income, before I could get US\$1,800 per hectare from cassava – now it's over US\$3,000 per hectare," he said.

"The company I supply has asked me to be a representative - I have a collection point where I collect cassava from other farmers. Now I also have a truck to transport cassava. Such links with the local markets have been made as a result of improved cassava management.

Vilaisak Phonphaily, a group leader in Lao PDR, started growing cassava since 2012, when he saw it planted in another village and decided to attend training. "I was trained in how to prepare the land; how to select planting material. My production and income has doubled to US\$12,000 per year, from around US\$6,000 before I learned the improved techniques," he said – now he provides advice to others.



A pest and disease crisis

Despite improved management techniques and better linkages with the private sector – which in some cases have doubled incomes for smallholder farmers – cassava production is under threat. Emerging pests and diseases are phytosanitary threats which endanger the gains of these initiatives.

For example, the cassava witches' broom disease – a systemic disease resulting in 10–15% yield loss and 20–30% starch content loss – continues to threaten farmers' yields and income. In key cassava cropping areas of Cambodia, virtually all cassava fields are infected, and farmers with little choice are planting infected stakes, risking their income.

Investigations are underway by CIAT and national research partners in Southeast Asia through an associated Emerging Pests and Diseases Project, also supported by IFAD, to assess the cause and transmission of emerging threats, and control options. Until then, farmers can only take minimal precautions to prevent disease spread and safeguard their livelihoods.

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