Banana and coffee intercropping could protect farmers from climate change in Uganda and other areas of the East African highlands, according to researchers from Africa's International Institute of Tropical Agriculture (IITA).

Coffea arabica currently accounts for around a third of Uganda's coffee export value, the nation's most important foreign exchange earning.

Unfortunately, the species is highly sensitive to temperature and precipitation change. It requires high elevation, generally above 1,400 meters (4,593 feet), to flourish.

A mean temperature increase of just 1°C results in an average loss of 98.4 kg/Ha and minimizes the crop's potential growing area.

IITA researcher Piet van Asten explained that the added protection of banana plants can help turn such losses around for Uganda's 1.3 million estimated coffee farms.

Studies found coffee yield remained steady, even with the additional competition created by the banana plants.

From July 2010 to June 2011, van Asten and the IITA team observed farms in Uganda's five main coffee-producing regions. They found intercropping improved revenue per hectare by over 40% compared to banana or coffee crops alone.

"For the farmer, the intercropping is highly beneficial since more food and income is coming from the same field. Bananas provide a permanent modest income flow and the coffee gives once or twice a year a cash boom," he told *www.freshfruitportal.com*.

"In fertile areas where farmers manage crop densities/canopies well, they've managed to sustain the intercrop systems for decades."

In Uganda, van Asten estimated that about half of coffee already comes from some sort of intercropping.

Farmers using the practice were reported to benefit in a number of ways. Banana plants not only provided shade to protect from high temperatures but also provided protection from hail, generated mulching material and eased land scarcity. Certain diseases and pests, such as CLR and twig borer, were found to be lower and drought sensitivity dropped.

The problem for farmers now is lack of clear information. The researchers found inconsistent levels of training and mixed messages, factors that can discourage investment

in such crops.

Education is key for growers to strike the right balance between the two competing systems.

“The downside of adding shade or shade crops to a coffee system is that it increases competition among the different plants for water, nutrients and light,” van Asten said in an IITA statement.

“This competition needs to be managed by using good agronomic practices such as integrating fertilizers and organic nutrient inputs, appropriate plant density and canopy management, and good soil and water conservation practices to adapt successfully to climate change.”

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