

# Waving goodbye to slash-and-burn

January 23 2018, by Vance Russell

---



Local farmer Mateo Ack shows the leaf litter in the Inga system. Credit: Maximiliano Caal

The first time I flew into Punta Gorda, a town on the edge of the Maya Golden Landscape in southern Belize, I was struck with how intact the forest remained compared to adjacent Guatemala and Honduras. Where Belizean forests were a rolling green landscape of tall tropical forest canopy Guatemala was nearly the opposite: blocks of intact forest surrounded by extensive clearing, smoke and fire.

In tropical regions worldwide, slash and burn practices are failing to provide [sustainable food production](#) and income for millions of smallholder farmers in rapidly growing communities. Faced with the growing pressure on the Maya Golden Landscape's tropical rainforests, Ya'axché Conservation Trust (in partnership with Fauna & Flora International) has been working with local communities to encourage a sustainable farming system known as Inga alley cropping so that Belize does not witness the same rampant land clearing as that experienced by its Mesoamerican neighbours.

In essence, the Inga alley cropping system works by planting crops (such as maize, pineapple, banana, cocoa and yam) between rows of Inga trees – native species that are able to recycle two vital nutrients, nitrogen and phosphorous, back into the [soil](#). Not only do these trees allow farmers to use the same plot of land again and again by keeping the soil fertile (thus eliminating the need to burn down rainforest), but they also prevent soil erosion and protect soils from the hot sun. Pruned before each growing season, Inga trees also produce firewood for homes.

## Inga alley cropping system benefits

### **Temperature control**

Inga alley cropping increases climate resilience through temperature regulation and has been found to reduce the daily temperature maxima by 4-5°C in coffee plantations.

### **Maintenance of permanent plots and reducing land pressure**

As Inga alley cropping improves and restores soil quality, farmers can maintain agricultural plots and longer-term food security, minimizing the need to clear new areas of land for farming.

### **Soil fertility**

Inga improves soil fertility through nitrogen fixation and mycorrhizal activity, promoting the long-term accumulation of nitrogen in the soil.

### **Mulch and weed suppression**

Inga leaf litter is resistant to decomposition compared to other tree species used in agroforestry, which means it forms a long lasting protective mulch cover that helps to suppress weeds.

### **Natural pest control**

Inga have extra floral nectaries that attract a wide range of beneficial insects helping to increase natural pest control.

Inga alley cropping system benefits. Credit: Fauna & Flora International

Christina Garcia of Ya'axché believes that "Inga alley cropping is the revolutionary alternative to slash-and-burn. It is the hope for the restoration of many degraded lands in Belize." Many farmers in the region agree, local farmer Orlando Cucul stated, "Inga alley cropping will make my soil fertile, give me good crops and create a lot of firewood."

However, Ya'axché are taking implementation of the programme one step further by measuring how Inga vs. traditional cropping changes the

environment, species diversity and economy. In this way they hope to show [local communities](#) and a wider audience the benefits Inga alley cropping can bring to local livelihoods and also to wildlife.

A many pronged approach to reduce the negative effects of agriculture to wildlife whilst measuring the results and ultimately creating new community livelihood opportunities is greatly needed, not just in Belize but throughout the region.

Provided by Fauna & Flora International

Citation: Waving goodbye to slash-and-burn (2018, January 23) retrieved 9 April 2024 from <https://phys.org/news/2018-01-goodbye-slash-and-burn.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--