Origin and species: fighting illegal logging with science

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Scientists at Britain's Royal Botanic Gardens are working on a global project as part of efforts to halt international illegal logging

A timeworn laboratory in Britain's Royal Botanic Gardens may not seem like the obvious epicentre of efforts to halt international illegal logging.

Beakers bubble away on a hotplate, while suspect guitars that have been sent by customs officials for testing sit on top of shelves lined with tattered old journals and reference books in a multitude of languages.

But scientists at the Wood Anatomy Laboratory, part of the research centre at the gardens in Kew, southwest London, are working on a new global project to help precisely identify the origin and species of timber.

Illegal logging is estimated to account for 15 to 30 percent of all timber traded worldwide, according to Interpol, with an estimated annual value of $51 billion to $152 billion (45 billion to 134 billion euros) in 2017.

Much of the import and export business relies on paper trails for verification.

However experts hope that their new project can, in future, provide enforcement agencies with some hard science that can quickly identify through checks whether a wood species is as claimed, and exactly where it was grown.

"I'm hoping it will really help to reduce illegal logging," said Peter Gasson, the Kew institution's research leader in wood and timber.

'Comprehensive library'

Chunks of wood from Laos are stacked in a pile, alongside other slices of timber with yellow sticky notes identifying them.

The aim of the project is to precisely identify the origin and species of timber

The laboratory's samples originate from far and wide and some date back well over a century.

Lying around besides the Leica and Nikon microscopes is a piece of African blackwood collected during British explorer David Livingstone's Zambezi expedition, dated 1860.

There is method however in the apparent miscellany at one of the world's largest wood sample collections.

Six chests of drawers hold 100,000 microscope slides of fragments,

sorted in Latin by family, genus and then species.

Each specimen contains three different slices through the wood: transverse, tangential and radial.

"We're trying to build up and future-proof the reference collection of wood samples of all the commercial timbers used in the world," said Gasson.

"We want a big, comprehensive library—and that's going to take a long time," added the expert, who started his life's work in the Kew lab as a student in 1977.

Accurate to 10 kms

While the Kew experts have the know-how to identify the species, they need help pinpointing where the tree originates, an expertise being provided by a separate partner team in northern England.