

Logging must stay below critical limit: For wildlife and carbon capture goals

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Kitayama said forests could recover naturally when logging remained within safe limits, but would lose their ability to regenerate once a critical threshold was crossed.

KOTA KINABALU: Sabah's logged forests can still support rich wildlife and store carbon effectively, but only if logging stays below a critical limit, beyond which the damage becomes permanent, said Kyoto University visiting professor Dr Kanehiro Kitayama.

Kitayama, who is also attached to Universiti Malaysia Sabah (UMS), said forests could recover naturally when logging remained within safe limits, but would lose their ability to regenerate once a critical threshold was crossed.

"As long as we stay within safe limits, forests can heal themselves naturally. Once forests cross that line, they lose the ability to recover on their own and we need costly human help to fix them," he said at the recent International Conference on Tropical Forestry 2026.

"It is not a straight-line decline, it is a curved response with a point where things suddenly get much worse," he said.

Drawing on some 20 years of research in Sabah's Deramakot and Tangkulap forest reserves, Kitayama said 30 per cent of the area studied by his team showed no signs of recovery even after 35 years, with the affected areas now overgrown with dense ferns and vines.

"Indeed, 30 per cent of the area does not show any sign of recovery in the past 35 years," he said, pointing out that these areas had lost their ability to bounce back.

He said Deramakot, which has been carefully managed since 1995 using low-impact logging methods, remains in noticeably better condition than nearby Tangkulap, which was logged using more intensive methods until 2003.

"Just by eyes, we can conclude that sustainable forestry really makes a difference," he said.

Kitayama singled out the forest managed by KTS Plantations for particular praise, saying the company was managing its forest very well.

Even so, he stressed that the picture was not black and white, noting that some parts of well-managed Deramakot were still badly damaged, while some areas of heavily logged Tangkulap remained in decent condition.

For wildlife, he said a two-year camera-trap study involving 280 cameras across both reserves recorded 35 animal species, including sun bear, orangutan, elephant and tembadau.

Only five species showed a real decline in the more heavily logged area, he said.

"We found endangered species living in degraded production forests," he said.

Carbon storage, however, tells a more worrying story because most of a forest's carbon is locked up in a small number of very large trees. Removing those trees causes carbon stocks to fall sharply and quickly, rather than gradually, he said.

"You harvest big trees, then carbon stock abruptly declines," he said, again stressing that the response was curved rather than linear.

Kitayama said the loss of forest resilience generally came down to three gaps: a lack of awareness, a lack of proper techniques and a lack of adequate support systems for responsible logging.

He said foresters currently earned no additional income for logging responsibly, despite certification schemes and mandatory low-impact logging rules already being in place.

"We need to build a society where common citizens respect forest ecosystem services, respect foresters and pay for those services to help foresters maintain natural forests," he said.

"Unfortunately, we do not have adequate institutions for this yet," he added.

Sabah, which retains large stretches of production forest with valuable ecosystem services, is well placed to build such support systems, he said.

However, key questions remain unanswered, including exactly where the safe limit lies and how badly damaged areas can be identified and mapped to guide recovery efforts.

The conference was organised by UMS' Faculty of Tropical Forestry in collaboration with KTS Plantation Sdn Bhd.