

UGM Students Design Tool to Monitor Rare Trees

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Starting from the idea to monitor nutrients of *Pelahlar* tree (*Dipterocarpus littoralis*), a rare species in Nusa Kambangan, Central Java, a group of UGM students have designed a tool to monitor the tree development as well as knowing the condition of surrounding environmental changes.

The Litto-Sens, short for Littoralis Essential Soil Nutrient Sensor, can monitor soil nutrients by additional components to measure environmental factors such as light intensity level and soil pH. "This tool is designed with remote measurement basis to see the the spread locations on steep slopes that is difficult to reach," said Khumairoh Nur Azizah, one team member, said on Monday (16/7) at UGM.

With fellow students Dwi Rahmasari F and Gema Wahyu and supervision by Dr. Ir. Ronggo Sadono, the innovation has been funded by Higher Learning Directorate General for Student Creativity Programme.

Azizah said Litto-Sens could do 24-hour nonstop measurement as it is installed with solar panel to change light energy to electricity. The result is transmitted to the internet station. "The measurement results are displayed in the form of graphics to monitor the change in soil nutrients, light intensity, soil humidity and pH as well as the safety condition of the tree site.



He said this tool was designed to help people conserve rare species. “The design can be applied for other species, too, or added with other measurement components,” she said.

Pelahlar is a rare and endemic tree which becomes the priority of conservation in 2008-2018. Since 2015, there are only 676 trees in their natural habitat. “In situ and ex situ conservation have been done for the silviculture of the tree and pest control, but monitoring of the site typical habitat has not been done optimally,” she said.

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