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Satellite scan may improve forest watch

Remote sensing through a radar satellite may advance monitoring on forest carbon, the focal point of the Reducing Emissions from Deforestation and Forest Degradation (REDD) plus mechanism, experts say.By utilizing synthetic aperture radar (SAR) satellites, Indonesia could measure, report and verify activities in its forests and plantation areas more comprehensively and unhampered by difficult geographical and aerial condition in several islands.

“We can measure more accurately the levels of deforestation and forest degradation by using a high-resolution radar satellite due to the fact that most of Indonesia’s area is covered by cloud,” Nur Hidayat, the National Aeronautics and Space Agency’s (LAPAN) Deputy Director of Remote Sensing, said on Wednesday.He said that several areas in Indonesia, especially Kalimantan and Papua, were blanketed by cloud all year long, making it difficult to sustain monitoring.Forest preservation is one of the best immediate hopes in reducing carbon emissions. An accurate and effective monitoring system on forestry areas may help Indonesia achieve its target to reduce the carbon emission. Indonesia has pledged to reduce its carbon emissions by 26 percent in 2020 and even 41 percent with international assistance.

“We can reduce forest clearance, especially illegal logging, by tightly safeguarding all forestry areas. However, we cannot do this without using a satellite with high resolution and a radar that enables it to send images in the midst of typically tropical heavy cloud cover, dust storms and heat haze,” Nur said.

He said now Indonesia used an optical satellite, resulting in insufficient images on forest areas located beneath heavy clouds.Ade Komara Mulyana, a senior researcher of the Geomatics Research Division at the National Coordinating Agency for Land Survey and Mapping, said that heavy clouds like that in Kalimantan had forced the aircraft to carry the optical system to fly at a low altitude to get clear images.

“The situation is even worse in Papua. We had to fly far lower,” he said, adding that flying lower would reduce the coverage of the images.Ian Encke, a British SAR satellite expert, said that SAR could provide an overall image of Indonesian national forests and plantations every few weeks with a high resolution despite heavy cloud cover. “A satellite radar can deliver images day and night and even in cloudy conditions several times per day, while a conventional radar satellite can only image a small part of the area and that only once per day,” he said.

He said the system was sufficient to detect new illegal logging roads, deforestation and forest degradation, as well as forest fire.
“We can interdict illegal logging before the damage is done,” he said.

According to LAPAN, more Indonesian institutions have recently used the high resolution SAR satellite data, such as the National Land Agency and the National Geology Agency.

“High resolution SAR satellite data have also been used by several private companies both local and foreign, such as oil, gas and mining companies, as well as plantations,” said Ade, adding that SAR satellite data had other potential use, including monitoring illegal fishing and food security in nationwide, as well as for defense affairs.

Bambang Teja Sukmana, LAPAN Deputy Director of Aerospace Science, said that his institute was planning to carry out a feasibility study on the development of the SAR satellite this year.

“We need about three years to prepare the satellite. I hope we can launch a SAR satellite in 2014 at the latest,” he said. **(ebf)**