Local communities produce high-quality forest monitoring data, rivals that of professional foresters

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As global forest and climate experts gather at the Oslo REDD Exchange 2013 to ramp up international efforts to protect carbon-storing forests in the developing world, a recent study by researchers at the Nairobi-based World Agroforestry Centre (ICRAF) and European and Southeast Asian institutions finds that local communities—using simple tools like ropes and sticks—can produce forest carbon data on par with results by professional foresters using high-tech devices.

At the same time, the study found that nearly half of official REDD+ (Reducing Emissions from Deforestation and Forest Degradation) projects, which pivot on the accurate measurement of carbon trapped in forests, do not engage communities in this data gathering, despite assertions by the United Nations that these projects must ensure communities' "full and effective participation." The authors of the paper—the first-ever quantitative study of REDD+ community participation—argue that locally-gathered data is not only accurate but also more legitimate and cost-effective in the long run. It also improves trust in REDD+ among local communities.

"Saving the world's forests requires us to close the massive gulf between international promises and realities on the ground," said Finn Danielsen, the study's lead author and senior ecologist at the Nordic Foundation for Environment and Development in Copenhagen, Denmark. "Our research shows that if more REDD+ projects were to include community

monitoring, we would see a more just global effort to fight [climate change](#) that meaningfully incorporates insight from people who depend on forests for everything from their incomes to their food—and are eager to protect these precious natural resources as a result."

The study—Community Monitoring for REDD+: International Promises and Field Realities—was authored by 22 scientists and was based on a study conducted in Southeast Asia's most complex, carbon-rich forests: lowland forest in Indonesia, mountain rain forest in China and monsoon forest in Laos and Vietnam. It was published in a special issue of the journal *Ecology and Society*. The study is part of the EU-funded project Impacts of Reducing Emissions from Deforestation and Forest Degradation and Enhancing Carbon Stocks (I-REDD+).

To determine if communities can provide accurate monitoring of above-ground forest-carbon stocks, researchers trained community members in simple measuring tactics and sent them to 289 pre-selected forest plots to measure the number of trees, tree girth and biomass per hectare. Researchers then compared their measurements to those gathered by professional foresters using handheld computers.

The results showed strikingly similar results between community members and professional foresters across countries and forest types. This corroborates a small but growing body of research suggesting that, when armed with the simplest of techniques and equipment, community members with limited education can accurately monitor forest biomass—previously thought to be the domain of highly-trained professionals. The authors also state that data gathered by communities meet the high standards of the United Nations Intergovernmental Panel on Climate Change's (IPCC).

The study is the most comprehensive assessment undertaken to date of the ability of [community members](#) to accurately monitor forest

resources.

Community forest monitoring is also cheaper in the long run. Researchers compared costs per plot, finding that while professional monitoring can be less expensive in the short-term—US$22-$53 as opposed to US$39-$82 for community-led efforts—modest investments in training could, over time, make community-led monitoring a cheaper alternative.

"We're convinced that engaging communities is ultimately the most cost-effective approach. The small extra cost would be largely offset by its benefits to both local people—who would earn wages and gain training from these activities—and larger global efforts to address climate change," said Subekti Rahayu, an analyst at ICRAF who conducted fieldwork for the study.

The study argues that community-gathered data would strengthen current REDD+ projects. It can be used, for example, to double-check remote sensing or modeling data gathered by researchers from afar. It can also be used to earn "buy-in" from local people, who, according to researchers, would be more likely to trust and participate in REDD+ activities if they are treated as equals in the process and are ensured continued access to the forests they rely on for their incomes.

Despite agreement among all parties that REDD+ must include local communities, local engagement is lagging, said the study's authors.

"The legitimacy of international efforts to reduce emissions from deforestation rests on community involvement," said Meine van Noordwijk, Chief Science Advisor at ICRAF. "Yet international promises to engage local people have gone largely unfulfilled."

The study finds that obstacles to effective community engagement stem

from a lack of awareness; foresters who train local people are simply not aware of low-tech methods and their accuracy. In addition, skills among local people vary, as do monitoring methods. The authors call for the development of, and better training in, simple, standardized [monitoring](link) methods that can be deployed across the world's [forest](link) nations.

"The roadblocks are ultimately surmountable," said Peter Minang, a scientist at ICRAF and an expert on community forestry in developing countries. "With the accuracy of community-gathered data now confirmed, the international community has little excuse to exclude local people from participating in knowledge gathering to better understand and fight climate change."

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