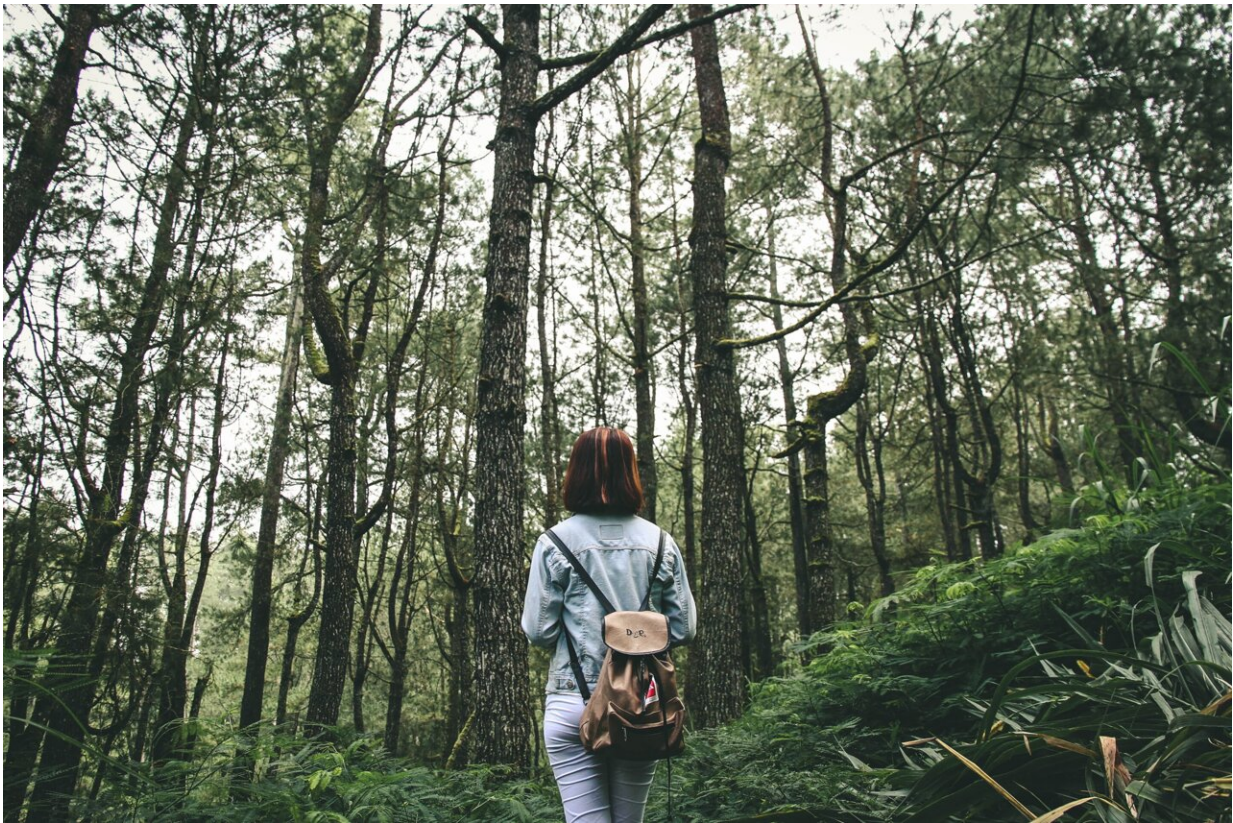


Ambitious tree planting goals in Asia lack diverse tree seeds from native species

January 14 2022, by Ennia Bosshard



Kintamani, Indonesia. Credit: Unsplash/CC0 Public Domain

Four Asian countries—the Philippines, Indonesia, Malaysia and India—aim to restore 47.5 million hectares of degraded land by 2030. This is roughly equal to the size of Sumatra, Indonesia's third biggest

island.

Achieving these ambitious [restoration](#) targets in the four megadiverse countries alone could contribute to roughly 13% of the global restoration commitments of [the Bonn Challenge](#).

Successfully meeting these restoration targets would require tens of billions of seeds and seedlings of diverse [native species](#) that are of high quality and suitably adapted.

But as we found in our study, recently published in [MDPI Diversity](#) the national tree seed systems in the four megadiverse countries are currently not fit for purpose. (We hereafter use the term seed to include seeds, seedlings and wildings, among other regenerative materials.)

These countries' forestry sectors have traditionally focused on developing seed systems for few commercially viable and often [exotic species](#) like Acacia or Eucalyptus. Those are commonly used to make paper, furniture, constructions or pharmaceutical ingredients.

Planting seeds and seedlings from only a few different [species](#) can result in negative consequences for the individual survival, growth and productivity of the trees. Genetic diversity of the replanted trees is a must to ensure that the restored forests can adapt to extreme weather events such as floods or droughts.

This means sourcing seed from many different mother trees and from suitable provenances for the restoration site.

Failing to do this can jeopardize restoration efforts.

A seed system fit for restoration purposes

Building on similar research that has been done in [Latin America](#), we used literature review, surveys and questionnaires to shed light on the strengths and weaknesses in tree seed systems in each country, both at the policy level and on the ground.

To assess the readiness of the seed systems, we employed an indicator [system](#) with five interlinked components: covering selection and innovation, seed harvesting and production, market access, supply and demand, quality control and the enabling environment.

Our study finds that all four countries cover at least some aspects of a fit-for-purpose seed system. This means the system provides the required material to regain ecological functionality and enhance human well-being across the restored landscapes in the long term.

Indonesia seems to be most on track, having initiated forest rehabilitation programs more than four decades ago.

But we also find an overarching focus on fast-growing and often exotic species in all four countries. The traditionally economic-driven seed system developed by the forestry sector is often used for species selection for restoration.

The result is a mismatch between supply and demand for native species, both regarding the volume and the quality of seeds.

Using a diverse range of native species can expand the biodiversity value and ecosystem service provision in restored landscapes, particularly its ability to mitigate and adapt to climate change, bringing long-term benefits for [local communities](#).

But people implementing restoration projects might not be aware of the long-term positive outcome of planting native species, and the negative

outcome of using exotic species. Additionally, they may also lack information about where to source the seeds.

Community-based seed system

A global paradigm shift away from planting trees towards growing resilient forests is needed. We don't need to reinvent the wheel; there are existing examples that can serve as blueprints.

Involving the community in the seed system can contribute to a high diversity of native species and support local livelihoods, such as the case of community-based [seed](#) networks in [Burkina Faso](#), [Brazil](#) and [Australia](#).

We need to work together and think beyond quantitative, short-term planting goals. To restore the ecosystem functions and services that are so urgently needed for both nature and people, it is key to provide high-quality seeds of diverse native species.

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