



Community land titles alone will not protect forests

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Blackman et al. (1) assess the forest cover impacts of providing indigenous Peruvian communities with formal title to land they have long inhabited. We applaud the authors' use of high-quality forest change data and rigorous causal methods; both are critical gaps in the land tenure and forest change literature (2). Their findings are encouraging, especially given Peru's globally important biodiverse forests and the pressing need to secure the rights of indigenous people. Beyond these notable strengths, we caution against generalizing the results of this study for several reasons.

First, titling did not cede full land rights. To obtain title, communities in the study were required to develop, gain approval for, and secure permits for forest-management plans (see the *SI Forest Governance* section of ref. 1). Thus, communities' management rights were considerably constrained and, furthermore, they were not allowed to sell or subdivide forestland. In the Ecuadorian Amazon, a project to title long-term residents' individual land came with similar "forest-friendly" restrictions on rights for some households. Deforestation was reduced by 34% on these lands, whereas titling in the same region without restrictions showed no significant effect (3). Giving communities a more complete bundle of rights (e.g., management, alienation, and transferability) would result in greater agency over land use but we suspect forest outcomes would show even greater variation.

Second, 2 y of forest change compared with 1 y of baseline is short. Even over the study's relatively short 2-year posttitle period, the effects of title appear to

diminish. Thus, in contrast to the article title of the Blackman et al. paper (1), the effects of titling in this case may be quite limited.

Third, the Blackman et al. study (1) cannot differentiate between the form of tenure [i.e., the substance of property rights (4)] and tenure security [the assurance rights are upheld by society (5)]. Blackman et al.'s (1) six hypotheses suggest security is more important; however, rights and security at baseline are not known. Yet, this is central to policy implications: Should title be promoted irrespective of current local norms and rights, or is providing more assurance that local institutions will be upheld in statutory systems more important? As Blackman et al. note, identifying such causal mechanisms remains elusive.

At its core, titling empowers landholders with agency over land-use choices and legitimacy against which they can make claims. Titling itself may or may not slow forest change, which Blackman et al. (1) note through their discussion of similar studies (6, 7). However, their six hypotheses and *SI Theory of Change* section (1) all attempt to explain how community titles protect forest. Although internally rigorous, this study's results are still specific to the rural Peruvian context in the early 2000s. Understanding how contextual factors impact outcomes is crucial for whether title "stems or spurs forest damage." Again, we applaud Blackman et al. (1) for raising the bar on methods for assessing the impact of land tenure on forest outcomes. Still, given the high stakes for communities and forests, we urge caution in extrapolating these results.

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- 3 Holland M, et al. (2017) Titling land to conserve forests: The case of Cuyabeno Reserve in Ecuador. *Glob Environ Change* 44:27–38.
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- 6 Buntaine MT, Hamilton SE, Millones M (2015) Titling community land to prevent deforestation: An evaluation of a best-case program in Morona-Santiago, Ecuador. *Glob Environ Change* 33:32–43.
- 7 Liscow ZD (2013) Do property rights promote investment but cause deforestation? Quasi-experimental evidence from Nicaragua. *J Environ Econ Manage* 65:241–261.

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