

CHHATRE, ASHWINI [S22-P91]

Pathways to regeneration in human-dominated forests

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Forest commons, small and large, have been an important feature of human-domination landscapes in the tropics. Ranging in size from a few hectares to a few thousand, these forests serve as refugia for species of conservation concern, perform important ecological functions, while also supporting rural livelihoods. More recently, large scale national and international policy efforts have focused on enabling the regeneration of such forests across the world. Support for local institutions has been one of the principal policy mechanisms for improvements in forest commons, with evidence suggesting that devolution of decision-making authority to local communities leads to better forest outcomes. However, there remains lack of clarity on the identity of mechanisms through which local management efforts improve forest conditions, as well as the extent to which local institutions mediate the impact of larger drivers of change in forest conditions.

We use primary data from 242 forests across 15 tropical countries in Africa, Asia, and Latin America to investigate the association between social and biophysical factors on the one hand, and forest degradation and regeneration on the other. Our analysis specifically focuses on the mechanisms through which devolution might influence forest outcomes. We show that the formal involvement of local community institutions in forest governance is significantly and positively associated with forest regeneration.

Additionally, we also demonstrate that this effect works through variation in different types of operational rules, the number and kind of improvement activities undertaken in the forest, and the degree of rule compliance. We also find that local institutions mediate the impact of biophysical factors such as the size, elevation, and steepness of the forest management unit, the number of different groups using the forest, the distance of user community to the forest, and the use of alternative energy sources in the community.

Our findings validate the emphasis on devolution of decision-making authority to local communities. At the same time, we also provide new and concrete evidence on the mechanisms through which such devolution leads to better forest conditions. Our findings will help design smarter interventions and become the basis for a better diagnosis of decentralization policies around the world. Finally, our insights can be used to identify the specific kinds of policy and material support needed by local communities in order to manage forests.