The Role of Local Governments in Preserving the Commons: Theory and Evidence from Indonesia

Teevrat Garg[*†], Caterina Gennaioli*, Stefania Lovo*

Abstract

A central question in environmental conservation is on the governance of environmental commons and in particular what level of governance is best to avoid over-exploitation and degradation of such resources. When over-exploitation of environmental resources generates spatially explicit negative spillovers, centralized governance and regulation can internalize these externalities. However, when enforcement of regulation is limited, either due to prohibitive costs or weak institutions, local institutions that benefit from more detailed information can promote better conservation (Gibson et al., 2000; Ostrom & Nagendra, 2006; Aleisina et al., 2015). Recent evidence suggests that decentralization of conservation policy (eg. for forests in Indonesia) can introduce competition amongst local regulators seeking illegal sources of revenue, which can drive over-exploitation of the commons (Burgess et al., 2012). Conversely, Alesina et al. (2015) show that decentralization in Indonesia results in ethnically more homogenous districts, which are better at curbing deforestation than more diverse districts. While these important papers allude to the role of institutions, no work, to the best of our knowledge, uses exogenous variation in programs targeted at improving governance to understand the importance of governance in environmental conservation.

If corrupt local leaders seek illegal sources of revenue, then different sources of rent-seeking behavior can either be complements or substitutes. If there are fixed costs incurred in procuring illegal revenue (eg. costs to win an election, or secure a contract), then different sources of illegal rents can be complements. Conversely, if the costs of avoiding detection or prosecution are increasing in quantity of illegal revenue, then sources of illegal rents can be substitutes.

We test these competing theories in the context of Indonesia where the World Bank rolled out a large community development project, knows as the Kecamantan Development Program (KDP). The KDP program targeted Kecamantan's or sub-districts that were provided block grants. Villages within sub-districts competed for a portion of the grant for village infrastructure and community projects such as roads. The KDP was targeted towards the poorest sub-districts, but the amount allocated to a sub-district was contingent upon the population of the sub-district. If a sub-district had less than 25,000 individuals, it received USD 90,000. If it had more than 25,000 individuals, it received USD 125,000. Since the

[*] London School of Economics and Political Science
[†] University of California, San Diego

number of villages (the unit of competition) in a sub district is largely invariant to population and continuous at 25,000, the effective discontinuity is in the average amount available per village or the *intensity of competition* for funds. To visualize, to the right of the cutoff, the intensity of competition falls discontinuously because even though the number of villages is the same, the size of pot of money available increases by 40%.

In this paper, we derive causal estimates of the impact of increased local competition for public funds using an inherent discontinuity in the design of a community development program. We find that increased intensity of competition for public funds reduces deforestation per hectare by 2 percentage points. We find that this effect around the cutoff for only those sub-districts that were included in the KDP program. As a placebo, we find no effect around the discontinuity in sub-districts not included in the KDP program. We further show that this effect persists for at least 6-7 years. We further demonstrate that the effect is not contingent on the villages *actually* receiving the funds, which is consistent with our hypothesis that the competitive process positively impacts local governance (Chavis, 2010) resulting in increased conservation.

Our results have strong implications for policy makers suggesting that there could be double dividends from local infrastructure projects when such programs are awarded on a competitive basis. This empirical convergence at the intersection of environment and development underscores the complementarities in development and conservation policy and a potential sustainability roadmap for emerging economies.

References

Alesina, Alberto, Caterina Gennaioli, and Stefania Lovo. *Public goods and ethnic diversity: Evidence from deforestation in Indonesia*. No. w20504. National Bureau of Economic Research, 2014.

Burgess, Robin, Matthew Hansen, Benjamin A. Olken, Peter Potapov, and Stefanie Sieber. "The Political Economy of Deforestation in the Tropics." *The Quarterly Journal of Economics* 127, no. 4 (2012): 1707-1754.

Chavis, Larry. "Decentralizing development: Allocating public goods via competition." *Journal of Development Economics* 93, no. 2 (2010): 264-274.

Gibson, Clark C., Margaret A. McKean, and Elinor Ostrom. "Explaining deforestation: the role of local institutions." *People and forests: communities, institutions, and governance* (2000): 1-26.

Ostrom, Elinor, and Harini Nagendra. "Insights on linking forests, trees, and people from the air, on the ground, and in the laboratory." *Proceedings of the national Academy of sciences* 103, no. 51 (2006): 19224-19231.