

Global evidence that bottom-up but not co-management improves compliance with commons governance compared to top-down regulations

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## **ABSTRACT**

Noncompliance threatens the sustainability of the commons. Arguments for bottom-up commons governance is often premised on assumptions that commons users comply more when they craft the rules that govern them. However, there is limited evidence linking governance and compliance, especially at large scale, because the gold standard for measuring compliance as a binary (comply/not comply) maps poorly onto the complexity of overlapping formal and informal rules that characterize commons governance. In this paper, we advance an emerging methodological tool to diagnose compliance types using a two-dimensional model with both quantitative and qualitative applications. We then use this tool to examine whether self-governance increases regulatory compliance with marine protected areas, a widespread tool for fisheries management, through the analysis of a survey of fisher attitudes collected by the nonprofit organization, Rare, in seven countries with total  $n > 5000$ . Using a cluster analysis, we found four compliance ideal-types: committed, supportive, ambivalent, and resistant. Top-down governance was associated with more resistant fishers while bottom-up governance was associated with more committed fishers. Contrary to our expectations, co-management was indistinguishable from top-down governance. Based on the ratios of different compliance types, we suggest several policy levers that could improve governance. This study suggests that more attention should be given to how resources users perceive rules rather than just the behavior of compliance.