

Co-management Policy Can Reduce Resilience in Traditionally Managed Marine Ecosystems

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Abstract

Best-practice environmental policy often suggests co-management of marine resources as a means of achieving sustainable development. Here we consider the impacts of superimposing co-management policy, in the form of territorial user rights for fishers over an existing traditional community-based natural-resource management system in Chile. We consider a broad definition of co-management that includes a spectrum of arrangements between governments and user groups described by different levels of devolution of power. We used participatory rural appraisal techniques and questionnaires to understand the mechanisms that underpin the traditional management system for the bull-kelp “cochayuyo” (*Durvillaea antarctica*). Traditional management was based on the allocation of informal access rights through a lottery system. This system was controlled by a complex web of traditional institutions that were shown to be successful in terms of equity and resilience. Using a similar approach, we analyzed the effects of superimposing a government-led co-management policy into this traditional system. Two major effects of the new policy were encountered. First, traditional institutions were weakened, which had negative effects on the levels of trust within the community and intensified conflict among users. Second, the management system’s adaptive capacity was reduced, thereby jeopardizing the ecosystem’s resilience. Our results suggest that the devolution of power to this kind of fisher community still has not reached the level required for fishers to legally address the local deficiencies of the Chilean co-management policy. Additionally, legal adjustments must be made to accommodate traditionally managed ecosystems that offer benefits comparable to those mandated under the formal policy. A fuller understanding of the interactions between co-management and traditional institutions can help us to identify ways to promote resilience and facilitate equal access by mitigating the potential negative effects of co-management policy and informing its future implementation.

Keywords

Property rights, environmental entitlement, sustainability, resilience, artisanal fishers, traditional institutions, human dimension, cochayuyo, bull-kelp, Chile