

HOW TO MAKE MARINE PES WORK

Payment for ecosystem service (PES) schemes have been deployed in terrestrial conservation over the last decade, generating a wealth of lessons on how best to target and scale up an incentive-based alternative to inflexible regulation. Even as the effectiveness of these approaches continues to be debated on dry land, they are now emerging as an answer to coastal marine conservation. What conditions are needed to make PES work in the water?

CSF economist Rhona Barr asked that question in two parallel studies. One was a global survey of 42 experts on PES and marine conservation. The other was in-depth fieldwork in six Tanzanian fishing communities. Together, they suggest that PES can contribute to marine conservation but that targeting decides whether a program is economically fair and whether it works at all.

Marine environments are amongst the most heavily exploited and continue to deteriorate at a rate faster than any terrestrial ecosystem type. Part of the problem is that existing environmental regulation fails to address the short-term needs of fishers and coastal communities, particularly in low-income areas. Marine PES schemes are increasingly being advocated as an alternative – or complement – to more traditional regulatory tools, such as spatial, temporal and input controls.

PES schemes compensate resource owners for the private costs of more sustainable practices like the use of less destructive gear that generate public goods, such as the biodiversity benefits of reduced bycatch. PES have been used terrestrially in forestry and watershed management for many years. They have faced a number of challenges: difficulty targeting areas of high biological value or areas facing a real threat of degradation, adverse effects on poor people (because of their shaky property rights), and difficulties achieving large-scale coverage.



Boys working in a Tanzanian fishing community

In the ocean, these concerns are often compounded by the very nature of the marine environment. Marine systems are subject to ill-defined and insecure property rights, multiple resource users, as well as diffuse and mobile ecosystem services that are hard to quantify. The coast is also home to some of the poorest members of society.

Barr's research corroborates these concerns. Sixty percent of experts from her global survey identified complex tenure systems as the predominant challenge for marine PES. Despite the widespread nature of tenure problems, it is not the hardest problem to resolve; mechanisms do exist for willing governments to assign tenure. A thornier problem, in the author's view, is the identification of appropriate stakeholders, cited as the lead challenge by over a quarter of experts. With multiple and fragmented resource users there will ultimately be winners and losers.



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In order for marine PES to promote compliance, the distribution of their benefits must be viewed as legitimate and fair. Fairness must be defined and agreed upon by a critical mass of stakeholders.

Research in Tanzanian fishing villages identified additional pre-conditions for success of marine PES, particularly for poor households. In a PES scheme that proposed the creation of no-take zones, statistical analysis showed that fishers were more likely to participate if they were able to spread risk of reduced fishing income across alternative income-generating activities. Those with less diverse household economies were less likely to participate. Furthermore, fishers embedded in fishing dependency networks - in which fishers relied on at least one other person in order to fish or were relied upon by another - were significantly less likely to sign up. These results point to an important equity challenge because poorer fishers tend to lack income alternatives and be more embedded in support networks. Design of the PES scheme will have to account for their reluctance and lower the barriers to participation, without overly undermining effectiveness or unduly increasing transaction costs.

Marine PES can add to the current portfolio of conservation instruments and address some of the weaknesses of current tools. They can inspire external investment and local compliance through

a conditional incentive structure not seen before. However, promoters of these arrangements must be careful not to solidify pre-existing exclusion and marginalization common within many fishing communities. Cementing property-rights and getting the local structures right will foster compliance and enforcement, lower program costs in the long run, and promote sustainable management. In many cases, the barriers mentioned for marine PES should not discourage their use because *all* marine management tools face the same challenges: many diverse stakeholders, mobile and diffuse services, as well as the monitoring and enforcement associated with large open areas, to name a few.

Like any other successful conservation intervention, marine PES will depend upon biological, economic and social understanding of site needs and impacts. And where they are appropriate, marine PES should be used to reinforce existing regulatory mechanisms. Marine PES can deliver simultaneous environmental health, poverty alleviation and regional development benefits, goals that have previously often been in conflict. In unifying these agendas, marine PES can promote dialogue, encourage investment and facilitate legislation in favor of marine conservation.



Tanzanian women participating in a focus group about marine payments for ecosystem services. Tanzanian women generally fish using a technique called "tandilo," which involves dragging a net along the shoreline, while the men engage in many different types of fishing.

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