Driving adoption of payments for ecosystem services through social marketing, Veracruz, Mexico

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SUMMARY

In the Central Coast of Veracruz, Mexico, expansion of sugar cane production, cattle ranching and urban development threatens the tropical deciduous forest that serves as stopover habitat for numerous species of migratory raptors, among them the peregrine falcon Falco peregrinus. To conserve the habitat of these key migratory bird species, and slow deforestation due to agricultural pressures, Pronatura Veracruz and Rare implemented a social marketing Pride campaign to motivate landowners to join a network of private conservation areas in exchange for ecosystem service payments under Mexico's national Payments for Ecosystem Services program. In an area where Payments for Ecosystem Services adoption had been slow to take off, initial results indicate that the application of social marketing methods facilitated a social change in the Actopan municipality of Veracruz and ultimately enabled the protection of more than 1,500 hectares of previously unprotected forest.

BACKGROUND

The state of Veracruz covers an area of roughly 72,000 km^2, with a coastline extending more than 650 km along the Gulf of Mexico. The Central Coast of Veracruz is a critical stopover site for millions of neotropical migratory birds, including raptors such as the peregrine falcon *Falco peregrinus*. The migration is most visible in the month of October, when the raptors make their way south for the winter. In addition, the forests of Veracruz are home to a number of threatened and endangered mammal and reptilian species, including the Gulf Coast jaguarondi *Puma yagouaroundi cacomitli*, the northern tamandua *Tamandua Mexicana*, and the Morelet's crocodile *Crocodylus moreletii.* The biological significance of the region is evidenced by the Ramsar designation of more than 400,000 hectares of wetland habitat throughout Veracruz, roughly 1,400 of which are situated in the Actopan municipality where the Pride campaign took place (Ramsar 2012).

Despite the biological significance of the state, agricultural expansion (especially sugar cane production and cattle ranching) and urban development have threatened forest ecosystems throughout much of Veracruz (Martinez *et al.* 2009; Williams-Linera 2007). For example, the expansion of informal settlements around the inland city of Xalapa has reduced cloud forest cover in the municipality to only 7.6 % (Benítez *et al.* 2012). Prior to Pronatura Veracruz' Pride campaign, only 3 sites, totalling less than 100 hectares, in the Central Coast of Veracruz were registered as Private Conservation Areas under Mexico's national Payments for Ecosystem Services program, ProÁrbol (Balcazar Arias 2010).

In 2003 and 2004, Mexico's National Forestry Commission, CONAFOR, launched two payments for ecosystem services initiatives: the Hydrological Ecosystem Services Program and the Program to Develop Ecosystem Services Markets from Carbon Sequestration and Biodiversity (CONAFOR 2011). In 2006, these two programs were merged under the ProÁrbol program which implements its strategy through several distinct financing and institutional schemes. In spite of the immense effort of the federal government to implement Payments for Ecosystem Services schemes over the last few years, and some early successes, Corbera et al (2009) have identified that capacity has often been a key barrier to adoption and success of Payments for Ecosystem Services at the local level. Accordingly, Payments for Ecosystem Services schemes need to secure a minimum level of capacity and understanding across the actors involved so that they understand what Payments for Ecosystem Services is actually about and what should be delivered (Corbera *et al.* 2009). In addition, Payments for Ecosystem Services projects, even when implemented nationally, must be firmly rooted in, and indeed owned by, the communities in which they are implemented.

Mexico, with its vast diversity of ecosystem types, has a long history of deforestation. Rates between 1976 and 2000 averaged 263,570 ha/year for tropical forests and 545,000 ha/year for all ecosystem types (Bray *et al.* 2005, Corbera 2009). And as recorded above, the country has experienced mixed results with implementing Payments for Ecosystem Services to slow deforestation. Many of the challenges have arisen from lack of capacity and buy-in at the local level. In a country where roughly 80 % of forests are legally titled to local communities (Corbera 2009), almost any effort to slow deforestation in Mexico is required to be community-based (Klooster and Masera 2000).

ACTION

In 2008, Pronatura Veracruz began partnering with Rare, a non-profit based out of Guadalajara, to apply Rare's social marketing methodology, called 'Pride', in order to encourage

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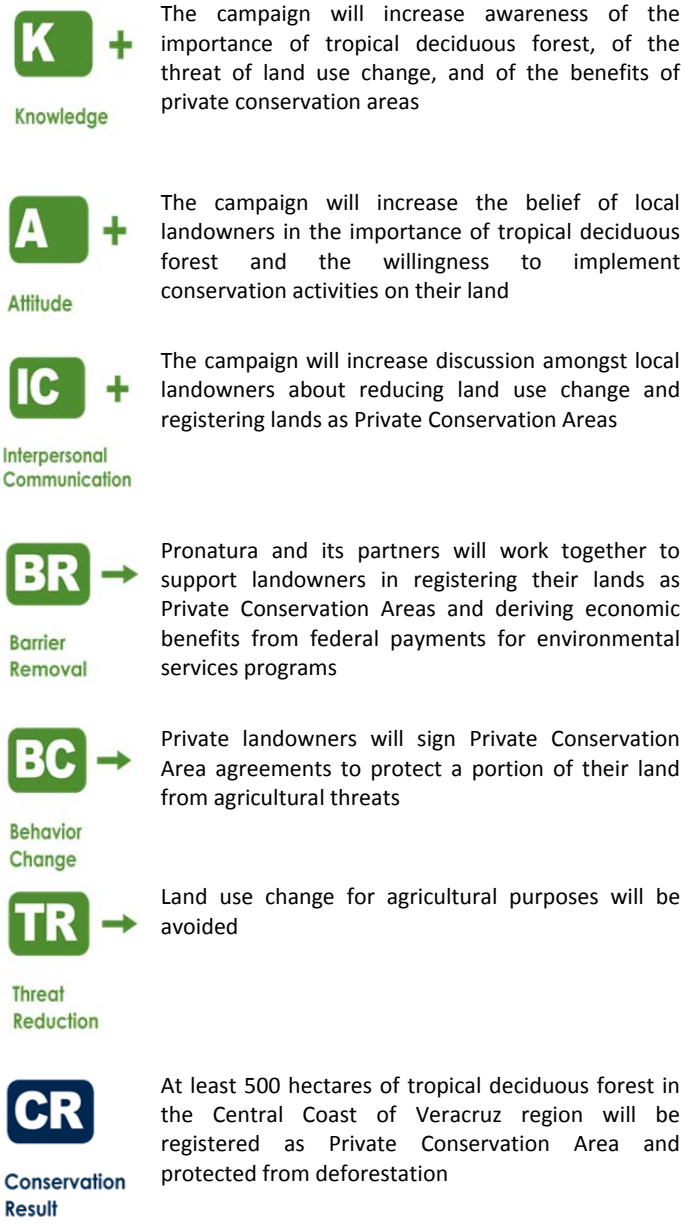

Figure 1. The theory of change from Pronatura Veracruz' Pride campaign, in which high-level objectives were set to improve the knowledge, attitudes, and interpersonal communication of local landowners and to remove the prevailing barriers to change.

private landowners in the municipality of Actopan to register their land as Private Conservation Areas, under the ProÁrbol system. Rare applies the Pride methodology globally to 'inform and motivate people to adopt both a conservation ethic and specific behavioral practices that are less environmentally damaging' (Jenks *et al.* 2010). Pride campaigns work by employing marketing techniques from the private sector and tailoring them to the targeted social good. They are based on the theory that threatening behaviors can be reduced, and replaced by sustainable behaviors, by educating people about the costs and benefits of alternative behaviors, and inspiring them to take pride in their local environment and resources. So by fostering new social norms, this enables them to change by removing barriers that stand in the way, whether they are technical, social, political or other. The purely economic

Figure 2. The Pride campaign logo, displaying the campaign slogan "Certifica tu tesoro" [Register your treasure]

rationale for participating in Payments for Ecosystem Services in Mexico has been slow to gain traction in certain communities and regions, so the hypothesis for Pronatura and Rare was that adoption of Payments for Ecosystem Services in Actopan could be encouraged via a social marketing approach to behavior change. Therefore, the organizations hoped that by educating the private landowners about the importance of tropical deciduous forest and fostering new social norms geared toward protecting it, they could ensure that within two years, at least 500 hectares of tropical deciduous forest in the Central Coast of Veracruz would be registered as Private Conservation Area and protected from deforestation.

Pronatura Veracruz staff worked with Rare program managers to develop and apply a comprehensive Theory of Change for this approach, outlined in Figure 1. A variety of techniques, approaches and media were used to achieve the Knowledge, Attitude and Interpersonal Communication goals of the campaign, including posters and billboards displaying the campaign slogan, 'Certifica tu Tesoro [*Register your treasure*]' (Figure 2). Radio spots, television advertisements, calendars, school visits and even a campaign song were created to deliver key information and reinforce the campaign messages. In addition,the campaign team led a visit to a local bird observatory to inspire individuals to appreciate their local environment and hosted events and festivals to rally community support. One of the key features of a Pride campaign is a 'flagship' species : a local charismatic animal or plant species, that is chosen to provide an empathetic symbol of the local biodiversity, and that is used in all of the messages and activities (Jenks *et al.* 2010). Pronatura staff selected the peregrine falcon *Falco peregrinus* as the campaign's flagship species and created a mascot, named Peri, to represent the peregrine falcon and serve as the campaign ambassador at key events (Figure 3).

Having employed the above techniques to generate buy-in amongst the local community, the campaign team subsequently sought to remove the prevailing barrier to adoption, that is the lack of technical capacity at the local level for participating in a Payments for Ecosystem Services scheme. They did this by

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Figure 1. Peri the peregrine falcon, the Pride campaign mascot, posing at a campaign event with 3 local landowners from the Actopan municipality.

organizing a series of meetings at which landowners could learn about the processes involved with registration and share experiences. The team also used these meetings to allow technical staff to collect and administer documentation for registration, so that landowners themselves would not have to absorb those costs. The hope was that with this combination of approaches, the campaign would inspire and enable numerous landowners to sign Private Conservation Area agreements and protect a portion of their land from deforestation.

The Pronatura Veracruz team conducted sociological surveys at the beginning (May 2009) and end (July 2010) of the campaign to assess whether the campaign led to any significant changes in knowledge, attitudes and interpersonal communication amongst the target audience. Household surveys used a stratified random sampling design to test for indicators along the campaign theory of change (Figure 1).

Specific survey questions were designed to test each objective along the theory of change. For example, for the campaign objective concerning knowledge of the threat of deforestation, respondents were asked a filter question asking whether they believe there are any threats to the forest in their region, and if they answered yes, they were subsequently asked a multiple choice-multiple response question about which threats they perceived to be most significant. Surveys also controlled for key demographic data to ensure that pre- and post- surveys were comparable. Sampling limitations, particularly around the inability to reach many landowners during the post-campaign survey, reduced the level of confidence in the significance of some results. There was also a lower response rate than expected (about 20% refused to respond in both pre- and post-surveys), but evidence is strong that additional surveys would support similar conclusions, particularly given the consistency and size of various changes. This is partly because it appears that the survey refusals were most likely due to religious differences between respondents and interviewers, and not due to any bias for or against the campaign itself.

CONSEQUENCES

Knowledge: Knowledge was increased along all four metrics measured by the sociological survey, though only one of these increases was significant at the 95% confidence level (Table 1). The understanding amongst landowners that deforestation is a threat to Veracruz' tropical deciduous forest increased 27 percentage points, from 36 % to 63 %. Knowledge about the environmental benefits of tropical deciduous forest as well as the concept and benefits of Private Conservation Area registration all increased by 10 or more percentage points, but larger samples are needed to determine whether these results are significant at the 95% confidence level. Interestingly, the baseline of knowledge about the *benefits* of Private Conservation Area registration (61 %) was more than 2.5 times the baseline of fully understanding the *concept* of Private Conservation Area registration. The implications of this difference are uncertain, but it potentially reflects an indication that the biggest barrier to adoption is not so much a lack of understanding about the benefits but rather a lack of the technical capacity to do it.

Table 1. The pre- and post-campaign survey Knowledge measurements of 4 Knowledge objectives, including calculated percentage point change and Chi Square test.

Knowledge				
	Pre-campaign (n=138)	Post-campaign (n=85)	% point change	Chi Square Significance at 95% conf. level
% of landowners understanding the environmental benefits of tropical deciduous forest	19%	29%	10	N
% of landowners understanding that deforestation is a threat to tropical deciduous forest	36%	63%	27	Y
% of landowners understanding the concept of 'Private Conservation Area'	24%	41%	17	N
% of landowners understanding the benefits of registering land as a 'Private Conservation Area'	61%	76%	15	N

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Attitude: The pre-campaign survey found that 34 % of landowners expressed a wish to register land as Private Conservation Area, additional evidence suggesting that a total lack of willingness was not the only barrier to adoption. That said, the post-campaign survey found 47 % wishing to register land, suggesting a 13 percentage point increase as a result of campaign activities. Again, additional surveying of a larger sample is necessary to confirm the statistical significance of this result.

Interpersonal Communication: The biggest and most significant changes occurred in the measurements of interpersonal communication. Social marketing theory and research have demonstrated that generating communication about behavior change amongst individuals in a social unit is an essential element in bringing that behavior change to fruition (Andreasen 1995; Jenks *et al.* 2010; Rogers 2003). This research shows that when the change involves a considerable change of lifestyle or livelihood, the individual has not demonstrated preparedness to make the change until she or he has discussed it with others in her or his social unit. In this case, the Veracruz campaign team observed a 27 percentage point increase in landowners discussing the benefits of tropical deciduous forest over the past 6 months and a 35 percentage point increase in those discussing Private Conservation Area registration, a significant indication of an increase in preparation to make the commitment (Table 2).

Behaviour change and conservation: The campaign team set a goal of at least 10 landowners signing Private Conservation Area agreements by the end of the campaign, for a total land area of at least 500 hectares. By July 2010, 14 landowners had done so, signing agreements to protect a total of 1,584 hectares, more than three times as many as the campaign team had hoped. Given the considerably low participation in Payments for Ecosystem Services prior to the campaign, the results provide strong preliminary evidence that the campaign played a significant role in creating the social conditions and removing capacity limitations to drive meaningful increase in the participation in Payments for Ecosystem Services in the Central Coast region of Veracruz.

The results of this study suggest that the social marketing approach can be an effective tool for driving greater participation in, and adoption of, Payments for Ecosystem Services, particularly in areas where the administration of the program is highly distinct from its implementation. Local buy-in and capacity is essential to understand the nature of the program as well as the means for implementing it. A further hypothesis suggests that social marketing can be used to supplement the opportunity cost of conservation versus land use change with the non-monetary value of social capital. Social surveys involving a larger research sample, as well as research implementation at a control site, will be needed to strengthen the case that social marketing provides a useful channel through which to clarify the benefits exchange between communities and national administrators in implementing the Payments for Ecosystem Services and thereby drives greater participation.

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