



# Public discourses on conservation and development in a rural community in Colombia: an application of Q-methodology

Andrés Vargas<sup>1</sup> · David Diaz<sup>1</sup> · Juanita Aldana-Domínguez<sup>2,3</sup>

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## Abstract

People living in rural areas are caught between the two often conflicting objectives of conserving biodiversity and promoting economic development. Current approaches to conservation are built on the premise that conservation and development are not antagonistic. Social conservationists advocate win–win solutions that both conserve biodiversity and promote human well-being. In this paper we explore how the conservation-development relationship is understood by a rural community in Colombia where remaining areas of tropical dry forest are threatened by human activities, and a payment for ecosystem services scheme, PES, is proposed as a conservation strategy. Q-methodology was used to identify and categorise local peoples' perspectives on forest conservation. Four distinctive perspectives were found: Social Conservationism, Fair Development, Development Advocate and Government's Responsibility. Social conservationism places more importance on forest conservation while the other three perspectives emphasise development. This suggests that the conservation program at the local level must be explicit about tensions and trade-offs. Not to do so can compromise the social acceptability of the PES scheme and therefore the conservation objective.

**Keywords** Tropical dry forest · Conservation-development relationship · Payment for ecosystem services Q-method

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✉ Andrés Vargas  
andresmv@uninorte.edu.co

Extended author information available on the last page of the article

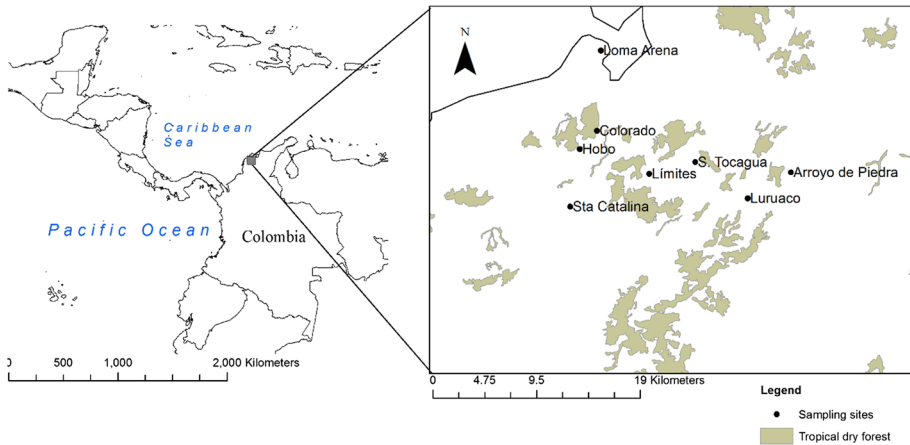
## Introduction

Human pressures on ecosystems in the developing world often occur in places where poverty overlaps with high biodiversity (Fisher and Christopher 2007). In such contexts, the conservation–development debate is sometimes framed in terms of two competing and opposite discourses: conservation versus development on one side, and conservation and development as synergistic on the other (Miller et al. 2011). A discourse is a shared way of apprehending the world, which is embedded in language and exists in people’s discussion (Lo and Howes 2015). Each discourse rests on assumptions, judgements, and contentions that provide the basic terms for debate (Dryzek 2013). As such, discourses reflect the different ways in which the sides of a conflict construct, interpret and analyse environmental problems. In this sense, the way conflict is dealt with depends to a great extent on the balance of competing discourses (Dryzek 2013). This is no less true for conservation policy. While the conservation versus development perspective tends to favour conservation strategies focused on protecting areas, the so called people-free parks or fortress approach (Fletcher 2012), the synergistic approach advocates for strategies that align biodiversity conservation with economic goals for community development, win–win solutions (Berkes 2004).

Although this way of framing the issue is common in the conservation debate it does not mean that these two discourses exhaust all possible understandings (Holmes et al. 2017). Rather, they are better thought of as the opposing poles of a wide spectrum of differing positions. For conservation, this is important insofar as implementing a policy involves a great diversity of stakeholders whose interests and values may not coincide even if they share the common objective of conserving the forest. This may be particularly relevant in the current situation where a significant amount of land with conservation value is privately owned (Butchart et al. 2015). Therefore, a better understanding of stakeholders’ views is critical to devise conservation policies which are socially acceptable and thus more likely to be successful (Pascual et al. 2014).

In Colombia, policies aimed at conserving forests on private land are gaining in popularity, in particular, payment based policies such as payment for ecosystem services (PES). It is thought that these types of strategies can resolve the conflict that arises from the fact that ecosystem services are public goods which flow from forests located on private land (Shogren and Parkhurst 2011). This research analyses a policy proposal aimed at conserving the tropical dry forest in the Colombian Caribbean through monetary payments made by local people to landowners, a PES program. The research objective is then to identify public discourses on forest conservation to analyse what would make the PES program socially acceptable.

This paper presents a systematic analysis of local citizens’ forest conservation discourses in a rural area in Colombia. Using Q-methodology, the empirical study characterized the pattern of subjective perspectives held by a group of ordinary citizens, after they participated in a deliberative workshop. We also asked participants their willingness to pay (WTP) to finance the PES scheme. The next section presents the context in which the study was realized. The Q-methodology is then introduced. Results are analysed and discussed in the ensuing sections.



**Fig. 1** Study site in northern Colombia, taken from Vargas et al. (2016)

## Research methods

### Background

The study was conducted in 2014–2015 in the Colombian municipalities of Luruaco and Santa Catalina, between the cities of Barranquilla and Cartagena in the Colombian Caribbean, an area once covered by tropical dry forests (TDF), Fig. 1. The TDF are now highly fragmented and degraded. At the national level it is estimated that less than 8% of the original TDF area remains intact, and that only 3% of the remaining forests are inside Protected Areas (PAs) (García et al. 2014). TDF have been declared a strategic ecosystem for Colombian environmental policy and has been classified as a critically endangered ecosystem (CR) according to IUCN's Red List of Ecosystems Criteria (Etter et al. 2015). Therefore, further expansion of PAs and payment based policies aimed at conserving forests on private land are priority management strategies in Colombian conservation policy.

This study was conducted in an area where some TDF fragments in good condition remain. The area also has a history of conservation related to the protection of the Cotton-top tamarin (*Saguinus oedipus*), an endemic and critically endangered primate (Savage et al. 2010). The primary drivers of deforestation and forest degradation in the area are: (i) extensive cattle ranching; (ii) mining; and, (iii) extraction of wood for fuel and making of charcoal for domestic and commercial use. Extensive cattle ranching is associated with Colombia's historical high inequality in land ownership (Faguet et al. 2015), whereas mining has recently expanded due to the real estate booms in the nearby cities of Barranquilla and Cartagena. Ranching and mining cause further inequality in the land tenancy structure. In contrast, wood extraction for fuel and charcoal is an activity mostly carried out by poor individuals who usually do not own land.

The PES scheme presented to the participants for discussion was based on the Colombian national PES policy that is meant to guarantee the provision of hydrological services. For this study the policy objective was changed from hydrological services to forest protection. The rest of the scheme follows government guidelines (Ministerio de Ambiente y Desarrollo Sostenible, Decreto 0953 May 17 2013) according to which the municipal government is responsible for the administration and funding (using its tax revenues) of a

scheme aimed at securing the provision of ecosystem services (ES) by paying landowners to either protect the forest or change current land-use patterns.

In this case, the objective of the PES was to transfer financial incentives (through a municipal tax) from households residing in the municipalities of Luruaco and Santa Catalina to landowners of the TDF remnants in exchange for forest conservation. Forested areas inside each municipality were identified through the official map that guides Colombia's TDF conservation policy (Instituto de Investigación de Recursos Biológicos Alexander von Humboldt 2013). The focus of this study was on the payment issue, i.e. on the willingness of households to pay an additional tax to fund the PES scheme.

By applying the government's blueprint to a particular context, several aspects deserving further attention emerge. First, the relationship between ES users and ES providers is highly asymmetric and contrary to what is found in most PES schemes, where small landholders living in poverty are usually the providers and the government or private sector organizations the "buyers" (Milder et al. 2010). In this case, most local inhabitants live in poverty whereas landowners are better-off. Second, it is mandatory for local governments to implement and fund the scheme using their own revenue, despite their poor fiscal condition. Local governments in the study area have limited resources and capacity to obtain money from sources other than the national government (e.g. foreign aid) to compensate for the tax revenue used to implement the policy. In this study area the combination of land inequality and low levels of economic development make it very unlikely that a PES scheme following the national guideline will be pro-poor. On the contrary, it seems to produce questionable results from an equity perspective.

## Q-methodology

The Q-method aims to analyse subjectivity, that is, it attempts to enable the communication of a personal point of view. Subjectivity is inherently expressive and subjective expressions are anchored to an internal frame of reference (McKeown and Thomas 2013). The Q-method combines qualitative and quantitative data to explore the opinions that exist about a topic within the sample population. It has been widely used in analysing the different social perspectives that exist in environmental issues (Webler and Tuler 2006; Brannstrom 2011; Curry et al. 2012; Lansing 2013; Bredin et al. 2015).

The Q-method involves participants' sorting a set of statements (Q-sample) about the subject matter that is provided by the researchers. According to McKeown and Thomas (2013), an ideal Q-sample is composed of statements that are in the native language of the participants, are comprehensive, and represent a cross-section of the range of their expressed opinions. The interviews and focus group (see data collection) enabled us to identify 92 such statements (the *concourse*) related to the topic of interest. Statements were classified into six categories (fairness, government, conservation policy, forest importance, development, and public participation), which were not a priori defined but emerged from the analysis of the data. This categorisation was then used to reduce the *concourse* to 40 representative statements that provided adequate coverage of the range while simplifying the sorting process (Supplementary Material Table A1). All statements were in Spanish.

Participants were asked to sort these statements according to how well they represented their own opinion, using a forced-choice distribution with a scale running from  $-4$  (disagree most) to  $+4$  (agree most). The forced-choice distribution dictates the number of statements that can be assigned a particular ranking value. The resulting rank-ordered set is

the Q-sort. Participant's Q-sorts were analysed by means of principal component analysis (PCA) (Webler et al. 2009).

Factors were rotated using the Varimax algorithm.<sup>1</sup> The resulting factors represent the assembled points of view, or discourses. Each discourse represents categories described similarly by individuals who are significantly loaded on the same factor. Finally, factors are analysed through the interpretation of the pattern of statements that characterises each typical discourse. This is an interpretative activity in which the meaning of each statement is conditional on its position relative to the other statements. The Watts and Stenner (2012) crib sheet method for factor interpretation which aims at sound and holistic factor interpretations was followed. The Q-method was used because it is underpinned by the communication of viewpoints among individuals as if they were deliberating (Lo 2013). Q-methodology is also an established approach for exploring political behaviour and is coherent with discourse theory (Niemeyer 2011).

## Data collection

### Semi-structured personal interviews

Five semi-structured personal interviews were conducted with key informants, identified based on their involvement in conservation activities. These interviews assessed their perceptions of forest conservation, its importance for the community and environmental conflicts.

### Focus group

One focus group was conducted to discuss perceptions of the government and public participation in decision-making. Eight people participated. The focus group was part of a larger training activity carried out by a local conservation NGO, who selected the eight participants.

### Deliberative workshop

The Q sorting was performed by 39 participants who participated in a deliberative workshop on forest conservation. Participants were recruited using a two-step procedure. In the first stage, a random sample of 225 households in the study area (sampling sites Fig. 1) were chosen to participate in a contingent valuation survey. The survey was administered face to face between July and August 2014. In the second stage, 50 households from the initial sample were invited to participate in the deliberative workshop, 39 showed up. They were selected on the basis of their place of residence, education level, gender and engagement in conservation activities. The 39 participants were randomly assigned to five small discussion groups (four groups of 8 and one group of 7).<sup>2</sup>

Participants were involved in a series of group discussions focused on TDF conservation issues. The workshop was comprised of three discussion sessions. The first focused

<sup>1</sup> Statistical analysis was done using the PQmethod software, freely available from: <http://schmolck.userweb.mwn.de/qmethod/downpqwin.htm>.

<sup>2</sup> One participant did not complete the Q questionnaire and was excluded from further analysis.

**Table 1** Factor characteristics

Factor characteristics	FA: social conservationism	FB: fair development	FC: development advocate	FD: gov. responsibility
Eigenvalue	9.7	4.5	2.9	2.2
No. of defining sorts	14	10	12	6
Average relative coefficient	0.8	0.8	0.8	0.8
Composite reliability	0.98	0.97	0.98	0.96
SE of factor scores	0.13	0.16	0.14	0.2
% variance explained	19	12	13	7

**Table 2** Number individuals uniquely loaded per discourse and number of individuals willing to finance the conservation program

Factor	Loaded individuals	Willing to pay to finance the program (%) <sup>a</sup>
FA: social conservationism	10	6 (60)
FB: fair development	7	5 (71)
FC: development advocate	8	6 (75)
FD: gov. responsibility	4	3 (75)
Total	29	20 (69)

<sup>a</sup>Counted if expressed a WTP > 0 to the valuation question asked at the end of session 3 of the deliberative workshop

on “concern about the TDF”, where participants expressed their views about the importance of the forest for their livelihoods and well-being, as well as the perceived relationship between conservation and development. The second session was about the proposed policy, PES scheme. At the end of this session participants were asked to state the monetary amount they would be willing to pay, through a tax, to finance the PES scheme.<sup>3</sup> The Q questionnaire was applied at the end of the day.

## Results

Based on the criteria used for retaining factors, (eigenvalue > 1, variance > 40%, used for most Q-sorts, Watts and Stenner 2012), four factors were extracted for rotation. These four factors explained 51% of the variance with 36 of the 38 Q sorts loading significantly on one or more of the factors (Table 1).

Of those 36 Q sorts, 29 uniquely loaded on one factor. In terms of an individual’s stated WTP to finance the PES program, it was found that 69% of them are willing to pay (Table 2). The proportion of participants willing to pay is lower for factor A (FA) than for the other factors, but not statistically lower (Fisher exact test:  $p=0.675$ ).

<sup>3</sup> For further details see Vargas et al. (2017).

**Table 3** Factor interpretation crib sheet for Factor A: social conservationism

Statements ranked at + 4	
27	Forest of this region must be conserved to protect animal species at risk of extinction + 4
28	We are part of the environment, without it we would not exist + 4
Statements ranked higher in Factor A than in other factors	
22	Protecting forests is necessary because we are running out of natural resources + 2
33	If we as a community don't take action then business will not compensate for the deforestation they cause + 3
35	Land is owned by few, cutting down the trees benefits them and harms the local community 0
36	Money cannot compensate welfare loss I experienced due to forest destruction + 1
40	Large projects' benefits do not compensate for the environmental damage experienced by local people + 1
Statements ranked lower in Factor A than in other factors	
5	Forest and environmental protection is government's responsibility – 2
7	Colombia is a country with great natural richness, we should protect it, it's part of our development – 1
9	Poor households affected by forest protection must be compensated – 2
11	The use of forests must be restricted because people don't use it rationally – 3
16	Forest conservation is a source of development – 1
18	Everybody should contribute to forest protection because it is for our region's benefit 0
Statements ranked at – 4	
10	Landowners affected by forest protection must be compensated – 4
24	Forest conservation diminishes local employment opportunities – 4

### **Factor A: social conservationism (10 uniquely loaded; 14 significantly loaded)**

Factor A represents a conservationist position. This discourse sees forests as an integral part of people's lives (statement 28), and recognizes its importance in protecting endangered species and natural resources (27, 22) (Table 3). Although people who are influenced by this discourse think that the government is not solely responsible for protecting the environment (5), they do not firmly assert that it is everybody's duty. Hence their acceptance of the forest's importance does not automatically translate into a strong environmentalist position. Social conservationists are not pure nature protectionists because they believe that conservation does not diminish local employment opportunities (24) and reject the idea that access to forest resources must be restricted because local people overexploit them (11). They see the deforestation problem as more to do with the actions of a few powerful actors, such as rich landowners (who own most of the land) and mining companies (33, 35). As a result, the proposition of compensating landowners for the costs associated with measures aimed at protecting forests is strongly rejected (10). Compensation that is directed at poor households is also rejected but not so vehemently (9).

**Table 4** Factor interpretation crib sheet for Factor B: fair development

Statements ranked at + 4	
1	Business should pay to protect the forest as compensation for the environmental damage they cause + 4
7	Colombia is a country with great natural richness, we should protect it, it's part of our development + 4
Statements ranked higher in Factor B than in other factors	
9	Poor households affected by forest protection must be compensated + 2
12	Environmental authorities and the government are aware of our environmental problems but they do nothing about it + 1
13	Mining destroys the forest and does not bring benefits to local people + 2
14	Business causing environmental damage do not contribute what they should to local wellbeing + 1
15	The expansion of mining, agriculture and industry must not be stopped because it is a source of development, what we need is to prevent environmental damage + 3
18	Everybody should contribute to forest protection because it is for our region's benefit + 3
19	Forests are essential, we cannot put a price on them + 3
Statements ranked lower in Factor B than in other factors	
2	The government is not interested in protecting the region's forests – 3
29	Forest must protected because they improve our wellbeing – 1
Statements ranked at – 4	
34	Mining and cattle ranching produce deforestation and generates development, but that development is not for local people – 4
38	Consulting the community about the environmental impacts of mining and infrastructure projects is an obstacle to development – 4

### Factor B: fair development (7 uniquely loaded; 10 significantly loaded)

This factor represents a more pro-development discourse with a strong emphasis on distributional costs and benefits (Table 4). Participants subscribing to this discourse wanted to see the expansion of economic activity (statement 34), but not at any cost. They believed that measures should be taken to minimize environmental impacts (15) and that companies should finance forest protection programs (1) on the understanding that the environmental damage they cause hinders the expected social and economic benefits for the local population (13, 14). Their concern about the distribution of costs and benefits also extends to other dimensions. Compensation must be paid to poor households affected by conservation measures (9) and the community should have greater participation in environmental decision-making (38).

Although this factor cannot be classed as an environmental discourse it has a sympathetic disposition about conservation. Natural richness is thought to be part of society's development (7), thus everybody should contribute to protecting it (18). Nonetheless, some inconsistencies can be observed, i.e. considering forests as essential (19) while maintaining a mild position about their contribution to human well-being (29).



**Table 5** Factor interpretation crib sheet for Factor C: development advocate

Statements ranked at + 4	
31	If forests are destroyed we lose the services they provide to us, like oxygen and recreation + 4
39	People are now more participative in protecting the environment + 4
Statements ranked higher in Factor C than in other factors	
23	Protecting forests is necessary because we are running out of natural resources – 1
24	Forest conservation diminishes local employment opportunities – 1
37	Local participation in forest management is very important + 3
38	Consulting the community about the environmental impacts of mining and infrastructure projects is an obstacle to development + 2
Statements ranked lower in Factor C than in other factors	
1	Business should pay to protect the forest as compensation for the environmental damage they cause 0
3	Conscientiousness is more important than money to protect the forest and the environment – 1
33	If we as a community don't take action then business will not compensate for the deforestation they cause – 2
Statements ranked at – 4	
36	Money cannot compensate welfare loss I experienced due to forest destruction – 4
40	Large projects' benefits do not compensate for the environmental damage experienced by local people – 4

### **Factor C: development advocate (8 uniquely loaded; 11 significantly loaded)**

This discourse is characterized by a pro-development orientation (statement 40) which takes a conservative, though somewhat ambiguous, attitude to public participation. It considers that the public has become more willing to participate in decision-making (39), which is seen as a good thing in relation to forest management (37), but at the same time it is concerned that too much public involvement impedes development (38). This could be due to the more pro-business element, which denies the need for public pressure to force companies to compensate for the damage they cause (33). Moreover, development advocates are more cautious when it comes to affirming that companies have a responsibility for compensation (1). Development advocates see the forest in anthropocentric terms (31), and are therefore willing to trade environmental quality for money (36). They are more inclined to trust in economic incentives to protect the forest than in changing people's ways of thinking (3) (Table 5).

### **Factor D: government's responsibility (4 uniquely loaded; 7 significantly loaded)**

In this discourse, the emphasis is on issues concerning the government (Table 6). This is not an environmentalist perspective (statements 19, 21, 26, 27, 30, 31, 32), rather it sees the environment in anthropocentric terms as it argues that forest protection could bring economic benefits (17). This discourse considers that the environment should have a higher priority on

**Table 6** Factor interpretation crib sheet for Factor D: government's responsibility

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Statements ranked at + 4	
4	Regional environmental issues should be more important on the government agenda + 4
5	Forest and environmental protection is government's responsibility + 4
Statements ranked higher in Factor D than in other factors	
2	The government is not interested in protecting the region's forests + 1
3	Conscientiousness is more important than money to protect the forest and the environment + 3
6	For environmental protection I don't trust the government, it's corrupt + 2
8	Environmental protection costs must be borne by the government, not by the citizens + 2
10	Landowners affected by forest protection must be compensated – 1
17	Forest protection is an opportunity of economic benefit for local people + 2
20	No environmental policy is viable unless the current socio-economic model is changed + 1
25	Local people do not benefit from mining and infrastructure employment opportunities because they lack proper training + 2
Statements ranked lower in Factor D than in other factors	
13	Mining destroys the forest and does not bring benefits to local people – 3
19	Forests are essential, we cannot put a price on them – 1
21	Forests should be protected because animals have a right to live 0
26	The forest must be preserved for future generations 0
27	Forest of this region must be conserved to protect animal species at risk of extinction – 1
30	Forests are an important part of our history – 1
31	If forests are destroyed we lost the services they provide to us, like oxygen and recreation – 2
32	If the forests are destroyed we lost much of what we already have – 2
35	Land is owned by few, cutting down the trees benefits them and harms the local community – 3
Statements ranked at – 4	
38	Consulting the community about the environmental impacts of mining and infrastructure projects is an obstacle to development – 4
39	People are now more participative for protecting the environment – 4

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the government's agenda (2, 4) because it is one of the government's key responsibilities (5). Despite distrust in the government (6), the government's responsibility discourse argues that the government, rather than citizens, should bear the financial costs of environmental protection (8). Citizens on their part should play greater roles in environmental protection via public participation (38, 39) and by adopting a more ecologically friendly way of thinking (3).

## Discussion

Rather than assessing the degree to which local people support a forest conservation scheme, this study described different assemblages of forest conservation perspectives that exist across a range of individuals. Using Q-methodology it identified four factors, which can be interpreted as discourses on forest conservation and development.

The first discourse, *social conservationist*, is not characterized by a preservationist position that sees either the conservation-development or the nature-people relationships as a state of conflict. They are more inclined towards a sustainable development discourse that affirms the possibility of jointly advancing the goals of improving human well-being and environmental protection. This discourse is amenable to the “nature for people” framing of conservation (Mace 2014), according to which the goal of ecosystem management is to provide sustainable benefits for people.

The *fair development* discourse is more concerned with the degree to which the social and environmental costs generated by natural resource exploitation fall most heavily on the local population while the economic benefits are enjoyed by outsiders, especially rich individuals and companies. Although development ranks higher in priority than forest conservation in this discourse, it does not see development and conservation as an inevitable zero sum game. Rather, it thinks that win-win scenarios are one of the possibilities, so in this sense the conservation-development relationship is better characterized as being in a state of tension rather than antagonism.

The *development advocate* discourse exhibits a more development oriented position than the other three discourses. That is not to say that adherents to this discourse do not care about the environment, but that they see it from a more utilitarian perspective. For this discourse, the conservation-development relationship is characterized by a trade-off. Conservation gains are at the expense of development opportunities (McShane et al. 2011).

The last discourse, *government's responsibility*, emphasises the government's role in environmental conservation. This discourse, as seen in the preceding two, exhibits an anthropocentric perspective in which economic development ranks higher in people's priorities. Nevertheless, this discourse does not argue that there is an inevitable trade-off between development and conservation, as it thinks that forest conservation policies could bring win-win outcomes.

Comparing the four discourses reveals the different discursive spaces in which forest conservation is situated. Contrary to what Miller et al. (2011) call the “nature protectionist” perspective, where the goal of conservation is protection of biodiversity regardless of its contribution to human values or interests, none of the four discourses approached the conservation-development relationship in such nature-centred terms, neither did they understand conservation and development as inherently compatible. In other words, the four discourses advance, to a different degree, the idea that conservation can improve human livelihoods, though most of them also recognize the existence of trade-offs. The four discourses are also underpinned by an anthropocentric ethical stance. They differ, however, in how social justice aspects related to equity in resource allocation and decision making are taken into account.

While the *social conservationism* discourse seems to reject the idea of paying landowners the opportunity cost that forest conservation entails, even if they are poor, the other three discourses are not against such an idea, although there is dissent in regard to who should bear the costs. For instance, the *fair development* treats agents according to their economic capacity. Firms and well-off landowners must pay for the environmental damage

they cause and poor landowners should be compensated for not exploiting land resources. This view is at odds with the *development advocate* discourse for which the costs of environmental protection should not fall on businesses since they create economic benefits that compensate for the negative environmental impacts of their activities. This discourse, however, does not indicate who should pay. The *government's responsibility*, by contrast, places most of the burden on the government.

In terms of the position the four discourses take in regard to public participation, there are differences worth noting. While the *government's responsibility* and *fair development* discourses call for greater public involvement in environmental decision making, the *development advocate* sees public participation as a potential barrier to development projects. *Social conservationism* is silent on this respect. The importance of these different positions resides in their connection to the participatory aspect of procedural justice (McDemott et al. 2013); i.e. the fairness of the political process through which resources are allocated and disputes are resolved, an aspect that according to Pascual et al. (2014) is key to the success of any PES based conservation program. The absence of a common position towards public participation revealed in the four discourses indicates that people hold different ideas about the role that local people should play in environmental decision making, and by extension on what defines a good public participation process (Webler et al. 2001).

In regard to the relationship between discourses and the willingness to pay to finance the proposed PES program, it was found that most participants support the program and that there are no significant differences across discourses in this respect (Table 2). Therefore, the Q sorts reveal that the willingness to financially support the PES program must be interpreted in light of the relationships between the environmental, social and political underpinnings of discourses. In other words, participants support the same of course of action, i.e. the PES program, but not all of them for the same reasons. Acknowledging these differences is important since narrowly framing the conservation program as a market based instrument where local residents pay landholders the full opportunity cost of forest conservation would make the program socially unacceptable.

Since payments do not necessarily reflect a market transaction where people's multiple values have been reduced to money and nature has been fully commodified (Gómez-Baggethun and Muradian 2015), PES programs are better conceptualized as governance structures that create new relationships between the beneficiaries and providers of ES rather than market mechanisms (Vatn 2015). Furthermore, by assuming that social disputes can be solved through transfers of resources between social agents, the market metaphor obscures the socio-environmental conflicts that underlie conservation on the ground (Muradian and Cárdenas 2015).

## Concluding comments

Tropical dry forests are critically endangered in Colombia. Because their conservation requires going beyond the traditional PA approach to design and implement conservation programs on privately owned land, the debate on whether conservation impedes economic development immediately arises. By mapping discourses this study shows that local people's understanding of the conservation and development relationship is more diverse than usually thought, and thus cannot be reduced to the polar views of win-win or inevitable trade-off. Distributional aspects and social justice considerations are important in shaping people's understanding of this relationship. Our study also stresses the importance

of seeing payment-based conservation programs as governance structures in which payments convey information which helps define the nature of the interaction between relevant actors (e.g. ES beneficiaries and landowners). Narrowly framing such payments as market transactions ignores the multiple reasons and understandings on which the payment is supported, thus running the risk of making the conservation program socially unacceptable.



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## Affiliations

Andrés Vargas<sup>1</sup>  · David Diaz<sup>1</sup> · Juanita Aldana-Domínguez<sup>2,3</sup> 

David Diaz  
davidd@uninorte.edu.co

Juanita Aldana-Domínguez  
ajuanita@uninorte.edu.co

- <sup>1</sup> Department of Economics, Universidad del Norte, Km 5 Vía Puerto Colombia, Barranquilla, Colombia
- <sup>2</sup> Department of Chemistry and Biology, Universidad del Norte, Barranquilla, Colombia
- <sup>3</sup> Laboratorio de Socio-ecosistemas, Universidad Autónoma de Madrid, Madrid, Spain