

# Nature conservation on private land: Civil Society Nature Reserves in Valle del Cauca\*

*Conservación de la naturaleza en propiedad privada: las Reservas Naturales de la Sociedad Civil en el Valle del Cauca*

*Conservação da natureza em propriedade privada: As Reservas Naturais da Sociedade Civil no Valle del Cauca*

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## Abstract

Civil Society Nature Reserves in Colombia play an important role in the conservation of ecosystems. This paper investigates why the owners of private areas in Valle del Cauca preserve nature on their properties. Among the explanations considered are the economic theories of rational choice and reciprocal altruism, as well as the theory of cultural value orientations which comes from social psychology. It was found that the predominant reasons for the establishment of nature reserves are self-interest and an appreciation of nature on the part of land owners.

**Keywords:** Nature conservation, Civil Society Natural Reserves, incentives, rational choice, altruism, cultural value orientations.

**JEL:** Q21, Q24

## Resumen

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Las Reservas Naturales de la Sociedad Civil en Colombia cumplen un papel importante en la conservación de ecosistemas. En este trabajo se investiga por qué los dueños de áreas privadas en el departamento del Valle del Cauca conservan la naturaleza en sus propiedades. Se consideran las explicaciones entre la teoría económica de la elección racional, la teoría económica sobre los comportamientos altruistas y recíprocos y la teoría de la psicología social sobre los valores de orientación cultural. Se encuentra que las razones predominantes para la conformación de las reservas naturales son el interés propio y la valoración de la naturaleza por parte de sus dueños.

**Palabras clave:** conservación de la naturaleza, Reservas Naturales de la Sociedad Civil, incentivos, elección racional, altruismo, valores de orientación cultural.

### **Resumo**

As Reservas Naturais da Sociedade Civil na Colômbia têm um importante papel na conservação dos ecossistemas. Este artigo investiga por que os proprietários de áreas privadas, no estado do Valle del Cauca, preservam a natureza em suas propriedades. Explicações entre a teoria econômica da escolha racional, teoria econômica sobre o comportamento altruísta ou recíproco e a teoria da psicologia social sobre os valores de orientação cultural são consideradas. As razões predominantes para a criação de reservas naturais são o auto-interesse e a apreciação da natureza de seus proprietários.

**Palavras chave:** Conservação da Natureza, Reservas Naturais da Sociedade Civil, incentivos, escolha racional, o altruísmo, valores de orientação cultural.

## **INTRODUCTION**

In Colombia, there are different mechanisms for private nature conservation, but the only one that has legal recognition is the Civil Society Nature Reserve. This legal form was born from the demands and initiatives of property owners who conserved nature privately on their land and demanded recognition for their actions on the part of the nation. Civil Society Nature Reserves are therefore, private properties where conservation measures and methods of sustainable production are carried out, which were registered before the *Unidad Administrativa Especial del Sistema de Parques Nacionales Naturales de Colombia* (Special Administrative Unit of the System of Natural National Parks of Colombia). This is the unit in charge of managing all the protected areas in the country (public as well as private). The reserve owners carry out an important task, in complement to the state, which is very important for the conservation of resources that the government is not protecting.

Like in most countries, in Colombia, a large part of the territory is in the hands of private owners and for that reason, private conservation is important. Not all land owners decide to conserve, as the uses they make of their lands are diverse. The different alternative uses that can be made of properties, the fact that the owners of Civil Society Nature Reserves decide to register their property before the state, and the need for more private conservation areas,

makes the analysis of this situation relevant. In this paper, the reasons why the owners of private plots decided to conserve nature on their properties and turn them into Civil Society Nature Reserves is explored.

Because of various limitations it is not possible to cover the whole country, although Colombia has Civil Society Nature Reserves in most of its departments. In this work it was decided to carry out the study in the department of the Valle del Cauca, which one of the pioneering departments in conservation. In the Valle del Cauca there are more than sixty registered Civil Society Nature Reserves and there are many properties where conservation work and sustainable production is realized but are not registered. The department also has various non-governmental organizations that look after conservation and support reserve owners in the implementation of projects with goals of environmental protection and sustainable production.

There is no single theory that provides an explanation as to why people decide to conserve on their properties and form a Civil Society Nature Reserve. Therefore, the incentives for private conservation that exist in Colombia are explored and three theoretical lines of thought are put forward that offer different explanations for such a decision. The first theory put forward is the economic theory of rational choice, the second is the economic theory of the private provision of public goods and non-self-interested behavior, and the last perspective considered comes from social psychology and is the theory of cultural value orientations.

The methodological approach of the study is explanatory and deductive. From the theories explored in the theoretical framework and the information on the rights of and incentives for Civil Society Nature Reserves, some hypotheses were proposed, and then contrasted with the compiled information. In such a way, the research also involved an empirical approach. For the collection of data, a sample of Civil Society Nature Reserves was chosen in accordance with the saturation criterion. The instrument chosen for compiling information is a semi-structured interview. Finally, the results are presented, an analysis of the compiled data is outlined which aims to contrast the formulated hypotheses.

## **BACKGROUND OF THE PRIVATE CONSERVATION OF NATURE**

Below, the object and area of study of this investigation is presented: the Civil Society Nature Reserves in the Valle de Cauca Department. As an introduction to the subject, a brief illustration of private conservation in both America and Colombia is shown; the way in which the legal form of the Civil Society Nature Reserve came into being is described as well the importance of these areas for the country. Later, the area of study, the department of Valle de Cauca, its environmental conditions and the Civil Society Nature Reserves that exist in the department are introduced. Finally, the incentives and rights that the owners of Civil Society Nature Reserves have in order to conserve on their properties are dealt with.

### **Private conservation in America**

Private conservation in America is something that has gained strength as an alternative way of conserving nature. The lack of public protected areas to prevent degradation and the growing interest of civil society in participating in the conservation of biodiversity, has influenced the growth of private conservation areas in the region. According to Chacón (2008), this interest of civil society in participating in the conservation of nature is not new, but rather forms part of the traditional sustainable practices of the original peoples. However, according to Monteferri and Coll (2009), private conservation in America initially arose in the north, with the conservation of private lands under the name of easement contracts, voluntarily agreed to by the owners of those lands who sought to limit exploitation and developments rights on their properties. There are currently individual and community owners, conservation networks and systems in the majority of American countries.

Monteferri and Coll (2009) indicate that in Latin America nature conservation incentives have been outlined and implemented in different forms. They have been implemented voluntarily as well as imposed, with or without the support of the state, and in some cases with the support of various NGOs. According to these authors, Brazil is a pioneering country in including this concept as a conservation alternative in its legislation. It has the strong backing of the civil society and more than 1,500 private protected areas recognized by the government. Colombia also has a large number of such areas and a legal form that is recognized by the state. In Venezuela, Ecuador, Bolivia and Peru there has been little support from the state but they have managed to develop small, but significant conservation systems. In French Guyana conservation on private lands has been imposed by the state.

### **Private conservation in Colombia**

Private conservation in Colombia arose from the initiatives of land owners who voluntarily decided to conserve nature and implement sustainable practices of production on their plots. For more than two decades, with the increase of private conservation plots and the collective organization of some of those owners in a network called Resnatur, the need for a legal form that would protect the conservation initiatives was put forward. With Law 99 of 1993, the owners belonging to the Resnatur network got the state to implement a legal form for private nature conservation plots. The legal category implemented by the state is the Civil Society Nature Reserve (RNSC by its acronym in Spanish), defined as: " ... the part or all of the area of a property which conserves a sample of a natural ecosystem and is managed under the principles of sustainability in the use of the natural resources" (Law 99 of 1993, art. 109).

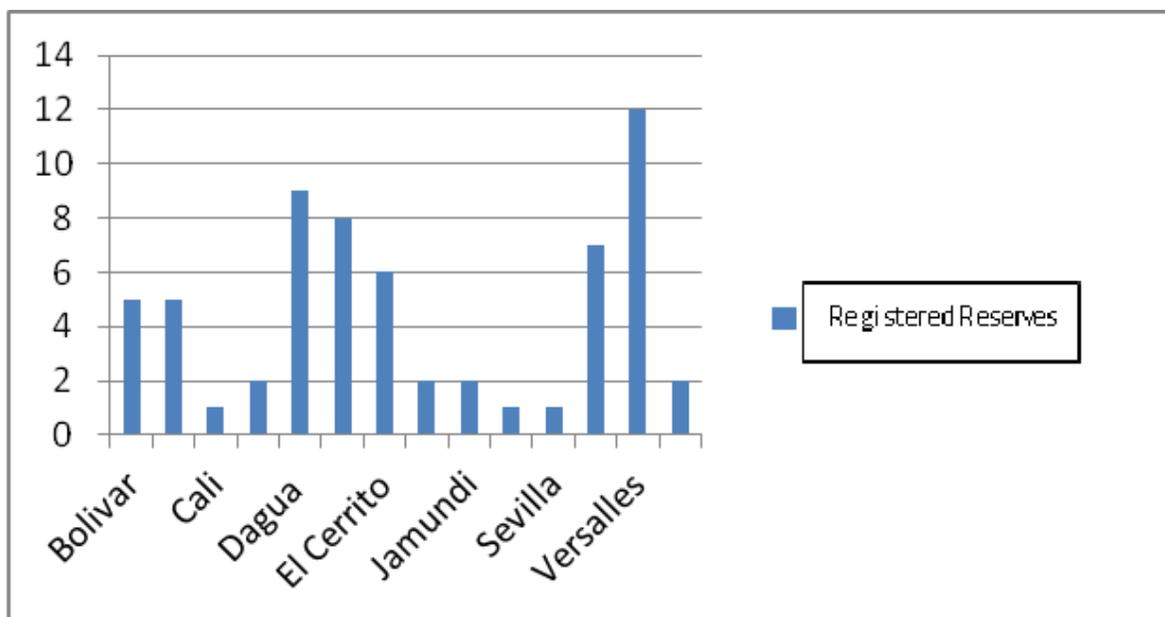
Ocampo (2010) highlights that with the legal category of Civil Society Nature Reserve it was sought that the state recognized the contribution of civil society to conservation and supported these initiatives.

Escobar and Solano (2009) indicate that the conservation models and functions vary between reserves according to the actors involved and their interests. According to these authors, reserves can be the property of an NGO, family, business or can be community

owned. As well as being dedicated to conservation, the reserves can carry out other activities, such as eco-tourism, environmental education, sustainable production systems, research and permanent habitation. In Colombia, the institution in charge of both private and public protected areas is the National Natural Parks of Colombia. According to information from this entity, available on its web page, the number of registered Civil Society Nature Reserves in the entire country, as of 2011, was 275.

**Area of study: the department of Valle de Cauca, Colombia**

The department of Valle del Cauca, 63 Civil Society Nature Reserves had been registered by the year 2014 (CVC, 2014a). There are also private conservation areas in the department that have not yet been registered or are in that process, which is why it is estimated that there are many more such areas. There are Civil Society Nature Reserves in 14 municipalities of the department, with Versalles, El Cairo and Dagua being those with the most reserves and Cali, Sevilla and Palmira with the least. In Figure 1, the number of Civil Society Nature Reserves per municipality can be seen.



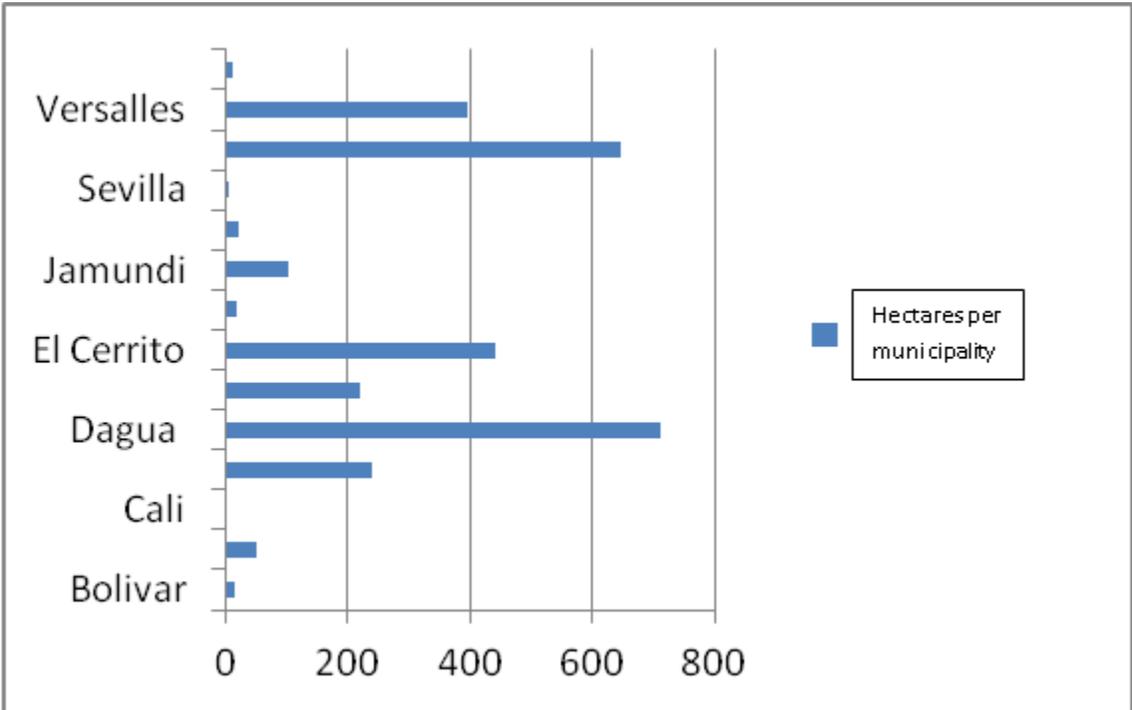
**Figure 1.** Registered Civil Society Nature Reserves per municipality

**Source:** elaborated by the author based on data supplied by the National Natural Parks of Colombia (2014a, 2014b, 2014c)

The characteristics, functions and objectives of conservation vary in each reserve according to geographical conditions and the interests of its owners. In the department, there are reserves as small as 0.16 hectares in the municipality of Bolívar, up to 269,838 hectares in the Dagua municipality. The municipalities with the greatest total number of privately

conserved hectares (the sum of the hectares of registered Civil Society Nature Reserves in the municipality), are Dagua, Tuluá, El Cerrito and Versalles. In Figure 2 the total of conserved hectares per municipality can be seen. The conservation objectives consist, in general, of preserving the natural ecosystem present within the reserve, although some reserves specifically protect some species of plant or animal that is characteristic of the area and is under threat.

The type of ecosystem of the majority of the Civil Society Nature Reserves in the department is Andean and sub-Andean jungle. In municipalities like El Cerrito, El Cairo, Bugalagrande, Versalles, Calima, and Yumbo, among others, this kind of ecosystem can be found. In the municipality of Dagua, a very special type of ecosystem can be found, sub-xerophytic. For this reason, the reserves located in this municipality hold great importance in the protection of this unique ecosystem of the Andean zone. One of the greatest contributions of the Civil Society Nature Reserves is the protection of the regions water supply, as the majority of Civil Society Nature Reserves protect springs, streams and watersheds.



**Figure 2.** Number of hectares of private conservation (RNSC) in each municipality.  
**Source:** elaborated by the author based on data supplied by the CVC (2014b)

**Rights and incentives of Civil Society Nature Reserves**

In Decree 1996 of 1999, which regulated articles 109 and 110 of Law 99 of 1993 on Civil Society Nature Reserves, the rights of the owners who turn their plots into Civil Society Nature Reserves were established. These rights are; participation rights in the planning

processes of development programs, the right of prior consent for the carrying out of public investments that affect the Civil Society Nature Reserve and the right to incentives. Regarding incentives, the decree establishes that the national government as well as territorial entities, should create incentives directed towards the conservation on the part of the owners of the Civil Society Nature Reserves RNSC (Decree 1996, art.11, 12, 13,14).

Escobar and Solano (2009) state that, on a national and municipal level, different types of incentives have been attempted to be formulated that have not been put into practice. The only incentive that they have managed to implement in some Civil Society Nature Reserves, according to these authors, is an exemption from property tax, which is solicited before the municipality in which the Civil Society Nature Reserve is located and its issuance is not guaranteed. However, on a regional level, the *Corporación Autónoma Regional del Valle del Cauca* or CVC (an autonomous environmental agency in the region), has also applied incentives for Civil Society Nature Reserves of the Valle de Cauca, realizing investments for the development of different projects that benefit the reserves, such as: support for the formulation of its management plans, agroecological restructuring, silvopastoral systems, research, reforestation, green markets, etc.

The decision to privately conserve is beneficial for the country, however, not all private owners decide to conserve. In this sense, the owners of Civil Society Nature Reserves make a very particular decision; to conserve on their properties as opposed to the diverse alternative uses. These owners must have had some kind of incentive or motivation which led them to make this decision and to carry out conservation on their plots. Why do they conserve natural areas on their properties? Why do they register them as Civil Society Nature Reserves? Why do they not make some other use of their properties? Are there incentives for private nature conservation in the department of Valle de Cauca and in Colombia? What are the motives that led these agents to conserve on their properties?

## **THEORETICAL FRAMEWORK**

No sole method of addressing the topic is put forward, as none of the theories offer a complete explanation of why individuals decide to conserve. Of the theories considered, two pertain to the economic field of research and one to that of social psychology. The first theory contemplated is the economic theory of rational choice. This theory suggests that individuals would conserve nature because it offers them individual usefulness. The second is the economic theory of non-self-interested behavior, individuals' decisions can be for other reasons than personal interest. This idea also covers the personal provision of public goods, altruistic and reciprocal actions, among others, which can be considered like donations or voluntary contributions to the public good. The final theory considered comes from social psychology, the theory of cultural value orientations, proposed by Schwartz (2006, 2007). This theory proposes that societies have some determined cultural value orientations which explain the behavior of individuals.

## **Rational and selfish agents**

From the theory of rational choice (Pindyck & Rubinfeld, 2013; Varian, 1993), the decision to conserve can be regarded as a decision of consumption, as a problem of the maximization of individual utility (Field & Azqueta, 1996; Kolstad, 2000; Hanley & Barbier, 2009). From this perspective, conserving nature can be analyzed as a consumption choice, that is to say, individuals, as well as consuming common goods, also consume a good called nature. Nature, like other goods, provides use to the individual and is preferred over other goods. The conservation of nature therefore corresponds to a decision in favor of individual interest. This approach presents some questions: Do the individuals who make the decision to conserve nature view it as a decision of consumption? Does nature constitute a good that these individuals can get use from?

From the perspective of rational choice, Hardin (1968) and Olson (1999) propose the inability or difficulty in finding a social agreement in order to reach common wellbeing coming from individual interests. For their part, in Ostrom (2000) and Ostrom *et al.* (2002), it is noted that such a coordination is possible through the formulation and putting into practice of rules that regulate the use of and the interaction between community members. It is considered important to mention the rapid way in which the theory of rational choice has widely studied the goods of common use. Nevertheless, the lines of study regarding the environmental goods mentioned do not suggest a way of analyzing why people conserve natural areas on their properties.

## **Beyond the assumption of self-interested individuals**

Conserving nature on private property may not only correspond to a decision of self-interest. It can involve concern for the wellbeing of others, which is to say, a decision that seeks to benefit not only the individual, but also other people or the community. Non-self-interested actions, decisions and behaviors, are not analyzed in the rational choice economic model. However, for a couple of decades some researchers in this field have been interested in modelling and studying them. The different analyses put forward suggest as behaviors non-self-interested, altruistic, reciprocal, prosocial, among others.

Social interactions influence people's behavior and decisions. Becker (1974) was one of the pioneers in trying to incorporate non-selfish behaviors and what he called social interactions into modern economic theory. According to this author, the personal characteristics of other people affect usefulness and income, for example, the good actions of one person give an incentive to others to behave in the same way. More recent works analyze non-selfish behaviors as a type of preference called "social preferences," which in its most simple version is described as an individual interest in the wellbeing of other individuals as well as one's own interest. In this sense, social preferences, according to Cabrales and Ponti (2011) are interdependent; individuals take the preferences of others into account as well as their own preferences.

Fehr and Fischbacher (2002) suggest that there are diverse types of social preferences; reciprocal preferences, pure altruism, an aversion to inequality and envy. Reciprocal preferences describe individual behaviors in agreement with the actions of other individuals, that is to say, an individual with reciprocal preferences will respond kindly to kind actions and in a hostile manner to hostile actions. Actions are classified as hostile or kind depending on the justice or injustice of their consequences or the intention that motivated them. Pure altruism is a type of social preference that describes the behavior of individuals who value positively the resources or profits of other agents, and never carry out actions against those profits. Pure altruism, in contrast to reciprocity, does not arise in response to altruistic actions; it is unconditional.

The theory of social preferences, in summary, proposes that individuals take other people's preferences and payoffs into account. The theory of social interactions suggests that individuals take the characteristics of others into account; both theories propose that individuals do not only have selfish preferences. For the objective of this paper, it could therefore be asked, if the individuals who make the decision to conserve on their territories have social preferences, or can it be assumed that they are preoccupied by the wellbeing or characteristics of others. In the case that those people exhibit social preferences, what type of social preferences do they exhibit? Do they show reciprocal social preferences?

Fehr and Fischbacher (2002) are not the first to suggest that individuals can behave for reciprocal or altruistic motivations, other economists have analyzed these motivations. A fundamental determinant of human behavior is reciprocity. Zamagni (2006) puts forward that the incentive of reciprocity is a behavioral response to perceived courtesy, in such a way that transactions between people are bidirectional but voluntary and there are no expectations of gains. Pure altruism, in contrast to reciprocity, does not expect bidirectional transactions. This author has been interested in individual behaviors that benefit social groups and communities, behaviors known as prosocial (Zamagni, 1995).

Pena and Sánchez (2006) highlight that the prosocial behaviors described by Zamagni can originate from altruistic and non-altruistic behaviors. Altruistic behaviors can be motivated by sympathy or duty, while non-altruistic behaviors can be motivated by social recognition and security networks, or by institutions of non-voluntary cooperation. In the case of altruism being motivated by duty, the individuals are motivated by moral values.

The works cited suggest various significant aspects; firstly, they recognize the importance and necessity of assuming that individuals have motivations different to those assumed in the economic model of rational choice, that is, selfishness or self-interest. Secondly, they suggest that these motivations follow a preoccupation for the wellbeing of other individuals or moral behaviors. Thirdly, they agree in that those motivations are derived from altruism or reciprocity. Fourth, the theory of social interactions as well as the theory of prosocial behaviors analyze the case of donations and the possible motivations behind them. These key aspects identified, a new question arises: How well can this theoretical line of thought explain the choice to conserve nature on private lands? Can the decision of private conservation be characterized as prosocial behavior?

## **Private provision of public goods**

One line of investigation that complements the above is the private provision of public goods. In the economic field, donations and voluntary contributions like the private provision of public goods have been studied. Donations and voluntary contributions are characterized, in general, by not being exclusive, the contribution of a person confers benefits to a group. For that reason, Sugden (1984) argues that the goods provided by the voluntary sector can be catalogued as public goods. Nature conservation can be catalogued as a task which confers benefits to the society, given that the maintenance of woods, for example, helps to keep the air clean, and that of water, helps to maintain water sources. From this perspective it can be put forward that nature conservation can be seen as a contribution to the public good. In this section some works on this topic are reviewed.

The majority of works on the private provision of public goods, analyze the efficiency of said provision or the motivations for which individuals contribute. One that is often quoted is that of Bergstrom, Blume and Varian (1986); these authors analyze the private provision of public goods under a general model, in which individuals have independent preferences, and are only worried about their private consumption and the total supply of the public good. The most important results of their research show that only a small group in society contributes to the public good and that redistributions of income do not necessarily increase the number of contributors to the public good. They also show that the contributors will be those with greater wealth, that the contributors will consume the same amount of the public good as the private and that the contributions of the government displace private contributions.

The model proposed by Bergstrom *et al.* (1986) is a classic model of pure altruism. The model of Becker (1974) of social interactions, mentioned in the previous section, is also a model of this type. The model put forward by Becker analyzes two special cases, one is that of donations and the other is that of the redistribution of income among the members of a family. In the case of donations, Becker proposes that they can be motivated by the desire to improve the wellbeing of the recipients, by the desire to avoid the disdain of others or by the desire to receive social acclamations. This author finds that the utility of donors is positively related to the utility of the recipients, and that increases in the incomes of the donors would increase their donations.

Explaining voluntary contributions to the public good from conventional economic theory presents the necessity of resorting to new suppositions. Sugden (1984) affirms that it is necessary to assume some type of moral behavior that explains why people are interested in other people. This author finds that this behavior is reciprocity, and in his work he proposes that reciprocal motivations in a context of the voluntary provision of public goods, given that if all individuals contribute, each individual in particular will be obliged to contribute at least the same. In summary, the models mentioned regarding the private provision of public goods propose that donations can be seen as private contributions to the public good or as the provision of a public good.

These theories provide two important contributions to this work. Firstly, they propose that donations can be seen as the provision of a public good, and secondly, that this phenomenon needs to be studied. Therefore, can the choice to conserve nature on private land be considered to be a voluntary contribution to the environmental public good? Does the choice to conserve on private properties respond to a desire to improve the wellbeing of others?

### **Cultural value orientations**

The choice to conserve nature can be motivated by different factors to those proposed by economic analysis. From social psychology, Schwartz (2006) formulates a theory that explains individual or group behaviors and choices. The theory of Schwartz tries to explain and characterize cultures or ethnic groups, in accordance with the values emphasized in their way of life, this is called the theory of cultural value orientations. This author suggests that individuals belonging to a culture tend to make decisions and choose ways of life in accordance with the values that prevail in that culture. The analysis proposed by this author is focused on cultures, societies or ethnic groups, but, this analysis begins with the individual and for that reason his theory may serve to understand the motivations or values that influence their decisions.

Values, according to Schwartz (2007), are desirable objects which transcend specific situations, which vary in importance and that serve as guiding principles in people's lives. Values differ from one another by the type of motivational goal that they reveal. The theory of cultural value orientations proposed by this author, poses that there are ten cultural value orientations, the relevance of which has been empirically proven in different countries. Those ten values are: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security (in Table 1 their definitions can be found).

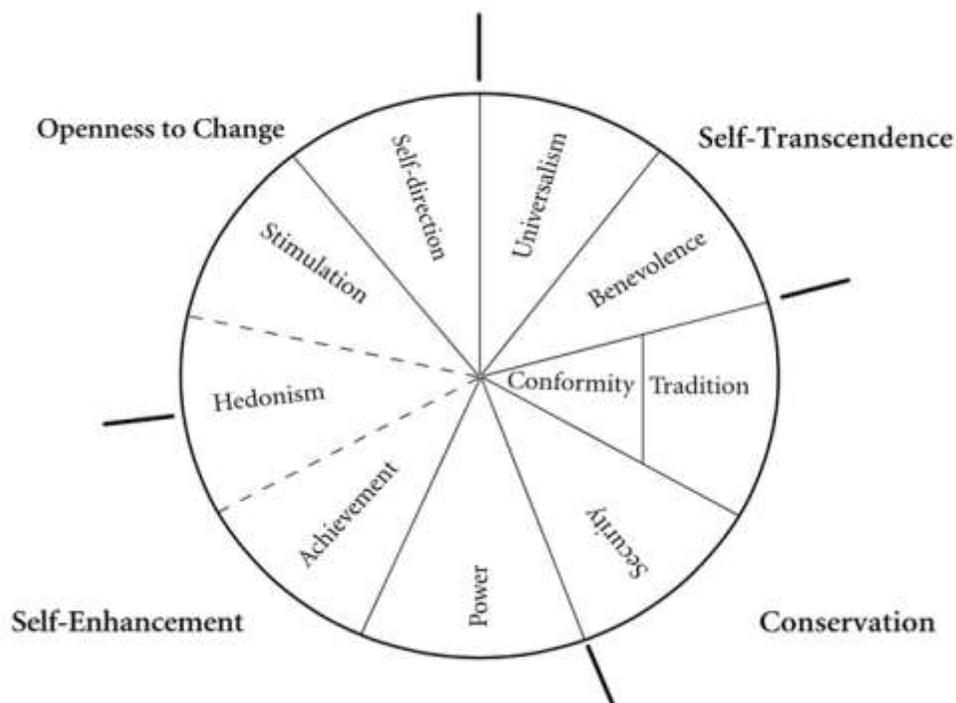
**Table 1. Definition of cultural value orientations according to the motivational goal that they express**

<b>Value</b>	<b>Definition</b>
<i><b>Power</b></i>	<i>Social status and prestige; control or dominance over people and resources.</i>
<i><b>Achievement</b></i>	<i>Personal success through demonstrating competence according to social standards.</i>
<i><b>Hedonism</b></i>	<i>Pleasure and sensuous self-gratification.</i>
<i><b>Stimulation</b></i>	<i>Excitement, novelty, and challenge in life.</i>
<i><b>Self-direction</b></i>	<i>Independent thought and action (i.e., choosing, creating, and exploring).</i>
<i><b>Universalism</b></i>	<i>Understanding, appreciation, tolerance, and protection of the</i>

	<i>welfare of all people and of nature.</i>
<b>Benevolence</b>	<i>Preservation and enhancement of the welfare of the people with whom one is in frequent personal contact.</i>
<b>Tradition</b>	<i>Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide</i>
<b>Conformity</b>	<i>Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.</i>
<b>Security</b>	<i>Safety, harmony and stability of society, relationships and self.</i>

Source: Schwartz (2007, p. 174)

The ten cultural value orientations are grouped into four dimensions according to their dynamic: self-enhancement, self-transcendence, openness to change and conservation (Figure 3). Self-enhancement is opposed to self-transcendence, the first emphasizes self-interest, while the second emphasizes concern for others. In self-enhancement are grouped the values of power, achievement and hedonism, and in self-transcendence are grouped the values of universalism and benevolence. The pursuit of one value can go against other values, as it can also promote or be complemented by the pursuit of similar values.



**Figure 3.** Theoretical model of the relations between the ten types of cultural value orientations.  
**Source:** Schwartz (2007, p. 175).

The other two dimensions also outline opposed orientations. Openness to change promotes independent action and thought, as well as preparation for new experiences, while conservation promotes self-restraint, order and resistance to change. Within openness to change are grouped the values of self-direction, stimulation and hedonism, and in conservation, the values of security, conformity and tradition. Schwartz (2007) represents the dimensions of values and those values are grouped in a circular scheme. In this scheme, the closer two values are in any direction, the more similar their underlying motivations are, and the further apart they are, the more opposed their underlying motivations.

This theory proposes new analysis alternatives for the choice to conserve nature. Each dimension can present an analysis alternative. The conservation dimension, could in principle seem the most adequate for the analysis of this choice, given that it emphasizes self-restraint and resistance to change. In this sense, those who choose to conserve nature may do so based on the motivation that it is an ancient world and it should be preserved. However, why not consider other types of motivations that can arise from the other three dimensions? The opposite dimension to conservation, openness to change, emphasizes preparation for new experiences. In this dimension, the motivation to conserve would be associated with the creation of a new world to improve.

The dimension of self-transcendence emphasizes concern for the wellbeing and interests of others. In this dimension, the choice to conserve can be seen as an action for improving the wellbeing of everyone. In the opposite analysis, the self-enhancement dimension, the choice to conserve can be seen as an action for one's own wellbeing, people who want to preserve a piece of the world for themselves. These two last analysis alternatives are similar to those proposed by the economic theory, self-enhancement can be said to be similar to the search for individual utility and self-transcendence to altruistic and reciprocal motivations. The theory of cultural value orientations suggests, therefore, an analysis alternative that does not contradict the analysis proposed by the economic theory; rather it is complementary.

None of the theories within the theoretical framework suggest a single way to analyze or understand the decision to conserve nature on private properties. Each makes a contribution or shines a light on the analysis of this phenomenon. Based on this, from each theory a hypothesis can be extracted as to why individuals decide to preserve nature on their lands or what the repercussions are of that decision. The questions formulated throughout the exposition of the different proposed theories, serve to formulate the hypotheses.

A first hypothesis is formulated from the analysis of the economic theory of rational choice: individuals choose to conserve on their properties because the enjoyment of nature creates utility for them. A second option is that the choice to conserve nature can be seen as the private provision of a public good that comes from a concern for nature and the wellbeing of society, and is motivated by altruism or reciprocity. A third hypothesis, related to the previous, would be that people who choose to conserve on their properties make that decision in accordance with some cultural value orientations.

Finally, there is a fourth option that cannot be dismissed; the incentives that exist for nature conservation. In the previous section the rights and incentives regarding Civil Society Nature Reserves were mentioned, and it was said that the state and some NGOs offer incentives for which individuals' conserve nature on their private properties. Among the cited incentives, the exemption from property tax is found to be the most common. From this, a fourth hypothesis is formulated: people decide to conserve because there are incentives for it.

## **METHODOLOGY**

The study has an explanatory and deductive approach. Explanatory studies, according to Hernández, Fernández and Baptista (2003), are characterized by looking for reasons or causes that provoke certain phenomena. In general, these studies follow a deductive method, present hypotheses and contrast them with empirical information. The proposed research explores: the reasons why natural areas are privately conserved, it presents some hypotheses for this question based on the theories revised in the theoretical framework and contrasts the hypotheses with empirical information obtained in the field work. A defined exercise is put forward, conservation on private properties in the department of Valle de Cauca is studied, and some cases are selected to be studied and compared, that is to say, Civil Society Nature Reserves in the department are selected to be studied. Below, the sample and the information collection procedure are presented.

For the research, a sample of Civil Society Nature Reserves located in the Valle de Cauca were selected. The sample was selected in accordance with the saturation principle. In this type of sample, according to Vásquez *et al.* (2006), the saturation point is reached when the information begins to repeat itself, becomes redundant and does not offer new aspects. For this, the sample in this type of research is not constructed in a probabilistic way, nor should it be statistically representative. The criteria of saturation chosen are: location of the reserve, area of the reserve and the importance of the municipality where it is located in terms of the number of reserves registered and the number of hectares conserved in that municipality.

In accordance with the location criterion, reserves located in municipalities of the south, center and north of the department were selected. Under the area criterion, it was sought that large reserves as well as small ones were represented. In the sample, reserves from 1.87 hectares to 225.28 hectares are found. The municipalities with the greatest number of registered reserves, as can be seen in Figure 1, are Versalles and Dagua; for this reason, it

was sought that these two municipalities be represented in the sample. Also, it was sought that reserves in the municipalities of Tuluá, Cerrito and Dagua be represented in the sample, as these have the greatest number of hectares conserved (see Figure 2). In accordance with the criteria, 13 Civil Society Nature Reserves were selected in the municipalities of Cali, Calima El Darién, Dagua, El Cerrito, Tuluá, Versalles and Yumbo. It was sought that the selected sample be a good reference of the Civil Society Nature Reserves in the department of Valle de Cauca. Also, it was sought that it not only be a good reference of biological diversity, productive systems and more, but also of the diversity of owners, their professions and occupations.

An interview was chosen as the data collection instrument. Semi-structured interviews were carried out, as they allowed the introduction of additional questions so as to obtain better information. Twelve interviews were carried out with the owners of the Civil Society Nature Reserves selected in the sample (see appendix 1<sup>1</sup>). For the realization of interviews, the interviewees were asked to sign an authorization so that the information could be used in the study.

In appendix 2 the questionnaire can be found. In the first part of the questionnaire some questions were formulated for the characterization of the reserve: the ecosystem, the flora and fauna present, the productive systems, among other aspects; information that served to complement the characteristics. In the second, questions that explored the research problem were included. The questions that make up the second part of the questionnaire were elaborated from the proposed hypotheses. The basic guide was the cultural value orientations scheme, which investigates the ten values in Table 1, in four groups that confront decisions with an individual or social inclination. An interview based on this approach allows, at the same time, the evaluation of the theory of choice that assumes self-interest as a prosocial choice, because they are included in the cultural value orientations approach.

## **RESULTS: MOTIVATIONS FOR CONSERVING NATURE ON PRIVATE PROPERTIES**

From the theories presented in the theoretical framework, four hypotheses were formulated. Below, an analysis is presented based on the information collected in the field work, where each hypothesis is addressed individually. Initially the hypothesis according to which the people choose to conserve because there are incentives to do so is dealt with; immediately afterwards the hypothesis that the individuals conserve in their territories because it generates utility is analyzed. Then the hypothesis that the individuals conserve so as to improve social wellbeing because of altruism and reciprocity and the private provision of the public good is studied. Finally, the hypothesis is addressed, according to which they choose to conserve in accordance with some cultural value orientations.

### **Conservation incentives**

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<sup>1</sup> The sample is composed of 13 Civil Society Nature Reserves, but two belong to the same owner, for that reason 12 interviews were carried out.

As one of the alternative hypotheses for analyzing the object of this work it was suggested that the owners of Civil Society Nature Reserves conserve because there are incentives to do so. The incentives and rights that are granted to Civil Society Nature Reserves according to the revised laws and bibliographies, consist of rights of participation in development programs, the right to prior consent for the implementation of public investments that affect the reserve and the right to incentives that should be formulated by the different municipalities. From the information collected in the interviews it was found that the municipalities in the Valle de Cauca have not carried out the task of creating incentives for private conservation. Nevertheless, the CVC, the environmental authority in the department, and some NGOs have created some incentives for conservation in certain municipalities.

The only incentive that is granted by some municipalities in the department, because not all do so, is a reduction of about 80% of the property tax. Of the 13 reserves interviewed, five have had their property tax reduced. Among the reserves with reduced property tax, only two confirm that the amount is significant, as both have more than 100 hectares, and for this reason the taxes are high. These Civil Society Nature Reserves are those of Los Chagualos, located in the municipality of Tuluá, and El Vesubio, located in El Cerrito. For the Civil Society Nature Reserve El Tesoro, located in the municipality of Dagua, the reduction is not significant because the area is small and the taxes are low. The owners affirm that the paperwork that must be carried out is more costly than the tax itself. The other two reserves which receive a tax reduction are located in the municipality of Versailles, and are the Civil Society Nature Reserves of Villa Manuela and La Huerta-Villa Nueva-El Descanso respectively.

Three reserves were refused the property tax reduction. Two of these are located in the municipality of Calima, and one in Yumbo. The reserves located in Calima belong to the same owner and are called Moralba and Rondalla. The reserve located in the Yumbo municipality is the Civil Society Nature Reserve Parque Ecológico Samuel Álvarez. The remaining reserves have not applied for the property tax reduction or the application is in process.

In some municipalities, the CVC has created incentives for private conservation (CVC, 2012). In Dagua, the owners interviewed state that this entity supports them constantly. The CVC offers them support and supplies so as to erect isolation fences, reforest, protect water, and they have provided diverse workshops for the implementation of sustainable techniques in their reserves. In Tuluá, Los Chagualos reserve has benefitted from various projects that the CVC has implemented in the zone for the strengthening of conservation areas. In the rest of the municipalities where interviews were carried out with reserve owners, the CVC has not implemented incentives and so the owners have not benefitted.

In the municipality of Versailles, the NGO Corpoversalles has dedicated itself to creating various benefits and incentives for land owners to conserve. The owners interviewed whose reserves are found in the municipality of Versailles, state that Corpoversalles has provided them with education, training, and technical assistance. Another NGO that has been

dedicated to the creation of incentives and benefits for the owners of private conservation efforts is Resnatur. The owners of the Civil Society Nature Reserve Refugio Natural Corazones Verdes, located in the municipality of Yumbo, state that through Resnatur they have received training in different topics such as sustainable production and organic agriculture. The NGO has offered them the possibility to carry out an inventory of the flora and fauna in the reserve that can be uploaded to the data bases of the Humboldt Institute, as well as other benefits and incentives.

Among the owners interviewed, some indicate that although they do not receive incentives at the moment, they hope to receive them in the future. These owners express that they hope for remuneration for their conservation work and among the reasons for which they conserve is the possibility of receiving incentives, as is the case of the reserve La Laguna. Other owners, like the owner of the reserve El Vesubio, declare that they do not conserve because of incentives, given that the incentives that the state offer are minimal and that they have other reasons to do so. Nevertheless, all the owners interviewed, independently of the reasons why they conserve, state that any potential incentives offered by the state, the CVC or any private entity are welcome.

Returning to the formulated hypothesis, based on the interviews carried out, it can be affirmed that in some cases, among the motivations to conserve lie the incentives, which is consistent with other cases in Latin America (Langholz et al., 2000). As in the case of the Civil Society Nature Reserves in Dagua, in the case of the Civil Society Nature Reserves in Versailles and that of the reserve La Laguna in Cali, they hope to receive them. The incentives that can be and are received by the owners, weigh more in the decision to register than to conserve, because all the interviewed reserve owners carried out conservation actions before registering their plots as Civil Society Nature Reserves. Many owners registered with the intention of having their conservation efforts recognized, of being protected in the face of public investments or projects that could affect them, of working in a team, or of being supported by incentives, but they already carried out conservation efforts.

### **Conservation for personal wellbeing or for the utility that nature confers**

As was presented in the theoretical framework, one of the proposed hypothesis is that individuals conserve because nature benefits them. This hypothesis, as was argued, complements or is similar to the self-enhancement dimension of the theory of cultural value orientations. For this reason, in this section the hypotheses are addressed together: individuals conserve for their own wellbeing, because nature benefits them and they conserve for themselves. From the information obtained in the interviews, it was found that this hypothesis is perhaps the strongest motivation had by the owners of the Civil Society Nature Reserves interviewed.

The owners of the Civil Society Nature Reserves El Cedral, San Antonio, El Vesubio, Rondalla, Moralba, La Laguna, among others, expressed that they conserve because they are passionate about nature. They enjoy the space that their reserve provides them, the

vegetation, the fauna, the water, the air, the landscapes, among other things. For those who live in the reserve, like for some who do not, it constitutes a space for relaxation, for some a working space and for others a space for recreation. For the owner of the reserve of Los Chagualos, like many more, the reserve is their life project, a place where they see their goals and personal dreams realized, a place that can be enjoyed in the present and in the future, it is a living place. The owner of the Civil Society Nature Reserve Tesorito, located in Dagua, stated that their family had always done conservation work and that they do so out of necessity, because they foresee that if they use all their land they will not be able to produce in the future, because if they do not take care of the water they would not have it in dry periods, especially as they live in a very dry region.

Those that produce on their farms have implemented sustainable techniques and systems, so that they and their families can continue to produce in the future. Some of those that produce in their reserves live from the resources generated from that production, and for that reason they are very conscious that they must use sustainable management, as is the case of the reserves located in the municipalities of Dagua and Versalles. For other owners, the resources generated from their production form part of their incomes, as is the case of the reserve Los Chagualos, while for other owners their production does not generate income for their own maintenance, but rather for that of the reserve itself, as is the case in the reserves El Vesubio and San Antonio, for which reason they are also very conscious that they should produce sustainably.

The owners that do not have a sustainable production are also conscious that if they want to enjoy their space in the future, they must conserve it. The majority of owners express that they conserve because they want to enjoy nature in the future, they are guarding a piece of nature for themselves, as well as for the community, as is the case of the owners of the Civil Society Nature Reserves Villa Manuela, San Antonio, Refugio Natural Corazones Verdes, among others. For most owners, being able to conserve nature on their properties is a personal achievement, is part of their life goals, of their life projects; many of them have professional and technical careers to do with the environment.

Therefore, the reserves become, for many, spaces where they can apply their knowledge, be it for productive activities, ecotourism, research, education, among other activities; spaces where they enjoy doing what they like and what they are passionate about. For this reason, it can be affirmed that perhaps the greatest motivation for which owners' conserve is because it benefits them in some way, it gives them personal wellbeing and because they conserve for themselves. The enjoyment of nature and the ability to do what they are passionate about on their properties, gives the owners utility. The different productive systems that they use in their reserves, the activities of ecotourism and environmental education, benefit the owners, it provides them with resources for their own maintenance and personal enjoyment. This proposed hypothesis explains to a large degree why owners conserve, however, other motivations exist related to the other proposed hypotheses.

### **Conservation for altruism or reciprocity**

From the economic theories of non-self-interested behaviors is presented the hypothesis: individuals conserve nature because they are concerned about the wellbeing of others and of nature; for altruistic and reciprocal motives. Previously, it was suggested that the self-transcendence dimension of the theory of cultural value orientations puts forward a similar analysis that reinforces this hypothesis, and that for this reason it could be considered that this theory is complementary to the economic one upon analyzation. The theory of non-self-interested behaviors suggests that the motivations behind those behaviors are altruism and reciprocity; for this reason, firstly it will be analyzed if the conservation carried out by the owners interviewed is motivated by altruism or reciprocity.

None of the owners interviewed conserve for reciprocity, given that none of them do so because another owner or the state is doing it. Only one of the owners explicitly states that they conserve out of altruism, that their family bought the plots where the reserves of Rondalla and Moralba are located, exclusively for conservation. The owner of these reserves argues that they do not have money making interests and that they do not carry out activity on the reserves to generate income, that they conserve because they were educated with these values and because their family considered it important to recuperate the tree cover so as to protect the streams on the plots. This owner states that if it was necessary, they would donate the property to the state or to some conservation oriented NGO in the zone.

The owner of the Civil Society Nature Reserves Rondalla and Moralba and their family, have a foundation that manages solid wastes, provides environmental education, works in reforestation projects and offers an advisory service in environmental law. According to the interview carried out with this owner, it can be discerned that their motives really are altruistic, as well as, that their economic level is superior to that of the majority of the owners interviewed. None of the other owners interviewed express that they conserve for altruistic motives, nor can this be sensed from the interview, however, all of those interviewed state that they conserve because the welfare of nature concerns them and that their actions benefit the local community where their reserves are located, and in general, everyone.

Many of the owners propose that they conserve because the degradation of ecosystems and the future water supply concerns them. The owner of the reserve El Cedral, expresses that they conserve because they had the opportunity to see how the ecosystems have changed and degraded. This owner is convinced that their actions positively affect the environment. Various owners argue that conservation efforts also have positive impacts on the community and fulfill an important social function. The owner of the Civil Society Nature Reserve Los Chagualos, for example, states that they carry out important work with the local community, that in their reserve they offer training for the implementation of sustainable techniques in the locality, and that from the reserve projects are formulated for the development of the locality.

Although the conservation efforts of the owners benefit the community, it cannot be affirmed that they do so because of altruism or the desire to improve the wellbeing of

others, strictly speaking. None of those interviewed, except for the owner of the Rondalla and Moralba reserves, would be willing to donate their plot for continued conservation to some state or private entity and all the owners express that they would share their property for research but not for any other activity. If the reason for which they conserve were social wellbeing, the owners would be inclined to say that they would donate their property, or that they would share it for many other uses that do not affect the conservation.

### **Conservation for cultural value orientations**

The theory of cultural value orientations proposes four approaches for analyzing the choice to conserve nature. Two of the approaches were already outlined in the previous hypotheses as complements to the economic theories; individuals conserve for their own wellbeing and individuals conserve to improve the wellbeing of everyone. With respect to the first of those approaches it was found that most of the owners conserve for their own wellbeing because they seek self-enhancement and utility. It was found that this approach offers perhaps a better explanation of why individuals conserve.

In relation to the approach that individuals conserve so as to improve the wellbeing of everyone, it was found that most of the owners do not do so for this reason, only one owner claims to have this reason. The two remaining approaches suggest that the choice to conserve nature can be motivated by the view that it is an ancient world which should be conserved, or with the view that it is a new world to improve. The first perspective corresponds to the dimension of values called conservation and the second to that of openness to change. According to the information collected in the interviews, the majority of the owners of Civil Society Nature Reserves are inclined towards openness to change in order to work to improve the current world.

Only two of the owners interviewed, those of El Vesubio and La Laguna, expressed that they are inclined towards conservatism. For both owners, the old world was better because ecosystems were less degraded and population was smaller. The other owners interviewed are inclined towards openness to change, arguing that currently the knowledge about biodiversity, environmental degradation and the technologies to prevent, and to prepare ourselves for climate change, and to implement sustainable techniques, are available. The owner of El Cedral, for example, proposes that everything has to evolve, that we have to move forward with modernity, that we have to train and educate ourselves.

The hypothesis that asserts that individuals decide to conserve in accordance with some cultural value orientations, captures the multiple motivations and reasons behind the choice to conserve. This hypothesis covers the two formulated economic theories and also presents two approaches, offering the visualization of a complete panorama of the reasons or motivations for which individuals conserve nature. Nevertheless, we should not fail to mention that incentives have been determinants for some owners.

## CONCLUSIONS

The rights and incentives granted are a determining factor in the decision to register the plot and in some cases in the decision to conserve. Most of the owners expressed that they registered as Civil Society Nature Reserves with the intention of protecting their plot from investments and private and public projects that can affect them, a right that they acquire upon registering as a Civil Society Nature Reserve. These owners also stated that they registered because they seek support from the state in their conservation efforts. For them, the rights and incentives were determinants in the decision to register but not in the decision to conserve, firstly, because they have other motivations and secondly, because there are no strong incentives to conserve nature in the department.

For the Civil Society Nature Reserves in Dagua, Versalles, and Cali, rights and incentives are a determining factor in the decision to conserve. Although the owners of these reserves argue that they also have other reasons to do so, the incentives that they have received from the CVC, in the case of the reserves in Dagua, and from Corpoversalles, in the case of the reserves in Versalles, have been important elements that have influenced their decision to conserve and later to register as Civil Society Nature Reserves. These incentives have been, in Dagua, technical support, training and different supplies, and in Versalles, environmental education, training, technical assistance, supplies and materials. In the case of the reserve La Laguna in Cali, the owner argues that among their reasons for conserving are the possible incentives that they can receive from the state (they conserve because they hope they will receive incentives), but until now they have received none.

Nature conservation for utility, for personal wellbeing and for oneself, is the strongest motivation that owners have. Most of them express that they conserve because they are passionate about nature and their reserve is a space where they can enjoy it. Reserves are for some, their places of work and living, where they obtain the resources for their own maintenance and that of their family. For this reason, they are conscious that they must protect the water, if they want to benefit from it, that they should produce sustainably, if they want to continue producing in the future, that they should protect the forests, if they want to enjoy clean air, as well as the diversity of flora and fauna species. For those who do not live or work on their reserves, they are still places to enjoy, relax and apply their knowledge. The reserve is a personal achievement for many that they hope to enjoy for a long time. It is a way to conserve a piece of nature for themselves into the future.

None of the owners interviewed conserve because of reciprocal motives and only one for altruism. The owner that conserves for altruism does not carry out any activity on the reserve other than conservation, and if necessary would be willing to donate the property for it to continue to be preserved. It should be highlighted that this owner has a higher economic level than most of those interviewed. All the owners argue that they conserve because the current state of the ecosystems concern them, and that their actions benefit the community, nevertheless, their decisive motivation is first and foremost their personal wellbeing. Motivated by whatever reason, the conservation efforts that they all carry out

benefit the local, regional and global community, and for that reason, it can be affirmed that they are contributing to the environmental public good.

The dimension of conservation from the theory of cultural value orientations, which apparently seems to be a strong motivation for preserving nature, is not. Only two of the owners interviewed claim that they have a conservative orientation. The rest of those interviewed are inclined towards the dimension of openness to change, of evolution and modernity, of preparation in the face of new experiences based on knowledge and available technologies. The other two dimensions, self-improvement and self-transcendence were analyzed together with the economic theories of utility, reciprocity and altruism, respectively. The theory of cultural value orientations offers an analysis that collects the different motivations and reasons that the owners have for conservation.

As has been argued, the choice of each owner to conserve is motivated by different factors. Of the hypotheses proposed, it can be affirmed that that which states that individuals choose to conserve in accordance with some cultural value orientations is the best explanation of these reasons, because it covers various motivations. Among the motivations that it covers it can be affirmed that conservation for personal wellbeing is the strongest motivation that owners have. The rights and incentives influence more the decision to register than the decision to conserve in the majority of cases.

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## APPENDIXES

### APPENDIX 1: CIVIL SOCIETY NATURE RESERVES SELECTED FOR SAMPLE AND OWNERS INTERVIEWED

Civil Society Nature Reserve	Municipality	Corregimiento/Vereda (small territorial division)	Area	Name of owner interviewed
La Laguna	Cali	La Castilla	1,87 ha	Eusebio Angulo
Moralba	Calima El Darién	Berlín	225,28 ha	Iveth Kathyryne Jaramillo
Rondalla	Calima El Darién	La Cristalina	13 ha	Iveth Kathyryne Jaramillo
El Tesoro	Dagua	Atuncela	14,96 ha	Oscar Benavidez Saa
Tesorito	Dagua	Atuncela	30,40 ha	Leonel Benítez
El Cedral	El Cerrito	El Pomo	38,4 ha	Alberto Silva Scarpetta
El Vesubio	El Cerrito	El Pomo	138,14 ha	José Genner Gutiérrez
San Antonio	El Cerrito	El Pomo	44,8 ha	Francisco Javier Arango
Los Chagualos	Tuluá	El Chuzo y El Brasil	167,33 ha	María Patricia Mejía
Villa Manuela	Versalles	El Balsal	2,5 ha	Luis Gerardo Monsalve
La Huerta-Villa Nueva-El Descanso	Versalles	El Balsal	26,4 ha	Gerardo Antonio Pineda

Parque Ecológico Samuel Alvarez	Yumbo	Dapa	6,46 ha	Martha Cecilia Cucalón
Refugio Natural Corazones Verdes	Yumbo	Dapa	4,74 ha	Perla Barba

## APPENDIX 2: INTERVIEW QUESTIONNAIRE. QUESTIONS ABOUT THE CHOICE TO CONSERVE

1. Is the reservation your own or of your family?
2. Is it your residence?
3. Do you consider your reservation a place of recreation?
4. What do you do most of the time?
5. Do you carry out research activities on your reservation?
6. Do you depend on the reservation for your maintenance and that of your family?
7. Does the reserve generate income or do you have to use other sources for maintenance?
8. For what types of activities do you receive income (sustainable production, ecotourism, environmental education)?
9. Do you receive financial support from third parties?
10. Does the state exempt you from property tax?
11. Does the state exempt you from income tax generated by ecotourism services?
12. Have you received subsidies for the improvement of your home or for the construction of tourist accommodation in your reservation?
13. Have you received financial support for the restoration of forests, rivers, the implementation of isolation fences, among other activities, from the CVC, a government entity or an NGO?
14. Do you receive any economic compensation for environmental services, sustainable production or any other activity?
15. Why did you form your property as a Civil Society Nature Reserve?
16. Where did the decision to conserve come from?
17. Why do you consider it important to conserve?
18. What have been the difficulties you have faced and how have you overcome them?
19. Is the reserve a way of securing a part of nature in the future?
20. Would you like your family to continue your conservation work?
21. Do you consider your work to be good for society?
22. Are you admired for your work?
23. Do you consider your work to be a personal achievement?
24. Would you share your ownership in order to implement conservation and sustainable management activities?
25. Would you donate your property to the state or an NGO to carry out research, conservation and sustainable management actions?
26. What is your perception of the state of today's ecosystems?
27. From your experience as a protector of nature and of life, what would you suggest to stop the degradation?
28. Is conserving your way of contributing to the world?
29. Do you consider that the old world was better and must be returned to?
30. How do you relate conservation to the community?
31. How concerned are you about the welfare of society?