

Social Property Relations and Payment for Environmental Services: a Case Study in a Rural Community in Mexico

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Abstract. *This article presents a case study centred on the rural community of Chichila, Mexico, which has implemented a local project of payment for environmental services to the neighboring town of Taxco. Mexican legislation recognizes different types of property rights related to water, forest and land and, likewise, recognizes the importance of conserving natural resources like forest and water while making use of the environmental services they can offer. This study is a qualitative approach, which shows how direct control of natural resources helps local people in the community to construct an idea of property and their own concept of environmental services. Both ideas are legitimized by the direct or indirect involvement of local agents in these projects, but at the same time bring to light conflicting interests between different actors at the regional level. This is because the process of appropriation of natural resources leads to confusion due to the overlapping of different property rights and the confluence of different, and divergent, political and legal institutions.*

Keywords: *social property relations, payment for environment services, environmental services, water management, rural community.*

Raktažodžiai: *socialiniai nuosavybės santykiai, mokėstis už aplinkosaugos paslaugas, aplinkosaugos paslaugos, vandens išteklių valdymas, kaimo bendruomenė.*

Introduction

Property, as the social institution it is, has been historically associated with the ideas of freedom and economic prosperity, but it is also related to social injustice as a consequence of its unequal distribution. It is impossible to imagine social life without it. The study of property involves multiple dimensions, economic, political, social, legal and cultural. Yet, despite its importance, theoretical and conceptual discussion of property in connection with payment for environmental services projects has been marginal.¹ Analysis has centred

¹ Environmental services are the functions and processes permitting the maintenance and reproduction of biological resources, as well as the generation of economic benefits and the

on the clear definition of property rights, as a primary requirement for establishing projects of environmental services; but in fact the appropriation of natural resources is a highly complex process involving social and power relations between owners and non-owners, and is profoundly influenced by the local historical background of natural resource appropriation practices and the convergence of different institutional frameworks governing property of water, forest and land.

This article discusses, with reference to a particular case study, the inherent difficulties of the appropriation process linked to strategic natural resources (such as forest and water) and how such difficulties affected the implementation of three agreements on environmental services in a rural community in Mexico. The case involved a proposal for Payment for Environmental Services which was generated by the community of Chichila without mediation from the Federal Government. Those agreements attempted to address the problem of water shortage in the city of Taxco, located downwards in the same drainage system, and at the same time to achieve sustainable development in the rural community through implementation of other projects judged to be “environment-friendly.”

The article is divided into two main parts; the first is a theoretical discussion of the meaning of social property relations *versus* property rights and how both elements are related to different conceptions of economic compensation schemes for environmental services. The second analyzes the local appropriation processes which have served as bases for the implementation of three agreements for environmental services, and outlines the characteristics of these agreements. The paper concludes with a discussion of the relevance of considering the impact of social property relations on the implementation processes for environmental services agreements at the local level, and some other relevant issues related to property.

Social Property Relations, Socio-Political or Legal-Economic Processes?

Property rights are produced, endorsed and sanctioned by some form of legitimate authority (Sikor, Lund 2009, 10). The main purpose of defining property rights in the context of payments for environmental services is to help generate projects for environmental services related to water, forest and biodiversity, among other ecosystem services (Johnson, White, Perrot-Maitre 2000; Landell-Mills 2002; Pagiola, Bishop, Landell-Mills 2003; Perrot-Maitre, Davis 2001; Powell, White 2001; Scherr, White, Khare 2004).

well-being of human beings. The flows of materials, energy and information, combined with services produced socially, are facilitate conservation – in sufficient quantities and quality – of the natural resources necessary for sustaining human society (Costanza, Folke 1996, 17; Daily 1997, 3; Ibarra 2001, 22–23; Wittmer 2005, 16).

Title deeds and the clear definition of property rights are essential requirements for environmental market-based schemes. This point of view originates in an environmental economics which considers that if property rights are weak, transaction costs will be correspondingly higher, but as Wunder (2007, 55) has observed, the main concern for service buyers should not be *de jure* land rights, but *de facto* control of land and resources use, control as an expression of the power relations emerging from natural resource appropriation processes, as analyzed by Adams (1966, 1978) and which I shall back to below.

The dominant approach to the analysis of environmental service projects emphasizes market failures in natural resource management, and considers that the sale of environmental services will generate economic resources that will benefit the people maintaining the forest (Pagiola et al. 2003). One of the fundamental objectives sought by environmental service projects in Mexico and other parts of the world is to contribute both to the conservation of natural resources and to the provision of environmental services related to forest and water, with special emphasis on the maintenance of those land uses that contribute to the provision of those services (Pagiola et al. 2003; Swallow, Meinzen-Dick, Noordwijk 2005, 40; Wunder 2007; Muñoz et al. 2005). Several authors have studied and described local initiatives for remunerating the provision of environmental services in Mexico (Burnstein 2002; Muñoz et al. 2006, 177; Merino, Robson 2005; Merino 2006) and other developed and developing countries such as Ecuador (Echavarría et al. 2004), the United States (Isakson 2002), Costa Rica (Miranda et al. 2003), South Africa (Le Maitre et al. 2007) and China (Cao et al. 2009); but none of them have considered overlapping rights and the difficulties implied by the ambiguity surrounding those rights in rural contexts overall in underdeveloped countries. It is the aim of this paper, then, to study the concept of property in a wider sense.

The legal infrastructure built up through titles of property is useful, for it furnishes security to parties participating in the interchange of services and merchandise (Rittich 1999). The possession of a title endorsing the property of a good is an indispensable condition for market-oriented economic growth and expansion; it is an asset, a symbol of wealth, security and power. For example, the mainstream discourse on land-titling assumes that once the poor are given a title to their share of the market they will become participants in the game with the awareness that it is better to be in the game than out of it (Brogaard 2009, 146).

In contrast, the socio-cultural and political dimensions of property are generally ignored, for the fact is that all appropriation processes are constructed socially, "property relations are social relations," and, as Hann (1998, 5) has pointed out, a social property relations approach can be used to facilitate comparative analysis in the field of social organization, where economics, politics and law intersect. An appropriation process is composed by three main elements simultaneously interacting at a specific point in time and space. On the one hand, there are social relationships arising from the execution of particular

appropriation practices that may be governed by formal and informal institutional frameworks. On the other hand, appropriation practices respond to local social dynamics influenced by usage and customs, by the course of history and perceptions and cultural values that may be imbedded or not in more ample institutional processes, for instance, federal laws and regulations, public conservation policies or other types of policy. Perception is understood as an information flow that the individual articulates consciously or unconsciously to express his expectations, visions, ways of understanding the world, where memory and practice play an important role by manifesting his experiences with respect to something (Giddens 1984, 46–47). Perception regarding the property of natural resources is influenced by the greater or lesser physical control agents have over them.

Formal rules are often ambiguous, overlapping or contradictory, leaving considerable space for different interpretations (Broegaard 2009, 145). It is thus useful to consider the concept of property relations by referring to different kinds of social actors (individual or collective) who are linked to each other through social relations; property takes the form of enforceable claims to some use or benefit of something. Property relations exist at the different levels of laws and regulations, cultural norms, social values and property practices, and property is a legitimized claim in the sense that the state, or some other form of political and legal authority, sanctions them (Macpherson 1978, quoted by Sikor, Lund 2009, 3). The appropriation process is embedded and forms a major component of property relations.

Property as social relations refers to the recursive appropriation practices and institutionalized characteristics of the social systems that agents produce, reproduce and transform in a specific time and space. This kind of relationship has social and moral meanings. Through social interaction the power some social agents have over others becomes evident, if a set of actors has control over something; all others must understand the signals of property and respect them independently of the existence of a property title (Rose 2007, 1901). This kind of analysis implies paying attention to the institutional and cultural context in which property relations take place, for such analysis seeks to go beyond the study of formal legal codes because the social perceptions and practices of what is legal or illegal may change over time without any change in actual legislation. Sikor and Lund (2009, 7) mention that government policies, statements and practices can effectively outlaw certain legal practices and even nullify established rights; for example, government can turn private property into public land, etc.

In a general way the social parties involved in all appropriation processes fall into the classes of owners, non-owners and the State. Owners are persons having the legal or socially recognized right to exclude others, and non-owners are those who can be excluded from the enjoyment of a good or service. In the case of the environmental service projects, proprietors are usually (wrongly) referred to as “service suppliers,” but in fact they are landowners whose cooperation is needed in maintaining the ecosystems generating these services.

On the other hand, the State not only oversees property relationships between owners and non-owners, it also takes part as a user or a purchaser of environmental services. The main idea of Payment for Environmental Services is that external beneficiaries of environmental services make direct contractual payments or give some kind of reward to local landowners or land users in return for their adopting styles of land and resource use that guarantee ecosystem conservation and restoration (Wunder 2007, 49).

Agents having property titles, which are normally backed up by the State, have a right to obtain benefits from possession, transference and exchange of a good. By recognizing property rights, the State uses the law as a tool to modify the behavior of the social parties, placing the social interest above private interests in view of the threat of non-compliance with the law; it also watches over the fulfillment of standards, exercising its coercive power as necessary with the purpose of keeping order. A clear definition of property rights ensures the fulfillment of contracts and transactions (Trubeck, Santos 2006). The role of law, through the definition of those rights, provides for better institutional and normative performance against risk and uncertainty. In fact, contemporary court orders (issued by the Tribunal Agrario) originate in the functional differentiation of complex social contexts, and the function of the law is to minimize insecurity regarding property with the aim of making market exchanges easier (Díaz 2001, 22–23). Thus legal and economic disciplines complement each other in the field of property rights. Nevertheless, both perspectives tend to simplify the real situation in which appropriation processes occur; they usually leave aside the social complexity pervading property. Security related to property is not just about rights but very much about relations, and all legal arrangements are the manifestation of a complex pattern of scarcities, priorities, power relations, and local circumstances (Bromley 2009, 26, cited in Broegaard 2009, 144).

At present, the analysis of social relations within the frame of payment for environmental service projects has a very important role to play, given that property titles do not guarantee that those transactions will lead to successful projects, mainly because what is involved is the simultaneous appropriation of several different natural resources with all the implications that has on a variety of different spheres, economic, political, social and cultural. In this context, what is most relevant for getting environmental service projects underway is the existence (or lack) of agreements between the social agents involved in the processes of appropriation of natural resources, irrespective of titles and legal rights to property.

In countries like Mexico, and specifically in the community of Chichila, when considering the adoption of projects involving environmental services, it is of considerable importance to view property as a social institution; this is mainly due to the existence of an important tradition of communal property since pre-Columbian times, a fact that is closely connected to the deep affective roots of the inhabitants regarding their land, territory and natural resources. Therefore social recognition of property and access to natural resources

has been not only a legal matter, but also a socio-cultural and political issue. Sikor and Lund (2009, 4 and 7) have argued that, in post-colonial contexts, property regimes are negotiable and in to some degree because of the multiplicity of institutions competing. Various forms of indigenous land tenure are being translated into one-dimensional property rights, causing a simplification of a complex, composite tenure system; but in fact the appropriation process implies a convergence of several components and different sociopolitical actors, as I shall set forth in the present case. Legally, the State may be the exclusive authority with the competence to legitimize property institutions; in the real world, however, multiple actors compete or collaborate in the management of natural resources and are legitimated locally by social recognition.

In the agreements on environmental services in Chichila, there are two categories of social agents participating, owners, non-owners and State. Each one have capacity for action in response to specific reasons, purposes, intentions or motives linked to the use and enjoyment of the good or service in question. Those social agents are reflexive beings who perceive and act in the world, attaching different meanings and practical implications to it (Giddens 1984, 5–7; Cohen 1987, 365). It is through discourse that they express what they themselves and others know, understand and make as part of their interaction with the material and immaterial world. The practices (use, access and management of natural resources) performed by agents reveal the social conception of what it means to be an owner or to appropriate something.

Property is commonly defined as a bundle of rights and relationships between persons with respect to valuable goods or services; it is not a relation between people and things but between people about things (Nuijten, Lorenzo 2009, 79). This concept refers to rights over the things that are possessed and not to the possessed objects. To be an owner means to be in a position to claim the right to use or benefit from a good, and this applies to both shared rights over a common resource and to individual rights (Macpherson 1978, 202). Property is a right that may be claimed by society or State, according to custom, convention or law, and although an executable and legal right, it depends on the fact that society conceives it as an existing moral element (Macpherson 1978, 11) – that is, a social recognition of the rights, obligations and regulations ruling the social behavior related to property.

From this point of view, property has a contingent, contextual and relational nature (Macferlane 1998, 114). It is a social, cultural and political phenomenon in addition to being legal and economic. Therefore, a single model of property does not exist, for at a given point in time and space a variety of social agents, practices and accepted rules of conduct, as well as formal regulations and organizations are present and influence the appropriation processes. In such processes, owners and non-owners establish power relationships among themselves with the purpose of defining who, how, when, where and for what purposes natural resources – and now, increasingly, environmental services – are to be used. Interactions established among agents may be essentially of

equivalence or of a subordinating-subordinated nature (Adams 1966, 64–65). Power tends to increase or diminish through time according to the social, political and economic context in which social property relations exist.

If we focus on the question of power within the framework of local land, water and forest appropriation processes we have to pay attention to control and the way that power is exercised, as well as the symbolic construction that agents place on such processes. Richard N. Adams (1978, 90) defines *control* as a physical process linked to action and practices, while the *exercise* of power refers to a mental process related to decision-making, by means of which an agent may exert a relationship of domination over others, by changing or threatening to modify the environment of a second acting party; in this way, it is possible to apply pressure on other agents so as to make them adopt a particular kind of behavior. Sikor and Lund (2009, 8) consider property and authority to be intimately connected in the form of legitimized power that represents a minimum of voluntary compliance in a given group of persons. This perspective complements the idea of control and exercise of power related to the process of appropriation of land, water and forest and the environmental services thus produced. These considerations have an important role to play in the analysis of the appropriation process as regards strategic natural resources and the potential environmental services they may be made to generate, since it is unavoidable that some agents dominate others, and that this will manifest itself in the form of conflicts of interests in which the environmental services projects may be involved.

Methods

For this research a qualitative methodology was used. Empirical data were collected from fieldwork carried out in 2005 and 2006 using the methodology of participant observation and interviews with key actors. Four different interview guides were prepared with semi-structured questions for, 1) the community authorities of Chichila and the local authorities of the neighboring communities; 2) the local government officers, both federal and municipal; and 3) other key actors (such as the technical advisor, older people in the town, the schoolteacher, etc.). A total of fifty-two interviews were conducted that enabled the analysis of the natural resources (water, forest and land) appropriation process in the community to be carried out. This was complemented with reviews of specialized literature and historical archives related communities' use of water, forest and land. The criteria for selecting individuals for interview was that they had to be people directly involved in the process, or who had exercised a direct role in decision-making regarding the natural resources appropriation processes and the implementation of environmental service projects in the community.

The information was analyzed using two primary categories, 1) property and 2) environmental services projects; and three variables, 1) social property relations, 2) appropriation practices and 3) institutional framework. The

information was organized and analyzed as shown by the following matrix (Table 1).

The matrix is divided into two major rows in which two categories appear, A. Property and B. Environmental services, and three columns in which we observe the variables (and their corresponding sub-variables), I. Social property relations, II. Appropriation practices and III. Institutional analysis governing the appropriation processes for natural resources (water, forest and land).

All the rows and columns are closely related. The first row (A) refers to the appropriation process for natural resources over time. We can analyze it through the evolution of the relationship between owners and non-owners and with other social actors participating in this process at the local level (AIa, AIb, AIc and AIId); and also through the evolution of practices of use and management of natural resources (water, forest and land) and the inherent power relations and social perception supporting the appropriation process (AII, AIIa, AIIb, AIIc, AIIId). Social property relations and appropriation practices are closely related to the institutional framework ruling these processes (AIII); their evolution (AIIIa); the different rules supported by the State or by society that govern the appropriation process of natural resources, and the factors determining the transformation or creation of new institutional frameworks (*de jure* and *de facto*) over time (AIIIb, AIIIc, AIIId). “A” is relevant for understanding “B” because the study of property as a social relationship helps to analyze the particular context in which agreements for environmental services were implemented in Chichila.

For the analysis of the environmental services (B) the transformation of social property relationships was considered at the local level as a cause and effect of the agreements in which payment for environmental services was accorded (BI1, BI2), likewise their influence in the adoption of sustainable appropriation practices (BII1), and the adaptation of these agreements to the community’s knowledge (BIII1, BIII2).

In the following part, we discuss the main characteristics of the case study and the most relevant outcomes.

The Natural Resources Appropriation Process and the Local Environmental Services Projects

Chichila is a rural community² located in the municipality of Taxco in the State of Guerrero in the southern part of the Mexican Republic. It is located in the high section of a valley which provides water to the municipal centre twelve kilometres downstream. Taxco itself is a small city with a long history of mining. It is in fact the oldest colonial mining site in Mexico and the entire American continent.

² In Mexico a rural community is defined on the basis of the number of inhabitants. To be classified as such it must have less than 2,500 inhabitants. By 2010 only 22% of the Mexican population was rural (INEGI 2010).

TABLE I

Variables	I. Social property relations			II. Appropriation practices		III. Institutions	
Categories	a) Evolution of relations between owners and non-owners	Relations between State and society	a) Evolution of land, water and forest uses	Access to and control of natural resources (possession, use, conservation, extraction and usufruct)	a) Evolution of legal frameworks	Transformation of legal frameworks (water, forest and land) Recognition of rights over time	
A. Property	b) Relations between the federal government and community	Interactions between the community and different agents belonging to the federal government	b) Evolution of current management strategies of natural resources at the local level	Reflexive and planned ecosystem intervention (supported by technical, scientific and technological aspects)	b) Different rules governing access to and uses of natural resources (<i>de jure</i> and <i>de facto</i>)	Land (recognition of rights of use) Forest (forest bars, conservation strategies) Water (bars, assignments, etc.)	
	c) Relations between the community and regional agents	Municipal government, other communities, technical advisors and enterprises, urban-rural relationships	c) Analysis of social practices of use and management of local natural resources	Analysis of territory management and the conception of control and exercise of power	c) Elements transforming local institutions	Economic, social, political and cultural. Scarcity, conflicts, intervention of federal organizations governing property, conservation strategies	
	d) Relations among community members	Local leadership actions, interactions among authorities, social power relations	d) Perception regarding property and the appropriation process	Different ways to value natural resources (symbolic, economic and functional), control and exercise of power	d) Creation of new local institutions supporting strategies for conserving local natural resources	Agreements and plans implemented according to local conditions (Land Use Plan, agreements with private enterprise)	
	1) Transformations of social relations between the community and other social agents	Intensification of relations between the community and different governmental agencies (municipal and federal) and other regional communities	1) Adoption of sustainable practices regarding use of natural resources	Projects responding to community needs oriented to the implementation of conservation strategies, the adoption of economic sustainable development projects and environmental services schemes	1) Implementation of agreements with environmental services	Adaptation and conceptual definition of the ES agreements with the municipal government, according to local needs and knowledge	
2) Social property relations in the context of environmental services agreements	Analysis of power relationships: subordinating vs subordinated, hegemonic relations and conflicts among users				2) Institutional discrepancies over property of natural resources and connections with environmental services agreements	Institutional ambiguity linked to water property conflicts among users	
B. Environmental services							

Since its founding in 1528, the area has been an important producer of silver, and to a lesser degree, tin. This has made it, for several centuries, the centre of Guerrero's northern Sierra; it is also the site of local government, and thus, the municipality's political and economical centre. A little over 50,000 inhabitants live in this city, representing 51% of the municipality's total population. Historically the economic vitality of Taxco has demanded a constant supply of water, food and raw materials such as timber and charcoal, which for a long time were used mainly for mining activities. This fact determined the relationship between the city and the surrounding area and specifically with Chichila, basically due to the use of its forest and water resources.

The community has an approximate area of 5,000 hectares (12,000 acres) and in 2010 it had 1,645 inhabitants distributed in twelve small villages or hamlets spread across its territory. The level of deprivation among the population is high. One of the most important socio-economic problems is the lack of employment, which has led to migration of the younger people, mainly to the United States. This is one of the principal concerns of the community's authorities, who are trying to retain younger people in the town. In this context, environmental service schemes have been considered a good option for generating or attracting environment-friendly projects with the aim of reviving the local economy.

As recorded in historical documents, the plots that became the community's present territory were originally a Royal Land Grant. From the 16th to early 19th centuries, the land was gradually sold or donated to local people by the colonial authorities. Even though there was no clear delineation of boundaries, it is evident that social property relations in Chichila became strong and stable over time because members of the community have enjoyed relative autonomy from the Crown in the decision-making regarding practices involving use of land, water and forest, and greater control over their territory than the governmental authorities concerned.

These strong social property relations were reinforced, strengthened over centuries and endorsed by the early legal recognition of land property by federal government in 1882. By contrast many rural communities recognized *de jure* and *de facto* rights over land only after the end of the Mexican Revolution (1921). Community rights in Chichila were confirmed in 1948 by a national Agrarian Office as part of the Agrarian Reform that took place during the 20th century, and the community's control over water resources have influenced they behaved like proprietors even though the federal government had decreed in 1922 the rivers and dams in the region to be property of the nation.

Historically, the geographical and ecological characteristics of the community's territory have led to the adoption of governmental strategies of conservation, such as controls on timber felling enacted in 1944, and on water use in 1978. More recently the community area was included in the Priority Areas for Conservation decreed by the National Commission for the Knowledge and Use of Biodiversity (Comisión Nacional para el Conocimiento y Uso

de la Biodiversidad, CONABIO) (Arriaga et al. 2000), owing to its location in the upper part of the basin in a water catchment area essential for the city of Taxco. Since the mid 20th century, the city of Taxco has suffered from scarcity of water, and this has worsened over the last three decades as a result of population growth (from 1990 to 2010 the population increased by almost one thousand inhabitants, reaching over fifty-two thousand by the end of this period).

This regional background influenced the implementation of the agreements on environmental services projects between the community and Taxco's municipal government.

Precursors to environmental services projects in Chichila developed in line with local needs, idiosyncrasies and past experiences. In the 1950s the community signed an agreement with a soft drinks enterprise for a *water right of passage*,³ which established that the company could use the water from a source located in the northeastern part of the community in exchange for a monthly payment (still in force today). This agreement did not specify any other condition related to the quantity or quality of the water the company could appropriate. The only kind of easement recognized by Mexican Civil Law is the *right of way*, defined as the right of a landowner to pass through a piece of land belonging to somebody else in order to reach his own plot. But in this case, the easement referred to the passage of water, something that corresponds neither to a right-of-way nor to an environmental service. However, although the *water right of passage* is a different concept from that involved in payment for environmental services, the concept was taken up again by the community and its authorities in the local projects for environmental services; the name was even used in the agreements signed by the community with the municipal government of Taxco.

It is important to mention that property of natural resources (land, water and forest, among other strategic resources) is defined in Article 27 of the Mexican Constitution. But neither this Article nor the Constitution as a whole mentions or recognizes environmental services. Article 27 establishes that “the Nation”⁴ has the right to impose at any time “on private property such arrangements as are deemed necessary in the public interest, in particular that of regulating, for the social benefit, the exploitation of those natural elements that are susceptible of appropriation, with the purpose of bringing about an equitable distribution of public wealth, while ensuring their conservation, as well as a balanced development of the country and the improvement of the living conditions of the rural and urban population” (Article 27). The political and ideological principle sustaining this Article establishes that society is prior to and above the individual, and natural resources conservation is a public interest aim.

³ This idea was analogous to the concept of an easement recognizing the right of one party to a restricted use of something in the property of another (such as a right of way).

⁴ The concept of “nation” appears in the Mexican Constitution with a double meaning; on the one hand, it refers to its legal-political aspect in the form of the Federal Government, and on the other hand, to socio-cultural aspects like Mexican identity enshrined in the people.

As regards environmental services, the Mexican Water and Forestry laws (National Water Law and General Law of Sustainable Forest Development, respectively) define these in a very general way, and none of them stipulates precisely the rights and obligations to which persons contributing to conservation or those benefitting from environmental services are subject. These frameworks only specify the rights and obligations of owners (whether private, collective or the State) with respect to water and forest management, and set the basis for exploring, and/or generating, methodologies enabling economic valuation of environmental services to be carried out, taking existing international experiences into consideration. In daily life practices, the rights and environmental services agreements implemented locally without the intervention of the federal government are defined on the basis of the local experiences, recognizing the control people have over their territory and its natural resources.

Water and forest appropriation practices in the community are linked to direct control and decision-making over the use and exploitation of natural resources, irrespective of the rights upheld by law. In Chichila, as mentioned above, exploitation of forest resources was historically of key importance for the survival of the local population, setting aside the fact that the community's natural resources were rigorously controlled during the 1950s and again in the mid 1970s. Federal government felling is still banned today. Nevertheless, such restrictions have not been respected either because people are not aware of such decrees, or simply because the State has lacked the means to enforce them. More recently, however, the perception of the local authorities of Chichila concerning the progressive decline in forest and water resources has been a determining factor for the adoption of rules and other instruments aimed at conserving natural resources and the associated environmental services; such is the case of the community's new Land Use Plan. This instrument was created collectively by the members of the community with the purpose of planning different uses of the land in the community in the long-term. The failure of previous governmental decrees contrasts with the acceptance, adoption and execution of new local rules about restrictive uses of natural resources, mainly because the latter were adopted in a consensual way by the community, and therefore are recognized and complied with.

The negotiation process of the environmental services agreements had its origin in a conflict over the use of water. In 1998, municipal government workers entered the Chichila territory with the intention of building a small dam to store water for use in the city of Taxco. This annoyed the inhabitants of the community because the municipal authorities had not asked for authorization to carry out these works in territory that legally belongs to Chichila; hence the government workers were sent away. The outcome of this experience was that the community's political leaders, with the help of a forestry expert, proposed the setting up of three agreements on environmental services to the municipal government. After the negotiation process (that lasted almost a year) the covenants were signed between 2003 and 2004 with the title, "Land use and right

of passage service for the granting of environmental services” and “construction of dams.” Each covenant refers to a dam, but one of these was contested by the neighboring community of Tetipac, which lodged an appeal against the municipal government of Taxco before the corresponding agrarian authority the Unitary Agrarian Court (Tribunal Unitario Agrario, TUA) over the possible infringement of its irrigation rights as a result of the construction of “La Zavala” dam. This led to the intervention of the National Water Commission (Comisión Nacional del Agua, CAN), which imposed a fine on the municipal government and ordered the dismantling of the dam that was then under construction, since the local authority had not obtained the federal government permit (called an “asignación”) for the exploitation of national water resources. Hence, out of the original three covenants one has miscarried.

As regards the performance of the two covenants in operation, the municipal government pays to the community for water storage in the two dams that were built by the municipality, and likewise for conservation activities and the maintenance of forest that the community’s inhabitants have undertaken to carry out. The money for payment for environmental services comes from the municipality’s public treasury and not from the fees paid by water users as the theory of payment for environmental services supposes. The municipal government agreed to pay monthly if, and only if, the water of each dam was in use. This amount was fixed by mutual agreement and not by a technical calculation based on the volume or quality of stored water. It is worth noting that, in principle, the areas of the territory to which maintenance must be given have not been clearly defined and no mechanism to verify the fulfillment of the parties’ obligations was established in the agreements, apart from the matter of water storage.

Strictly, the payment for environmental services is aimed at solving the city’s need for water, while generating alternatives for local development in Chichila and taking advantage of the political and social visibility attained through the agreements at local, state and national levels. These agreements established transactions in which one agent pays and another receives a certain amount for carrying out specific conservation activities in a given area. That does not mean that divergent interests between the social agents involved have disappeared, but it is a good example of their ability to negotiate and implement joint actions. As we can see, the Chichila agreements are the outcome of local needs and the knowledge and control that people have over their own territory and its natural resources.

Conclusion

This case shows that the legitimacy of property cannot be seen as fixed and absolute. As Sikor and Lund (2009, 6) point out, it will be more productive to pay attention to the process by which various social actors go about legitimizing their actions and defending them amid the convergence of multiple

legal institutions. It is also important to study the way in which social relationships are established and re-established through conflict and negotiation over time.

Social property relationships in the processes of appropriation and implementation of environmental services agreements are of great relevance given that – irrespective of the existence of property rights, institutional frameworks regulating property, and federal government arbitrating or administering the use of natural resources – local, social, political and economic conditions have had fundamental weight, at least until now. The case of Chichila underlines the importance of considering the peculiarities of the appropriation process at the local level, as well as considering the adaptation of concepts to local conditions and knowledge, based on the previous experience of the agents taking part in these agreements.

The present regional process of appropriation of natural resources has been determined by relations between rural areas, whose natural resources need to be preserved, and urban areas whose need for water and other resources calls for agreements on what are now known as environmental services. Historically, this dynamic clearly transforms the processes of appropriation of natural resources, practices and uses of territory, as likewise the social property relations between social actors (in this case, the community and its authorities dealing with the municipal government of Taxco). It also involves the adoption of institutional frameworks ruling the use and exploitation of natural resources at the local level.

This experience also reveals how social property relations can be transformed, in this case spurred on by a conflict of interests related to the use of natural resources, which was resolved by negotiations at the local level that generated an innovative form of environmental service project.

Regarding property rights on natural resources, formal legal definition is not the only relevant issue; social perceptions, and traditional use rights also are of key importance and the physical control people have over land and natural resources also comes into play. The conventional assumption that as long as property rights are clearly defined it will be possible to implement environmental service projects using market based instruments with success has its limitations. But the case shows that, even when property rights over the territory are clearly defined, this is not necessarily a determining factor for the design and implementation of agreements. What is important is the confluence of diverse property regimes in the process of simultaneous appropriation of different natural resources because implies potential conflicts or claims related to uses even when property as regards environmental services is not defined.

However, control and the capacity for direct appropriation of land and forest leads community members to act as if they were the owners of its water resources, and this inevitably demands the presence and arbitration of the State to solve disputes related to the use of such resources. The complexity of water

appropriation evidences the inherent difficulties of understanding what exactly environmental services are, and what it is that has to be paid for, to whom, and under what conditions. Hence clarity as regards property rights is not in itself sufficient to ensure adequate performance of projects designed to recompense agents for provision of environmental services; it is also important to understand the functioning of property relations, and the social interactions generated by them, in the locality in question.

It will thus be helpful for such projects to take into account the various overlapping property regimes involved in processes of appropriation of natural resources (in this case land, water and forest) as well as the way social customs link with property. Those projects could be made more functional if – taking into account social, political, ecological, historic and economic contexts in specific places – local needs were to be made the starting point for agreements. The agreements on environmental services in Chichila responded to the need to solve very specific local problems such as the water supply to the city of Taxco and the generation of development alternatives in the community.

Finally, if one wishes to create environmental services schemes, it will be necessary to define the rights and duties of the agents contributing to the conservation of natural resources like forest and water and the environmental services associated; in particular, attention must be given to the incentives that may be (or not) generated at the economic, social or political levels deriving from the execution of such agreements.

The above means that it will be necessary to achieve compatibility between the different visions affecting agreements reached or arbitrated by the State or by any other authority. This should contribute to ensuring better distribution of responsibilities and benefits, and hence the maintenance of these agreements through time and the effective conservation of ecosystems.

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Socialiniai nuosavybės santykiai ir mokesčiai už aplinkosaugos paslaugas: Meksikoje esančios kaimo bendruomenės atvejis

Santrauka

Straipsnyje analizuojamas atvejis *Chichila* kaimo bendruomenės (Meksika), kuri įgyvendino vietinį mokesčio už aplinkosaugos paslaugas, teikiamas kaimyniniam *Taxco* miestui, projektą. Meksikos įstatymuose pripažįstami skirtingi nuosavybės į vandenį, miškus ir žemę tipai. Juose taip pat pabrėžiama gamtos išteklių, tokių kaip miškai ir vanduo, išsaugojimo svarba ir raginama naudotis aplinkosaugos paslaugomis. Straipsnyje, kurio pagrindas – kokybinis tyrimas, atskleidžiama, kaip tiesioginis gamtos išteklių valdymas įgalina vietinės bendruomenės narius sukurti savo pačių nuosavybės ir aplinkosaugos paslaugų sampratą. Abi sampratos legitimuoja vietinių veikėjų tiesioginį ir netiesioginį įsitraukimą į vietinius projektus. Kita vertus, šios sampratos parodo ir prieštarigus įvairių veikėjų interesus regioniniu lygmeniu. Taip atsitinka dėl to, kad gamtos išteklių savinimasis yra susijęs su painiava, kuri kyla susiliejančioms dalies sutampančioms skirtingoms nuosavybės teisėms ir skirtingoms politinėms bei teisinėms institucijoms.