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Transaction cost theory of the firm and community forestry enterprises

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ABSTRACT

The share of production and processing acquired by community forestry enterprises (CFEs) in the forest products and service industries has increased considerably in developing countries. This paper is a review article that analyzes the importance of both vertical integration and governance of economic activity for communities aiming to benefit from commercial forestry. Transaction cost economic theory serves as a basis for the analysis. Organizational forms, also known as governance structures, set order and provide for mutual gain in commercial exchanges between parties. One of the most important tasks of economic governance is to reduce transaction costs stemming from opportunistic behavior from one or both of the transacting parties. Governance structures exist in a continuum with the market and the firm at opposite ends of the spectrum. A 'firm-type' organization is only one possibility in a continuum of enterprise governance structures. The Mexican experience with CFEs corroborates the existence of a range of governance forms that exhibit some of the characteristics described by TCE theory. The paper reflects on the transaction cost implications of these governance structures for a range of vertical integration levels in Mexican CFEs.

1. Introduction

Community forestry approaches have moved beyond their experimental stage to becoming consolidated alternatives to traditional government control and industrial management of forest resources (Barry et al., 2003). Transfers in forest tenure to families and communities through the process of devolution have been accompanied by a growing predominance of forest production and processing by communities and smallholders in the forest products and service industries (Molnar et al., 2011). This has been the case in Bolivia, China, Guatemala, Honduras, India and Mexico (Macqueen and Team, 2010) and Peru, Ecuador, Burkina Faso, Gambia, and Papua New Guinea (Donovan et al., 2006).

Antinori and Bray (2005:1529) referred to market-oriented community forest enterprises as "historically rare birds", but there has been growing interest worldwide in the application of business-oriented community forestry (Donovan et al., 2006). They have been promoted by governments, NGOs, and development agencies as a way of supporting poverty-reduction and conservation strategies by increasing economic incentives for sustainable forest management by forest-dependent people (Kozak, 2007).

Key features of CFEs include (Macqueen and Team, 2010):

a) a focus on commercial exchange of goods for profit not simply subsistence;
b) representation in management of the interests of the whole community and distribution of benefits in line with these interests;
c) 'community' being self-defined both in terms of people and area.

In contrast with vertically integrated industrial models of forest management, it has been argued that CFEs have micro-economic characteristics with multiplier effects in rural economies that translate into more skilled jobs, higher incomes, higher consumption and better terms of trade (Macqueen, 2012).

The creation of increased income and employment opportunities from the commercialization of timber depends to a large extent on the ability of communities to capture value added in the supply chain. A community's degree of participation in the value chain is reflected in its degree of vertical integration (VI) (Ezzine de Blas et al., 2009). Although vertical integration is not a measure of success in forest management, it can reflect organizational stability, levels of community participation and control of forest resources, existence of sound financial management structures and adequate ecological practices which are all success measures in community forestry (Barsimantov, 2010). It is not surprising then that a lot of the literature on CFEs has focused on the conditions that enable communities to capture value from their forests through VI, and VI's effect on poverty alleviation and local development. For example, Ezzine de Blas et al. (2009) look at a stratified sample of 20 community forests in Cameroon and find that lack of technical skills, excessive distance to markets, competition from industrial loggers and the intensity of external help they receive is limiting their ability to capture value added in the market chain, making the contribution of community forests to local development sub-optimal. Farmers in

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Eastern Amazonia have developed a vertically integrated local industry that is highly dependent on family ties, good neighbor relations and trustworthy partners in economic exchanges (Sears et al., 2007).

Mexico has a particularly rich experience with vertical integration in community forestry. In his analysis of 11 communities with different levels of VI in forestry production in Oaxaca and Michoacan, James Barsimantov (2010) suggests that strong community governance is a necessary but not sufficient precondition for vertical integration and that strong interactions with NGOs are critical. Antinori (2000) finds that the combination of a range of mechanical skills in forestry previously available in the community, higher resource endowments and history of participation in the federal concession system favors the probability that communities will form a CFE and integrate downstream. In general, the literature looking at vertical integration in community forestry enterprises associates higher levels of VI with greater commercial control by communities of forest resources, higher incomes, and therefore more benefits to be distributed among participants, some of which would be invested in forest maintenance and protection. It is also assumed to reflect greater stability, cohesion, and participation among community members.

There is benefit in understanding not only the process of vertical integration and its triggers but also the forms of economic organization required to govern new economic activity and to distribute its benefits. Transaction cost economics (TCE), a branch of new institutional economics, suggests that the process of vertical integration is accompanied by the formation of governance structures that have efficiency implications in terms of reducing transaction costs. Transaction costs are the result of one or both parties in an exchange being opportunistic and wishing to make additional rents from a transaction. Parties bargain, haggle, search for information and monitor each other in order to protect themselves from this opportunism. These activities are costly. Vertical integration will eliminate transaction costs, but VI must be governed through new forms of organization or governance structures. These governance structures present trade-offs and no single governance structure can possess all of the advantages of the others without costs.

The application of TCE to community natural resource management is not new and has proven to be of great value in understanding specific issues in community forestry. TCE has been used to analyze the size and distribution of transaction costs incurred by forest users (Adhikari and Lovett, 2006; Meshack et al., 2006) and for understanding the conditions under which vertical integration is an efficient decision to predict vertical integration levels for community forestry enterprises in Oaxaca, Mexico (Antinori, 2000). However, the insights that TCE provides about economic organization have not yet been applied to the analysis of organizational structure in CFE's nor the implications that these structures have for transaction costs faced by communities engaging in commercial forestry activity.

Existing information on the Mexican CFFs reveals the existence of a variety of forms of economic organization in community forestry enterprises (Antinori and Rausser, 2010; Antinori and Bray, 2005). In general, three forms of governance have been identified: individual level extraction and sales, work groups, and community enterprises. Humphries (2010) finds similar patterns in CFEs in Quintana Roo, southern Mexico: individual, workgroup, and 'ejido' level commercial activity. Taylor (2005) describes transitions between these three governance structures in the state of Durango. Understanding what types of organization are possible for governing different levels of VI can shed light on how community natural resource management interacts with the market and adapts to both its demands and community preferences.

The aim of this article was to review the literature on TCE and CFEs and use this as a basis for a descriptive classification of CFE economic organization based on transaction cost economics. It serves as a departing point for design and diagnosis of research in this area of community forestry.

2. Transaction cost economic theory of the firm

Economic theory attempts to understand firms by asking when it pays off to be part of a single organization or an atomized buyer or seller. Theories on the existence of firms date back to Adam Smith who argued that the division of labor within a firm led to specialization and skill enhancement through learning by doing, thus increasing productivity. However he did not consider that productivity could be enhanced even with workers acting as self-employed contractors (Hodgson, 1998). In 1937, Ronald Coase proposed in his landmark paper 'The Nature of the Firm' (Coase, 1937) that there are inherent costs to transacting in the market as a means of exchange and that the creation of firms economizes on these costs. Firms replace the coordination mechanism of the market with that of an organization led by a manager. There is efficiency to be gained from such a replacement. This was the first mention of transaction costs and their relationship with organization: organization can be explained to a large extent as an effort to minimize transaction costs.

The process of replacement of the external market with internal coordination is known as vertical integration. Under some circumstances it may be a good option for a buyer to make use of specialized skills available in the market and hire a seller to provide particular goods and services (Antinori, 2005). However, a buyer may decide to self-provide those goods and services if the costs of transacting in the market are particularly high (Antinori, 2005). TCE lays out very specifically when to vertically integrate and avoid market transactions: when one of the parties in an economic exchange could behave opportunistically and engage in rent-seeking behavior. When the costs of protecting oneself from this opportunistic behavior through the negotiation, writing, monitoring and enforcement of contracts i.e. transaction costs, are prohibitive then VI is the best option.

Markets and firms are two ways in which exchange can be governed, and which governance mechanism to use will depend on the level of transaction costs. This introduces a key concept of TCE: governance structure. Governance structures are continuous, not discrete choices, they exist in a continuum with the market at one extreme and the firm or hierarchy at the other extreme. In between lies a range of possibilities, including long-term contracts or hybrids. Governance is "the means by which to infuse order, thereby to mitigate conflict and realize mutual gains" (Williamson, 2003).

Governance structures possess different types of properties and have associated costs and benefits. This is where TCE makes one of its most important contributions in the understanding of organization. Market and hierarchical organization share some basic properties and the differences between governance structures lie in the levels of these properties. The main properties for economic governance structures are: adaptive or coordinated action, incentive intensity (ability to motivate people), administrative control, and the dispute settlement mechanisms (Bigelow, 2010; Williamson, 1991a).

The ability to motivate people is high in markets because participants do appropriate streams of net receipts almost instantly and no other party can make legitimate claims to these gains (Williamson, 1991b). Markets are said to possess 'high-powered' incentives. In the case of firms, the process of market replacement with managerial control introduces a set of complexities into the growing organization. Parties contributing to team production cannot expect direct retribution for their effort as in high-powered systems because in cooperative processes of production it is difficult to measure the respective contributions of parties to a transaction (Maitland et al., 1985). Changes in effort have little or no immediate effect on compensation, hence in hierarchies incentives are said to be flat or low-powered (Williamson, 1991a).

In markets, price changes reflect demand and supply changes which lead independent consumers and producers to adapt their behavior accordingly. Price is the only determinant of the final transaction and any other aspects of the transaction are non-negotiable (Hobbs, 1996). This