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**The Managerial Economics of Sustainable
Community Forestry in México:
A case study of El Balcón, Técpan, Guerrero**

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Acknowledgments

This case study is based on a number of field visits to the ejido "El Balcón" between March 2001 and May 2002. Information is drawn from documentary research, personal observations, reviews of accounting as well as interviews with Jesús García, Manager of the El Balcón enterprise, Chris Cooper of Westwood Forest Products, Bernadino Ramírez, former President of the Oversight Council, Unión de Ejidos Hermingildo Galeana (UEHG), Alejandro Albarrán, Forest Technical Director (UEHG), Mario Cedillo, Forest Technical Director, Ejido El Balcón Enterprise, Leónidas Chávez, President of the Administrative Council, (UEHG), Fidel López, ejidatario of ejido Bajos de Balsemar, Jorge Villa, forest technician and ejidatario El Balcón, and Jesús López, Comisariado Ejidal, El Balcón. We are sincerely grateful for the research assistance of Josefina Braña, Mariana Mazón, Melina Villagómez and Martino Aguilar. Finally, we would like to thank the Ford Foundation for the finance granted to Florida International University and CIDE to carry out this research

Abstract

Community enterprises have multiple goals that may not be shared by non community owned enterprises. These enterprises aspire only to maximize their earnings, while many authors have argued that community enterprises seek the generation of sources of employment, the conservation of their resources, the production of resources for collective benefit, and the maximization of the participation of the "comuneros". All these objectives are accompanied by certain economic inefficiencies which sometimes jeopardize the sustainability of the community enterprise. This paper undertakes an examination of the community enterprise "El Balcón", an ejido located in the so-called Costa Grande region of Guerrero. The analysis follows an evaluation of the competitiveness of the enterprise according to Porter's framework and discusses the sustainability of the enterprise under social, economic and ecological perspectives. The analysis delineates some of the determinants of El Balcón's relative success in national and international markets and also some of the areas of weaknesses which could undermine the prospects for continued success. It shows that the ejido has demonstrated an impressive capacity to build new social capital which along with the rich forest stock constitutes the basis for their achievements. Finally the analysis demonstrates that common property resources administered by a community enterprise are no necessary hindrance in the marketplace, and may be a source of particular strengths in delivering greater social equity while also assuring enterprise survival.

Resumen

Las empresas comunales tiene objetivos múltiples que podrían no ser compartidos por una empresa no comunal. Estas empresas aspiran a maximizar sus ganancias, mientras que varios autores han señalado que las empresas comunales buscan la generación de fuentes de empleo, la conservación de sus recursos, la producción de bienes para el beneficio colectivo, así como la maximización de la participación de los comuneros. Todos estos objetivos usualmente se acompañan de ciertas ineficiencias económicas, mismas que ponen en peligro la sustentabilidad de las empresas comunales. Este documento examina la empresa comunal "El Balcón", un ejido localizado en la región de la Costa Grande de Guerrero. El análisis sigue una evaluación de la competitividad de la empresa de acuerdo al esquema de Porter y discute la sustentabilidad de la empresa bajo la perspectiva económica, social y ecológica. El análisis deja ver algunos determinantes del éxito relativo de El Balcón dentro de los mercados doméstico e internacional, así como algunas áreas de debilidad que podrían minar las perspectivas de un éxito continuado. De igual forma, demuestra que el ejido ha mostrado una impresionante capacidad para construir nuevo capital social, el cual, sumado al rico inventario forestal constituyen la base de sus logros. Finalmente, el análisis demuestra que los recursos de propiedad común que son

administrados por una empresa comunal, no necesariamente están obstaculizados por el mercado y podrían ser una fuente de fortalezas particulares al proveer equidad social al mismo tiempo que aseguran la sobrevivencia de la empresa

Introduction

History and Context

The phenomenon of community-based enterprises competing successfully in the marketplace is a relatively new one, and there is still very little literature on the subject. When examining the example of community forest enterprises (CFEs) in Mexico, we find ourselves up against an even more unusual permutation of the phenomenon. In Mexico, CFEs are based on the timber exploitation of a common property forest and sometimes use larger market opportunities as an alternative source of benefits provided by this common property asset. While the economic development literature in general has little light to shed on the "community as entrepreneurial firm" (Antinori, 2000; see also Antinori this volume), it has been suggested that CFEs have a different "logic" from privately owned capitalist enterprises. Community enterprises have multiple goals that may not be shared by non community owned enterprises. These enterprises aspire only to maximize their earnings, while the community enterprises "seek the generation of sources of employment, the conservation of the forests, the production of resources for collective benefit, and the maximization of the participation of the comuneros" (Alatorre Frenk, 2000). In addition to being characterized as different from other enterprises, it has also often been suggested that Mexican CFEs are at great risk of disappearing entirely because of foreign competition and the lack of profitability in the sector (Chapela, 1996). However, Antinori (this volume) has argued that the CFE sector is actually more profitable than has suggested.

It is true that in management structure, distribution of benefits, common property productive assets and other dimensions that CFEs are different from private enterprises. Nonetheless, they must also compete and survive in an economic context that demands efficiency and competitiveness in quality and price, and thus will finally be judged by the same harsh terms of the marketplace as any other business. In this paper, we will attempt to do an analytic case study of one CFE in mostly entrepreneurial terms, while taking into account some of its special characteristics as a community-owned enterprise with a unique history.

The CFE we have chosen was until recently, little known in the literature, but it is emerging as an example of an unusually successful community enterprise which is now exporting much of its production (Bray and Merino-Pérez). We will undertake an examination of El Balcón in the analytic terms

presented by Porter (1990) to understand how it has become competitive despite what are often perceived to be the handicaps of community ownership. It is shown through an analysis of the factor and demand conditions, the related and supporting industries, and firm strategy, structure and rivalry why El Balcón has become successful. We will also carry out a brief strategic planning exercise in order to make some concrete suggestions on steps El Balcón can take to further increase its international competitiveness. While we do not make a specific argument that El Balcón has been successful because of the nature of the community ownership, the case study certainly shows that an enterprise based on community ownership of a common property asset is no hindrance for gaining competitive advantage in national and international markets.

In the following section, we will give a brief history of the ejido, before continuing with the analysis as indicated above. El Balcón is located in the so-called Costa Grande region of Guerrero, the Pacific coast north of Acapulco. Situated in the segment of the Sierra Madre Sur known as the Cordillera Costera del Sur, it has an average elevation of 2,200 meters, with a very rugged topography that leaves parts of the area isolated during the rainy season, when some 1,400 millimeters of precipitation fall. It was constituted as an ejido in January, 1966 with an endowment of 2,400 ha. In October, 1974, it received an additional 19,150 ha., including most of its current forest lands, for a total land area today of 25,565 ha. Its current land area and perimeter were fixed in the resolution of a boundary dispute with the neighboring ejido of Cuatro Cruces in 1986, where it ceded 3,085 ha of forest in exchange for 7,100 ha of dry shrub forest. El Balcón has a main village, Pocitos, and two outlying populations centers or *agencias* (La Lajita and Mesa Verde) with 136 ejidatarios in all three villages and a total population of around 600.

The population was formed from small groups of mestizo families who lived from corn farming and goat herding, and was severely marked by the violent inter-family and inter-community clashes over land that have marked Guerrero in general. The violence of the region in El Balcón makes the community enterprise and the relative peace of the zone today all the more remarkable. In the early 1960s, this region of the Sierra has been described as "enmeshed in terror and killing" as El Balcón itself became embroiled in brutal inter-family and intra and inter-community conflicts over land (Wexler, 1995). Reciprocal murders left the region almost depopulated for a period, as families fled to other communities. Community members from El Balcón sought the intercession of the Mexican government in 1961, initiating the application for ejido status to fix their land boundaries. Although the claim was recognized in 1966, final ejido title was not received until 1972. In the

late 1960s and early 1970s, the Costa Grande was further roiled by armed guerrilla movements, which brought military incursions and firefights into the area, once again forcing communities to relocate. Some community members from El Balcón fled to a community to the north called La Laguna, which had been operating its own sawmill and logging operation since the late 1950s. When they returned to resettle El Balcón in the early 1970s, they carried with them the realization that their forests were a potential economic resource, the seeds of a demonstration effect were planted. Community members began lobbying for a new land grant, that was given in 1974 for 19, 150 ha. A national small farmer federation, the "Central Independiente de Obreros Agrícolas y Campesinos" (CIOAC) played a key role in negotiating peace between the communities during the 1970s (Wexler, 1995) and commercial logging began in 1980, as a direct result social peace in the region. When El Balcón first began selling logs in 1980, it sold directly to the Guerrero state-owned "Forestal Vicente Guerrero" (FOVIGRO), with about 20 community members working as laborers. Thus, El Balcón never passed through a stage typical in Mexico (known as *rentismo*) where the timber buyers come in and take complete charge of extraction, paying only a stumpage fee to the community.

El Balcón was able to use the significant profits from the first few years of roundwood sales to begin to expand their capital assets. In 1982-1983 they bought their first logging equipment, and were thus able deliver roundwood directly to the sawmill, capturing more of the value chain. In 1986 El Balcón acquired a new community asset, the sawmill, in a joint investment with a state development-financing agency, the National Trust Fund for Ejido Development (FIFONAFE). FIFONAFE dissolved ten months later, leaving El Balcón with full ownership of the mill. Thus, in six years, El Balcón went from their first logging essentially as employees of the state-owned enterprise to full control over their own logging business. Consequently, this short-term growth confronted serious human capital deficiencies in terms of training and experience in managing a complex industrial enterprise. Due to economic difficulties and managerial problems, in 1989 the ejido turned management of the community forest enterprise (CFE) to an outside professional manager. This inevitably included outside staff as well. The ejidatarios created a "Council of Principles" as a community oversight committee, whose purpose is to approve investment and policy guidelines, inspired by a similar committee in the forest community of "San Juan Nuevo Parangaricutiro" in Michoacan. The Council of Principals reports to the General Assembly and is said to represent each family in the community. After the accumulation of productive assets in the enterprise, in the early 1990s, the enterprise slowly began to hire ejidatarios again, and today the labor force is over 70% ejidatarios. El Balcón's professional management has also introduced

important efficiency gains, such as using logging trucks with double trailers, significantly lowering transportation costs. All this has led to what is reported to be relatively healthy financial profile. The enterprise reports a 20-35% profit margin in recent years, an average of around one million US dollars annually in net profits.

El Balcón has established a successful commercial relationship with a state of Washington-based timber marketing company called Westwood Forest Products. Westwood is currently importing both sawn wood and moldings to the U.S. from El Balcón. From late 1995 to late 2001, El Balcón exported approximately 19 million dollars worth of timber to Westwood. Westwood has been crucial in financing both capital assets and operating costs over the last several years. The current professional manager estimates that from 1989-1998, the ejido invested about 60% of profits in the business and 40% in community infrastructure and social services. In the most recent period, 1998-2001, about 90% was invested in the community, because the business has not required any further investments recently. Social investments include roads, potable water, solar energy, education and housing. El Balcón has also invested in human capital of their children, providing full fellowships for high school and college study.

Analytical Framework

Due to its history and evolution, the CFE of El Balcón is one of the most interesting and instructive examples of common property forest management in Mexico. From varying perspectives, El Balcón could be considered a result of a superior phase of an evolutionary economic process (Nelson & Winters: 1994), and thus one to which other rural communities involved in forestry can aspire, or of an organization where a particular crisis led to innovative solutions, but which has few lessons for other experiences. Or in Bryson's managerial terms (1995), can it be considered an organization in which a crisis becomes precisely the origin of a continued strategic impulse that leads to success?

All of these are viable explanatory frameworks to understand El Balcón's success. However, we argue that the most powerful explanation for this current success can be found in a modified interpretation of Porter's "Diamond" (1995). The "Diamond" explains the determinants of economic success of nations and the distinct industrial sectors. The determinants are the factors that considered necessary to reach and maintain the so-called competitive advantage. The determinants, composed of the four vertices of competitive advantage, constitute a system through which many

characteristics influence competitive success. This system is an evolving one in which one determinant influences the other three. Accordingly, Porter

Figure 1: Porter's Diamond

Adapted from Porter (1990)

gives this system a diamond shape because it is mutually reinforcing, in that one determinant is subject to the changes of the others. The effects of one determinant often depend on the state of the others. Although the diamond system excludes both chance and government, they also play a major role in his theory. The four determinants that make up the vertices of the diamond are shown in Figure 1.

In this article, we will be applying the analytic framework at the level of the firm to help understand what are both, the general enterprise characteristics and the specific characteristics of a community enterprise based on a common property that have helped make El Balcón nationally and internationally competitive. Porter (1990: 69) also asks the question of what makes a particular national a more or less desirable "home base" for competing in an industry so, by extension, we will be asking if there are any special characteristics of a community as the literal "home base" that may hinder or help competitiveness.

Factor Conditions

This analytic framework includes all of the inputs necessary to create and sustain an industry, and can be divided into basic and advanced factors. The basic factors are natural resources, climate, location, unskilled and semiskilled labor, and debt capital. Advanced factors include advanced communication infrastructure, highly educated personnel, and university research institutes in sophisticated disciplines. These advanced factors are the most important in gaining competitive advantage. The trade theory is based on the understanding that every industry and/or enterprise is endowed with different stocks of factors of production. An industry's endowment of factors play a key role in the competitive advantage of firms, and the continual sophistication and renovation of the production factors within industries is important in gaining and maintaining competitive advantage.

Demand Conditions

In his model, Porter (1990) suggests that home demand's influence on competitive advantage can be categorized into three broad attributes: a) the composition of home demand, b) the size and pattern of growth of home demand, and c) the mechanisms by which an industry's local preferences are transmitted to foreign markets. He defines the first element as a basis for national advantage, while the second amplifies this advantage by affecting investment behavior, timing, and motivation. The foundation of his claim reflects that a large and demanding group of local consumers pose a powerful incentive for firms to thrive for excellence in production and marketing, which in turn gives way to a competitive advantage at an international level. Our perception is that in the context of globalization, the competitive advantage of a sector or firm is also strongly stimulated by international demand, and which, even if lacking all the necessary elements to take complete advantage of this demand, joint ventures with other firms can complement the missing attributes to develop such an advantage.

Related and Supporting Industries

The next determinant of competitive advantage in an industry is the presence in the country of supplier industries or related industries that are internationally competitive. Here, related industries refers to firms and industries that have similar activities in the "value chain" in competitive markets, as well as, firms and industries that provide complementary goods and services. Competitive advantage in some supplier industries bestows potential advantages of firms in many other industries, or for internationalization.

Firm Strategy, Structure, and Rivalry

This last determinant refers to the context in which firms are created, organized and managed as well as the nature of domestic rivalry. Competitive advantage is in part a result of a good combination of goals, strategies, and ways of organizing firms in industries. This, along with the existence of rivalry within industries, in order to give rise to innovation and prospects of international success, is the foundation for maintaining competitive advantage and closely tied to the previous determinant of related and supporting industries. In the following section, we will examine these factors as they are applied to El Balcón and at the end of the section we will summarize the competitive advantages or disadvantages of the community as entrepreneurial firm.

Analysis of El Balcón's Community Forest Enterprise

Factor Conditions in El Balcón

In this section we consider four fundamental production factors of El Balcón: natural resources, human capital, physical capital and road and communications infrastructure.

Natural Resources, Climate and Location

El Balcón's 25,565 ha is composed basically of 15,190 ha with forest cover and the rest (40%) is a mixture of dry shrub forests and grazing areas. Only 72% of the forest area of El Balcón is under timber production, the rest is saved for conservation purposes and restoration, with 163 ha under forest plantations. As noted at the beginning, El Balcón's major forest resource was granted to it by the Mexican government in 1974. This transfer of a valuable natural asset was part of Mexico's ongoing process of agrarian reform, but was also given for the purposes of creating a new source of supply for a state-owned timber company, as well as being an effort at rural pacification because of a guerrilla movement active in the region in the late 1960s and early 1970s.

The forest cover is characterized by pine stands (81% of the forest cover) and mixed stands composed by pines, oaks and other hardwood species¹. Timber production is the main use of the forest area. Logging is concentrated in pine species (46%), oaks (21%), fir (16%), and other hardwoods and dead trees (17%), (Ejido El Balcón, 2000). However, commercial logging is performed mostly on pines and firs. The harvest of additional species is limited; oaks and other hardwoods are removed for firewood and tools. Given the location of "El Balcón", the existence of highly commercial non-timber forest products (such as mushrooms and medicinal plants) is very likely, but they are not currently harvested for subsistence or sale.

The forest stock is composed mostly by overmature forest with low growth rates. The last forest inventory shows that the current growth rate averages 2.54 m³/ha/year, although there are some places where the mean annual increment can be as high as 3.2 m³/ha/year, very low considering the growth potential in the area. On the other hand, despite the low growth rates, El Balcón still has an important stock of overmature forest. The forest inventory shows that 87.4% of the forest area is composed by old growth stands with an average of 309 m³/ha.

¹ The main commercial species are *Pinus herrerae*, *P. tocote*, *P. pseudostrobus*, *P. oocarpa*, *P. michoacana*, *P. ayacahuite* and *Abies religiosa*.

Human Capital

The counties in which El Balcón are located are among the most marginalized in the country (CONAPO: 2001).² The degree of marginalization of El Balcón, expressed in two indicators that reflect the level of human capital, is actually low related to the municipality. However the three villages that compose the ejido show that there is still large degree of marginality for national standards. The main town, "Pocitos del Balcón" has a kindergarden, a basic school and a "telsecundaria"³. Despite these facilities, still El Balcón shows a 15% illiteracy rate in the population over the age of 15, and 35% with less than a primary education. This is a low level compared with national standards, and poses serious restrictions in successful firm management.

The forest production system at "El Balcón" is divided in three phases, namely, forest maintenance, logging and industrialization, each one demanding different levels of labor specialization. Forest maintenance is still dependent on outside forest technicians, with ejido members only participating in reforestation activities. However, the ejido has been successful in the management of logging, possibly due to the human capital inherited from the FOVIGRO period. In contrast, the industrialization phase is still far from being totally acquired by the ejido, since barely 20% of the workers in the mill are ejido members. The low percentage is significantly due to the fact that the sawmill is in Tépán, far from the community, but ejido members also occupy only a few of the technical and managerial positions in the sawmill.

a) Formal education and Training

From 1991-1996 the ejido launched a program to support secondary school studies for children of ejido members. However, this support was terminated after a decision that this should be the responsibility of each household. Despite the termination of the scholarship program for high school scholars, there was still some funding directed to help university students. As a result of that program some ejido members now work in technical and managerial positions as accountants, lawyers and forest technicians. Only two ejido members who obtained a scholarship to continue a university education failed to return to the ejido. El Balcón does not currently have a systematic training program, but some ejidatarios have learned some of the more sophisticated mill operations. For example, the young operator of the highly sophisticated automated saw is from El Balcón. Training by practice among the ejido

² It is situated in the 14th percentile of the municipalities with the highest degree of marginalization in Mexico.

³ Telsecundaria is a broadcasted junior high school system.

members is a goal in the mill administration. The current professional manager, while not from El Balcón, learned management from the previous professional manager while he was Forest Technical Director. No other activity has formal training. Some important logging and planting activities are still performed with traditional and inefficient methods.

b) Health issues

Since the beginning of the forest operations, part of the social investments were for the installment of the water distribution system and health benefits. Before 1997, all the expenses for direct medical care in Técpan or Acapulco were covered by the CFE, for workers and all ejido members. Currently, there is a small medical clinic attended by two doctors who provide medical services three weeks a month. These services are now partially subsidized by the ejido (medicines and transportation costs), as medical services are provided from the state budget since 1999. However, major medical care is still covered by the CFE.

Physical Capital

Contrary to conventional wisdom in the development literature, it is not lack of physical capital but the relative abundance of it that is a major concern for El Balcón. As was noted earlier, El Balcón was able to use the significant profits from the first roundwood sales to begin to expand their capital assets. In 1982-83 they acquired five logging trucks and two winches, which were used to deliver roundwood directly to FOVIGRO's sawmill. The sawmill capacity is many times superior to El Balcón's harvest capabilities, the sawmill operates at only about one-sixth of its potential, resulting in additional sunk costs. The overcapacity problem could be confronted by buying logs from neighboring ejidos, an activity which El Balcón has begun. Additional problems are that logging activities are almost impossible during the rainy season and the logyard is too small to store a larger amount of logs.

The sawmill is totally equipped with shops for sharpening and mill maintenance. Additionally, the sawmill is used for storing the logging trucks and other equipment for road construction and maintenance. In addition, the plant has a chip mill, as well as two front-end loaders, seven winches, and six tractors. The main shop for repairing trucks is located within the sawmill facilities. Clearly, the current logging and industrialization equipment of El Balcón surpasses that required by timber harvest levels. In addition, in spite of the fact the plant has security equipment, most of it is not used. Workers in the mill are not used to wearing hardhats, gloves and other protection

equipment.⁴ The processing infrastructure includes four drying ovens. These ovens use sawdust and other waste material from the sawmill to operate, which introduces significant environmental efficiencies and a reduction in costs. In addition these ovens are equipped with pollution reducing chimneys and the dry kiln schedules are totally automatic. Most of the lumber is dried and occasionally the ovens are used to dry lumber from other mills. This activity represented between 6-7% of the gross income in the mill during 1999 and 2000. The drying ovens and the sawmill represent an investment of 2.3 million dollars which has been largely paid.

In 1997 a fire burned down the sawmill. Fortunately, the sawmill had insurance which, with commercial credit, was used to rebuild a more modern plant with a higher capacity and greater efficiency. The new sawmill has one main saw and two parallel saws for small boards. A major bottleneck is given by the fact that the log yard is small compared to the sawing capacity. If the sawmill is working three shifts, the yard can just store logs for a maximum of 6 days. However, given the low log volumes, the sawmill works only one shift a day with only one line out of the two sawing lines. In addition, the sawmill activities are concentrated only during the dry season, from the middle of November to the middle of May. The rest of the year the sawmill is closed.

Social Capital

To the traditional factor endowments we would like to add the concept of "social capital" which is particularly pertinent in the case of a community enterprise. Social capital may be thought of "those forces that increase the potential for economic development in a society by creating and sustaining social relations and patterns of social organization" (Turner, 2000). These forces may include norms, family structure, and informal and formal organizations. The basic concept is that there are certain social relations that may increase economic competitiveness in the marketplace as well as collective action in the public interest (Fox, 2001). It seems apparent that El Balcón started out with a very low social capital endowment. The community does not have the communal institutions of many indigenous communities or a history as a self-governing ejido stretching back decades. It was formed out of violent quarrelling families with extremely low levels of trust, and would have only been learning how to govern themselves under ejido structures and practices beginning in the late 1960s. This makes the relatively rapid accumulation of social capital particularly noteworthy. Sources of social capital accumulation can be traced to the participation of several communities in the Técpan region in a national small farmer federation, the Central Independiente de Obreros Agrícolas y Campesinos (CIOAC). In the

⁴ Most of the accidents in the whole process occur during the logging activities, not within the mill. On average, every year there is one dead or a very badly injured logging worker.

1970s, local CIOAC leaders negotiated social peace between the neighboring communities, although the final agrarian solution did not occur until 1986 with the land exchange previously mentioned. Nonetheless, the social peace pact in the late 1970s led directly to the beginning of commercial logging in 1980 in El Balcón. The ejido President at the time was a "visionary leader who saw community organizing and regional peace as necessary precursors to the establishment of a community forestry enterprise".⁵ (Wexler, 1995:54).

As they struggled to form their forest community enterprise, in 1986 they journeyed to San Juan Nuevo Parangaricutiro in Michoacan, which was already establishing itself as a national model in community forestry. One of the most important lessons they took away from the visit was the need to create new organizational structures that would permit the management of the timber business to be separated from the politics of the ejido. In 1989, as a part of the dramatic decision to turn forest enterprise management over to an outsider, El Balcón finally created its own "Council of Principals" modeled after San Juan Nuevo's Communal Council. The Council of Principals functioned as a sort of community oversight committee over the professional manager, approving general investment and policy guidelines, but leaving day-to-day management to him. It represents a further accumulation of social capital, both as an organizational innovation and as a new space to build accountability, mechanisms for forest monitoring, and experience in conflict resolution. Finally, El Balcón participation in the second-level organization, the Unión de Ejidos Hermenegildo Galeana (see below) represents another source of social capital.

Roads and Communications

One of the greatest challenges for the firm is the distance and difficulty of access of roads between the forest and the sawmill. The road that connects both is in service only during the dry season. During the rainy season the communication between the ejido and the mill is cut off. In this season the ejido members reach larger towns only by the road through Ajuchitlán del Progreso, the opposite direction from the sawmill. The main road is maintained by the "Road Committee" which is a group composed by members of different ejidos that use the road. Financing of the road maintenance comes from a quota for each cubic meter of log transported along the road. The ejido machinery is rented to the Road Committee to perform the rehabilitation activities. Radio communication is available in the mill, three basic camps in the ejido, the logging camp and the three towns.

⁵ This President was assassinated in 1986, so the forest enterprise has also been able to survive the loss of a charismatic leader.

Demand Conditions in el Balcón

The community first began selling logs in 1980 directly to the Guerrero state-owned forest enterprise "Forestal Vicente Guerrero" (FOVIGRO), with about 20 community members working as laborers and selling roundwood. Since the mid 90's (especially after the North American Free Trade Agreement (NAFTA),⁶ demand for its products can be characterized as a dual system, a regimen that exports higher quality, higher value added products, while leaving those of lesser quality to the internal market. Logs at El Balcón are high quality logs given the relative abundance of old growth and it is common to find large diameter logs of species such as *Pinus michoacana* or *P. pseudostrobus*.

Eighty percent of the lumber produced is sold dried; only hardwood species like oaks and some pines are not dried, although there is no reported problem in selling undried lumber. The drying system is very efficient; the losses because of bad drying kiln schedules has been minimized and variance of the dried lumber in each load is low. The percentage of premium lumber is relatively high (between 10-15%) by Mexican standards, basically because of the high quality logs and the sawing strategy.

Most of the production comes from third and fourth grade lumber which improves its price when dried. Table 1 shows the evolution of prices of different species, grades and sizes of lumber. It can be observed that real prices have been falling (except for fourth grade classes) since the 1995 economic crisis and they have not recovered to the levels held at the beginning of the past decade.⁷ For some grades, specially the highly commercial, prices recovered slightly during 1997-1998 (year of high demand in the American market), however they fell again, and although the ejido exports a great percentage of its production, the prices do not follow the lumber price cycle in the U.S market, but keep falling. Comparing real prices of "El Balcón" at a regional level, it is evident that the prices are very competitive, especially since it is kiln dried. This advantage guarantees that

⁶ By the year 2003 commercial tariffs on wood and wood products between Canada, Mexico and US will be eliminated. Nevertheless, before NAFTA, tariffs between Canada and US for wood and wood products were virtually zero (CESPEDES & CEMDA: 2002). On the other hand, Mexico held import tariffs of 15% to 20%, depending on the product (PEF 2020: 2001). After NAFTA, differences in tariffs still exist; nevertheless, this difference is much smaller. Mexico agreed to eliminate quantitative restrictions, in favor of tariff rate quotas, which allow that a certain amount of a product be introduced. If that quota is exceeded, remaining imports for that same product will be imposed a certain tariff. Average tariff reduction by Mexico on wood and wood products has been significant. By 1998, average tariffs by NAFTA members were: Mexico 11.32%, Canada 3.88%, and United States 1.4%.

⁷ The crisis is of course an important factor in explaining such decline, but it is also important to recognize that other factors such as the entrance of cheaper forest products from Chile, Canada and the USA after NAFTA and other free-trade agreements play a significant role.

the Ejido keeps a very low inventory of lumber during the year and ensures sales of third and fourth grade class at prices slightly higher than the regional market.

Export prices usually are 8-10% above domestic prices (nominal base), which has been a great support for "El Balcón" during this period of price depression; however, the trend of these prices follow the same path as the domestic prices and for some years do not compensate the lost due to exchange and inflation rates. Nonetheless "El Balcón" exports represent the base of their market since most of the profits derived from lumber sales come from exports, although this share is not equally proportional in terms of volume. Hence without the Westwood Forest Products market relationship "El Balcón" would face a different and more depressed market scenario.

TABLE 1: EL BALCÓN PRODUCTS AND SALE (REAL) PRICES (DOMESTIC MARKET)

SPECIES	GRADING	SIZE	MEXICAN PESOS / BOARD FEET (BASE YEAR= 2000)									AVERAGE PRICE DECLINE (1992-2001)
			1992	1993	1994	1995	1997	1998	1999	2000	2001	
PINE	PREMIUM AND FIRST CLASS	3/4"	13.56	13.27	8.66	11.26	10.18	10.48	9.78	8.00	8.55	-36.95%
	THIRD CLASS	3/4"	8.53	8.50	5.08	6.61	5.92	6.89	6.49	5.50	5.58	-34.58%
	FOURTH CLASS	3/4"	7.43	7.47	3.46	4.16	4.25	5.54	5.18	4.50	4.50	-39.43%
AYACAHUITE PINE	PREMIUM AND FIRST CLASS	3/4"	14.87	14.52	9.47		10.94	12.73	11.48	9.50	9.99	-32.82%
	THIRD CLASS	3/4"	8.97	8.92	5.08	6.61	6.08	7.11	6.86	5.80	6.21	-30.77%
	FOURTH CLASS	3/4"	7.87	7.47	3.70	4.16	4.40	5.54	5.30	4.95	5.22	-33.67%
FIR	PREMIUM AND FIRST CLASS	3/4"	N.D.	N.D.	N.D.	9.24	8.35	9.43	8.86	7.50	7.43	-19.59%
	THIRD CLASS	3/4"	N.D.	N.D.	N.D.	5.54	4.86	5.54	5.12	4.30	4.50	-18.77%
	FOURTH CLASS	3/4"	N.D.	7.05	3.23	3.88	3.49	3.97	3.81	3.20	3.60	-48.94%

Source: El Balcón prices lists, 2002.

This decline in prices in the domestic markets has been compensated by El Balcón's growing export markets through the previously mentioned Westwood Forest Products. A Westwood representative first visited El Balcón in 1995, and came away extremely impressed by the sawmill and the management plan and by the high quality of their product.⁸ El Balcón also sells sawn wood in national markets and wood chips in Mexico City, Tuxtepec, Oaxaca, and Jalisco. Small pieces of wood are also sold for broom handles. From 1996-2001, El Balcón exported 40-45% of its volume, which represented 65% of total sales, with all first-class timber exported through Westwood. From late 1995 to late 2001, El Balcón exported approximately 19 million dollars worth of timber to Westwood. The positive experience of El Balcón with Westwood Forest Products contrasts markedly with the controversial incursion of Boise Cascade in the Costa Grande.⁹

⁸ Chris Cooper, Westwood Forest Products. Cooper noted that the quality was actually much higher than needed at the time.

⁹ Boise Cascade first entered the region of El Balcón in 1994 through a contracted agent that was charged with setting up the operation in the Costa Grande. In 1995 they paid US\$60 per cubic meter for logwood (or MX\$450), when the national price was at MX\$300. In 1996, according to local reports, Boise Cascade began colluding with the local industry and lowered the price to prevailing national levels, giving no price stimulus for selling to them. When the prices were high in 1995, communities could afford to rent extraction equipment and trucks to do this, but when the price went down, it became impossible for them to absorb the transportation costs. Boise Cascade no longer offered a higher price than local buyers, so the communities were no longer interested in selling to them. By 1997 Boise Cascade was gone from the region. (Chris Cooper, personal communication).

Related and Supporting Industries in El Balcón

As already mentioned, the presence in the country of supplier industries or related industries that are internationally competitive, like Westwood Forest Products, are important for the development of competitive advantages. In our opinion, not only private industries like Westwood but also other institutions have been instrumental in the successful economic performance of El Balcón, namely a) regional or national farmer organizations, b) government and c) other sources of financing.

Membership in Farmer's Associations

In the period when El Balcón began establishing its CFE, it also began organizing a negotiating front for prices with other communities. In 1986, this loose coalition became the Hermenegildo Galeana Ejido Union (UEHG) with seven founding members (Wexler 1995). The relationship has varied, depending on the level of interest of the El Balcón elected ejido authorities. Unlike other forest ejido unions where the most powerful members typically withdraws from the organization after a period because they are subsidizing the forest technical services for smaller members, El Balcón has always remained in the Union, although it hired its own Forest Technical Director early on. Through the Ejido union, El Balcón has been able to get access to regional development projects by government agencies such as the Secretary of Social Development (SEDESOL) and the Secretary of the Environment and Natural Resources (SEMARNAT), that prefer to work with second-level organizations rather than individual ejidos.

Westwood as a source of Technical and Financial Assistance

Westwood invested considerable time and effort in building the relationship with El Balcón and providing technical assistance and financing. Its representative spent one week a month at the Guerrero site for a couple of years. Westwood is currently importing both sawnwood and moldings to the US from El Balcón, shipping to their warehouse in El Paso, Texas. Westwood has also been crucial in financing both capital assets and operating costs over the last several years. Westwood loaned El Balcón US\$200,000 to put in dry kilns, in addition to helping to arrange for a 6% interest loan from the manufacturer. In 1999 and 2000, Westwood loaned El Balcón US\$400-500,000 in start-up operating capital, all of which was repaid within months. In 2001, only \$100,000 was loaned because El Balcón now has sufficient operating capital.

Government Supporting Programs

El Balcón has been very successful in getting financing from government funding for forestry programs such as the Program for the Development of Forest Plantations (PRODEPLAN) and the Forest Development Program (PRODEFOR). From PRODEPLAN they obtained some support for building the forest nursery and stand up reforestation activities (around MEX\$40,000.00. Current financing from PRODEPLAN is about MEX\$10,000.00 a year, although the ejido is about to stop asking for this support given that the amount of the support is lower than the costs involved in the paper work and responsibilities acquired with the financing. They have obtained some financing from PRODEFOR for precommercial thinnings, forest fire equipment and to develop the "forest management plan". Some members of the community receive benefits from other programs such as PROGRESA and PROCAMPO .

Sources for Financing

The first assets were acquired from savings and governmental support. Thereafter, assets have been obtained by private financing, a very rare source of financing for most of the ejidos in Mexico. The main sources of private financing have been clients like Boise Cascade and Westwood as well as the commercial banks. El Balcón's new sawmill was financed by the insurance obtained from the loss of the first mill, plus commercial financing. Current financing is obtained from different banks and it is used for financing operating costs and the beginning of yearly operations and for renewing equipment.

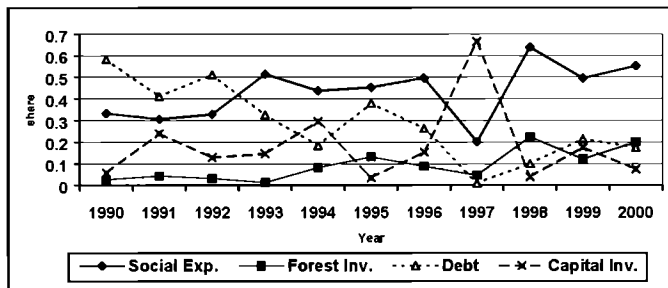
Firm Strategy, Structure, and Rivalry in El Balcón

Appropriation of Common Property Resources

In order to understand the firm's strategies and structure it is important to recognize the nature of ownership and distribution of their main forestry asset: the forest itself. This is an aspect that, combined with community governance arrangement, makes CFEs in Mexico unique as firms. Many common property forests in Mexico have been informally divided up, but El Balcón's common property has remained held by the community as whole. However, there have been major struggles over the allocation of the flow of benefits from the common property. Flows of benefits can be categorized into capital investment in the enterprise, employment in the enterprise, investments in community enterprise, and direct cash distribution (a form of profit sharing). For example, in 1987, as the ejido was struggling to get its forest enterprise off the ground, the ejido bought five trucks on credit, to be paid for with forest proceeds, and envisioned as an investment in the

enterprise. However, the ejido truck drivers began assuming private possession of the vehicles. A period of severe internal conflict followed, but the ejido authorities were eventually able to reclaim the vehicles as community property, stopping the private appropriation of a common resource (Wexler: 1985). A more dramatic example of struggle over employment in the enterprise followed. As the CFE tumbled into disorganization and debt in 1988 after the initial period of direct community management, mostly because of low human capital, the community made the controversial decision to turn the operation of the enterprise over to a professional manager, a dramatic dilution of community self-management. The professional manager had to consult on his investment decisions with the emerging Council of Principals (mentioned earlier), but one of his first decisions was to entirely cut off the community from the benefit flow as employees, hiring all staff from outside. However, significant benefits continued to flow into the community as profits that were channeled into community benefits and profit sharing. Beginning in 1995, the community slowly began integrating itself back into the community enterprise as employees, primarily in the logging operation, reclaiming employment as a benefit flow from the forest common stock. In recent years, the amount of investment in capital expenses in the CFE has declined and investment in social infrastructure and benefits has increased. Figure 2 below shows the trend of shares of rents derived from the whole process directed to social investments, direct forest investments, debt and capital investments. As can be observed, social investments have increased in recent years, as well as the investments in the forest stock, although social investments have usually been much higher than any of the other categories.

FIGURE 2: TREND OF THE DISTRIBUTION OF PROFITS SOURCE: EL BALCÓN SAWMILL ACCOUNTING BOOKS, VARIOUS YEARS.



SOURCE: EL BALCÓN SAWMILL ACCOUNTING BOOKS, VARIOUS YEARS.

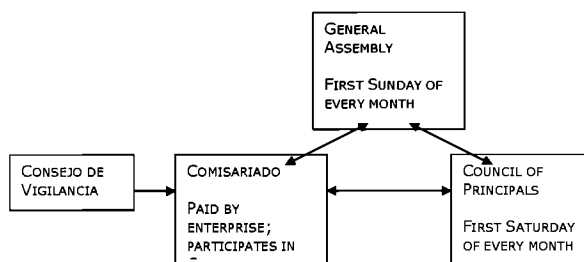
Most of the social investments are distributed among different community requirements such as direct subsidies of material for construction (20%), church infrastructure (25%), religious activities (10-15%), ejido management expenses (8-10%), and medical assistance (10-15%). As has already mentioned, from 1991 to 1996, 25 high school students were supported and now only small scholarships for university level education are given. Direct distributions of profits was a common practice before 1993. Thereafter, no direct profit shares have been distributed among ejidatarios, although some direct financial support for housing and special medical care has been distributed. Direct payments in the form of pensions are given to widows and elderly ejido members.

Community Enterprise and Forest Management Plan

When the professional manager was hired in 1989, "El Balcón" created its own "Council of Principals", modeled after San Juan Nuevo Parangaricutiro's Communal Council (Bray and Merino-Perez, ms). The Council of Principals functions as a community oversight committee over the professional manager, approving general investment and policy guidelines, but leaving to him the day-to-day management. This is also a unique feature of a CFE, although it could be said that this Council operates in a similar way to a Board of Directors in a private sector firm.

The Council of Principals reports to the ejido's General Assembly and is said to represent each family in the community. It is made up of young people, seniors, men and women; with current numbers reported to be between 26-32. Its relationship to other community authorities and administrative organs is shown in figure 3.

FIGURE 3: ORGANIZATION OF "EL BALCÓN"



The Council itself does not make decisions. Rather, it discusses and analyzes enterprise issues and then makes recommendations for new rules or policies to the General Assembly. However, members report that the Council's recommendations are invariably accepted by the General Assembly. Since El Balcón has almost no families lacking agrarian rights, community cohesion is aided by the fact that nearly everyone participates in the larger decisions on local resource use.

a) Labor profile and employment

A distinctive mark of the "El Balcón" CFE is the balance achieved between labor hired both from within and outside the community. The entire forest enterprise employs 140-145 people, but only 26 of these are employed for the entire year. For most other employees, the enterprise generates about eight months of work a year. As noted earlier, almost all sawmill employees are from Técpan, although some of the more skilled technical positions are filled by ejidatarios. In forest extraction and transportation, now about 80% of the employees are from El Balcón, with 70% of all of the ejidatarios now working in the enterprise. November-July is the period of maximum work in the forest. All workers receive benefits, social security, retirement payments and a Christmas bonus. In addition, the ejido administrative positions of

Comisariado, Secretary and Treasurer are all paid positions. The Oversight Committee is also paid, although at a lower rate.

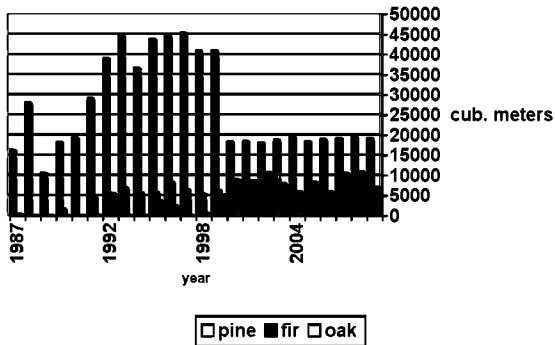
The major roles in the forest production system at "El Balcón" are partially or totally held by the ejido members. Logging is coordinated by a forest technician who is in charge of following the forest management plan. The Forest Technical Director, an outside professional, is responsible not only for the activities related to silviculture and forest management but also for the required paperwork, monitoring of the marking of trees selected for logging in the management plan, and defining strategies for scheduling harvest.

The current manager of the logging operations (jefe de monte) as well as his assistants are ejido members with a long experience in each one of the activities. They are responsible for the planning and operation of logging and yarding equipment, road construction and maintenance, and the scheduling of trucks and cutting areas. This part of the production system is totally managed by the ejido. However, the operation of this activity has much space for improvement. For instance, road and skidding trails construction is not planned to minimize skidding or yarding costs. Most of the trail and secondary roads are not built to minimize sediment production or to protect water flows or important habitats.

b) Forest Management Plan

El Balcón started logging the forest in 1987 on a 15-year management plan that authorized the harvest of 400,000 cubic meters over the entire period. However, because of the managerial problems in the early years, the annual cuts were far below the authorized volume. Thus, the forest managers made the decision to log at much higher volumes in recent years in order to achieve the full 400,000 cubic meter volume over the period. Nevertheless, the most recent forest management plan (year 2000) estimated an annual cut of around 20,000 cubic meters, from which only 55% of it pine. Figure 4 shows the harvest flows since 1987 and the expected flows derived from the forest management plan.

FIGURE 4: HARVEST FLOW BY SPECIES IN "EL BALCÓN"



Until recently, El Balcón forest management followed the Mexican Method of Forest Management (MMOM), but as of 2001, in a new ten-year management plan, it adopted the System of Conservation and Silvicultural Development (SICODESI-Sistema de Conservación y Desarrollo Silvícola), a variant of the Method of Silvicultural Development (MDS). SICODESI is a software program, developed under the Mexico-Finland Agreement in the early 1990s. The program estimates harvest schedules by using predictive whole stand models taking into account ecological protection, socio-economic and legal variables. It includes a suite of silvicultural treatments, including liberation and pre-clearing cuts (preclareos), regeneration cuts, small clear cuts (aclareos), and selection cuts. The harvest schedules are simulated among different alternatives for a given stand. The simulation follows an ideal condition defined by a silvicultural sequence that would begin with a liberation cut, followed by regeneration cuts, clearing cuts, and selection cuts. Hence if the forest considered under the simulation is an old growth forest, the program provides good estimates for harvest schedules. However, if the forest is a surplus forest¹⁰ the harvest schedules are limited in the amount of harvest estimated, since harvest is constrained to the maximum yield which is very low in an old growth surplus forest. This result can be confirmed in the new plan, where the cutting strategy involves a slow removal of larger trees between 60-70 years trying to maintain the present structure of the forest.

¹⁰ A surplus forest is a forest whose harvest rate can be potentially higher than the long run sustained yield harvest rate.

The ejido reports that some 500 hectares of formerly cultivated lands are being converted to forest plantations of native species. They are planted in fenced areas with seeds of pine species obtained from their own forest. It is expected that the plantations will generate an additional harvest flow estimated in 250 m³/hectare with a rotation age ranging between 40-50 years.

The forest brigade, composed of 20 persons, chops up the volume that is left in the forest to reduce the risk of forest fire and hasten decomposition. The brigade has also cut 45 km of firebreaks and carries out forest enrichment activities. Since 1993, the ejido has maintained a nursery in the forest that has a annual production capacity of 100,000 seedlings and is composed mainly of *Pinus pseudostrobus*, *P. ayacahuite*, *P. chiapensis*, and *P. patula*. Despite the limited investments in forest, some of them supported by PRODEPLAN and PRODEFOR, production requires additional investments since the forest cover at El Balcón is overmature and overcrowded in some areas. This means that activities such as liberation cuts to favor natural regeneration and thinnings (perhaps noncommercial) are necessary.

El Balcón places 4,058 hectares of the forested area under protection where no logging is permitted. These include permanent and seasonal watercourses (20m and 10m strips respectively, called for by Mexican forest law), fringes along roads, forested areas around the population centers, and a forest area with low production potential held as a wildlife reserve. The forested land on the El Balcón ejido contains specimens of *P. chiapensis*, a species protected under Mexican law. The ejido gives special protection to this species, marking all individually as they are found to prevent their being logged, and is seeking to expand its presence in the forest through reforestation. Other conservation measures include leaving trees with nests in them, or large dead trees suitable for nesting, closing logging roads that are not needed in the short term, leaving piles of branches as wildlife refuges, and segregating important habitat areas from logging areas.

A few years ago, the ejido imposed a conservation measure to prohibit hunting of any kind. This regulation is enforced by the forest brigades who patrol for fires, illegal logging, and hunting. It was also noted that members of the community are too busy with paid employment in the ejido to hunt. Thus a collateral benefit of the community forest industry, in terms of biodiversity conservation, has been the prohibition on hunting.

Cost Structure and Cost-Saving Strategies

At a glance, the forest production system at "El Balcón" seems efficient. However, the distribution and evolution of the cost structure shows some

problems. For instance, until 1992, the proportion of costs was quite regular. After the acquisition of the logging and transportation equipment, logging and transportation costs were reduced from 60% of the total cost to 36% (still very high since current logging and extraction costs are close to US\$31.6/m³ 11). Sawing cost share has remained relatively constant even with the introduction of the new sawmill in 1997. In spite of the improved technology of the new mill and the efficiency in how the activities are performed, the sawing ratio is not higher than 61% and did not improve after the installation of the new sawmill¹². This might be due to the fact that sawing is performed according to the demand of lumber size instead of optimizing the maximum amount of lumber that could be obtained from the sawing, which can be a good strategy if the market provides a premium high enough to hide the inefficiencies and losses generated.

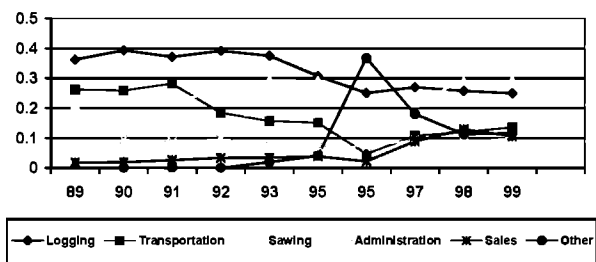
Figure 5 shows that the share of administrative and marketing costs has been increasing in the past five years. Most of the administrative costs are due to the increasing necessity of buying timber outside the ejido, yielding higher administration costs because of negotiation and other transaction costs. Other sources of administrative costs are the transaction costs derived from the increasing use of government funds and the needs to fulfill additional requirements such as the new forest management plan and to meet certification requirements¹³. On the other hand, marketing's higher cost share is mainly due to the loss of profits because of clients who did not pay for product delivered (a serious problem after the 1995 crisis).

11 Logging costs in average in Mexico are US\$24.60 /m³, in Chile are around US\$15.60 and in Brazil are around US\$18.50 (base year=2000)

12 The average sawing ratio with the old sawmill (1990-1997) was 59% while the average sawing ratio with the new sawmill has improved only up to 61%.

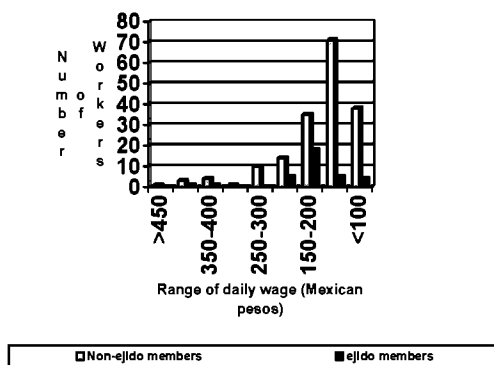
13 Certification was granted in February 2003 with some constraints.

FIGURE 5: EVOLUTION OF THE COST STRUCTURE AT "EL BALCÓN"



On average, labor cost accounts for only 17% of the total cost. Some activities, however, have additional incentives to promote efficiency. Thus, activities such as sawing, recycling lumber or bucking have bonuses according to the efficiency achieved measured in additional first class lumber or logs. Other activities, specially those performed in the field have incentives in the form of subsidies for meals or additional holidays. Ejido members still represent a low share in the mill, although they represent a high percentage in the logging and transportation activities. They are not supposed to have additional privileges for labor, however, figure 6 shows that the proportion of ejido members with very low salaries is much lower than those with higher wage ranges. It is true that some of the ejido members perform more specialized work, but it is also true that most of them perform basic activities presumably compensated a little bit higher than if they were not ejido members.

FIGURE 6: DISTRIBUTIONS OF DAILY WAGES AT "EL BALCÓN"



Profits

Gross profits derived from the three stages of the production system (without accounting for depreciation, debt and taxes), are about 1 million dollars yearly (20-30% of gross sales). These relatively high profits must be considered as the accumulated profits from all the stages. If average debt payments as well average annual depreciation costs derived from the historical capital investment (2.3 million dollars) are considered, those profits would be severely reduced.

Of the three stages, industrialization seems to be very efficient but with high sunk costs, which weigh heavily on profits when depreciation is considered. On the other hand, logging seems to be the most inefficient stage, since as discussed earlier, average logging costs surpass international standards. This means that high nominal profits come mostly from logging. This stage has been the one with the lowest investment level and mostly subsidized by the government. These high nominal profits can be maintained only as long as harvest levels continue to be high, which is not a sustainable situation.

El Balcón has recently begun buying roundwood from other ejidos and this could decrease profits dramatically, since under these conditions the ejido will have to face the inefficiencies of the other stages of production. Therefore, sustainability of profits depends largely on the availability of high harvest levels with extremely low production costs. This suggests that if additional investments at forest level that enable increasing forest productivity are not made soon (e.g. additional forest plantations, thinnings and upgrading the road standards), profitability of the whole enterprise will not be sustainable

Current Production Problems and Future Strategies

In the last section we mentioned the drastic reduction in harvest flows called for in the new forest management plan, from around 40,000 m³ to just over 20,000 m³. Such a reduction is an imminent threat in the sense that unless some strategic actions are taken, it will dramatically reduce the efficiency (and sustainability) of the mill and the economy of the ejido. This new challenge has motivated the formation of the innovative firm strategy of searching for other ejidos who might act as partners to supply logs for the mill. In an effort to meet this crisis of reduction of volume in their own forests, El Balcón is willing to subsidize in other ejidos the development of forest management plans, road construction and maintenance, as well as some logging activities and bureaucratic paper work, activities where they have acquired long experience. They strongly believe that this is an investment to ensure the sustainability of the mill, and indeed, it is one of the alternatives to solve the problem of high sunk costs derived from the mill's overcapacity. Before going further, we will continue by presenting a brief analysis in order to assess the environment in which strategic decisions are to be taken to ensure the sustainability of the firm.

Brief "SWOT" Analysis

The purpose of this section is to provide information regarding the organization's strengths and weaknesses in relation to the opportunities and threats, a so-called "SWOT" analysis (Bryson, 1995). This allows an analysis of the possible strategic responses to reduction of harvest flows and other connected problems that pose a challenge for the El Balcón CFE. Table 3 below gives a summarized picture of the situation.

TABLE 2: SWOT ANALYSIS, EL BALCÓN

	INTERNAL	EXTERNAL
(+)	STRENGTHS ABUNDANCE OF OLD GROWTH HIGH LEVELS OF SOCIAL CAPITAL ACCUMULATED KNOWLEDGE IN COMMUNITY FORESTRY VERTICALLY INTEGRATED ENTERPRISE	OPPORTUNITIES SAWMILL OVERCAPACITY GOVERNMENTAL FUNDS AVAILABLE POTENTIAL MARKET FOR CERTIFIED PRODUCTS
(-)	WEAKNESSES CURRENT FOREST MANAGEMENT PLAN UNDERESTIMATES THE HARVEST POTENTIAL LOW LEVELS OF HUMAN CAPITAL	THREATS CHEAP LUMBER CONTINUES TO BE IMPORTED FROM OTHER COUNTRIES (CHILE, USA, CANADA)

We believe that such a situation calls for two general strategies considered below, namely a) improving the forest management plan and b) reengineering the production, investment and distribution process.

Improving the Forest Management Plan

According to the current forest management program, total average volume in the ejido's forest area reaches 206.4 m³/ha (the current timber stock reaches 2,122,314 m³) with a rotation age ranging between 60-80 years and ages concentrated in old age classes. In general terms this forest can be classified as an old growth and surplus forest. As mentioned earlier, the SICODESI system estimates low harvest schedules for this type of forests since real growth is low. In addition to the new strategy of buying additional logs from neighboring communities, there remains a possibility of increasing harvest flows at "El Balcón". Just by considering the current average yields, the estimated stock in sustained yield¹⁴ might be about 921,340 m³. Such a stock is very low compared with the current timber stock (more than 2 million m³), hence it is possible to liquidate some surplus volume, whose amount could reach up to 1.5 million m³ along the conversion period (60 to 80 years).

¹⁴ Stock reached when the forest is totally regulated and produces the maximum sustained yield.

Considering the rate of growth of the old growth forest as well as the rate of change of prices, the annual liquidation rate should not be higher than 1.1%, which yields an additional volume for liquidation of nearly 17,000 m³ a year for more than a rotation period. Such a volume could ameliorate the huge scarcity of logs for the mill.

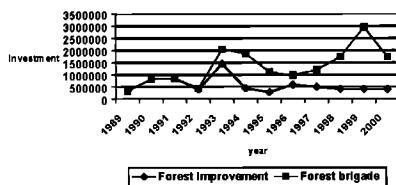
Reengineering the Production, Investment and Distribution Processes

The first social benefits accrued from the enterprise were widows' pensions, much-needed after years of violent conflicts. The pensions currently support some twenty widows with \$1,500 pesos a month. The forestry business also provides fifteen retirement pensions at 2,000 pesos a month each. There is complete medical coverage for both ejidatarios and non-ejidatarios, with vouchers given for a doctor in Técpan. In 1986-1989, the ejido implemented direct profit-sharing (*reparto*) but this included the distribution of a loan for working capital and was one of the causes of the financial collapse that led to the decision to hire a professional manager. In all, there have only been four *repartos* in the last fifteen years, since almost all profits are reinvested either in the business or in collective community development projects.

The professional manager estimates that from 1989-1998, the Ejido invested about 60% of profits in the business and 40% in community infrastructure and social services. In the most recent period, 1998-2001, about 90% has been invested in the community, because the business has not required any further investments recently. It is estimated that some one million US dollars has been spent on roads alone. Other social investments include potable water, solar energy, and housing. As of 2001, they had constructed 32 houses, but are now experimenting with a lower cost home that requires participation of the homeowner. The ejido has also invested in productive projects such as pig raising and organic agriculture.

Investment in the forest has been increasing in the past years not only from direct participation of ejido profits but also because the ejido has been very successful in obtaining subsidies from government programs such as PRONARE and PRODEFOR. In real terms, investment in direct forest activities account for an average of 1.26 million of pesos a year (year base = 2000), with an average annual increment of almost 50% a year (See Figure 7 below).

FIGURE 7: TREND OF REAL INVESTMENT IN FOREST ACTIVITIES (BASE YEAR = 2000)



Finally, El Balcón has invested in the human capital of their children, as has already been noted. Currently, they have produced some 8-9 college graduates and 2-3 forest technicians, most of whom have returned to the community. The cost of the fellowships exceeds many of the salaries, and there has been some discussion that with the reduction in logging, this is one of the benefits that would have to be looked at more closely.

Conclusions

This analysis has helped to delineate some of the determinants of El Balcón's relative success in national and international markets and also some of the areas of weaknesses which could undermine the prospects for continued success. El Balcón has an excellent forest stock but one characterized by an overmature forest with low growth rates. It has made significant investments in human capital in both health and education, although there are still very notable deficits in this area that it may take another generation to overcome and will require continued investment. It has excellent physical capital but is currently burdened with a serious underutilization of the sawmill. It has demonstrated an impressive capacity to build new social capital. Its demand conditions are good, with strong sales in national markets and a growing presence in international markets through a successful relationship with a US timber company. It has made astute use of other sources of support such as the ejido union and government subsidies. El Balcón has effectively evolved community institutions for governing the CFE which may be likened to that of a Board of Directors in a private enterprise. It demonstrates that common property resources administered by a community enterprise are no necessary hindrance in the marketplace, and may be a source of particular strengths in delivering greater social equity while also assuring enterprise survival. The concept of the "community as entrepreneurial firm" is not an oxymoron. However, current patterns of reinvestment may be shortchanging the forest in favor of social investments. The forest management plan is suggested to be underestimating the volume of timber which may be extracted while still maintaining crucial ecosystem functions. The new firm strategy of financing the development of CFEs in other communities that then become suppliers to El Balcón is an effective way to address the underutilization of the sawmill but will also imply increased costs that must be carefully monitored.

The case study of El Balcón suggests that a natural asset of substantial value, good community organization, the particular history associated with the professional manager, and the market link with Westwood Forest Products have positioned this community to be a winner in the globalization processes that are sweeping rural Mexico. However previous successful record in terms of overall sustainability could be jeopardized if the strategic actions suggested above are not taken into consideration.

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