

The land use patterns and the history of coffee in eastern Chiapas, Mexico

Robert A. Rice

Smithsonian Migratory Bird Center, National Zoological Park, Washington, DC USA

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Abstract. The role of coffee in the land use patterns and decisions of eastern Chiapas looms as a key ingredient in the social and political relations of this conflicted area. Data from the *municipios* of Ocosingo, Altamirano, and Las Margaritas – three districts generally associated with the January 1994 uprising – reveal similarities and distinct differences in land use patterns involving coffee. The introduction and spread of coffee, as well as the market and production changes related to this export-oriented sector can be linked to the colonists who settled this remote region over the past several decades. The dynamics between grassroots *campesino* producer organizations and the state's now-defunct National Coffee Institute (INMECAFE) helped set the stage for the economic challenges that fell full force upon the residents in the area in 1994 and beyond.

Key words: Land use patterns, Coffee, Social and political relations, Chiapas, Mexico

Robert A. Rice is a geographer with extensive experience in Central America and Mexico. His research interests center around issues that link agriculture and the environment. He currently works at the Smithsonian Institution, where the focus of his work includes land use changes in Latin America, especially in the coffee sector.

Introduction

This paper examines the history of land use of coffee in the eastern portion of the Mexican state of Chiapas. Land use patterns have long been a domain of great concern to geographers, rural sociologists, and other researchers concerned with shifting trends in human-environment relations, as well as the various consequences arising from landscape changes. As studies evolve toward a more interdisciplinary analysis, rural patterns and changes receive scrutiny from various fields. Agriculture's resonance and role within the natural environment is beginning to draw the attentive ear of environmentalists, field ecologists, and conservation biologists. While this study concentrates on land use in and around the Ocosingo Valley of Chiapas, it can help to make connections to broader processes. Its centerpiece showcases the perennial cash crop coffee, a commodity that has gained importance within the area in recent decades. Coffee, moreover, ranks as an important variable in the zone's political equations. Inasmuch as its history in eastern Chiapas relates to the armed conflict that shook this southernmost Mexican state and points beyond in January 1994 (Parra et al. 1994; Hernandez 1994; Guillermprieto 1995), this study addresses a portion of the undercarriage that propelled the indigenous population of this 'backwater' region on a fast-track trajectory, placing Chiapas upon the Mexican agenda and the international stage. Understanding the particu-

lars of coffee's history can illuminate other aspects of this puzzling region.

The paper is organized in three general sections. The first examines coffee production at the level of the state of Chiapas, providing a context within which to locate the more detailed and geographically focused information that follows. The second section concentrates upon the Ocosingo Valley area, relying upon census data and other information from the three *municipios* of Altamirano, Las Margaritas, and Ocosingo. This section and the third focus specifically upon coffee production in eastern Chiapas. The final part examines some of the physical characteristics of coffee lands in the study area, and presents the paths producers have taken to develop the specific agroecological profile cast by coffee in this region. Also addressed is the role the Mexican Coffee Institute played in the modernization of certain areas within eastern Chiapas, and how changes in international coffee prices can affect local players in an unpredictable industry.

One of stiffest challenges to teasing out the land use history and the socioeconomic consequences of that history derives from the paucity of data on the Ocosingo-Altamirano-Las Margaritas area. From the standpoint of true government effort or international aid, the region qualifies as a neglected zone within a backwater state.¹ Academic attention has been scant. Moreover, the interest generated in the Lacandon forest to the east by a phalanx of Mexican and foreign researchers and non-governmental

organizations alike has undoubtedly served to draw attention away from the Ocosingo Valley and its immediate environs.²

Much of the available data come from census reports and state statistical accounts, both of which provide information at the *municipio* level. Such data pose some analytical problems. The *municipio* of Ocosingo alone, for instance, covers an immense space. Encompassing 10,690 km², areally it represents more than 14% of the state of Chiapas, and a full 0.5% of Mexico. As the Ocosingo Valley area lies in the extreme western portion of the *municipio*, data from these statistical sources can be misleading. What happens at the *municipio* level may not necessarily represent what goes on within the valley. They are the only data available in many instances, however, and offer the best approximation of what the land use history has been. Fortunately, in the case of coffee in this *municipio*, its developmental history mainly involves the very region focused upon in this report (that is, the western portion of the *municipio* of Ocosingo), making *municipio* level data more reliable than we might otherwise expect (Marquéz, personal communication).

Land use and land use change do not develop through the simple action of humans deciding how they wish to make use of the earth's resources. Rather, as this case of coffee and land use in Chiapas shows, the social interactions between and within specific groups, not only within distinct areas but between areas with historical connections, have profound impact upon how land is used. Grassroots political organizing around issues of indigenous identity and peasant unity has sculpted much of coffee's history in eastern Chiapas.³ The social and migration linkages between the easternmost *municipios* of the state and areas and the northern *municipios* clustered near the border with Tabasco, for instance, are mirrored in the political stew that has nourished the indigenous peasants involved in coffee production. It is the various independent organizations that have played a crucial role in the spread of small-holding coffee producers.

Coffee production in context

Coffee in the Ocosingo Valley is widespread and economically relevant to many of the residents. It is a perennial cash crop traditionally grown beneath a forest-like cover, and occupies a range of elevations within the larger zone of eastern Chiapas. The coffee plant that is now economically important within the world market (*Coffea arabica*) evolved within the forests of east Africa and was brought to the Western Hemisphere in the 1700s. Arabica coffee does best – in terms of quality – at higher elevations. Regionally, coffee has played an integral role in the lives of the residents. Moreover, the state promoted coffee as a cash crop during the 1970s and 1980s.

Table 1. Land use in the state of Chiapas, Mexico, by sector (1991)

Category	Private sector ^a		Social sector ^b	
	Area (ha)	%	Area (ha)	%
Total production area	1,926,071	100.0	4,066,098	100.0
Agriculture	1,192,237	61.9	1,658,986	40.8
Pasture	525,817	27.3	1,199,499	29.5
Forest/woodlands	169,494	8.8	910,806	22.4
Forest/woodlands with pasture	13,483	0.7	n.a.	
Unvegetated	25,038	1.3	n.a.	
Other uses	n.a.		296,825	7.3

n.a. = data not available.

^a Private sector includes all production units, whether for agricultural or forest production, not classified as *ejidos* or *comunidades agrarias*.

^b Social sector includes those units of production classified as *ejidos* or *comunidades agrarias*. It also includes areas in common use.

Sources: VII Censo Agrícola-Ganadero 1991 (Chiapas) Instituto Nacional de Estadística Geográfica e Informática (1994); Atlas Ejidal del Estado de Chiapas 1988 (INEGI 1991); Sr Luís José Alfaro, Agricultural Section of INEGI in Aguascalientes, personal communication/correspondence.

General land use patterns

Before presenting detailed information about these crops at the state level, it helps to examine the *general* land use patterns currently in place for Chiapas. It is worth noting that the state displays some of Mexico's most distorted relations around access to resources. Though blessed with a fountain of natural and human resources, Chiapas ranks as one of Mexico's poorest states, displaying higher levels of poverty for more of its population than most other states in the country. With only 3% of Mexico's population, Chiapas registers 25% of the land disputes (Padgett & Waller 1994). Social indicators place much of the state in poverty. Of the 111 *municipios*, 85% are classified as having either 'high' or 'very high' degrees of marginalization (Orozco 1994).

Table 1 gives a breakdown of the various land use categories reported by Mexico's Instituto Nacional de Estadística Geográfica e Informática, the government institute that recently completed the seventh agricultural census. Including both general categories of land tenure (private and social), the state has around 6 million hectares of land in productive use. At the state level, we can see that the social sector has twice the total area that the private sector controls. Also, we see that for both sectors, agricultural land area exceeds that of pasture lands or other categories. A salient difference between the two sectors,

Table 2. Geographic distribution of Mexico's coffee production and related factors

State	No. of municipios	No. of communities	No. of producers	Hectares	Production ^a	Yield ^b
Colima	8	34	1219	2844	10,241	3.6
<i>Chiapas</i>	60	1418	72,021	214,470	2,350,232	10.9
Guerrero	13	73	8483	41,513	262,792	6.3
Hidalgo	18	473	23,746	43,092	451,372	10.5
Jalisco	2	4	366	2124	6527	3.1
Nayarit	7	49	3288	18,995	157,825	8.3
Oaxaca	76	771	58,660	180,239	1,117,521	6.2
Puebla	37	442	32,726	68,570	1,198,254	17.5
Queretaro	1	3	313	614	4592	7.5
S.L.P. ^c	11	247	16,658	32,319	210,509	6.5
Tabasco	2	29	950	1688	5600	3.3
Veracruz	46	783	58,225	137,014	1,733,645	12.7
TOTAL	281	4326	276,655	743,482	7,509,110	10.1

^a Production units = quintals (1 qq = 100 lbs).

^b Yield expressed in qq oro/hectare.

^c San Luís Potos'.

Source: Instituto Mexicano del Café (1989).

however, is the degree to which forest and woodland area accounts for land use in the social sector.

Coffee's distribution in Mexico

The role of coffee in Chiapas is of critical importance to the state, as well as to Mexico's overall coffee production. Within Chiapas, the importance of the Soconusco region near the state's southern Pacific coast and bordering Guatemala cannot be over-emphasized (Villafuerte Solís 1993). Table 2 shows Chiapas's place within the Mexican coffee sector. With more than one fifth of the country's *municipios* that grow coffee and a full third of the state's communities designated as 'coffee towns', the 72,021 producers in Chiapas represent 26% of all Mexican coffee producers. Furthermore, this southernmost and 'backwater' state contains 29% of Mexico's coffee area, and accounts for 31% of all production. In the 1970s, Chiapas displaced the state of Veracruz, which currently produces around 23% of Mexico's coffee, as the most important coffee state. It should be pointed out that a widespread rural economic crisis in Mexico, in conjunction with the collapse of coffee price mechanisms via the International Coffee Agreement in 1989, have resulted in a fall in Mexican production in recent years. Between the 1988/89 and the 1992/93 cropping cycles in coffee, national production fell 33% from 7.16 million quintals⁴ to 4.77 million quintals (Celis 1993). The 1993 coffee area was slightly greater than that for 1989, implying that lowered maintenance and/or abandonment of coffee lands was the cause for this fall (as opposed to switching into

other crops, a difficult endeavor with a perennial crop like coffee).

Mexico's most important producing states in absolute terms (those, say, with more than one million quintals of production) tend to display an average size holding that is in line with the national average size of 2.6 ha per producer. Chiapas shows an average size of 2.9 ha per producer. Oaxaca's average coffee holding is 3.0 ha, while Veracruz, Puebla, and Hidalgo show 2.3 ha, 2.0 ha, and 1.8 ha, respectively. Except for Oaxaca, these states also display comparatively high yields, which range from near to well above the national average. Chiapas's yields exceed the national average (Table 2).

Growth of the coffee sector

The growth and importance of coffee production in Chiapas is something of a national phenomenon. We can see from data presented in Table 3 that the area and production have grown steadily since 1930. The area in coffee today is more than three times that found in Chiapas in 1950. There were concerted efforts on the part of the government agency responsible for coffee, the Instituto Mexicano del Café (INMECAFE), to increase its presence throughout the state during the 1960s and 1970s. Coffee production since the 1950s has more than tripled. Areal expansion of coffee is the key, however, as, while yields have indeed fluctuated over the years, there is no clear upward trend in production per unit area during this time. Hence, production increases derive from increased coffee area.

Table 3. Coffee production in the state of Chiapas, Mexico, 1930–1992^a

Year	Area (hectares)	Production (mt)	Yield (qq/ha)
1930	24,111	11,740	10.7
1940	32,594	18,525	12.5
1950	71,067	30,000	9.3
1960	92,183	44,000	10.5
1970	140,352	100,160	15.7
1980 ^b	142,106	81,004	12.6
1989	214,470	106,586	10.9
1991	248,326	117,390	10.4
1992	231,305	110,397	10.5

^a Area in hectares (1 ha. = 2.47 acres); production in metric tons (1 mt = 2205 lbs); yields calculated and expressed in quintals (qq) oro (green processed coffee) per hectare (1 qq = 100lbs).

^b Data from 1981.

Note: The 1950 agricultural census reported 64,109 ha. of coffee harvested. Such differences are not uncommon, given the difficulty of assessing crop area, as well as the fact that some figures report total area planted, while others reflect only that area harvested for the year specified. Lack of consistency and reporting information inhibits greater accuracy in these figures.

Sources: 1930–1960, Secretaría de Agricultura y Ganadería (as cited in Gunn 1976); 1970, *V Censos Agrícola-Ganadero y Ejidal*, Dirección General de Estadística, Mexico (1975); 1980, 1989, 1992, *Anuario Estadístico del Estado de Chiapas*, respective years; 1991, *VII Censo Agrícola-Ganadero* (1994).

World demand played its part in sparking interest in coffee production in eastern Chiapas, but only up to a point. Independent peasant organizations such as the Emiliano Zapata Peasant Organization (OCEZ), the Independent Confederation of Agricultural Workers and Indians (CIOAC), and the Unión de Uniones did much of the grassroots organizing that forced the government's hand to make concessions concerning coffee in the region. While the first two of these groups developed outside the region that is the focus of this paper, their political influence and attitudes about coffee spread via the migration-trail network of family and community alliances that had developed over several decades prior to the 1970s. The Unión de Uniones, by contrast, developed in situ in the Ocosingo-Altamirano-Las Margaritas region that serves as the focus of this study (Collier 1994b: 69–75).

The size distribution of coffee holdings in Chiapas, along with area and production, appear in Table 4. There are, of course, other sources for this size distribution of coffee holdings, the most obvious one being the Instituto Nacional de Estadística, Geografía e Informática (INEGI). According to researchers working on Mexico's coffee sector (Hernandez 1995; Moguel 1996), however, the most reliable set of data comes from the now-defunct

Table 4. Size distribution of coffee holdings in Chiapas, Mexico (1989)

Size holding	No. of producers	No. of hectares	Production (qq)
Up to 2 ha	44,889	60,274	638,039
From 2.01 to 5 ha	21,070	70,309	759,228
From 5.01 to 10 ha	4604	35,276	360,832
Greater than 10 ha	1458	48,611	592,133
Total for Chiapas	72,021	214,470	2,350,232

Source: INMECAFE (1989).

Instituto Mexicano del Café (INMECAFE). The last coffee census conducted by INMECAFE was in 1989/90.

Small versus large holdings

As is the case in nearby coffee producing countries and throughout Mexico, the structure of Chiapas's coffee sector is skewed toward a preponderance of small growers. Producers holding 5 hectares or less account for 91% of the coffee growers in the state. These same small growers control around 61% of the coffee land, and account for 59% of the state's production. At the large growers' end of the spectrum, we find 2% of Chiapas's producers holding more than 22% of the coffee area and producing one quarter of the state's coffee. The skewed structure tells us nothing about the quality of the land on which producers grow coffee.

However, we can get some idea of quality distribution based on elevation. Since coffee quality is highly dependent upon the elevation at which it is grown (with all other factors such as soil, rainfall patterns, cultivation methods, and processing techniques being equal), Table 5 provides a notion of the quality of coffee being produced in Chiapas. However, due to the lack of production data at the different elevational classes, we can only estimate that amount of coffee being produced at the highest elevations (greater than 900 meters above sea level). We see that the number of producers and the area in coffee differs noticeably when comparing the three grossly divided elevational classes in the table.

The highest elevational class, that of 900 meters and above, should offer the best quality coffee in the state. The number of producers within this category account for some 31% of all producers in Chiapas. The hectares at this elevation also represent about 31% of total coffee area in the state. The middle range category accounts for nearly half (48%) of both producers and area in the state, while the lowland coffee category, one of generally lower quality beans, includes about 20% of each of producers and area.

Table 5. Distribution of coffee production in Chiapas, Mexico as a function of elevation

Elevational class	No. of producers	No. of hectares
Low (up to 600 m)	15,352	45,326
Middle (from 600 to 900 m)	34,519	100,746
High (over 900 m)	22,150	68,398
Total for Chiapas	72,021	214,470

Source: INMECAFE (1989).

Mexico's land reform since the revolution, while open to criticism about the quantity and quality of land received by its beneficiaries, stands out as the most extensive in Latin America in terms of the absolute number of peasants involved.⁵ *Ejido* lands in Chiapas, as well as for the country as a whole, account for the bulk of producers and area, and the majority of production. Within Chiapas, the 'social sector' involved in coffee production – that is, *ejido* lands, communal lands and small producers holding less than 10 ha of coffee – represents 98% of all producers and 77% of the coffee area. This same sector produced three quarters of Chiapas's coffee in the late 1980s, as well. On a strictly social vs. private sector comparison (that is, not including the private producers with fewer than 10 ha in the social sector), we find 90% of the producers are on *ejido* and/or communal lands, accounting for 72% of the coffee area and 71% of the production in Chiapas (INMECAFE 1989).

Lest we conclude that the coffee sector within Chiapas offers up an example of objective equity on the part of agrarian reform planners and the Mexican revolution in general, information from the 'other end' of the size distribution spectrum would prove helpful. That is, what is the situation presented by the largest coffee growers in the state? For the state as a whole, we do know that merely 0.16% of all coffee farmers in Chiapas (a little more than 100 producers) control 12% of all coffee lands. An advisor to a national coffee growers' association maintains that actual land tenure patterns are more distorted than these figures suggest, since some holdings belong on paper (at least) to third parties. Such maneuvering sidesteps the constitutional restrictions that limit maximum farm size. More to the point, however, is the quality of the land held by these 100-plus producers. It is the land best suited to coffee, most apt to receive credit, and best positioned with respect to infrastructure (Hernandez 1994).

The Ocosingo Valley⁶ and beyond: Ocosingo-Altamirano-Las Margaritas

The area defined

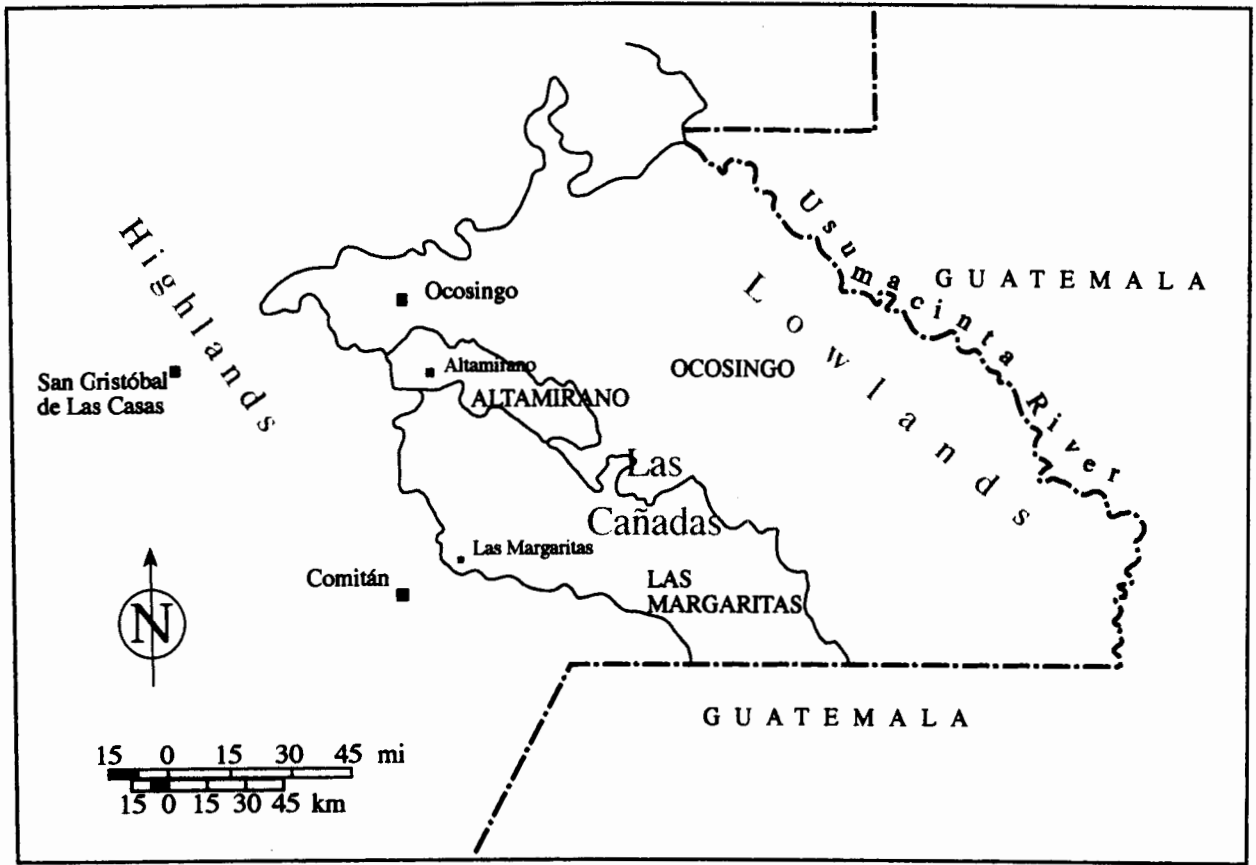
The focus of this study includes the *municipios* of Ocosingo, Altamirano, and Las Margaritas, three geographically defined administrative units in eastern Chiapas. As mentioned already, the *municipio* of Ocosingo alone embraces more than 14% of the territory of Chiapas. Map 1 shows the three *municipios* in relation to the highland city of San Cristóbal de Las Casas, as well as to Guatemala, which borders this area on the east and south. Altogether, these three *municipios* comprise about 20% of the territory of Chiapas.

The region is one of varied topography, with elevations ranging from less than 300 meters above sea level, to ridges as high as 1200 to 1300 meters above sea level. Ecologically, from the highlands bordering its western edge to the Usumacinta River along the Guatemalan border, the area and its surroundings boast a diversity that has generated a 'conservationist euphoria' (Parra et al. 1994). It falls within a larger region in which, by 1990, a total of 19 protected areas had been established, covering more than 43% of the state's surface. Another 25 await approval, bringing the total area of actual or proposed protected zones to 3.8 million hectares.

Moving from the town of Ocosingo southeastward through the *municipio* of Altamirano and into that of Las Margaritas, there is a general decline in elevation. Coffee production concentrates in the transitional zone along the cusp of the highlands, between 900 and 1300 meters in elevation. To the east of this swath (see Map 2) lies an area called Las Cañadas, characterized by parallel ridges oriented along a northwest-to-southeast axis. This broken terrain within the Las Cañadas region has provided the opportunity for many small producers to initiate coffee. It is rugged and remote.

Coffee's introduction and spread

The arrival and expansion of coffee production within the Ocosingo Valley and its hinterland are as diverse as the colonists who have found their way to the region over the last several decades. As one of the last frontiers within Mexico's national territory, this region of eastern Chiapas has attracted several rounds of landless Mexicans looking to secure a future upon the land. The north-central tier of Chiapas's *municipios* has had a particularly strong influence for the eastern Chiapas region. Ethnicity, geographic place of origin, attitudes toward specific types of agricultural production, and general cultural traditions have all worked to contour the social and physical landscapes of the region. Also important in this landscape equation are the activities of independent grassroots organizations



Map 1. The *municipios* of Ocosingo, Altamirano and Las Margaritas in the eastern sector of Chiapas, Mexico.

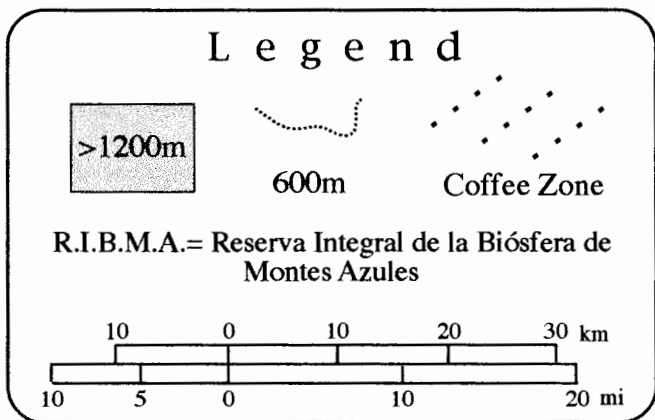
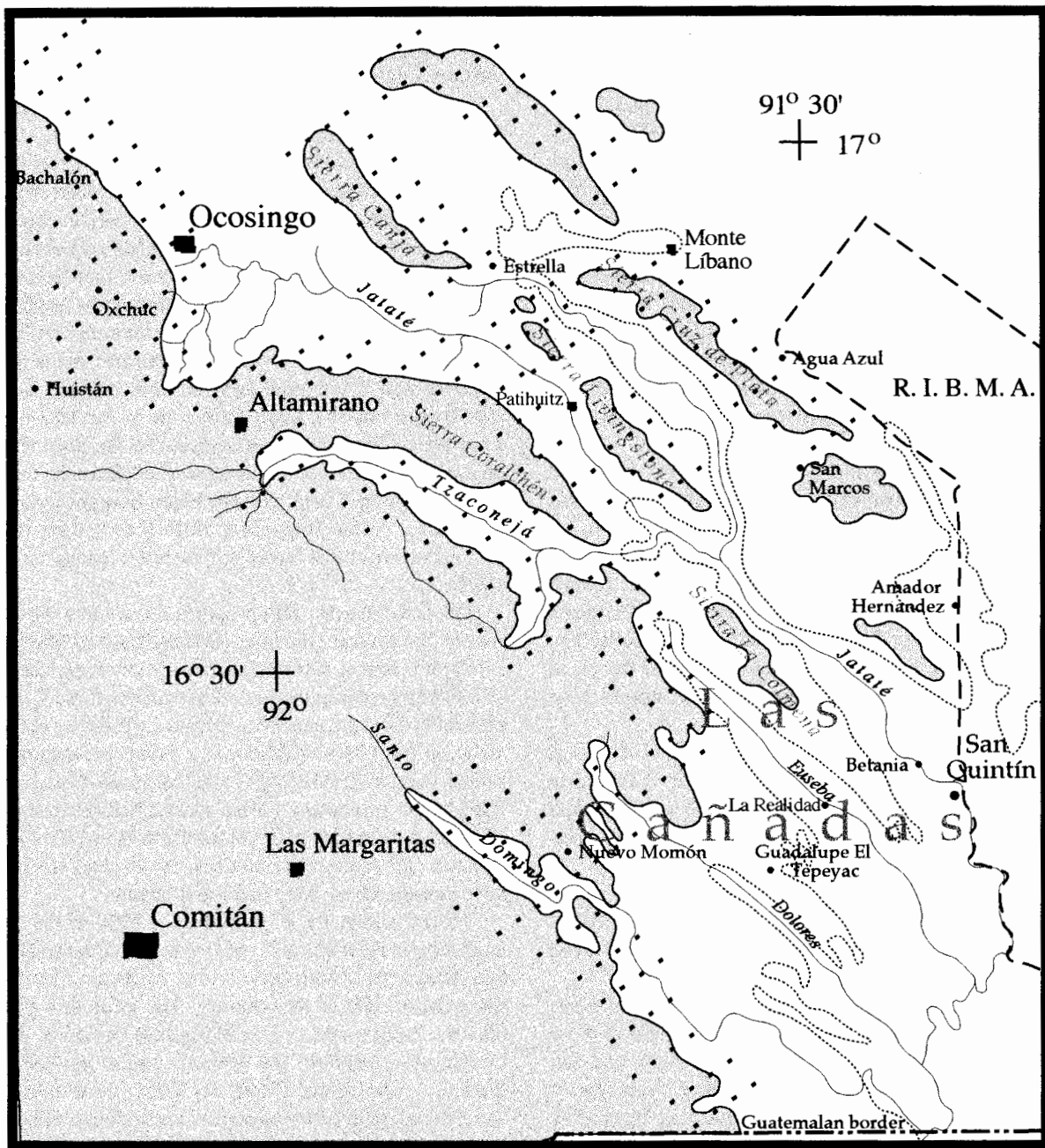
like the CIOAC, the OCEZ, and the Unión de Uniones, groups that worked to unify peasant and indigenous voices through work at the *ejido* and community level. Consequently, the resultant pattern of land use is varied, ranging from cattle or coffee or vegetable production as strategy to integrate into the market economy, to basic grain production for home consumption. Similar variation holds true, as we shall see, within the coffee sector itself. Land tenure patterns display significant variety, too, owing to the fact that many of the colonists settled at the behest of the Mexican government and therefore received *ejido* land.

Although the arrival of coffee in any significant way to the Ocosingo region did not occur until the 1970s (Marquéz, personal communication), production for household consumption has long been in place in various sites in Ocosingo's hinterland. Colonists – whether small private producers or *ejidatarios* – have played a central role in its early establishment and subsequent transformation into a cash crop.

Colonists to eastern Chiapas hail from many parts of Mexico and Chiapas. In a general sense, as Stanford anthropologist George Collier explains, eastern Chiapas 'was settled as late as the 1950s, when indians from Chiapas's over-populated central highlands arrived in

unregulated migration, swelled by colonists from central and northern Mexico in the 1970s' (Collier 1994b).

Coffee has a long history in the region to the north and west of the town of Ocosingo, toward the highlands of north-central Chiapas. Sitalá, Yajalón, Simojovel, Chilón, and Tila are locations that established themselves as coffee production centers decades before people in the Ocosingo area became involved with the crop. Contiguous *municipios* like Huitiupán, Pantelhó, Sabinilla, Tenejapa, and Tumbalá also have a history of involvement with coffee production. Aside from the obvious coffee connection provided by this area that has served historically as a source region for many immigrants to the Ocosingo-Altamirano-Las Margaritas zone, this northern tier of *municipios* displays a rich history in grassroots organizing. Indigenous peasants here made significant gains by learning agrarian law, organizing land takeovers, and taking advantage of political opportunities (Perez Castro 1989; Collier 1994b: 53ff). This history is reflected in the prevalence of the *ejido* sector today. These nine small *municipios* account for 27% of Chiapas's total *ejido* production units, and 25% of both the state's entire *ejido* coffee area and production (INEGI 1994). Such strong representation came about through tough political orga-



Map 2. The Ocosingo-Altamirano-Las Margaritas region of Chiapas, Mexico

nizing on the part of groups like the Independent Confederation of Agricultural Workers and Indians (CIOAC) and its precursors (Perez Castro 1989).

Other origins can also be identified, especially relating to coffee's history. Its introduction derived from peasants migrating from the large coffee plantations of the Soconusco area in southwest Chiapas, where they had worked as day laborers (Parra et al. 1994). These seasonal migration routes established strong connections between the Soconusco region that emerged in the first half of this century (with all its attendant practices and knowledge linked to coffee production) and the Los Altos region around San Cristóbal de Las Casas (Ascencio 1993). It is the Los Altos region and surrounding area that eventually played a role in coffee's importation further east into the Ocosingo area.

At a more fine-grained geographical scale, Márquez (1988) identified seven distinct agricultural zones in this region of eastern Chiapas. For each of these zones, he researched the place of origin of the settlers, and attempted to characterize their 'production specialization' (dominant economic activity). Table 6 summarizes Márquez's assessment of place of origin and economic activity. The names of the agricultural zones correspond to the place names found in Map 2, and encompass areas around these place names.

Colonization and continued movement of different groups have been key ingredients flavoring the cultural mix of the region over the past several decades. Second generation settlers sometimes moved on to push the agricultural frontier further into the Lacandon forest to the east, as in the case of the Amador zone. Children of the *ejidatarios* in and around Patihuitz, along with colonists from around Huistán and Oxchuc, picked up and moved east into the Amador Hernandez area in the 1960s.

An ethnic component also enters into this colonization equation, with Tseltales comprising large portions of those who moved into the Patihuitz, Betania, Amador, and San Marcos areas. Tojobales formed significant portions of those who found land in the Betania and Las Margaritas agricultural zones. Betania was settled by some Choles, as well. Such groups had cultural ties with the northern tier of coffee *municipios*, too.

Leyva & Ascencio (1992) paint a more complex 'cultural mosaic' for the area, citing the decades of the 1930s, the 1960s, and the 1970s as key periods of colonization. The motive forces behind the settlement of the Ocosingo area and its hinterlands included 'extra-regional phenomena' such as agrarian reform during the Cárdenas period (1930s), agrarian structures in the places of origins of the colonists, and the attraction of an expanding agricultural frontier. Some of the earliest settlers were indigenous day laborers from farms around Comitán sent by their bosses to work on lands the bosses owned in the *municipio* of Ocosingo. Extractive activities such as *chicle*

collection and lumber operations created an uprooted work force, portions of which chose to remain in the area once these activities had played themselves out.

Although assessing the degree to which such cultural and geographic factors associated with colonists eventually express themselves in land use is difficult, it is safe to assume that settlers brought with them a preference and knowledge base that led them to choose certain economic activities over others. The land they ended up occupying would certainly influence the production base that would eventually emerge, but colonists undoubtedly applied the production systems most familiar to them upon the land they settled. Such is the case with certain areas within the Ocosingo-Altamirano-Las Margaritas region. Settlers who forged into the Agua Azul zone in the 1960s came from the coffee-oriented *municipios* to the northwest of the town of Ocosingo. Landless workers from the *municipios* of Yajalón, Sitalá, and Bachajón brought with them a knack for coffee production, skills they had learned on the productive coffee farms in these areas (Márquez 1988, 1994).

Other factors can also propel residents in a particular area to choose one crop over another. The Las Margaritas zone, for instance, settled by groups from around the town of Las Margaritas and others descending off the Comitán plateau to the west, undoubtedly had coffee-wise colonists arrive in the 1950s. Additionally, however, institutional forces such as INMECAFE (the Mexican Coffee Institute) began promoting coffee intensification in the Las Cañadas area in the 1970s (Márquez & Hernandez 1987). Distinct agroecological practices, as we shall see below, have emerged from such historical factors.

Table 7 shows the evolution since 1950 of the coffee landscape in the *municipios* of Ocosingo, Altamirano, and Las Margaritas. Obviously, coffee lands have increased since the middle of this century. The table also reflects how the coffee area in Las Margaritas overtook that of Ocosingo – formerly the leading coffee *municipio* in the area – during the 1960s. By 1991, these two areas were on par, with both *municipios* expanding coffee lands dramatically in the 1980s. But the greatest differences emerge when the percent changes in coffee area between 1950 and 1991 are compared. Las Margaritas, with an increase greater than 11,000%, far outstripped the other two *municipios*, which themselves have seen substantial coffee expansion (Table 7).

One way to understand the importance of the coffee lands in these *municipios* is to determine what portion of the agricultural land is planted in coffee. Table 8 shows the breakdown in general land use categories for the three *municipios*. The coffee area from 1991 in Table 7 can be applied to the land use category 'agriculture' in Table 8. Of Altamirano's 18,547 ha of land characterized as agricultural, the 3187 ha planted in coffee occupy 17%. Las Margaritas' 14,426 ha of coffee represent 23% of the

Table 6. Settlement history, place of origin and current land use in the Ocosingo-Altamirano-Las Margaritas region of eastern Chiapas, Mexico

Zone	Period settled	Settlers' place(s) of origin	Economic activity*
Patihuitz	1930-1950	Around Ocosingo	Cattle/coffee
Betania	1960-1970	Ocosingo, Oxchuc, Comitán	Cattle
Amador	1960-1970	Patihuitz, Huistán, Oxchuc	Cattle/coffee
San Marcos	1960-1970	Oxchuc, Bachajón	Cattle/coffee
Agua Azul	1960-1970	Yajalón, Sitalá, Bachajón	Coffee/cattle
Estrella	1970-1980	Surrounding area	Cattle/coffee
Las Margaritas	1950-1960	Surrounding area, Comitán	Coffee/cattle

* Order of land use reflects relative importance of activity

Source: Márquez (1988).

Table 7. Historical changes in coffee area in the *municipios* of Ocosingo, Altamirano and Las Margaritas, in eastern Chiapas, Mexico, 1950-1992 (in hectares)

<i>Municipio</i>						% Change
	1950 ^a	1960	1970	1980 ^b	1991	1950-1991
Ocosingo	943	1392	1752	1104	16,376	1637
Altamirano	315	444	841	1085	3187	918
Las Margaritas	122	830	2791	1029	14,426	11,725

^a Due to aggregate figures reported in 1950, these data derived from relative proportions obtained in subsequent years.

^b Data from 1981.

Source: Agricultural Census and Annual Statistic Data (see Table 3).

municipio's 61,507 ha of agricultural land. The case of Ocosingo contrasts sharply, due to the vast area involved. The 16,376 ha of coffee in Ocosingo represent nearly 10% of the land designated for agriculture.

Table 8 also displays some of the land use differences between the three *municipios*, the distinctions of which emerge when the percentages are compared. All three devote between 40% and 50% of their production area to agriculture. Pasture lands occupy a comparable role in Altamirano, but do not surpass one quarter of the production area in Las Margaritas or Ocosingo. (Of course, in absolute area, Ocosingo's pasture lands exceed those of Altamirano by a factor of 3.7.)

Some socioeconomic factors behind coffee's establishment as a crop

While the origin of many colonists, along with their knowledge base about different crops, determined whether or not their respective settlements tended toward coffee production, there are, of course, other factors involved. To arrive as a landless peasant in an area and initiate coffee production immediately is unlikely. The personal capital, the market connections, and the commu-

nication and transportation infrastructure needed to support production for anything other than home consumption was simply not available to these settlers. Rather, specific processes have shaped the social and productive dynamics to lead certain colonists to specialize in coffee production. And we should realize that not all coffee producers arrive at the stage of producer by the same route. Márquez (1990) and Rus (1994) have identified two sets of historical conditions that help explain how coffee established itself as an important crop in the area. It is worth noting that one explanation focuses on the individual household economy for an understanding of coffee's establishment, while the other invokes regional factors. Of course, these two explanations are not mutually exclusive, and any given producer could surely have been influenced by a combination of factors.

Márquez, an agronomist who works principally in the Las Cañadas area, uses a three-stage evolutionary model of the peasant household to explain coffee's (or, in other cases, cattle's) establishment. The model has as much to say about producers' personal choices in economic activity as it does about the region's progressive insertion into the Mexican economy as infrastructure and communication networks developed. The first stage involves the

Table 8. Land use in the *municipios* of Ocosingo, Altamirano and Las Margaritas in the state of Chiapas, Mexico (1991)

Category	Altamirano		Las Margaritas		Ocosingo	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Total production area	44,607	100.0	126,042	100.0	359,920	100.0
Agriculture*	18,547	41.6	61,507	48.8	165,976	46.1
Pasture	17,138	38.4	30,886	24.5	81,298	22.6
Forest/woodland	6672	15.0	28,885	22.9	104,786	29.1
Forest/woodland with pasture	1579	3.5	2264	1.8	2388	0.7
Unvegetated	671	1.5	2500	2.0	5472	1.5

* 'Agriculture' includes all land in annual or perennial crops, whether planted or not for the cycle in question, as well as lands that are in pasture or second growth that also have been planted at least once in the five years previous to the census. Categories displayed are the represent the best attempt to join the private and ejido sector data from the two sources listed below.

Source: VII Censo Agrícola-Ganadero (Chiapas) 1991 (1994) and VII Censo Ejidal, Instituto de Estadística Geográfica e Informática (1994).

simple location and establishment of the production unit for home consumption. *Milpa* production (corn and beans) for family survival form the central activity. Yet, certain goods cannot be provided by *milpa* production alone – farm tools, salt, shoes, and clothes, for example. For items demanding a necessary, albeit small, amount of cash, the production of pigs, chickens and/or turkeys has played a crucial role. The small farm animals demand a minimal cash outlay initially. Moreover, a portion of the grain production can be converted into meat for sale on the local or regional market, making these fowl or pigs quite attractive as a frontier survival strategy. Moreover, they can often forage for themselves on or around the household property. Additionally, these animals have the advantage of being either relatively light-weight or able to walk to market for slaughter, considerations of no small importance in an area with poorly developed transportation networks.

Amplification of the holding and its production characterizes the second stage in Márquez's model. As capital is generated and saved, investment in more long-term activities occurs, given that the land tenure situation is such that the peasant feels secure with such investment in the land. Over time, with roads crossing and connecting the region – however slowly, however poorly – connections with markets become easier. Pig production gives way to beef, a market with stronger demand. Alternatively, for those more disposed to coffee production due to personal histories, investment tends toward the establishment of that crop. Some cases include corn, coffee, and cattle production, though it is not the rule. The natural conditions of the settlement area, despite the tendencies and knowledge of the colonists, can dictate the decision of which activity predominates, as in the case of settlers located in the Cruz de La Plata mountain range. Here,

even though the colonists have an historical association with cattle production, the terrain/climate/vegetation conditions prohibit their dedication to such activity (Márquez 1990: 22).

The third and final step in this model involves the consolidation of the chosen activity. As pig production gives way to the preferred beef production, corn may also disappear. Whereas pigs demand some corn for feed, cattle can eat grass from natural or induced pastures. Concentration of production does not translate automatically into intensification. Most production units are characterized as relatively extensive in nature, such as coffee production beneath native forest shade species

Rus's (1994) explanation for the establishment of coffee rests on a more regional and macro-level footing. In laying out the desperate conditions⁷ currently facing indigenous communities, he begins with the large land holders who grew corn and employed thousands of workers by the early 1970s. When corn prices fell by 75% in the late 1970s, many of these large farm operations switched to cattle, the low labor demands of which ejected corn workers from their jobs. While public works programs (hydroelectric and road construction) absorbed some of the unemployed at first, the debt crisis of the early 1980s and the arrival of tens of thousands of refugees from neighboring Guatemala (who worked for sub-minimum wages at any job) produced rampant unemployment by 1984. In response, many small peasant producers hitched their futures to coffee as a cash crop in hope of survival.

The institutional role of INMECAFE

Aside from personal household economy factors, or those that we might associate with macro-level phenomena, there exists an institutional axis that helped establish

coffee in certain areas. Since 1959, when the Instituto Mexicano del Café (INMECAFE) replaced the National Coffee Commission, there existed a concerted, state-sponsored effort to improve coffee lands throughout Mexico. Salazar (1988: 97ff) sees the creation of this parastatal institution as but one example of many state entities personifying the attempt to control economic relations on the part of Mexico's elite. While INMECAFE ostensibly existed to satisfy the conditions of a public institution – that is, to provide goods and services to Mexican producers and consumers – it simultaneously reflects a strategy for intervention into the administration of the country's economy.

From the perspective of small coffee growers in the Ocosingo-Altamirano-Las Margaritas area, INMECAFE's initial role was more benign, and its actions more applicable to everyday life (Hall 1994). Prior to the institution's appearance on the rural scene, coffee producers were at the mercy of intermediaries (*coyotes*), and a few 'coffee czars' who controlled marketing. In the mid-1970s, INMECAFE came into its own as a provider of credit and technical services to small growers. It also made inroads with buying and marketing small growers' product, capturing 40% of Mexico's coffee exports – including the bulk of *campesinos'* production (Hernandez & Bray 1991).⁸

Within the area concerned here, INMECAFE operated most strongly in the Las Margaritas area. Propelled by a program designed to control coffee leaf rust disease (*la roya*), INMECAFE set up a project to bring coffee production into the fold of modern agricultural production. Institute technicians and agronomists promoted the use of chemical fertilizer (18-12-06), as well as fungicides like the copper-based Cupravit and Bayleton to control fungal disease like the rust (Márquez & Hernandez 1987). Within the Ocosingo-Altamirano-Las Margaritas region, the coffee lands toward the southern part (Las Margaritas/Las Cañadas) display higher degrees of technification, or modernization. It was this area in which INMECAFE operated and successfully convinced growers to modernize production. Such efforts involve added investment and reliance upon inputs, usually accompanied by a heightened dependence upon a successful harvest and favorable international prices.

Ejido and private lands in coffee

While Table 7 shows the coffee area changes at the level of the *municipio*, it does not provide information on the distribution of land holdings within the sector. Table 9 attempts to lay out the structure of the coffee sector in these *municipios* based on the size distribution of holdings. Coffee area has steadily increased since 1950 in all three *municipios*, with a phenomenal expansion during the 1980s. Inspection of the data clearly illuminates

Table 9. Private and *ejido* lands in coffee in the *municipios* of Ocosingo, Altamirano and Las Margaritas in the state of Chiapas, Mexico (in hectares)

	1950 ^a	1960	1970	1982	1991
Ocosingo	943	1392	1752	1104	16,376
Holdings >5 ha	939	1386	1030	n.a.	2741
Holdings <5 ha	4	6	3	n.a.	585
<i>Ejid</i> os	–	–	719	n.a.	13,050
Altamirano	315	444	841	1085	3187
Holdings >5 ha	228	322	802	n.a.	628
Holdings <5 ha	–	–	–	n.a.	81
<i>Ejid</i> os	87	122	39	n.a.	2478
Las Margaritas	122	830	2791	6032	14,426
Holdings >5 ha	42	283	298	n.a.	1004
Holdings <5 ha	–	–	1	n.a.	74
<i>Ejid</i> os	80	547	2492	n.a.	13,348
Total for region ^b	1380	2666	5384	8221	33,989
Holdings >5 ha	1209	1991	2130	n.a.	4373
Holdings <5 ha	4	6	4	n.a.	740
<i>Ejid</i> os	167	669	3250	n.a.	28,876

^a Due to reporting differences, distribution of holdings calculated from subsequent data (1960);

^b The three *municipios* taken together; n.a. = data not available.

Note: Municipio level data are not available from INMECAFE's 1989 census, which is probably more reliable than INEGI's 1991 information. Also, the private holdings in category '>5 ha' include a 'mixed' category from the census, which, while technically a mixture of private and *ejido* tenure systems, is always so small in terms of area as to be insignificant for the purpose of this study.

Sources: 1950–1970 data, *Censos Agrícolas*; 1982 data, INMECAFE; 1991 data, *VII Censo Agrícola-Ganadero (Chiapas)*, 1991 (1994).

the importance of Las Margaritas and Ocosingo as areas of coffee extension. From the 1991 agricultural census data, we can see that the *municipios* of Las Margaritas, Ocosingo, and Altamirano account for 43%, 48%, and 9%, respectively of the total coffee area of the study region. In 1950, the respective contributions were 9%, 68% and 23% for these *municipios*. The general picture for the study area, then, is one in which coffee has grown in importance in Las Margaritas, fallen dramatically in Altamirano, and maintained its importance (with some decrease) in Ocosingo. In absolute terms, of course, the coffee area for all *municipios* has increased dramatically since 1950.

With respect to the land tenure patterns associated in coffee, one salient feature concerns the growth of *ejido*

lands. For the region as a whole, lands under control of *ejidos* increased from 12% of the total area in 1950 to 60% by 1970. Las Margaritas registered a change from 66% to 89% during the same period, while Altamirano's *ejido* lands climbed from 28% to 51% of the total area. Interestingly, Ocosingo had no *ejido* lands in 1950, but by 1970 more than 41% of coffee area was held by *ejidatarios*. Today, the percentage of coffee land held by *ejidos* is 80%, 78% and 93% for the *municipios* of Ocosingo, Altamirano, and Las Margaritas, respectively.

Lest we conclude prematurely that the predominance of *ejido* lands in the area translates automatically into all-round favorable conditions for the *ejidatarios*, we should remember the geography of the region. While colonization and land reform programs have indeed given hundreds of peasants land in the area, it is important to understand the location of those lands in terms of quality and accessibility. *Ejido* lands occupy the more broken and inaccessible terrain. Most have been located on national land. But local land tenure patterns and social discontent have also influenced the type of land sought by landless or land-poor peasants of the region. Occasionally settlers have attempted to locate on private lands that exceed the legal size limit or are left abandoned (conditions that run counter to the land reform regulations), as in the case of some farms around the Santa Cruz Valley (also called the 'Second Ocosingo Valley') which lies to the east of the ('first') Ocosingo Valley (Márquez 1988: 40).

Additionally, with respect to land quality associated with coffee production, it is worth remembering the explosion of coffee area and producers in the *municipio* of Las Margaritas. According to the Instituto Mexicano del Café (1989), virtually all producers in this *municipio* are on *ejido* lands. More than half of these, as well as more than half the area, falls below 600 m in elevation. While coffee can certainly grow below this altitude, the quality generally is considered to be inferior.⁹

Private lands are generally restricted to a few areas within the region. The Valley of Ocosingo and those adjacent to it contain large cattle farms in private hands.¹⁰ Eastward toward Monte Líbano we also find a swath of private holdings of similar use (see Map 2). Toward the south along the Santo Domingo River is another area of private lands. As Table 9 illustrates, though, it is *ejido* lands that predominate in terms of overall coffee area.

Another way to examine land tenure of coffee holdings involves data from individual communities. While such information does not exist for the time span that concerns us here, there are figures for the last decade or so. Table 10 shows some aggregate data for the three *municipios* in question. Obviously, as implied by the coffee area data in Table 9 above, *ejido* operators dominate the coffee sector in terms of numbers and area. Of the 4403 coffee producers found in 117 separate communities within this three-*municipio* region, 91% of them are *ejidatarios*.¹¹

Table 10. Distribution of private and *ejido* land coffee producers in eastern Chiapas, Mexico

<i>Municipio</i>	No. of locations	No. of producers		
		Total	Private N (%)	<i>Ejido</i> N (%)
Ocosingo	27	1195	282 (24)	913 (76)
Altamirano	11	356	24 (7)	332 (93)
Las Margaritas	79	2852	99 (4)	2753 (96)
Total for region	117	4403	405 (9)	3998 (91)

Source: Anuario Estadístico del Estado de Chiapas (1992).

In 1985, INMECAFE reported the results of a coffee census conducted in 1982, providing information not only on the number of producers in these *municipios*, but on the area as well. The majority of producers and area are in the social sector (*ejido* and agrarian community lands). The 142 private producers for the region represent 3.5% of all producers, average 6.8 ha of land each, and hold 12% of the region's coffee area. *Ejidatarios*, by contrast, average about 1.8 ha of land each, hold 88% of the coffee area, and comprise the remaining 96.5% of all producers (Table 11).

Yet, within the region, we find dramatically different structures when comparing *municipios*. In Las Margaritas, for instance, the 51 private producers represent 1.7% of all landholders and control around 3.5% of the coffee lands. In Altamirano, on the other hand, the 30 private growers there (8.4% of all producers), manage 48% of the coffee land. The 61 private producers in Ocosingo, accounting for 7.3% of the coffee growers, hold 21% of the coffee land (see Appendix for detailed Ocosingo data).

Perhaps some of the most telling information emerges when we compare the number of producers, the area and the production found within the Ocosingo-Altamirano-Las Margaritas region to the overall figures of the state of Chiapas. In the area encompassed by the three *municipios* in question, we find fully 45% of all the coffee producers in the Chiapas. Yet, the production derived from these growers amounts to only 6.3% of the state's crop. Moreover, the coffee lands of this area represent a mere 5.6% of the Chiapas's total coffee area (INEGI 1992). These figures alone tell us that there are significant numbers of farmers growing coffee in the region, yet their holdings, on average, are quite small, and the implied yields also fall below the norm. Indeed, if we calculate average yields from the early 1990s, we find that Chiapas overall averaged 11.25 quintals/ha, compared to the 9.45 quintals/ha for the area in this study. By way of comparison, the Soconusco region along the Pacific coast, accounts for some 36% of Chiapas's production. Within that region, the most productive *municipio* is Tapachula, which shows yields of 17 quintals/ha (*Anuario Estadístico* 1992). Aver-

Table 11. Land tenure in coffee communities of eastern Chiapas, Mexico

Municipio	No. of locations	No. of producers	Total area	Distribution by production sector			
				Private		Ejido*	
				Prod.	Hectares	Prod.	Hectares
Ocosingo	26	832	1104	61	230	771	874
Altamirano	11	356	1085	30	522	326	563
Las Margaritas	78	2855	6032	51	215	2804	5817
Total	115	4043	8221	142	967	3901	7254

* Category includes communal lands.

Source: INMECAFE (1985).

age farm size of this productive region is also higher than that of the study area.

The social structure and lower-than-average yields in an area that accounts for 45% of the state's coffee producers begs the question of how it is that coffee is produced. That is, what can we say about the general conditions of production and/or the physical characteristics of the coffee holdings in the Ocosingo-Altamirano-Las Margaritas region? It is to this question that we now turn in the final section of this study, in which we focus upon the agroecological aspects of production.

The coffee environment: Agroecological aspects of production

The physical structure of many coffee lands in the Ocosingo-Altamirano-Las Margaritas region of Chiapas displays a distinctly agroforest-like character. Yet, arrival at this shaded environment can take one of two paths, both of which portray a transformation of the natural vegetation (Márquez 1988). One path is 'direct' (see Figure 1), altering the natural forest environment into a coffee production unit by the simple removal of selected tree so that the coffee can be inserted into the existing forest. The native species act as shade, and production per unit area (yield) is quite low, averaging around 2.5 quintals/ha (Parra et al. 1994). This landscape modification produces a forest environment, with the top stratum occupied by mature natural vegetation, and the shrub layer consisting of the coffee. Mid-level strata may also comprise significant portions of the vertical structure.

The other path is more 'indirect' in nature, and capitalizes on the second growth vegetation that takes over a corn plot during its fallow period. Sometimes the 'acahual' is converted back into *milpa*. Alternatively, it may be selectively cleared for coffee production, leaving certain legumes such as *Inga* spp., and planting desirable species such as banana for added shade (and production).

According to Márquez (1988: 94ff), these two distinct paths involve not only two different levels of technolog-

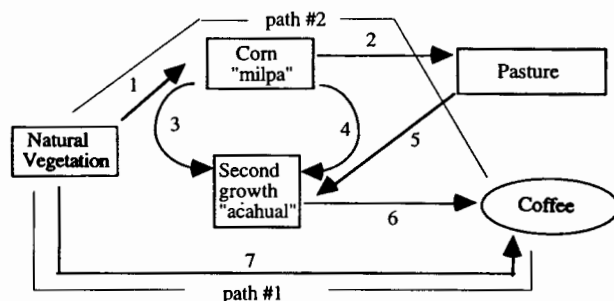


Figure 1. Two transformational paths to coffee production in eastern Chiapas, Mexico (after Márquez 1988).

Transformational steps:

1. Slash and burn.
2. Planting of grasses; clearing of weeds/shrubs.
3. Fallow period (3 to 5 years).
4. Slash and burn (without the large trees of step 1).
5. Pasture abandonment (several year fallow).
6. Selective clearing, leaving *Inga* spp., planting other desired plants such as banana (*Musa* spp.) along with coffee.
7. Selective removal of primary forest species for coffee shade.

ical sophistication in the overall production process, as well as a marked dichotomy in management techniques and labor demand, but display a geographic component in where they predominate. The 'simple' system of inserting coffee into the existing native forest (path #1) occurs among the tseltal ethnic groups found principally in the northern portion of the region (the *municipio* of Ocosingo), around settlements such as Patihuitz, Agua Azul and San Marcos. The 'advanced' system that displays more modern shade regulation techniques occurs toward the south, in the Las Margaritas-Las Cañadas area, and can be associated with the tojolabal groups that are Spanish speaking and have spent time as wage laborers on coffee farms in neighboring areas. Land preparation, transplanting of seedlings, general management of the farm and yields also differ, as can be seen in Table 12.

There may be a temptation to envision these two systems as traditional and modern, drawing parallels to the coffee sector in other countries of the Americas. The allure

Table 12. Characteristic coffee production systems in Eastern Chiapas, Mexico

Cultural practice	Simple system	Advanced system
Preparation of land and shade establishment	Partial removal of native tree species, leaving a structurally and biologically diverse system; 150 to 250 shade trees/ha	Specific shade spp. left or planted (<i>Inga</i> spp.), after selective removal of second growth in a disturbed site; shade regulation practiced
Seedlings/transplants	Volunteer seedlings used in transplanting; digging stick method of transplanting; varieties include bourbon, árabe and caturra; relatively high densities – 1200 to 2500 plants/ha	Best seeds from each harvest to into seedbed for transplants; pit prepared for each seedling; varieties include bourbon, mundo novo and pluma hidalgo; densities low – 600 to 1000 plants/ha
General management of cafetal	Two weedings per season; ineffective 'agobio**' practiced; minimal pruning, sometimes only removal of suckers	2–3 weedings per season; shoot and stem 'agobio' practiced; three types of pruning known/practiced; fertilizer and fungicides used; shade regulation practiced
Yields	3–10 quintals/ha; average of 5 quintals/ha	8–20 quintals/ha

* 'agobio' is a practice that involves bending the main stem to the ground and allowing the subsequent vertical growth to bear fruit.

Source: Márquez (1988).

is not unwarranted, as the 'advanced' system does indeed represent a more intensified production system. Yet, within the normal dichotomy of traditional vs. modern coffee found throughout the Americas, this eastern Chiapas example does not fit the expected mold. It is worth noting, for instance, that the planting density in the simple system (what we would classify as 'traditional') is higher than that in the advanced system, a relationship that is reversed in the usual traditional vs. modern comparison (Rice 1990). Moreover, the use of the variety *caturre* in the simple system and not in the advanced one does not conform to what we would expect in the traditional vs. modern division.

Conclusion

Coffee from the state of Chiapas provides the greatest contribution to Mexico's coffee industry. The coffee area of eastern Chiapas, while not of paramount importance to the overall production of Mexico – or even of Chiapas – has evolved to represent a livelihood and survival strategy for many of the inhabitants of the region. The three *municipios* of Ocosingo, Altamirano, and Las Margaritas, in fact, are home to 45% of Chiapas's coffee growers. Long relegated to the infrastructurally impoverished hinterlands of towns that have been the gateways to the Lacandon forest (the towns of Ocosingo, Altamirano, and Las Margaritas), residents have come to produce coffee via a series of varied forces and circumstances.

The agricultural interests and know-how that these colonists brought with them from their points of origin aided in their evolving strategies to survive in this remote

region of a backwater state. Coffee production, one agricultural practice with which many residents were familiar, has offered opportunities historically to participate in local, national, and international markets. The role of independent grassroots organizations in the spread of coffee and small-holding reliance upon it has also been significant. Indigenous and peasant groups such as the CIOAC, the Unión de Uniones, and the OCEZ brought pressure to state agencies to provide credit, marketing, and technical assistance to small producers. Institutional forces in the form of Mexico's Coffee Institute (INMECAFE) introduced the idea of participating more seriously in the international market through some technification projects, especially in the *municipio* of Las Margaritas.

With the collapse of the International Coffee Agreement in 1989, coffee prices worldwide plummeted. From US\$ 120.00 per quintal, prices fell to US\$ 55.00 or US\$ 60.00. Only in mid- to late-1994, when Brazil suffered frost damage in its coffee sector, did prices recover to a level deemed respectable by most producers. The degree to which this devastatingly downward spiral in international price might affect producers has already been observed (Rus 1994; Márquez 1994). Many coffee producers in Chiapas's eastern region abandoned production, unable to withstand the price slide.

Interestingly, the level of technology in which producers have been operating seems to have an influence on who decides to abandon coffee completely. If we remember that, within the region of this study, the growers toward the south end – near Las Margaritas and the Las Cañadas area – learned to intensify their production with the aid of INMECAFE. With more capital investment

in their land, it is these producers who have felt the economic production pinch more strongly. Producers toward the northern end of the study area, by contrast, whose production represents a more extensive, plant-within-the-forest strategy, should be less affected. The institutional influence of INMECAFE did not penetrate this area as it did to the south. Since production in this northern area is not dependent upon expensive chemical inputs, producers here have not been in a position of having to obtain costly materials to continue cultivation. For those communities in which INMECAFE had taken on a significant role in technical assistance and marketing connections, the dismantling of the institution – just one aspect of Mexico's neoliberal policies – left small coffee producers more vulnerable than before and did little to instill confidence in government institutions. Even in the coffee stronghold area of Soconusco, credit and technical assistance to small coffee growers evaporated in the early 1990s (Villafuerte Solís 1993).

Within eastern Chiapas, those producers of Las Margaritas were undoubtedly affected more directly, due to their more modern holdings. With the dissolution of the government entity that had aided their entering into international market relations via its credit and technical programs, in conjunction with four years of basement level prices for a crop they had chosen to place more faith in for their economic well-being, the January 1994 uprising becomes somewhat clearer in terms of its proximate causes. It is not surprising that site names such as Guadalupe El Tepeyac, Nuevo Momón, and La Realidad have figured as important sites Mexico's recent political history.

Coffee in these *municipios* does not explain the Zapatista uprising in its entirety. But understanding the land use patterns and agroecology of coffee over the past several decades does bring added relief to the socio-political map of this troubled area.

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Appendix: Land tenure in the coffee sector of the *municipio* of Ocosingo 1982

Coffee community	Land tenancy	Number of producers	Number hectares
Balaxthe	Private	12	34.0
Cabecera Municipal	Private, <i>Ejido</i>	47	203.75
Crucilja	Communal	15	7.75
Cruston-Cancuc	Communal	13	5.75
Chancolón	Communal	53	44.75
Chilolja	Communal	29	25.0
Damasco	<i>Ejido</i>	30	33.0
El Censo	<i>Ejido</i>	21	43.0
El Mango	<i>Ejido</i>	45	63.5
El Pozo Cuauhtemoc	Communal	45	19.25
El Salvador	<i>Ejido</i>	30	56.0
Emiliano Zapata	Private	25	31.0
Ignacio Zaragoza	<i>Ejido</i>	44	58.5
Jol Tullija	<i>Ejido</i>	33	51.5
Monte Lfbano	<i>Ejido</i>	25	51.0
Nailchen	Communal	66	62.75
Oniltic	Communal	25	15.25
Peña Limonar	<i>Ejido</i>	62	101.0
San Caralampio	<i>Ejido</i>	11	13.0
San Juan Cancuc	Communal	39	19.75
San Quintín	<i>Ejido</i>	30	10.25
Santa Elena	<i>Ejido</i>	15	17.5
Santo Tomás	<i>Ejido</i>	20	39.0
Sibaca	<i>Ejido</i>	20	26.0
Tzuluwitz	Communal	56	53.0
Tzuteoteal	Communal	21	18.75
Total		832	1104.0

Source: INMECAFE (1985).

Notes

1. Explaining how the fundamental problem in Chiapas is not so much economic as political, Mexican economist Jorge Castañeda reports that, despite the fact that more money was poured into Chiapas than any other state by the World Bank and President Salinas's anti-poverty program, Solidaridad, these efforts did little to weaken or change the age-old 'authoritarian, corrupt, oligarchical structures' that have made poverty and racism hallmarks of the state (Castañeda 1994).
2. With a relatively pristine (a debatable categorization in itself) forest inhabited by indigenous populations toward the east, the cattle producing Ocosingo Valley and coffee-covered hillslopes surrounding it probably played a part in the general neglect enjoyed by the Ocosingo area.
3. Indigenous peasant organizations continue to lead the way in other coffee concerns as well. For instance, groups like Majomut in San Cristóbal de Las Casas or Indígenas de

la Sierra Madre de Motozintla (ISMAM) in Tapachula and Motozintla are involved in organic coffee production and its export to Europe and the USA.

4. A quintal is 100 pounds.
5. Recent changes in Article 27 of the constitution that allow for ejido lands to be sold, however, may well erase what small gains Mexico's rural poor have enjoyed over the past three generations. Victor Toledo, fearing what this fundamental change in ejido land law port ends for the rural sector, describes these constitutional changes as both anti-peasant and anti-environment (Toledo 1994).
6. The area around the town of Ocosingo played an important role during colonial times, with large areas being held by the church for agricultural production. Interestingly, by 1957, when Blom & Duby (1957) recorded their experience through the 'Selva Lacandona', the Valley of Ocosingo was basically abandoned. They wrote that, while the valley had once been home to many farms, it was now 'deserted and weed infested' (Blom & Duby 1957: 63).
7. Rus's assessment specifically targets the highland populations of Chiapas, but the contributing factors also hold for producers in the coffee zone of eastern Chiapas.
8. Clearly, while purchasing coffee from small growers provides a needed service, some would maintain that such activity represents the state's capture of value added that could otherwise go to communities or individuals.
9. Cultivation and processing techniques will also determine ultimate quality characteristics.
10. Some preliminary analysis of data provided by the Ocosingo branch of the Secretaría de Agricultura y Recursos Hidráulicos, data which come from the Ocosingo Cattlemen's Association, show an *average* size cattle farm slightly greater than 151 hectares for association members.
11. This annual statistical report probably does not account for all producers. The 1991 agricultural census lists more than 19,000 coffee 'production units'. It is unlikely that the 4400 producers appearing in Table 11 operate 4 to 5 production units each.

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- Address for correspondence:* Robert A. Rice, Smithsonian Migratory Bird Center, National Zoological Park, Washington, DC 20008, USA
Phone: (202) 673-4908; Fax: (202) 673-4916
E-mail: rarice@sivm.si.edu