THE RESTRUCTURING OF FROZEN FOOD PRODUCTION IN NORTH AMERICA AND ITS IMPACT ON DAILY LIFE IN TWO COMMUNITIES: WATSONVILLE, CALIFORNIA AND IRAPUATO, GUANAJUATO

John Borrego
Community Studies Department
University of California at Santa Cruz

Working Paper No. 21
Chicano/Latino Research Center

October 1998

Chicano/Latino Research Center
1156 High Street
Merrill College
University of California
Santa Cruz, CA 95064

Do not cite or quote without permission
The Restructuring of Frozen Food Production in North America and Its Impact on Daily Life in Two Communities: Watsonville, California and Irapuato, Guanajuato

October 26, 1998

to appear in a bilingual anthology entitled
Las Nuevas Fronteras del Siglo XXI: Dimensiones Culturales, Políticas y Socioeconómicas de las Relaciones México-Estados Unidos
eds. Alvarez, Klahn, Manchon and Castillo
La Jornada, Mexico D.F., 1999

John Borrego¹
Professor of Community Studies
Department of Community Studies, College Eight
University of California, Santa Cruz, CA 95064
Fax (831) 459-3518
Tel: (831) 459-4430
Messages: (831) 459-3516
email: borrego@cats.ucsc.edu

¹This essay is part of a collective project with Patricia Zavella, my partner on this work since 1994. David Runsten has been invaluable in helping us understand this overall process and in sharing his insights and resources. I would also like to thank Carter Wilson for his thoughtful commentary on earlier drafts.
In 1967, almost 30 years ago, Birdseye which was part of General Foods (U.S.) built a plant in Celaya, Guanajuato, Mexico. It was located in an irrigated agricultural valley which had been farmed since the Spaniards arrived in Mexico. There is a major highway that ran through the valley at the time. Birdseye went to where other U.S. companies such as Del Monte and Campbells Soup and some other companies had already gone during the 1950s to build plants for canned goods to sell in the Mexican market. Mexico had passed laws establishing import substitution industrialization (ISI), in an attempt to attract foreign firms to come to Mexico to produce for the national market. This allowed the U.S. companies to come to Mexico and avoid the tariffs on their imports.

Birdseye followed these U.S. processors to the Bajio, because it was very good region for growing vegetables. They built a plant within an old garlic dehydrator on a farm outside of Celaya. They started freezing vegetables and shipping them to the United States. Birdseye contracted with large growers in the Bajio, who had had a lot of experience marketing the United States.

After about five years after Birdseye's arrival the Mexican growers started thinking, "If this is such a good deal we could build own plants and start selling the vegetables directly to the U.S. market." So they started building frozen food plants. They built one in Celaya and one in Agus Calientes. They went down to some strawberry freezing plants in Zamora, Michoacan and they started freezing vegetables there (see Feder, 1975).

There was a devaluation in 1976, the first real significant devaluation of the peso in 30 years. The peso had been a very stable currency all through the 1960s and early 1970s. Devaluation made the Mexican plants more competitive in the United States. Other people wanted to get into the act. In 1982 there was a huge devaluation in Mexico due to the debt crisis outlined above. The people who were in processing and exporting vegetables to the U.S. became extremely wealthy overnight. It was a great investment to be in at the time. Other people saw the instant wealth that was generated at the time and they too wanted to get involved. According to Runsten, "there was this sort of stampede that got started. They all wanted to build plants."
Green Giant, which had a plant in Watsonville, California, decided that they had better be part of this movement or they were going to lose their market share. They remodeled an existing plant in Irapuato in 1983. They only recently (1993) closed the plant in Watsonville. It had taken them ten years from the time they built the plant in Irapuato, Guanajuato, Mexico until they closed the plant in Watsonville, California.

In 1986 Moulton and Runsten went to the Bajio and did a study for the California frozen food industry. "They hired us to do a paper that they could use to keep the exports out. Well we wrote a paper that told it like it was. It turned out that it had the opposite effect. It turned out to have the effect that everyone in the industry read it. All these guys didn't realize how cheap it was to do [food processing] in Mexico. [They ] got the picture."

Runsten refers to the rise in the capacity of frozen food production in Mexico and the related decline within California in the following Chart #1.

(Insert Chart #1 here)

When [food processing] first started out, "Mexico was just small potatoes" (Runsten interview, January, 1996). They started to come up a bit in the mid-1980s. When we went down there [the industry] was still pretty small, maybe a third of what California was producing at the time. The California food processors dominated the U.S. market and they would set the price. The Mexican producers were happy about this because the price was really high in order to cover the California costs. The producers from Mexico made a lot of money during this period. When the buyers [brokers] realized how cheap it was to produce in Mexico they started driving their price down. That is when the squeeze really hit the California food processors. The clawback in wages and benefits during 1984/85 due to competition from Mexico ultimately led to the 18-month strike in Watsonville during 1985-1987.

November 18, 1998
Mexico production was being brought in and buyers were driving down the costs to those in Mexico and the California producers could not compete. That was the conclusion of our report, "it doesn't look good for California" (Runsten interview, January, 1996).

I. The Dialectic Relationship between Watsonville and Irapuato

North American integration, somewhat accelerated by the passage of NAFTA, has been underway for some time. The frozen vegetable processing sector, as illustrated above, has experienced the outmigration of highly mobile transnational capital from Watsonville, California into Irapuato (and the Bajio) in Guanajuato. Over the last ten years the resulting impact on the economic and social conditions in the two communities and regions provides a study in extreme contrasts, i.e., massive unemployment and restructuring in the just "abandoned" community and destabilizing production and environmental impacts in the newly structured "frontier" community. Despite the promise of NAFTA, and the differences suggested by being a "loser" or "winner" in the global game of attracting capital, our study suggests that the two communities on different sides of the border share one condition—an increase of poverty.

This analysis of agri-food restructuring and its impact on two communities in North America will be situated on the larger canvass of social transformation within global capitalism. In short, we will locate rural agricultural and industrial systems of production in the two locations within the "inner contradictions of capitalism ... expressed through the relentless formations and re-formation of geographical landscapes (Harvey, 1985: 150, from Goodman & Watts, 1994). We explore the global, national, and local dynamics of food processing and the production of fresh fruits and vegetables and their relationship to community and regional development within two communities in two regions, one in Mexico and the other in California. In addition, from our analysis of the impact of these processes on communities and on the daily lives of workers, peasants, managers, growers, bureaucrats, and the middle class, we analyze how people in the two different locations react to and develop strategies to transform their situation. How do they become subjects and participants in the process of social change?

November 18, 1998
II. Reconceptualizing the Conceptual Framework

Goodman and Watts (1994) argue that existing theorizing about the current transitions within the international agri-food system are inadequate. They criticize regulation theory, Fordist and Post Fordist conceptual frameworks and the new industrial geography and flexible specialization. Collectively they argue that "their failure derives from the unexamined assumption that the sectorial dynamics of socio-economic, cultural and spatial changes in agri-food systems are the mirror image of industrial restructuring" (Goodman & Watts, 1994: 37).

They argue for "a theory of dialectics capable of providing analytical insight into crisis, transition and adjustment" (Goodman & Watts, 1994: 38). They suggest that one way to proceed is by "focusing on territoriality, and the territoriality (or lack thereof) of specific agri-food complexes and the rural domain in general. The importance of territoriality is driven by the recognition that globalization requires simultaneous processes of territorialization (place specific practices and interdependencies) and deterritorialization (the "erasure" of place specificity, see Watts, 1992b), each of which has different causal structure."

They suggest that:

1. Different agri-food complexes or parts of complexes may be subject to different sorts of territorialization;
2. The global agri-food system will contain patterns of convergence and divergence in territorial production-consumption systems of development pathways (Storper & Salais, 1993).
   a. A rural space would be constituted by combinations of and parts of complexes which would produce different types of territorialized and deterritorialized activity;
   b. Within particular territorialized agricultural production systems (national, regional, sub-regional) one might anticipate distinctive production and consumption regimes (Burawoy, 1985), distinctive transactions and institutional relations, distinctive customs and conventions (Putnam, 1993; Storper & Salais, 1993), and distinctive regulatory structures.
   c. These territorialities may be discursively constructed, but the overall effect is to produce a constant creation and re-creation of territorially coherent transaction structures through waves of investment and
reestructuring or what FitzSimmons (1989) calls "regional social contracts";

d. Some territorially based systems may not be rural but regions that embrace town and country is specific ways.

The goal would be to recognize patterns of convergence and divergence that are derived from dialectic interaction of global processes and local specificities (Goodman & Watts, 1994: 39).

III. The Frozen Food Industry

To comprehend the gravity of the crisis, transition and readjustment within the community of Watsonville and the Pajaro Valley in the last ten years it is important to understand the importance of the frozen vegetable processing industry within the California economy and the economy of Watsonville before the outmigration of food processing capital occurred.

A Brief Overview of The Industry

Frozen fruits and vegetables were first introduced by Birdseye (a division of General Foods) in 1930. Production expanded rapidly during World War II. Large quantities of canned and dehydrated foods were diverted to the war effort, and domestic demand consequently shifted toward frozen food. Frozen food consumption increased at an explosive rate during the postwar years, rising 650 percent from 1940 to 1954 (Segal, 1988: 123).

The frozen fruits and vegetables industry was concentrated in California and the Pacific northwest. California alone generated one-third of the value of shipments of frozen fruits and vegetables—frozen broccoli, cauliflower, spinach, asparagus and strawberries (excluding juices)—in 1982. Production of these cool-weather products are concentrated in the Salinas and Pajaro valleys because these regions have among the world's best climate and soil conditions for the production of these agricultural commodities. In 1985, employment in California frozen fruits and vegetables industry stood at approximately 11,500. Over 90 percent of these workers were represented by the Teamsters (Segal, 1988: 120).

November 18, 1998
Frozen fruit and vegetable imports into the United States have grown at an explosive pace since 1980. The share of the frozen broccoli market made up of product packed in Mexico has grown from 4.2 percent in 1979 to 21.9 percent in 1986. During 1979-1980 California's share of the frozen broccoli market dropped from 95.1 percent to 62.3 percent. The experience with frozen cauliflower has been similar (Segal, 1988: 128).

Following the rise of California agriculture and food processing labor costs associated with the end of the Bracero program in 1965, U.S. frozen vegetable packers began building or leasing Mexican frozen vegetable plants in 1967. Following the deprecation of the peso starting in 1982, additional core sector firms expanded into Mexico.

The chief attraction of locating production facilities in Mexico was the lower costs of growing and harvesting broccoli. Farm and frozen food workers in Mexico were paid the equivalent of $3 per day in November 1987. The cost of the raw product, which represented nearly half the cost of Mexican frozen vegetable production, is as much as 70% lower than the corresponding U.S. cost not only because of cheaper farm labor, but cheaper land and cheaper capital as well (Moulten & Runsten, 1986).

Initially, the pace of expansion of frozen vegetable production in Mexico was limited by the reluctance of Mexican landowners to grow winter vegetables (such as broccoli and cauliflower) in place of grain for the domestic market. The profits associated with winter vegetable production was large enough to overcome this initial reluctance. Growers soon found that they could profitably integrate forward into processing, utilizing the production technology and distribution channels of U.S. firms.

Approximately half the production generated within Mexico was sold under the brand name of the U.S. firm. This figure is considerably higher than the 20 percent branded output of the U.S. frozen vegetable industry. The difference reflects the relatively greater domination of the Mexican frozen vegetable industry by U.S. transnational corporations, which concentrate on production for the branded market. This 'branded' Mexican output is sold primarily under the Birdseye and

November 18, 1998
Green Giant labels, but is also sold under the United Foods label, a periphery firm (Segal, 1988: 122).

Most of the "branded" Mexican production is produced in the U.S.-owned facilities. Mexican owned plants are geared toward production for the private label, institutional, and industrial markets. Thus far, Mexican frozen food manufacturers have not been able to establish their own distributions networks within the U.S., relying instead upon U.S. retailers, brokers, and processors to import and distribute the product in the U.S. market. (Segal, 1988: 131).

By 1986, core firms no longer utilized California-based periphery firms as suppliers, contracting out work to them during periods of peak demand, to the extent that they once did. Instead, core firms increasingly began to contract this work out to Mexican-owned packers, who could provide an equivalent or superior product at lower cost. The core sector overseas expansion fueled the growth of a Mexican-owned sector of the frozen vegetable industry that was geared toward production for the private, institutional and industrial markets, where they competed directly with California-based periphery sector firms. Because of the low labor costs, Mexican producers are consistently able to undersell their U.S. competitors. For example in June 1986, U.S. frozen broccoli sold for 33 cents per pound, compared with 26 cents per pound for Mexican broccoli after imposing a 17.5 percent import tariff (Moulton & Runsten, 1986). In short, California-based periphery firms had become more dependent on the private label, industrial and institutional sectors of the frozen food market at the very time that a growing number of low-cost Mexican-owned firms have begun to compete in precisely the same market area.

In 1986, two peripheral firms dropped out the frozen vegetable industry even after they succeeded in decertifying the Teamsters Union and reducing wages to $5.30 an hour at a time when the industry standard was $7.06. J. J. Crosetti, another peripheral firm, closed its plant and merged with Nor Cal (formerly Watsonville Canning) in early 1988 (Segal, 1988: 122).

In North America the overall tendency is toward consolidation in the industry as a whole with more joint ventures between formerly independent Mexican plants and U.S. firms. The rapid growth of the Mexican industry in combination with a recession in the United States, led to low

November 18, 1998
prices and major restructuring. One result was the tendency toward mixing in the Midwest and Texas which brought in intermediate products from many sources including Mexico and Central America. This reduced the role of the California plants in mixing, making them into a regional industry. Simultaneously, small-scale regional processing increased in other areas of the United States, such as the Midwest and the Southeast (Runsten, 1998).

The remaining independent frozen vegetable firms in the United States, such as Patterson Frozen Foods and Nor Cal-Crosetti were opposed to NAFTA because it would remove the 17.5 percent tariff on most frozen vegetables imported from Mexico over a period of 15 years — sounding the death knell for the industry in California. The final restructuring of the industry in the United States had begun.

IV. Watsonville: De-Territorialization of Global Processes

Watsonville and the Pajaro Valley Today

Farmland in the Pajaro Valley around Watsonville in 1998 rents for up to $2,000 an acre per year to grow strawberries. Vegetable growers zip in between strawberry cycles and grow some lettuce for awhile and turn it back over to the strawberry growers. The lettuce is an interim crop and benefits from the methyl bromide fumigation by the strawberry growers which essentially sterilizes the soil. A very few major land owners (some have suggested as few as five) own the majority of land in the Pajaro Valley. They rent that land out to smaller growers that move in and out with the different crops (e.g., lettuce, strawberries, cover crops, etc.). The small growers may even sublet the land if permitted by the owner.

Watsonville has become an area of increasingly more intensive agriculture which requires more and more workers. Strawberries are the most labor intensive crop grown in California (Wells, 1995). California produces 80 percent of the strawberries in the U.S and Watsonville produces about 50 percent of that amount (Wells, 1995; Strawberry Commission, 1997). It is the major strawberry producing region in the United States (Schlosser, 1995; Strawberry Commission, 1997). Irapuato is in a major strawberry producing region in Mexico (Ernst

November 18, 1998
Feder, 1967; Runsten, 1988?; Bivings and Runsten, 1992). In the Pajaro Valley one of the workers that we interviewed mentioned that you need one worker to take care of and cultivate about 2/3 of an acre over the season. The region's 10,446 acres require about 15,669 workers to work the strawberry fields in the Pajaro and Salinas valleys (see Table #1 below for the total acres in the strawberry producing regions on California's central coast). This is in stark contrast to harvesting apples, a crop where you just need a work force to come in in the fall, harvest apples for a few weeks, and then move on. There are minimal crews for pruning, fertilizing, and maintenance of apples. (John Steinbeck in his book, In Dubious Battle, wrote about Watsonville's apple producing region and the strike that occurred here in the 1930s.)

(Insert Table #1 here)

The Pajaro Valley has year-round lettuce and strawberry production. They grow strawberries and harvest them for seven, eight months here (see Friedland, 1981; Miriam Wells, 1995). Often lettuce is introduced between strawberry crops to take advantage of the methyl bromide treated soil. These crops and their production cycle now require a much more permanent and settled kind of labor force than apple production did which is how Watsonville became the de facto housing/service center for the region's farm labor force.

Restructuring and Adjustment

When the frozen vegetable market within the United States began to be increasingly serviced by imports from Mexico during the late 1970s and early 1980s, the majority of that increased productive capacity within that sector had shifted to the Bajio in Mexico as we argued in the previous section. Seeing the writing on the wall California growers immediately shifted over to the more profitable fresh production. The impact of relocating production to Mexico by California processors of selected vegetables has been massive. In short, the vast majority of frozen production has been shifted to Mexico in order to service the markets which are primarily

November 18, 1998
concentrated east of the Mississippi. The frozen food processing industry in California has been radically downsized through extensive plant closures between 1977-1996 (see Table #2, Summary of California Cannery Plant Closures, Siegel, 1988; Borrego and Zavella, 1996; Runsten, 1998). In turn, local employment in the frozen vegetable and fruit industry in the county of Santa Cruz has steadily fallen between 1979 and 1990 (Deloitte & Touche, 1991: 13) and it has continued to fall to this day. All of the frozen food processing within the county of Santa Cruz was located in Watsonville, which is why it underwent a meltdown in the employment arena as the plants continued to shut down and merge between 1983 and 1996.

(Insert Table #2 here)

Green Giant closed its plant in Watsonville in early 1994 and consolidated production in Irapuato, Guanajuato, Mexico. It subcontracted out its production of broccoli as well as spinach and Brussels sprouts — crops that are highly mechanized in Watsonville — to Del Mar Foods, which had largely been a fruit freezer and moved some of its equipment into a new building at the Del Mar Foods site.

The peso was still significantly overvalued throughout 1994, as it had been for several years. This made the Mexican product more expensive. At the end of 1994 the peso was devalued and allowed to float. It fell from 3.2 pesos per dollar to 7.5 pesos to the dollar at the time we were doing the first round of interviews in the Bajio. This huge devaluation of the peso was a greater reduction than if the entire 17.5 percent tariff had been eliminated at once. It bankrupted Nor Cal-Crosetti in Watsonville.

Dean Foods had purchased the Richard Shaw plant in Watsonville in 1988. Because the Shaw plant was the last plant built in California, it had the most efficient engineering, and it made sense that this would be the surviving plant in the Central Coast region of California. Dean Foods bought Birdseye, the oldest but best located plant in the Bajio, shortly after NAFTA passed. Dean foods then bought Nor Cal-Crosetti plant in August of 1995. As Nor Cal-Crosetti went bankrupt;

November 18, 1998
Dean Foods liquidated the debts and sold the plant to a cold storage firm. They admitted at the time that they didn't need two facilities in Watsonville, they had clearly bought the plant to shut it down (Runsten, 1998).

All together the frozen vegetable industry, formerly a major Watsonville employer, had been severely impacted by imports from Mexico, leading to the closure of four out of the five large processing plants in the area, and a direct loss of an estimated 4,000 jobs. As NAFTA was debated, 2½ plants were closed in town; since NAFTA passed another 1½ plants have been closed.

The plant closures in California and Oregon have been extensive and as we can see from Table #3: Utilization of Vegetables and Fruit Processing Plants after Closure (Deloitte & Touche, 1992: 76), few of these plants remain and even fewer have been converted into new industrial or commercial uses and locations of employment. Most are warehousing or not in use and some efforts are underway to convert them into business/industrial parks and other types of businesses. One of the vacant plants in Watsonville has recently been converted into a fish processing plant, others still remain vacant and underutilized. A recently completed inventory of the vacant and underutilized land within the city of Watsonville which includes the industrial space left behind by these outmigrating food processors has recently been completed and should be useful in exploring alternative uses of these spaces. Effective infill planning could reduce the annexation pressures on the prime agricultural land driven by the city's current expansion plans (Pajaro Valley Futures Project, 1998).

(Insert Table #3 here)

Community Impact

In Watsonville, it was clear that the impact of the 1985-87 strike, the 1989 earthquake, the protracted 1991-94 Green Giant plant closure, the general downturn in the California economy over the last several years, the closing of Fort Ord in 1994 and the continued restructuring of food

November 18, 1998
processing in Watsonville (e.g., the closing of Nor Cal-Crossetti) have sent the local economy into a downward spiral. In a short article entitled, "After the jobs left Watsonville," Alexander Cockburn reviewed the reasons for the plants closures and the impact on the community (1993). Pointing out how the community of Watsonville and Yolanda Navarro had become a symbols of job flight south into Mexico as a preview of the potential impacts of NAFTA (Fortune, July 12, 1993).

By 1994, the jobless rate in Watsonville had approached 16 percent, at that point it was the second highest rate in the state's central coast region, second only to Soledad. The rate was twice that of Santa Cruz County and the state of California and almost three times that of the United States (Register Pajaronian, November 29, 1994). By February, 1995 there were already articles appearing in the local newspaper about the rising rate of tuberculosis relating it to overcrowding conditions and increased poverty (Register Pajaronian, February 7, 1995). So many jobs had been lost to Mexico, Guatemala and other parts of Latin America that Watsonville was designated a Rural Enterprise Community by the U.S. Department of Agriculture in January of 1995. Only two other communities in California and 30 cities nationwide have been so designated. The designation brings with it a small grant of $300,000 each year for the next decade in order to reinvigorate these economically depressed communities. The city of Watsonville was finally designated a California State Enterprise Zone in 1997. All of the commercial and industrial land within the city is included within the newly formed enterprise zone (City of Watsonville, 1996). It provides a series of tax incentives to existing and new industries and commercial entities to either continue to stay or come into Watsonville. The risk is that the zones could further undercut the tax base of the community by giving away too much which would lead to reduced social services (Leroy, 1994).

By January of 1996 the situation was being described as a "job meltdown in Watsonville," with 20 percent of the adults out of work, leaving families without incomes, shop owners without business, and the city without its historic tax base (San Jose Mercury News, January 1, 1996). The situation worsened when Nor Cal-Crosetti Foods, Inc., closed in February, 1996, adding about 700 more people to the unemployment rolls. About half of these were rehired by Dean

November 18, 1998
Foods and other employers such as the fish processing plant who were in part attracted by the abundant supply of the vacant food processing plants and an unemployed pool of experienced food processing workers. Other planners such as Del Mar Foods benefited from the plant closings through the creation of an abundant, flexible and more docile supply of experienced workers with few options for retraining into other sectors of the economy (Bronfenbrenner, 1996). The earnings of many workers continued to decline after the four plant closures between 1994 and 1996. A family in which both the man and woman worked had generated a good pair of salaries in the 1970s and 1980s but had become a family that was barely surviving economically in the late 1990s in Watsonville (see Chart #1 below illustrating the Wage History of Pedro and Maria, 1971-1997 [Interview, August, 1998]). In many ways the earnings of this couple reflects what has happened to the workers within the restructured food processing sector in Watsonville over the last 15 years.

(Chart #1 here)

The community also expects to benefit from a lending program that was set up under the North American Free Trade Agreement under the North American Development Bank (NADBANK). The purpose of this program is to spur job growth in cities, such as Watsonville, that have lost jobs to Mexico. Specifically, it is a new type of institution designed for democratically based regional planning and international leveraging of public and private financing in response to the many communities requiring adjustment assistance because of NAFTA (Hinojosa-Ojeda, 1994: 30). In Watsonville, David Runsten (UCLA), the local representative of the NADBANK, had several meetings of representatives from Agriculture, Food processing, Displaced Workers, Light Manufacturing, the City of Watsonville, Social Service providers, Environmentalists, other Community Leaders and Activists as well as Bankers and Finance specialists during 1996. In 1998 $500,000 in funds were announced for stimulating economic development projects in the Watsonville area and the surrounding region. To date, little if anything has materialized from these efforts by NADBANK. NADBANK chose California Coastal Rural

November 18, 1998
Development Corporation (Cal Coastal) based in Salinas California and directed by Herb Aarons to act as financial intermediary. They will provide direct loans to small businesses in the prescribed catchment area around Watsonville.

The Struggle for Land and Water

This situation of structural high unemployment is being used by the city officials and real estate interests in the community to push for the annexation of adjacent agricultural land. That additional land, they argue, would be used to build factories and needed retail commercial outlets which would create the needed jobs. The counterargument generated by a coalition of NGOs within the Watsonville and Pajaro Valley community is that the paving over of some of the world's richest farmland is a long-term disaster and that such industrial and commercial development would convert the town into another sprawling suburban community. They also argue that the development would not necessarily provide jobs for displaced food processing workers. Instead, the jobs would go to workers from outside of the impacted community of Watsonville and the Pajaro Valley. The coalition argues that there is still the possibility of having a vibrant local economy based on farming and related agro-industries. They argue that farming and related industries together with the necessary light industrial, commercial and educational systems could yield a sustainable form of economic development with positive long-term results for the community of Watsonville and the surrounding Pajaro Valley. Some are going further by suggesting a "Valley Free from Pesticides," in which the valley's rich soil and close proximity to the Monterey Bay Sanctuary would be the key components in a chemical-free zone (Merrill, 1998). The proposal by the real estate and developer interests, they argue, turns over the future of the community to outside interests which place short-term profit maximization before the larger and longer-term interests of community development and the protection of prime land for food production.

The recent struggle over locating a large-scale regional retail center anchored by Target, a major discount store, as well as Safeway, Staples, Long's, a series of fast food franchises, a gas

November 18, 1998
station etc., on Main Street close to Highway #1, was passed by the city council and was tied up in litigation for a while but ultimately began construction in 1997. It is currently almost complete with the Target having opened in October of 1998. The rest of the regional commercial center will open soon. Existing small- and medium-scale business owners throughout Watsonville, especially those within the downtown area, combined forces with several NGOs and filed a suit against the city because of the concerns over the probable negative impact of the new regional center on them (Borrego, 1996). The ultimate impact of this regional center on existing local retail outlets and the net job growth is being evaluated by a small impact study which is under way (Borrego, 1998). So recent high school graduates receiving near minimum wage are the norm for the new employees at Target. A far cry from the 4,000 thousand union jobs with benefits which were lost.

Water, a key to the survival of agriculture in the Pajaro Valley, is going to be imported to stop sea water from seeping into and contaminating depleted coastal aquifers and wells (PVWMA, 1998). Efforts to import water from the Federal Central Valley Project at enormous cost were recently stopped by a strong coalition of ranchers and environmentalists in the June, 1998 elections. The issue came up before the voters again in the November, 1998 elections with a major organizing effort by the United Farmworkers Union (UFW) who were concerned about the overdrafts and the salt water intrusion impact on the future of agricultural jobs in the valley. It is clearly a hot and contested issue in the Pajaro Valley. The annual recharge is about 50,000 acre feet, the needs are currently at about 69,000 acre feet per year and are projected to be 78,000 acre feet by the year 2040. The Pajaro Valley Water Management Agency had planned to import 19,000 acre feet as soon as possible in order to stop the salt water intrusion and to increase this allotment to 28,000 acre feet by 2040. The agency argued that this water would be used for agriculture, but one of the concerns of many activists and environmentalists is that the water might actually end up being used to fuel rapid suburbanization in the Pajaro Valley as the city extends into the surrounding rich agricultural land (Bardacke, 1992). An acre foot of water is 325,000 gallons or enough to supply a family of five at home and work with water for a year. This is enough water to support an increase

November 18, 1998
of 28,000 people in the Pajaro Valley if the City of Watsonville, the real estate interests and the
developers have their way.

Why is land zoned for housing about 30 times more expensive than the
same land zoned for agriculture? Because Watsonville sits right over the hill
from what used to be the Santa Clara Valley and what has become the
Valley of Silicon. As computer production has crept over Highway 17,
expensive housing projects have shot up on the north side of Watsonville,
peopled by folks who commute northeast to Scotts Valley and San Jose. If
the computer industry continues to thrive, and the Silicon Valley remains
one of its centers, then pressure will increase to subdivide and develop our
agricultural land. (Bardacke, 1992: 6)

In June, 1998 the community came to terms with the political economy of water in the Pajaro
Valley. At that point it stopped the plan to import water. Wherever the importation of water has
happened in the past within California’s Central Valley, it has led to accelerated suburbanization
(Walton, 1992). It is very easy to imagine this same fate for the Pajaro Valley if water is imported.

Strawberry Fields and the New Workforce

The Pajaro Valley is also the center of a major concentration of strawberry production. It produces
50 percent of California strawberries and 40 percent of all national production. (California
produces about 80 percent of U.S. national production.) As well, the area continues to be a center
for the production of lettuce, and other fruits and vegetables. In the case of strawberry production,
the extensive use of methyl bromide to prepare the soil has created many conflicts both locally and
within the state. The edge between the fields and housing is one area of struggle, also many
schools are located in rural areas surrounded by agriculture. The increased pressure to stop the use
of pesticides runs into the economic weight of the strawberry industry within both the regional
economy of the Central Coast and the overall economy of state of California.

The 10,446 acres of strawberry fields in the Pajaro Valley and the Salinas Valley
surrounding Watsonville employ over 15,000 to 18,000 workers. These workers have become the

November 18, 1998
new lower paid labor force within the region which primarily resides in and around Watsonville, the primary service center for this population. Two or three families must pool their resources in order to rent a home, buy food and clothe everyone. The new increased density is well understood by the garbage collectors who see the increase of refuse generated by the overcrowdced households or is noticed by the street sweepers who can't clean certain streets in Watsonville because they are constantly occupied with older abandoned cars, many of which are used for sleeping. The situation is so extreme that there was one case in Watsonville in which there are three shifts of 27 farm workers sleeping in a house so that it ultimately served 81 people (Interview). It is not unusual for multiple families to combine in order to purchase a house. Overall, there is an increasing percentage of Mexicanos moving into Watsonville and there is an increasing density within the city. This has further stressed the services within the city of Watsonville.

In many ways, the city is becoming more polarized than before. On the one hand, we have workers oriented toward the Silicon Valley and the University of California, the research facilities at Monterey and Moss Landing and the projects generated by the Redevelopment of Fort Ord, California State University at Monterey and, on the other, we have between 15,000 - 18,000 strawberry workers and the remaining 2,000 plus food processing employees which either live in Watsonville or revolve around the city as their main service center. In short, Watsonville has become a primarily a Mexican town and an increasingly polarized town.

Politics as usual in the community appears to have come to an end. There is more representation by Latinos/Mexicanos on the City council, in large part because of the mobilizations which have occurred primarily after the earthquake in 1989 (Takash and Avila, 1989). However, the Latinos have not necessarily been progressive; on the contrary, most, given their backgrounds in real estate and insurance, have blended in nicely with the conservative core of the existing power brokers within the community. The upcoming November, 1998 elections promise to increase the Latino presence on the City council. In June, 1998 a Latino was elected to the Board of Supervisors of Santa Cruz County. As a former mayor once commented to an inquiring newspaper reporter about this person (new Supervisor) when he became the first Latino mayor of Watsonville, "Oh

November 18, 1998
he's one of us, he's more Anglo than I am." (Interview). There is an increasing brown tone to the City Council, but the values are solidly conservative. Using the lenses of Mexican politics they are PANistas.

There is more hope within the City Manager's office. There we find a bright, hardworking and well-educated technocrat who wants to confront the increasingly complex and interrelated issues created by economic restructuring within the city and the valley. But to date the city manager's hands are tied by overarching structures and processes such as Proposition 13 and the crushing impact of the outmigration of food processing capital. The net effect is that as a city the only solutions that have been generated are determined by "place wars" in which they feel that they must annex valuable farmland in order to create retail outlets to increase the tax base to meet the increasing needs for social services in an economy decimated by the outmigration of good paying union jobs with benefits. Along with the retail outlets come the low-paying jobs without benefits, which in turn add to the downward wage cycle in the community and increased poverty which in turn feeds the downward spiral for a significant sector of the population in Watsonville. Another island of hope lies in the leadership of some of the Non Governmental Organizations (NGOs) in town, which head up agencies like Fenix, Adelante, Defensa de Mujeres, Si Se Puede, Pajaro Valley Housing, etc. Among that leadership you find people heading up organizations which are attempting to pick up the pieces left behind by the grinding situation created by the massive impact of economic restructuring. The simple fact is that the casualties are being created as a faster rate than their budgets and ability to handle the increasing need. Collectively they are presenting a good fight against poverty, broken families, drug addiction, gangs, etc., but they are still losing given the overwhelming size of the problem which requires the elimination of global constraints to allow for local solutions (Ross, Shakow and Susman, 1980).

\textit{Education Without a Future?}

In order to align its vocational and technical services to the needs of local businesses, the Cabrillo Community College District commissioned a study called "North Central Coast Region Business

November 18, 1998
Retention and Economic Advancement: A Report on 1995 Findings." Completed by the Resource Group (TRG) Riverside, California, the study surveyed 265 businesses in the Watsonville and Freedom area. The results suggested that: (1) Watsonville merchants were optimistic about the area's economic vitality, and projected higher gross revenues for the coming year; (2) 6 percent of Watsonville's companies were expanding, giving the city the highest rate of growth in Santa Cruz County; (3) 32 percent were experiencing moderate growth while 38 percent were reporting increases in business activity; and, (4) by the end of 1995 Watsonville businesses expected to gross a median of $500,000, compared to $450,000 the previous year.

However, the survey suggests Watsonville's business optimism was tempered by the cost of doing business. For example, (1) 56 percent of Watsonville merchants cited economic conditions as a major obstacle to business; (2) 38 percent cited workers' compensation costs as a major concern; (3) 35 percent consider state and federal regulations a stumbling block to business; (4) 33 percent point to the cost of employee benefits; and (5) 31 percent say they were worried about the effects of crime, gangs, and graffiti on their businesses.

Medical and health occupations topped the list of the ten jobs most in demand in Watsonville; next is plant farming, followed by packaging and materials handling, sales, general managers and officials, food and beverage preparation service, administrative specialization, office clerks, motor freight occupations and metal working. The survey also pointed out the high crime rates, the high rate of Spanish spoken in the households, the high rate of female-headed households, and the low educational attainment of the residents.

There is an unfortunate relationship between the educational system within the Pajaro Valley and the creation and recreation of the existing truncated economic/job structure in the Watsonville/Pajaro Valley area. For example, Cabrillo's employment assessment study concludes that in Watsonville over the next 3-5 years employers will require additional farm workers, fast-food workers, retail sales workers, truck drivers and warehouse people. This is far from the "land of opportunity" that Sam Farr talked about recently in a presentation to Watsonville's Hispanic Chamber of Commerce. If you look at the expectations of the educational system that is in place

November 18, 1998
within the Pajaro Valley Unified School District (PVUSD) these are precisely the kind of skills that the schools in the southern part of the PVUSD are generating. The educational system that is in place is resigned to provide what the existing employers need. The statistics on the PVUSD are dismal; 51 percent of the students who started out in the school system as first grader do not finish high school; the majority of the freshman class will not graduate from high school; and many students who do graduate from high school have to go to the junior colleges like Cabrillo and Hartnell to do remedial work and develop the skills that they did not develop within the high school if they want to go on to the university level. The majority do not get any additional training beyond high school. Many are not adequately prepared for anything but jobs as truck drivers, retail sales workers, truck drivers, and warehouse people. In short, the PVUSD is failing the vast majority of its students.

This situation in the southern part of the PVUSD is in stark contrast with the expectations of the employers in the northern Aptos area. The Cabrillo study notes that they employers in the northern area see themselves as needing technicians, managers, and professionals. Aptos parents continue to try and secede from the PVUSD and develop their own separate educational system—the Aptos Unified School District (The Santa Cruz County Committee on School District Organization, 1995). To be sure, the secession movement by the Aptos parents is racist and class driven. The separate district will insure the elite educational system that the upper-income Aptos parents desire and it will also protect and increase the real estate value of the housing in that upper-income and primarily white area. The secession movement has exposed a major problem within the PVUSD, the expectations are too low and the educational system is in need of a major restructuring of expectations, methods and process. In stark contrast to the PVUSD, at North Monterey County High School all students are being exposed to the same curriculum. The expectation is that all students are being prepared to go into the California State University System or the University of California system. The district has also developed some of the most innovative schools within the state of California. The PVUSD has much to learn from them.

November 18, 1998
Most recently the passage of the Unz initiative which mandates that students must be educated in English after one year of language transition has introduced additional burdens on the teachers and staff of the Pajaro Valley, further complicating the ability of the overwhelmingly migrant/Spanish-speaking students to catch up. The systemic effect is just the opposite: the overwhelmingly Spanish-speaking students are being left further behind.

What is also very important to note is that the Community of Watsonville generates over 30,000 jobs. Close to half of those jobs (14,700) are filled by people from outside of the community. They are the highest paying jobs which require higher education and more training. The remaining 15,300 jobs filled by people living in Watsonville are the lower paying jobs (Santa Cruz County Employment Study, 1997). These are filled by the people with less education and less training. I would argue that this uneven access to the jobs is rooted in the uneven access to educational opportunities generated in the local public schools. A related issue is the large number of private schools that have cropped up in the Pajaro Valley. They offer a separate educational experience for over 2,000 mostly white/middle-class students.

The Regional Context: California's Central Coast

The Pajaro Valley is situated in an ideal Mediterranean climate on the Monterey Bay and the city of Watsonville is located in that valley between the hills and the ocean. The Pajaro Valley is on the Central Coast and is anchored to the north by the University of California and the city of Santa Cruz and to the south by the city of Monterey, the reconversion of the old Fort Ord military installation, the site of the new California State University, Monterey Bay Campus (CSUMB) (Cook, 1996) as well as the world famous Monterey Bay Aquarium, the Monterey Language Institute, etc. (see Map #1 below).

(Insert Map #1 here)

November 18, 1998
The collective impact of the University of California at Santa Cruz (UCSC) and Cal State at Monterey Bay (CSUMB), the retrofitting of the closed Fort Ord, plus the new marine research facilities along the coast and the agricultural research center proposed at the mouth of the Salinas Valley as well as a new transportation hub and internet on-ramp also at Ford Ord, make this place ripe for development and exploitation by the real estate developers and financial sectors.

I remember that one reason I moved into the California Central Coast in 1974 was because I could work at the University of California at Santa Cruz and live in Watsonville, a more rural community with a large presence of Mexicanos. This was made possible by the extension of Highway #1 as four lanes from mid-county to the Monterey County line in 1974-75. It has taken 24 years for this linkage to develop into a major pressure on this community. Another major pressure on this community to urbanize is the existence of the spill over from the Silicon Valley over the hill from Santa Cruz, as well as the pressures for urbanization as they move south from the Silicon Valley to Gilroy and over the hills via Highway # 152 to the Pajaro Valley.

This is a radically new regional context and transformed conditions for Watsonville and the Pajaro Valley. The Pajaro Valley is now the location of an intense struggle over the nature of future development. The deterritorialization of food processing capital are bringing new pressures to restructure the economic, social, and political space that have been left behind by transnationally mobile capital. The drive in agriculture is to move up the value chain toward more capital intensive crops, e.g., away from orchards toward row crops such as lettuce, then up to strawberries. Each shift up requires more labor, creating more pressure on the existing housing stock, requiring more schools, health facilities and social services which, up to this point, the remaining voters refuse to pay for. This has created a fiscal crisis throughout all the local levels (county, city ) of government. The result is a tendency toward two very separate, unequal community strands which have combined into a new interconnected social system of accumulation in the Pajaro Valley. One strand benefits from the existing system of accumulation, and is wealthy enough to internalize its costs and wants to separate and the other strand becomes increasingly poor and must increasingly depends on an ever weaker government for support services. De-territorialization thus recreates a

*November 18, 1998*
new setting, a new social structure of accumulation, ripe for the more rapid reproduction of all fractions of capital (e.g., local, national and global). We are approximating locally what Robert Reich referred to nationally as the "succession of the successful" (Reich, 1996).

V. The Bajio: Territorialization of Global Agri-Food Processes

The essence of how global processes become embedded (Evan, 1995) and territorialized (Watts, 1994), although increasingly for shorter times as capital becomes more mobile and driven by the economics of speed, is everywhere evident in the Bajio. The industrial corridor between Mexico and Guadalajara within the Bajio has most recently attracted a poultry processing and egg production plant close to Queretaro to service the Mexico City market. This was necessary because the high price of meat during the latest crisis made it prohibitive for the urban consumers of Mexico City (Alvarez interview, 1996). At the other edge of the Bajio, but still within the corridor, a new world class auto complex was built in Silao also to service the markets to the north (GM relocated its plant from Mexico City). There is also a new state of the art set of greenhouses for vegetable production outside of Queretaro, also orientated to the North American market (complete with technology, buildings and agronomists from Holland). There continue to exist the food processors (canned and frozen) throughout the Bajio (Campbells, Heinz, Green Giant, Birdseye, Expor San Antonio, MarBran, Expohort). There are also remnants of a garment industry that used to flourish in and around Irapuato, not to mention the strawberry processing plants that also continue to operate in the area. The region is a major supplier of grains, vegetables, fruits and animals for the urban centers of Mexico and Guadalajara. It also continues to house a major PEMEX plant in Salamanca as well as a major leather industry complex surrounding León. These last two are among the most polluting industries in the Bajio. In 1995, for example, the chemicals released by 600 plus tanneries around León were responsible for a major ecological disaster, where thousands of migrating birds died in the contaminated lakes downstream from the plants. These lakes were on the long-established flyway between Mexico and Canada (New York Times, 1996). Collectively, the Bajio is one of the most important and dynamic and consequently problematic economic

November 18, 1998
regions within Mexico. It services both the agricultural needs of the major cities of Mexico D.F. and Guadalajara and beyond, it is the location of a major set of exporting industries or what Governor Vincente Fox refers to as the vanguard industries in the state of Guanajuato (Fox interview, 1996). Recently, there have surfaced major social dislocations and environmental problems which are presenting barriers to continued growth and development within the Bajio. We will take up the question of these barriers below after we briefly review the nature of the vegetable processing complex in the Bajio.

**Restructuring of the Central Extended Industrial Region in Mexico and the New Linkages to the U.S./Canadian Industrial Corridors**

Global capitalist restructuring operates through and across all circuits of capital and all circuits are composed of separate sectors, branches, and firms. The North American Free Trade Agreement (NAFTA) between the United States, Canada and Mexico is now a reality. Because of the tremendous asymmetries among the three economies the Mexican economy will be the epicenter of the most severe adjustments. These adjustments will have a major impact in the seven key industrial branches within Mexico: (1) automobiles and auto parts; (2) cement; (3) glass; (4) textiles and clothing; (5) agriculture and food processing; (6) electronics; and (7) petrochemicals. A majority of these industrial branches are located in the Bajio.

Mexico's original five industrial districts, e.g., Puebla, Zona Metropolitana del Valle de Mexico, Guadalajara, Monterey, Saltillo and Vera Cruz-Villahermosa are increasingly acting as one larger extended industrial region. This region is shown in relationship to Mexico's northern industrial districts which are in turn integrated into the major industrial corridors within the United States and Canada. Collectively, these interconnect into a tri-national industrial region which constitutes the new dynamic core of North American Integration (see Map #2: Mexico's extended central industrial district and its linkage to the dynamic core of North America).

(Insert Map #2 here)

*November 18, 1998*
The central region in Mexico extends out from the D.F. in several corridors; northwest in the direction of Aguascalientes [Queretaro-Irapuato-Leon-Aguascalientes or from Irapuato west to Guadalajara]; north toward Saltillo [San Luis Potosi-Saltillo-Monterey]; southeast toward Veracruz [Puebla, Orizaba, Veracruz, Villahermosa]; south towards Cuernavaca; and west toward Toluca. The sectors of production included in this extended region include autos, auto parts, textiles, electronics and food processing which are transnational; textiles, clothing, glass, cement which are national and petrochemical (formerly national "parastatales") becoming national or transnational. It is the corridor that extends northwest from Mexico D.F. to Guadalajara that links the Bajio into the extended central industrial region of Mexico.

This extended industrial region: (1) houses the bulk of Mexico's industrial capacity which, since 1981, has been undergoing a radical restructuring; (2) the manner in which it is unfolding reveals the deep structures of Mexico's evolving model of development and integration; (3) the industries in this extended region include three critical types of corporations: (a) national, (b) national/transnational joint ventures, and (c) transnational corporations (these different corporations range from private, quasi-private/public and public); (4) the region includes the seven key sectors [industrial branches] in the economy that are undergoing restructuring.

This central extended industrial region is currently linked to the rest of North American by highway, rail, and air. The new port facilities on the west coast of Mexico will increase the strength of this linkage of the central extended industrial region (including the Bajio) both to the economic regions of the north as well as the Pacific Rim economies. These new port facilities at Topolobampo and Manzanillo will also have a major impact on Mexico's competitiveness within the North American Free Trade Area. The port at Topolobampo on the western coast of Mexico connects with a rail line that passes through Chihuahua (Ford Motor Company's state of the art engine plant, etc.) to the twin cities of Presidio and Ojinge on into Texas and onto the markets of the east coast. The other port at Manzanillo will link directly into Mexico's Extended Central Industrial Region via Guadalajara on the west end of that region. Both ports will have the

*November 18, 1998*
advantage of shortening the time/distance to the markets of products originating within the rapidly growing Pacific Rim economies. The new port at Topolobampo may become a threat to the economy of southern California as it begins to takes away volume from the ports of Los Angeles and San Diego. (See the ports and the rail systems as they pass through the Bajio, Map #3 below.)

(Map #3 here)

*The North American Integration: Highway Systems Linking Production, Consumption and Industrial Corridors*

The route in and out of the Bajio for most of the inputs and outputs of the food processing industry is through a major highway that comes down from Nuevo Laredo through Monterey and into the heart of the Bajio. This is the life line of the Bajio industries (see Map #4 below). It is the source of the inputs via the transnational vegetable processors to the greenhouses (e.g., seeds, peat moss, etc.); to the growers (e.g., fertilizers, pesticides, agro-chemicals etc.) and to themselves (e.g., machinery, packing boxes, plastic bags, etc.). This route takes the finished product to the U.S. market which is primarily east of the Mississippi and north into the Great Lakes region of Canada. It is easy to see the transportation advantage that the frozen vegetable processors in the Bajio have relative to California processors in terms of distance to those markets.

(Insert Map #4 here)

*The Bajio's Restructuring, Development and Integration*

The industrial corridor that runs through the Bajio runs northwest from Mexico D.F. in the direction of Aguascalientes [Queretaro-Irapuato-Leon-Aguascalientes or from Irapuato west to Guadalajara]. This industrial corridor houses, as we have mentioned above, a new GM plant in Silao. There are plans to expand this into a world-class auto complex. Recently, in part due to the 1998 GM strike in the U.S., production was doubled in the GM plant at Silao, further expanding

*November 18, 1998*
local sourcing of components within the region. The continued expansion of the auto sector will have an increasing impact on the economic geography of the Bajio.

There are also plans for the development of a light train system in the region to connect up communities of Celaya, Salamanca, Irapuato, Silao and Guanajuato (see Map #5 of the proposed region light train network below). The ultimate goal was to develop a good transportation system which linked the workers throughout the region to their jobs. The impetus to the plan was the need to develop linkages between a world-class auto-industrial complex in Silao, which already has a new massive GM plant in place (which has recently doubled in size) but would ultimately also have plants by Toyota, Volkswagen, Ford, Mercedes Benz, Renault, and Chrysler. The plan envisions 12,000 employees working in 120 plants related to and supplying the new world auto complex. It would employ 23 percent of the workers in the state of Guanajuato ("Tren Rápido Interurbano: Para Estar Mejor en Guanajuato." Gobierno del Estado de Guanajuato. n.d.; Government Basic Plan, 1995-2000). The transportation system would be built to connect the low-cost highly skilled regional labor pool from throughout the Bajio to the auto complex in Silao. The financing for the light train would be foreign and local, e.g., Canadian, the United Arab States and from the state of Guanajuato. The train system would take three years to build (Interview, Guanajuato, 1996).

(Insert Map #5 here)

The Bajio is facing a water problem, the aquifers are becoming depleted. The tension between urban use and agricultural use of water will only become worsened as more industry locates along the industrial corridor which connects Mexico City and Guadalajara (Ferriolli interview, 1996; Comision Estatal de Agua y Saneamiento de Guanajuato [CEASG], 1994). The water crisis in the Bajio is clearly illustrated by map #6 developed by Moulton and Runsten, (1986: 92) which illustrates that the principal broccoli producing areas are also the regions where the government had limited the drilling of new wells due to falling aquifers. In the late 1970s there

November 18, 1998
were about 10,000 wells in Guanajuatyo, and the water levels varied from 5 to 150 meters. According to their study aquifers were falling at up to 5 meters per year. In 1978, the government in Guanajuato stated that the known withdrawal exceeded recharge by 577 million cubic meters per year and estimated that they were probably mining about 700 million cubic meters per year in 1986, creating an overdraft of 123 million meters per year. Since then the overdraft has increased according to the Comision Estatal de Agua y Saneamiento de Guanajuato (CEASG) (1994).

(Insert Map #6 here)

As serious as the water depletion is the heavy use of pesticides and extensive planting of Broccoli in the Bajio which have generated a new problem with the Diamond-Backed Moth. The growers and the government planned and implemented a five-month ban on broccoli production in the Bajio in an attempt order to break the cycle of the Diamond-Backed Moth (Runsten interview, 1996).

As the ecological contradictions get extreme and pesticides are no longer able to control the Diamond-Backed Moth, measures such as breaking the growing cycle by rotating five months of no production among different regions in order to continue overall production in the Bajio are extreme and expensive. Clearly, if these ecological issues continue to escalate, the future of the frozen vegetable industry in the Bajio may be threatened.

The continued expansion of the new auto complex could ultimately drive up the cost of labor to the food processors and in combination with the dropping water table and the problem with the Diamond-Backed Moth could drive agro-industry out of the Bajio, possibly to another Latin America country.

Some of the food processors may have to move further south, possibly South America (Argentina has been mentioned) because of this situation. The other major crop in the region is strawberries which have been grown in the region for a long period of time. The two industries are linked at their respective points of demise (strawberries) and emergence (broccoli).

November 18, 1998
Together, these two issues—ecological limits and labor costs—combine to create a highly contradictory situation and the continued operation and expansion of the food processing industry in the Bajio is threatened. Previously some of the production of broccoli had been moved north to higher altitudes during the summer months. They were able to source new water supplies (different aquifers) and different sources of cheaper labor (from even poorer regions). But these alternative regional solutions also have their limits in that they are burdened with undeveloped infrastructure and they also have limited supplies of water.

The competition between industrial, agricultural and expanding urban activities in the Bajio is intense and complex. Solutions will be hard to attain without joint planning efforts between the state, corporations and the communities/labor/campesinos. To date, the state and the corporations have excluded the communities of workers from any future planning in the region.

*The Vegetable Processors in the Bajio*

Canned, frozen and fresh vegetable processors and growers in the Bajio continue to operate as an interactive network of local, regional, national, multinational, transnational and global corporations. In short, the Bajio houses the full range of corporations suggested by the following typology. The Bajio includes:

1. The small, medium, and large growers that feed through contract farming into the national, multinational, and transnational processing plants
2. The large Mexican-owned export oriented enterprises that either operate independently and sell directly to the U.S. market (like Expor San Antonio) or they form joint ventures (like MarBran/Simplot). In this joint venture, the Mexican plant is in charge of production (growing and processing according to U.S. market specifications) and the U.S. partner is in charge of the distribution system within the U.S. market. In some instances Mexican firms supply raw product to the exporting transnationals when they run short.
3. The canned food processors are multinationals that were set up to scale the tariff barriers set up by Mexico after W.W.II when Import Substitution Industrialization (ISI) was established in Mexico. Here multinationals like Campbells, Heinz, etc., were mostly involved in production for the national market.
4. Green Giant and Birdseye are transnationals controlled by European and U.S. capital respectively. They are involved in producing in Mexico in order to service

*November 18, 1998*
the U.S., Japanese or European markets. In all cases, the plants are export driven and operate very much like Agro-maquiladoras. They receive the entire package of inputs, seeds, peat moss, pesticides, fertilizers, plastic bags, boxes, wrappers, machines, capital, etc., from a variety of locations in the world (e.g., Canada, U.S., Holland, Germany, Japan, etc.). The above complex of frozen vegetable processors are distributed throughout the states of Guanajuato, Queretaro and Michoacan but clearly concentrated in the Bajio.

5. The world-class greenhouses outside of Queretaro are a project formed by Mexican capital to take advantage of NAFTA. The greenhouses were designed and developed to produce high quality fresh vegetables for specific market niches in Canada and the U.S. What is unique about this project is that it is utilizing state of the art technology and production processes in order to produce fresh vegetables for the world market. They use computers to locate market niches within North America. As they become more experienced and therefore competitive within the North American market, they may also decide to compete beyond North America. This project begins to remind me of the global logic in our above typology as it uses the latest production processes and services within one of the triad regions.

The Production Process in a Transnational Frozen Vegetable Plant

In 1996 the process of restructuring within the Frozen Food Processors in Mexico continued and several of the plant managers helped us generate estimates of the complex of food processors and their capacities and utilization in Mexico at that point (see Table #4). What was made clear to us is that the food processing complex throughout the Bajio had increased in both number of plants and overall capacity since 1986 (See Map #7). The number of plants appeared to be declining after 1994/95 as the crisis devalued the peso and competition heated up because of the overbuilding of plants and capacity which in turn saturated the market in the U.S. This overcapacity led to a decline in the network of factories between 1991 Table # 5 (Runsten, 1992) and 1995/96 (Borrego and Zavella, 1996).

As important as the growing and restructuring network of frozen vegetable processors in the Bajio is our understanding of how a typical food processing plant operates. [The new agro-industrial process in the Bajio is very reminiscent of Carey Williams, *Factories in the Field* (1947)]. From our discussions with several plant managers we developed a sketch of the mosaic of production which supplies raw product to a typical large processing plant (see Diagram #1 below).

November 20, 1998
In describing the overall process (from "seeds to sewer" according to one plant manager) they identified the various inputs, components of the overall production process, and the outputs and how they related to each other.

(Insert Diagram #1 here)

The production process was roughly grouped into these components;

1. The seeds and peat moss are delivered to the greenhouses controlled by the processing plants, which grow the seed into small plants (some of the seeds are sourced from Japan but they are delivered via U.S. transnationals into Mexico; the peat moss was sourced from Canada). This process takes about four weeks. These plants were then delivered to the growers that had a contract with the processing plant. The contract farmers planted the plants on their land and began to take care of them. Agronomists from the food processing plant determined the entire growing process planting, watering, pesticide and fertilizer applications, when to pick the crop, etc.

2. The processing plants developed contracts with growers. In the beginning, one of the older processing plants tried to work with many smaller growers—some with very small plots of between 6 and 10 hectares. Another manager of a large modern processing plant mentioned that they now prefer working with growers that have at least 50 hectares. In both instances technicians (agronomists) from the plants came out to oversee the growing process. They determined if the care of the crop, for example broccoli, needed pesticides, fertilizers, water, etc. (when and how much). The grower could apply the pesticides or the processor would do it for a fee. In short, the processors controlled the entire process of growing the raw product.

3. As well, the exact time and date when a crop would be harvested was determined by technicians (agronomists) from the vegetable processing plant. The result was a mosaic of producing land units which you do not own, but on which you determined everything that happens to the contracted crop. You controlled everything except the labor process. This is a very tight system of quality control. The plant also controlled when the crop was to be picked. In this way

November 18, 1998
the processing plant could program when the product reached the receiving docks. The plans of the locations of the land under contract which we saw on the walls of one of the offices very clearly laid out the timetable for this very extensive mosaic of planting, production and harvesting. The overall system was clearly organized to produce a continuous flow of product to the plant.

4. Once in the plant we again have a very detailed description the production process. (See Diagram #2)

5. When the product is ready it is either shipped right away or put into storage. The product is shipped back north through the same highway route that most of the inputs came down from either U.S. or Canada. Much of the product from the Bajio goes through Nuevo Laredo on its way to the markets north to the U.S. east of the Mississippi River or to Canada's urban centers around the Great Lakes. (See Map #8 below.)

(Insert Map #8 here)

We discussed this sketch of the production system with four of the major transnational food processors in the Bajio and with their help refined the overall contours of the process. In the process we discovered key differences between transnationals, multinationals and national corporations as to their control of capital, technology, communication, marketing and labor process, etc.

Wage Structure in the Plants

Table #6 illustrates the various job and wages within a large plant. It is important to note that these jobs, even though they are very low pay compared to U.S wages, are jobs in the context of Mexico and that is especially significant because of Mexico's near meltdown in 1994/95 and its continued crisis and very high rates of unemployment and underemployment. People get by because there are multiple workers in the family and the multiple wages allow the family unit to survive. The situation in Irapuato was very reminiscent of the situation of Mexicanos currently encountering the

November 18, 1998
same job meltdown and high unemployment in Watsonville on the other side of the border. In both locations many families have had to share housing (e.g., parents with married children or with brothers and sisters, etc.) in order to have enough resources for rent, food, clothing, transportation, and so forth.

(Insert Table #6 here)

We reviewed several pay stubs for line workers at Gigante Verde for December 29, 1992. For 40 hours of work the net pay was 115,841 pesos. At the time the exchange rate was about 3,000 pesos per dollar which translated into slightly less than 40 dollars or about $8.00 per day. Since the near collapse of the peso in December of 1994, wages have been cut about one-half. By December, 1995 the exchange rate was about 8.0 nuevos pesos (new pesos) per dollar. The wages had dropped to the equivalent of 18 to 23 pesos per day or slightly less than $3.00 per day. It is interesting to note that production cost of broccoli in 1996 was 6.5 cents per pound, exactly what it was in 1986 when Moulten and Runsten did their landmark study of the food processing industry in the Bajio (Runsten, personal communication, 1997).

In her study of agricultural employment in the Bajio, Linda Wilcox concludes, "The impact of widespread crop substitution and wholesale transfer of technology promoted by transnational processing plants have both reduced the total labor employed and increased the instability of employment through heightened seasonality of labor demand" (1988, 1993).

Contract Farming and The Labor Process within the Foodprocessing Plants

Much of the production in the Bajio has been accomplished through contract farming. This contract production has formed the core of the relationship between U.S. transnationals such as Green Giant and Birdseye and the existing system of Mexican growers in the Bajio. In large part this was true because U.S. capital was not allowed to own land in Mexico. At this point, the transnationals can own land but do not want to be tied down to any one location given the rate at

November 18, 1998
which the natural resources of any specific locations can now be used up or the rapidity with which contradictions in the production process arise (Hellman, 1994; Watts, 1994; Borrego & Zavella, 1994; Doug Murray, 1996). Both agro-exporters and those foreign investors targeting the national market actually prefer contracts rather than direct ownership of land and production. This trend parallels patterns of foreign investment throughout the world, as investors have found that contract production rather than directly owning and managing large estates is more cost effective (Barry, 1994: 77).

In this system, investors regard land more as a factor of production than one of control or of market influence. Because land is considered more of an input than as capital, foreign firms gain "effective" control over agricultural land through their ownership of nonland equity capital. By reducing the fixed costs of foreign investors, the contract system ensures that individual growers bear most of the risk of crop failure. Also by not owning land and not directly managing labor, contracting corporations distance themselves from potential political conflicts (Barry, 1994: 78). Contract farming or contract production are the arrangements between a grower and firm(s) (exporters, processors, retail outlets, or shippers, for example) in which non-transferable contracts specify one or more conditions of marketing and production (Little & Watts, 1994: 3-4).

Fruit and vegetable processors, freezers, and canners in the Mexican Bajio illustrates how contract production—in this instance between U.S. agribusinesses such as Campbells, Heinz, Gerber, Del Monte, Birdseye, Simplot and Green Giant and for the most part heavily capitalized Mexican growers of strawberries, carrots, asparagus, corn and green beans—has developed since the late 1950s (Moulten & Runsten, 1986; Runsten & Archibald, 1986; Rama and Vigorito, 1979; Rama, 1985).

Generally, a U.S. agribusiness contracts to purchase that part of the harvest that meets specific quality standards, while providing growers with financing, technical assistance, seeds, and agrochemicals. Even when foreign investors are not involved (as is the case of many of the large Mexican growers in the Bajio) there is a strong foreign foundation to agroexport production in Mexico formed by imported agricultural inputs. Virtually all of the seed used in horticultural

*November 18, 1998*
export production comes from the United States, and only thirteen of the 41 main pesticides used in Mexico are domestically supplied active ingredients (Banamex, 1992; Barry, 1994: 78).

Initiated by the postwar industrialization of the U.S. food system, contracting expressed a particular integration of agriculture and a specific regime of industrial accumulation called emergent Fordist agriculture. Gerber, Campbells, Del Monte, and Heinz all established canneries in the northern border regions of Mexico between 1959 and 1963. These were geared almost wholly to the internal market but provisioned with raw product by large-scale, capitalized Mexican contract growers. With the collapse of local purchasing power after the 1982 devaluation of the peso, many of these enterprises shifted to the U.S. export market. Birdseye, which was in the forefront of what was to become the agro-maquila sector, established a freezing plant for broccoli, cauliflower, okra, and zucchini in 1967. The amounts of frozen and fresh vegetables produced under contract tripled between 1950 and 1980, but in the 1980s Mexican horticultural crops proved to be even more attractive to U.S. investment, drawing new capital and agribusiness investors (e.g., Green Giant to Irapuato in 1983) and resulted in a second boom. By 1992 the value of Mexican horticultural trade with exports to the U.S. and Canada totaled Canadian $1.77 billion. Exports to the United States dominated this flow accounting for 92.4 percent of the total. As Diagram #3 below illustrates, the U.S. occupied a very similar position with exports to Canada and Mexico totaling Canadian $1.73 billion in 1990.

(Insert Diagram #3 here)

Contract production facilitates global sourcing of agricultural products. The increased availability of fruits and vegetables in U.S. supermarkets testifies to the internationalization of agricultural production. No longer limited by seasonal availability, U.S. firms source their horticultural products throughout the world but mainly from Mexico, which supplied more than 80% of all fresh vegetables imported by the United States (Barry, 1994: 79).

November 18, 1998
In seeking to explain the particular logic of contracting in relation to the rise of an integrated global agro-food system Watts (1994) explores contract farming as a form of structural convergence between First and Third World agricultures. In contract farming, "the crop system must be embedded in the local, regional, and global constellations of state, political, and social forces." The proliferation of contracting in the recent past suggests certain parallels between the rise of flexible accumulation in advanced capitalist industrial organization and the restructuring and industrialization of agriculture in global agro-food systems. These confluences point toward one means by which agriculture and industry achieve a higher synthesis (Little & Watts, 1994: 24-25).

*Factories in the Fields*

Although the cash crops, particularly agroexports, offer better income potential than the traditional milpa cropping of corn and beans, increased agroexport production for the world market will not necessarily improve the lot of the rural population (Barry, 1994: 84). Mexico has a long history of agroexport production, and the peasantry has learned that the cultivation of agroexports does not hold the key to unlocking rural development.

For the most part, campesinos participate in the international agricultural economy mainly as seasonal labor. Only a small percentage of Mexican peasants who work as wage laborers in the farm economy find full-time jobs. Aside from the foreman and mechanics, most farm workers only find temporary jobs, which commonly pay only minimum wage and do not offer social security or other benefits. Because of the seasonal and migratory character of the agroexport work force, increased exports to the United States are unlikely to slow northbound immigration flows. In fact, by encouraging more workers to enter the internal migratory stream, increased agroexport production will most likely continue to spark new international migration.

The Bajio also fails to offer steady employment even though horticultural production is directly linked to export oriented agro-industry. It has been a regional center for U.S. agro-industry and since 1960 irrigated land and crop yields have increased dramatically, yet the region has still experienced a substantial loss in employment opportunities (Wilcox, 1993). As land has

*November 18, 1998*
shifted away from labor-intensive corn cultivation to more automated, single-harvest feed grains like sorghum and to horticultural production, the need for farm labor has decreased (Barry, 1994: 85). One problem is the increasing mechanization in the production of feed grains, another is that the new horticultural crops only require intensive farm labor during harvesting. The factories throughout the Bajio that freeze and can fruits and vegetables for the U.S., Canadian, and Mexican markets are new sources of jobs. But like production, food processing is highly seasonal. Because three-quarters of those employed in the processing plants are women who are usually young and have never previously been employed, the agroindustries do not cut unemployment among men or stem migration.

Agro-export production, like cash crops in general, largely bypass the small farm sector because the agro-industries and U.S. contractors rarely work with small farmers, preferring instead to contract production with large local landowners and entrepreneurs (Young, 1988). In areas where ejidatarios have had a stake in horticultural production, they are losing their access to the U.S. market as the Mexican government shifts from state supported to full-blown capitalist agriculture.

The rapid economic development in northern and central Mexico is leading to water shortages as industrialization and urbanization compete for limited land and water. Currently, most irrigation projects have only enough water for one crop. Another obstacle is the falling rate of public investment in agriculture, which makes additional government spending on new irrigation projects unlikely. Even if Mexico were to double its acreage from 2.5 to 5.0 million acres, it would still face tough competition in the U.S. market. California alone has 9.0 million acres under cultivation and new technological advances continue to increase productivity. Other Latin American and Caribbean nations are also increasing their agroexports to the United States (Barry, 1994: 87).
Wages in the Fields

The wage structure and gender of workers working for a larger grower of lettuce destined for the Canadian market in the Bajio are displayed in Table #7 below.

(Insert Table #7 about here)

Where the Workers Live

The urban Colonias (neighborhoods) in Irapuato, Salamanca, Celaya and Queretaro, together with the surrounding rural villages, supply the majority of the workers to the processing plants. Increasingly, more of the workers are brought in from the outlying villages as the workers within the cities do not wish to undertake the factory work at the wages offered. It was not completely clear why this was true. We suspect that it was a combination of the city workers having more options and needing more money. The village workers had lower costs and therefore could survive on the lower salaries paid by the vegetable processing plants. They can also augment their wages by growing food on their land. The workers from the villages are picked up in the morning and dropped off in the evening at the plants by buses or micro buses (which held about 25 workers each). This service is free and is undertaken by the processing plants as a way to access a steady and more willing labor from the outlying villages.

The Communities of Workers

Many of the colonias and outlying villages did not have sufficient services (water, sewer, roads, schools, clinics, garbage pick up, etc.). The housing stock is insufficient for the growing population. Many families that we encountered were extended families with grandparents and their children who in turn had children themselves all in one small house. Each subunit of the extended
family would have a room within the house. Most of the housing that we saw was very modest in
the city and extremely minimal and crowded in the rural villages.

The workers and residents of the urban colonias and surrounding villages have voiced
concerns about the rapidly growing population surrounding Irapuato. A petition entitled "Clean up
the Environment" was circulated by an ecological organization made up of residents of the urban
neighborhoods and outlying communities. Its stated objective is to get the city to clean up the
environment for this and future generations. At the same time, it identified the need to provide
critical services to communities at the outer edge of the city of Irapuato. The indispensable services
they requested are: potable water, drainage, electric lights, schools, transportation, markets,
telephone service, health services, protection, and recreational areas. The petition had 101
signatures.

Other forms of organizing were attempted, for example in 1993 when a group of workers,
oorganizers and city officials from Watsonville went to Irapuato to take a look at the food processing
plants in Irapuato and throughout the Bajio. The trip was paid for by the Teamsters International
and had the purpose of developing cross-border understanding and hopefully the basis for
transnational organizational efforts. The trip was an attempt at international solidarity and attempted
to clarify the kinds of issues and concerns addressed by both Mexican and U.S. workers about the
relocated plants and their long-term impact. Joe Fahey, one of the participants in the trip,
suggested that that effort went nowhere (Fahey interview, 1995). In no small part, I'm sure, due to
the fact that it would be hard to find the common ground between the losers and winners in the
international struggle for dollars and jobs.

The workers make ends meet by pooling their resources in order to pay rent, buy food, and
purchase clothing. In most cases the workers were glad to have their jobs, because it was a job and
a salary and it represented survival. They did not see themselves as getting ahead but instead barely
making it. It was interesting to us (Pat Zavella and myself) that many of the workers chose to eat
at the plant cafeteria as opposed to taking a lunch. They said it was a good lunch and cheap, they

November 18, 1998
paid 3 nuevos pesos for it. This represented a good percentage of their daily earnings of between 18 and 21 nuevos pesos. Others took their lunch with them.

Families with some land could also raise animals or plant corn and vegetables in order to supplement their incomes. In these cases they were much better off than most, as one of the families we interviewed attested to. For most families this was not an option and they were more marginal.

*Literacy Project in the Villages*

PLAMACL is a literacy project which attempts to work on the issues that people in the villages think important. The project is considered important because it initiated a series of projects: literacy classes, sewing classes with bulk purchases of materials so that people can purchase small amounts of cloth, thread, etc., in order to sew their own clothes, a savings program so that the individual/group could use the savings to start up small projects/businesses in the villages, birth control education in an effort to control the size of the families, especially as the women were increasingly working outside of the home at the processing plants and were still expected by many families (but not all) to do all of the work within in the home—caring for the children, cooking, cleaning, etc.

The literacy-based community organizations were also making attempts at organizing politically within the communities to elect their own local representatives in order to get day care centers, schools, playgrounds and so forth. It is interesting that while organizing is squelched within the vegetable processing plants it has burst out within the communities. The women that we met and interviewed were very energetic and had a very clear vision of the importance of taking charge of their lives outside of the realm of work. They were less interested in organizing within the processing plants.

This experience is similar to that of workers along the U.S./Mexico border's maquiladoras. In that setting as well, the women in the plants surrounding Ciudad Juarez first organized outside of the factories around issues central to their survival in the communities and at home. This
community platform could then be used as a base to begin to penetrate the inner realms of factory work. To begin in the factory was both more difficult and less critical given the high rate of turnover, which sometimes approaches 100 percent a year.

The Migrant Workers

The areas of Mexico like the Bajio where modernized cash-crop and agroexport are most advanced, are also the areas where rural poverty is most dehumanizing. The farm workers who weed the fields and pick the produce for the international market are part of an expanding rural underclass of the landless and land poor who look for seasonal farm work for their economic salvation. It is a salvation which comes day by day, since there is very little security that there will be work for the next day. The jornaleros are commonly hired by the day. If the market is good and there is work, they may be hired again tomorrow. If not, the farm worker families pack their morales to join the migrant flow to another state where they hear work is available for picking melons, strawberries, tomatoes, lettuce, or other cash crops. They are the golondrinas (swallows) of the agroexport economy who follow the crops and the seasons throughout Mexico, hoping only that there will be enough work to ensure that their families survive another day, another season (Barry, 1994: 82).

As the minifundio or ejido provides only a home base and a declining part of their survival needs, an estimated 80 percent of the campesinos must migrate. As a consequence, most peasants are, in fact, rural proletarians who depend on seasonal planting, weeding, and harvesting work on estates that are sometimes very far from their villages. The coffee, vegetable, fruit, cotton, and sugarcane harvests require one million jornaleros. Other cash crops, including basic grains, require hundreds of thousands more. The landless and land poor peasants looking for seasonal work in Mexico are estimated to be between 4.5 and 5.6 million (Barry, 1994: 83). As the rural economy fractures and disintegrates, women and children increasingly constitute an ever-increasing percentage of the farm worker population.

Many of these migrant families have their own mental maps, a changing geography of survival driven by growing seasons that takes them from their peasant villages to pick coffee in Chiapas, Morelos and Veracruz for sugar and the great northwest and the Bajio

November 18, 1998
for the fruit and vegetable harvests. The young and more ambitious migrate to the United States. They go to the strawberry fields of California, the berry bushes of Oregon and Washington, as well as the fish canneries in Alaska. (Barry, 1994).

VI: Conclusion

This essay has attempt to briefly describe the outmigration of frozen food processing from the Pajaro Valley in California and the introduction of the export-oriented agroindustrial production focused on frozen vegetables throughout the Bajio, Guanajuato. The broader context for this expansion is the installation of the neo-liberal model of economic development in Mexico. The introduction of the neoliberal model in Mexico, in turn, is integral to North American integration and development driven by the competition between the globes triad—the core nations of Japan, the United States and Germany. In turn, all of these processes at the scale of family, community, regions, nations and transnational regions are housed within the overarching processes of global capitalist accumulation.

The spread of the export-oriented industrialization (EOI) within the agricultural sector and the current crisis in Mexico surfaces a long-standing debate as to the future of the agricultural sector in Mexico's economy and society (Barry, 1992).

One side argues that agriculture must continue its historic function of providing dignity, jobs, and sustenance to Mexican peasants. Closely related is the argument that the fundamental purpose of the agricultural sector is to feed the Mexican nation. That agricultural policy should give Mexico food security by making itself sufficient in basic food commodities. That agrarian programs must reach out to campesinos with credit and technical assistance while continuing the country's land distribution program and that agricultural development in Mexico be more balanced, rather than prioritizing export production.

The other side argues that the world has become economically integrated, with prices and supply determined by the global market. They argue that instead of continuing to protect and subsidize Mexico's farm community, the agricultural sector must be transformed by putting a premium on productivity and the ability to compete in the global marketplace. The state must direct

November 18, 1998
its limited resources to those farmers and investors that are commercially viable. They propose the neoliberal modernization of the agriculture sector and opening the way for the full scale capitalist transformation of Mexican agriculture.

In the long run, what might this march toward integration in North America bring to the regions and communities of the Bajío and the Pajaro Valley? Especially as water and soil are depleted, urban and industrial and commercial uses successfully replace prime agricultural land, as workers can’t get adequate housing, education, services, and as the ecological contradictions get extreme (e.g., pesticides no longer can control the Diamond-Backed Moth and you have to have state/corporate-required breaks in the growing cycle throughout the Bajío in order to bring infestations caused by monoculture agriculture under control. Both regions and their ideal climates may have to be abandoned by global capital for new and probably less productive areas.

In short, transnational agro-industries and states continue to use up workers, communities, and regions on both sides of the border in the pursuit of the neo-liberal dream and global capitalist accumulation. The combined and uneven development of vegetable foodprocessing sector across North America comes at an enormous cost to communities, workers and families on both sides of the border because both regions are caught in a downward spiral.
Bibliography

Bardacke, Frank. 1992. "Not Enough Water to Wash Their Sins Away." CES/CNS Pamphlet, Local Ecological History Series. P.O. Box 8467, Santa Cruz, CA 95061, USA.

*November 18, 1998*


Comision Estatal de Agua y Sancamiento de Guanajuato (CEASG), 1994). "Realizacion del Diagnostico de la Problempatica, el establicimiento del los postulados basicos, la realizacion de los programas de manejo de cuencas, uso eficiente del agua, y de agua potable y la integracion del plan hidrolico de Guanajuato." TOMO I, Diciembre de 1994. Elaborado por ECO- Inginieria. A. de C.V., Consultaores.

Deloitte & Touche. 1991. The Frozen Food Processing Industry in South Santa Cruz County. Prepared for the County of Santa Cruz, April.

November 18, 1998


November 18, 1998


November 18, 1998


Register Pajaronian. February 7, 1995).

Register Pajaronian, November 29, 1994).


November 18, 1998