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The Curse of the Rio Grande

Contaminated irrigation in the Valley of Querendaro

MORELIA, Mexico

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By William F. Foote

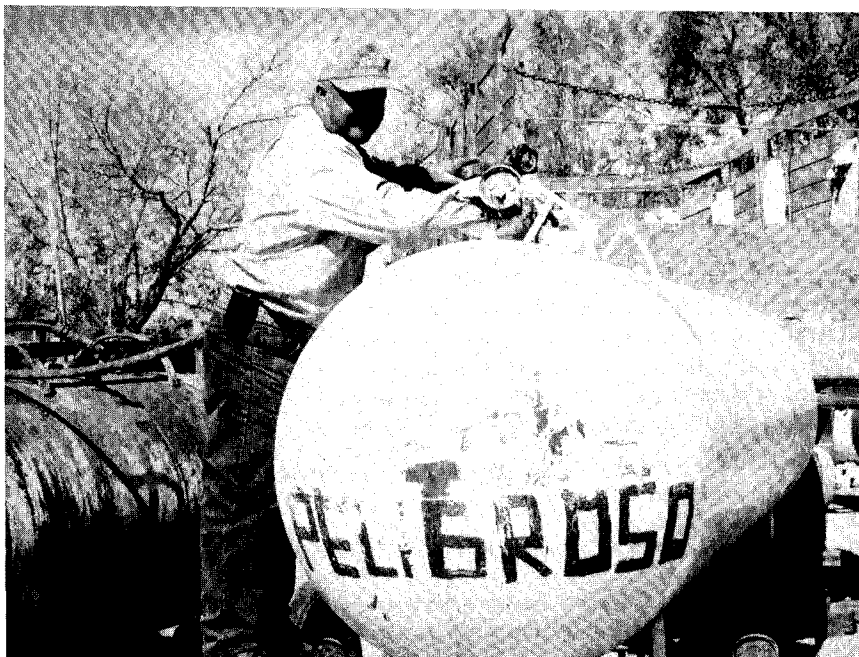
In a hot valley in Mexico's western Sierra Madre, near the city of Morelia, Salomon Garcia Barrera fastened the nozzle of a pump hose and jumped down from a fertilizer tank. "O.K., let's go to my office," he said, leading the way through a cluttered equipment yard. Startled pigeons nibbling scattered corn kernels swooped off the ground before us, circling above and settling on a nearby John Deere tractor.

Beyond mud-caked machinery, great swaths of farmland soon emerged. Irrigation canals crisscrossed green fields, drawing lines through the flat river basin. The big midday sun, without a wisp of cloud to soften it, hammered the crops as far as a squinted eye could see. "What are you growing?" I asked.

"Wheat and alfalfa," Garcia grumbled, as we entered the warehouse. He removed his yellow baseball hat with a flying corn cob logo, revealing gray hair, cropped to its roots.

"It's a crying shame, really," he said, stroking the stubble on his chin with thick, greasy fingers. "We should be growing winter fruits and vegetables for export out there. The government won't let us though, thanks to the *aguas cochinas* (pig waters) that Morelia dumps into the valley. Imagine, 15,000 hectares of fertile irrigation district, all of it contaminated."

Around here, cursing the Rio Grande (not the Texas one), which feeds the Valley of Querendaro, is about as popular as blessing the Virgin Mary. Flowing through the



Solomon Garcia Barrera works on his fertilizer tank.

city of Morelia before reaching the valley, the river constitutes an open sewer into which an estimated 1.2 million people and numerous industries dump their toxic payload: fecal matter, hospital rubbish, motor oil, detergent, heavy metals. With no treatment whatsoever, this flushes into the troubled canals of Irrigation District No. 20.

Significantly, the prevailing stench in Querendaro Valley, located in the state of Michoacan, characterizes river basins across Mexico. The National Water Commission — *Comisión Nacional de Agua (CNA)* — reports that half of the country's surface water suffers from "high contamination."¹ An estimated 90 percent of companies in Mexico dump industrial waste clandestinely into municipal drainage systems or federal bodies of water. These toxins flow inexorably toward fertile valleys and irrigation ditches.² This might not seem so bad if Mexico's shortage of water were not particularly acute: the runoff from the Mississippi River alone exceeds that of all of the country's rivers.³ More than half of Mexico is arid, only 20 percent has irrigation. One begins to understand why former Mexican President Miguel de la Madrid once noted that "water is one of the principal limitations on our development."⁴

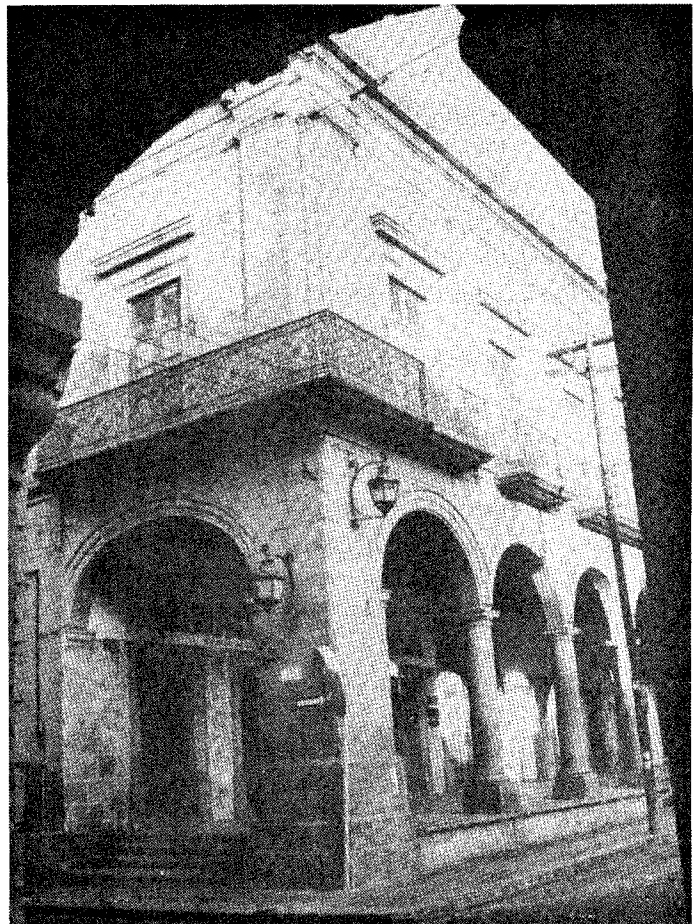
The World Bank says water-related diseases account for eight percent of all illnesses in developing countries.⁵ Typhoid and cholera aren't the only obstacles to Mexico's progress, however. Polluted rivers also threaten to poison the country's free-trade strategy. In broad terms, NAFTA resulted in the gradual opening of the Mexican grain market to U.S. exports in exchange for the opening of the U.S. fruit and vegetable market to Mexican exports.⁶ This arrangement has produced a widening trade imbalance for Mexico, which imported U.S.\$1.5 billion more in agricultural food products than it exported to the U.S. in 1994.⁷ Mexico plans to correct that deficit by boosting counter-cyclical horticultural exports, like winter strawberries and tomatoes.

Who will produce them? Certainly not Mexico's 2.8 million small-farm families, or roughly 14 million people who depend on the six-month rainy season to grow the barely profitable kernel corn used for making tortillas. Rather, such exports will come from well-heeled farmers like Garcia, who owns 80 acres and rents another 150 of flat valley land. He can mortgage this property as collateral for bank loans, which provide access to vital inputs such as seeds and fertilizer

as well as pickup trucks, tractors, warehouses — in sum, everything Mexico needs to rise to the NAFTA challenge. Everything, that is, except clean water.

Without it, Garcia has no choice but to continue growing basic grains, the prices of which have plummeted under the weight of foreign competition. If what the farmer says is true — that he's barely staying afloat harvesting wheat and alfalfa, even with all his tractors and technology — then it would appear that Mexico's mule-riding, corn-planting majority are condemned to drown in the dirtiest of water.

Inside a 300-year-old *cantera* stone mansion in downtown Morelia, Don Gabriel de Perez Gil, 78, recalled taking the train as a boy into the Valley of Querendaro to buy fresh produce. "Oh yes, there were green *serrano* chiles piled high, so many fruits and vegetables they had to sell them in Mexico City," said Don Gabriel underneath the 25-foot wood-beamed ceilings of the



Don Gabriel's 300-year-old mansion in Morelia, Michoacan.

1. *Cambio de Michoacan*, Jan. 28, 1996.

2. *El Financiero*, Nov. 30, 1995.

3. Alan Riding, *Distant Neighbors: A Portrait of the Mexicans*, (Vintage Books), 1984, p.189.

4. *Ibid.*, p.189.

5. Ismail Serageldin, *Toward Sustainable Management of Water Resources*, (World Bank), 1995, p.3.

6. Tom Barry, *Zapata's Revenge: Free Trade and the Farm Crisis in Mexico*, (South End Press), 1995, p. 69-71.

7. *Ibid.*, p.88.

house he inherited from his grandfather, a powerful cattle rancher from Tierra Caliente in southern Michoacan.

During the 19th century, his family was one of some 3,000 who owned half of Mexico and lived in magnificent *haciendas*. In Michoacan, the respectable elite also kept houses in Morelia. Only a handful of the erstwhile gentry still live in them today. Behind thick oaken doors, the landless nobility shelter their neoclassical inheritances and their memories from a modern Mexico they would rather forget. "I remember playing as a kid at the house of the Huerta Corujo family. They owned much of Querendaro Valley back then," said Don Gabriel, sitting beneath the flags of Spain and Madrid that hang in his great dining hall.

After the violent 1910 Revolution, rambling *haciendas* were seized from their Spanish owners and the land was redistributed to peasants. Today, the only lasting remnant of the vast private estates in the Valley of Querendaro are the decaying irrigation canals, and a few old *campesinos*.

In early January, one of them strolled in sneakers and a straw hat through the heart of the valley, just outside the sun-washed town of Uruetaro. Alonzo Guzman, 86, had just arrived from his adobe house at the nearby cornfields. He pointed his cane toward three hectares of land just off the road. "I received that plot over sixty years ago and I still plant it today," said Guzman to a stranger.

In the 1930s, President Lazaro Cardenas distributed 18 million hectares — 12 percent of the entire country — to 810,000 peasants, making good on the famous Article 27 of the 1917 Constitution, which established their right to a piece of land. Unfortunately, most farmers received tiny plots on *ejido* (communal) farms located in arid land cruelly unsuited for agriculture. Guzman got lucky, however. His plot lay smack in the middle of an irrigation district. Hence, he could grow fruits and vegetables in addition to corn, the *campesino's* national obsession.

"About 30 years ago, an *americano* came here with a special kind of cauliflower," the old man recalled, motioning for his friends to come and meet the *gringo*. "I'd already harvested carrots, celery, tomatoes—it's good soil here, you see. But when we planted that cauliflower, boy did it grow; as big as pumpkins!" His octogenarian

buddies smiled and nodded in agreement. "But now," Guzman added, turning abruptly toward the others who then pointed together at a nearby canal, "we've got *aguas cochinas* (pig waters)!"

In 1990, the National Water Commission (CNA) banned the production of fruits and vegetables irrigated with surface water in the Valley of Querendaro. "We had determined the area to be contaminated," said Leon Torres, director of CNA's Irrigation Direct No. 20. "We applied the new federal law, identified numerous farmers watering plots of lettuce, cilantro, carrots, chiles, and were obliged to issue hefty fines."

Since then, CNA has monitored the valley's water quality regularly. In 1994, a study of seven agricultural zones in Michoacan reported that Querendaro Valley had the highest degree of water contamination in the state. The study attributed this to the basin's proximity to Morelia, the largest city in Michoacan. Contamination indicators ranged from I to IV, the former representing less than 1,000 fecal units per 100 milliliters of water: clean enough for export production. The valley qualified for level IV, indicating 100,000-plus fecal units in the same size water sample: dirty enough for epidemics.⁸

Indeed, biologists at the University of Michoacan San Nicolas claim that "contamination from the principal river in the region is the source of a majority of ailments suffered by communities located near the Rio Grande of Morelia, most of which comprise gastrointestinal diseases transmitted by vector agents such as rats and flies."⁹

Over the years, CNA has found a solution of sorts for dirty-water problems: sinking wells. Some farmers in Querendaro Valley now draw relatively clean water from approximately 100 of them. The Morelia Aquifer, a subterranean sponge of porous limestone that holds huge volumes of slow-moving ground water, provides irrigation for about 15 percent of the valley. "Thanks to the wells, we're now producing 500 acres of *chile serrano*, onions, carrots, and other vegetables with type I and II irrigation water," said Torres, cheerily. That's good news, no doubt.

Problem is, well water ain't cheap. Since Mexico's financial crisis broke early last year, rising electricity tariffs have driven the cost of groundwater



Alonzo Guzman, 86,
resting on a pipe.

8. "Diagnostico preliminar de la calidad bacteriologica del agua utilizada para riego en 7 zonas agricolas del estado de Michoacan," *Revista de la Universidad Michoacana*, Oct.-Dec., 1994.

9. Guillermo Vargas Uribe, "Deterioro Ambiental en la Cuenca del Rio Grande de Morelia," *Revista de la Universidad Michoacana*, Oct.-Dec., 1993.



Virginia Sanchez's radishes at the Mercado de Abastos in Morelia, Michoacan.

pumping sky high.

One recent morning at the *Mercado de Abastos*, an outdoor wholesale market in Morelia, I asked a woman named Virginia Sanchez how much it cost her to irrigate the mountain of radishes she had assembled. After a truck roared past laden with bright red tomatoes from the northern state of Sinaloa, she answered: "15 pesos per hour for two hectares which need 50 hours of well water per cycle [i.e., NP\$750, or U.S.\$100]." I asked if that was more than what she would pay for surface water. "Triple," she said.

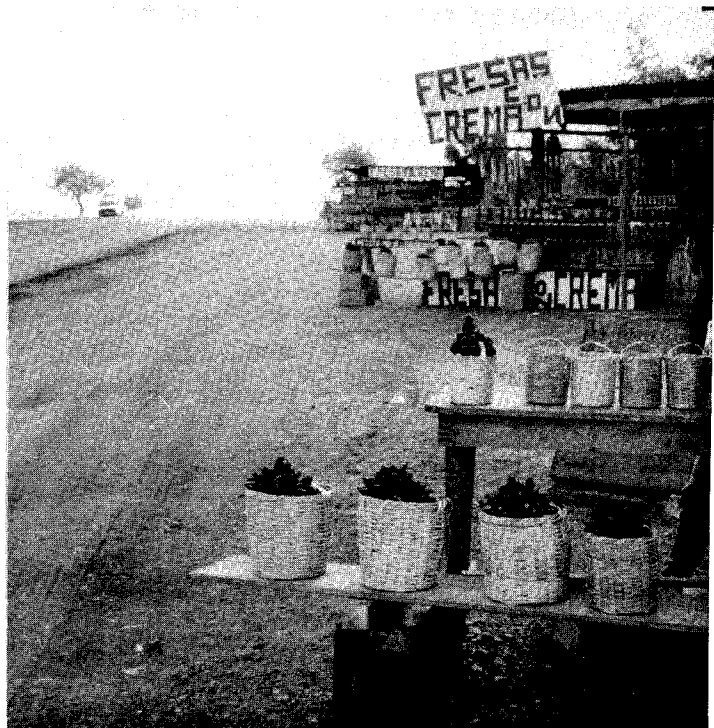
Some local producers appear to have found a way around the problem, however. "It's simple," Torres explained. "They wait until six or seven in the evening, when they know local water authorities have gone home, then they turn off the well and irrigate from the canal."

Unfortunately, farmers appear to be sneaking dirty water across the state. Drive west from Morelia to the city of Zamora, the strawberry capital of central Mexico, for example. Pass countless stalls along the highway offering baskets bursting with red fruit. Before you stop and pour on the cream, however, ask yourself: why don't they sell in the market?

"Forget about the market," said Alfonzo Urbina, director of special projects for the state government's Municipal Support Office in Morelia. "The only really safe strawberries in Mexico are exported to the U.S. We don't have reliable controls for local fruit consumption. In

Mexico we eat what we get, amoebas and all."

The local press has picked up the story. In late 1995, *La Voz de Michoacan* reported that for the autumn irrigation period in the Valley of Zamora, the Ministry of Agriculture had authorized the planting of 1,200 hectares of strawberries. By October, however, over 2,500 hectares had been planted. In addition, the article docu-



Coyotes hawk strawberries on the road to Zamora.

mented the production of 550 hectares of onions, 820 of tomatoes, 2,600 of potatoes, and smaller amounts of cabbage, lettuce, broccoli, carrots and cucumbers, all with contaminated water.¹⁰

The *campesinos'* logic for such tainted production is sound. They refuse to accept planting restrictions on the grounds that they did not personally contaminate the water. As one farmer interviewed stated: "Why should we pay for crimes we didn't commit?"¹¹

And so it goes. Authorities fail to enforce the law. Lucky farmers with access to well water increasingly can't afford it. The others continue to irrigate with the only water they have, hoping to sell something to the local food processing industry.¹² Otherwise, they defer to the "*coyotes*" (middlemen) on the side of the highway, "as it has been for so many years," regretted one local reporter.¹³ Is there no remedy for this headache?

The Center for Sustainable Production—*Centro de Producción Sostenible* (CPS), an agro-research facility located in Querendaro Valley, thinks it has found one: aspirin. Apparently, if farmers spray crops with dissolved aspirin, which restricts the opening of the pores of plant leaves, they can reduce water requirements by half. Logically, that would cut well-pumping bills in half as well, making healthier irrigation more affordable.

"We monitor the entrance and exit of water into plants," explained agronomist Blanca Leticia Gomez, 36, bending to stroke spindly wheat seedlings beside the center's one-story concrete office. "Leaves have pores like our skin, through which 90 percent of their water escapes. Aspirin closes some of them, helping to make plants more efficient, physiologically speaking. It's also harmless and cheap, only 40 pesos (U.S.\$5.33) per hectare."

The center began experimenting with wheat. Spraying the crop with aspirin, they claim to have dropped the usual number of required irrigations for a wheat production cycle from four to two. That's good news for states like Michoacan, where one year of low rainfall can reduce the number of hectares of wheat planted from 50,000 to 25,000.

With funding from the federal government and well-off local farmers like Salomon Garcia, the CPS is working with 155 producers on 350 hectares to dig up further remedies to the valley's water problem. The center's 12-person team commenced operations just ten months ago. Ten minutes of conversation over cof-

fee at their headquarters, however, was enough to note that, notwithstanding the aspirin, the scientists have uncovered far more problems than solutions.

"You can't believe the condition of some fields out there," said Mario Zepeda, who runs the office along with Gomez. "Last year, in our 350-hectare testing zone, we found areas where no plant would grow; not even sorghum, one of the toughest crops." He underlined that "the problem of contaminated irrigation water is not limited to the restriction of harvests [e.g. fruits and vegetables]. Rather, it affects land productivity levels for any type of crop."

Gomez set down her mug and chimed in. "I'd say about a quarter of the fields suffer from truncated growth. To give you an idea, in 1995 a good crop of wheat in the valley yielded 11 to 12 tons per hectare. Damaged fields produce about one ton," said Gomez. She concluded that "industrial and urban waste is destroying the valley. We can't go on like this."

Debates rage over the cause of falling land productivity. Is it, as Gomez and Zepeda suggest, due to the toxic stew that Morelia dumps into the irrigation district? Or has the earth soured from high salinity, a generalized problem affecting both contaminated and clean irrigation districts all over Mexico? The CNA argues the latter, pointing out that reduced crop production due to salinization is equivalent to an estimated one million tons of grain annually and affects at least one of ten irrigated hectares in Mexico.

Salinization, contamination—what's the difference, right? The difference is that CNA, as the government agency in charge of building sewage treatment plants in Mexico, is partially responsible for the toxic payload gutting the valley. The abandoned remains of an unfinished sewage treatment plant on the outskirts of Morelia attest to the agency's shortcomings [see WF-3]. As long as those ruins remain ruins, CNA officials will downplay the impact of contaminated water on the valley's lagging productivity, pointing instead to an inefficient drainage system that impedes the earth's natural cleansing process.

Driving beside an irrigation duct just outside the town of Alvaro Obregon, the valley's urban bellybutton, Zepeda pointed toward a barren plot of land. "Looks like snow, doesn't it?" he said, referring to the white, frost-like flakes covering the jagged rows of plowed earth. We had just entered the trouble zone of the CPS *sales* (salts), a generic term that refers to the mixture of sodium, household detergents, and sulfuric carbonate that CRISOBA [a local paper mill] dumps

10. *La Voz de Michoacan*, Oct. 29, 1995.

11. *La Voz de Michoacan*, Dec. 10, 1995.

12. Some of the fruit goes into processed foods, which feature less stringent sanitation controls. El Bajio, the fertile agricultural region located northwest of Mexico City, has become a center of U.S. agroindustry, attracting such companies as Del Monte, Anderson Clayton, Campbell, Green Giant, and Bird's Eye.

13. *La Voz de Michoacan*, Oct. 29, 1995.



Mario Zepeda breaking sales in the testing zone of the CPS. The white crust on the ground resembles snow, a sign of trouble.

into the Rio Grande.

The agronomist left the car to grab a wedge of dirt. He broke it apart to reveal crystallized *sales* as white as the clouds hovering two fists above the mountainous horizon, just over Morelia. I recalled my conversation there at the CNA offices: "We undertook a study of CRISOBA's waste. Although it was never completed, in our opinion, the company does not contaminate the valley," said Leon Torres, who then proceeded to cast doubt on his former assertion: "Although I understand that they shut their water treatment facilities off at night, and on Sundays." The mill runs 24 hours a day.

Back on the rocky road, we rattled up alongside an ancient *campesino* irrigating his field, a smelly process. He pointed his machete toward the water and held his nose, laughing. The farmer remembered fishing for carp and skinny-dipping as a boy in the irrigation canals. "Not any more," he assured us, chuckling again.

Back in the car not far down the road, Gomez pointed out the detergent spume bubbling five feet above the edge of an irrigation ditch, protruding over a bed of green water lilies like the bloated throat of some tropical frog.

"Lilies grow in water when there is an overabundance of nutrients from organic material," Gomez explained, bumping up and down in the back seat. "It's a huge problem. They spend a fortune trying to rid the canals of lilies. If only we could come up with a productive use for them, we'd make millions. But, with all the fecal matter dumped into the Rio Grande, they just keep growing and growing."

Torres had another take on the poop. "Organic matter



An old campesino irrigating his field, a smelly process.

is fertilizer, you see," said the official. "We enjoy good yields here in the valley, in corn, sorghum, alfalfa and wheat. There are people who produce ten tons of corn per hectare. The valley's problems stem from poor maintenance of the secondary drainage system, not contaminated water. So, I don't know to what extent it would help to treat the water and thus remove the fertilizer. I'm not saying we don't need a treatment plant, I just want one that removes the bad and leaves the good."

Local producers consider Torres's attitude a cop-out. Salomon Garcia, the well-heeled wheat farmer, said if Morelia and CRISOBA contaminate the water, they have an obligation to deliver it just as they receive it, clean. "It's urgent that they build the treatment plant this year before CRISOBA renders our land nonproductive, which wouldn't be good for anybody," he stated.

However, an engineer who works for Torres at CNA called CRISOBA a scapegoat. "I've always told the farmers that it's not the paper mill," said Jose Luz Paz Velazquez. "They claim the brown blanket covering the water comes from CRISOBA, for example. I remind them that in the city of Morelia, about 5,000 people change their oil on a daily average. Assuming four liters per car, that's 20,000 liters a day, much of which ends up in the river."

Merited or not, CRISOBA presents a natural target for frustrated growers, who have organized themselves in the past to demand the company's closure. Five years ago, in fact, following a week of violent demonstrations outside the Governor's Palace in downtown Morelia, *campesinos* succeeded in forcing CRISOBA to suspend operations, albeit momentarily.¹⁴

"We've changed our strategy since then," said Garcia, a spokesperson for the valley producers during the protests. "Now we're trying to work together with the city to solve our problems, avoiding conflict," he explained, adding that "things have changed in the valley."

I wouldn't have guessed it driving back to Morelia from the CPS testing ground, as the sun set over the mountains on *campesinos* tending their jagged rows with brown and gray mules. Dark volcanic fields beneath them erupted with an ancient variety of cream-colored corn, a reminder of the *Purépecha* people who tilled the misty basin half a millennium ago. Time-worn church bells pealed for the evening mass, summoning the farmers to old mission churches to give



Detergent foam spilling over the water lilies that suffocate irrigation canals across the Valley of Querendaro.

thanks for all their blessings, to keep the faith, to have the humility to accept that which cannot be changed, like that stench in the water, the curse of the Rio Grande.

"Salvation through privatization." So sayeth the World Bank. Private partnerships and community participation, the keystones of a new gospel that's swept the nation. A devolution revolution, and word has it that irrigation districts have been put on the block too. Might these northern winds of change reach the Valley of Querendaro?

"By the end of 1994, full or partial management of responsibility for 55 irrigation districts with a command area of about 2.5 million hectares had been transferred to water-user organizations. The reform program has attracted the attention of irrigation officials from other developing countries..." reports the Bank.¹⁵

Unfortunately Michoacan missed out, according to local representatives of the National Institute of Forest and Agricultural Research — *Instituto Nacional de Investigaciones Forestales y Agropecuarias* (INIFAP). Such privatization has been limited mostly to the richer farm states of northern Mexico, according to Dr. Sachez Brito. "The first one to transfer irrigation management to the users was Sinaloa," he said. "They say it gave

14. Patricia Avila Garcia, "Estudio preliminar sobre el deterioro socioambiental en la ciudad de Morelia: el caso del agua " *Urbanizacion y Desarrollo en Michoacan*, (El Colegio de Michoacan), 1991, p.254.

15. Ismail Serageldin, *Toward Sustainable Management of Water Resources*, (World Bank), 1995, p. 24.

excellent results, but we haven't experienced this process in Michoacan, yet."

Torres called Brito sadly mistaken. "With all due respect, he doesn't know what he's talking about," said the CNA official. In August, 1994 local water authorities allegedly transferred all of the state's irrigation districts, except for three municipalities. "We had to, it was the law," Torres explained.

Historically, CNA handled everything in Irrigation District No. 20: infrastructure maintenance, technical assistance, resource management, project investment, etc. Now the agency just delivers the water to the system and provides technical support. *Asociaciones civiles* (user associations) in each *modulo* (subsystem) take it from there. "We granted concessions to all the infrastructure for 99 years, placing the users in charge of maintenance and service billing," said Torres, concluding that "there's one major problem: no one wants to pay."

In Mexico's northern states, local producers financed much of the cost of restoring their irrigation districts. In Sinaloa, for example, water authorities carried out feasibility studies to determine the price of restoration per hectare. Next came socio-economic studies to discern what users were able, or willing, to contribute. Most projects went ahead with a 50/50 blend of funding from the federal government and the users. "We tried to do the same thing here in the valley and they refused to pay a cent," said Torres.

He blamed this on Michoacan's taste for pork-barrel populism. "The state still suffers from an overdose of paternalism and *Lazarismo*.¹⁶ People here think the government owes them everything. It's different up north, however. I know because I worked for the CNA in the state of Tamaulipas [on the Texas border] for ten years. Up there, being so close to the U.S. border, *gringo* capitalism rubs off on people."

Others sympathize with the local farmers' tight-fisted stance. An agronomist with the State Ministry of Agricultural and Forest Development, Jesus Mondragon Espinoza, called CNA's transference of Irrigation District No. 20 premature. "Farmers want to assume responsibility for the system, once it works. Yet it's a disaster now. Wells need restoration; the drainage system's clogged, has been for years, hence the fields suffer from waterlog and salinization. Privatization implies capital costs they simply can't afford," said Mondragon, who offers technical assistance to rural infrastructure projects throughout Michoacan.

Interestingly, Torres agreed. "I was against the decision from the start. I knew the district was very old and lacked adequate planning. A lot of work needs to be done and local farmers don't have any money. It was

hard for us to let go," he acknowledged, concluding that "it was federal policy, however. The decision came from above."

Sitting in his office warehouse in Querendaro Valley, Salomon Garcia gazed out the window at a load of alfalfa rolling onto a truck scale he had installed recently. "Water authorities should dig deep ditches and apply water every six months to cleanse the valley's non-productive fields," he demanded. "Until then, they can't expect us users to manage the district, especially considering that contaminated water prohibits us from planting more lucrative crops. Today's profit margins barely pay for three meals a day, let alone for the restoration of the valley."

Garcia put his baseball cap with corncob logo back on, signaling the end of the interview. I thanked him for his time and returned to the car, passing a gang of impoverished *jornaleros* (rural wage laborers) taking a lunch break in the shade. The sweat-soaked workers heated tortillas over an open fire, the corn for which they'd probably grown on little three-hectare plots, the average holding in the valley. As I pulled out of the driveway, surveying the 200 fertile hectares that Garcia controls, it occurred to me that all users were not created equal.

After lunch one balmy afternoon, Don Gabriel relaxed beneath the limestone arches of the second-story balustrade of his home. Rising from the cobblestone patio below, the sound of a trickling fountain echoed gently off the pink rock walls, lulling him to sleep. A ritual that predates the Revolution, my landlord's nap occupies the same spot, chair, and angle in the sun that his dad and grandfather enjoyed all their lives. As the grand old man slumbered, I recalled our lunch time conversation from the servants' quarters that my wife and I rent.

"Those guys in the Valley of Querendaro are the modern equivalents of 19th century *hacendados*," said Don Gabriel, dressed in elegant yet musty lunch attire. "Revolutionaries broke the back of the *haciendas* by expropriating our estates, and for what? So that a few wily peasants could rise up and take our places?"

Predictably, many Mexicans object to his view. Urbina of the Municipal Support Office acknowledged that land concentration in the valley has increased, but discounted any comparison to the *haciendas*. "In those days, Querendaro Valley had estates of many thousands of hectares. Nobody owns even close to that now," he said, adding that "at least wealthy farmers today worked for their spoils."

Currently, three men control the most fertile land in

¹⁶ *Lazarismo* refers to the adulation of Lazaro Cardenas, Mexico's most revered president who governed from 1934-40 and undertook massive land redistribution in favor of nearly one million *campesinos*. Born and raised in Michoacan, Cardenas also served as state governor, leaving behind a leftist legacy that continues to shape the local political and economic arena.



Don Gabriel napping under the limestone arches of his house and inheritance.

Querendaro Valley, according to Blanca Gomez of the Center for Sustainable Production. Alfonso "Poncho" Lemus, president of the valley's Union of Producers, plants 300 to 350 hectares per season, owning 100 and renting the rest. Salomon Garcia, the union's treasurer, controls another 200, as does Mr. Mejia. "They all started as poor *ejidatarios* (communal farmers) about 30 years ago," said Gomez.

How did they accumulate so much land? Some point to Mexico's recent neoliberalist reforms. During the early 1990s, the government of President Raul Salinas de Gortari undertook a radical restructuring of the farm sector that was consistent with his commitment to principles of private property and free market. "The overall objective was to make Mexican agriculture more efficient and competitive and less dependent on state support," writes author Tom Barry.¹⁷

In 1992, Salinas pushed through an historic reform, radically revamping Article 27 of the 1917 Constitution, which established the *campesinos'* inalienable right to a piece of land. The reform scrapped traditional *ejidos* (a community-based system of land tenure) from the market. This opened the way for *ejido* privatization, grant-

ing *campesinos* the freedom to buy, sell, or rent their communal lands. Freedom, in other words, to do exactly what they'd been doing, albeit clandestinely, for years.¹⁸

In reality, Mexico's current land concentration began decades ago. No doubt peasants had cause for optimism during the Revolution. Emiliano Zapata promised "*Tierra y Libertad*" (Land and Freedom) for all *campesinos*. In the 1930s, their hopes endured with President Lazaro's massive land redistribution. By the late 1940s, however, the tables had turned.

"In 1947, the 'counter-reform' in agriculture took place.... The principal effect of these reforms was to protect existing estates from expropriation and to create *neo-latifundios*. Since individual members of a single family were regarded as separate small landholders, large estates could exist within the law. Similarly, a landowner could put various sections of his property in the names of his farm hands.... In every state, there survived or emerged landed *caciques* who controlled much of production and commerce in their regions," writes Alan Riding in his book, *Distant Neighbors*, a synthesis of 20th century Mexican history.¹⁹

Despite these historical facts, critics today focus on the recent and controversial amendment to Article 27. National Farm Workers Union chief Federico Ovalle said recently that the Salinas reforms were designed to push small farmers off the land, forcing them to migrate to Mexico's already-crippled cities, or abroad.

"The amendment constitutes a spearhead for the expulsion of Mexico's peasantry from the countryside, forcing thousands of people every day to seek better lives in the U.S. Four out of 10 farmers today have quit their land, leaving two million hectares [across the country] to wither in abandon," said Ovalle to the national press.²⁰

The Valley of Querendaro is a case in point. "Most of our local farmers have migrated to the U.S., renting their land before they go to the three men who control the valley," said Blanca Gomez of the CPS.

"I'm just glad the lands weren't abandoned, as so often happens in Mexico," said Urbina of the Municipal Support Office. "Let's be realistic. Small farmers around here are starving. Over 90 percent of the valley has no access to credit. They can't pay for inputs, they can't compete in the free market. So they say forget it and migrate. Thank God there's someone here to rent their land while they're gone."

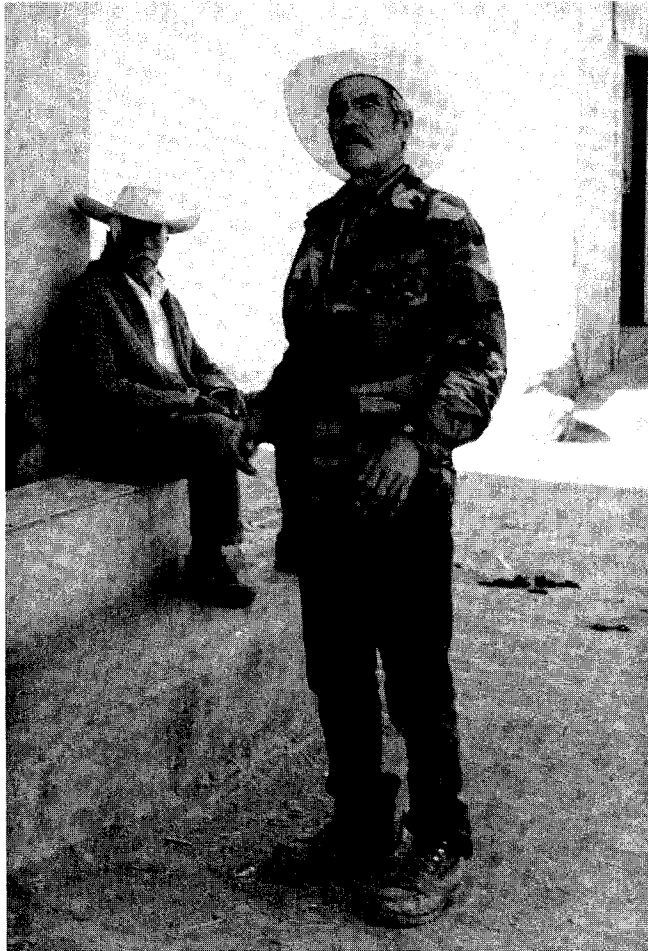
One of a dying breed, Everardo Ayala Guerrero, 57, still farms his three-hectare plot tucked into the north-

17 Tom Barry, *Zapata's Revenge: Free Trade and the Farm Crisis in Mexico*, (South End Press), 1995, p.12-13.

18 Ibid., p. 121.

19 Alan Riding, *Distant Neighbors: A Portrait of the Mexicans*, (Vintage Books), 1984, p.183.

20 *La Voz de Michoacan*, Jan. 27, 1996.



Everardo Ayala Guerrero, father of three migrant workers living in the U.S.

ern edge of Querendaro Valley, renting to no one. More-over, he waters his 30 rows of corn and alfalfa with pristine well water, which costs him a whopping 750 pesos (U.S.\$100) per cycle. He knows he can legally irrigate basic grains with contaminated water, but prefers the well water "because it doesn't stink." How does he afford such odorless luxuries?

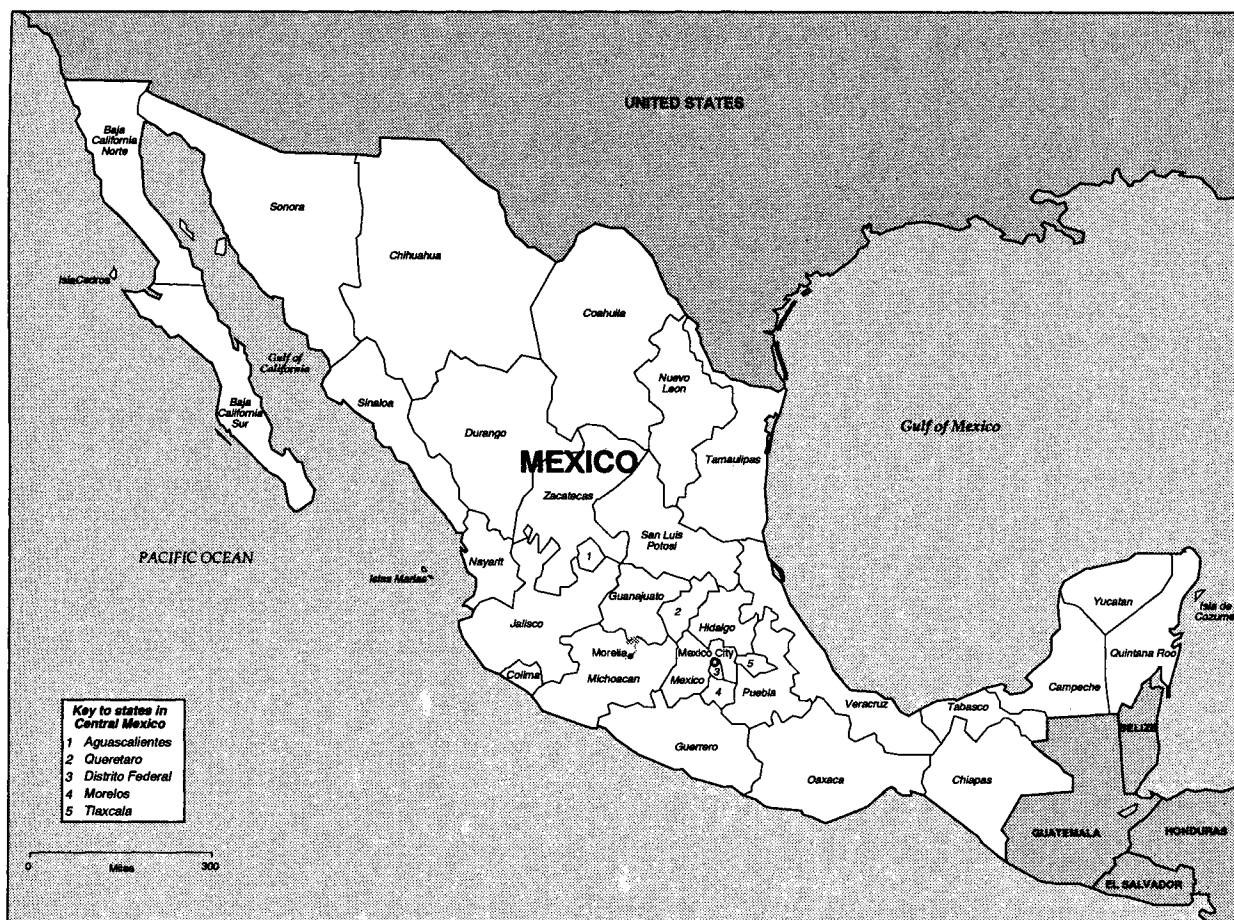
"My three sons live in the United States," said Ayala, wearing a camouflage jacket one Sunday morning in his hometown of Téjaro. "One packs vegetables in Chicago and two work the fields of Iowa. They send me up to 200 dollars a month. I couldn't survive without it," added Ayala, who spent ten years of his own life (the 1960s) picking cucumbers in Michigan, tomatoes in Texas and cotton in Arkansas.

Like Ayala, the President of Querendaro Valley's Producers' Union, Alfonzo "Poncho" Lemus, also sent his child abroad. Not as a migrant worker to the U.S, however, but as a student of agricultural engineering in Japan. "The Japanese are interested in boosting commercial production here in Querendaro

Valley, so they invited Poncho's son to Japan to train him," said Torres of the CNA.

On my way home from Torres's office, I pondered Poncho Jr.'s trip. With that kind of instruction, he represents just the stuff Mexico needs to become the *conquistador* of the global market. What better place than East Asia to learn how to maximize productivity, I thought to myself. When he returns, presumably, he'll make the most of all his dad's assets: land, credit, seeds, fertilizer, pickups, tractors, warehouses, markets, etc.

Before he does, however, let's hope the new-world *samuari* focus tomorrow's *hacendado* on Mexico's growing water problems, too. For it would be a shame to see Poncho's kid take over Querendaro Valley some day, only to lose it to the rot of contamination. And then what? A new generation of landless gentry? Imagine it, Poncho's grandson 80 years from now, napping his dotage away in a late-20th century apartment he inherited from his grandfather. Only he won't be cursing the Revolution, like Don Gabriel, but rather that stinking river, the Rio Grande. □



Institute Fellows and their Activities

Hisham Ahmed. Born blind in the Palestinian Dheisheh Refugee Camp near Bethlehem, Hisham finished his A-levels with the fifth highest score out of 13,000 students throughout Israel. He received a B.A. in political science on a scholarship from Illinois State University and his M.A. and Ph.D. from the University of California in Santa Barbara. Back in East Jerusalem and still blind, Hisham plans to gather oral histories from a broad selection of Palestinians to produce a "Portrait of Palestine" at this crucial point in Middle Eastern history. [MIDEAST/N. AFRICA]

Adam Albion. A former research associate at the Institute for EastWest Studies at Prague in the Czech Republic, Adam is spending two years studying and writing about Turkey's regional role and growing importance as an actor in the Balkans, the Middle East and the former Soviet bloc. A Harvard graduate (1988; History), Adam has completed the first year of a two-year M. Litt. degree in Russian/East European history and languages at Oxford University. [EUROPE/RUSSIA]

Cynthia Caron. With a Masters degree in Forest Science from the Yale School of Forestry and Environmental Studies, Cynthia is spending two years in South Asia as ICWA's first John Miller Musser Memorial Forest & Society Fellow. She is studying and writing about the impact of forest-preservation projects on the lives (and land-tenure) of indigenous peoples and local farmers who live on their fringes. Her fellowship includes stays in Bhutan, India and Sri Lanka. [SOUTH ASIA/Forest & Society]

William F. Foote. Formerly a financial analyst with Lehman Brothers' Emerging Markets Group, Willy Foote is examining the economic sub-structure of Mexico and the impact of free-market reforms on Mexico's people, society and politics. Willy holds a Bachelor's degree from Yale University (history), a Master's from the London School of Economics (Development Economics; Latin America) and studied Basque history in San Sebastian, Spain. He carried out intensive Spanish-language studies in Guatemala in 1990 and then worked as a copy editor and Reporter for the Buenos Aires Herald from 1990 to 1992. [THE AMERICAS]

Sharon Griffin. A feature writer and contributing columnist on African affairs at the San Diego Union-Tribune, Sharon is spending two years in

southern Africa studying Zulu and the KwaZulu kingdom and writing about the role of nongovernmental organizations as fulfillment centers for national needs in developing countries where governments are still feeling their way toward effective administration. She plans to travel and live in Namibia and Zimbabwe as well as South Africa. [sub-SAHARA]

John Harris. A would-be lawyer with an undergraduate degree in History from the University of Chicago, John reverted to international studies after a year of internship in the product-liability department of a Chicago law firm and took two years of postgraduate Russian at the University of Washington in Seattle. Based in Moscow during his fellowship, John is studying and writing about Russia's nascent political parties as they begin the difficult transition from identities based on the personalities of their leaders to positions based on national and international issues. [EUROPE/RUSSIA]

Pramila Jayapal. Born in India, Pramila left when she was four and went through primary and secondary education in Indonesia. She graduated from Georgetown University in 1986 and won an M.B.A. from the Kellogg School of Management in Evanston, Illinois in 1990. She has worked as a corporate analyst for PaineWebber and an accounts manager for the world's leading producer of cardiac defibrillators, but most recently managed a \$7 million developing-country revolving-loan fund for the Program for Appropriate Technology in Health (PATH) in Seattle. Pramila is spending two years in India tracing her roots and studying social issues involving religion, the status of women, population and AIDS. [SOUTH ASIA]

Teresa C. Yates. A former member of the American Civil Liberties Union's national task force on the workplace, Teresa is spending two years in South Africa observing and reporting on the efforts of the Mandela government to reform the national land-tenure system. A Vassar graduate with a *juris doctor* from the University of Cincinnati College of Law, Teresa had an internship at the Centre for Applied Legal Studies in Johannesburg in 1991 and 1992, studying the feasibility of including social and economic rights in the new South African constitution. While with the ACLU, she also conducted a Seminar on Women in the Law at Fordham Law School in New York. [sub-SAHARA]

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