

INSTITUTE OF CURRENT WORLD AFFAIRS

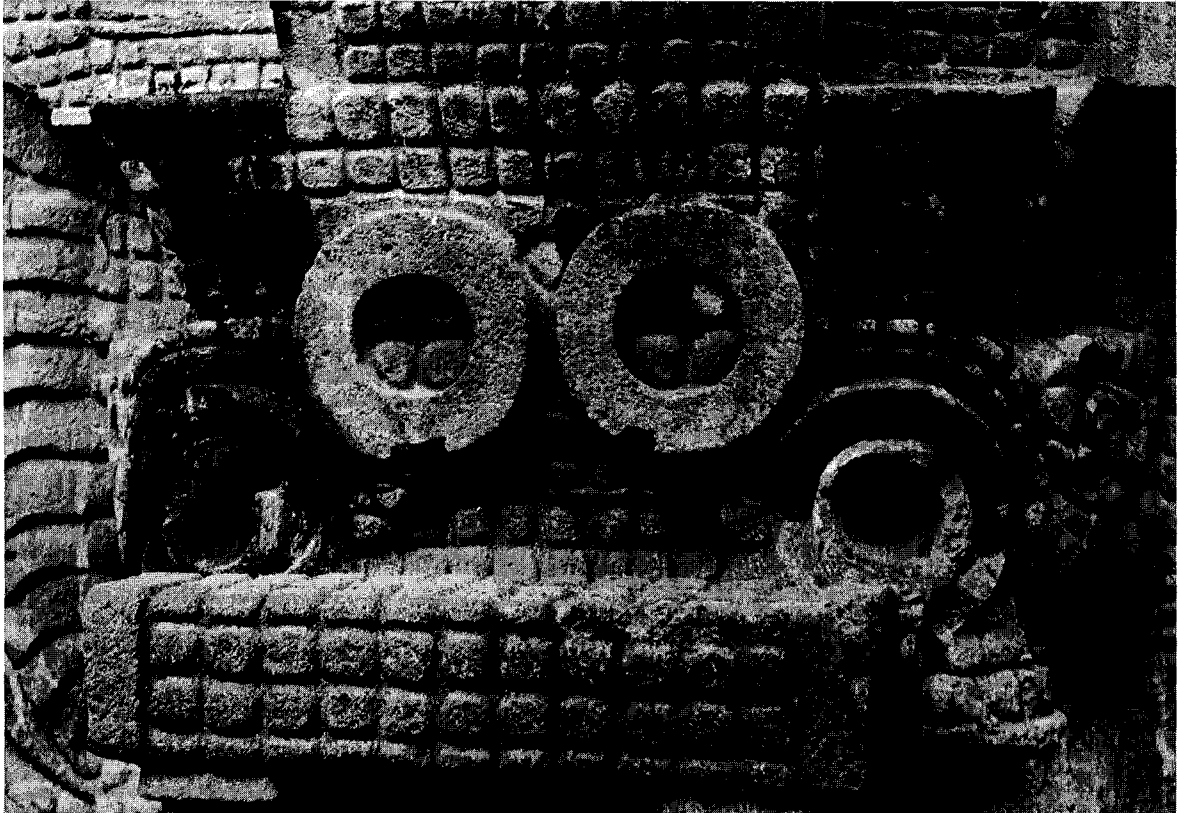
FMP-30

Mexico's Agrarian Reform: The Physical Aspect

Mexico, D.F.

18 June 1969

Richard H. Nolte, Executive Director
Institute of Current World Affairs
535 Fifth Avenue
New York, New York 10017



Dear Mr. Nolte:

The Mayas called him Chac. To the people of the Central Plateau, he was Tlaloc. In the Valley of Oaxaca the ancient civilizations referred to Dios del "Rayo" and Dzahñi, and on the eastern slopes of the mountains, the Totonacs worshipped him as Tajín. No matter the name, he was the God of Rain, for all the cultures the supreme deity throughout the centuries.

At Teotihuacán in the Central Plateau his image, characterized by large round eyes, dominated art and architecture. His companion, the goddess of terrestrial waters, was honored by a huge monolithic sculpture. Often his symbol was joined with that of the God of Corn, as in the Mixteca funerary urn above the lintel of Tomb 104 at Monte Albán.



LEFT. Chatchiutlicue,
or "she of the jade skirt",
goddess of terrestrial water.
Height: 10.5 ft.
Classic. Teotihuacán III

Aztec poetry abounded with references to rain:

"I am the flowering corn ear with strips of red,
"I come into the world.
"I am born of the land of the mystery and the rain,
"I am a creature of the Sun and of the Earth..."

"And your golden rain will circulate
"In the blood of the Fraternity tree..."

"I am the quetzal
"I sing among the flowers
"I sing under the divine rain...
"The water blossoms,
"Its foam blossoms over the earth."

The civilization of Teotihuacán was probably the earliest in Mexico. From a matrix of sedentary agriculture it matured into an urban and specialized society. Its physical setting---in a valley tightly circumscribed by mountains and watered by extensive lakes---provided the base for feeding a concentrated population and, yet, limited the geographic alternatives so that the inhabitants had to learn to live with one another, therefore to develop the social and political systems essential to such mutual accommodation. In contrast, an area such as Amazonia never developed a civilization partially because thin, leached soils could not provide more than ephemeral support for agriculture, and the aborigines were not forced to interrelate closely but, rather, could choose the easier route, migrating over the forested peneplain.

As population at Teotihuacán increased, land utilization intensified. With diffused habitation the farmers could clear a plot crudely, harvest two or three crops, and then abandon the land at the first sign of depletion. But with more people on the same tract, the demands upon the soil were greater; it was allowed to lie fallow for only one or two seasons and, when it became necessary, was restored by a primitive fertilization which, in the absence of livestock, was derived from the refuse of humans and small domesticated animals and birds.

The city of Teotihuacán began to grow, and specialized crafts and services developed whose practitioners were dependent upon others to provide their sustenance. Agriculture moved down to the alluvial valley floor and evolved a complex irrigation system which allowed multicropping. The degree of organization essential to construct and coordinate this system enhanced the sophistication of the Teotihuacán civilization.

To meet the fuel and construction demands of an urban society, the once abundant forests were felled. Denuded slopes brought erosion and decreased rainfall. Overused soils hampered production, and Teotihuacán became vulnerable to primitive peoples pushing in from the north. After a thousand years of development, the civilization disintegrated. Today, the monumental architecture of its apogee stands upon a hot and semi-arid plain.

In thousands of miles of my travel through Mexico---in the States of Sonora, Sinaloa, Nayarit, Jalisco, Guanajuato, Tlaxcala, Puebla, Oaxaca---I have not seen one area with sufficient rainfall. Some 85% of the country can produce decent crops only if bolstered by irrigation. It is for this reason that the Mexican Government incorporates a unique cabinet post: the Secretary of Hydraulic Resources. In addition, the Ministry of Agriculture and Livestock includes a Department of Agricultural Engineering which is particularly concerned with small-scale irrigation projects. Over 12 million acres are now under irrigation, producing a third of the country's agricultural production. Whereas Teotihuacán's cultivation moved from an outer ring inward, modern Mexico has pushed agriculture outward to the national periphery, now exploiting areas to the west and north that were until recently desolate wastelands.

Irrigation cannot always transform a desert into an Eden, however. Recently, I drove 350 miles southward to the city of Oaxaca. Between Mexico City and Cuautla the expressway descends through cool, pine-covered



ABOVE. The Valley of Yanhuitlán. The mountains in the background show severe erosion.

mountains and then levels out over an arid flatland of volcanic soils. But, just beyond the sugar cane oasis at Izucar de Matamoros, the two ranges of the Sierra Madre collide in a convolution of vertical forms. Being the end of a protracted dry season, even the xerophytic growth was parched, and exposed boulders exuded the sun's heat like New York concrete in August. Widely scattered villages, consisting of two or three adobe huts, carried names reflecting the geography—Desierto San Juan, El Pedregal, El Salitre, La Cumbre, La Matanza, Ojo de Agua—St. John's Desert, Stony Ground, The Salt Bed, The Crest, The Slaughter, Water Hole. Three dilapidated shacks huddling together on a particularly seared col boasted a road sign announcing "Nuevas Horizontes"—new horizons: I wondered what hope its settlers could possibly see there.

Worse was yet to come, however. As I swung from curve to curve and came down to the Valley of Yanhuitlán, even the cacti could not survive amid a surface scarred by accelerated erosion. Here no topsoil remained and, as in many areas of Latin America, no amount of fertilization, irrigation and modern technology could wrest a crop from these slopes. Yet, a huge Dominican monastery suggests that four centuries ago the valley's importance warranted the considerable attention of the Church.

Just as the Central Plateau gave rise to Teotihuacán, the Valley of Oaxaca produced an ancient culture rivalling that to the north. The sites of Monte Albán and Mitla probably came into being for much the same reasons as Teotihuacán. Again, mountains ring the valley tightly, setting limits which are always in sight.

As with Teotihuacán agricultural conditions in the Valley of Oaxaca are not as favorable as they were in pre-Hispanic times. While dessication and soil exhaustion have reduced production, population has multiplied. All the more desirable lands were held as haciendas until the agrarian reform decimated the large holdings. The arithmetic was simple: there are so many peasants and so much land; therefore, we'll divide the sum of the latter by the former and grant each man a parcel determined by the quotient. The outcome was unfortunate—the beneficiaries of the land reform usually received less than an acre, and never over two and a half acres. If irrigation could make multicropping possible and a market for the produce were available, the Indian farmers might make do by intensive agriculture. But, neither is the case.

Agricultural engineers for the state have in the last decade constructed a scattering of small irrigation projects—modest reservoirs which, rains allowing, catch the seasonal flow of wadis and hold it for use during the growing season. At maximum, a reservoir can water 30 to 50 acres. In contrast, two dams in the Yaquí Valley in Sonora provide 600,000 acres.

Approximately 85,000 Oaxaqueños live in the state capital—the rest of the 1.6 million population is rural. Isolated by the mountainous terrain, the state has not developed industry, so the inhabitants must depend upon the land for survival—but a quarter of a hectare of poor, dry soil does not suffice. As a result, the Oaxaca peasant—and particularly the ejidatario (land reform beneficiary) is more bracero than independent farmer. He ranges as far as the United States and Guatemala in search of field work. He picks coffee in Chiapas, cuts cane in Vera Cruz and picks tomatoes in Sinaloa. It is hardly the outcome idealized by those who conceived and implemented Mexico's agrarian reform.

Privately-owned small holdings encircle the town of Oaxaca. As always in Latin America, the peasants do not live on their land but cluster in small villages. I was on the way to visit one such village, Atzompa, at 7:00 a.m. At that hour the air was fresh, and the landscape glistened in the bright sun. The gravel road soon deteriorated into a dirt lane deeply rutted by burro hoofs and cart wheels. It wound between newly plowed fields, the soil a rusty red, where occasional lone campesinos were already at work behind yoked oxen and wooden plows.

Atzompa, consisting of one dusty street between mud huts, supplements its agricultural earnings with pottery-making. The ware has changed in only one aspect since pre-Hispanic days—now the clay vessels are splashed around the top edge with a green glaze. It is not an esthetic improvement. The traditional shapes, pleasing and practical, have been retained, however—pitchers with high necks and elongated handles, plates with fluted edges, and baking dishes whose concave sides bear two small handles.



ABOVE. Sra. Teodora Blanco, with one of her five children. A pure Zapotec Indian, she is a leading potter of Atzompa, ceramics of her own design on display in Mexico City and the United States. Behind her is the crude kiln which is fired with wood.

It seems, however, that it is not the craftsman of Atzompa who peddles his products at the Saturday market in Oaxaca. Mestizo intermediaries enter in. One vendor—as if to impress me with her overhead—insisted that I realize it cost her one peso (eight cents) each way by bus to reach Atzompa to restock her ceramic supply. Since the large pitcher I bought cost three pesos (no doubt inflated for the "gringa"), I could conclude something about the price paid to the artisan.

On my way back from Atzompa, I invited an Indian woman walking along the roadside to ride with me. She was going to the center of Oaxaca and gratefully accepted. I asked her about the conditions in the countryside.

"Very bad" was her laconic reply.

I prompted her by commenting on the lack of rain.

"It is more than a month late," she said. "The fields are plowed and



ABOVE. The Saturday market in Oaxaca. The pottery displayed is typical of Atzompa. The market occupies some eight square blocks and, as here, the passageways are clogged, especially with vendors transporting their wares on precarious dollies which threaten imminent collapse.

ready, but the men cannot plant the corn (she referred to milpa) until the rains. Last year was a drought year, this year is worse."

"And if there is not enough to eat?" I asked. She shrugged her shoulders.

I inquired about the size of the holdings in the area, and she replied in terms of a unit I did not know—the almude. She said the average was four to six almudes.

Pursuing the definition of this measure at two sources later, I learned that almude refers to a quantity of seed used in planting a field. In one case, I was told that an almude was four kilos, in another four liters. In any case, it was agreed that four almudes would plant about a hectare, so I could judge that the average small holding was between two and a half and four acres.

I have pondered this roundabout way of indicating the size of a land-

holding. It may indicate that there are no titles, the land is not surveyed and, therefore, the peasant does not know how much land he tills. It also suggests that the cost of the seeds is the major investment and so governs the peasant's concept of area. It is certain that yield would not be a good indicator of acreage in an agriculture subject to the vagaries of nature.

Whereas Oaxaca's was an in situ agrarian reform, the laborers on the haciendas transformed into ejidatarios, the ejidos of Northwest Mexico are largely settled by people from other parts of the country, particularly the overpopulated center and south. To stimulate migration to the peripheral States of Sonora and Sinaloa, the federal government encouraged prospects with descriptions of fertile, irrigated lands.

One example of this situation is in the Carrizo Valley, about 35 miles north of Los Mochis, Sinaloa. Alongside the highway I noticed a sign announcing the Ejido V. Carranza y Reforma. I saw no agriculture, just scrub growth and organpipe cacti. A bit further the village appeared—about 50 houses widely scattered over a clearing of packed dirt.

I stopped and walked up to a house with a woman sitting outside. There were two rooms separated by a breezeway which served as kitchen. The floor was dirt but with as little loose dust or debris as well-swept concrete.

Though it was mid-day and warm, the woman wore a scarf and sweater. She looked to be in her 50's but I later decided she was probably much younger when I learned of her hard life and illness.

Her husband had been a peasant in southern Sinaloa, but ten years ago they had come to the Ejido Carranza y Reforma on the promise that they would receive good, irrigated land. Ten years ago, and still no water.

I asked how, then, it was possible to raise a crop.

"It is not possible."

Then how did they live?

"My husband gets odd jobs in the town when he can." Los Mochis was an hour's ride by bus. There were six children, and she had no money for medicine for herself.

"We have waited, but we wait sin esperanza—without hope."

I told her of the irrigated Yaqui Valley to the north and of the prosperous ejido I had visited there. Then I told her I had stopped to take photographs only a few kilometers back—irrigation canals were being dug, and tractors were clearing the desert. The workmen said the whole valley would be irrigated in two years. She was not encouraged by this news.

I counted back ten years to see who was President of Mexico and asked her if he was to blame. She said not. Insisting that she place the fault, I was told unequivocally that it was the State Governor who had just gone



ABOVE. Children on the Ejido V. Carranza y Reforma, near Los Mochis, Sinaloa.
out of office after six years.

"He did all he could to bar the irrigation." She did not know why.

Unfortunately the cases of "Poor Land and Little Water" are not exceptional. As early as 1935, before the reform really gained momentum under President Cárdenas, Eyster Simpson*so entitled a chapter in his classic, The Ejido: Mexico's Way Out. He comments:

"There are, of course, many ejidos with good land and plenty of water, either from rainfall or irrigation. But it is also true that most ejidos have little land, and that poor, and less water, and that scarce."

He then gives a series of case materials covering the States of Puebla, Michoacán, Guanajuato, Hidalgo, Jalisco, Coahuila, Guerrero, México, Chihuahua, and Oaxaca.

Since I comment above on the situation of Oaxaca ejidatarios in 1969, I quote Simpson regarding conditions three and a half decades earlier:

"In the inspection I have been making of the ejidos in this state, I have noted that, in the overwhelming majority of cases, the villages do not have enough land or land of sufficiently good quality to permit the ejidatarios to satisfy their agricultural necessities. Indeed, in place of being satisfied, the villages are stirred up by the injustice of giving them parcels which are too small and in the majority of cases of poor quality. In other words, the agrarian reform has been carried out in that the villages have been given land, but the problem has not been solved definitely.

"When we add together the lack of irrigation, the difficulties in the

* an Institute of Current World Affairs Fellow, 1926-34,

way of obtaining agricultural credit, high taxes, the poor quality of the land granted in some places and the small amount of land in others, it is clear that in Oaxaca it is impossible for the ejidatarios to make any progress except in a very small number of cases..."

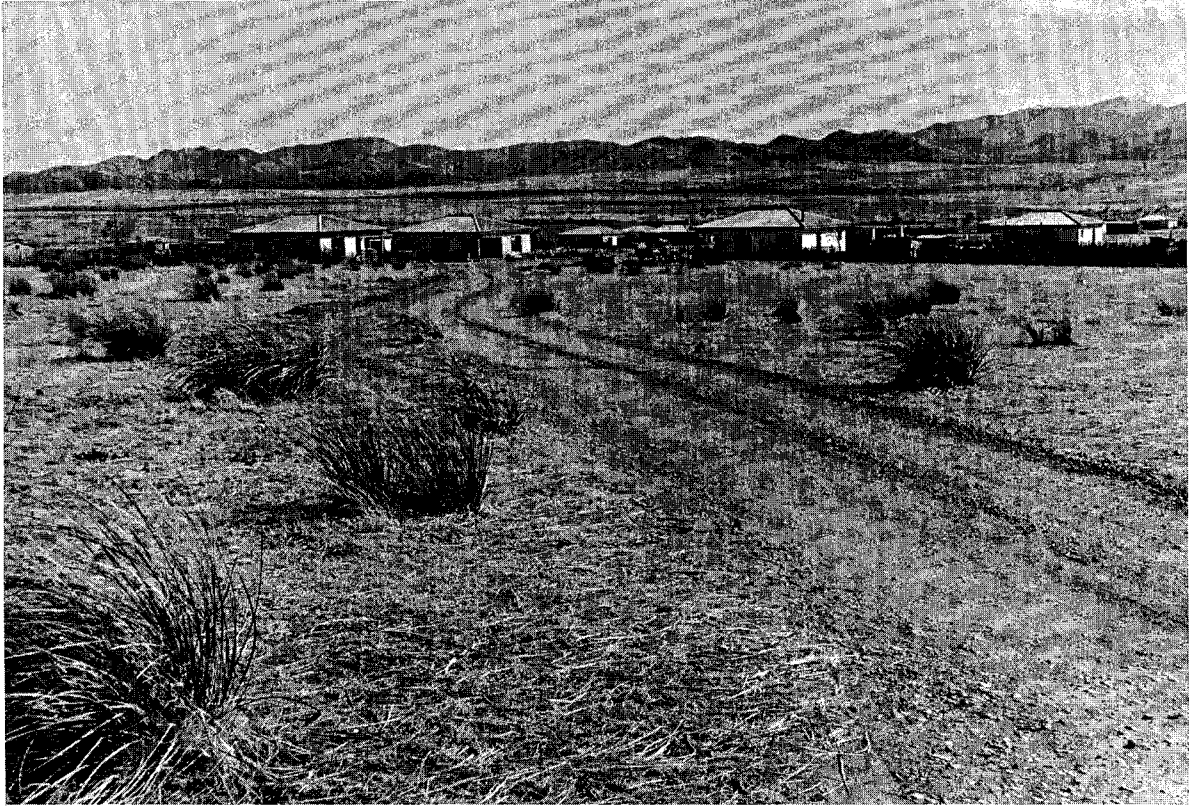
Many of the problems of Mexico's agrarian reform today can be traced back to original sins rooted in lack of faith or good intention regarding the ejidos. During the first 20 years the objective of land distribution was conceived in modest terms—merely to grant the campesino a small parcel just sufficient to feed himself and family and to supplement a salary he might earn on larger farms. The ejido was relegated to a role as subsistence agriculture which should not, therefore, occupy the best lands. Not until the mid-30's with President Cárdenas did the agrarian reform advance to a position of prime importance for the nation's agriculture, a new role which warranted the creation of ejidos to produce cash crops on productive lands. In order to operate efficiently to produce extensive crops it was judged essential to organize large units, therefore, collective farms.

La Laguna is the prime example of this period. It was the first, the most extensive and the most important economically of the collective ejidos formed under Cárdenas. Though political considerations have played a role in the failure of this large collective in northern Mexico, it has been physical aspects which have absolutely doomed La Laguna.

For years the 2000-sq.-mi. farm was highly productive, producing half of Mexico's cotton. Water was ample from rainfall and two rivers. Then, in the late 40's an unrelenting drought set in. In 1958 it was prohibited to drill more wells, the 2558 already in existence having lowered the water table drastically. By 1963 the water behind the Lázaro Cárdenas dam barely touched its base, and none was available for irrigation. In that year the Government initiated a resettlement program for La Laguna peasants, transferring them to verdant and tropical Campeche; within months many of the original 500 farmers transferred had deserted their new land, and about 50 families had returned to La Laguna.

The Presidents since Cárdenas have not been so enthusiastic about agrarian reform and certainly not about collective farming. Only one collective ejido has been formed since 1940: Cananea, whose history is related in FMF-25.

With the purchase of the Cananea ranch in northern Sonora in 1958, the herd of 30,000 cattle was also acquired from the Greene family. It was not feasible to divide the herd and grazing land among the 450 families so the area was split into seven collective ejidos to facilitate administration. There is little precipitation in this region, about six inches per year, but there is considerable underground water and runoff from the mountains which could be utilized. However, the ejidatarios have received very little technical assistance or agricultural training and, so, restrict their activities to guarding the cattle which underutilizes both manpower and land. Only 900 acres are cultivated, for forage crops, and officials of the local Ejidal Bank have urged the ejidatarios to drill deep wells for irrigation. However, they see no use to go deeper than 150 feet which provides enough water to quench the thirst of cattle and humans.



ABOVE. One of the seven ejidos near Cananea in northern Sonora.

In the case of Cananea, therefore, it is the human element which limits the development of the ejidos. However, given Nature's generally niggard supply of water in Mexico, deep-well irrigation at Cananea might bring on La Laguna's fate.

Water, land and population are in a tight race in Mexico. When the Revolution started in 1910, there were only 15 million Mexicans, and the chaos of the next two decades held down the population. Today, however, it has soared to almost 50 million. Before the agrarian reform, 70% of the labor force---3.6 million---were employed in agriculture. That percentage has dropped to 48% but the absolute number working the land has doubled, to 7.1 million. In the last 40 years land and water have had to support 100% more peasants, and the saturation point is fast approaching.

Recently both President Diaz Ordaz and Eng. Norberto Aguirre, head of the agrarian reform agency, have stated that no more land remains for distribution. Other ways to support the rural population must be found. Hope is now pinned on a massive program of rural industrialization, made possible by a \$200-million loan from the World Bank.

On the one hand, it would seem that Mexico could boast of agricultural

success. In the last 30 years goods and services produced by the agricultural sector have expanded by 4.4% per year. Exports of cotton, coffee, cattle, tomatoes and sugar have increased, and the country is now self-sufficient in wheat, corn and potatoes.

Long term predictions are not optimistic, however. With a projected population of 61 million in 1975, Mexico will be producing 8% less food for each citizen, according to an economic study by the Banco de Mexico. Unless agricultural production makes dramatic advances, the country will be forced to resort to increasing imports of foodstuffs.

A key question is: Can the ejido system fill the increased needs? Can it overcome the barriers of poor land, poor terrain and little water---the physical aspects, some of which are indicated in this newsletter?

To a considerable extent, this will depend on progress in agricultural technology which can expand the carrying capacity of an area. On the other hand, solution of Mexico's rural problem depends to a large degree on socio-political aspects.

Sincerely yours,

A handwritten signature in cursive script that reads "Frances M. Foland".

Frances M. Foland

Photos: FMM

Received in New York on June 20, 1969.