Tackling Poverty in Rural Mexico
A Case Study of Economic Development
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Tackling Poverty in Rural Mexico
A Case Study of Economic Development

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## Pronunciation Guide

### People

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<td>Hernando Cortes</td>
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The Setting

Pedro Vasquez has lived all his fifteen years in San Jose del Rio, a village in the Mexican state of Aguascalientes. The eldest of seven children, he lives with his family in a three-room house that his father built many years ago with the help of neighbors.

Except for fiestas and the good times after harvests, life in San Jose del Rio does not change much from day to day. The men farm the land, raising the corn and beans their families eat. The women tend the children, haul water to their houses, and prepare the food. The children work around the house and in the fields as soon as they are able. A few of them go to the school in Villa Juarez, ten kilometers away.

Pedro had to stop going to school in Villa Juarez after he finished the third grade. The family was getting bigger, and his father needed Pedro's help on the land. Since then, Pedro has spent much of his time working with his father. But in the late afternoons he meets with his friends—sometimes to play basketball at a makeshift court, other times just to talk outside the only shop in the village.

Pedro has an idea of what the future holds for him in San Jose del Rio. Most young people marry and settle down there or in nearby villages. Some of them leave and go to Aguascalientes, the capital of the state. If they are lucky, they get jobs. If not, they come back after a while. One of Pedro's neighbors, several years older, went to Mexico City a few years ago and found work as a taxi driver. Pedro sometimes thinks about going to Aguascalientes or Mexico City, too. But he knows he
probably would not have enough money to tide him over until he found a job.

Sometimes Pedro hears the men in the village talk about the big farms along Mexico's west coast. Equipped with irrigation and modern farm machinery, those farms produce fruits, vegetables, and grains—such as wheat and rice—for Mexican markets. Some of their products are exported to the United States. Farmers go there from all over Mexico to get temporary work during the plant-

Many children in rural Mexico have an early initiation into a life of hard work and few material rewards.

...ing and harvesting seasons because the pay is good. A few go every year from San Jose del Rio. Pedro would like to go, too, but his family cannot afford the bus fare.

Pedro knows that Mexico is advancing in many ways, and he wants to share in its advance. A way to do so, he thinks, is to leave San Jose del Rio. Once he talked with his father about going to Aguascalientes, or to Mexico City, or to the farms in western Mexico. "I could make a lot more money there," Pedro said.
“Stay in San Jose,” his father told him. “Our family has always lived here. It has always been good enough for us. And life here is better than it was a few years ago.”

Pedro Vasquez is descended from a long line of poor peasant farmers in Aguascalientes. Like most Mexicans, he is a mestizo: part Indian and part Spanish.

Half of his heritage can be traced to the Aztecs, who founded one of the early civilizations in Mexico. The Aztecs constructed massive pyramids for worshiping their gods, and they laid out and managed large cities. The capital of the Aztec empire was a city of hundreds of thousands in the early 1500s.

The other half of Pedro’s heritage can be traced to the Spaniards, who began coming to New Spain after Hernando Cortes and his army conquered the Aztecs in 1521. For three centuries Pedro’s ancestors lived under
Spanish rule as they had always lived—farming the land. They were called campesinos, the Spanish word for farm workers. The land belonged to wealthy landlords, who claimed a big part of everything the campesinos produced. The campesinos thought things might change when Mexico fought for and won its independence from Spain in 1821. Many things did change, but not for them.

For the next ninety years, Mexico was a land of emperors, dictators, and revolutionaries competing for power. Pedro's great-grandfather fought in the revolution that toppled the last of them in 1910. He and others like him hoped that life for the campesinos might finally begin to improve.

At first, the prospects were bright. In the aftermath

The poor treatment of campesinos, portrayed here in a mural by a Mexican artist, was one thing that led to the revolution of 1910.
of the revolution, the new government took over many of the big farms and ranches that the campesinos had worked for wealthy landowners. Then the land was divided into small farms and given to the campesinos. Some parcels of land were issued to individual families. Others were given to ejidos, farm communities of a hundred or so families who own land jointly. San Jose del Rio, where Pedro lives, is an ejido. A lot of land was transferred in these ways, but many large farms and ranches stayed in the hands of the rich.

Between 1910 and 1970 agricultural production on many big farms and ranches—and some ejidos—increased dramatically. But until the 1970s little happened to change the lives of most campesinos.

For centuries children in rural Mexico have watched their parents to learn the tasks they would one day perform.
Chapter Two

Doing Something for the Campesinos

Agriculture has always been important in Mexico's economy. After the Second World War, the Mexican government took many steps to strengthen agriculture further. It built roads and irrigation systems and supplied electricity to farms. It conducted research on soil conditions and plant varieties, and made efforts to conserve and improve the soil. It ran training programs to teach farmers modern farming techniques. Loans were made to farmers so they could buy seed, fertilizer, insecticide, and modern tools and machinery. Warehouses and marketplaces were built so that agricultural products could be more easily stored and sold. As a result of these measures, agricultural production in Mexico soared in the 1950s and 1960s, and the incomes of many farmers rose rapidly.

But the majority of the 25 million people in rural Mexico were left behind. Living in isolated pockets throughout the country, they had few schools and little health care or electricity. They were working poor land and relying on farming methods used for centuries.

In the early 1970s the Mexican government decided that it had to do more—much more—to improve the lot of the campesinos. The key, officials agreed, did not lie in creating jobs that poor farmers might fill if they moved to cities: the cities already were overcrowded. It lay instead in helping poor farmers to help themselves where they were—in the countryside.

The government agencies responsible for strengthening agriculture had not been doing enough in parts of the country where poor farmers lived. Instead, they de-
voted most of their staff and money to places having greater promise—such as the farmland in the northwestern part of the country. And in many instances the agencies had not been working together. Sometimes the plans of one agency would fail because a second agency did not provide help when it was needed. Sometimes two agencies would develop similar plans for one valley, yet do nothing at all in a neighboring valley. So the Mexican government drew up a program that would bring the activities of all these agencies together in a way that would help the campesinos.

Started in 1973, the new program is called PIDEIR. The name comes from the first letters of the official Spanish title of the program: “Programa Integrado de Desarrollo Rural,” which in English means “Integrated Program for Rural Development.” PIDEIR’s goal is to improve the lives of poor rural families throughout Mexico. It is working to achieve this goal by getting government agencies to do more in areas that have been neglected.

Under the PIDEIR program, the National Marketing Agency (CONASUPO) is building warehouses so that more farmers can store their produce and prepare it for shipment.
**Figure 1.** PIDER at the Hub of Activity

**Features of PIDER**

PIDER has three important features. The first is that it is not another big government agency. Instead, it is a program of an existing agency—the Department of Programming and Budgeting (DPB). The DPB provides money under the PIDER program for planning and carrying out activities that develop rural areas. But the activities are carried out by other agencies already working in these areas. So the PIDER program is like the hub of a wheel: it coordinates the efforts of many agencies (see Figure 1).
PIDER's second feature is that its activities are focused on poor areas in rural Mexico. PIDER officials, in one of their first steps, identified forty-one such areas; they have since identified ninety more (see map). They call these areas "microregions" ("micro" is a Greek prefix that means small). Some microregions have about 10,000 people, others close to 100,000. Altogether there are roughly 6,000,000 people in the PIDER microregions.

When PIDER started, basic services were either lacking or deficient in all microregions—such services as roads, schools, health centers, electricity, farmer-training programs, and banks that would make loans to poor farmers. As a result, farmers in these microregions could not produce much on their land, and their average income was a small fraction of the national average.

The third important feature of the PIDER program is that it covers many aspects of rural life. Development projects that use this approach are called "integrated rural development projects." It is easy to see their advan-
tages. If a rural road is built, farm families might not be much better off than before. But if a road is built, and farmers are trained in modern methods, and loans are provided so farmers can buy better seed, tools, and fertilizer, and if warehouses are built to store produce, and so on—if all these things are done, poor farm families will have a good chance to advance.
Doing Something for the Campesinos

How PIDER Works

In each state the Department of Programming and Budgeting (DPB) has a representative who assists the state government in carrying out the PIDER program for that state. There is also a PIDER coordinator in each microregion. The state DPB officials, the PIDER microregion coordinators, and the representatives of other agencies meet with communities in the microregions and ask them to list their needs. Together, these officials draw up plans for activities that can meet community needs and be paid for with PIDER funds. After the communities agree to the plans, the DPB officials and the PIDER coordinators see to it that the agencies cooperate in carrying out the activities planned for each community.

The plan for a microregion might include a road for one village, an irrigation system for another, a warehouse and market for a third, and so on. Or it might include several related activities in a few communities: farmer-training programs, loans that enable farmers to buy high-yielding seeds, and the construction of roads and schools.

Suppose that the plan for a microregion includes having farmers in a community begin to grow avocados. Farmers would already be growing beans, potatoes, and corn. They would harvest enough to feed their families, and they would have only a little left over to sell. But if they grew avocados, they could sell them and their incomes would rise. Introducing avocados into such a community sounds simple: bring avocado saplings into the village and have farmers plant them. But it is not that simple.

To begin with, experts from the Department of Agriculture and Water Resources have to do some research to see what variety of avocado will grow best in the area. Then the manager of a branch of BANRURAL, the National Bank for Rural Credit, must be contacted. He has to agree to make loans to farmers so they can buy the saplings and perhaps build a small-scale irrigation system. CONAFRUT, the National Commission for Fruit Development, has to bring in the saplings when farmers are
Doing Something for the Campesinos

ready to plant them. The Department of Agriculture and Water Resources, along with CONAFRUT, has to assign field-workers to the village to give farmers advice after the trees are planted.

The PDER coordinator for the microregion has to make sure that all these things are done—and done in the right sequence to avoid bottlenecks and delays. The agencies, on the other hand, have an added burden because they work not only on the PDER program, but on their regular programs for farmers outside the PDER microregions.

The need for coordination is clear. The avocado project just described might be only one of several projects under way in the village. The village might be only one of perhaps a hundred in the microregion. The microregion might be only one of three or four in the state and one of more than a hundred in the country. And the importance of PDER is clear. Without PDER officials to coordinate the work of all the agencies, much less would be done for poor farm families in the microregions.

The National Commission for Fruit Development (CONAFRUT) nurtures avocado saplings at its nurseries until farmers are ready to plant them.
Paying for PIDER

The Mexican government decided it would spend $1,700,000,000 on the PIDER program between 1973 and 1981. It increased the amount to $2,500,000,000 in the late 1970s. To help meet part of the cost, the government applied for some loans from international organizations. It received $40,000,000 from the Inter-American Development Bank in 1975. It received $110,000,000 from the World Bank in 1975 and $120,000,000 more in 1977. And it received $22,000,000 from the International Fund for Agricultural Development, an agency of the United

PIDER has made it possible for many farmers to get loans to build chicken coops—and have a regular source of protein and income.
Nations, in 1980. These loans have made it possible for PIDER to step up its activities in many microregions.

PIDER now spends about $450,000,000 a year. It will have to spend even more in the 1980s if it is to extend its work in all the microregions.

How is the money spent? It goes for three sets of activities in PIDER microregions (see Figure 2). Most of the money—about 70 percent of it—helps people in farm communities do things that will increase agricultural production. For example, irrigation networks are being built, livestock raised, fruit trees planted, small industries set up, and ways found to conserve soil and water. In addition, loans are being made to individual farmers and to groups of farmers to help them improve their land.

About 20 percent of PIDER's annual budget is for activities that support agricultural production: building roads that link villages to market towns, enlarging market facilities, extending electric power lines, and training farmers. The remaining 10 percent goes for building schools, health centers, and village water systems.

Many different activities are under way at the same time in PIDER's microregions. In the chapters that follow, a few of PIDER's activities are described in detail.
Chapter Three

Getting Water Out of the Ground in Aguascalientes

San Jose del Rio, where Pedro Vasquez lives, is an ejido that was formed after the Mexican revolution of 1910 (see map). The farmers who belong to the ejido are called ejidatarios: they own the land jointly, but each has a plot for his family to farm. Much of the ejido’s land is too poor to be used for farming.

Pedro was a young boy when PIDER officials first came to San Jose del Rio in 1973. He doesn’t remember their visit, but he has heard about it many times from his father and others in the ejido. His father takes almost any opportunity to tell the story.

“We had heard about PIDER. We’d heard that our ejido was part of something called the El Llano microregion and that people in the microregion were going to get special help from the government. We didn’t pay much attention to the rumors, though. We had seen government people in San Jose del Rio, but they would come once and then not for a long time. We thought the people from PIDER would be the same. They were holding meetings in communities nearby, telling people how PIDER would be different. When they said they wanted to meet with us, we almost told them not to bother.

“But we decided to meet with them after all. At our first meeting, they asked us many questions. ‘Do you want to learn to grow new crops so you won’t have to pin all your hopes on corn? Do you need bank loans so you can buy fertilizer and tools? Do you need a better road and a school? Irrigation works and electricity?’ We said we needed all those things.

“Then they told us they would help us get some of them. I stood up and said, ‘We’ve talked to government
The El Llano microregion covers about 2,500 square kilometers in the eastern half of Aguascalientes, one of the smallest states in Mexico. Most of the land is semi-arid, with rainfall averaging only 400-600 millimeters a year. The microregion has about 75,000 rural inhabitants.

officials before. They all tell us that things take a long time because nothing is simple. One official tells us he can't do something until another official does something else. And then they have to get approval from Mexico City.

"The people from the PIDER program said they understood how we felt. But PIDER, they said, would be different. We all laughed. It was getting hot, so we asked them to have a cold drink with us at the cantina. After some more discussion, we agreed to meet with them again. They told us to decide on what we needed most. They'd come back in a week to talk some more."
There was lots of talk among the ejidatarios before the PIDER officials returned. Most ejidatarios agreed that what San Jose del Rio needed most was an irrigation system. Not much rain falls in Aguascalientes, but there is plenty of water underground. What the ejidatarios lacked were deep wells, pumps to draw the water up, and pipes to carry it to their fields. But to get these things would cost much more than the ejidatarios could put together.

When they met with the PIDER officials the next week, the ejidatarios told them that they wanted an irrigation system. The officials tried to dissuade them.

"Why not start with something less difficult?" the officials asked. "How about bringing electricity to the
village?" That could be done quickly and easily. For an irrigation system, however, the ejidatarios would have to make many decisions and work with many government agencies. And they would have to pay part of the cost, about a third. PIDER would pay the other two-thirds. The ejido probably could get a bank loan, but it would have to be repaid. How did the ejidatarios feel about having to do all that?

The ejidatarios held firm. "We can't grow much more corn until we have more water," they said. The people from PIDER had asked the ejidatarios what they wanted most, and the ejidatarios told them. An irrigation system, and that was that. A few ejidatarios didn't even want an irrigation system, and they drifted away from the meeting. After a lot more discussion and arguing, the PIDER officials agreed to help the thirty-two remaining ejidatarios plan an irrigation system and build it.
Pedro's father, and many other ejidatarios of San Jose del Rio, felt that an irrigation system was what they needed most.

**Plans and Decisions**

"The PIDER people were right about the irrigation system involving a lot of decisions," Pedro's father says, continuing with the story. "We were always having to make decisions—arguing among ourselves and discussing things with government officials. Each decision was tougher than the last. It went on and on—for three months. Sometimes we thought the irrigation system wasn't worth all the trouble."

The first decision the ejidatarios had to make was what part of their land to irrigate. As in all Mexican ejidos, the land belonged to the community, and each family had a plot to farm. But much of the land was not being
used. The ejidatarios quickly agreed to build the irrigation system in a large unused area known to have plenty of water far beneath the surface.

Then there was another decision. Should the irrigated land be divided into small plots that would be tended by each family? Or should everyone farm it together? At first, most of the ejidatarios—Pedro's father was among them—felt that each family should farm its own plot. “We have always done it that way,” they said. “Why should we change?” But if the irrigated land were divided, some plots would be better than others. And what if someone neglected his plot? Would it be divided among the others? How?

In the end the ejidatarios agreed that they would farm the land as a group. They knew that there would be records to keep. And they would have to set up a system for transporting produce, selling it, and sharing the proceeds. But farming as a group would be less risky.

Then a new question arose: How much land should be irrigated? Two things had to be taken into account. The first was the amount of irrigated land the ejidatarios felt they could handle. They already had their own rain-fed plots to care for. How much additional land could they farm? The ejidatarios decided that they could each handle a hectare of the irrigated land without difficulty, maybe two hectares, since they would be working together. There were thirty-two ejidatarios: that meant an irrigated area of thirty to sixty hectares. But how large, exactly, was the area to be?

The second thing to take into account was the cost of the system. The ejidatarios had to decide this because they had to pay a third of the cost. Obviously it would cost more to irrigate sixty hectares than thirty. Perhaps even thirty hectares would cost too much.

Up to this point, the ejidatarios had talked only with PIDER officials. But when they needed to figure out the cost of the system, representatives of the Department of Agriculture and Water Resources (DAWR) joined the discussions. The people from the DAWR knew what the charges would be for hiring equipment to drill the wells.
They also knew what it would cost to buy and install the pumps, generators, well covers, storage tanks, and pipes to bring water to the surface and lead it to irrigation ditches.

After talking with the ejidatarios and surveying the land, the people from the DAWR went back to their office in Aguascalientes and did some calculations. A week later they returned to tell the ejidatarios what it would cost to irrigate thirty hectares, forty-five hectares, and sixty hectares.

"Then the people from PIDER came back into the act," continues Pedro's father. "They told us that we couldn't decide whether to irrigate thirty, forty-five, or sixty hectares until we had thought about the bank loan needed to pay for the system.

"They reminded us that we were going to have to pay a third of the cost of the system. We would be able to get a loan, but they wanted to know how much we would be able to pay back each year. We laughed and told them we were experts in paying back loans. We were always paying back the shopkeeper in San Jose del Rio. Then they asked, 'How much can you pay back each year for twenty-five years?'

"The whole project nearly fell apart then," Pedro's father continues. "'Twenty-five years!' we shouted. 'What kind of loan is that?'

"All along we thought we'd have an irrigation system in three months. By this time, three months had passed and there wasn't a drop of water in sight. We began to holler about all the promises the people from PIDER had made. We reminded them of their smooth talk about no red tape.

"But the people from PIDER told us not to worry so much about the loan. If we had twenty-five years to repay, we would not have to pay much each year. And during all those years, we'd be earning more from our crops because we'd be growing more. It made sense, and we finally calmed down. But on that day, and I remember it as though it were yesterday, the plans for the irrigation system almost stopped dead."
The DAWR officials helped the ejidatarios figure out how much they could pay on a loan each year. Then the officials did some calculations. The amount of the loan the ejidatarios could afford would be enough to build a system to irrigate forty-five hectares. PIDER would pay the DAWR twice the amount of the loan to cover its share of the cost of the system. The total cost would be a little more than one million pesos, or about $45,000.

After this decision was made, things became easier. The PIDER officials approved the irrigation project and helped the ejidatarios present the plan to the branch office of BANRURAL, the National Bank for Rural Credit, in Aguascalientes. The ejidatarios participating in the project had to sign the loan application. "And all of us went," Pedro's father remembers, "to sign the papers at the BANRURAL office in Aguascalientes. It was a big event."
Work Begins

Although Pedro has only heard from others about all the discussions and decisions, he remembers clearly all the activity when the irrigation system was being built. Engineers driving a truck bearing the insignia of the DAWR spent several days in San Jose del Rio surveying the land. The DAWR also arranged for a private company to bring in equipment to drill the two wells. After this, pumps were installed on both wells along with diesel generators to power them. Then the people from the DAWR returned to supervise the ejidatarios as they dug trenches and laid pipes.

All ejidatarios participating in the project, and many of the older boys, helped to build the irrigation system.

Pedro’s father was very busy during this time. He was the head of the ejido, and he had to make sure that the ejidatarios were where they were supposed to be when there was work to be done. He had the older children help whenever they could. The PDER coordinator for the El Llano microregion was very busy, too, making sure that every agency involved in building the irrigation system was doing what it was supposed to do.

Finally, one day, everyone in San Jose del Rio gathered around one of the wells. Four people joined hands—Pedro’s father, the El Llano microregion coordinator,
the branch manager of BANRURAL, and one of the DAWR engineers. They turned the crank to start the generator, and the pump began to churn. Water soon filled one of the storage tanks and flowed out of a pipe into the ditches in one corner of the field. Everyone cheered. Pedro remembers splashing some of the water on his face and clothes.

There had been few such days in San Jose del Rio. The excitement continued as the generator was started up at the other well. At last, the pumps had filled the storage tanks, and water had reached most of the irrigated area. The wet, brown earth was a refreshing sight.

The ejidatarios decided to plant most of the land in corn and beans, crops they had always raised. A fieldworker from the DAWR showed the ejidatarios how to improve the planting of corn and how much fertilizer to use. The first harvest from the irrigated land was a big improvement over what the ejidatarios were used to. Their families had more to eat, and there was a surplus to sell in the market in Aguascalientes. Then they decided to grow chilies, the hot peppers used as a spice in Mexican cooking. Soon they were selling chilies in Aguascalientes, too.

To help the ejidatarios earn even more, a representative of the DAWR suggested that they consider growing grapes. It would be a few years before the vines would begin to bear fruit, he said. Not much could be grown on the land planted with vines in the meantime. And the ejidatarios would have to get a loan from BANRURAL in Aguascalientes to pay for the vines and insecticide they would need. There would be less income for a while. But the ejidatarios knew that grapes would bring a good price and quickly make up for the income lost.

So the PIDER coordinator arranged for CONAFRUT, the National Commission for Fruit Development, to work out a plan for a vineyard on ten hectares—about a fifth—of the irrigated land. He also helped the ejidatarios to get the loan they needed. The ejidatarios prepared the land, and CONAFRUT delivered the vines and supervised the planting.
By 1979, three years after the irrigation system was completed, the irrigated land was in full swing. The ejidatarios could farm all year round, producing two, sometimes three, crops a year on land that had produced nothing three years earlier. There was more food for everyone in the ejido, and some extra to sell. There was money coming in from the sale of chilies. And the vines produced their first grapes.

The money the ejidatarios get from the sale of crops grown on the irrigated land goes into a common fund. From that fund they make payments for seeds, fertilizer, insecticide, and hired labor, as well as for principal and interest on their loans. From the amount left over, they find they can pay themselves about 110 pesos (about $5) for each day they work on the irrigated land. Older boys in the ejido—such as Pedro—are paid half that. There is some money left over each year, and the ejidatarios are saving it for another improvement. They want

*Land that once had little worth has become a new source of income and wealth to the ejidatarios.*
to bring electricity to the ejido, and they already have begun to make plans with the El Llano microregion coordinator.

Pedro hardly remembers what it was like in San Jose del Rio before the irrigation system was built. After all, he was very young. But he knows that things have changed. People have more money now, and they feel that things will get better. His mother tells him that when electricity comes, a pump might be installed on the well where she gets the family's water. Then she won't have to spend so much time hauling water up by hand. More important, she will have more water for the garden behind the house.

Even Pedro has a little money now from working on the irrigated land. And it is possible that he will earn even more. The men in San Jose del Rio say that PIDER may arrange to improve the road from the village to the main road that leads to Aguascalientes. Pedro hopes the rumor is true, because he would like to get a job working on the road.
Chapter Four

Setting Up Demonstration Plots in Zacapoaxtla

The Zacapoaxtla microregion, extending over rugged, mountainous terrain, is one of the first places that PIDER officials began to work in the early 1970s (see map). It is obvious why the area was selected for special attention. The topsoil was badly eroded. There were few roads. People in one valley had little contact with people in the next, and even less with people outside the region. Few villages had schools, health clinics, or electricity. Half the people were illiterate, and a quarter were Indians who spoke no Spanish. Densely populated by extremely poor people, the land was hard-pressed to produce enough food. Most farmers could grow only enough corn, beans, and potatoes to feed their families.

In drawing up a long-term plan for developing the Zacapoaxtla microregion, PIDER officials knew that the first step was to teach farmers how to produce more on their land. Production could increase if farmers would begin to use some new farming methods. But the officials also knew that poor farmers usually are reluctant to change the way they farm. "We have always farmed the way we farm today," poor farmers are likely to say. "And so did our fathers. We may not grow much, but we are sure of getting a crop. If we do something different, the crop might fail, and our families would starve."

How could poor farmers in the microregion be persuaded to adopt new farming methods? This was one of the first questions PIDER officials had to deal with in the Zacapoaxtla microregion.
The Zacapoaxtla microregion, 150 kilometers east of Mexico City, covers about 600 square kilometers in the northern mountainous part of the state of Puebla. The microregion has roughly 75,000 people in 100 rural communities. It gets its name from the town of 40,000 inhabitants at its heart.

The Ripple Effect

Just as a stone dropped in water sends out ripples in all directions, so a change that works on one farm will spread to other farms nearby, then to others. The key to setting the ripple effect in motion is demonstrating to farmers that a particular change can produce a bigger
Manuel Ruiz was confident that a few simple changes in the way people farmed would make a big difference in their lives.

harvest. This is done by setting up “demonstration plots” on small plots of land in farm communities. When farmers see the greater harvest produced by the new methods on the demonstration plots, they become more willing to try the new methods—at least on part of their land. If their harvests increase, they talk with other farmers about their success, describing what they did to achieve it. Then the other farmers may decide to try the new methods, too, and the ripple effect is at work.

To set the ripple effect in motion in the Zacapoaxtla microregion, PIDER officials got in touch with the Agricultural Program for Rainfed Areas (APRA), one of the government agencies that works in PIDER microregions. APRA had trained many field-workers. Its director agreed to start a special training program for the field-workers who would set up demonstration plots in the Zacapoaxtla microregion.
Manuel Ruiz Gets Started

APRA selected seven agricultural economists for the new training program. Manuel Ruiz, a graduate student at the National Agricultural University in Mexico City, was one of them. Manuel and the other members of the team spent four months at APRA’s training center in Puebla, the capital of the state, about 100 kilometers from the Zacapoaxtla microregion. They studied the agricultural conditions of the microregion and learned about how to work with farmers.

During this four-month period, Manuel made frequent

It was planned that Manuel and his colleagues would reach 3,000 of the microregion’s 12,000 farmers in their first three years.
Demonstration Plots in Zacapoaxtla

trips to three valleys in the northern part of the microregion. Later, he would return to these valleys and start setting up demonstration plots. He analyzed samples of soil from various parts of the valleys, but mostly he talked with farmers. How did they farm the land? When did they plant? How far apart did they place the seeds? What seeds did they use? What problems did they run into? How much corn did they get at harvest time?

As part of his training, Manuel compared his experiences and findings with other members of the APRA team. After many sessions with his instructors, Manuel decided what he would try to show farmers on the demonstration plots in his three valleys.

When the training period was over, Manuel went to live in Zacapoaxtla. It was in the center of the microregion, and he could go by jeep to the villages in his valleys each day. He persuaded five farmers he knew to help him set up small demonstration plots on their land. In exchange, the farmers would get everything harvested from the plots. The demonstration plots were on the outskirts of five different villages, and Manuel planned to spend one day a week in each village.

Manuel and the farmers laid out the five demonstration plots in the same way. Each plot had five rows of corn, and each row was labeled to identify how it was planted (see Figure 3).

- In the first row, Manuel and the farmers planted the corn just as the farmers usually did: at the usual planting time, and using the same seeds.
- In the second row, they used the same seeds, but they planted them two weeks earlier than usual.
- The third row was also planted two weeks early, but special seeds developed at the training center at Puebla were used.
- The fourth row was planted two weeks early, again using special seeds. But fertilizer was added.
- The fifth row was the same as the fourth, except that Manuel and the farmers twice sprayed insecticide on the growing stalks.
Manuel felt confident that the rows planted earlier than usual would produce more corn than the first row. He was confident, too, that the third row would produce more than the second, the fourth more than the third, and so on, with the fifth producing the most of all. If that happened, farmers would clearly see the advantages of planting earlier and of using special seeds, fertilizer, and insecticide.

Farmers who let Manuel set up demonstration plots on their land watched the progress with great interest. So did some farmers who lived nearby and came to the demonstration plots for training sessions each week. At those sessions, Manuel would explain why it was a good idea to plant early, how seeds differed, and what fertilizer and insecticide did to help the plants. The farmers asked many questions, and Manuel could answer most of them. But if he couldn't, he would try to get the answer from other members of the APRA team or from his instructors.

As the growing season advanced, Manuel and the farmers measured the differences between the plants in the first row and the other rows. They compared the height of the stalks and counted the number of cobs on each stalk. The farmers commented that there would probably be little difference between the five rows by
harvest time: stalks in one part of a field often grew more slowly than those in another part. Besides, the first row had been planted two weeks later than the other rows. Give it time, they said, and watch it catch up.

Their skepticism surprised Manuel, but he respected the farmers’ reluctance to make any changes in farming practices. So he laughed with them, saying that maybe his plot wouldn’t be different from their fields when harvest time came. After all, they had been farming their land for years, and he was a newcomer.

But as harvest time approached, everyone agreed that there were differences between the five rows of each demonstration plot. Manuel was disappointed that there was only a small difference between the first and second rows. He had hoped that planting earlier would help farmers grow much more corn without having to spend anything extra.

But the difference between the first two rows and the fifth was dramatic. Manuel harvested 50 percent more corn from the fifth row than from either of the first two. The farmers were impressed. But they laughed at him and said, “So you want us to use new seeds and fertilizer and insecticide. Where do we get the money?”

Manuel was prepared for this. During his months in the microregion, he had several conversations with the manager of BANRURAL, the National Bank for Rural Credit in Zacapoaxtla. He had described the demonstration plots and farmer-training sessions. He told the BANRURAL manager that if farmers followed his recommendations in using seed, fertilizer, and insecticide, they would produce more than enough corn on their land to repay loans. The BANRURAL manager told Manuel that he would consider making loans when the farmers applied for them.

Manuel explained to the farmers about the arrangements with BANRURAL in Zacapoaxtla. He then helped them prepare loan application forms and went with them on their first visit to the bank. He was pleased when the farmers later asked him to join them in a small gathering to celebrate the approval of the loans.
Word Gets Around

When the time came for the next planting, several dozen of the farmers Manuel had been working with were ready to try the new methods on part of their land. Some of them were the farmers who had let Manuel set up the demonstration plots on their land. But most of them were neighboring farmers who had attended the weekly training sessions. With Manuel’s help, they had all been able to get loans and buy the seeds, fertilizer, and insecticide they needed.

During Manuel’s second year in the microregion, he set up new demonstration plots on the same five farms. This time, he wanted to show farmers how they could increase

*Having seen how new methods improved the odds for a good harvest, many farmers in Manuel’s groups began to heed his advice.*
their harvests of beans and potatoes, the other principal crops of the microregion. He met often with farmers in training sessions, to answer their questions and to provide additional advice. Manuel also branched out to five other villages, again persuading one farmer in each village to let him set up demonstration plots. He prepared the plots just as he had the year before, and he invited nearby farmers to attend weekly training sessions.

Manuel also organized groups of farmers to dig trenches that would prevent further erosion on steeper slopes.

In his third year Manuel organized farmers in groups to build terraces on badly eroded slopes. Terracing would prevent further erosion and eventually provide more land for farming. Some day Manuel hopes to show farmers how to grow coffee—which they could sell at the big market in Zacapoaxtla to raise their incomes even more.

Manuel and the other members of the team trained by APRA can work with only a small number of the 12,000 farmers in the Zacapoaxtla microregion. But word of
the new farming methods and bigger harvests is getting around, and the ripple effect is operating. More and more farmers are trying those methods and harvesting more corn, beans, and potatoes on their farms. As a result, the incomes of these farmers are rising. Table 1 shows how incomes have changed in one ejido in the Zacapoaxtla microregion since farmers began to use new farming methods and to grow avocados.

Table 1. The Difference Between the Old and the New in Ejido Alzalan

<table>
<thead>
<tr>
<th>Crop</th>
<th>Average annual income per family</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With old farming methods</td>
</tr>
<tr>
<td>Corn</td>
<td>$220</td>
</tr>
<tr>
<td>Beans</td>
<td>80</td>
</tr>
<tr>
<td>Potatoes</td>
<td>50</td>
</tr>
<tr>
<td>Subtotal</td>
<td>350</td>
</tr>
<tr>
<td>Fruit, mainly avocados</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>$350</td>
</tr>
</tbody>
</table>

The program of demonstration plots is only one of many activities that PIDER officials have started in the Zacapoaxtla microregion. Roads are being built to connect the communities of the microregion to the town of Zacapoaxtla, where some of the farmers' additional produce can be sold. Steep slopes are being terraced to prevent further erosion. Schools and health clinics are being built, and electricity is being brought to many villages.

The efforts of people from PIDER and the agencies it works with are clearly changing the lives of many people in the Zacapoaxtla microregion. People there have had to work hard for generations. But now, with a few important changes, their hard work is beginning to bring about some improvements in the way they live.
Chapter Five

The Effect of PIDER

Poor farmers in Mexico have been trapped in a vicious circle of poverty for generations. Because they do not produce much, they must consume all or most of what they produce. That means they cannot sell much. Nor can they save much. Because they cannot save much, they do not have money to spend on things that could help them produce more. So they continue to produce very little. Breaking out of this vicious circle on their own is almost impossible.

The PIDER program pays for projects that enable poor farmers to produce more and to break out of the vicious circle of poverty. For this reason, PIDER is called an investment program. (Spending money on things that enable people to produce more is called investing.) PIDER is channeling $450,000,000 a year for investment in its microregions. As the preceding chapters have shown, these investments take many forms.

Is PIDER succeeding? Are farmers producing more? Are they beginning to break out of the vicious circle of poverty? Are their living conditions improving?

If Pedro Vasquez’s father were asked these questions, he probably would say that PIDER’s projects are improving life for him and his family. If Manuel Ruiz were asked the same questions about the communities he works with in the Zacapoaxtla microregion, he probably would reply that many people are better off. He might add that many more people will be better off in the future. But what about the PIDER program as a whole? Is it succeeding in helping Mexico’s campesinos?
The Effect of PIDER

In the late 1970s PIDER officials studied what had been done in thirty of PIDER's microregions. Here's what they found:

- 140 new irrigation systems were bringing water to more than 12,500 hectares of land.
- 160 new soil-and-water-conservation projects were helping to protect more than 30,000 hectares of land.
- 150 new livestock projects were improving the prospects for higher income of more than 13,000 families.
- 850 kilometers of new roads had been built to make it easier for farmers to get their goods to market towns.
- 275 kilometers of new lines were bringing in power to run lights and irrigation pumps.
- 50 new health centers were serving 18,000 families.
- 350 new classrooms were making it possible for more than 20,000 children to attend school.
- 80 new water systems were serving more than 20,000 families.

Village stores—started with help from PIDER and from CONASUPO, the National Marketing Agency—sell many essential products at about two-thirds the usual price.
With help from PIDER and the Department of Health, the people of many villages are building clinics that will bring health care closer to home.

In all, about 1,200 projects had been completed in the thirty microregions, benefiting almost 120,000 families. Farm production was increasing—and farm incomes were rising—in some of the long-neglected pockets of poverty in Mexico.

From the study of the thirty microregions, PIDER officials discovered some things that they are applying to their work in all microregions. They learned that many projects were taking longer than expected. So they began to design simpler projects that could be completed more quickly. And they decided that they would have to improve further their coordination of other government agencies. They also learned that most projects were more expensive than expected, partly because of inflation. The higher costs underlined the need
The Effect of PIDER for simpler projects—and for better planning and for economizing wherever possible.

The study also showed that greater attention should be given to helping women in the microregions. For example, in villages where wells and electric pumps have been installed, women did not have to spend so much time getting water for their families. They were free for other kinds of work. For many years, the Department of Agriculture and Water Resources had

*Home economists of the DAWR show village women how to do many things that can add to a family’s income and well-being—and that can free them from routines they have been bound to for centuries.*

run a small program to help rural women to do things that would increase their income. PIDER officials helped the DAWR strengthen and expand its program in PIDER microregions.

Young women trained in home economics now work with girls and women in most microregions. It is the custom in many parts of rural Mexico for women to tend small gardens near their houses. The DAWR workers are teaching women new ways of growing the vegetables they have grown for a long time. Using seeds
provided by the DAWR workers, women are also begin­
ing to grow other vegetables that are rich in vitamins
and minerals—carrots, cabbage, spinach, and tomatoes,
for example. They are being shown how to prepare more
nutritious meals. And women in some microregions are
learning how to raise chickens. Not only are women
producing more food for their families. They are also
selling some of their produce in local markets, helping
to increase family income.

Many schools are being built under the PIDER program—because
primary education, particularly of girls, is one of the most important
ingredients of economic development.

Problems will continue to arise as PIDER continues
its work. Improving the living conditions of Mexico’s
poorest farmers is complex and expensive. It will take
time—and a lot of money.

Although there still is much to be done, PIDER has
made some important headway in changing the outlook
of many people in its microregions. Pedro Vasquez, for
example, has some new ideas about his future. He got
the temporary job that he hoped for in improving the
dirt road from San Jose del Rio out to the highway. The
work took him to Aguascalientes on a few occasions, and once he visited a village that he had never been to before. A store, set up there with PIDER’s help, was selling sugar, salt, and many other items at prices lower than those charged by other stores.

"Maybe we could set up such a store in San Jose del Rio," Pedro thinks. "And maybe I could run it." To do that, though, he would need some more schooling. So he is thinking about joining a class for people his age at the school in Villa Juarez. He is also thinking about enrolling in a program that trains people to maintain and repair the pumps used for irrigation systems and village wells.

With such possibilities, Pedro seldom considers moving to Aguascalientes, or to Mexico City, or to the farms in western Mexico. "I think I'll stay in San Jose del Rio," he says. "Our family has always lived here. It has always been good enough for us. And life here is better than it was a few years ago."

The prospects of many young people in rural Mexico are brighter because of the PIDER program.
LIST OF STATES

1. BAJA CALIFORNIA
2. BAJA CALIFORNIA SUR
3. SONORA
4. CHIHUAHUA
5. COAHUILA
6. NUEVO LEON
7. TAMALIPAIS
8. SINHALA
9. DURANGO
10. ZACATECAS
11. SAN LUIS POTOSI
12. NAYARIT
13. JALISCO
14. AGUASCALIENTES
15. GUANAJUATO
16. QUERETARO
17. HIDALGO
18. VERACRUZ
19. COLIMA
20. MICHOACAN
21. MEXICO
22. TLAXCALA
23. MORELOS
24. PUEBLA
25. GUERRERO
26. OAXACA
27. CHIAPAS
28. TABASCO
29. CAMPECHE
30. YUCATAN
31. QUINTANA ROO

MEXICO CLIMATIC REGIONS

CLIMATIC REGIONS:
- TROPICAL
- TEMPERATE
- ARID

STATE BOUNDARIES

INTERNATIONAL BOUNDARIES

0 300 400 KILOMETERS
0 200 400 MILES