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Mexico: Poverty, Food Insecurity and Lack of Education Opportunities in Xoxocotla in the Municipality of Puente de Ixtla, Morelos, Mexico.

The municipality of Puente de Ixtla is located in the state of Morelos in south-central Mexico. 68.3% of its population lives in poverty. The food poverty line is a monetary measure of the resources needed to buy a representative food basket. For the last quarter of 2010, the food poverty line in our country was MX\$797.29 (39 USD) for a rural household. Even more alarming is the fact that 73.2 % of Puente de Ixtla's population has an income below the poverty line. 19.4% has no access to health services, 36.5% has food insecurity problems and 36.2% no access to health services. There are 43 localities with a very high degree of marginalization, among them: El Estudiante, La Tigra, El Zapote, El Salto and Xoxocotla, the locality in which I have centered my research. (INEGI)

The agricultural sector has been steadily shrinking in Xoxocotla, but it remains a vital part of the family economy. Agricultural lands hold multiple crops both for self-supply and the market. Small farmers integrate a complex set of objectives, their own economic resources and social and family networks. Sadly, only 20% is directly involved in farming. Many of them have a wage of 500 Mexican pesos (\$25 USD), sometimes even less. The main crop is sorghum, which has somehow displaced the production of corn. Corn production has become more and more for auto consumption, but continues to represent a steady income in the sale of fresh cobs and creole maize. Seasonal crops include apricots, peanuts, forage oats, sugar cane, onions, lemons, plums, zucchinis, mangos, tamarinds and avocados.

There has been a very high population increase in the area since the mid-1990s. This has caused the loss of the municipality's own ability to provide with food. Most families tend to be larger than in urban areas, with an average of three to six children. Multiple generations commonly live together, with grandparents serving as heads of the family. Few rural communities rely on agriculture as their main source of income because individual plots of land are too small to support families. Nowadays, less families have their own agricultural plot, where they plant maize and beans for subsistence. The main diet of the population consists of beans, tomatoes, green tomatoes, cucumbers, chili, prickly pear and maize. Many of their dishes are made out of maize: *atole*, *pozole*, *gorditas*, *tamales* and *tortillas*. Many times the product is exchanged among the families in the rural zone. When the products exceed the family's consumption, the head of the household goes to the local market and sells them to obtain a little extra money for eventualities, and in most of the cases it is used for young men's migration expenses. The better well off part of the population is sometimes also able to sell the meat of their farm animals, mainly chicken and pork.

Small landholdings, minuscule subsistence-oriented farms, *mini fundios*, feed the majority of the population. These are backyard gardens in rural households less than 1000 m² (3280 ft.) long, which constantly suffer from permanent sub-divisions due to new constructions in order to house the growing families and their multiple uses within the family's needs. The well, the wood for the stove, the gas stove and the skillet along with the living room area and play area for the children and the working animals,

cows, calves, hens and pigs all share the same space. Other *mini fundios* also hold a space for the working tools and machines and tractors, agrochemicals and corn grating.

Poverty is a prominent issue, especially when focusing on some specific groups of people such as the majority of Xoxocotla's inhabitants. Population growth has also put strain on infrastructure such as water, sewer, potable water, electricity, roads and schools. In Xoxocotla there are 4069 households; 1945 without floor and about 563 of them consist of one room only. 5610 inhabitants live in indigenous households. The household organization includes the distribution of domestic and productive chores.

Children participate actively in both and many do not have an opportunity to go to school because their labor force is needed to help out with farming labors. On the other hand, very young men choose and sometimes are forced by their own families to leave their home and search for options outside their community. Even though there are some jobs in the region, the conditions are very disadvantageous for the farmers. They have no warranties and are offered unfair salaries. This is the main reason of the big amount of people migrating and looking for better salaries working abroad and sending money to their families. Remittances are a mean of subsistence for many of them.

Many households are left in charge of women who are responsible of growing food for self-consumption, the household chores and the feeding and education of their children. Rural households that are food insecure include those with less-educated heads. Children in food-insecure households in Xoxocotla are at risk of poor health and developmental problems, basically academic performance. Common health issues for children in rural Mexico include diabetes, parasites and infections. Health clinics are usually far away, and families often must rely on often-unsafe buses for transportation.

In many families, children drop out of school to contribute to their family's income by working on the small plots of land their family's farm. Most communities offer no education beyond junior high. The medium of school level is 7 years. 24.8% of its population is directly affected by its educational lag. Besides the 2123 analphabets aged 15 or older, about 277 minors between 6 and 14 are not going to school. The little amount of children that are able to go to school suffer from anemia because of bad nutrition and feel too tired to concentrate in their classes. Some are even too tired to even go to school. Malnutrition affects their learning process. They often lack potable water, and as a consequence, they suffer from gastrointestinal infections. There are people who might not have any kind of water, thus, it is complicated to maintain a good hygiene to go to school. In Xoxocotla, there are many poor families who have difficulty in affording the necessary material. Parents face also indirect costs when sending their children to school because they usually lose a source of labor. In many cases, it is complicated for them to have access to school simply because they live so far away from it. Education is an important variable that affects the probability of a favorable food security status. (INEGI)

The level of formal education of the household head is an important determinant of food security in Xoxocotla. Education is important to food security not only because it is usually correlated with income, but also because it may have a positive impact on how the resources in the household are managed. Therefore, there is a big need to start with the younger ones, providing access to technical assistance and a better basic education that can be translated into better opportunities.

The importance of investing in rural education for progress is significant. That is why I am convinced that it is very necessary to implement training programs that can help families to achieve food security. The more educated the head of household, the less likely they will suffer food insecurity. The *Procampo*

program from *Sedesol* (The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food) is helping many families. It contributes to the family income of rural producers for self-consumption farming and also stimulates farming production. Nevertheless, I am certain that giving money to the inhabitants without providing education is not the real solution, there has to be a better combination that will eventually stop the vicious cycle in which many inhabitants of Xoxocotla have been caught for many years. Better-fed healthier children learn better, become more productive citizens and foster more innovative rural societies

In terms of education coverage and quality, there is a big problem with the rate of secondary school dropout. The municipality of Puente de Ixtla, where Xoxocotla is located, had 8,195 students enrolled in elementary school, but only 3,812 in middle school in 2014. Middle school education includes General Middle School, Middle Technical and Agricultural School and “Telesecundarias”. Education remains the possibly most important correlate of poverty. A continued emphasis should be given to access, quality, expanding secondary education facilities and enrolment. It is very important to strengthen technical education and vocational training for rural people related to farm activities.

The Colegio Centro de Bachillerato Tecnológico Agropecuario Number 8 is a middle school located in Xoxocotla. It was founded in October 1974. This school was opened thanks to the petitions of the ejido laborers that gave the lands for it. A year later it was moved to the lands next to the highway and two buildings were raised. It originally started with two groups only and the students received lessons of Spanish, mathematics, social science, natural science, English, physical education and farming. This is a good option to acquire both expertise in a technological field and to learn the basics for students from Puente de Ixtla and nearby municipalities such as Zacatepec, Jojutla, Tlatizapan and Tlaquitenango. It offers programs for agriculture and livestock farming. (mejoratuescuela)

We need to promote production practices and the integration of economic activities from rural areas into larger productive chains and encourage the participation of organizations of producers with economic projects on their own. Rural farmers in Xoxocotla need to be taught how to grow food in a more sustainable way. They need to learn and adopt new practices that will let them grow more food in the same amount of land and learn to use natural resources in a better way. It is important that they also learn about these practices to reduce the loss of crops before they are able to sell their production by improving their methods of recollection, storage, packaging and transporting to local markets.

On the other hand, school programs are still missing many important details, they need improvement and updating. There is an urgent need to promote in our country current agriculture-specific techniques such as production, biotechnology, and agro processing/post-harvest handling but also entrepreneurial and business management skills that will complement the technical know-how. School programs need to supply with real mechanisms that will result into more skilled workers. They also need to equip their students to become managers, and entrepreneurs who support innovation and facilitate economic growth within a complex and interconnected agricultural chain. Additionally, graduates need skills to move commodities through commercial supply chains and markets including competence in information communication technologies; marketing and certification standards; transport and logistics; and food safety and quality control. Furthermore, “soft skills” such as communication, leadership, and team work need to be added to the curriculum.

There is a recent program called *Arraigate* sponsored by the technological University of the State of Morelos (UTSEM) that fosters professional participation and stimulates the farming sector in the state providing students with training in new careers with the aid of *Sagarpa*, the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food; a unit from the Federal Executive Branch of the Government of Mexico. Its mission is to promote the comprehensive development of the agricultural, livestock and coastal sectors in the country, and allow the sustainable exploitation of its resources, for a sustainable and balanced growth of the economic regions. It also encourages the generation of attractive sources of employment, fostering settlement and permanence of inhabitants in rural areas and the strengthening of productivity and competitiveness of agricultural products. The challenge is to consolidate the “effective positioning and penetration of products in new markets, addressing the requirements and demands from consumers”. (morelos.gob.mx)

Among the objectives of *Sagarpa* is to promote the execution of policies that support producers to improve their production practices, utilizing in a more efficient manner the competitive advantages from our agricultural, livestock and fisheries sectors, and integrate the economic activities from rural areas into larger productive chains. *Arraigate* encourages the participation of organizations of producers with economic projects on their own, as well as with the proposal of goals and objectives for the agricultural sector within the National Development Plan. (morelos.gob.mx)

I would like to make a formal proposal to the Technical-Agricultural Middle School in Xoxocotla, Puente de Ixtla and the UTSEM to acknowledge the needs, worries and real problems of rural farmers in Xoxocotla and rural students. I think we need to make connections with experts in the field. I am positive that we can help them improve their education and help them directly as well as the families by encouraging students and offering attractive programs that will result in better sources of employment, settlement and permanence of inhabitants in rural areas and benefit the whole community. If we are able to generate a sense of need, graduates will be further encouraged to become better prepared. They need to be willing to work directly with rural farmers and adapt information based on literacy level, geography, resources, and farming system. Students should be working with small-scale producers and organizing groups to solve local issues in sustainable community development.

For that, we need to provide with attractive incentives for students. There has to be a sense of need, of urgency and students need to also acknowledge the importance of their future roles and feel proud of themselves. This will strengthen the productivity and competitiveness of agricultural products. The school programs need to be improved. Besides technical, practical and “soft skills”, students need to be trained more into advisory roles and learn how to share and work with adult learners. Students have to be taught from the very early stages how to identify work sites in the community that align with a career goal. They need to learn how to develop, and implement a work plan. But most of all, they need to help with their community development.

At Colegio Williams, where I have been studying for the past 10 years, I have learned many things. One that I have really enjoyed is the closeness to our countryside and the love and respect we have learned to have for our land our people and our country. I have learned throughout these years as part of my education during our visits to the school’s farm how to grow food, take care of farm animals and process food that comes directly from the school’s gardens in the town of Ajusco nearby the city. I think I can help by creating a link and establishing a sisterhood and exchange programs between the Technical-Agricultural Middle School in Xoxocotla, Puente de Ixtla and the UTSEM (Technological University of the State of Morelos) and students, NGOs and Institutions in other countries dedicated to aid agricultural

programs to improve living conditions for people that live in great poverty in my country. Xoxocotla has become a very dear locality for me. All my life, I have been very fortunate to visit the lake of Tequesquitengo which is very near and witness how it has grown throughout the years, when my family and I go visit and buy local food. Sadly, not all of its people are living well. Many are still in the need of extra help and I really wish to be able to make a difference.



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