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### **Agriculture in Development: Food Security in an Era of Increased Demand**

Around the world there are many people suffering from trying to survive on very little. A shortage of food is a major problem people face. With so many people and so much new technology, we need to find ways to deliver the food and resources around the world. We also need to think of reasons to why food is not getting spread evenly and try to correct them. Mexico is a country in need of such economic help, including the agriculture and industrial areas. Located at the United States' southern border, Mexico has a population of 109,955,400 people. Approximately 45 million people are in the labor force. Of these people about 18 percent are involved in agriculture, 24 percent in industry, and 58 percent in the service occupation. Most people grow up working their entire life and do not even notice how hard their lives really are. Their life expectancy is the age of 76 years. Mexico is a semi-industrialized country, but is trying to become an industrialized country gradually. Mexico is rich in industrial resources and has had a rise in manufacturing outputs. In Mexico, the predominant and official language is Spanish. Most of their religion is Catholic based, but some people have been converting to Protestant religions. Their unemployment rate is about 4 percent, but 25 percent more are underemployed. About 14 percent of Mexicans were suffering from food poverty in 2006.

Mexico has been an influence in the United States for a long time. This influence has ranged from the formation of North American Free Trade Agreement (NAFTA) to immigrants coming into the United States. Mexico and the United States depend a lot on each other whether we realize it or not. Mexico is the highest exporting country to the United States, supplying mainly fruit, vegetables, live cattle, and coffee. In return the United States is the leading exporting country to Mexico, mainly for corn. One problem is that Mexico is not getting enough corn, because the United States is using so much of it for biofuels. This has created major problems for Mexico, including anger and riots in 2007 about the increase in corn prices. Other major industries help to stabilize the Mexican economy, including food and beverages, tobacco, chemicals, iron, steel, petroleum, mining, textiles, clothing, motor vehicles, consumer durables, and tourism.

Getting involved in a tactful new way, like meeting these two countries together, and helping Mexico develop their economy. I think we could eliminate many of our tensions. This would also help to stop so many immigrants from coming and stop hunger in Mexico. It would also help to bring up incomes if the United States would stop bringing so many companies to Mexico just because they will work for cheaper wages. Mexico also needs to find ways to have better ways to irrigate or find more water sources somewhere. Somehow they need to find crops that can stand droughts and the dry land that they face, so that farming is not costing them so much money.

Most farming is subsistence farming, and the families barely make enough money to survive. Most farmers only have small plots of land that were distributed to poor families between the 1920s and 1970s. Most of this land was very poor quality. Agriculture has become so unprofitable that in 2005, 76 percent of the Mexican population was living in urban areas to try to find jobs, education, and health care. Usually families in Mexico are large due to many families living in one house to try to save money and to stay close. On average a woman will have two to three children. Their diet consists of mainly corn and beans that grow well around Mexico City. Wheat has to be irrigated, but has started to be a replacement for corn. Other foods consumed are barley, rice, soybeans, vegetables, including chili peppers and tomatoes, and citrus fruits. Most middle and upper class Mexicans will eat dishes traditionally served in the United States and Europe. Over half of Mexico's usable land is found in the central highlands and

only 13 percent of their land can be cultivated. Over 50 percent of the agricultural land is occupied by communal farms (ejidos), which were set up in the 20<sup>th</sup> century.

Weather affects Mexican farmers, because most farmers will not be able to plant anything without irrigation systems. Usually the weather is very warm and there are droughts all throughout the year. Approximately 63,200 square kilometers of land is irrigated. Irrigation costs a lot, because only about 457 cubic kilometers of land has renewable water sources. Most rainfall occurs in the southern parts of the plateau, and most of the rain falls during the summer. Rainfall patterns vary, because of industrial pollution that causes change in the wet and dry seasons. In the Valley of Mexico they are having problems with land subsidence due to the groundwater depletion. This problem is caused by the irrigation systems needing so much water so that the farmer's crops can hopefully survive and also so people hopefully have enough water to survive. Most accessible water is not usable for drinking water, because the water is polluted.

Women in the labor force in 2006 made up about 35 percent of the whole labor work force. Most of these women also will work at home. If the women are in middle to upper class they usually are able to get help to watch their children, clean the house, and to prepare meals. The poor and working class will normally work at home and in more than one job just to make ends meet.

Diseases are another major problem in Mexico. About 160,000 people are diagnosed that they are living with HIV or AIDS, and over 5,000 deaths have occurred because of these diseases. There are also diseases caused by food and water consumption, including bacterial diarrhea, Hepatitis A, and typhoid fever. This year there has been a new problem with leptospirosis disease, caused by contact with their water.

The Catholic Church believed it was their task to provide education in the colonial period. After Mexico's independence the government became concerned about the effects on children's values and beliefs, so they turned to a public educational system. In this system first through sixth grade are banned from learning about religious influences. The federal government controls all curricula and provides the textbooks for primary schools. In 1917, it became mandatory for all children to go to school until sixth grade. About 91 percent of the population over 15 years of age can read and write, and most persons complete a total of 13 years of formal education.

Overall, Mexico uses about 20 million tons of corn every year. Of that 20 million, 7 million tons are imported from the United States. In 2007 over a three month period, corn flour prices rose by 400 percent. Lower class Mexicans normally set aside about one third of their wages for corn, but then found problems paying for it after this increase. When these imports rose wholesalers would buy out the rest of the corn not being used for biofuels. Most farmers do not have enough money to even purchase seeds, fertilizer, or equipment that they need for their farms. This has led to migration from Mexico to the United States. These people are looking for profitable jobs so they can survive. Avoiding genetically engineered corn has forced Mexico to find other nations to import corn from, causing a drop in net income.

NAFTA had some negative effects on Mexico. NAFTA, which was officially put into effect in 1994, made the exchange rate for the peso too high compared to the U.S. dollar. Then, when the peso's value went down, investors withdrew lots of money from the country and hurt the economy. Another problem Mexico faced was that the United States companies coming into Mexico were raising labor costs, which meant that lots of Mexican businesses could not compete with the U.S and were forced out of business. NAFTA is helping bigger businesses and hurting the little ones in this sense. Also by this year, 2008, Mexico also had to have total trade liberalization on all agricultural products. This liberalization was already put into effect though, and since has caused a negative balance of trade. Their government has lost about 3 million dollars in revenues by not applying tariffs.

Right now these problems are causing lower class people to become unemployed and fall under the poverty line. Little businesses are not able to survive and have nowhere to go. When the United States takes most of the corn, Mexico is out a food source. Tortillas, which they eat at basically every meal, are made out of corn. Now Mexico is trying to make more tortillas out of wheat, but this is not what they are used to, and they can barely afford buying other means of food for their families. Food prices are going up on everything just because importing food and material goods is becoming so high. Without enough money farmers are not able to plant enough crops to make it through the year.

The highest national priority is the subsistence farming, because income is so low. Leaders are trying to find alternatives, but so far they think farmers are just going to work more than one job. The situation is pretty severe, because farming used to be the biggest occupation. Now a lot of people are switching over to manufacturing jobs and more people are suffering. The environment is getting worse also. The manufacturing is causing more pollution, which is causing more diseases and more water pollution. The whole environment is seeing more droughts from the increasing amount of pollution in the air. Women are also working more and doing more labor jobs than before.

The government is trying to work on this issue. They have made lots of agreements with other countries. They have also given land and money to the farmers in the past. The situation has become worse as the years go by, and people are just giving up in a sense. The situation for a typical farm family is getting much worse. Most of the time they can barely afford to buy seeds let alone all the other necessities. Lots of the government help has hurt them more than helped them. The help is only affecting the wealthier people that already are well off. This leaves the people who are not wealthy down at the bottom of the totem pole still doing everything they can do to make it.

If some of the agreements between other countries were rewritten to benefit the lower class, some of the problems would decrease. A safer water supply would decrease Mexico's health problems. Also, irrigation systems would probably help increase yields and income. If the farming profit would increase again, most women could stay home with their children and help with the family farm instead of working lots of jobs.

If productivity and yields increased, there would be more food for Mexico which would mean less money paid out for importing. The urban families would still be doing fine, because they are already well off. It would just help to spread the wealth a little more. It would definitely help subsistence farmers who would be able to sell extra food. Also this would create more jobs again and increase wages.

Increased productivity will most likely occur through research. Mexico needs to find new ways to improve their land, water, and crops. This can only be done with funds to subsistence farming, and funds for research facilities. Mexico's national government should help by supporting this research to occur. Other organizations could help to raise money for this cause by going to larger farm corporations and companies to ask for help. It would also probably help if the United Nations helped to bring peace between Mexico and the United States. There is a lot of conflict between the illegal immigrants and corn riots between the countries. The World Bank might also help to eliminate the poverty and to help the economy industrialize.

Research on fertilizers could help the land and benefit subsistence farmers. This would increase yields and decrease the amount of water needed for crops. A different fertilizer might make more land usable for farming and cultivation. If Mexico also found a different crop to grow on this fertilizer that was more profitable, Mexico could trade it for imports they need from other countries. In general, a different fertilizer and new crops could increase the wealth of Mexico.

Overall, we need to find a way to spread out wealth among the people. Some areas are very well off, and others are starving. The major dilemma in Mexico is distribution of corn. Their people depend

on it and cannot afford to change their ways. People in Mexico should not have to feel the need to migrate into the United States illegally. Mexico is in need of a better economy and help from its own government.

The government could help subsistence farmers more if there was tax on foreign corporations and businesses coming into Mexico to benefit. The money brought in from the taxes could then be used for research. If this covered a lot of the money needed for research, the government or other organizations might be willing to pay for the rest of the cost. This would also help to keep labor rates approximately the same between all businesses, causing unemployment to decrease and the Mexican economy to not get hurt. It would then also spread wealth more evenly throughout Mexico.

Biofuels might not be a helpful thing to the United States if it is taking a lot of the corn needed by others. Corn is a big part of agriculture in general. Livestock, people and biofuels depend on it. The world's corn supply is also affected by allowing good farmland in the U.S. and other countries to be used for non-agricultural purposes.

Mexico needs to decrease its dependency on other countries for its corn supply. Increased local production through research and irrigation would increase employment, income and food supply.

There are people in many areas of the world who are living in poverty. People need to be informed of all of the issues. Information and communication can decrease tensions and allow efforts to be directed toward solving these problems.