REVISITING NAFTA: THE GAP BETWEEN PREDICTION AND REALITY FOR MEXICO'S SMALL CORN FARMERS

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The recent history of Mexico's small corn farmers is a sad one, told in terms of increased poverty and illustrated by countless statistics that predict the small farmer's demise. It is also a story of trade liberalization between the United States and Latin America, particularly of its shortcomings when not handled correctly. Years of bad news stemming from the effects of NAFTA make Mexico's corn farmers seem like a dying breed, and unfortunately the future does not look bright. Recent events, like the shocking rise in tortilla prices in 2007 and the dismantling of the last NAFTA barriers to agricultural trade in 2008, make their plight obvious. These events have led to large protests in the streets of Mexico City against the rising price of tortillas and a serious questioning of the current administration's commitment to free-market economics (Malkin 2007). Such events may be precursors for small agriculturalists in other Latin American states like Colombia, Peru, the Dominican Republic, Guatemala, Nicaragua, El Salvador, Panama, Honduras, and Costa Rica; these are countries which have or are in the process of entering similar free trade agreements with the United States (International Trade Administration). These agreements, like NAFTA, encompass agricultural trade liberalization that will undoubtedly have a strong impact on these countries' agricultural sectors.

Since NAFTA predates the next oldest free trade agreement between the United States and a Latin American country (Chile) by 10 years and because it is the most heavily-researched of these accords, studying the effects of NAFTA on Mexico's most important agricultural population, corn producers, can serve as a test

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case for predicting the future of millions of Latin American farmers who face the prospect of unfettered agricultural trade with the United States. The relationship between NAFTA and Mexico's corn sector is good example of introducing free agricultural trade between economies of different sizes because corn is a crop of great economic and societal importance to Mexico, yet one in which the United States has a clear comparative advantage. The results of trade liberalization in this sector have affected areas ranging from food prices to immigration rates, making the issue of corn under NAFTA important on both sides of the border. With this in mind, this paper seeks to answer three questions: what were the effects of NAFTA on Mexico's corn sector? How do these outcomes differ from the expected ones? And what have been the larger effects of these results?

Although several policies can be blamed for the increased hardships that face these corn farmers, many economists and political scientists trace the beginning of this decline to January 1, 1994, when NAFTA was implemented. Keeping in mind that the plight of the corn industry in Mexico cannot be exclusively related to trade liberalization, this paper will address the discrepancies between what economists and policymakers in the early 1990s publicly predicted would happen to this sizable segment of the labor force and what has actually occurred in the last fifteen years since its ratification. From there, this paper will discuss several effects that the agricultural policies of NAFTA have had on the corn sector and the implications this has on its role in Mexican society.

NAFTA'S PROPONENTS AND PHILOSOPHY: THE 1994 NEGOTIATIONS

Beginning with a series of reforms in the mid 1980s, Mexico zealously embraced a neo-liberal development path during the presidency of Carlos Salinas de Gortari (1988-1994) that contrasted starkly with the import-substitution ideology that had dominated the country's economic policies until the late 1970s. Under the direction of its Harvard-educated, technocratic president, the Mexican government sought to integrate itself into the world economy by pursuing open-market policies, privatizing state-owned enterprises, and entering into liberal trade agreements. Most notable among these efforts was Mexico's entrance into NAFTA in 1994.

By creating a free trade bloc between Mexico, the United States, and Canada, NAFTA integrated three very different economies and sparked heated debate in all three countries over the costs and benefits of such a sweeping trade agreement.

However, the different ways in which these debates took shape in Mexico and the United States foreshadowed the uneven way in which NAFTA affected Mexican society. On the American side, NAFTA was negotiated by two administrations (those of George H.W. Bush and Bill Clinton) and ratified by Congress, following the constitutional rules of treaty negotiation. The negotiation process was slow in the United States due to heated congressional deliberation, lobbying efforts by corporations and labor unions, and the contentious 1994 presidential election that focused, in part, on whether or not to accept or reject NAFTA. The same type of open deliberation was lacking in Mexico, where the decision to pursue and ultimately to ratify NAFTA was made by the Mexican president. Mexico's political structure meant it was easy for the president to approve the measure while making it difficult for opposition interests to voice their concerns. The agreement had to pass the Mexican Senate, but at the time, President Salinas de Gortari's party (PRI) held 61 of the 64 Senate seats. In 1994, Tim Golden of the New York Times observed that "President Carlos Salinas de Gortari's overwhelming political control make approval a formality here" (Golden 1992).

The United States, Mexico, and Canada agreed on most sectors under NAFTA, but trade liberalization in the agricultural sector was divided into separate bilateral agreements due to the importance of maintaining a strong domestic agricultural sector. Frederick Mayer notes that "Canada found it so difficult to negotiate away its agricultural policies that it opted out of the [agricultural] deal altogether," agreed upon by the United States and Mexico (Mayer 1998, 148). Separate agricultural agreements between Canada and Mexico, and Canada and the United States were established. Considering the comparatively small level of agricultural trade between Canada and Mexico under their separate agricultural agreement, Mexico's corn policy has been shaped by a bilateral liberalization agreement between Mexico and the United States (Jannol et al 2003, 1).

This sweeping trade agreement between the United States and Mexico was an unprecedented integration of countries that were at very different levels of economic development. Nevertheless, the Mexican government "was eager to move quickly" with negotiations and proceeded to do so without the "similar consultative structure" of the United States that would have allowed potentially vulnerable sectors to voice their concerns (Mayer 1998, 115). As a result of "a Mexican political system that suppressed populist pressures and allowed for bold presidential action," the concerns of small farmers and criticism from unions were shut out during negotiations (Mayer 1998, 339). Instead, Mexican negotiators worked closely with a few Mexican business elites who accompanied them to many conferences as the Coordinadora de organismos empresariales de comercio exterior (Committee for Foreign Trade Business Organizations, COECE), which became informally known as "el cuarto de al lado" (the room next door). This elite group was headed by Juan Gallardo, the president of a large soda bottling company, and included representatives of "agro industrial businesses" and the Mexican Council of Businessmen representing "the 50 most prominent businessmen" in Mexico. The hierarchical structure of the COECE allowed for a unified private sector interface with Mexican negotiators but, according to report from the Inter-American Development Bank, "prompted some criticism from groups not represented by COECE (trade unions, some farm groups, SMEs [small and medium enterprises] and academic analysts) that their views [were] excluded or given less weight" (Alba and Vega 2002). The policies designed to apply to small-holder corn farmers came out of this hurried consultative process, in which they were not directly represented.

WHO ARE MEXICAN CORN FARMERS?

In Mexico, agriculture is more than just an important sector of the economy; it has served as the cultural backbone of the country for centuries. Currently 15 percent of the Mexican labor force is employed in agriculture, a much higher percentage than in neighboring Canada or the United States (CIA World Factbook 2009). Because corn farming is practiced by a variety of producers across the nation it is particularly important to cultural identity in ways that other crops simply are not. Before analyzing the effects of NAFTA on Mexico's corn sector, it is important to distinguish between different types of corn farmers because NAFTA has had heterogeneous effects on corn farmers depending on their size, market, and farming techniques. Large competitive corn producers constitute a numerical minority of Mexico's corn farmers but were influential in the decision-making process of the agricultural agreement of NAFTA and "enjoy profit margins that enable them to withstand the pressure of price reductions and face the challenge of competition from NAFTA-related corn imports." (Nadal 2000, 6). They are concentrated in the northwestern states and use modern farming techniques (Zahniser and Coyle 2004, 8-9). Small scale producers operate under less favorable conditions than large competitive corn producers and "can only withstand the pressure of foreign competition through exceptional efforts" (Nadal 2000, 7). Without viable alternatives, many of these producers have continued growing corn out of desperation and settle for decreasing profits. In 2000 subsistence corn farmers constituted 40 percent of all Mexican corn producers and used outdated farming techniques on marginal land (Nadal 2000, 8). In 2000, roughly 1,644,000 of subsistence farmers were ejidatarios, people who practice small-scale subsistence farming on semi-communal plots called ejidos (Zahniser and Coyle 2004, 6). Ejidos account for 62 percent of Mexico's corn production even though a majority of these plots are smaller than 5 hectares in size (Nadal 2000, 44).The small level of output that these farmers produce is reflected in the fact that although so many Mexicans claim to be farmers, while agriculture accounts for only 3.8 percent of the country's GDP (CIA World Factbook 2009). Corn production is, therefore, not equivalent to market agriculture.

Of the millions of small-scale Mexican farmers, roughly three million derive their main source of livelihood from the cultivation of corn, which is indigenous to Mexico and a staple of the Mexican diet. These subsistence corn agriculturalists grow thousands of different corn varieties according to which type is best suited to their particular plot of land, which varies dramatically as one moves from the dry highlands of the Sierra Madre to the sloped tropical forests of the coastline. For these people, corn production is an intricate yet primitive process that is passed down through the generations, preventing standardized cultivation yet allowing for the optimal use of otherwise marginal land. As a result of the corn's diversity and the farmers' understanding of which type is best suited for the land, sixty percent of land under cultivation in Mexico in 2000 was devoted to the production of corn (Nadal 2000, 4). Small-scale farmers are diffuse throughout Mexico and as a group are powerless to organized agricultural interests able to influence treaty negotiations.

THE PROVISIONS FOR CORN UNDER NAFTA, AND ITS EFFECTS

In reaching the terms of trade under NAFTA, Mexican negotiators publicly sought a transition period in which trade liberalization in the corn market would be implemented slowly, affording the Mexican government time to help its small corn farmers adjust. On the other side of the table, American negotiators knew that the United States had a strong comparative advantage in most grain production, so they pushed for fast trade liberalization in that sector. The final agreement on corn between the two countries allowed the United States to export up to 2.5 million tons of corn duty-free in 1994, while increasing this permissible volume by three3 percent annually until 2008 (Rivera et al. 2009, 91). Concurrently, the Mexican government was allowed to charge heavy tariffs (initially

215 percent in 1994) on imported American corn that surpassed the duty-free quotas. These import duties had to decrease annually until reaching 0 zero percent in 2008, at which point the United States would have unfettered access to Mexican corn markets.

For Mexico's corn farmers, historically among its poorest citizens, the fifteen-year transition period did little to make integration smooth and has left many even poorer, mainly because it was never really implemented. The percentage of rural Mexicans living in extreme poverty sharply increased from around 37 percent in 1994 to about 54 percent in 1998 before returning back to 1994 levels in 2002 (World Bank 2004, 171). Although 2004 data shows that this percentage has fallen below 1994 levels, this decrease might be attributed to the fact that hundreds of thousands of rural Mexicans have abandoned the countryside for the city and for the United States. In the early years after the ratification of NAFTA, corn prices fell predictably, hurting small farmers who grew enough corn to sell on the market but not enough to sell competitively. On top of this, the percentage of the rural population living in poverty reached 85 percent in 2001, encouraging farmers to leave their lands for cities or the United States. This has led to a disintegration of rural families that have experienced increased poverty and seen their members emigrate to the United States (Henriques and Patel 2004, 4). This dire situation has been compounded as the real price of tortilla, the traditional corn-based food of the poor, rose 279 percent between 1994 and 2004 (Henriques and Patel 2004, 6).[1] This large increase does not take into account the sudden spike in tortilla prices that occurred in the first few months of 2007 (BBC News 2007). And prices have continued to rise as a result of growing demand for corn as a source for ethanol (Keleman and Rañó 2008) and the Mexican government's 1996 decision to stop regulating tortilla prices (Nadal 2000, 38). Today, two years after the last tariffs on corn were lifted, Mexican corn farmers face higher tortilla prices as well as unfettered competition from American corn producers, who yielded in 2005 an average of 9.3

1 This statistic is of prices in Mexico City, where local officials take increased measures to control the price of corn.

tons of corn per hectare as opposed to Mexico's 2.9 tons per hectare (Randall 2007).

EVALUATING CORN POLICY: THE VIEW FROM 1994 AND THE VIEW FROM 2010

A large part of the blame for the difficult situation of the corn farmers lies in agricultural trade liberalization under NAFTA. In deciding how corn policy would operate under NAFTA, it was incorrectly assumed (1) that the horticulture sector could absorb all of the losses in the corn industry, (2) that subsistence corn farmers were economically insulated from fluctuations in the price of corn, (3) that all corn-based products would fall in price, (4) and that the government would help poor farmers adjust to trade liberalization (Nadal 2000, 28). These shortcomings in vision, combined with unforeseen events like the boost in demand for corn-based ethanol, led to many discrepancies between pre-NAFTA predictions and reality.

The first factor that skewed the negotiators' dealings in NAFTA talks was their belief in the unlimited expansion of Mexico's horticulture and warm-weather crops market. Hoping to break into America's citrus fruits, vegetable, and sugar markets, Mexican negotiators broke the agricultural stalemate and surprised many observers by making important concessions on corn in exchange for liberalizing horticulture markets in the United States (Mayer 1998, 137). The hypothesis was that competitive and intermediary producers would leave grain cultivation in favor of modernized production of tomatoes and other vegetables, while poorer farmers could find more productive jobs at these larger farms (Rivera et al. 2009, 90) .

There were many problems with this prediction. First, Mexican exports already accounted for 60 percent of total horticultural imports to the United States, meaning there was not much room to grow (Nadal 2000, 23). Second, Mexico's warm-weather crops have to compete with those of other Central American and Caribbean countries, many of which are naturally better suited for that kind of agriculture. This is especially true in the banana market, where that fruit constitutes 29 percent of the fruits imported into NAFTA countries from the rest of the world (Stout et al. 2004, 48). Also, the comparative advantage of Mexico in warm-weather crops is not as lop-sided as America's comparative advantage in grains. Warm-weather states like California, Texas, and Florida provide for a substantial amount of America's demand for warm-weather crops. As a result, Mexican fruit exports to the U.S. only grew by 50 percent in the ten years after NAFTA's ratification while Mexico's corn imports from the U.S. tripled in the same time period (Carlsen 2004).[2] The United States' strength in horticulture crops can also be seen in the fact that Mexico's horticultural exports to the United States fall in the summer months when the climate is warmer further north (Nadal 2000, 23). Finally, economists wrongly predicted that the expansion of the horticulture sector would correlate with a comparable expansion of jobs in that sector; that is, they assumed neutral technical change. The introduction of better technologies has made increases in output more related to capital growth than labor expansion (Nadal 2000, 21). As a result, jobs in the horticulture sector have not been as abundant as the government predicted. All of this shows that the horticulture and warm-weather crops sectors, which many in Salinas's administration saw as the future of Mexican agriculture, were never going to be large enough to absorb displaced small-scale corn farmers who relied to some degree on being able to sell their corn. By 2000, Mexico had just about maximized its import market share in America's horticulture market, which is also served by a strong domestic market (Nadal 2000, 23).

The second factor that NAFTA negotiators and economists incorrectly assumed was that subsistence corn farmers, who primarily live off their own production, would not be affected by lowered corn prices because they do not sell their produce and thus do not compete with American producers. Even today, the idea

2 Laura Carlsen, "Mexico after 10 years of NAFTA: The price of going to market" is based on presentations by the author at the Asian Regional Workshop on Bilateral Free Trade Agreements, held in Kuala Lumpur on 26-28 August 2004 and organised by the Third World Network.

of subsistence farmers as completely separated from the market is prevalent. In 2008, Marco Sifuentes, a spokesman for the agricultural department of Mexico reiterated, "our small producers are not affected by the free trade agreement… They don't participate in the market" (McKinley 2008). This reflects the thoughts of economists in the nineties who supported NAFTA on the prediction that trade liberalization would help subsistence farmers by allowing them to take advantage of lowered prices for corn products (Rindermann et al. 1998, 32).

Reality did not match predictions because subsistence farmers are not isolated from the market and are in fact affected by price fluctuations in corn, even if most of their corn is for their own consumption. As Nadal points out, even though a rural family may be subsistent, it still needs monetary flow to buy products that it cannot grow, like medicines, and tools (Nadal 2000, 43). The growing dependence of subsistence farmers on other sources of liquidity can be seen in the fact that on average 44 percent of rural household incomes come from non-farm-wages. Meré shows that remittances received by rural Mexicans "are becoming a relevant part of household income, particularly for those who hold a smaller plot of land, where remittance may represent as much as 30 percent of the household's income" (Meré 2007, 6). When strapped for cash, subsistence corn farmers are forced to sell petty amounts of their corn to cover their liquidity needs, forcing them to make up for the loss in food by expanding production (Nadal 2000, 36). As corn prices dropped over the last 15 years, subsistence farmers started planting more corn on their plots to make up for the increased amount of corn they had to sell to cover their liquidity needs. For example, Zahniser and Coyle (2004) say that "the average annual area harvested of corn during the NAFTA period is larger than the average for the 10 years immediately preceding the agreement (7.7 million hectares versus 7.0 million hectares" (Zahniser and Coyle 2004, 6). Contrary to beliefs held by the government economists, subsistence corn farmers are tied to the corn market even if the majority of their crop is for consumption. This discrepancy helps account for the increase in corn production, especially among small-scale farmers who do not have the capital or know-how to switch crops, cross the border, or adopt competitive farming techniques. For many subsistence corn farmers who cannot resort to these other measures, an increase in the production of their corn is the only way to independently meet their liquidity needs.

The third dimension that was overlooked during the negotiation of the trade agreement was that possibility that some corn-based product prices would drop with trade liberalization. Direct food use of corn accounts for about one-third of Mexico's per capita calorie supply and is principally consumed in the form of tortillas (Zahniser and Coyle 2004, 9). This statistic does not highlight the fact that tortillas are primarily the carbohydrate of the poor, because middle and upper class Mexicans can afford to eat bread. The centuries-old Mexican flatbread was subsidized in the 1930s in order to keep the cost of this staple low and support many small-scale producers (Ross 1999). As late as 2007, street protests over increasing corn prices have demonstrated the centrality of corn in the Mexican diet and highlighted the importance of corn policy in Mexico (McKinley 2008). During NAFTA negotiations, it was thought that the losses in the corn sector would be cancelled by lower corn-stuff prices as Mexico and the United States specialized in their comparatively advantaged sectors. Assuming that tortilla prices would drop, the government phased out its roughly fifty year-old system of regulating tortilla prices called La Compañía Nacional de Subsistencias Populares (CONASUPO) (Ross 1999). Although corn prices did fall, the price of tortillas rose, leaving many to ask why.

The prediction that tortilla prices would fall with corn prices was based on assumptions that turned out to be wrong. Most importantly, it was assumed that tortilla prices were dependent only on corn prices. Officials did not take into account that the tortilla is segmented into various imperfect markets (dough, flour, machinery), of which corn serves only as one (though central) input. Although the processing of tortillas is fragmented into about 45,000 different tortilla producers, the tortilla flour market that supplies them is an oligopoly where the two largest companies—GIMSA and MINSA—account for 70 percent and 27 percent of the market respectively (Henriques and Patel 2004, 6). NAFTA allowed these two companies to import American corn at a fraction of what it cost them to buy Mexican corn while the 1996 deregulation allowed them to artificially raise prices over the years. The fact that these large companies benefited from NAFTA's agricultural policies is no surprise, considering the close connection between their CFOs and the Mexican government. Many of its leaders are members of the same organizations, like the Consejo Mexicano de Hombres de Negocios (Mexican Council of Businessmen) that comprised the cuarto de al lado of the Mexican NAFTA negotiating team (GRUMA). In an extreme example, the "king of the tortilla" and long-time owner of the world's largest corn tortilla manufacturer, Roberto Gonzalez Barrera, has been a long-time friend of President Salinas de Gortari. With the dissolution of CONASUPO, he received all of the subsidized corn sales of the government and even furnished the ex-president with a private jet (Ross 1999). In keeping with neo-liberal policies, Mexican presidents since 1996 have rejected reinstating price controls to fight this speculation. Facing widespread protest in 2007, President Calderón held firm in his belief in free-market economics, saying "the government cannot decide the price of these products" while promising to "to protect those who have the least" by persecuting speculators and supplying low cost corn to the poorest of Mexican society (Wall 2007). The situation was aggravated in the mid-2000s as a real shock in corn prices caused by the new demand for ethanol raised tortilla prices even further. Although the problem has its roots in NAFTA, the unpredicted rise of tortilla prices is largely a product of faulty domestic policy in Mexico. Prices could be stabilized if the government broke the tortilla flour monopoly and were more effective in combating hoarding and speculation.

The fourth failure between pre-NAFTA rhetoric and outcomes relates to the supposed assistance that the Mexican government would provide to those farmers who would be most adversely affected by trade liberalization. In negotiating the corn provisions of NAFTA, the Mexican government reserved the right to charge high tariffs on imported corn that surpassed a certain duty-free volume. As originally planned, this tariff would slowly reduce itself to zero by 2008, making the transition to free trade smooth. In combination with this plan, the Mexican government devised two policy instruments to assist producers during the transition period. The first, the Program for Direct Assistance in Agriculture (PROCAMPO), is a direct income subsidy created in 1994 that pays farmers the difference between a guaranteed floor price and the government's target rate (Nadal 2000, 28). The other, Alianza para el campo (alliance for the countryside), is a "matching funds" subsidy that helps farmers (generally those most able to switch to other crops) invest in advanced irrigation systems, high yield crops, and farming tools, the goal being to increase the competitiveness of Mexican farmers (Suvedi 2000).

PROGRAM FAILURE: THE RESULTS AND RESPONSE TO NAFTA

The Mexican government's plans to ease transition pains from NAFTA, which sound good on paper, failed in many ways, largely due to budgetary problems. The first major failing was that the fifteen-year transition period was truncated into a span of thirty months. Although Mexico was importing American corn beyond the duty-free amount since the agreement was put into place, Mexico never imposed the transitional tariffs that were supposed to start at 215 percent. This was largely due to an already insufficient domestic supply of corn and the 1994 Mexican peso crisis, which saw a sudden devaluation of the Mexican peso and required additional corn to maintain corn-based food prices from spiraling too high. Furthermore, instead of reducing the tariffs over the fifteen-year period, the government reduced them in thirty months due to inflation worries, pressure from powerful corn processors, and disorganized control mechanisms at the border. As a result of this bad implementation, corn prices plummeted 48 percent between 1994 and 1996 while the government failed to collect $2 billion in tariffs that it had a right to claim (Henriques and Patel 2004, 6).

These $2 billion of forgone revenue would have been useful in implementing Mexico's new farming policies. PROCAMPO payments to farmers, which initially stood at around $100 per hectare, did not keep up with inflation and as of 2000 provided less than $62 per hectare in real terms. Since small farmers have become dependant on PROCAMPO to cover for the increasing price of farming inputs like fertilizer, pesticides, and seeds, many PROCAMPO payments are made directly to the suppliers of these inputs who in turn supply the farmers with fewer and fewer supplies (Nadal 2000, 29). The growing difference between PROCAMPO payments and input prices has essentially made these payments welfare checks for poor farmers instead of starting capital for creating more advanced farming techniques. Alianza para el campo met a similar fate in that it started with a measly operating budget of about 200 million U.S. dollars that has been declining in real terms ever since the program began (Nadal 2000, 30). Suvedi has also seen that this program tends to subsidize those producers most able to move to more intensive production, instead of those in greatest need of assistance. Because of this, only about a fourth of those agriculturists receiving Alianza para el campo subsidies are subsistence farmers (Suvedi 2000, 15). These programs, which the administration hoped would create a smooth and fair transition to free trade, were not properly implemented and did little to achieve their purposes.

AN INDEPENDENT CAUSE? NAFTA, CORN POLICY, AND SOCIAL OUTCOMES

NAFTA's effect on small corn farmers cannot be evaluated in a vacuum. Such a project requires an understanding of other factors that affected this sector, such as political structure, geography, technological advances, and relations with the outside world. Corn producers—both subsistence farmers and those producing for the market—saw their lives changed by NAFTA policies. These changes within the corn sector also affected how the corn sector related to Mexico. This broader question requires an understanding of NAFTA's exclusive role in changing the corn market. The paper now examines how the effects of NAFTA on the corn sector have made themselves felt in other aspects of Mexican society, namely immigration, the environment, and domestic spending.

Many of the adverse effects of NAFTA on Mexico's corn industry correlate with certain domestic policies, changes in demand for corn, and competitiveness of other countries. In many cases, the discrepancies created by NAFTA would have turned out differently if it were not for these extra conditions. At the same time, certain Mexican policies of the 1990s were planned specifically to accompany NAFTA, and cannot be separated from the effects of the agreement. As Zepeda, Wise, and Gallagher argue, it is incorrect to assume the "no-NAFTA scenario would entail Mexico following the very same policies it has since the 1980s, only without NAFTA" (Zepeda et al. 2009. 3). NAFTA is intrinsically entwined with such policies as tighter monetary policy and deregulation of the corn industry. Thus it is fruitless to analyze narrowly the effects of the treaty without considering NAFTA as part of Mexico's liberalization attempt of the mid 1980s and onwards. Keeping this in mind, when one controls for additional factors, for example, the devaluation crisis of 1994, the growing competitiveness of China, and rise of ethanol, NAFTA still contributed to the demise of the Mexican corn sector by setting in motion a series of policies that ignored the public sector's role in promoting growth and defending at-risk industries.

Trade liberalization through NAFTA was a conscious choice made by the Mexican government; it was not a natural progression, nor was it the only available path. In its effort to modernize, Mexico chose to adhere strictly to the neo-liberal guidelines of the Washington Consensus, which called for financial deregulation, privatization, strict property rights, and arm's length governmental-business relations. Although neo-liberal economists advocated this type of plan, India, China, and Brazil achieved more success by following development paths that strayed from this neo-liberal recipe and molded to the specific needs of each country. With this in mind, it makes little sense to argue that the situation would necessarily have been worse had NAFTA not been passed. Economist Dani Rodrik makes the argument that "neo-classical economic analysis is a lot more flexible than its practitioners in the policy domain have generally given it credit for" (Rodrik 2007, 15). In other words, overarching economic principles like liberalization, open markets, and property rights should guide policy but should not be translated into specific policy. In ratifying NAFTA, Mexico followed a theoretical recipe for success closely without seriously factoring in its special circumstances. Examples of strict neoliberal policies included the dissolution of tortilla price controls under CONASUPO, the reprivatization of the banks in 1985, and the forced dissolution of "illegal" worker's unions (Peters 1998, 355-356). NAFTA's passage, philosophically related to such policies, had direct harmful consequences for the Mexican corn industry. These developments in the corn industry may affect Mexicans outside that particular sector.

With this background in mind, this paper turns to broader effects of NAFTA's agricultural policies, particularly on the environment and land use. The first noticeable effect that can be attributed to NAFTA has been on the environment. In his 1992 book that laid out the Mexican government's objectives for NAFTA, Luis Téllez, the then Undersecretary of Planning at the Secretariat of Agriculture for President Salinas de Gortari, predicted that reductions in the output of corn would set aside marginal land and relieve it of over-tillage (Téllez 1992). This prediction turned out to be incorrect, a misunderstanding that, encoded in NAFTA, had clear consequences. Nadal concludes that the "extension of the agricultural frontier to marginal lands", and the "deterioration of the social institutions that enable communities to maintain adequate soil conservation practices" have enhanced soil erosion problems in Mexico (Nadal 2000, 81). Increased corn cultivation as a result of falling prices has led to the disintegration of the soil in many traditional farming states like Oaxaca and Chiapas, where corn output increased 48 percent and 51 percent respectively between 1991 and 1997 (Nadal 2000, 47). The problem lies in the fact that most of the poorest farmers, who have increased corn production to cope with lower returns for their crops, farm on sloped plots of land that have low-quality soil. At the same time, other factors help explain the disintegration of subsistence farming units and the over-use of marginal lands.

The privatization of the ejido system in 1992, allowed ejidatarios to sell their land to private parties and ended the government's obligation to redistribute land according to peasants' petitions (Cornelius and Myhre 1998, 2). A four-year research project established by the Center for U.S.-Mexican Studies on the consequences of the 1992 agricultural restructuring found that although changes are not happening as drastically as predicted, the privatization of the ejidos was creating a "gradual and regionally varied—though still far-reaching-process of rural transformation," by consolidating ejidos in the hands of private land-holders, stimulating emigration to the United States, and favoring "commercially lucrative ejidos with the greatest potential for expanding export performance" (Cornelius and Myhre 1998, 19, 16).

The privatization of the ejido system in 1992 allowed ejidatarios to sell their land to private parties, splitting many farming communities that used to practice communal farming techniques. In addition, technological changes, namely the growing availability of chemical fertilizers, allow for more rigorous use of soil that needs to lay fallow to ease the erosion process. Corn yields in Mexico rose to 2.9 tons per hectares in 2005 as opposed to 2.0 in 2000, a testament to the effectiveness of new technologies but a bad omen for the over-tilled land of Mexico's countryside (Randall 2007).

Even if these factors were independent of NAFTA, Nadal shows that trade liberalization under NAFTA "may enhance these negative trends… through more intensive use of soils." The change in corn prices has led to a serious intensification of corn production among those producers who rely exclusively on corn and farm on marginal soil that is especially susceptible to irreversible erosion damage. By 1997 roughly two-thirds of Mexico's agricultural land met that description (Nadal 2000, 81).

The land has also suffered as a result of emigration and the disintegration of the social institutions and networks within old ejido communities. Since the early 1990s, rural people have fled the Mexican countryside to the cities and the United States at an astonishing rate. The percentage of labor devoted to agriculture shrank from 25 percent in 1994 to 15 percent in 2009 (CIA World Factbook 1994, 2009). As a result, community farming practices like grazing livestock on communal grounds and curating seed types, are becoming more rare. Animals graze on private farmland instead, uprooting plants that keep the soil healthy. In various communities, local corn growing practices are being lost now that younger generations are leaving the farms (Nadal 2000, 87). Looking beyond NAFTA as a cause, some attribute this trend of increased migration to more long-term changes like the growing familial, social, and economic ties between Mexico and the United States (Massey and Espinosa 1997, 989-990). Zúñiga and Molina argue that the high population growth since the mid 20th century, in combination with increased female labor force participation, led to the high emigration rates from Mexico that started in the 1970s (Zúñiga and Molina 2008, 3). But simple demographics do not explain the sudden increase in emigration from rural Mexico in the 1990s. In connection with a 2.3 million drop in total employment between 1990 and 2008 (largely due to agricultural employment loss), Mexicans have been fleeing the countryside (Zepeda et al., 2009, 13; Meré 2007, 12). In connection with the 2.3 million agricultural jobs that were lost between 1990 and 2008, rural migration to the United States grew 452 percent from 1980 to 2002, a large change considering that rural migration to the United States only grew 92 percent from 1980 to 1994 (Meré 2007, 3). This migration trend runs opposite the intentions of the trade agreement. During a campaign to sell NAFTA to an American audience, President Salinas de Gortari plainly stated in an NBC News interview: "we want to export goods, not people" (NBC Nightly News 1990 qtd. in Mayer 1998, 45). Trying to explain this migration, Philip Martin, an agricultural economist, blames the Mexican government's handling of NAFTA provisions for rendering tens of thousands of Mexican farmers useless and forcing them to "export themselves" to the United States (Uchitelle 2007). Martin mainly blames the lack of transition from corn to alternative crops for the unexpected increase in migration: "'We understood that the transition from corn to strawberries would not be smooth…but we did not think there would be almost no transition'" (Martin qtd. in Uchitelle 2007). This astonishing increase occurred in spite of the rising militarization of the U.S. border and plummeting birth rates, which would suggest a decline in emigration.

Another important effect on the rural sector that can be traced directly to NAFTA is the decrease in public spending on the agricultural sector. Although foreign direct investment (FDI) more than tripled between 1992 and 2006, overall investment rates in Mexico have remained remarkably stagnant at about 20 percent of GDP (Zepeda et al. 2009, 7). Additionally, less than 1 percent of that FDI went into the agricultural sector (Henriques and Patel 2004, 2). Hoping that NAFTA would generate large sums of private investment from home and abroad, the Mexican government simultaneously reduced its government spending on agriculture by reducing corn subsidies, eliminating corn price guarantees and dismantling CONASUPO. The government never provided more than meager budgets to PROCAMPO and Alianza para el campo. Proponents feared that high levels of government spending would "crowd out" private investment, but this did not turn out to be the case. Looking beyond levels of FDI in Mexico (which tripled since NAFTA) Zepeda, Wise, and Gallagher reveal that total levels of investment (foreign plus domestic) are extremely low in comparison to that of rapidly industrializing countries, like China, and even in comparison to previous levels of total investment in Mexico. This lack of domestic private investment is a result of pressure from imports and a lack of government spending that should provide infrastructure and credit to Mexican firms (Zepeda et al. 2009, 7). NAFTA did attract a lot of American private investment (conglomerates like Cargill and Archer Daniels Midland own a large portion of Mexico's competitive agriculture), but the lack of comparable domestic government spending on necessary infrastructure like irrigation, roads, and housing has stunted economic growth (Uchitelle 2007). From this, one can see that NAFTA has made it hard to translate increased FDI into economic growth, especially in the agricultural sector.

CONCLUSION

At the outset of negotiating NAFTA, poor farmers using outdated techniques on marginal plots of land fit badly with the Mexican administration's vision of modern, export-oriented agricultural production, or at least with the policies that came out of that vision. What was created proved to be unworkable: The transition period was slashed, the relief programs' budgets were never increased, and corn producers were excluded from the negotiation process.

"In spite of calls from economists and opponents to rework the provisions of the trade agreement, the Calderón administration has not taken any significant steps toward supporting those agrarians hurt by NAFTA" (Zepeda et al. 2009, 18). Calderón has refused to consider a re-negotiation of NAFTA, stating that "the free trade agreement, negotiated almost 15 years ago, has its pros and cons, but overall it has benefited the country." Instead, he favors instituting domestic policies that will alleviate the pressure felt by these farmers (Jacinto 2008). In its latest informe de gobierno (Mexico's equivalent of a State of the Union), the Calderón administration has countered claims of agricultural neglect by pointing to the roughly $1.5 billion increase in PROCAMPO's budget and stating that new measures have been put in place to ensure a more even distribution of these payments to the smallest of producers (Economía Competitiva y Generadora de Empleo). Still, Calderón faces much opposition from groups representing small farmers who claim that he has abandoned the Mexican farmer (Sánchez 2009).

In light of continued resistance, displaced corn farmers and a growing percent of the general citizenry are voicing their frustration with NAFTA. The 2006 presidential hopeful, Andres Manuel López Obrador, ran on a platform of not honoring Mexico's commitment under NAFTA to eliminated tariffs on U.S. corn and beans, and only narrowly lost the election (Stevenson 2006). Large numbers of people have taken to the streets on numerous occasions, but the political structure of the government has prevented any significant changes to the corn provisions of the treaty or the accompanying domestic policies.

In 2010, NAFTA's failure to improve the conditions for small-holder corn farmers points to one central question—one for which any attempt to answer is outside the scope of this paper. Why have so many of these farmers continued to produce corn rather than change to more lucrative crops, as the Mexican government foretold? In one way, this is a question specific to Mexico: the Mexican government's mischaracterization of the corn sector has had serious internal consequences. This paper argues that the Mexican government did not move quickly to address NAFTA's negative effects on corn farmers, and an examination of the original policy suggests that many of those effects could have been avoided. The content of Mexico's corn policy, above all the assumptions made about subsistence farmers' relation to the market, is instructive beyond the country's borders. The method and philosophy of the treaty raises pressing questions for similar trade deals.

Although some might dismiss the NAFTA as an agreement of the past, the consequences of the agreement are still being felt today, especially now that the last and most important tariff barriers have been terminated. With the dramatic increase in tortilla prices, the spread of rural poverty, and the development of corn as an energy source, the effects of free agricultural trade between Mexico and the United States are current events, contemporary with new trade liberalization between countries of very different economic development, and a reminder that small agriculture can make a large statement.

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