

Milk against Poverty: Nutrition and the Politics of Consumption in
Twentieth-Century Mexico

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ABSTRACT

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This dissertation examines how and why food consumption and nutrition became legitimate public policy issues in Mexico between the 1930s to the 1980s. In the post-revolutionary era, Mexican public officials began to systematically consider diet a social problem that affected not only individual well-being but could influence the economic development of the nation. This belief resulted in the implementation of policies with the goal of improving the quality of the Mexican diet.

Several government actors participated in formulating and executing food and nutrition policies. Economic authorities, doctors and nutritional experts became convinced that food consumption could be managed, rationalized and perfected to obtain optimal results both in terms of expenses and health benefits. For economic officials, the primary goal of food policies was to maintain the stability of the factors of production, primarily labor costs, to encourage industrialization. Thus, from the early 1930s, the Mexican government regulated prices and intervened in food markets to control the supply side. Since the 1970s, government officials also sought to influence the demand side through the behavior of consumers. Diet came to be regarded not only as an object of health intervention and macroeconomic policy, but also as a crucial component of the new consumer culture.

The Mexican government also promoted the study of food consumption scientifically, looking for ways to optimize food consumption with low wages. This scientific research done at public hospitals helped solidify diets as a legitimate sphere of intervention. Most doctors and

nutritional experts agreed that Mexicans in general were malnourished due to the quality of their diets, which lacked animal proteins. Based on the findings of their studies, which indicated that diets had effects on mental development, these experts insisted that malnourishment was the explanation for the poverty and backwardness of Mexican society.

Milk production and distribution is presented as a case study of the multiplicity of processes and actors involved in food consumption and nutrition policies in Mexico. For both doctors and economic planners, it was not enough to recommend increased consumption of animal proteins if these products were not available in the market or were not affordable enough for low income consumers to buy them. Government officials implemented policies to increase the production and consumption of the product. This dissertation traces how the milk sector was transformed and how the interactions between local producers, government agencies and transnational companies shaped an incipient industry in the early twentieth century into an important economic sector in several regions of Mexico.

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Introduction

In 2010, Mexican consumer organizations El Poder del Consumidor, Al Consumidor, El Barzón, and Oxfam launched a campaign to raise awareness and reverse the current trends of obesity in children and adults. The organizations were alarmed because Mexico has one of the highest rates of obese and overweight people in the world (along with the United States), which increases risks of ill-health and health care expenditures. The consumer organizations insisted that the government had to take measures to reverse the epidemic. With the support of other NGOs and groups of sustainable agricultural producers, they summarized their demands in the Manifesto for Dietary Health, which declared that “the state, the executive and legislative powers, as well as companies, are responsible for the deterioration of the dietary habits of Mexicans.”¹ To prove their point, the organizations relied on statistics and clinical data compiled by Mexican health authorities and both national and international expert bodies. In the manifesto, the civil society organizations insisted that the government was not adhering to its constitutional mandate of protecting the health of Mexican citizens. By acting by omission, the government favored powerful economic interests that made great profits selling junk food. The Manifesto’s most important demands were the implementation of a permanent national nutrition education campaign, the prohibition of processed food advertisements targeted to children, and the guarantee of food sovereignty to make basic foods available and accessible to all.

The current demands of the NGOs and their analysis of the causes of the obesity epidemic suggest deep seated beliefs that food consumption is intrinsically linked with government action. Another important implication of the demands of the civil society groups is

¹ El Poder del Cosumidor A.C., “El ambiente obesigénico entre el poder legislativo y el ejecutivo: Manifiesto por la salud alimentaria,” accessed April 21,2010, http://ss1.webkreator.com.mx/4_2/000/000/02b/b46/manifiesto_salud-alimentaria.pdf

the conviction that the government has the obligation to regulate certain aspects of the market to protect consumers as a group, in particular regarding food. The example also illustrates the complexity of diet as a problem framed by political discourse, economic interests and scientific interventions. Diet is at once shaped by consumption patterns, social customs, economic dynamics, government intervention, and expert medical recommendations. The concern for the Mexican diet, and the demands presented in 2010 by the NGOs are embedded in a long history of public debate and policy intervention aimed at changing the dietary habits and consumption patterns of Mexican citizens.

During the twentieth century in Mexico food consumption became a public policy issue. Starting in the 1930s, the Mexican government considered diet a social problem which had direct bearings not just on individuals but on the future and economic development of the nation. In this dissertation, I examine why and how different government actors turned diet into a legitimate arena for public intervention, as well as the emergence and implementation of policies with the goal of influencing food consumption patterns, particularly the idea of improving dietary habits. In other words, during the twentieth century in Mexico doctors, nutritional experts, and economic authorities became convinced that food consumption could be managed, rationalized and perfected to obtain optimal results both in terms of expenses and health benefits.

Food consumption is a complex phenomenon determined by many social, economic, and cultural factors. What people eat not only depends on how much they earn, but on what is available in the market. Diet is also influenced by desires, customs, and expectations. Other important factors are intra-family relations and divisions of labor, like who cooks or who receives a larger share of the food available. Also, technology changes food costs, preparation, preservation and hygiene, all essential to determine dietary patterns. In sum, eating is

simultaneously biological, cultural and economic act, but it has many facets, most of which can be the subject of varied forms of intervention.

Diet in Mexico was not the exclusive area of intervention of a single government agency, and different branches of government were interested in food in different ways. For the post-revolutionary economic officials food consumption was seen as subordinate to economic growth. In other words, the primary goal was to maintain the stability of the factors of production, including labor costs, to encourage industrialization and investment. For example, Mexico experienced a period of high inflation from the late 1930s until the mid-1950s, and during that period economic officials used intervention in the food market to control overall price increases. By controlling inflation, economists tried to discourage demands for wage increases, in an attempt to promote a stable developing economy. But at the same time, the Mexican government was the result of a popular revolutionary struggle. The ideological foundations of the post-revolutionary government, crystallized in the 1917 Constitution's legislation on social rights, were based on the goal of fulfilling the needs of the popular classes. Subordinating food consumption and wages to macroeconomic goals created political tension, particularly in regards to the alliance between the government and organized labor. The government had to match the larger economic development goals with the political demands of the social sectors that supported it. In this context, government intervention in the food market became a mechanism to transfer income to the poor without drastically modifying the wage structure. Intervening in the food market and subsidizing food consumption was an instrument to regulate class relations and compensate for the negative effects the overall economic policies had on income, and thus maintain social peace.

It was this interest in regulating the factors of production that led the Mexican government to promote the study of food consumption scientifically, looking for ways to optimize food consumption with low wages. Since the 1940s, the federal government funded studies to discover what people ate and why and how they could eat better. For this the government needed to recruit experts, particularly nutritionists and doctors who studied the properties of food and the effects this food had on human health. This was not a phenomenon exclusive to Mexico. Since the early twentieth century, international organizations like the International Labor Office, the League of Nations, and later the United Nations and its agencies, promoted nutritional knowledge as a way to improve the application of a broad array of policies, ranging from health to agricultural. The federal government provided funds to create scientific institutions dedicated to the study of nutrition and health. The most important of these was the Instituto Nacional de Nutrición (INN, National Institute of Nutrition), which was founded in 1946, and the Hospital Infantil de México (HIM, Children's Hospital) founded in 1943. The scientific research at these institutions helped solidify diets as a legitimate sphere of intervention for public policy.

Nonetheless, while doctors at these agencies were public servants, they managed to achieve a degree of institutional autonomy, based on claims of scientific legitimacy. Their views about food and nutritional matters were not necessarily the same as those of political and economic officials. Doctors, by the nature of their profession, had different allegiances. The doctors working at public institutions wanted to produce knowledge sanctioned by a specialized expert community that went beyond the national context. While they were dealing with eminently political and economic issues (such as what people eat and the nature of poverty and malnutrition) their intervention in the public debate and in policy was framed as technical

scientific knowledge. Yet, they sought to make their work relevant for the design of public policies. They thought that policies would be more effective if they were backed and assessed by the rigor of science.

During the twentieth century, most doctors and public health experts agreed that a good diet in terms of quality and quantity was not only essential to human survival but to the overall health status of individuals and populations. Moreover, medical interest on diets changed from acknowledging the effects of nutrition in an anecdotal manner, to a scientific research agenda, depending on laboratory work, nutritional surveys, and clinical studies. From the late 1930s to the early 1980s, doctors and nutritional experts elaborated theories and conducted surveys and experiments regarding dietary deficiencies and the effects of these deficiencies on individuals and even society. Most doctors and nutritional experts came to agree that Mexicans in general were malnourished due to the quality of their diets, which lacked animal proteins. Based on the findings of their studies which indicated that diets had an effect on mental development, doctors and nutritional experts insisted that malnourishment was the explanation for the poverty and backwardness of Mexican society. Oftentimes, scientists intervened in public debates that exceeded their specific area of expertise, taking advantage of their scientific legitimacy to promote larger diagnoses about the nature of Mexican underdevelopment that were not based on systematic research.

Nutritional experts consistently recommended intervention to change and improve dietary habits, in particular increasing protein consumption. They recognized the complexity of the problems they were addressing, and they often proposed solutions that challenged the capacity and political will of the government. Leaders of the National Institute of Nutrition, for example, usually pointed that nutritional education would be largely useless if people could not afford or

find certain foods in the market. Doctors often advised actions that did not depend on them directly and pushed the government for efforts in the areas of income and food availability. Nonetheless, doctors also proposed solutions to malnutrition that focused on individual behavior more than structural variables. These recommendations offered the government a way to do something about nutritional problems while avoiding major redistribution efforts.

Government strategies towards food consumption changed as the nature of the Mexican economic market was itself transformed during the twentieth century. Starting in the 1940s, technology changed the systems and modes of production, distribution, and sales of most consumer articles, including food. For example, traditional foods like tortillas were no longer handmade by women milling corn but produced in small factories with special machinery.² The same happened with bread, milk and other staple foods, whose production was no longer artisanal. Moreover, chemists and engineers created new foods, for example carbonated sweetened beverages, soup cubes, flavored potatoes chips, etc. Increased industrialized production necessitated the development of new forms of distributing and marketing these goods. Companies used new media like film and later television to sell products on a massive scale.

Given these changing market conditions, by the 1970s government officials in Mexico started to consider how new factors such as advertisement affected spending (and indirectly the real value of income). While all social classes were affected by “consumerism,” many government officials and union leaders were particularly concerned about low income consumers being manipulated by sellers and advertising. Workers spending beyond their needs was seen as hurtful both for the national economy and for the wellbeing of the masses. Considering that

² Jeffrey Pilcher, *¡Que vivan los tamales! Food and the Making of Mexican Identity*, Diálogos (Albuquerque: University of New Mexico Press, 1998), 105.

excess consumption could disrupt the delicate equilibrium of wage costs, macroeconomic variables like trade balances, and the well being of family economy, in the mid-1970s the government created specialized consumer agencies. The goals of these agencies were to influence the consumer behavior of the population and to defend consumers from abuses. In other words, on top of regulating prices and intervening in food markets to control the supply side, the Mexican state sought to influence the demand side through the behavior of consumers. Since the 1970s, diet came to be regarded not only as an object of health intervention and macroeconomic policy, but also as a crucial component of the new consumer culture. New government agencies, such as the Instituto Nacional del Consumidor, prompted citizens to control and rationalize their spending as a way to improve their household economy. For the consumer agencies and other government officials, educating the consumers would have a similar effect as raising salaries, since family budgets would be optimized. Official publications encouraged people to live frugally (*vivir con poco*). The new consumer agencies sought to promote consumers who were informed not only about their rights and the prices of basic products, but also on the nutritional value of the food they purchased. Since the 1970s, dietary habits and knowledge about nutrition was not only an object of expert medical knowledge. Consumer agencies provided information to the population on how to have a balanced diet that included more fresh foods, animal protein, and less sugar and processed foods. These agencies took advantage of the accumulated knowledge about the deficient diet of Mexicans, much of which had been developed throughout the years by the government's nutrition research agencies mentioned above. The government even published cookbooks optimizing the health benefits and the low cost of ingredients. The long standing post-revolutionary government commitment to the

living standards of the poor was now not only dependent on developing the national economy, but also on rationalizing the household economy and nutrition.

Any policy addressing the improvement of diet necessarily involves a very wide range of actors, including producers, consumers and intermediaries. So a government who wants to intervene in the food system has to take into account all these actors and the relationships between them, which in large part are economic. Therefore, an analysis of food policy intervention should include food producers. If a government targets improving nutrition as a goal, it involves food producers necessarily either as allies or as enemies or both. The Mexican government had numerous policies to increase agricultural output during the twentieth century. The production and markets of each of these agricultural products had their own specific dynamics. In this dissertation, I focus on the production of distribution of milk. Government officials and medical experts from public research institutions recommended dairy products, particularly milk, as staples in a nutritious diet, especially for children. Economic officials did not consider that expanding meat consumption was possible because the product was too costly. Milk was also special because other producers of animal products like meat and egg never faced competition from the government like milk producers did. The Mexican government controlled milk prices and participated in the milk market selling and reconstituting powder milk from 1950 to 1991. The case of milk illustrates how local companies and producer groups fought for what they considered fair regulation and free markets.

Milk is a good case study of the multiplicity of processes and actors involved in food consumption policies. For both doctors and economic planners, it was not enough to recommend increased consumption of animal proteins if these products were not available in the market or were not affordable enough for low income consumers to buy them. Moreover, the Mexican

government promoted large agricultural modernization projects in all of the country, which included large irrigation infrastructure and agricultural loans. Milk is central to understand food policies in Mexico, because unlike corn or other basic grains, milk distribution was not a policy that explicitly included provisions to help local producers. Producing milk required a much higher investment than harvesting corn, thus its production was not as widespread as other agricultural endeavors. For this reason, milk distribution was originally conceived by the government as a social policy designed to improve the nutritional conditions of the low income populations, given that before the 1950s the production sector was comparatively small. Nonetheless, producer activities and government policies changed over time, as did incentives and challenges to production. This dissertation traces how the sector was transformed and how the interactions between local producers, government agencies and transnational companies shaped an incipient industry in the early twentieth century into an important economic sector in several regions of Mexico, including central Mexico, Jalisco and La Laguna.

A large part of nutrition and food policies involved government institutions interacting with food producers. These interactions ranged from providing incentives like loans and subsidies, but also disciplining them, imposing regulations and limiting profits. The goals of different state actors often conflicted. While government officials frequently clashed with producers as a consequence of pushing food policies forward, other times the improvement of diets suffered due to the relation between government and producers. For example, while nutritional research consistently showed that Mexicans were consuming too much sugar and consumer agencies discouraged the excessive consumption of sugar-based products, the state never ceased to subsidize sugar production. The livelihood of large rural sectors depended on

cane production. Government officials put social peace in these regions over the overall nutritional wellbeing of the population.

Historiography

This dissertation draws from and contributes to the literature about the post-1940s Mexican state, studies of expertise and public health, as well as the history of consumption. With this work I am contributing to the broader rethinking of the “long wave” of mid-century Mexican political stability and economic growth. I do not focus on a single government agency or private firm, but on a multiplicity of actors that interacted with one another. Recent academic literature about post-revolutionary Mexico has focused mostly on the period before the 1940s. One of the most popular topics of inquiry for the 1910 to 1940 period has been “the dynamics of the state’s day to day engagement with grassroots society”³ and how these dynamic of resistance and interaction have influenced the process of state formation. In the case of post-1940s Mexico, the traditional academic literature has characterized the Mexican political system as authoritarian and corporatist. Under this scheme, Mexican politics were dominated by a single political party which operated through political alliances with rural and organized labor sectors. In such a system, its capabilities to co-opt, rather than elections, was the primary source of legitimacy for the government. When cooptation did not work, the state used coercion to solve disputes. Historian Arthur Schmidt considers that this interpretative framework, which concentrates on state power and emphasizes “the effectiveness of corporatism,” has marginalized other social

³ G. M. Joseph and Daniel Nugent, *Everyday Forms of State Formation: Revolution and the Negotiation of Rule in Modern Mexico* (Durham: Duke University Press, 1994), 3.

actors “from any explanatory process.”⁴ As a way of countering traditional literature, scholars have more recently demonstrated how local powers and cultural practices have challenged the political and social directives of the central state.⁵ The desire to transcend state centered narratives and to question abstract general frameworks, such as presidentialism and corporatism, marks most of the efforts to create a cohesive historical revision of post-1940 Mexico. In order to challenge the persistence of these narratives, historians have re-examined regional politics and its relationship with the federal state, as well as the modes of production, dissemination and reception of different kinds of cultural identities. Hence, in the last three decades there has been significant more emphasis on the study of popular culture and politics from “the bottom up.”⁶ While topics like institutions and public policies receded into the background, the changes provided much needed new insights, theories and approaches that took into consideration issues of gender, class, race and identity. In relation to food, social and cultural historians, not just of Mexico, have analyzed the relationship of cuisine to the formation of different national identities.⁷ These studies address elite and popular adoption of diverse culinary traditions, regional and international, through modernizing or nationalist discourses informed by ideas of taste and status.

⁴ Arthur Schmidt, "Making it Real Compared to What? Reconceptualizing Mexican History since 1940," in *Fragments of a Golden Age: the Politics of Culture in Mexico since 1940*, ed. G. M. Joseph, Anne Rubenstein, and Eric Zolov (Durham, NC: Duke University Press, 2001), 29.

⁵ See G. M. Joseph, Anne Rubenstein, and Eric Zolov, *Fragments of a Golden Age: the Politics of Culture in Mexico since 1940*, American encounters/global interactions (Durham, NC: Duke University Press, 2001).

⁶ See E. Van Young, "The New Cultural History Comes to Old Mexico," *Hispanic American Historical Review* 79, no. 2 (1999).

⁷ See Pilcher, *¡Que vivan los tamales! Food and the Making of Mexican Identity*; Harvey A. Levenstein, *Paradox of Plenty: a Social History of Eating in Modern America* (New York: Oxford University Press, 1993); Harvey A. Levenstein, *Revolution at the Table: the Transformation of the American Diet* (New York: Oxford University Press, 1988); Doris Witt, *Black Hunger: Soul Food and America*, 1st University of Minnesota Press ed. (Minneapolis, MN ; London: University of Minnesota Press, 2004).

During the last two decades there has been a growing body of historical analysis that questions the hegemonic nature of the modern Mexican state. These critics have also disputed the notion that post-revolutionary Mexico had a “strong state.” In other words, they asserted that the state has not been capable of implementing rules and measures against powerful economic actors. Schmidt suggested abandoning the view of the state as an “institutional monolith,” and thinking of the state instead as an “ensemble of practices, institutions and ideologies of rule.”⁸ These ideas are directly derived from a theoretical framework developed by sociologist Bob Jessop. For Jessop the state is

an ensemble of power centers and capacities that offer unequal chances to different forces within and outside the state and that cannot, *qua (in the capacity of)* institutional ensemble, exercise power. This implies that it is not the state, as such, that exercises power. Instead, its powers (plural) are activated by changing sets of politicians and state officials located in specific parts of the state in specific conjunctures.⁹

When I refer to the state and analyze state action I ascribe to the model formulated by Jessop. My aim is to examine the actions of the post-revolutionary state by looking at the people, issues and organizations involved in the decision making process. Moreover, defining the problem solely in terms of strength or weakness lacks explanatory power regarding what sort of activities state actors actually engage on, or the characteristics of policies they choose to pursue. The crafting of public policies is a composite of events, in which government officials interact with each other and other social actors. The levels of contention in these interactions can range from outright conflict to relatively effortless consensus. Therefore, some policy choices are sometimes more problematic than others. For example, while price controls has always been an object of controversy and contentious views of different actors, few people dared to oppose the

⁸ Schmidt, "Making it Real Compared to What? Reconceptualizing Mexican History since 1940," 41.

⁹ Bob Jessop, "Redesigning the State, Reorienting State Power, and Rethinking the State," in *Handbook of Politics*, ed. Kevin Leicht and J.C. Jenkins, *Handbooks of Sociology and Social Research* (New York: Springer, 2010), 45.

policy of educating consumers. The notion that malnutrition was a problem was rarely disputed. However, the causes and possible solutions to the problem were the subject of debate and intervention of various state actors with different interests and outlooks.

Bob Jessop also points to a key problem brought by the recognition that the state is not an “institutional monolith”:

The state is just one part of a complex social order with limited capacities to intervene in other parts of the whole and is, at the same time, held responsible for the whole and expected to intervene in the last instance to maintain social cohesion and institutional integration.¹⁰

While the state is an institutional ensemble, it is often referred to by various actors as a monolith. Like any state policy, the implementation of nutritional policies did not depend on a single state agency, not even exclusively on state institutions. To be successful, nutritional policies depended on the mobilization of diverse actors like producers, commerce, doctors, economists and even families. However, like in the *Manifiesto for Dietary Health* that opens this dissertation, the state as whole is constitutionally committed to protect the health of Mexicans. In other words, the state as a whole has the symbolic obligation to pursue certain policies that depend on a multiplicity of actors. As Jessop notes, if this fails, the “state” is held responsible.

In the case of food policies in Mexico, scholars have analyzed the systems of production and distribution of grains and their relationship with the state. The role of this intervention, especially the systematic distribution of patronage, investment in public works, and price regulation, has been interpreted as either evidence of continued state dedication to the social goals of the revolution or as a constant attempt to undermine all kinds of political dissent and to

¹⁰ Ibid., 49.

promote social peace.¹¹ The fulfillment of basic needs became characterized as the ideologically hollow promise of a non-democratic political regime. In his analysis of state food agencies in Mexico, historian Enrique Ochoa classified food intervention as social policies that were “used to shore up political support.”¹² Ochoa centers his analysis on the short-term political challenges that influenced food subsidies and distribution policies and focuses on a single agency which regulated grain purchases and sales, *Compañía Nacional de las Subsistencias Populares* (CONASUPO, National Popular Subsistence Company). This is of course a very important part of food policy in Mexico. However, I hope to show in this dissertation that the short-term goals of political officers were not the exclusive force that shaped food policy in Mexico. The concurring forces of various actors with political, economic, and scientific claims helped define a legitimate sphere of intervention in more complex terms. The problem of diet and food policy from the 1930s to the 1980s was shaped by the quest for support of Mexican politicians as much as by ideas about long term industrialization and economic development and by changing notions of adequate nutrition achieved through systematic research by specialized agencies.

In the twentieth century, the idea that empirical knowledge and expertise is necessary to solve social problems became very prevalent in government circles. Food production and consumption are prime examples of this phenomenon. In order to intervene in the food market and implement policies regarding food consumption, governments in many countries began to collect information and set objectives. These tasks increasingly became the terrain of experts,

¹¹ See for example, Alan Knight, "Revolutionary Project, Recalcitrant People: Mexico 1910-1940," in *The Revolutionary Process in Mexico: Essays on Political and Social Change, 1880-1940*, ed. Jaime E. Rodríguez (Los Angeles, CA: UCLA Latin American Center Publications University of California Los Angeles: Mexico/Chicano Program University of California Irvine, 1990); Jonathan Fox, *The Politics of Food in Mexico: State Power and Social Mobilization*, Food Systems and Agrarian Change (Ithaca, N.Y.: Cornell University Press, 1993).

¹² Enrique Ochoa, *Feeding Mexico: the Political Uses of Food Since 1910*, Latin American Silhouettes (Wilmington, Del.: Scholarly Resources, 2000), 8.

responsible for making a problem quantifiable and legible, hence an object of expert policy intervention. As historian Nick Cullather has shown, in the twentieth century food became “a material instrument of statecraft”¹³ internationally. Many scholars like him have used Michel Foucault’s theories about state schemes and statecraft to analyze social policies, some of them related to food.¹⁴ Food is a crucial location of Foucault’s concerns. Diet in the twentieth century became simultaneously an object of power and an object of knowledge. What people eat and drink affects the overall health of the population, mortality rates and macro-economic variables, all areas in which governments have increased its intervention. For the doctors at the Institute of Nutrition, studying food consumption scientifically in order to understand it and dominate it in order to administrate it was part of the same quest (although its administration was not always in the experts hands). The creation of specialized agencies with claims of scientific legitimacy was part of the increased complexity and technical management of social policies.

In addition, nutritional policies reflect some of the problems governments face in terms of their modes of governance. Foucault explained the appearance of new forms of power that had the intention to produce individuals with the suitable mentality to govern themselves. A state like the Mexican, even with its authoritarian features, could still not force consumers to eat and drink in ways that were convenient for macro-economic or public health goals. The shaping of diet as an arena of public intervention was marked by efforts to influence the behavior of private

¹³ Nick Cullather, "The Foreign Policy of the Calorie," *The American Historical Review* 112, no. 2 (2007): 338.

¹⁴ For Foucault’s theories see his later work for example Michel Foucault, "Governmentality," in *The Foucault Effect: Studies in Governmentality, with two Lectures by and an Interview with Michel Foucault*, ed. Graham Burchell, Colin Godron, and Peter Miller (Chicago: University of Chicago Press, 1991); Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France, 1978-79* (Basingstoke and New York: Palgrave Macmillan, 2008). For books that use Foucault’s framework see Timothy Mitchell, *Rule of experts: Egypt, Techno-politics, Modernity* (Berkeley: University of California Press, 2002); J. Vernon, "The Ethics of Hunger and the Assembly of Society: the Techno-politics of the School Meal in Modern Britain," *The American Historical Review* 110, no. 3 (2005).

citizens in areas in which the state could not intervene directly. Public campaigns encouraged - but could not force- people to choose the right foods.

Consumer politics appeared in Mexico during the twentieth century. The consumer was not so much an active agent in itself, but a category used by federal and local officials, organized industrial groups, unions, and workers in competing discourses and practices concerning rights and entitlements in the marketplace. As with the development of marketing and business techniques, the appearance of mass consumption and ideas about consumer rights were influenced both by transnational exchanges and local functions and necessities.

The role of expertise is central for most studies of consumption all around the world. The central question of this literature is “who speaks for the consumer?”¹⁵ Consumers as entities and identities are more malleable than other social categories. In other words, while it is clear that not everyone is a worker or owns a business, in capitalist societies most people can be thought of as consumers. Governments, civilian groups, economists, and private businesses usually compete or interact to define or contend which the real interests of consumers are.

The largest historical literature about consumption refers to the United States. Historian Lizabeth Cohen, one of the leading historians of consumption, has analyzed how in the post-war era policy-makers, business, labor leaders, and civilian groups promoted mass consumption as the engine of economic prosperity in their country. Cohen argues that there was a “consensus view” about the extensive linkage between the identities of citizens and consumers, as

¹⁵ Alain Chatriot, Marie-Emmanuelle Chessel, and Matthew Hilton, *The Expert Consumer: Associations and Professionals in Consumer Society*, *The History of Retailing and Consumption* (Aldershot, England ; Burlington, VT: Ashgate, 2006), 1.

“consuming for personal and national benefits was not only a right but a duty of citizenship,” that served to reconstruct and expand the national economy.¹⁶

For several scholars, the rise of consumer societies in other parts of the world is related to the process of material and ideological expansion of the United States as a world power during the twentieth century. For example, historians have examined processes of “Americanization” in post-Second World War Europe in terms of business practices and consumption patterns.¹⁷ The strength and appeal of an American “empire” was based on the promotion of “democracy” in the realm of consumption, which “presented itself as a progressive alternative to reactionary solidarities.”¹⁸ Victoria de Grazia explains that, in European societies, with their complex traditions of aristocracy and distinction, this was just short of a revolutionary idea. In Mexico, the influence of American popular culture, particularly rock-and-roll, was also liberating of old social traditions. This American-influenced counterculture undermined patriarchal authority in upper-and middle-class families and gave force to the student movement in the 1960s.¹⁹ For many observers in Mexico, however, consumption patterns imported from the American way of life were unsustainable and seriously jeopardized the national economy. Mexico imported some of the “irresistible” consumer culture from the United States, but government consumer agencies disseminated an anti-consumer discourse in the 1970s.

¹⁶ Lizabeth Cohen, *A Consumer's Republic: the Politics of Mass Consumption in Postwar America*, 1st ed. (New York: Knopf, 2003), 408.

¹⁷ See for example, Alexander Stephan, *The Americanization of Europe: Culture, Diplomacy, and anti-Americanism after 1945* (New York: Berghahn Books, 2006); Reinhold Wagnleitner, *Coca-colonization and the Cold War: the Cultural mission of the United States in Austria after the Second World War* (Chapel Hill: University of North Carolina Press, 1994).

¹⁸ Victoria De Grazia, *Irresistible Empire: America's Advance through Twentieth-century Europe* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2005), 10.

¹⁹ Eric Zolov, *Refried Elvis: the Rise of the Mexican Counterculture* (Berkeley: University of California Press, 1999). Other scholars have analyzed more traditional forms American influence on advertisement and consumer culture, see for example Julio Moreno, *Yankee Don't Go Home!: Mexican Nationalism, American Business Culture, and the Shaping of Modern Mexico, 1920-1950* (Chapel Hill: University of North Carolina Press, 2003).

In the case of Mexico, throughout the twentieth century the role of consumption and its relations to citizenship and rights were contentious. Since the 1930s, consumption was framed by politicians and labor leaders as a variable to negotiate and determine the value of wages. This approach to consumers as mainly workers-who-consume was disputed by business groups in the 1950s, who promoted a view of consumers as a separate category from workers. Consumers were in this view the sovereigns of the market. They represented the national interest, and the duties of workers, businesses, and political officials were to satisfy the desires and will of this new actor. Since the 1960s, Mexican economists began to look more closely at consumption, particularly to its relationship with national development, inequality and Mexico's class structure. These economists considered overconsumption by the upper and middle classes as a threat to development. Money spent in overconsumption drained resources for savings and investment, which Mexico's developing economy badly needed. On top of that, affluent consumers often spent their money on imported goods, which also hurt Mexico's national economy. Unlike the view of business groups, consumption became more tied with anti-patriotism than with inclusive citizenship. The containment of consumption (particularly of those in the upper and middle classes) became an issue for economists, and later, as the economy changed and advertising expanded, for government officials. In this dissertation I will explain that unlike the cases of Europe and the United States, in Mexico the state promoted anti-consumerism. Labor unions, government officials, and especially consumer agencies created in the mid-1970s framed consumers not as sovereigns but rather as potential victims of manipulation and injustice. Their duty became not to consume more, but to live with less and consume rationally. The Mexican national economy depended not on consuming more but on moderation.

A Note on Sources

This research is based on a number of archives and library collections. For the 1930 to 1955 period, I used the Archivo General de la Nación (AGN, National Archives of Mexico) and the presidential collections from Lázaro Cardenas to Miguel Alemán. Beyond this period, the presidential collections are far from complete, often missing substantial documentation about most branches of public administration. I also used the Archivo Histórico de la Secretaría de Salud (AHSS, Historical Archive of the Ministry of Health), which contains information about nutritional studies, sanitary policies, and milk sanitation efforts from the 1930s to the 1980s in several subdivisions, including the collections of the under-ministry of assistance, under-ministry of sanitation, the juridical section, and the personal secretariat of the minister. I also consulted the historical library and archive of the National Social Security Institute, which has a small collection of internal policy documents and secondary sources about health and nutrition in Mexico. At the Instituto Nacional de Nutrición Salvador Zubirán (National Institute of Nutrition Salvador Zubirán) I used the internal document collection and library of the Division of Nutrition Research. For information about consumer policies, I consulted the magazine and video collection of the Procuraduría Federal del Consumidor (PROFECO, Federal Consumer Protection Agency) as well as parts of the warehouse archive (*archivo de concentración*) of PROFECO, which are available to the public by request.

Due to the dearth of information about the milk market before the 1990s in the libraries of the Ministry of Agriculture, I interviewed seven members of the Asociación Nacional de Ganaderos Lecheros (Mexican Chamber of Milk Producers) and the Cámara Nacional de Industriales de la Leche (Mexican Chamber of Industrial Milk Producers). In the case of the

Industrial Chamber, I used its trade magazine and book collection. I also interviewed Luis Vicente Echeverría, who was in charge of relocating milk producers from Mexico City to other states during the 1970s.

Since the development of nutritional sciences in Mexico had much to do with extensive contacts with U.S. researchers and institutions, I consulted the Rockefeller Archive Center and its collections about the Rockefeller Foundation, the Mexican Agricultural Project, and collaboration projects with Mexican hospitals and health centers. These sources contained valuable information about nutritional research and health institutions in Mexico. Also, from the interviews with Mexican milk producers I learned that information about the milk market in Mexico was available at international archives, particularly the World Bank Archive in Washington D.C. In this archive, I collected documentation about agricultural loans and the milk market during the 1970s and 1980s.

I used newspapers and government publications to increase my source base. I consulted newspapers and magazines at the Hemeroteca Nacional (National Periodicals Library), the Archivos Económicos of the Ministry of the Treasury's Lerdo de Tejada Library, as well as the library of the Bank of Mexico, a rich source for government publications. For Mexican public health and medical periodicals from the 1930s to the 1980s, I used the library of the Hospital Infantil de Mexico (HIM, Children's Hospital of Mexico), and the Nicolás de León Library, affiliated with the School of Medicine of the National University.

Structure of the Dissertation

This dissertation has two parts. The first part is comprised of three chapters which cover the years from 1931 to 1955, a period of economic growth but with high inflation. During this

era the federal government began to implement a model of import-substitution industrialization which protected manufacturing industries with high tariffs and used currency overvaluation to reduce the cost of imported capital goods. The chapters are organized thematically, but each one has a chronological structure. Chapter one addresses the political aspects of the federal government's intervention in the food market. Since the late 1930s, subsidizing food prices became an instrument for the government to regulate class relations. In this chapter, I address how two institutions central to the development of government intervention in the food market appeared and consolidated. First, with the passage of the Federal Labor Law in 1931, the state institutionalized the role of the federal government as arbiter of wage disputes between unionized workers and employers. This legal framework weakened the negotiating power of organized labor in Mexico. Second, since the late 1930s, due to price volatility of food products and commodities in general, the federal government created agencies to directly intervene and regulate the food market. The consumer price index between 1938 and 1948 tripled, and it more than doubled from 1948 to 1955. Popular unrest in Mexico City, particularly linked to the railroad workers unions, increased in the late 1940s due these pressing economic conditions. The federal government discarded wage increases and negotiations, opting for repression and cooptation of the more moderate sectors of industrial unionism. Instead of increasing wages, which would increase the costs of operation to the private sectors, the federal government decided to subsidize and control food prices to maintain the purchasing power of workers.

The second chapter addresses changes in how the medical community analyzed food consumption and identified dietary deficiencies in the 1940s and 1950s. Analysis of the effects of diet on human health went from being based on eugenic theories, generally unsupported by actual empirical work, to systematic research based on population surveys, clinical studies and

laboratory use. The researchers were supported by two institutions, one foreign, the Rockefeller Foundation, and one national, the *Hospital Infantil de México*. These institutions pioneered the methodologies and questions later pursued by local medical researchers during the rest of the century. Scientist employed by the Rockefeller Foundation were interested in determining the scope and epidemiology of nutritional deficiencies in rural environments, in order to then provide recommendations to agricultural planners. The doctors working at the Hospital Infantil de México sought to define malnutrition as a disease, identify its biological components and symptoms, and then look for affordable therapies that could be introduced into public hospitals. Both teams concluded that Mexican diets were deficient on animal proteins. The findings justified intervention on the part of the government, by making dietary deficiencies something that could be measured and consequently solved through technical means.

Chapter three is a case study of how the government intervened in the market of a particular food product: milk. Amongst the different food commodities whose prices were controlled by the government, milk occupied a special place. Sanitary authorities wanted to make milk safe for human consumption and prevent the spread of disease. Milk was also seen by doctors and health authorities as a vital source of animal protein for vulnerable groups, especially children. I explain how since the beginning of the twentieth century, controlling the sanitary conditions of the milk produced to supply Mexico City and the surrounding areas was very difficult and expensive for the authorities. The milk market involved a wide variety of actors: producers, distributors, milk shop owners, pasteurization plants as well as home delivery personnel. Preventing adulteration or contamination involved strict controls in every step of the production chain, from the stable to the containers used to hold the milk. The alternative was for the government's food agencies to provide a substitute supply of milk, rehydrating powder milk,

a product that became very cheap and abundant in the international market after the Second World War. This intervention was further consolidated with the eruption of an epidemic of foot-and-mouth disease in 1946, which further disrupted the milk market of Mexico City.

The second section of the dissertation is comprised of three chapters which cover the years from the era of stabilizing development to the financial crisis of the early-1980s caused by the drop in the price of oil. Stabilizing development is the name given to the government's economic policies from the mid-1950s to 1970. During this period, Mexico experienced a decade and a half of macroeconomic growth, accompanied by low inflation. Economic authorities maintained the nominal exchange rate stable, and maintained a tight fiscal expenditure. Nonetheless, economic growth favored urban areas in detriment of rural ones, as during this period agricultural production and productivity stalled. The federal government modified its economic policies after a political crisis in 1968 brought on by student protests and subsequent repression, as well as by the decline in the rate of economic growth. The administrations of Luis Echeverría Álvarez (1970-1976) and José López Portillo (1976-1982) used expansionary public expenditures as a policy instrument to generate growth and try to correct income inequality. The discovery of large oil reserves in the late 1970s financed a large part of these expenditures, until the collapse of the price of oil in 1982.

Chapter four analyzes how, from the 1950s to the 1970s, Mexican doctors and nutritional experts debated theories about the nature and effects of malnutrition among the Mexican population. The doctors and nutritionists working for institutions like the National Institute of Nutrition found self-reinforcing correlation between malnutrition and the continuation of poverty and social inequality. Support for these research institutions came from the state, but also from a network of international funding agencies that supported scientific endeavors. This support

framework granted a certain degree of independence to the Institute of Nutrition in terms of money and legitimacy. The institution developed two types of studies: community surveys and longitudinal clinical studies. They focused on infant feeding practices and on how to improve nutrition making simple changes individual behavior. Their framework was influenced by ideas about poverty elaborated and discussed in the social sciences. Doctors and nutritional experts looked at the effects that social structures, food supply, and individual behavior had on diet. These doctors thought that economic inequality caused malnutrition and in turn malnutrition reinforced inequality. Nonetheless, institutions like the National Institute of Nutrition still considered that the government could reduce the incidence of the ailment by addressing certain individual behaviors, regardless of social structures. Doctors and nutritional experts formulated recommendations that were later used in for nutrition education campaigns.

In chapter five, I address the changes that the ideas of consumers and consumer rights underwent in the 1960s and 1970s. Economic officials working for the administration of Luis Echeverria considered that working class consumption could be optimized and rationalized, making the working class better off without altering the wage levels. The government pursued consumer protection policies for political reasons. Inflation increased substantially in the first half of the 1970s, inciting labor demands for wage increases. The government promoted consumer protection in order to address labor discontent. Intervention in the food market had been, since the 1930s, a government strategy to contain labor in an era of inflation. Consumer protection agencies created in the 1970s followed the same logic. However, these institutions focused on individual consumer behavior and less on market structure. Their goal was to instruct consumers about budgets and products, as well as establishing channels to mediate disagreements between consumers and businesses.

In chapter six, I examine how, during the López Portillo administration, various agencies like the Sistema Alimentario Mexicano (SAM, Mexican Food System), the consumer protection institutions, and the National Institute of Nutrition addressed the issue of the Mexican population growing consumption of sugar and soft-drinks. The production of sugar had increased steadily since the 1940s until the early 1970s, subsidized by the government for political reasons. Cane production was the source of employment of large sectors of the peasantry associated with the official party. While the government subsidized production through loans, economic authorities imposed price controls on the industry. Although price controls were supposed to maintain profit levels, in the long run they did not and investment decreased. Since the early 1970s, production of sugar did not increase at the same pace as demand and the country began to import the product. Both household and industrial consumption of sugar had steadily increased since the 1940s. Transnational soft-drink companies, which used a franchise model to attract local investment and expand its market in Mexico, became the most important buyers of locally produced sugar. By the 1970s, health experts of the National Institute of Nutrition began to worry about increased sugar consumption, which was linked to risks of obesity and diabetes. Institutions like the Sistema Alimentario Mexicano and the Consumer's Institute promoted nutritional education to decrease sugar consumption and improve health. The case of sugar and soft-drinks illustrates some of the contradictions of food and nutrition policy in Mexico, and the conflict between production policies and consumption policies. While there was a broad consensus and strong policy recommendations among nutrition and consumer agencies to decrease sugar consumption, other sectors of the state did not alter policies to subsidize and maintain sugar production.

In the last chapter, I address the interactions between several government agencies and milk producers from the late 1950s until the early 1980s. This is the second part of the case study about the milk market first presented in chapter three. The Mexican government's food regulation institution, the Compañía Nacional de las Subsistencias Populares (CONASUPO) steadily increased its imports of powder milk through this period. At the same time, producers in different parts of Mexico, like Jalisco, the *Laguna* area and the central states invested to increase the supply of fresh milk. Government development banks provided loans for some of these production enterprises like, for example, for the 1970s project to relocate the remaining milk farms from Mexico City to the neighboring state of Tlaxcala. Yet, producers complained about government intervention in the milk market through price controls, powder milk imports, and subsidized milk distribution and sale. Nonetheless, producers found it hard to form a front to present unified demands before the government because price controls and imports affected different producers in different ways. Officials from CONASUPO defended milk distribution, done through vouchers, hospitals, and public assistance institutions, claiming that it improved the nutritional status of disadvantaged populations. Increased milk imports by the government gravely hurt the milk production in the primary production zones, which did not flourish again until the liberalization of prices in 1996.

Part I. Introduction: Politics and Economics in Mexico (1910-1955)

Mexico's political and economic transformations in the twentieth-century were the result of a social revolution. From 1876 to 1911, General Porfirio Díaz dominated Mexican politics after almost fifty years of civil war, instability, and foreign invasions. The long dictatorship brought many benefits to Mexico's elites. In order to promote economic growth, the government of Díaz permitted and encouraged the privatization of collective land properties in order to enable their sale. The Díaz regime was committed to protecting private property rights and was able to attract foreign investment in an unprecedented scale, especially in agriculture and extractive industries like petroleum. The result of this process was the increasing commercialization of agriculture, which in general resulted in increasing dependence of peasants on wage labor and large landowners. Scholars of the revolution such as Alan Knight consider that these economic changes, which led to deteriorating economic conditions for the majority, interacted with political circumstances, tactical opportunities, and subjective feelings of helplessness and injustice, which led to mass peasant rebellions.²⁰

A political crisis -created in part by Díaz unwillingness to retire- as well as mass peasant mobilizations set the stage for civil war in 1911. Francisco Madero, the son of an elite family from northern Mexico, challenged Díaz and was persecuted. Madero capitalized on popular discontent and raised an army to defeat the dictator. Madero was elected president but was murdered in 1913 by a group of conspirators, including the military commander Victoriano Huerta, who took power for himself. The ensuing assassination and rebellion of Madero

²⁰ Alan Knight and other scholars such as John Tutino qualify the insurrections acknowledging wide regional variations. See Alan Knight, *The Mexican Revolution*, 2 vols., Cambridge Latin American studies (Cambridge ; New York: Cambridge University Press, 1986); John Tutino, *From Insurrection to Revolution in Mexico: Social Bases of Agrarian Violence, 1750-1940* (Princeton: Princeton University Press, 1986).

supporters undermined Mexico's national unity, and regional powers and caciques arose to fill the void. A complex mix of revolutionary groups and generals emerged, and in order for any of these to govern nationally they had to coopt or curtail the power of other groups. For example, Francisco "Pancho" Villa and Emiliano Zapata, military leaders of local peasant armies, united in 1914-1915 but were later defeated by the Constitucionalista armies led by former Madero supporters Venustiano Carranza and Álvaro Obregón.²¹

The Constitucionalistas formed a new government and elected representatives to draft a constitution in 1917. The new constitution legislated some of the demands of agrarian and working class groups involved in the rebellion, like legal protection to workers and collective ownership rights. During the 1920s, revolutionary generals from Sonora Álvaro Obregón (1920-1924) and Plutarco Elías Calles (1924-1928) presided over the federal government. Nonetheless, national unity was far from secure, as military resistance and outright revolt occurred in many regions. The process of stabilization and state-building required many alliances between the incipient revolutionary governments led by the Sonora generals and other classes including workers. Obregón and Calles forged an alliance with Mexico's first labor organization, the Confederación Regional Obrera Mexicana (Mexican Regional Labor Confederation, CROM). This alliance was crucial because the revolutionary governments were looking to reconstruct the institutions and the economic system which was shattered by the military struggle.

The governments in the 1920s had a national project, crystallized in the education policies. Ideas about social redemption were an integral part of the cultural policies of the revolutionary state, designed to uplift the moral qualities of the citizens through education and habit changes. As historian Mary Kay Vaughan has explained, these policies promoted secularism, patriotism, technological knowledge, and a wide set of practices, including hygiene,

²¹ Leslie Bethell, *Mexico since Independence* (Cambridge, New York: Cambridge University Press, 1991), 164-65.

that would permit the integration of urban and rural masses to a project of modernity.²² Federal state workers, especially school teachers, propagated particular ideas about each family member's responsibility concerning issues of the body, such as personal hygiene and food preparation, in the interest of nation building and development.

In 1929, Calles created the Partido Nacional Revolucionario (National Revolutionary Party, PNR) in order to continue to consolidate the power of the national state. The goal was to create a forum to generate orderly discussions and consensus among the revolutionary leadership and, in the long run, substitute military rebellions and violence with civilian politics. This was essential to ensure the political stability necessary for economic modernization.²³ Growing institutionalization worked against Calles, who had retained power and had remained the leading political figure even as three other men occupied the presidential seat (Emilio Portes Gil, Pascual Ortiz Rubio, and Abelardo Rodríguez). The end of this period, known as El Maximato (because Calles was in reality Mexico's maximum chief), came after a series of political maneuvers in which the new president Lázaro Cárdenas reasserted his power and sent Calles to exile.

Mexico's most important political institutions were consolidated during the Cárdenas presidency. In 1936, the leading labor unions of Mexico allied to create the Confederación de Trabajadores de México (CTM), which included the former leader of the CROM, Lombardo Toledano, as secretary general, and Fidel Velázquez of the Confederación General de Obreros y Campesinos de México (CGOCM). The PNR leaders also organized the Confederación Nacional Campesina (CNC) in 1938, as the agrarian branch of the party. The party itself was renamed Partido de la Revolución Mexicana (Party of the Mexican Revolution, PRM), in the same year.

²² Mary K. Vaughan, *The State, Education, and Social Class in Mexico, 1880-1928*, The Origins of Modern Mexico (DeKalb: Northern Illinois University Press, 1982), 20.

²³ Kevin J. Middlebrook, *The Paradox of Revolution: Labor, the State, and Authoritarianism in Mexico* (Baltimore: Johns Hopkins University Press, 1995), 26-27.

The PRM was formed by four branches, which included workers (led by the CTM), peasants (CNC), the military, and the popular sector. In 1946, the PRM was renamed as the Partido Revolucionario Institucional (PRI).²⁴

Lázaro Cárdenas's government implemented substantive agrarian reform and supported large scale labor mobilization in several industrial sectors, realizing some of the unfulfilled promises of the revolution. During the Cárdenas administration (1935-40), the government distributed more land than other administrations had from 1915 to 1934. Land distribution was done in the form of *ejidos*, which is land held collectively by a group of farmers which, according to Article 27 of the Constitution, could not be sold or rented. President Lázaro Cárdenas also nationalized the oil industry, partly as a measure to solve a labor dispute which was settled by the Supreme Court, but that the oil companies refused to abide by. The decision to nationalize oil resources would have a lasting impact, particularly in terms of revenue for the government. However, at the time it undermined Cárdenas political capital. Increased government spending, as well as the rising costs of domestic and imported foodstuff created inflationary pressures. At the end of his presidential term, Cárdenas renounced to the most socially progressive elements of his administration's political agenda.

Cárdenas's successor Manuel Ávila Camacho (1940–1946) was selected by the PRM as a moderate candidate to conciliate the interests of conservatives who opposed Cárdenas's reforms, and more radical leftists who supported them. Ávila Camacho weakened agrarian policies and emphasized much more the centralization of power. During the 1940s, Mexico entered the Second World War on the side of the allies, so the suspension of revolutionary programs and the repression of political dissidence were enacted in the name of national unity during a time of

²⁴ Leslie Bethell, *Mexico since independence* (Cambridge [England] ; New York: Cambridge University Press, 1991), 288.

extreme duress. The national war effort also changed the economic landscape in Mexico. By the late 1940s, public investment increased systematically and was directed towards urban and industrial development. In order to promote manufacturing activities, economic authorities used tax incentives. Given the state of the international markets during the war, Mexico adopted, as other Latin American countries, a model of import substitution industrialization.²⁵ This model was further pursued by the following administrations, beginning with Mexico's first post-revolutionary civilian president, Miguel Alemán.

Industrialization and the deceleration of agrarian reform hastened the urbanization process. Between 1940 and 1955, the industrial portion of the GDP increased more than the portion of agricultural production (see Table 1, all tables listed in the Annex). Manufacturing became the engine of growth, with rates of growth of production of 7.4 per cent per annum from 1940 to 1955. In 1930, 7% of the total population lived in Mexico City, a figure that increased to 12 percent in 1950 and 14 percent in 1960. In absolute numbers, the population of the city increased from 1.7 million in 1940 to 3 million in 1950, and to 4.8 million in 1960. The proportion of urban population in the country changed from 20percent in 1940 to 28 percent in 1950 and to 36 percent in 1960. These economic and demographic changes necessitated a large re-organization of food production and distribution to maintain supply as demand grew in urban centers.²⁶

Another development brought on by the Second World War was that agricultural production began to concentrate in the large irrigation districts on which cash and export crops such as cotton were being grown. Food staples were grown on rain-fed land with traditional

²⁵ Stephen R. Niblo, *Mexico in the 1940s: Modernity, Politics, and Corruption*, Latin American Silhouettes (Wilimington, Del.: Scholarly Resources, 1999), 250-55.

²⁶ Instituto Nacional de Estadística y Geografía, *Estadística históricas de México*, Colección Memoria (México, D.F.2009), tables 1.1, 1.33.

technology. Technical innovations such as the widespread use of machines, fertilizers, pesticides, genetically engineered crops, and the construction of dams to regulate and control the use of water were supposed to remedy rural backwardness. However, these agricultural modernization projects, known as the Green Revolution, tended to favor enclaves of privately owned commercial farms and not the majority of the rural population, who largely produced corn on a small scale. This agricultural structure did not guarantee steady production of basic grains to feed the growing population, increasingly concentrated in cities. For Mexican economic authorities from the mid 1930s to the 1950s, low internal production, the potential of food scarcity and high prices were a constant political problem. As economic authorities considered that one of the main factors to ensure stable development was controlling inflation, control of food prices became a key component of these policies.

In post-revolutionary Mexico, politicians, economists, union members, and businessmen in general agreed that the country had to evolve into an industrial economy while retaining agricultural self-sufficiency. All of this was supposed to be achieved while maintaining an amicable relationship with the two most important political constituencies: peasants and industrial workers. The government conceived a plan to kill two birds with one stone: secure affordable food supplies (corn and wheat) to the cities, while providing agrarian producers with a steady income. For this purpose, the federal government created different administrative agencies to regulate the food market. The scope of their activities varied over time, but the most important functions of food agencies were grain purchases (1937-1991), operating retail food stores (1940-1991), corn milling (1950-1985) and milk reconstitution (1950-1991).²⁷ In general, the food agencies sought to maintain prices of foods in the cities stable, and did it at the expense of agricultural producers. Beginning in 1961, the state agencies sought to benefit also

²⁷ Ochoa, *Feeding Mexico: the Political Uses of Food Since 1910*, 12-13.

agricultural producers, by guaranteeing fair pricing for their products, but the policy did not achieve its objectives. Producers involved in the markets in which the government intervened had a contentious relationship with the government food agencies and economic authorities. A prime example were milk producers, who had to continually negotiate fixed prices and complained about unfair competition from the government, which imported powdered milk.

In the following chapters, I address how diets first became a legitimate sphere of intervention for the Mexican government. I analyze the issue from three interrelated points of view. The first is the political and economic context of the 1930s and 1940s which was characterized by growing inflation and worker unrest. Chapter one addresses how the government started using food policies to regulate class relations during this time of economic transition and modernization. The second chapter is about how medical experts started focusing on the study of diets. Since the 1930s, state officials considered that agricultural modernization was essential to development. Thus, empirical study of food consumption became a crucial tool to guide this process. I address the relationship between agricultural projects and the development of nutritional sciences. The nature of research about what people ate changed with the increasing specialization of the field of medicine and the introduction of clinical tools and the use of laboratories. In the third chapter, I examine the process of change in the milk market in central Mexico. The multiplicity of actors involved in milk production, distribution and sales as well as sanitary requirements made the prices unstable and the safety of the product questionable. The government tried to shape this particular market to benefit consumers and ended up being participating in as direct seller and processor of the product.

Chapter 1: The Mexican Living Standards: Wages and Intervention in the Food Market in Mexico (1931-1948)

Since the 1930s, the Mexican government started creating and adopting mechanisms to measure and rationalize consumption, particularly of food, as a way to regulate class relations. The government took it upon itself to define and protect a set of “living standards,” defined mostly in terms of food consumption. The regulation of class relations through consumption policies became central to the viability of the post-revolutionary Mexican governments, whose power rested on an alliance with certain sectors of organized labor and peasants groups (both represented through the national PRI, Partido Revolucionario Institucional).

State food consumption policies were a response to political unrest derived from constant commodity price increases. This inflation was the result of the early phase of the import substitution development strategy that went from 1931 to 1955. During these twenty five years, the role and importance of domestic consumption for economic development were not entirely clear for the actors involved. During this time, government officials, labor representatives, and even industrialist adopted a new language to talk about increasing the consumption by the working classes. All insisted at some point on “raising the living standards” of the population, but the relationship between those standards and the wages most working class Mexicans received was still a contested issue.

Several factors framed how state food consumption policies were formulated. First, the high inflation, which in part resulted from the Mexican government’s early years as an engine of economic growth, as a builder of roads, dams and electrical power plants. Second, the subjection of the wage negotiation process to government arbitration, which caused worker organizations to significantly lose leverage and autonomy to engage in strikes or other types of legal action to

demand wage increases. Thus, while other factors or costs of the production process, like investment and capital gains, were left unchecked, labor and wages were tightly regulated. The government did try palliating the negative effects for the working classes that resulted from growing inflation and stagnating wages by intervening in the consumer market. While abandoning the promotion of worker's rights, the Mexican state became the champion of consumer rights, only when it meant defending the most basic necessities.

The first section of this chapter addresses how the social rights for workers included in the 1917 constitution were institutionalized by the government into tripartite conciliation and arbitration boards that included the government, unions and employers. Thus, government placed itself as a major player in wage negotiation between workers and the private sector. The law also defined the meaning of wages not as remuneration for productive labor but on the basis of their needs as consumers. Given this definition, the government embarked into technical discussions to determine what the actual needs of the workers were. By the mid-1930s, worker organizations like CTM and the government reached an agreement over the legitimacy of a set of living standards that could be measured. These standards were very basic, linked to the cost and affordability of food. The second section is about how the government responded to food shortages (1937-1945) and the inflation caused partly by agricultural shifts from food crops geared toward the internal market to export crops. The institutions created by the government to purchase and distribute basic foods were at first unable to enforce price controls and drive inflation down. This did not result in the cancellation of such policies, but in increasing investment in these institutions and expanding their functions. Finally, in the third section I examine a period of labor unrest after the war (1947-1948), which resulted in the defeat of dissident unions and union factions. The effect of these incidents in the late 1940s was the

dominance in the labor movement of groups allied with the government, the most important of which was the Confederación de Trabajadores de Mexico (CTM). These changes permitted the consolidation of a model in which wage increases were limited and the government subsidized and controlled the prices of basic foodstuffs instead.

From Social Rights to Government Practice: Work Legislation and the Definition of Living Standards (1931-1936)

The relationship between government, labor, and employers in post-revolutionary Mexico was based on the economic and social ideas that were crystallized in the 1917 Constitution. The document incorporates elements of 19th century economic liberalism and socialism as well as ideas that heightened national economic independence. As the Mexican revolution itself it was created in the confluence of very diverse interests, regions and characters. Beyond the basic rights enumerated in the first articles, the Constitution had relatively little new say on the subject of consumption. Article 28 was the only one that addresses the issue. The article explicitly prohibited monopolies and was inherited from the 19th century constitution. It was in the secondary labor legislation that the linkage between just remuneration and consumption was established. However, the 1917 Constitution regulated for the first time labor issues and workers' rights.

One of the innovations of the 1917 constitution was defining the role of the state as a guarantor of social rights, particularly in reference to labor protections and agrarian reform. Although many revisionist historians question the radical nature of the main two articles that enunciate these social rights (Articles 27 and 123), at the time drafters considered that the goals

of the constitution was to balance “the positive and negative aspects of liberalism and socialism.”²⁸

The new social rights given to specific groups, like workers and peasants, were the direct result of the constitutional congress’s interpretation of how the economy, and specifically the market, ought to work in Mexico. These interpretations were partially based on 19th century liberal ideas about economic growth and the intention of leaving behind Mexico’s feudal past. The deputies’ ideologies were not radically different from the intellectual traditions that preceded them, in particular regarding labor protection and land reform. Historian Richard Weiner has identified two different Porfirian groups that articulated discourses concerning the market, not “as a physical space where goods are exchanged but as a rhetorical site where representation and meanings of the social order are constructed.” The first were the Científicos, the managerial elite that dominated Porfirian policymaking. For them, the market was a symbol of abundance and prosperity but required state intervention for its development. In Mexico, the market would not do it alone, state action was needed to create a productive citizenry. However, for the Científicos, the state’s primary concern was to ensure that the market functioned normally in order to protect consumers from abuses. They denounced exorbitant taxation on the circulation of goods and thought that the absence of competition in the process of production served to dampen the flow and increase the price of goods, with the ultimate result of exploiting the consumer.²⁹ The second group was represented by the members of the Partido Liberal Mexicano (PLM) a political organization to which some of the influential members of the 1917 congress had once belonged or were influenced by. One strand of the party’s early market discourse stated that the market in

²⁸ Félix Palavicini, *Cómo y quiénes hicieron la revolución social en México* (México D.F.1931), 31.

²⁹ See Richard Weiner, *Race, Nation, and Market: Economic Culture in Porfirian Mexico* (University of Arizona Press, 2004).

Mexico could not fully emerge because a feudal system remained in place. Whereas both PLM and the Científicos' ideas dealt with the problem of overcoming a feudal past, the PLM argued that the Científicos, by cooperating with and even representing large landholders and the Church, were largely responsible for the continuation of feudal-like conditions. The PLM advocated redistribution in the form of smallholdings to solve this problem, for smallholding freed the masses, the large landless rural population, from its dependent and oppressed state. The market was also an emancipating symbol in the PLM discourse on labor conditions. Weiner argues that "by constructing a critique of coercive labor systems within the framework of liberalism, the PLM, perhaps unintentionally, was associating market-controlled labor with liberation. Associating debt peonage and physical coercion with slavery and feudalism, anarchy and rebellion implied that wage labor was free."³⁰ Yet they critiqued capitalism from a socialist point of view, since for them the sheer power of capital in modern society created an uneven playing field in capital's exploitation of labor, therefore the establishment of a free labor market would not fully liberate workers. Autonomous unions, worker protection and reduced hours were needed to protect labor from exploitative capital.

From 1917 to 1931, the politicians in power did not enact any specific labor legislation. When the Constitution was published, the radicalism of article 123 was tolerated by the conservative supporters of Venustiano Carranza, the president from 1917 to 1920, because during that period the labor movement was powerless and not able to demand its immediate implementation. As the economic situation improved and Carranza's term came to an end, the labor movement was able to find a different political re-accommodation.³¹

³⁰ R. Weiner, "Competing Market Discourses in Porfirian Mexico," *Latin American Perspectives* 26, no. 1 (1999): 53.

³¹ The participation of the urban working class (artisans, industrial workers and unskilled labor) varied in degree and intensity, the alliances of certain sectors of organized labor (Casa del Obrero Mundial) with revolutionary caudillos,

In the 1920s, although certain sectors of organized labor, in particular the Confederación Regional Obrera Mexicana (CROM) consolidated their power, the state did not draft any significant legislation regarding the implementation of Article 123. Within many productive branches like mining, petroleum, textiles, and urban transport, there were important struggles between radical unions and the CROM. The latter began to receive government-backing. The CROM fitted into a union business model, in which workers accepted the capitalist framework and rejected other kinds of production organizations.

According to the 1917 Constitution, each state had jurisdiction to resolve labor conflicts and pass their own labor laws. In many cases, these laws tended to favor industrialists, who had connections and leverage among many local leaders.³² In 1927, the CROM-affiliated deputies in the Mexican Congress tried to modify the constitution and place labor disputes under federal jurisdiction. Other groups, like the Confederación General de Trabajadores (CGT) and the Mexican branch of the Industrial Workers of the World, successfully organized protests to seek the enforcement of the provisions of Article 123.

It was a conflict between the governing coalition, headed by General Plutarco Elías Calles, and the CROM which resulted in the passage of the 1931 Federal Labor Law. The coalition led by Calles was concerned with containing social conflict caused by the economic downturn that originated with the Great Depression. The position of Calles and his allies in the government was not secure; the main caudillo was looking to consolidate their power through the creation of a national party, the Partido Nacional Revolucionario (PNR). Obtaining the support of organized labor to create this party was considered essential. As the CROM leadership took an

did not yield immediate benefits to their demands, on the contrary worker movement were systematically repressed during the revolution.

³² Jeffrey Bortz, "The Genesis of the Mexican Labor Relations System: Federal Labor Policy and the Textile Industry 1925-1940," *The Americas* 52, no. 1 (1995): 43-50.

antagonistic position towards the newly created party, the governing coalition began looking for ways to appeal directly to the rank and file. In order to achieve this support, the federal government drafted the 1931 Federal Labor Law.

This law stipulated government arbitration of disputes between labor and management. The mechanism for arbitration would be the federal and local Conciliation and Arbitration Boards. With these boards the intervention of the federal state in labor conflicts was institutionalized, as well as the exclusion clause which only permitted certain sanctioned unions to be included in the negotiations. In order to obtain support from the rank and file for the party, the government had to make concessions and take note of at least some of the demands of organized labor, particularly those deemed legitimate because they did not fundamentally alter the system of production.³³

Following this ideology, the passage of the federal labor law in the 1930s also defined the meaning of wages not as remuneration for productive labor but on the basis of their needs as consumers.³⁴ According to fraction VI of article 123 and article 99 of the Federal Code of Labor, the state had to set minimum wages for all regions of the republic. This minimum wages had to be “considered sufficient, taking into consideration the conditions of each region, and be able to satisfy the normal needs of the worker, his education and honest pleasures, considering him the head of the family.”³⁵ However, the assessment of what could be considered sufficient wage was to be an arbitrated decision, as it was with the conflicts handled with the Conciliation and Arbitration Boards. The Federal Labor Law, in article IX, stipulated that the fixing of the

³³ Alan Knight, "The Working Class and the Mexican Revolution, c.1900-1920," *Journal of Latin American Studies* 16, no. 1 (1984).

³⁴ A similar process occurred in the USA from 188-1930 see Lawrence B. Glickman, *A Living Wage: American Workers and the Making of Consumer Society* (Ithaca, N.Y.: Cornell University Press, 1997).

³⁵ *Ley Federal del Trabajo*, (México, D.F.: Talleres Gráficos de la Nación, 1931), 7.

minimum salary had to be done by special commissions formed in each municipality, which in turn would be subordinated to the Central Conciliation and Arbitration Boards of each state.

Politicians considered that implementing the provisions of the law, like the minimum wage, was essential to increase support for the party, especially as presidential elections were scheduled for 1934. The new president, Abelardo L. Rodríguez, wanted to expedite the process and have set up minimum wages for the entire republic before the elections. For this purpose, he set up a commission to investigate salaries in Mexico. According to the Federal Labor Law, at the end of 1932 the minimum wage had to be fixed in the 2,644 municipalities, but the Department of Labor informed that only 197 regional juntas had done so by 1933. The president had published numerous articles when he was Secretary of Industry citing the importance of a new wage policy.³⁶ An improvement of the standard of living for him would mean more calories for each worker and, in turn, an increase in productivity and consumption capacity. The president insisted that the commission should give more importance to agricultural workers because they represented 75 percent of the workforce in Mexico.

For Rodríguez, determining and implementing the minimum wage was a technical issue, so he chose the Department of Statistics as the office in charge of studying the agricultural workers' habits. Before the Wage Commission was established, the Department of Statistics had already faced the practical problem of determining what the "normal needs of the worker" ought to be, and had begun to speculate about how to determine the cost of living. The statistics bureaucracy chose calories as a measurement element.

³⁶ Abelardo L. Rodríguez, *El Nacional*, "Los actuales salarios en México," 29 March 1932,7. Abelardo L. Rodríguez, *El Nacional*, "La necesidad de crear mayor consumo para nuestra producción industrial," 30 March 1932, 8. p. 11, Abelardo L. Rodríguez, "Beneficio del salario elevado de la economía nacional," *El Nacional*, 1 April 1932,7. Abelardo L. Rodríguez "Organizacion de la campaña pro de los buenos salarios," *El Nacional*, 3 April 1932, 9.

Framing the problem of human needs in terms of calories was part of a much wider international development, in which “food lost its subjective, cultural character and evolved into a material instrument of statecraft.”³⁷ In the late 1890s, scientists began to measure the units of energy that were necessary to support life and developed a thermodynamic theory of nutrition. International institutions like the League of Nations and its International Labor Office (ILO) began a series of dietary surveys based on these theories. The head of the ILO was Albert Thomas, a moderate socialist that advocated the virtues of labor organization within a legal framework. The publications of the ILO reflected his positive view about central economic planning coordinated by the state and organized labor. For them, the discovery of a universal dietary standard, the exact number of calories a person needs, could be a powerful aid to achieve the centralized organization of economic life. It was also conceived as way of equating salary demands to measurable needs. The purpose was to find equilibrium between the cost of food and workers’ wages. In order to achieve this, the ILO began to compile different countries’ calculations of the cost of a standard family budget. This was done using index numbers that they understood to be “generally based on averages which give the different quantities of each article consumed in a given period by what is called a normal working class family.” This normal family consisted “as a rule of five persons, the father, mother and three children.”³⁸

Inspired by this scheme, the Department of Statistics published in their Bulletin the first study on salaries and the cost of living in Mexico in 1921.³⁹ It was a survey that followed the consumption patterns of different types of workers. The expenses were classified as food,

³⁷ Cullather, "The Foreign Policy of the Calorie."

³⁸ "Production, Prices and the Cost of Living: Retail Price Fluctuations," *International Labor Review* 116, no. 3 (1921): 113-14.

³⁹ "La curva de los salarios y el costo de la vida," *Estadística nacional* (1924): 6.

beverages, dress and miscellaneous. They did a very approximate calculation of the total number of calories. The study declared that the agricultural workers of five of the six states in the survey suffered from under-nutrition: Jalisco, Mexico, Michoacán, Puebla and Veracruz. The 1921 article was influential because bureaucrats from other government agencies used it as model to create “provision baskets” for government sponsored projects. For example, officials at the National Irrigation Commission used the same measurement tools when they were calculating the cost of living for different regions in order to plan agricultural colonies. The irrigation planners calculated these costs using the proposed basket, which included daily rations of corn, beans, sugar, coffee, milk, meat, and other animal proteins like eggs or poultry.⁴⁰

When President Rodríguez appointed the Wage Commission, the Department of Statistics was already engaged in a project designed to quantify the economic situation in the countryside after the revolution, the 1930s National Agrarian Census.⁴¹ The technical board of the Minimum Wage Commission, headed by economist Federico Bach, was not only supposed to use data from the Agrarian Census but needed also to collect some information on its own. To make sense of the data they collected, Bach and his team decided to use the formula already adopted by the United States government, the Fischer Index.⁴² Importing the formula was relevant because with it the Mexican Department of Statistics imported a series of concepts developed by New Deal

⁴⁰ Comisión Honorífica para el Estudio del Salario, “Memoria acerca de la Oficina para el Estudio del Salario, sector agrícola,” 1933, 1-10. Biblioteca Lerdo de Tejada, Colección de la Secretaría de Hacienda, (hereafter cited as CSH) DS22, File 2.

⁴¹ “Memorandum para Federico Bach,” 25 September 1933, 3, Biblioteca Lerdo de Tejada, CSH, DS22, File 3. On the agrarian census see also Michael A. Ervin, “The 1930 Agrarian Census in Mexico, Middle Politics, and the Negotiation of Data Collection,” *Hispanic American Historical Review* 87, no. 3 (2007).

⁴² This index was used to measure the changing costs of a fixed collection of goods overtime. The price level is not an absolute magnitude, but a relative difference from some base period, in other words an index number. Irving Fisher, *The Making of Index Numbers, a Study of their Varieties, Tests, and Reliability* (New York: A.M. Kelley, 1967), 23-28. See also Robert W. Dimand, “The Quest for an Ideal Index Number: Irving Fisher and the Making of Index Numbers,” in *The Economic Mind in America: Essays in the History of American Economics*, ed. Malcolm Rutherford (New York: Routledge, 1998).

policy makers in the United States. Their desire to engage and manage the market necessarily involved seeing the world in terms relevant to that market. The liberal activists and academics who formulated New Deal policies constructed a frame in accordance with business terms such as consumers, money, income, net gain, and loss, along with their own expectations about how the market was capable of shaping society. Like with the ILO, the units of inquiry for the Mexican Department of Statistics were private families, since the household was understood as the center of consumption. These families had to belong to the “working class,” which for the U.S. government in practical terms meant the families of the male and white industrial manual laborers.⁴³ These ideal types of families were to resemble “miniature corporations who could be analyzed using the same accounting tools that were applied to business firms.”⁴⁴ By importing this survey tools the Mexican Department of Statistics also adopted the assumptions behind them.

The members of the Wage Commission thought that a “sufficient” wage had to be set according not with indeterminate needs or wants, but with the existing economic conditions in the country. To determine these conditions, the Commission designed four questionnaires. The first was about how local industries were organized economically, especially paying attention to aspects such as productive capacity, nature of the products, investment, cost of production, and rent. The second was about wages and had to be filled by the employers themselves. The third and fourth were surveys for the workers, one concerning their living expenses and income and the other about union organization.⁴⁵

⁴³ Thomas Anderson Stapleford, "The Most Important Single Statistic: The Consumer Price Index and American Political Economy, 1880-1955" (Ph.D. diss., Harvard University, 2003), 293-95.

⁴⁴ Ibid., 288.

⁴⁵ Comisión Nacional del Salario Mínimo, *Memoria de la Comisión Nacional del Salario Mínimo* (México D.F.1934), 237-39.

Neither the industrial survey nor the cost of living questionnaire directed at urban workers were successful, because those involved refused to cooperate. The researchers complained that most workers did not give truthful data about their income, because they were fearful of having their wages reduced, and in other cases they increased their expenses, believing that soon they would have a salary increase. The Wage Commission sent questionnaires in 1933 to the owners of several industries which produced textile, cement, paper, and other products. These producers either refused to fill out any relevant information or simply did not bother to return the forms to the Wage Commission. They finally arranged a meeting with the Confederation of Industrial Chambers, and this organization agreed to provide data which producers did not consider an industrial secret. The Chamber had veto power over questions concerning investment, initial value of the real state, annual depreciation data, the initial value of the equipments and institutions or persons that gave credit to the firms and loan conditions. Essentially they refused to answer any question that may lead to taxation or would provide information on their assets to the government. The Wage Commission reviewed the information and decided that it had no value.⁴⁶

The Wage Commission designed another survey in 1933 that had the purpose of collecting data about the standard of living in the countryside. The bureaucrats who designed the survey concluded that direct observation had to be done concerning food consumption and expenses in rural families. The investigation was to be commissioned to rural teachers. The teachers had to conduct direct interviews with the chosen families and fill out the written survey.

⁴⁶ Ibid., 240.

The Wage Commission indicated that the families could not fill out the survey themselves due to their lack of culture.⁴⁷

Since the units of inquiry could not correspond to a traditional industrial working class family, the Wage Commission designed its own categories of a rural working class. The three categories of workers would be eventual laborer, *peón acasillado*, and rural artisan. In most cases this activities could overlap, so they left it up to the teacher to decide in which group to include a particular family.⁴⁸ The instructions the Wage Commission formulated for the teachers indicated that families that seemed especially productive and hard working should be excluded, as well as those that seemed laden in vices. Also, families that had anomalous living arrangements, which meant everyone except nuclear families with both living parents and children, had to be excluded. This indicated that Department of Statistics wanted to adhere as much as possible to the ideas about household units promoted by the ILO and authorities in the United States. The most important part of the survey consisted in the description of payments in kind and in cash, how many days a year they worked, and their other sources of income from the sales of animal and agricultural products. Also crucial were the sources, quantity and prices of the food consumed. The survey listed corn, beans, chile, lard, flour, unprocessed sugar, coffee, garbanzo, salt, *pulque*, rice, potatoes, meat, fish, eggs, milk, bread, fruits, cheese, and pasta soup as the possible items agricultural workers could consume. Dress, rent, and household items were also part of the survey, but the instructions indicated that these expenses were hard to measure and that it was more important to pay attention to food since they were trying to elaborate a food

⁴⁷“Estudio del costo de la vida rural, plan de trabajo, Comisión Honorífica para el Estudio del Salario, memoria acerca de la oficina para el estudio del salario, sector agrícola,” 1933. Biblioteca Lerdo de Tejada, CSH, DS22, File 3.

⁴⁸ Departamento de Escuelas Rurales, “Circular CHES,” 10 February 1933. Biblioteca Lerdo de Tejada, CSH, DS22, File 3.

index. The survey also included a special question for the teachers in which they had to describe up to what point the agricultural population in the survey could survive eating things from nature. Teachers were also asked if they noted great poverty and sickness in the population and if this provoked any discontent. Finally, the teachers had to explain if the agricultural workers had to resort to any illicit activities to survive.⁴⁹

The Wage Commission sent some members of the Department of Statistics do a pilot test of the surveys in Tenancingo, Tlaxcala, a community situated near the capital of the state of Puebla, Puebla. The researchers, who did not sign the report, wrote about the difficulties of gathering data about wages and living standards in this community. None of the labor categories devised by the department applied in Tenancingo. The report stated that the patterns of consumption among the families were sensibly uniform. The families cultivated their own products, except for the legumes that they bought in other communities or in the city of Puebla. The food intake was meager since they consumed only two meals a day and “not even the priest drank milk.” The people in Tenancingo were not eager to share information with the government. The community received the Wage Commission researchers with much skepticism, since they confused them with members of the federal agrarian commission, which settled land disputes. Most of the town dwellers owned land since 1929, when the peasants, with government support, divided up the large estates into one to three hectare parcels. The division was recognized in 1930 by the president in the *Diario Oficial*, although there was still a request for land requisition for *ejidos* by a local agrarian group. Support for this group had dwindled after the government recognized the de facto land distribution. According to the researchers’

⁴⁹ Ibid.

interpretation (which was based on interviews and data from the 1930 Agrarian Census), 65 percent of the members of the agrarian group, around six hundred people owned property.⁵⁰

Nonetheless, the Wage Commission researchers distributed the survey among the most instructed people but found that none of the responses were acceptable. The information on the report came from the direct observation of one family's purchase for two weeks and direct interviews with the people that filled up the survey. The responses and the observations were very similar. The researchers chose a family that they deemed the most representative, made up of both parents and two children. The report listed the yearly expenses of this family, four hundred and six pesos, of which sixty four percent was spent on food. The family's diet consisted mostly of corn, *pulque* and beans.⁵¹

In order to get more accurate information about family budgets, the researchers then compared their information with data provided by the Bank of Agrarian Credit of Puebla from December 1932. In order to get a loan from the Bank, families in Tenancingo had to provide a budget report listing their expenses. The credit applications of families from Tenancingo that the researchers found listed expenses that amounted to an average of 195 pesos a year, a figure very different from the 406 pesos calculated by the Wage Commission. The researchers stated that the figures in these credit applications could be incorrect, since the people who applied for the loans listed very meager purchases, for example three kilos of beans for the whole year. However, the researchers admitted that it was likely that loan seekers were not deceiving the bank when they

⁵⁰ "Estudio del costo de la vida rural, plan de trabajo, Comisión Honorífica para el Estudio del Salario, memoria acerca de la oficina para el estudio del salario, sector agrícola," 1933. Biblioteca Lerdo de Tejada, CSH, DS22, File 3.

⁵¹ "Estudio del costo de la vida rural, plan de trabajo, Comisión Honorífica para el Estudio del Salario, memoria acerca de la oficina para el estudio del salario, sector agrícola," 1933. Biblioteca Lerdo de Tejada, CSH, DS22, File 3.

listed their expenses. Since this area was one of subsistence agriculture, the food expenses of the people who applied for loans varied from year to year.

Income was almost as complicated to determine as expenses. Of the 665 male “probable” workers that the researchers found, 450 lived off the exploitation of their small parcels. Other land owners (120) supplemented their working in small textile factories in the state of Puebla (La Constanca, La Económica, La Maria, El Patriotismo and other smaller mills).⁵² The rest of the workers, who also owned small parcels, claimed to be temporarily unemployed due to the closure of other industries in Tlaxcala. The production of the parcels of the subsistence farmers was around 1,750 liters of corn annually, 200 kilos of beans plus a sufficient production of *pulque*. Yet the researchers could not calculate of what percentage of this claimed production was consumed and how much was sold in the market.

The part time industrial workers’ income was 1.65 pesos a day. The researchers compared their figures with the ones calculated by the Agrarian Commission and fifty-seven applications to the National Bank of Agrarian credit from the same region. The Agrarian Commission informed that the wages were around fifteen to twenty pesos a week in 1929, while the Bank stated that the workers earned around a hundred pesos a year in 1932. The report to the Minimum Wage Commission stated that industrial wages for these non-skilled workers was very unstable at most. The status of the mills themselves was not at all secure. Two mills that closed in 1932, La Tlaxcalteca and La Josefina, were scheduled to re-open a year later.⁵³

⁵² In certain cases and regions in Mexico there were fluid boundaries between the agrarian and industrial worlds. For more on the subject, see Barry Carr, *El movimiento obrero y la política en México, 1910-1929*, Problemas de México (México, D.F.: Ediciones Era, 1981).

⁵³ “Estudio del costo de la vida rural, plan de trabajo, Comisión Honorífica para el Estudio del Salario, memoria acerca de la oficina para el estudio del salario, sector agrícola,” 1933. Biblioteca Lerdo de Tejada, CSH, DS22, File 3.

The efforts of the commission did not result in an exact calculation of living costs and incomes. Setting the minimum wage turned out instead to be quite arbitrary. The study in Tenancingo was so problematic that the commission abandoned any other attempt at working in a rural community. They decided to rely on surveys collected by the rural teachers, and collected twenty thousand of them. This work was also futile because the Wage Commission itself was dissolved before all the data was organized.⁵⁴ So the minimum wages for each state were set using information given by the Mexican Railroad company concerning the maximum and minimum daily wages of each region and historical approximations from the Department of Statistics concerning mining wages in the 1920s. The complexity of employment patterns and problematic calculations of income that came from agricultural activities led to the decision of letting more or less stable railroad wages be the blueprint to determine the minimum wage. The final decision was to declare the minimum wage in most states to be 1 or 1.5 pesos a day.

Many worker leaders and organizations considered the efforts to set and raise the minimum wages in each state as minor palliatives that did not attack the core economic issues facing the working class in Mexico. For some, talking about wages was a fruitless discussion since it entailed abandoning other concerns, like worker ownership of the means of production. For example, ex-CROM labor leader Vicente Lombardo Toledano strongly criticized the work of the Minimum Wage Commission. Lombardo stated in newspaper *Excélsior* that it was not sufficient to increase wages in order to improve the living standard of workers. He thought that, in a capitalist economy, if wages went up, the cost of living would necessarily increase, at the very least, in the same proportion. Lombardo called the reform useless if it did not include a

⁵⁴Comisión Nacional del Salario Mínimo, *Memoria de la Comisión Nacional del Salario Mínimo*, 247.

revision of “the structure of the economic organization of Mexico.”⁵⁵ Francisco Zamora, an editorialist from the same newspaper, stated that the CROM finally agreed to the government’s proposal. According to him, Lombardo’s initial reaction was not entirely correct, because producers in a capitalist system could not set higher prices arbitrarily but had to do so in accordance with the laws of supply and demand. Higher wages would probably increase consumption of certain articles and thus prices would increase, but this rise would be momentary because the production of these commodities would also increase.

The Wage Commission’s attempts to make accurate “living standards” measurements failed to have any influence in actual policy since the outgoing government was in a rush to implement the reform and gathering reliable information proved to be slow and administratively challenging. Finally, in January 1934, several months before presidential elections were scheduled, Abelardo L. Rodríguez and the president of the Wage Commission Primo Villa Michel spoke on the radio to announce the fixing of minimum wages for each state in the republic. Both were careful to explain that the edict did not mean the decline of salaries already higher than the minimum wage, negotiated by unions, employers and the government. The president insisted that it was not a gracious concession to workers because “the working class was conscious of their responsibility” and would not use the wage increases to incur in vices but to provide “a more healthy and nutritious diet, better garments and hygienic housing” to their families. Primo Villa said in the broadcast that in Mexico there was “barely any consumption, and no market” and Mexico was the nation that consumed less wheat, rice, potatoes, coffee,

⁵⁵ Francisco Zamora, “Salarios y el costo de la vida,” *El Universal*, 4 September 1933, 4.

sugar, salt, meat, and sugar among a group of twenty countries. If Mexican diet was so poor comparatively, he did not “even have to mention other goods.”⁵⁶

The politics of the years 1934-35 were dominated by the presidential succession, and subsequently by the efforts of the elected president to establish his authority in the government. After a series of political maneuvers, Lázaro Cárdenas managed to get rid of the revolutionary caudillo Plutarco E. Calles, the *Jefe Máximo*, who had dominated Mexican politics since he became president in 1929. The new president then sought to organize a mass social base that would allow his administration to increase its power to undertake a broad program of socio-economic reforms. Former CROM leaders such as Lombardo Toledano and Fidel Velázquez embarked in a new organizational effort that culminated in the formation of the Confederación de Trabajadores de Mexico (CTM) de México in 1936. Cárdenas played a central part in uniting the labor movement under the CTM auspices, and his government encouraged worker mobilization to implement wage and social welfare policies that benefited workers.⁵⁷

After his initial doubts concerning the Wage Commission, Lombardo, as the first secretary general of the CTM, took up the discourse of linking wages and living standards. He used it constantly to justify union mobilization and strikes. In several occasions, he stated that the capitalist class intended to wipe out wage increases by raising the prices of basic commodities, to such an extent that a crisis was imminent. For him, the complaint against wages was not political but had “above all, a scientific justification: statistical data.”⁵⁸ According to Lombardo, this data proved that the cost of living in Mexico for a family composed of five members eating a healthy diet was higher than the daily wage. To eat well, workers would incur

⁵⁶Comisión Nacional del Salario Mínimo, *Memoria de la Comisión Nacional del Salario Mínimo*, 249.

⁵⁷ Middlebrook, *The Paradox of Revolution: Labor, the State, and Authoritarianism in Mexico*, 91.

⁵⁸ Confederación de Trabajadores de Mexico, *La C.T.M. y la carestía de la vida* (Mexico, D.F.1937), 22.

in debts, which would increase over time. The CTM presented some graphs during public speeches and press conferences that “demonstrated that the diet of Mexican workers is greatly inferior to that of workers living under sub-normal conditions in large countries like the United States, or even unskilled workers in small European nations.”⁵⁹

The use of the cost of living studies became a standard tool for negotiation in the 1930s, even though the results of those negotiations were not the ones organized labor intended. In 1935, Fidel Velazquez, a CTM leader, stated that his organization had compiled reliable data about the cost of living in Mexico City. According to him, the organization was willing to look over the “government’s statistical data” and compare it with their own to negotiate wages.⁶⁰ Unions used cost data again during a meeting intended to change the minimum wage in Mexico City in 1939. A delegation of workers’ organizations presented a copy of a study supervised by a professor from the National School of Economics, Gilberto Loyo, which analyzed the living conditions of graphic arts workers and printers in the capital. They were asking employers to raise the minimum wage to 3.5 pesos. A member of the worker commission stated that employers accepted that 1.60 pesos, the wage of graphic arts workers, was not enough to satisfy even the minimal physiological needs, not even to replenish the daily energies spent each day. The consumption of “protective elements” (proteins) was out of the question, since to have an absolutely proper diet at the current inflation prices, 5.6 pesos were needed. However, the negotiations failed and the wages continued to be below those recommended by the study.⁶¹

⁵⁹ Confederación de Trabajadores de Mexico, *C.T.M. 1936-1941* (México, D.F.: Talleres tipográficos de Modelo, 1941), passim.

⁶⁰ “Mejor salario a los obreros del Distrito Federal,” *El Nacional*, 16 November 1935, 7.

⁶¹ Rodrigo García Treviño and José R. Silveti, “El nivel de vida del los obreros en la ciudad de México,” *Acción Social: órgano del grupo Acción Social de la C.T.M* 1, no. 1 (1938): passim.

By the mid-1930s, workers organizations like the CTM and the government had an agreement over the legitimacy of a set of living standards that could be measured. These standards implied that wages would be sufficient so that workers could afford food and feed their families. However, an inflationary spiral due to increased government spending and a harsh reaction of investors to Cárdenas agrarian policies made constant wage negotiations more difficult. According to historian Enrique C. Ochoa “employers pressured the government to intervene” in order to avoid more wage increases.⁶² In the next section, I examine how the federal government started to implement a different strategy to maintain living standards: direct intervention in the food market.

The Creation of the State Food Agencies (1937-1945)

Since 1937, the cost of living began to steadily rise, especially in cities. Minister of Hacienda (1946-1952) Ramon Beteta cited as the internal causes of the inflationary spiral the constant increase of resources employed to pay for social policies, a spending that was not financed through tax revenue. Public credit was also in a bad situation due to the suspension of payments to foreign banks and governments by the previous revolutionary governments. Private credit institutions were also not inclined to finance government debts and bonds, nor finance infrastructure projects.⁶³ Thus, Cárdenas and then his successor Manuel Ávila Camacho, resorted to credits of the Bank of Mexico and paper money emission. There were also external variables causing domestic inflation. For example, foreign capital sought refuge from the war. In

⁶² Ochoa, *Feeding Mexico: the Political Uses of Food Since 1910*, 45.

⁶³ Ramón Beteta, *Tres años de política hacendaria, 1947-1948-1949: perspectiva, acción* (México: Secretaría de Hacienda y Crédito Público, Publicación de Memorias, 1951), 22.

addition, the increase in the value of exports did not at all correspond to the value of imports, due to the lack of goods in the world market caused by armed conflict.

Price hikes increased the number of strikes, which became a significant political hindrance for the Cárdenas administration, which was constantly criticized by the media and by organized industrial groups for its radicalism. The Cárdenas government started blaming speculators and middlemen for the price increases, and finally decided to create the first state food price regulation agency, which was in charge of the wheat market. Cárdenas relied on the Almacenes Nacionales de Depósito, a decentralized agency that provided grain storage and facilitated the marketing of agricultural produce. The administration had invested in this agency since 1935, when the government started distributing land in record amounts.⁶⁴

In addition to creating the wheat regulation committee, Efraín García Buenrostro, the Minister of Hacienda, sought the advice of a group of prominent intellectuals and economists.⁶⁵ This technical advisory committee, headed by Gonzalo Robles, an economist from the Agrarian Credit Bank, discouraged price controls by legal decree. The experts considered that it was beyond the means and capabilities of the judicial branch to handle those measures. The advisors thought that the only efficient and effective control measure was for the government to operate marginally in the basic commodities market.⁶⁶ A government agency would go out to the open market to sell and purchase commodities in order to “force prices to follow the guidelines of the state.” Following the expert advice, Cárdenas dissolved the wheat market agency and created

⁶⁴ The origin of the post-revolutionary state’s management of the grain supply was the result of wartime strategy and contingency. The control of supply was a military necessity to feed the revolutionary armies and maintain political control of territories.

⁶⁵ This group according included Gonzalo Robles, Daniel Cosío Villegas, Luciano Wechers, Manuel Sanchez Cuén, Antonio Espinosa de los Monteros y Ernesto Martínez de Alva. Comité Regulador del Mercado de las Subsistencias, *Informes Anuales* (México D.F.: A. del Bosque, 1940), 1-10.

⁶⁶ Their theory of economic and monetary action was based on a book by Wall Street operator Benjamin Graham, *Storage and Stability*. *Ibid.*, 35.

another agency called the Comité Regulador del Mercado de las Subsistencias (CRMS), which not only regulated wheat, but also corn, beans and rice. CRMS received credits from state banks, and then from another agency created in September 1937, the Compañía Exportadora e Importadora Mexicana S.A. (CEIMSA), which was in charge of importing goods in short demand.

During the first few months of operation, the CRMS faced multiple challenges and officials started to think that instead of swaying public opinion in favor of the government, the work of the CRMS would have the opposite effect. At first, the CRMS was reduced to filling railroad carts with grain and then selling the full carts in the railway stations to the owner of large grain storage facilities. The only beneficiaries seemed to be the big commercial interests. After a few months, the government began to sell grain to small commerce, but they did not have the power to make the shopkeepers sell the grain at the set prices. In the meantime, medium-sized wholesalers, who according to a report commissioned by President Cárdenas, dominated the grain market in the capital, refused to buy neither from the grain deposit owners nor from independent producers who had not sold their grain to the CRMS. Commercial operations were frozen because medium-wholesalers were waiting for the owners of the granaries to lower their prices, as the government mandated, or for the independent producers to feel desperate. The result was even more grain scarcity in Mexico City. The president's advisors insisted that appointing inspectors to regulate small commerce would backfire and would only turn them into hated parasites.⁶⁷

⁶⁷ "Memorándum: Defectos del funcionamiento del Comité Regulador del Mercado de las Subsistencias y sugerencias para corregirlas," October 20, 1938, Archivo General de la Nación (hereafter cited as AGN), LCR, 521/35, 2-5.

Officials working for the CRMS suggested that the only way the policy would work was if the government had its own chain of stores. This suggestion fitted in with Cárdenas's advisors theory of eliminating intermediaries between the producer and the consumer. The government insisted in promoting consumption cooperatives, starting with the employees of the federal government. This policy failed because they were unable even to finance the first purchases or secure volunteers to take care of the stock or the stores. Instead, the cooperatives had contracts with commercial houses and members used store credit instead of money.⁶⁸ Sufficient credit to finance an operation that did not rely on intermediaries was unavailable despite many efforts. The proposed alternative was union stores managed by the CTM. However, they only had one store operating and could not cater to any population other than unionized workers.⁶⁹ Under pressure of the CTM, the government opened the first CEIMSA store in 1939 in Mexico City, and a few months later a union store and some consumer cooperatives started operating throughout the city.

Even as the government struggled to control food prices through CEIMSA, the inflationary spiral continued. Political tensions mounted following the 1938 expropriation of foreign-owned oil companies, which caused more opposition from industrial groups and sectors of the middle class to the Cárdenas regime. Cárdenas and the official party decided to support a more conservative presidential candidate, General Manuel Ávila Camacho. Vicente Lombardo, CTM's secretary general, supported the president's decision and the labor organization endorsed Ávila Camacho's candidacy. CTM leaders would have preferred another candidate, Francisco J. Mújica, but they were willing to sacrifice their preferred choice in order to prevent a severe

⁶⁸ Jesús Díaz Barriga, "Sobre el problema del alza de precios de los artículos de primera necesidad, y del Funcionamiento de las cooperativas de consumo de empleados y obreros al servicio del estado en el Distrito Federal," 20 October 1937, AGN, LCR, 521/35 1-3.

⁶⁹Comité Regulador del Mercado de las Subsistencias, *Informes Anuales*, 75.

conservative reaction or even civil war, which was plausible given the rise of fascist organizations in Mexico and the 1938 rebellion of a conservative general, Saturnino Cedillo, in the state of San Luis Potosí.⁷⁰

The first official policies of Manuel Ávila Camacho were designed to tone down labor mobilization and appease conservative business and political interests. He sought to normalize relationships between sectors by calling for national unity. Political consensus was possible in part due to Ávila Camacho's friendship with Vicente Lombardo Toledano, who was originally from the same small town as the president. Mexican political elites presented a unified front in the face of the country's imminent participation in World War II on the side of the allies, which finally occurred in May 1942. Even labor's more radical sectors and the Mexican Communist Party supported a war-time cooperation alliance with the government designed to limit internal conflict and reduce the strikes and labor protest to the minimum.⁷¹

Mexico's participation in the war further exacerbated price increases, as production of food products declined in favor of other commercial crops. The closure of Asian and European trade routes intensified the already ongoing phenomenon concentration of resources for fiber production. Some of the most productive and fertile areas of Mexico, like *La Laguna* region, the beneficiary of many of Cárdenas' efforts and policies which championed the collective land plots (*ejidos*), were already specialized in cotton production. But as a result of a rise in prices, there was a steady increase of cotton acreage. Most of the land around La Laguna was underused, but if it was under cultivation, it was planted with food crops. Cotton merchants began to encourage production by extending credits. In other places like, Mexicali, Tamaulipas, San Luis Potosí, and

⁷⁰ Middlebrook, *The Paradox of Revolution: Labor, the State, and Authoritarianism in Mexico*, 94.

⁷¹ *Ibid.*, 111.

Chihuahua, farmers who until then were never able to borrow money found themselves capable of borrowing if they agreed to plant cotton. As the number of cotton farmers increased, new gins were built and, in order to keep the gins supplied with seed cotton, credit was extended to more farmers.⁷² This process also occurred all over the country with several other crops like flax seed and other grains used to produce vegetable oil. Another factor that contributed to the shift was the development of roads that made accessible areas which were previously not profitable.⁷³

Due to declining food production, the government continued to control prices and intervene in the food market. CRMS was substituted by Nacional Distribuidora y Reguladora (NADYRSA) in 1941. This organization had the same functions as its predecessor but improved the system of stocking and distribution of food. In 1943, the Ministry of Economy prohibited the exports of corn, rice, and beans, and no other private or public entity other than NADYRSA could transport these products. NADYRSA also continued to open stores in the federal district and other states, and by 1943 there were thirty-six under operation in the federal district.⁷⁴

Organized commerce in the capital was outraged by NADYRSA's intervention in what they considered their natural realm. For example, Mexico City's Chamber of Commerce argued that the policy would fail from the beginning and that the government would not be able to control the whole system of prices focusing simply on corn, beans and a few other basic commodities. Organized commerce exculpated themselves of all responsibility concerning hoarding and speculating with commodities. In 1942, the leaders of Mexico City's commercial guild insisted that, in the face of scarcity and inflation, the only two reasonable policies would be

⁷² P.K. Norris, "Cotton Production in Mexico: Recent Developments," ed. Office of Foreign Agricultural Relations (Department of Agriculture, 1952), 24-29.

⁷³ Beteta, *Tres años de política hacendaria, 1947-1948-1949: perspectiva, acción*, 22.

⁷⁴ Compañía Nacional de Subsistencias Populares, *El mercado de las subsistencias populares: cincuenta años de regulación*, 2 vols., vol. 1 (México D.F.1988), 150.

increasing the countries' productive capacity and limiting the government's expansive fiscal policy.⁷⁵ For Mexico City's Chamber of Commerce, black market tactics in times of scarcity were inevitable, even if they claimed that no member of their organization was responsible for such immoral practices. For the Chamber, the government was to blame, since it was incapable of maintaining successful cultivation of corn and beans, crops which were being substituted by oleaginous plants. In a 1942 letter addressed to Gustavo P. Serrano, the Minister of Economy, they demanded fewer restrictions to commerce and the end of the witch-hunt.⁷⁶ The Chamber constantly released statements to deny any responsibility for the inflation and scarcity and blamed both on the government. Even as organized commerce protested, government intervention in the food market continued, and this involvement increased and coincided with price increases due to unfavorable weather conditions, which affected corn production. Beginning in 1944, U.S. import controls of foodstuffs decreased, and the government was able to purchase grains in order to counter price increases in the Mexican market. The food state institutions, NADYRSA and CEIMSA, received increasing subsidies during the war years (1942-1945), of which 49 percent went to wheat, 39 percent to corn, 5 percent to flour and the rest to beans and rice.⁷⁷

From 1937 to 1946, state intervention in the food market became a viable alternative to curb the effects of decreasing food production during the war years and grain shortages caused by bad harvests. As agricultural production concentrated on cash crops needed for the war effort

⁷⁵ Editorial: El complejo problema del alza, absurda inculpación al comercio," *México Comercial: órgano mensual de la Cámara Nacional de Comercio de la Ciudad de México* 9, no. 129 (1942).

⁷⁶ "Editorial: Ensayo de congelación de precios," *México Comercial: órgano mensual de la Cámara Nacional de Comercio de la Ciudad de México* 10, no. 149 (1943); "Editorial: Mercado negro," *México Comercial: órgano mensual de la Cámara Nacional de Comercio de la Ciudad de México* 11, no. 161 (1944).

⁷⁷ Compañía Nacional de Subsistencias Populares, *El mercado de las subsistencias populares: cincuenta años de regulación*, 140.

instead of food, the government had to step in to secure supply for the cities. However, food scarcity and inflation did not end with the war and remained a problem for the Mexican government. The institutions that permitted government intervention in the food market would continue to be used to address worker demands for better standards of living without significantly giving any wage concessions to organized labor.

The Consolidation of the Food Intervention System and the Defeat of Dissident Labor (1946-1948)

The size of the Mexican economy increased substantially during 1939 to 1950, but this change benefited industrial groups and commercial interests more than any other sector of the economy. Mexico's National Development Bank (Nacional Financiera) and Washington's International Reconstruction Bank (Banco Internacional de Reconstrucción y Fomento) organized a commission (known as the Combined Mexican Working Party) to revise statistical data and determine the sources of the country's economic growth and its "national income." This was defined as the monetary sum of all the goods, rents, salaries and services produced since 1939 to 1950. The purpose was to establish if further foreign investment would be beneficial to the country. The banks stated that Mexico indeed grew at a high annual rate (7 percent) from 1939 to 1950. The total amount of wages, salaries and supplementary payments to workers had increased. However, as a percentage of the total national income, the amount received by workers declined from 31 percent to 21 percent. This decline was dramatic because researchers had taken into account also an increase in the total number of employees. In contrast, the percentage of industrial and commercial rent increased from 26 percent to 41 percent of the total national income. The economists members of the Combined Mexican Working Party saw this

situation as inevitable, even if it signaled a growing income disparity, and beneficial: it was the classic route to development followed by other capitalist countries.⁷⁸

As a result of the disparity, the economists concluded that it was “probably a minority of the population” who increased their participation in national consumption. Nonetheless, they were not able to calculate the number of people that benefited by growing rents or interest, those who received more than half of the national income. They assumed that the number had to be small, since 61 percent of the population obtained income from agriculture, cattle ranching, fisheries, mining, and petroleum, which produced only 24 percent of the national income. Despite these figures, the authors concluded that the number of people that improved their living standards increased, as they passed from traditional agriculture to commercial agriculture, commerce or industry.⁷⁹ However, the data to support this claim was scant.

Since 1948, the industrial groups that benefited the most from the changes of the economy since Mexico’s participation in World War II were reluctant to make any wage concessions. Some employers’ organizations, particularly the Confederación Patronal de México (COPARMEX), stressed that the interests of the working class had to be subordinated to the rights of society in general and that they should end all “crazy or political strikes.” COPARMEX represented industrial owners, many from the northern city of Monterrey, whose income did not only depend on the internal market. COPARMEX members adopted a discourse that stressed the importance of the “common good of the nation,” which was founded above all on private property. COPARMEX supported the idea that industrialization had to be a priority. However, the organization disagreed with the fact that this policy was justified by the government and

⁷⁸ Raúl Ortiz Mena et al., *El desarrollo económico de México y su capacidad para absorber capital del exterior* (México D.F.: Nacional Financiera, 1952), 27-31.

⁷⁹ *Ibid.*, 32.

workers organizations like the CTM in “classist terms”. For the COPARMEX the goal of industrialization was to benefit not only the workers, but the nation. In their information bulletin, the organization listed each month a review of all the strike movements in Mexico from 1946 to 1951, explaining in detail how each one of them was unjustified and illegal. They insisted that the government had to restore authority and make sure that the collective contracts negotiated in the *Juntas de Conciliación y Arbitraje* served their real purpose, which was “to produce more with the best quality and at the lowest cost.” The only justification for wage increases was an increase in productivity; inflation for them was not a legitimate reason for worker militancy.⁸⁰

In contrast, Alfonso Cardoso, president of the Confederación de Industrias de la Transformación (CANACINTRA), stated in his public report to the organization that development could only be sustained in an expanding economy centered in increasing of productive investment and countering sumptuary expenses. It was mandatory to increase in a permanent way the purchasing power of society. Cardoso, the leader of Mexico City’s growing class of import substitution industrialists, insisted that an industrialization founded in the sacrifice of the people with fixed or low income, apart from being unjust was “not viable,

⁸⁰ "Justicia social vs. bien común," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 7, no. 15 (1948); "La paz social y el fortalecimiento económico del país," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 7, no. 17 (1948); "El problema del campo," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 7, no. 19 (1948); "La necesidad de una doctrina social," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 8, no. 18 (1949); "Prejuicios que deben desecharse," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 8, no. 19 (1949); "Evidentes prejuicios al interés social," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 8, no. 29 (1949); "Intervención del estado en la economía," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 9, no. 8 (1950); "Una evidente contradicción en el régimen de salarios," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 9, no. 11 (1950); "Los conflictos obreros y la opinión pública," *Voz Patronal: órgano oficial de la Confederación Patronal de la República Mexicana* 9, no. 12 (1950).

because the great majority of entrepreneurs had the objective of satisfying internal consumption.”⁸¹

However, both CANACINTRA and COPARMEX members did not clearly acknowledge that in addition to being wage earners, workers were also consumers. Members of both industrial groups created public relations offices to publicize specific ideas about how the Mexican economy had to work. CANACINTRA members founded the National Economic Movement in 1949 and COPARMEX members founded The Office of Economic Studies in 1953. In the publications of these two organizations there was a clear dissociation between work and consumption. For example, the National Economic Movement’s call to arms was to “produce more, better and cheaper products” as they began a publicity campaign in the newspapers and radio to promote consumer products manufactured in Mexico. To represent their ideas, the movement picked an image that depicted four hands placed over a map of Mexico, each representing an essential actor necessary for promoting economic growth: government officials, workers, businessmen and consumers. In a similar fashion, the Office of Economic Studies published in 1955 a serial publication sent regularly to CANACINTRA and COPARMEX members. One of these pamphlets depicted in a cartoon a banker, an industrialist, and a worker bowing to a monarch: the consumer. The author of the text explained that all of them were slaves to the consumer and had to work hard to please him. The cartoon indicated that workers knew that their wages depended on the purchases of the “sovereign consumer” and that each salary raise they bargained for could not increase the price of products, because if it did, then “the

⁸¹ Cámara Nacional de la Industria de la Transformación, "El mercado interno de México," *Jornadas industriales* 24(1952): 7-17.

sovereign would not buy.”⁸² The Office of Economic Studies’ aim was to promote “an abundant production of goods” and clarify that this abundant production was “not the result of collective efforts but the aggregate of individual efforts.” For the Office, each individual’s prosperity depended on their own productivity, and the individual “must not receive more than” what he or she produces. According to this view of how the economy worked, the state did not have to intervene in favor of those in need, because aid to those lacking food and shelter, had to be “temporary and voluntary.”⁸³

The labor movement disagreed with these ideas, which focused exclusively on individual productivity and ignored almost every other factor that affected workers’ lives, particularly the increased cost of living. Inflation was a contentious issue amongst labor organizations, and it caused the labor movement’s unity achieved under the control of the CTM to deteriorate. The inability of the government to control inflation was an especially controversial issue with different fractions in the organization, which was addressed with high level meetings like the “Industrial Labor Pact” of 1945, aimed to promote further cooperation between workers and employers. However, the following year in January the CTM promoted a widespread strike to protest the negative impact of inflation on wages and then a few months later insisted on price regulation and control of basic consumer goods. As a response to a decision of the general counsel of the CTM to call a general strike to protest the cost of living, the government organized in 1946 the General Economic Council, which included bankers, government officials, industrialists, and labor leaders. Vicente Lombardo Toledano and his ally Fidel Velázquez, who opposed organizing the strike, sent one of the dissident leaders, Valentín Campa, a railroad

⁸² Movimiento Económico Nacional, *México y su evolución económica* (México D.F.: Editorial Arquitectura y lo Demás, 1952), 8. "Su majestad el consumidor," *Hoja de Información Económica* 2(1955): 1.

⁸³ "Su majestad el consumidor," 1.

worker representative, as the labor delegate to the council. He had organized in the previous weeks a demonstration in the *Zócalo* protesting the cost of living. There, he read a communiqué from Moscow, which informed that a group of basic commodity speculators had been executed. He stated that if one had to do that in Mexico, it would prove very expensive to buy bullets, because there were so many speculators. Once at the General Economic Council, Campa narrates in his memoirs that he received the support of the Cámara Nacional de la Industria de la Transformación's advisors and leaders. In one occasion, when they were debating if the dollar reserves in the Bank of Mexico were being squandered by the increasing imports of luxury commodities, a CANACINTRA representative gave Valentín Campa a receipt for the purchase of an expensive fur coat belonging to Mrs. Larín, a widow who owned a big chocolate company. Carlos Novoa, the president of the bankers' organization, accused Campa of using irrelevant information, especially since it was public knowledge that Mrs. Larín was crazy. Campa, to the general celebration of all the attendees, including President Ávila Camacho, asked which one of their wives (the millionaire's and the banker's) was not crazy and was not known for squandering the resources generated by the working people. However, the most important point Campa insisted on was that the railroad tariffs to transport food for internal consumption were higher than those for export goods. These commodities had priority also in the use of carts and, while wheat and rice was rotting in Sonora, there were no obstacles to send tomatoes to the United States. Most of Campa's concerns fell on deaf ears.⁸⁴ A commentator noted that the council concluded with a declaration "that high wages too, created inflation." However, the position of those who defended wage stabilization was undermined by the fact, publicly

⁸⁴ Valentín S. Campa, *Mi testimonio: experiencias de un comunista Mexicano*, Crónicas y Testimonios (México D.F.: Ediciones de Cultura Popular, 1978).

discussed in the session, that the president's statement "that the population's income had grown" in the last decade could not be proven.⁸⁵

A new president was elected in the midst of the worker unrest caused by growing inflation. As a presidential candidate and later as president, Miguel Alemán (1946-1952) was a champion of continuing Mexico's industrialization. In the mid-1940s a consensus began to appear among economic officials from the Ministry of the Treasury, the Ministry of Economy, and the Bank of Mexico about what kind of policies to follow in order to attain this goal. Economic officials decided that a level of participation from foreign investors and cooperation of labor were needed to achieve economic development. There were indeed more industries in Mexico after the Second World War, but also high production costs by world standards and mounting foreign competition. The new president intended to continue reducing Mexico's dependence on foreign economies as much as possible. An outward-looking industrialization policy was not seriously considered as an option so industrial growth had to rely on a protected home market.⁸⁶

As discussed in the Economic Council the previous year, the administration of Alemán was indeed trying to solve a balance-of-payments crisis in 1947. The government extended direct control over imports by prohibiting the import of 120 commodities which had accounted for 18 percent of the total value of imports. The Minister of Economy, Antonio Ruíz Galindo, claimed that those commodities, mostly luxury ones, like furs, jewelry, and perfumes, were eroding the reserves accumulated during the war. Organized commerce complained claiming that the only result of limiting commercial freedom would be black markets. The minister responded that the

⁸⁵ Alfonso Magallón de la Vega, "La carestía de la vida," *Revista de Economía* 9, no. 8 (1946).

⁸⁶ See the writings of the Minister of the Treasury during the presidency of Miguel Alemán, Ramón Beteta. Beteta, *Tres años de política hacendaria, 1947-1948-1949: perspectiva, acción*, passim.

restrictions did not affect the masses of ordinary consumers; on the contrary, the latter would later benefit as the policies would be an incentive to internal production. The government was trying to maintain high levels of internal reserves through protectionist measures that they would not abandon.

After the Economic Council, internal leadership disputes in the CTM caused a serious split. The most contentious issues were limitations on the legal rights to strike, a closer relationship of certain leaders with the official party, and other concessions to employers. Fidel Velázquez was a predominant figure in the CTM, who had received strong backing from Vicente Lombardo and Ávila Camacho (when the latter was president). He was able to organize a coalition of loyalist state and regional federations of workers. These unions were characterized by a numerically large but predominantly low-skilled labor force with limited mobilization capacity. Union size or economic bargaining power did not give this block prominence; instead they relied mostly on governmental support. Velázquez was able to block the election of the leader of the most important industrial union, the railroad workers, and placed instead his collaborator Fernando Amilpa as secretary general of the CTM. In his inauguration speech, Amilpa declared that economic problems were not solved through strikes, but by the intervention of the people in support of the government. He insisted in the creation of “neighborhood committees” who, along the wives of the workers, would patrol the stores and make sure that products were sold at the prices the government had set.⁸⁷

From 1947 to 1948, the faction of the CTM leadership led by Velázquez and Amilpa began to collaborate more closely with the administration of Alemán. They negotiated closer participation with the official party, obtaining more candidacies for popular representation

⁸⁷ “Hablan líderes de la CTM,” *Excelsior*, 6 October 1948, 8.

positions. Velázquez and Amilpa also severed relations with Lombardo Toledano, who was forming his own political party. While in theory workers of the CTM were allowed to be members of any party, people who joined Lombardo in his political party or were known to be communists, like Valentin Campa, were marginalized from the union.⁸⁸ At the national council of the CTM in 1947 and 1948, *lombardistas* and communists were subject to personal accusations of opportunism, corruption and despotic attitudes.⁸⁹ By January 1948, all groups that opposed Velázquez and Amilpa excised from the CTM.

In 1948, the CTM's dissident unions, which included railroad workers, electricians, metal workers as well as other organizations, founded an alternative association called the Coalition of Worker and Peasant Organizations. The split was due to the fact that their demands expressed at the General Economic Council were ignored by the president Miguel Alemán and also to the discontent caused by the subsequent election of Amilpa. In July of that same year, the Coalition organized collective demonstrations against the devaluation of the peso, which they claimed had further increased the cost of living for the working class. These mobilizations were a major challenge to Alemán and his administration's capacity to control economic policy. So the president worked hard to dismantle this independent workers' opposition through targeting its primary source of financing: the Railroad Workers Union.⁹⁰

In an episode that included political arm-twisting, accusations of corruption, and use of police force, known as *El Charrazo*, the executive power and its allies wiped out independent

⁸⁸ M.A. Mussot López and G. González Cruz, "En la posguerra, reestructuración de la CTM y formación de un nuevo proyecto sindical. 1947-1952," in *Historia de la CTM 1936-2006. El movimiento obrero y el estado mexicano.*, ed. J. Aguilar García (México D.F.: UNAM-Instituto de Investigaciones Sociales/Facultad de Ciencias Políticas y Sociales, Facultad de Economía, 2008), 168-69.

⁸⁹ *Ibid.*, 171.

⁹⁰ Middlebrook, *The Paradox of Revolution: Labor, the State, and Authoritarianism in Mexico*, 118-19.

union organizations. In October 4 1948, Jesus Díaz de León, a railroad worker leader backed by the president and the CTM, mobilized a large group of workers (and Mexican security forces dressed up like workers) to oust incumbent union leadership. The incumbent leadership, including Valentín Campa, fled and established other offices, but two weeks later were arrested and jailed under accusations of illegally appropriating union funds.⁹¹ These practices of union control, non-recognition and suppression of democratically elected union leadership, as well as imposition of leadership (usually from the CTM) continued and were known as *charrismo*. Dissident unionism declined after this episode, and the balance of power shifted toward unions like the CTM, which were willing to collaborate with the government to contain worker's demands for wage increases.

The response of the government to inflation and the fact that real salaries were very low was to focus with more intent on the consumer market. In September 1949, CEIMSA took over all of the functions of NADYRSA by presidential decree. Economic authorities, particularly the Ministry of Economy and the Bank of Mexico, decided to maintain the agency that regulated international commerce (CEIMSA) and instead get rid of NADYRSA because the latter produced great irritation in the private sector, in particular organized commerce. This sector saw NADYRSA as one of the most prominent symbols of state intervention in the economy. The new CEIMSA was conceived as a public company. The members of the administrative council were the Bank of Mexico and the national development banks.⁹² CEIMSA also worked in close coordination with the Ministry of Economy. By December 1949, by another presidential decree, CEIMSA was authorized the monopoly to import restricted industrial goods. At the end of 1949,

⁹¹ Ibid., 140.

⁹² These institutions include the export promotion bank (BANCOMEXT), the agrarian credit bank and the general development bank (*Nacional Financiera*).

officials expanded economic intervention in the consumer market and gave CEIMSA the prerogative to import and export restricted commodities (six hundred different goods in total), but it was overwhelmed by complaints in the private sector. Industrialists of CANACINTRA and COPARMEX were alarmed and declared that the new decree was illegal. For Mario Suárez, who represented both groups, the government regulating agency was becoming a monopoly. The representatives of the private sector met with Ramón Beteta, the Minister of the Treasury, in numerous occasions from December of 1949 to February of 1950. Opposition was of such a scale that the president derogated the law. The government of Miguel Alemán was unwilling to let go of the control of basic food exports and imports.⁹³ In just a couple of months, commercial and industrial organizations negotiated with the government and achieved that CEIMSA would only control the imports and exports of the basic commodities it already managed, all of them food.⁹⁴

So the only real triumph for the government's economic managers was controlling labor militancy, demobilizing opponents, and agreeing with the private sector on the need to maintain low wages. The CTM held various meetings and councils in 1950 and 1951 concerning the rising cost of living but in none of them worker representatives insisted on salary increases. Instead, they pointed out that the employers' propaganda concerning the low productivity of Mexican workers was unfair. They refused to agree to a formula, favored by the Industrial Chambers, in which workers earned money according to the number of units produced multiplied by the price per unit. According to the union, expanding production and lowering costs was the responsibility of industrialists, not the laborers, since they usually did not have a say in the ways the businesses

⁹³ Hugo Azpeitia Gómez, *Compañía Exportadora e Importadora Mexicana, S.A., 1949-1958: conflicto y abasto alimentario*, 1. ed., Colección Miguel Othón de Mendizábal (México, D.F.: CIESAS, 1994), 59.

⁹⁴ *Ibid.*, 54-58.

were ran or how much money was invested. In their resolutions, they listed the need for employers to lower their rent margins and that commerce should sell basic commodities to the workers at prices that are equitable to their wages.⁹⁵ This type of demand became standard practice for the CTM, which throughout the 1950s and 1960s pushed for subsidized socioeconomic benefits, especially health care and commodities, instead of wage increases.

Given this development model, the federal government continued to rely in the subsequent decades on food agencies to supply urban areas with cheap basic products and use them as a way of supplementing the salaries of the working population. The administration that followed Miguel Alemán's, headed by Adolfo Ruiz Cortines (1952-1958), expanded the budget and administrative capacity of CEIMSA. The agency's activities since its creation included supplying mills with corn and wheat and operating food stores in popular neighborhoods. CEIMSA increased its number of stores and began to intervene in the markets for other commodities, including milk (cf. chapter three).⁹⁶ In his presidential addresses, Adolfo López Mateos (president between 1958 and 1964) insisted that CEIMSA protected and increased Mexican living standards, and "helped maintain the real income" of the working class.⁹⁷

The federal government reorganized again its food regulation and intervention activities beginning in 1959, an effort that culminated in the creation of CONASUPO (Compañía Nacional de Subsistencias Populares) in 1965. Formally, CONASUPO was intended as an instrument to protect not only low-income consumers, but low-income agricultural producers by allowing them

⁹⁵ Confederación de Trabajadores de México, "43 Consejo Nacional octubre 5 al 7 de 1951, dictamen de la Comisión Especial de Precios y Salarios," in *Cincuenta años de lucha obrera: historia documental* (México, D.F.: Partido Revolucionario Institucional, Instituto de Capacitación Política, 1986), 625-30.

⁹⁶ Compañía Nacional de Subsistencias Populares, *El mercado de las subsistencias populares: cincuenta años de regulación*, 189-91.

⁹⁷ Adolfo López Mateos, *5 informes de gobierno* (Presidencia de la República, 1964), 145,55,58,211.

to obtain sufficient profit for their crops.⁹⁸ The government built more stores in urban areas, and since 1961 in rural areas, opening up Tiendas Rancheras and Tiendas Campesinas. CONASUPO also began to handle more crops (barley, beans, copra, corn, cotton, rice, sesame, sorghum, soybeans, sunflower and wheat) and expanded its network of storage infrastructure.⁹⁹ The government's food agency operations, which subsidized the cost of basic staples, continued to increase during the 1970s, doubling their volume between 1970 and 1982. Although CONASUPO's programs were modified over the years, particularly including reforms to increase individual agricultural producers participation in day-to-day administrative decisions, the overall purpose of the agency up until its dismantling in the mid-1990s was to prevent the erosion of purchasing power in the cities without making any significant concessions in terms of wage increases.

The high political cost of inflation and low wages from the mid-1940s to the mid-1950s forced government officials to look for an alternative model. Economic authorities were aware of the precarious impasse to which they had arrived. Antonio Ortiz Mena, who was the Minister of the Treasury and member of the Combined Mexican Working Party from 1958 to 1970, was assigned by president Adolfo López Mateos the task of managing the Mexican economy. Ortiz Mena's goal was to make the economy grow without inflation, and this goal was in part made easier by the institutions created in the 1930s and 1940s which were designed to shield urban salaried workers from inflationary spirals. The framework that was established before the war, which did not include de facto expanding the numerical consumer base for certain products, remained in place in the form of discourse and sometimes in practice. The post-revolutionary

⁹⁸ Compañía Nacional de Subsistencias Populares, *El mercado de las subsistencias populares: cincuenta años de regulación*, 2 vols., vol. 2 (México D.F.1988), 42.

⁹⁹ *Ibid.*, 201.

economic policy of Mexico was expansive, but not quite so distributive in the early decades of the twentieth century. The first step was to increase the size of the economic pie, not redistributing the existing pieces in a more equitable way. From the 1930s to the 1950s, most sectors, especially manufacturers and government economists, saw this as the most rational and unequivocal path. However, the inequality generated by economic growth was no secret and in chapter five I will explain how this issue became central in debates about economic policy in later decades, especially after the late 1960s. But the solution offered always had to do with modifying every other element of the economic equation except anything that would raise the production costs for internal manufacturers, like for example wages and taxes.

Conclusion

The 1917 Constitution granted substantive rights for workers and peasants but, in the case of the former, there was no specific legislation to enforce them until the early 1930s. This was achieved after a long series of negotiations between union leadership and former revolutionary generals like Plutarco Elías Calles who controlled the executive power. Calles was trying to increase the appeal of the newly formed political party, the PNR, among the rank and file of industrial labor unions. As a way to undermine the power of unions, Calles' government passed the Federal Labor Law in 1931. This law institutionalized government arbitration of disputes between labor and management and gave the Ministry of Labor the authority to recognize or exclude any union as a valid interlocutor. This legal framework weakened the negotiating power of organized labor in Mexico.

The Federal Labor Law also stipulated that wages had to be determined according to the minimum needs of the worker, in other words what each worker needed to maintain his optimal

well-being. This definition assumed that these needs could be quantified. The officials at the Ministry of Labor decided to calculate and budget the income and expenses of workers in Mexico to be able to reach an optimal wage level. However, gathering information to make these calculations proved to be cumbersome and ineffective, in part because the research was expensive and slow. The research was ineffective also because the orderly notions about budget that the Wage Commission (part of the Ministry of Labor) had were not easily applicable to the reality of the sample of Mexican workers that they studied. These workers derived their income from several of sources, including wage labor (both agricultural and industrial), subsistence farming, and crop sales. Nonetheless, the notion that needs could be calculated and quantified, using as variables income, prices, and calories stuck and was adopted by unions to demand wage increases in the name of their “standard of living.”

A long era of inflation from the early 1940s until the mid-1950s forced the government to intervene in the food market. The decline of food production, especially basic grains, was in part linked to Mexico’s participation on the allied side during the Second World War. Agricultural producers formerly dedicated to food production abandoned this in favor of cash crops like cotton which, during the war years, commanded very high prices in the international market. President Cárdenas and his economic advisors at the Treasury and the Ministry of Economy created a series of institutions to regulate prices as well as food imports. The subsequent administration (headed by Manuel Ávila Camacho) used these institutions to maintain the supply of basic grains to the city and stable prices.

Inflation and food scarcity created great social tensions in the late 1940s. Large sectors of organized labor, led by the railroad workers union, mobilized and made substantial wage

demands to the government. Both the governments of Manuel Avila Camacho and Miguel Alemán set as priority economic growth based on the expansion of capital intensive industrial activities. The federal government set up conditions for investment, including fiscal policy and trade protection. But a crucial element for the private sector, in particular COPARMEX and CANACINTRA, was to maintain the cost of labor low, so they systematically opposed wage concessions. The government of Alemán defeated labor opposition by directly attacking the leadership of the railroad workers' union and consolidating its alliance with the CTM. As wages became such a contentious issue, the government used intervention and regulation of the food market as a way to regulate class relations. These policies subsidized the private sector, and were intended to maintain the purchasing power of wages without increasing them.

During the 1930 and 1950s, public officials, through negotiations with industrial interests and organized labor, established the basis of ideas about the measurement and regulation of consumption. Subsequent government decisions regarding food consumption would be informed by the ideas developed during this era. CONASUPO and its subsidiaries would remain very important tools to intervene in the food and commodity markets until their dismantling in the early 1990s. As I will explain in subsequent chapters, food consumption remained a legitimate area of state intervention throughout the century.

Chapter 2: Beyond Corn and Beans: the Development of Nutritional Sciences in 1940s and 1950s Mexico

In the popular 1948 film *Esquina Bajan...!*, a young lady with a baby descended from a crammed Mexico City bus aided by Constantino Reyes “Regalito,” an employee of the Zócalo-Xochicalco route. The day was hot and the fellow passengers were restless and angry, but “Regalito,” who was in charge of collecting fare, took a moment to help the mother and comment on her child’s beauty: “look at you, you are so cute.” Then he turned to the mother and, raising his eyebrows in disbelief, declared: “and they say all children are malnourished” (*qué lindo, precioso, y luego dicen que están desnutridos*). The character’s statement at first engages a contemporary preoccupation, the nutritional status of the Mexican population, but then dismisses it, as part of an effort to make a hopeful representation of working class life in Mexico City. Like the movie itself, the comment nodded toward the contradictions and tensions that come with rapid urbanization, the pressures that urban dwellers felt to keep both their jobs and their dignity while keeping their families well clothed and fed. In this case, the bus employee complimented the working class mother’s success at keeping her baby fat and nourished.¹⁰⁰

Who said that Mexico’s children suffered from malnutrition? The movie character was not convinced that child malnutrition was a problem in Mexico City, but others, particularly doctors at public hospitals, *were* worried. In fact, other experts and public health officials were also concerned about the nutritional status of the majority of the Mexican population, not just urban children. This chapter is about the work of these doctors, experts and public officials, who began to study systematically the relationship between diet and population health in 1940s and 1950s Mexico. I will examine two groups in particular: a team funded by the Rockefeller

¹⁰⁰*Esquina, bajar...!*, directed by Alejandro Galindo (1954, México, D.F.: De Película, 2006), DVD.

Foundation (RF) and a team of clinicians working at the Hospital Infantil de Mexico (HIM, Children's Hospital of Mexico).

Unlike health reformers from the 1920s and 1930s, researchers involved with the RF and the HIM were not heavily influenced by the eugenics movement, for which racial theories of heredity and degeneration were central. Eugenic thought had a central role in the formation of public welfare institutions in Mexico. However, the Mexican and American doctors who studied diets in the 1940s and 1950s were trained as traditional clinicians, and in technical fields like biochemistry. Their goals were to diagnose clinical deficiencies, measure nutrients in food, and design new treatments to cure children who suffered physical deterioration due to lack of food intake.

During the 1940s and 1950s, medical knowledge around the world about the long and short term effects of diets on human health, in particular human growth, morbidity and mortality was far from conclusive. The RF and HIM studies were the first systematic epidemiological and clinical assessments of the effects of diets on human health in Mexico. During the rest of the twentieth century, doctors in Mexico continued implementing and perfecting the methodologies and questions pioneered by the RF and HIM. The RF and the HIM research teams worked under the auspices of or in direct collaboration with Mexican government institutions. The knowledge doctors generated about nutritional deficiencies and malnutrition was intended to inform public policy. For the Rockefeller Foundation, research was designed to gather information about diets and food consumption, so that agricultural and economic planners would be able to make an assessment of production needs according to nutritional needs. This research took place in both urban and rural environments, but American doctors were more personally interested in rural populations, because they would find more clinical nutritional deficiencies, and thus make more

scientific breakthroughs. In contrast, doctors working at the HIM sought to define malnutrition as a disease, identify its biological components and symptoms and then look for affordable therapies that could be introduced into public hospitals. The scope of research at the HIM was largely determined by the location of its facilities, Mexico City.

Since the early twentieth century, doctors all over the world had struggled precisely to assess the effects on the body caused by lack of food and nutrients. What doctors at the HIM did was help establish that malnutrition has degrees of severity, as well as a spectrum of symptoms and effects on the functioning of organs and bodily functions. Malnutrition is expected in situations of famine where there is widespread lack of food, which leads to excess mortality, but it is not an ailment exclusive to situations of extreme hunger. Temporal deprivations of nutrients of calories at key developmental stages in children or even a calorie appropriate diet lacking particular micro nutrients are part of the malnutrition spectrum. Both have long term health consequences and influence infant mortality when they interact with infectious disease. Scholars of famine, assume that this non-emergency incidence of malnutrition is endemic to most pre-industrial societies, affecting particularly the poorest sectors.¹⁰¹ Mexican doctors in the 1940s and 1950s did not find widespread starvation, but they did observe regularly mild to extreme nutritional deprivation in their daily medical practice. Nonetheless, doctors at the HIM did not consider this situation normal or endemic, but aberrant. Doctors at the HIM aspired to find some therapeutic mechanisms to prevent malnutrition and made this prevention administratively feasible.

Nutritional research took place in the 1940s and 1950s when the Mexican state was already intervening in the food market, as I have explained in chapter one. The knowledge

¹⁰¹ See Cormac Ó Gráda, *Famine, a Short History* (Princeton: Princeton University Press, 2009).

doctors generated about nutritional deficiencies and malnutrition helped justify continued intervention in the food market as a measure to assure the wellbeing of the population. However, the public policies the Mexican government implemented did not directly correspond to the findings and recommendations of the RF and the HIM, but to political and practical opportunities like the availability of excess powder milk in the international market.

This chapter is organized in four sections. The first section of the chapter is about how Mexican experts thought about the problem of diets before the 1940. The next two sections of the chapter address the ways doctors and experts gathered and interpreted information about the links between human health and nutrition in 1940s and 1950s Mexico. The methods of inquiry and the types of questions these doctors chose to ask depended on the institutional conditions which supported their work. By institutional conditions I mean the material conditions, such as sources of funding, as well as the overall goals of the organizations for which the researchers worked. In the second section, I analyze why the Rockefeller Foundation promoted the study of diets in Mexico. I contend that the project was an integral part of an agricultural assistance scheme designed to increase crop yields. The third section concerns the work of the team of doctors led by Dr. Federico Gómez at the HIM. The final section is about how Mexican representatives to the United Nations' aid agencies used the findings of both the Rockefeller Foundation's team and of the doctors at the Children's Hospital to promote and secure funding for food aid projects. This aid in the form of powder milk did not correspond to the recommendations of RF and HIM affiliated doctors, who insisted in maintaining Mexican traditional diets or developing cheap vegetable-based protein sources. Mexican representatives to the aid agencies used the information generated by doctors affiliated with the RF and HIM about Mexican nutritional deficiencies to receive funding from abroad.

Higienistas, Eugenics and food programs in 1920s and 1930s Mexico

By the 1940s, the study of diets was not a new preoccupation among Mexican expert circles. Intellectuals, public officials and doctors in the late nineteenth century and the early twentieth century had already struggled with questions about the relationship between diet, disease and poverty. These ideas concerning diets were influenced by eugenics, and later by the hygienist movement. The reason I examine these earlier ideas about the Mexican diet is that they influenced the goals of post-revolutionary government policies and institutions. Pre and post revolutionary notions concerning diet were interventionist at the core, in the sense that they implied that the state had the obligation of changing the private behavior and customs of the Mexican population in order to achieve national development. Ideas about the superiority of European style diets over Mexican diets based primarily on three staples (corn, beans and chile) survived the Porfiriato, and guided post-revolutionary policies, especially concerning education and welfare.

Before the 1940s, intellectuals and experts in Mexico had discussions about the nature of Mexican diet and the measures that had to be taken to improve it. Nineteenth-century hygienist and eugenics advocates in Mexico had constantly dismissed the vegetarian corn-based diet of most of the population as inferior to that of wheat-eating Europeans. Prominent intellectuals like Francisco Bulnes, as well as numerous experts who served in the Porfirian bureaucracy, were influenced by a particular interpretation of eugenics derived from neo-Lamarckian ideas. Historian Nancy Stepan has noted that most Latin American eugenics movements were less influenced by Darwin than by Jean-Baptiste Lamarck, the early-nineteenth century French naturalist who supported the idea that biological characteristics acquired over an organism's

lifetime could be passed over to the next generations.¹⁰² Latin American eugenic adherents believed for example that infectious diseases or physiological ailments like alcoholism could be genetically transmitted from one generation to the next. Unlike other eugenic movements, for whom improving societies genetic stock entailed the breeding out of bad genes through sterilization and prohibitions on procreation, Mexican and most Latin American eugenics movements stressed reforming the social and moral environment of prospective parents and children instead of blocking reproduction. Historian Jeffrey Pilcher argues that Porfirian intellectuals and experts “rejected the idea that their Indian ancestors were inherently unfit.”¹⁰³ Instead, the culprit of the underdevelopment of the Mexican people was a deficient diet, characterized by a high consumption of corn. The problem could be solved if the Mexican population adopted the customs of more advanced peoples, like Europeans, who ate white bread.¹⁰⁴

Neo-Lamarckian views survived the Porfiriato, and with them ideas about the deficiency of Mexican diets. Post-revolutionary intellectuals and experts continued advocating social improvement through modification of private behaviors. Particularly influential were officials involved in the issues of child and family welfare, who generally identified themselves as Higienistas. These hygienists included among their ranks physicians, social workers, educators and even feminists who were at the vanguard of establishing new laws and institutions. For them, the role of the state and philanthropic agencies was to assure that undesirable characteristics or

¹⁰² Nancy Leys Stepan, *The Hour of Eugenics: Race, Gender, and Nation in Latin America* (Ithaca, N.Y.: Cornell University Press, 1996).

¹⁰³ Pilcher, *¡Que vivan los tamales! Food and the Making of Mexican Identity*.

¹⁰⁴ Idem.

genes were not acquired by poor and disadvantaged populations.¹⁰⁵ Consequently, during the 1920s and 1930s Mexico's health and education governmental programs had the clear intent of going beyond the clinic or the classroom and into the household, all "in the interest of nation building and development."¹⁰⁶ Several scholars have shown that Mexican eugenicists dominated the medical establishment and other government institutions, thus making "eugenic ideas central to Mexico's project of national (re)construction in the 1920's and 1930's."¹⁰⁷ A good example of these government institutions is the Departamento de Salubridad Pública (Department of Public Health).¹⁰⁸

One of the primary proposals of the higienista reformers was to eradicate deficient diets. Some post-revolutionary observers of the health conditions of the Mexican population, such as Alberto J. Pani, a businessman who became Minister of Finance (1917-1919), were concerned with deaths by gastrointestinal and respiratory diseases. He thought these ailments "were preventable through known measures aimed at improving nutrition, sanitation and dwelling conditions, measures which were increasingly viewed as the duty of the state."¹⁰⁹ Pani's preoccupations about the link of diet and morbidity were re-stated in the 1930s, when President Lázaro Cárdenas passed a decree to create the rural Sanitary Services, managed by the Department of Public Health. These Services would address: "(1) Poor general health conditions;

¹⁰⁵ Alexandra Mina Stern, "Responsible Mothers and Normal Children: Eugenics, Nationalism, and Welfare in Post-revolutionary Mexico, 1920-1940," *Journal of Historical Sociology* 12, no. 4 (1999): 372-75.

¹⁰⁶ Mary K. Vaughan, *Cultural Politics in Revolution: Teachers, Peasants, and Schools in Mexico, 1930-1940* (Tucson: University of Arizona Press, 1997), 11.11.

¹⁰⁷ Anne-Emanuelle Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico*, ed. Theodore M. Brown, Rochester Studies in Medical History (Rochester, NY: University of Rochester Press, 2006), 154.

¹⁰⁸ *Ibid.*, 155.

¹⁰⁹ *Ibid.*, 38.

(2) inadequate nutrition; (3) absence of efficient health services; and (4) the public's ignorance of medicine and personal hygiene."¹¹⁰ However, the decree did not specify why the diets were deficient or what kind of policies the Sanitary Services would implement. In 1937, a year after the sanitary services were created, the government publicized and clarified the accomplishments of the plan of nutritional improvements. The most notable were the passage of food sanitation regulations and promotion of milk pasteurization, which I will address in chapter three.¹¹¹

In addition to milk sanitation policies, the most concrete higienista policies regarding diet were meal distribution programs. These policies involved promoting the substitution of tortillas and corn with bread and wheat, as well as encouraging the consumption of animal products, like milk and meat. Effective food assistance in 1920s and 1930s mostly targeted children and involved free food distribution. The food distribution was run by local governments, private charities and the Ministry of Education. For example, from 1922 to 1924 the government of Mexico City provided school meals to several groups of children.¹¹² This practice extended to other urban parts of Mexico but was by no means generalized. Also, groups of women in some cities of central Mexico founded institutions named Gotas de Leche based on the French model of Goutte de Lait.¹¹³ Their goal was to hand out pasteurized milk to poor children and infants. The Gotas de Leche were also modeled on private charity institutions like the ones ran by the Catholic Church. However, hygienists and social workers made sure that these institutions were

¹¹⁰ Ibid., 182.

¹¹¹ Ibid., 190.

¹¹² Simón Barquera, Juan Rivera-Dommarco, and Alejandra Gasca-García, "Políticas y programas de alimentación y nutrición en México," *Salud Pública de México* 43(2001): 465-66.

¹¹³ Leon Dufour established a clinic for infants in France and named it "Goutte de Lait" as a strategy to decrease infant mortality. These clinics encouraged mothers to breastfeed their infants but did supply sterilized milk for non-nursing mothers. French doctors promoted this model in the Americas at international health congresses. Anne-Emanuelle Birn, "The National-international Nexus in Public Health: Uruguay and the Circulation of Child Health and Welfare Policies, 1890-1940," *História, Ciências, Saúde-Manguinhos* 13, no. 3 (2006).

also supported by public funds. In 1929 the Gotas de Leche were incorporated as a government agency and renamed Asociación Nacional de Protección a la Infancia.¹¹⁴

In the late 1930s and early 1940s, health authorities started to participate in the meal programs. Since 1939 the Department of Health offered daily breakfasts to approximately three thousand school children in the Federal District. The menu included a piece of fruit, a quart of milk, a small piece of bread and an egg. It was only for school children who could pay the cost of the meal, which was subsidized by the state and by charity organizations. The volunteer committees for child-welfare, composed of middle-class women, were in charge of securing funds to provide services. The rest of the meal services were for orphanages or hospitals. Following the same model, the ministry opened the first public dining hall (Comedor Familiar Número Uno) in 1941. The Comedor Familiar catered to a limited number of members who were accepted according to socio-economic status.¹¹⁵

In the 1920s and 1930s, Mexican officials were yet to produce any systematic and rigorous assessments to sustain their claims that traditional Mexican diets had a negative effect on health. But although health authorities were interested in promoting the use of laboratory techniques and clinical trials to study diets,¹¹⁶ the use of these methods were not necessarily intended to make new discoveries: health officials had already decided beforehand that Mexican diets were defective. Any research done at public institutions had to be prescriptive, in other words, experts had to recommend changes to the diet, not determine if these changes were

¹¹⁴ Gloria Guadarrama, "Condiciones de bienestar y políticas de protección social en el Estado de México hacia el final del siglo XX," *Documentos de Investigación* 62, no. 1 (2001): 2-5.

¹¹⁵ J. Calvo et al., "Nutritional Status of Economically Poor Families Fed in the Government Operated Dining Room in Mexico City," *Journal of the American Dietetic Association* 22(1946): 297.

¹¹⁶ *Informe de labores presentado al H. Ejecutivo de la Union por el Dr. Gustavo Baz secretario del ramo 1941-942*, (Mexico D.F.1942), 270-71.

necessary. For example, José Siurob the chief of the Department of Health¹¹⁷ declared that in order to correct the “deficient and defective diet of workers and campesinos,” the Department had to study “complete food rations, adapted to different regions of the country.”¹¹⁸ For that reason, the Department of Public health founded the Instituto de Alimentación in 1943, later to be renamed the Instituto de Nutrición, (Institute of Nutrition). However, the Institute of Nutrition began a systematic study of Mexican diets in the 1940s, only at the initiative of an external agency: the Rockefeller Foundation. The people who conducted these studies did not intend to propose prescriptive measures without first researching the problem.

Diet Studies as Part of the Agricultural Development Program

The aid the Rockefeller Foundation gave to the Institute of Nutrition has to be understood in the context of a larger project intended to provide technical assistance to Mexican agriculture. Thus in the early 1940s, the decision to promote a systematic assessment of the nutritional status of the population was thought as part of the strategy to boost agricultural production in Mexico. As I discussed in the previous chapter, rampant inflation, in part caused by fluctuating agricultural production, had seriously diminished the purchasing power of most of the population. This was a source of constant political and social discontent. The government had decided to intervene in the grain market in order to try to control the inflationary spiral that affected food prices.

Several reasons explain the agricultural stagnation. Starting in 1935, president Lázaro Cárdenas began to redistribute land in record amounts. Twice as much land was distributed

¹¹⁷ The Department of Health merged with the Department of Welfare in 1943 to form the Ministry of Health and Welfare (Secretaría de Salubridad y Asistencia).

¹¹⁸ José Siurob, "La sanidad en México," *Boletín de la Oficina Sanitaria Panamericana* 15, no. 12 (1936).

between 1935 and 1940 than since the end of the armed phase of the Revolution in the early 1920s. The land reform took place not only in marginal, self-sufficient farming areas of central Mexico, like in the 1920s, but also in highly developed commercial farming districts. The Cardenista government borrowed heavily and spent large sums in transportation, irrigation and electrical infrastructure. However, the production of basic grains did not increase at the pace of population growth. Fluctuating production was caused by many factors like droughts and plagues, as well as the reticence of investors and loaners, who did not favor the new system of property. Cárdenas had also provided technical assistance to some farmers and encouraged agronomists and agricultural schools to aid peasants, but none of these measures had the desired results.¹¹⁹ The next President, Manuel Ávila Camacho, inherited a depressed agricultural market in which the dwindling production of corn, wheat and beans continued to be a concern.

Mexican officials admired the United States' Agricultural Extension Programs and wanted to secure some funds from the neighboring country to implement a similar scheme and revitalize production. These extension programs, better known as the Cooperative Extension Service, were a collaborative effort between the U.S. Department of Agriculture (USDA), the land-grant colleges, and state experiment stations.¹²⁰ The primary functions of the service were to disseminate technical information (irrigation methods, plague management, soil assessment, etc.) and make educational opportunities available to people not enrolled in the colleges. The land grant colleges were responsible for coordinating outreach and disseminating new knowledge through workshops and demonstrations. During the Cárdenas presidency, the

¹¹⁹ Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880-2002*, Contributions in Latin American studies (Westport, Conn.: Praeger, 2003).

¹²⁰ Since 1862, an act granted federal public lands to each U.S. state. These lands were to be sold and the proceeds used to create colleges of agriculture and mechanical arts, the land-grant colleges. U.S. Congress passed legislation in 1887 to establish and fund state agricultural experiment stations, to conduct original research to establish agricultural industries according to the conditions and needs of each respective state. See W.D. Rasmussen, *Taking the University to the People: Seventy-five years of Cooperative Extension* (Ames: Iowa state University Press, 1989).

Mexican Ministry of Agriculture's assistance projects, the Office of Experiment Stations, were in part modeled on these extension services.¹²¹

U.S. government officials thought that Mexico was very important from the standpoint of the United States national defense. This preoccupation drove vice-president elect and Secretary of Agriculture (1933-1940) Henry A. Wallace's efforts to convince the Rockefeller Foundation to aid Mexico. Mexico was not only a possible ally in the war, but he also thought that "the high birth rate and the low agricultural production" might constitute a possible danger.¹²² Wallace, who was also a prominent agricultural businessman, visited Mexico in 1940 to represent his country at Manuel Ávila Camacho's inauguration. Once there, he accepted an invitation to spend two days in the Bajío region between Guadalajara and Queretaro with Ávila Camacho, the incoming Mexican Secretary of Agriculture, Marte R. Gómez, and outgoing president Cárdenas. The president, the ex-president and the minister wanted to convince Wallace to help Mexico establish a program that served the same purposes as the Cooperative Extension Service. Wallace did not make any promises to the Mexican politicians regarding funds, explaining that the Second World War was underway in Europe and the Pacific, and the U.S. could be directly engaged as well in the future. Nonetheless, he did get in contact with Raymond Fosdick, President of the Rockefeller Foundation, and asked him if the Foundation could provide technical assistance to Mexico instead.

Vice-president Wallace, in order to secure funding, insisted to officials at the Rockefeller Foundation that the Mexico agricultural project was much more than a technical assistance program: it was also a health intervention. In part, he was honoring the RF's interests and

¹²¹ See Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880-2002*.

¹²² Memorandum of Conference: Vice president Wallace, RBF and JAF, regarding Mexico, Its Problems and Solutions. Rockefeller Foundation Center (hereafter designated RAC), Rockefeller Foundation Archives, Record Group 323, Box 1, Folder 2, 1.

recognizing their past work in Mexico. In the 1920s the Foundation had been interested in public health and sanitation work and under this scheme it had led several infectious disease eradication campaigns (hookworm, yellow fever and malaria). The interventions had been somewhat limited, both in geographical scope and length, but had lasting effects, especially due to the emphasis on training of Mexican rank and file health officers.¹²³ The Rockefeller Foundation's officers were reluctant to expand their organization's presence in Mexico during the Cárdenas years because they disagreed with the President's politics. Ávila Camacho, on the other hand, was seen by many American officials as a more moderate figure. So the Foundation agreed to fund a new adventure in Mexico, to implement breakthroughs in plant sciences in order to promote improvement in local economic conditions.¹²⁴

Wallace then proceeded to find out some facts about the state of Mexican diets and what it could be done to improve them. He discussed this issue with Dr. Louise Stanley of the Bureau of Home Economics, an institution which had conducted long term studies about food consumption in the United States. Stanley was in contact with the medical staff at the National University in Mexico, and convinced Wallace that Mexican diets were in fact deficient, but she could not offer any other information because no proper studies were available. Stanley was an advocate of investigating and regulating food consumption through extensive diet research which would provide information about the optimal relation between cost and nutritive content. Wallace pointed out in a letter that he and Stanley thought that while in Mexico the basic diet tended to conform to a pattern, there were variations from it in different areas of the country. Dietary studies were needed to bring out these differences and "to indicate the direction that

¹²³ Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico*, 85.

¹²⁴ Memorandum of JAF of Conference: Vice President Wallace, RBF and JAF, regarding Mexico, Its Problems and Remedies, 3 February 1941, RAC, Rockefeller Foundation Archives, 111, RG 323, Box1, Folder 2.

should be taken by a program of education to improve the situation and to show the development needed in agriculture so as to supply, in so far as possible, the foods required.” Thus agriculture was a crucial element in “the development of better nutrition and better health in any country.”¹²⁵

Wallace recommendations stemmed from his ideas about the causal relationship between nutrition, the human body size, and work productivity. In fact, as Vice-president he was at the forefront of linking ideas about nutrition, physical vigor and the war effort. The U.S. government in the early 1940s had several educational campaigns to promote these ideas: nutrition means eating the right foods, and eating the proper food will lead people to become healthy. Thus, eating properly was portrayed as a duty, and health as a virtue, for only a healthy person could be a “good citizen.” The ultimate goal of the campaign was to prepare the U.S. population for the Second World War. Thus, the campaigns promoted the idea that “healthy citizens are useful citizens (good fighters, good defense workers)” strong enough to be productive at work.¹²⁶

To illustrate the importance of agricultural assistance to Mexico to RF staff members, Wallace argued that some of the RF health programs in Latin America did not have any effect of productive work because they did not include nutritional policies. Wallace highlighted the RF’s assistance project to Puerto Rico in particular. In the island, sanitary measures did result in reducing the mortality rates, but little attention was given to nutrition and there was none of the necessary development of agriculture to provide food in proper quality and quantity. As a result, they had “a large sluggish population, working inefficiently.” Wallace hoped that dietary studies in Mexico would show a direct relationship between dietary habits and the physical development

¹²⁵ H.A. Wallace to Raymond E. Forsdick, 13 May 1931, RAC, Rockefeller Foundation Archives, 1.1, RG 323, Box 12, Folder 79.

¹²⁶ Background Materials for Agenda Committee on Food Habits, 14-15 March 1942, RAC, Rockefeller Foundation Archives, RG 1942, Series 100, Box 226, Folder 1574.

(physical growth) of the population. The analysis of the data would also indicate desirable changes in the dietary habits and serve as a guide to agricultural planning for various sections of the country. Wallace thought that Mexico could then serve as a model to other similar projects in countries like Haiti, Ecuador and Paraguay where dietary reform was also needed.¹²⁷

The RF responded to Wallace's advocacy by sending several scientists to conduct surveys of local conditions. Commissioning these fact finding missions before extending aid to recipient countries was a customary practice for the RF since 1916. Richmond K. Anderson and William Robinson were the head scientists assigned to the Mexican nutritional project and he started scouting for locations to conduct the surveys in 1941. A team of U.S. agricultural scientists, genetics expert Paul Mangelsdorf, agronomist Richard Bradfield and plant pathologist E.C. Stakman were sent to Mexico to conduct a feasibility study for agricultural aid. The three agricultural scientists' 1942 report led to the creation of the Rockefeller Foundation-Mexican government agricultural assistance program in 1943.¹²⁸

The RF considered that their programs abroad should require collaboration between U.S. and local scientists and experts. Thus, during the duration of the nutrition project and the agricultural extension program, local officials would work closely with U.S. scientists and universities to improve their technical knowledge. Richmond K. Anderson, and William Robinson, worked closely with chemists, doctors and nurses employed by the Institute of Nutrition. For the agricultural program the RF created the Office of Special Studies, which

¹²⁷ H.A. Wallace, Office of the Vice President to Mr. Raymond E. Fosdick, 13 May 1941 RAC, Rockefeller Foundation Archives, Collection 1.1, RG 323, Box 12, Folder 79,

¹²⁸ Norman E. Bourlaug, "Sixty-two years of fighting hunger: personal recollections," *Euphytica* 157(2007). E. C. Stakman, Richard Bradfield, and Paul C. Mangelsdorf, *Campaigns against hunger* (Cambridge, Mass.: Belknap Press, 1967).

worked in conjunction with the Mexican government's Office of Experiment Stations (later called the Agricultural Research Institute).

Vice-president Wallace had insisted that the purpose of the surveys was to guide agricultural policy and determine regional dietary differences in Mexico. The survey locations were supposed to be representative of different regions of the country. However, the selection criteria for the survey sites did not turn out to be representativeness, but the personal preferences of Anderson. The scientist was mostly interested in populations who had very high levels of nutritional deficiencies. Anderson was a doctor who had worked closely with the Foundation and had been in charge of a nutritional survey in North Carolina. In this study, Anderson was keen on investigating the optimal levels of calorie intake, which he concluded were much lower than what was generally recommended, around 2,000 calories per adult instead of 3,000. He was also interested in testing the correlation between supposedly tell-tale physical signs of deficiency and laboratory test that would confirm the presence of certain nutrients in the blood.¹²⁹

Previous studies that the Rockefeller Foundation scientists conducted in the U.S. south influenced how Anderson approached his work in Mexico. In the U.S. south, the Foundation nutritionists found definitive vitamin C deficiencies in the adult population. These deficiencies could be easily addressed using supplements and treatments. So Anderson was looking for something similar in Mexico: a clear deficiency in adults which could be treated like a disease.¹³⁰

Anderson's Mexican field diaries reflect an interest in selecting a population which would most certainly have a high level of deficiencies. Before Anderson arrived in Mexico he

¹²⁹“Mexico: Nutrition Studies Progress Report,” 1944 RAC, Rockefeller Foundation Archives, R.G., 5.3, Series 323, Box 143, Folder 1694, 7-8.

¹³⁰ “Trips to Various Parts of Mexico to Study Nutritional Conditions and Choose Areas For Surveys,” 17 August 1941, RAC, Rockefeller Foundation Archives, RG 1.1, Series 323, Box 12, Folder 80.

already asked the people at the Institute of Nutrition to recommend such a site.¹³¹ The suggestion of the Ministry of Health was to start working in the Valle del Mezquital, an indigenous Otomí Indian community which was known to live in extreme poverty. Prior to land reform the Mezquital Valley was a region dominated by large ranches where the chief industry was *pulque* production, but during the 1940s the population survived cultivating small plots of land without any irrigation systems.

There was another variable that limited Anderson's choices: the surveyed populations had to be close to Mexico City. The reason was that, during the 1940s, the types of survey methods Anderson used were closely tied to "rather complicated laboratory procedures." The blood and biological samples had to be analyzed the same day. The Institute of Nutrition did not have sufficient funds to have a fitted car or station wagon where the samples could be kept refrigerated or where less complicated tests could be conducted such as an analysis for vitamin C.¹³²

To select the other locations, the Rockefeller Foundation representative made a series of visits to various towns in central Mexico alongside Francisco P. de Miranda, the head of the Nutrition Institute. They both visited Hidalgo, Guerrero, Queretaro, Michoacán and Guanajuato. The American doctor was looking for indigenous populations that resembled those in the Valle del Mezquital. Mestizo towns did not impress him much as they seemed to have no nutritional problems. The two doctors conducted a series of clinical tests that consisted of a brief clinical examination of eyes, conjunctiva, teeth, gums, tongue, lips and skin which were the areas in which nutritional deficiency is most likely to be evident. They were only able to do the tests on

¹³¹ Ibid.2.

¹³² "Mexico: Nutrition Studies Progress Report," 5.

people who were already at the clinics. In some towns where the clinics were closed, Anderson and Francisco P. de Miranda made a superficial survey of the town.

Anderson settled for the small village of Yustes in the Bajío area of the State of Guanajuato, and later the Mexican team chose Cápula, a village near Lake Pátzcuaro, in the state of Michoacán. Yustes lied in one of the country's richest agricultural regions, formerly occupied by large haciendas which were divided and turned over to the villages as communal lands and parceled out among the families for cultivation. The inhabitants of Cápula were predominantly Tarascan Indians, although they no longer used their native tongue.¹³³

In his field notes, Anderson did not demonstrate any interest in urban populations, maybe because before he arrived in the country, the Nutrition Institute had already begun its first two surveys in Mexico City. These two studies, conducted in 1940, showed that "very few of the people received an ideal diet, as judged by the recommended daily allowances."¹³⁴ The nutrition problems of the working class urban population in Mexico City "appear to be quite similar to those of comparable groups in the United States, namely the correction of a sub-optimal dietary pattern and the detection of early sub-clinical manifestation of dietary diseases."¹³⁵ What this means is that the population did not have any visible signs (skin lesions) or measurable signs (vitamins, minerals, protein, carbohydrates in the blood) of deficiencies. The measurements of the studied populations simply did not correspond to the recommended nutrient and calorie standards. These recommendations were compiled by experts at international agencies, like the United Nations, and used by most nutritional researchers all over the world.

¹³³ "Trips to Various Parts of Mexico to Study Nutritional Conditions and Choose Areas For Surveys," 17 August 1941, RAC, Rockefeller Foundation Archives, RG 1.1, Series 323, Box 12, Folder 80.

¹³⁴ William D. Robinson, G.C. Payne, and J. Calvo, "A Study of the Nutritional Status of a Population Group in Mexico City," *Journal of the American Dietetic Association* 20(1944): 296.

¹³⁵ *Ibid.* 297.

The results of the city surveys depended entirely on the characteristics of the population the researchers chose. The first city survey examined the nutritional conditions of the residents of the crowded Santa Julia neighborhood. Using census data, the researchers sample families not individuals. Their Male school children (four to fifteen year olds) were overrepresented at the expense of other groups. All the families they studied were headed by men, and all of these men were employed: "The wage earners of the families' studied represented a wide variety of occupations, from day laborers, semiskilled factory workers, artisans and chauffeurs, to office workers, small shopkeepers and professional men."¹³⁶ Also, the researchers stated their work "was completed before any marked inflation or food scarcities developed as a result of the war." The second survey was an appraisal of poor families before and after they were fed for periods of 8 to 16 months at the government operated dining room, the Comedor Familiar Número Uno. The Comedor was intended for the employed worker whose income was below the minimum considered necessary for "decent living and presumably therefore below that required to feed his family adequately."¹³⁷ However, the heads of the families who received assistance were employed. The age distribution was more balanced, but it included almost no children under the age of one. The authors of the urban studies did not regard them as representative of Mexico as a whole, and insisted that similar studies were needed for other regions of Mexico. This was precisely the task that Anderson wanted to accomplish.

Anderson began to work with the Otomí Indian communities and he found the results of the survey surprising: the incidence of certain clinical symptoms of deficiencies did not coincide with the level of poverty. The primary measure that Anderson used to determine the poverty

¹³⁶ Ibid.: 285.

¹³⁷ Calvo et al., "Nutritional Status of Economically Poor Families Fed in the Government Operated Dining Room in Mexico City," 297.

levels was the percentage of the income that families spent on food. The population spent an average of 75 per cent of their total income, around 6.68 pesos per family a week, on food. Anderson and his collaborators emphasized that “prices were extremely high for Mexico at the time of the survey, with corn selling as much as 50 cents a kilo.” The explanation that they found for the lack of relationship between income and deficiencies was that the Otomí villages used as foods “almost every conceivably edible plant” as well as array of worms and insects.¹³⁸ For this reason, the research team found that a diet of considerable variety was attained. Certainly they thought the Indians “ate many things which are not considered to be foods by most so called civilized persons.”

The general nutrient intake of the people of the Mezquital Valley was within the standards recommended by experts in the United States. From the standpoint of total protein intake, blood proteins, and clinical examination, the protein nutrition of the people was fairly good. The major sources of protein were tortillas, beans and *pulque*. The researchers highlighted that consumption of Vitamin C was good, especially compared with very low income groups in the United States, where zero values were common. Average vitamin A, thiamin, ascorbic acid, and iron intakes exceeded the recommended values, which was good. Calcium was “a little low but probably adequate.”¹³⁹

Anderson and his team even had a hard time finding the causal relationship between anthropometric measures and nutrition. The team compared the relative weights of the population by age and sex which were found to be in general agreement with measurements for a group of individuals in Mexico City. In the Mezquital Valley, they found that U.S. standards

¹³⁸ R.K Anderson et al., "A Study of the Nutritional Status and Food Habits of Otomi Indians in the Mezquital Valley of Mexico," *American Journal of Public Health* 36(1946): 886.

¹³⁹ "Mexico: Nutrition Studies Progress Report," 1944, 6.

were not applicable due to the small body types of the residents. The people ‘were short and lean in type but not extremely thin’. Probably the most striking feature of “possible nutritional origin” was the small size and underdevelopment of the children for their age.¹⁴⁰ However, the researchers could not assert with total certainty what was more important in determining the children’s sizes: diet or heredity (cf. Part II, Introduction)..

The researchers of the Rockefeller Foundation continued their observations of body size in the other surveys, but they did not make any systematic weight assessments. In their final assessment of the surveys, Anderson and his team noted that underweight persons, as defined by U.S. averages, were common in the groups studied, and the absence of obesity was conspicuous. In their conclusion this did not have any positive or negative connotations. The researchers stated that “it should not be inferred however that the United States type of growth and physique would suit the Mexican better than his own. The average Mexican is probably less active than the average American.”¹⁴¹

Once all the other surveys were concluded, the Rockefeller Foundation’s researchers were still not able to find clear signs of nutritional deficiencies in the populations they studied. They were just impressed by the fact that in Mexico, as in the United States, in very few cases low blood protein values were clearly attributable to poor nutrition. Practically in all the regions they visited, they found individuals who had some clinical signs, lesions or discoloration in the skin and mouths, which were usually attributed to the absence of vitamin B-complex components from the diet. Nonetheless, the discoveries of an increasing number of substances once thought to be a single vitamin, vitamin B, were fairly recent. Although the Rockefeller Foundation

¹⁴⁰ Ibid. See also, “Mexico Nutrition Studies Progress Report,” 1944, 4 RAC, Rockefeller Foundation Archives, RG 5.3, Series 323, Box 143, Folder 1694, 6.

¹⁴¹ R.K Anderson et al., "Nutrition Appraisals in Mexico," *American Journal of Public Health* (1948): 1132.

researchers had some evidence that the population had some vitamin B-complex deficiencies, they were unable to measure these deficiencies with absolute certainty.

Riboflavin was the only nutrient which was regarded as very definitely inadequate, sufficiently so to produce clinical signs. However, the researchers concluded that milk, high in riboflavin content, was available only in small quantities, and an increase in its production could not be anticipated. So the researchers thought that attempts to increase the consumption of foods rich on Riboflavin as well as finding new sources of element seemed worthwhile.

Finding new sources of nutrients was precisely the other goal of the nutritional studies funded by the Rockefeller Foundation. The Institute of Nutrition was commended with this task. The first step was to study the chemical composition and nutritional properties of the most common food products in Mexican markets. Researchers at the Institute completed this project while Anderson conducted the survey in El Mezquital. Anderson used this research about the nutritional value of Mexican foodstuffs to be able to calculate more accurately nutrient consumption among the Otomi Indians.¹⁴² Although the foodstuffs used for the nutritional content study were purchased in a Mexico City's public market, Anderson assumed that the overall properties of these same foods would not differ from those consumed in the Mezquital Valley.

The general conclusion about Mexican foods that the exceptional amounts of calcium, iron, carotene, thiamine and protein found suggested was that it could be possible to nourish the Mexican people without the use of dairy and meat products. Cereals such as corn were regarded as relatively low in nutrient content, but were nonetheless considered important because of the large quantities consumed by the population. The researchers insisted that some exceptional

¹⁴² R. O. Cravioto et al., "Composition of Typical Mexican Foods," *Journal of Nutrition* 29(1945).

foods were revealed by these analyses. The first was *malva*, which was an uncultivated plant that grew abundantly in the Mexican plateau, and was cooked in the same manner as spinach.

Members of the Institute of Nutrition remarked that an ordinary portion (100 grams) of *malva* contained approximately 40 percent of the calcium, ascorbic acid allowances for an adult man proposed by the American National Research Council. The variation of the analyses of the several samples of *malva* indicated that more nutritive strains could be expected through breeding and cultivation. Another food that drew the researchers' attention was the *charal*, an inexpensive air-dried fresh water fish, usually 3 cm to 6 cm in length whose entire carcass was customarily eaten. Especially rich in protein and calcium, for a 30 gram portion supplies approximately 27 percent of the protein and 155 percent of the calcium allowances of adult man. Third, the *Quesa de tuna* which was prepared from the fruit of the prickly pear cactus and resembled cheese in texture was remarkable for its iron and ascorbic acid content. Lastly, 500 ml of *pulque*, which the researchers thought was consumed in liberal amounts partly due to the quality of the supply water, furnished significant quantities of mineral and vitamins, especially ascorbic acid.

Given these findings, both Anderson and the researchers at the Institute of Nutrition thought it was totally inadvisable to base a Mexican nutrition program upon that of the United States. Dr. Robert S. Harris, a researcher from the MIT who was in charge of doing the chemical nutrient testing of Mexican foods in his Boston laboratory, stated: "Our sense of preference or superiority and their inordinate respect for our prestige position tempts us to believe that ours is the preferred way of living. Thus we may be deluded into believing that good nourishment cannot be achieved unless milk, meat, eggs and certain designated vegetables are a part of the daily dietary." The data of this analysis of more than a hundred foods indicated that the Mexican

dietary was more adequate in ascorbic acid, phosphorus, calcium and thiamine than in riboflavin, niacin and “quality protein.”¹⁴³ Thus, he leaned over recommending nutrition education in Mexico to be patterned around the food habits of the people and formulated on the composition of native edible plant and animal products. The solution was higher crop yields, in particular enriched corn, the focus of Rockefeller’s agricultural program in Mexico. In short, he thought that the U.S. would be most constructive when people learned that “other nations need our knowledge and skills, not our foods and food habits.”¹⁴⁴

The nutritional research that the Rockefeller Foundation financed was not only supposed to generate knowledge about less known Mexican foods, but also to find ways to make the two staples, corn and beans, more nutritious. The agronomists hired by the Rockefeller Foundation were in charge of producing corn strains that gave superior yield. The Institute of Nutrition was then charged with the task of analyzing these different corn strains and determining which one had better nutritional qualities. However, these studies about the nutritional qualities of different corn varieties did not end up having any practical application.

One of the reasons for this failure was that plant experts in charge of increasing corn yields in central Mexico were never able to build a working relationship with Mexico’s producers. The first step of the Rockefeller Foundation’s agricultural program was to increase the yield of corn, and the second, once the production was up, was to introduce more nutritious strains of the crop. Most corn producers in Central Mexico had little access to fertile lands, water and credit. Some of them had not even left behind subsistence agriculture. However, lack of resources was not the only reason why peasants did not adopt the Rockefeller Foundation’s

¹⁴³ Ibid., 328.

¹⁴⁴ R.S. Harris, "Discussion: An Approach to the Nutritional Problems of Other Nations," *Science* 102, no. 2637 (1945): 44.

technical innovations. The Foundation had designed a program that emphasized open pollinated corn (developed matching different generations of plants from the same species), so that poor peasants of central Mexico did not have to buy transgenic corn each planting season.¹⁴⁵ But in the process of developing a high-yielding open pollinated crop, the agronomists came up with highly variable plants, which stood either too tall or short or had large or small ears. Most farmers in central Mexico used manual equipment to harvest, so they demanded, and had developed over the years, seeds that produced very homogeneous plants. They never really saw the advantages of the corn produced by the Rockefeller Foundation's scientists and were not very eager to adopt it.¹⁴⁶ This failure of introducing widespread use of hybrid corn to subsistence farmers illustrates the limits of international cooperation and international aid. Unsuspected challenges like cultural expectations were not taken into account, in this case by experts and they ended up undermining their efforts.

The second reason of the failure to find practical applications for the studies of the nutritional properties of different strains of corn was that the Institute of Nutrition fell into a crisis. When President Avila Camacho's term was over, there was a general re-organization in the state bureaucracy. Thus, the Institute of Nutrition was placed under the direction of the Institute of Tropical Medicine. Some of the staff had quit due to the incident. The Rockefeller Foundation was not happy about these changes, since they wanted to work with an institution whose existence and rank was at least secure.¹⁴⁷

¹⁴⁵ Like hybrids, also called transgenics, synthetic open pollinated varieties were formed using inbred lines, but, unlike hybrids, they could be propagated through open pollination and their seed could be saved. In other words the peasants did not have to buy the seeds each season.

¹⁴⁶ Karin Matchett, "At Odds over Inbreeding: An Abandoned Attempt at Mexico-United States Collaboration to "Improve" Mexican Corn, 1940-1950," *Journal of the History of Biology* 39(2006).

¹⁴⁷ J.G Harrar to Benjamin G. Horning MD Kellogg Foundation, 31 June 1954, RAC, Rockefeller Foundation Archives, RG 1.2, Series 300, Box 6, Folder 41.

The Rockefeller Foundation instead started working with another research team that was being assembled to work on similar nutritional issues in Central America, financed by the U.S. National Institute of Health, the W.K. Kellogg Foundation and the United Fruit Company: the staff at the Institute of Nutrition of Central America and Panama (INCAP).¹⁴⁸ In the end, the INCAP came up with several studies about the quality of proteins of Mexican and Central American corn. Prompted by the Rockefeller Foundation they started to collaborate with the Mexican team at the Institute of Nutrition, but they had different methodologies. The Mexican scientists continued to get support from the Office of Special Studies,¹⁴⁹ and from Edwin Wellhausen, who was in charge of the corn program. He wanted the Mexican Institute of Nutrition (now under the jurisdiction of the Institute of Tropical Medicine) to begin analyzing beans, since at that time people at the Office of Special Studies and the agricultural schools of Mexico knew anything about the relationship between high protein content and yield. The Institute continued to work with data sent by Wellhausen. However, all of the Institute's research on corn and beans was reviewed by people of the INCAP, who did not like the results, and let the Rockefeller Foundation know. In the end, budget problems continued to plague the Institute and the resources from the RF were redirected to the INCAP.¹⁵⁰ The Institute of Nutrition ended up disappearing as a dependency of the Ministry of Health and the nutritional population studies were continued elsewhere, but only in the late 1950s. When Anderson left to pursue other projects, he recommended that, in the case of Mexico, maintaining systematic studies was

¹⁴⁸ R. Aylward, "The Indigenous Foods of Mexico and Central America," *Proceedings of the Nutrition Society* 12, no. 1 (1953).

¹⁴⁹ The Office of Special Studies was the institution modeled on the U.S. extension programs. Agronomists and plant genetics experts were in charge of this office.

¹⁵⁰ J.G. Harrar to E.D., 14 April 1954, E.J. Wellhausen to J.G. Harrar, 25 May 1954, E.J. Wellhausen to J.G. Harrar, 31 May 1954, J.G. Harrar to Benjamin G. Horning MD Kellogg Foundation, 31 June 1954, RAC, Rockefeller Foundation Archives, RG 1.2, Series 300, Box 6, Folder 41.

important because “it was difficult to evaluate signs of mild, borderline or supposed deficiency unless people were followed for extended periods of time.” He advocated “the careful and more intensive study of small groups under better controlled conditions.”¹⁵¹ Anderson thought that Dr. Salvador Zubirán’s plan to open a new nutrition unit in the General Hospital was an encouraging sign.¹⁵² Zubirán was a well known physician, the personal doctor of several Mexican presidents, who also happened to be a clinical expert on issues of malnutrition and endocrinology. Zubirán was able to continue these nutritional population studies, after he secured enough government funds to establish the Hospital de Enfermedades de la Nutrición. Then he was able to recruit a team of doctors, laboratory technicians, social workers and anthropologists who participated in the first nationwide survey modeled after the Rockefeller Foundation’s work. In chapter five I will address the implications and findings of this survey, and others conducted in the 1960s and 1970s.

The Assessment of Malnourished Children: Research at the Children’s Hospital (1943-1956)

The other group that studied the relationship between diet and health was the team headed by Federico Gómez at Mexico’s Children Hospital. Unlike the scientists employed by the Rockefeller Foundation, Gómez did not actively sought out populations who suffered from nutritional deficiencies. His interest in human nutrition was not only a result of his training as a pediatrician, but also of his everyday experiences trying to save dying children at the hospital.

¹⁵¹ Report from R.K. Anderson, December 1943, RAC, Rockefeller Foundation Archives, RG 1.1, Series 323, Box 12, Folder 82, 3-4.

¹⁵² *Ibid.*, 5.

Another difference between the work of clinicians at the HIM and the work of the Rockefeller Foundation is that the former did find substantive incidence of nutritional problems.

There are several reasons for this disparity in findings. First, Federico Gómez was working with infants. Anderson did not pay attention to infants or to infant mortality. He was studying mostly adults. In their 1940s study of Mexico City, the Rockefeller Foundation's team pointed out that their data showed "that infants and pre-school children and women during pregnancy and lactation" were "the groups in the population which should receive particular attention by any program intended toward improvement of nutrition."¹⁵³ The doctors did not cite any particular reason for this recommendation. Also, the sample of the Rockefeller Foundation study included a minority of children under the age of three (4 percent). The inclusion of children under the age of one was not specified. Second, Anderson conducted his surveys in rural populations, which mostly produced their own food or collected it from nature. Federico Gómez treated patients from Mexico City or areas closeby, who more probably were wage earners. Third, the Rockefeller Foundation's team conducted their surveys from 1941 to 1943, and the *Hospital Infantil* began its formal clinical research operations in 1946. As I explained in chapter one, Mexico's sustained inflationary spiral (which authorities measured using food prices) began in 1944 and continued until the mid-1950s, which was not matched by wage increases. This situation might have affected dietary intakes in the city.

The study of diets and its connection to health at the Children's Hospital has to be understood in the context of how the institution was created and what its overall goals were. In the 1920s and 1930s, the Mexican government, in addition to increasing welfare services and sanitation infrastructure, also began to invest in medical education. This government interest in

¹⁵³ Robinson, Payne, and Calvo, "A Study of the Nutritional Status of a Population Group in Mexico City."

medicine was due both to the growing importance of public education in general, as well as an effort by the post-revolutionary authorities to rebuild institutions that had deteriorated during the civil war. Medical education would gain greater prominence in the 1940s, with the creation of several social security institutions. If Mexico was going to build a network of public hospitals it would need more doctors to staff them.

Elite physicians in Mexico in the late nineteenth and early twentieth century had studied at the National School of Medicine. However, clinical specializations (cardiology, endocrinology, neurology, etc.) based on laboratory work and basic science, such as chemistry and physiology, as well as intensive training with patients in a teaching hospital, did not exist in Mexico until 1905. In that year Eduardo Liceaga, the head of the Porfirian health services, founded the Hospital de México. It was the first teaching hospital in Mexico, affiliated with the National School of Medicine. The *Hospital de México* quickly fell into disrepair during the armed phase of the revolution, and it was almost closed down in 1915. Renamed Hospital de Clínicas, the institution began to function again normally in the 1920s, in part due to General Álvaro Obregón, who provided the Hospital with funds and equipment. The doctors who would later be responsible for running Mexico's largest public hospitals in Mexico City as well as the medical services of Mexico's social security institutions were trained at the National School of Medicine, which later became the Faculty of Medicine of the National University.¹⁵⁴

One of the most prominent graduates was Federico Gómez. After finishing his studies at the National School of Medicine, he pursued a pediatrics specialization at the Washington University School of Medicine, with Williams McKim Marriot, the author of a popular text on

¹⁵⁴ I.C. Jiménez et al., "La época de florecimiento de la enseñanza clínica," *Revista Médica del Hospital General* 62 no. 3 (1999): 216.

infant nutrition.¹⁵⁵ When he returned to Mexico, Gómez began promoting courses on pediatrics both in the National University and the military's medical school. He wanted to create a graduate training program so doctors could specialize in child care. But, before the 1940s, Gómez had not been able to secure neither funding nor staff. He later explained that, in the 1920 and 1930s, most recently graduated doctors went directly into private practice, and were not interested in long specialized courses.¹⁵⁶

Gómez was member of a generation of doctors who sought to further professionalize medical teaching in Mexico. This generation included other graduates of the National School of Medicine, like Gustavo Baz, Ignacio Chavez Téllez, and Salvador Zubirán. As Gómez, these three doctors have pursued graduate studies in the United States or Europe. Gustavo Baz was director of the Military Medical School from 1936 to 1939 and created a medical social service for all students. His intention was to incentivize medical work not only in cities but also in rural areas. Ignacio Chavez Téllez, a cardiologist who was the director of the General Hospital also from 1936 to 1939, spent his tenure modernizing the facilities, the laboratories and the teaching curricula at the Hospital. Zubirán, who was sub-secretary of health from 1938 to 1940, supported the modernization efforts at the General Hospital and the Military Medical School.¹⁵⁷

With the passage of the Social Security law in 1943 began an era of investment in Medical infrastructure in Mexico. Gustavo Baz, who was the Minister of Health from 1940 until 1946, used these favorable circumstances to create new medical institutions affiliated with the Ministry. His contemporaries Chávez Téllez and Gómez tirelessly lobbied the government and

¹⁵⁵ Williams McKim Marriott, *Infant Nutrition: a Textbook of Infant Feeding for Students and Practitioners of Medicine* (St. Louis: Mosby, 1930).

¹⁵⁶ F. Gómez, "The Research Program of the Hospital Infantil de México," *Pediatrics* 17, no. 1 (1956): 138.

¹⁵⁷ See corresponding entries in Roderic A. Camp, *Mexican Political Biographies, 1935-1975* (Tucson: University of Arizona Press, 1976).

private donors to fund a children's hospital, which was finally created in 1943, and a cardiology institute, which was inaugurated in 1944, both under the jurisdiction of the Ministry of Health. The same happened with Salvador Zubirán and the National Institute of Nutrition.¹⁵⁸

Gómez, Chavez Téllez and Zubirán considered that doctors, not bureaucrats, should be in charge of decision making at hospitals. The existence of a governing junta in which doctors had the final say would assure “continuity of purpose and unity in the scientific path of the hospital.”¹⁵⁹ For them the role of the state was to support the modernization of medical practice, training of professional physicians, and new treatments. Participation of private donors, and an affiliation with the Ministry of Health, not the Social Security Institute, would permit independence to pursue medical research and innovation. Nonetheless, according to Chavez Téllez, state medicine had the advantage of “being accessible to all” and that the nature of medical services in Mexico changed the day “the state created the Institute of Cardiology, the Hospital Infantil and the Institute of Nutrition, all official institutions where poor Mexicans could get modern medical attention not unlike that provided in other countries.”¹⁶⁰

Gómez thought of the HIM as a combination of research and teaching hospital and a social welfare institution. He considered that clinical problems could not be understood simply from textbooks but doctors had to pay attention to the “anthropological, geographical, epidemiological and economic backgrounds of the patients.” Thus, he integrated the functions of

¹⁵⁸ Ignacio Chávez, *México en la cultura médica, el humanismo médico y mensaje a los estudiantes de medicina*, ed. Centro de Estudios sobre la Cultura Nicolaita (Morelia, Michoacán: Universidad Michoacana de San Nicolás de Hidalgo, 1993), 206-15.

¹⁵⁹ Ignacio Chávez and Bernardo Sepúlveda Amor, *Humanismo médico, educación y cultura: conferencias y discursos (homenaje de El Colegio Nacional en su octogésimo aniversario)*, 1. ed. (México, D.F.: Editorial de El Colegio Nacional, 1978), 291,357-61.

¹⁶⁰ *Ibid.*, 408.

the clinician, the laboratory and the nurse's station into small research units.¹⁶¹ Gómez sought complementary funding from the United States for his research and was one of the first Mexican doctors to receive it for clinical trials from the National Institutes of Health. His interns and collaborators also got individual fellowships, sometimes from pharmaceutical companies E. R. Squibb and Sons de Mexico and Mead Johnson.¹⁶²

Clinical institutions like the HIM became important sites to develop empirical knowledge about Mexican society. This occurred because, according to Gómez, pure research was an activity reserved for groups with broad experience and sufficient resources to study the most complex problems of medicine. Therefore, this type of research "was a waste of money in an underdeveloped country like Mexico, particularly in view of the fact that many practical medical problems require immediate solution."¹⁶³ Thus, for the doctor, poor countries had to focus on scientific and clinical research to make a practical contribution to improve society. The units were created so that the clinicians could understand the most pressing problems at the hospital and be familiar with the most common ailments affecting children in Mexico. Doctor Gómez thought that the most urgent task the hospital had to face was to treat children who were malnourished. Thus, the first research unit at the Hospital Infantil, which began to function informally in 1946 and formally two years later, was designed to study nutritional problems.

In order to treat malnutrition, the first thing Gómez and his team did was to define the condition and design a system to diagnose it. Gómez assimilated several interests he inherited from his teacher, Williams McKim Marriot, and through his experience in the Hospital Infantil

¹⁶¹Gómez, "The Research Program of the Hospital Infantil de México."

¹⁶² See Federico Gómez, Rafael Ramos-Galván, and J. Muñoz, "Nutritional Recovery Syndrome: Preliminary Report," *Pediatrics* 10, no. 5 (1952).

¹⁶³ Gómez, "The Research Program of the Hospital Infantil de México," 140.

he developed new therapeutic concepts. Marriott had noted in his book that several names, like marasmus (wasting disorder) or decomposition, had been used to describe various unhealthy nutritional states of lactating children. He thought that it was better to consider the various forms as mere states of the same condition: malnutrition.¹⁶⁴ In other words, for Marriot, the pathology of malnutrition was essentially that of starvation. The key for Marriot was to determine in what state of starvation the patient was, and to restore her to health.¹⁶⁵

Driven by this same curiosity, Gómez published an essay in 1946 that he entitled “*Desnutrición*” (malnutrition).¹⁶⁶ He defined malnutrition as the deficient assimilation of food by the organism that conduced to a pathological state of different degrees of gravity and diverse clinical manifestations. Gómez worked on this subject for ten years and published his final results in 1956. He and his team wanted to provide a correlation table between clinical profiles of child malnutrition and a precise health outcome: mortality.¹⁶⁷ The Gómez team’s landmark contribution was the use of an anthropometric measure (weight-for-age). They classified patients into three groups according to severity. With time the so-called “Gómez classification” was widely used both to classify individual children for clinical referral and to asses malnutrition in communities.¹⁶⁸

¹⁶⁴ Marriott, *Infant Nutrition: a Textbook of Infant Feeding for Students and Practitioners of Medicine*, 39-47.

¹⁶⁵ *Ibid.*, 170-73. What Marriot meant by starvation was the following: “when the calorie value of the food consumed is lower than that needed by the body, or when the amounts of nutrients, such as proteins, minerals or carbohydrates, were less than he amounts of these elements metabolized in the body and excreted, then the body gets this nutrients from the tissues. The body burns stored fat, carbohydrate and ultimately protein.” Marriot thought that infants who reached an extreme degree of starvation showed little resistance to infections. Thus, malnourished infants were especially prone to infections in the gastrointestinal tract. Organisms which were found ordinarily in the colon might have invaded the upper intestine and caused vomiting and diarrhea.

¹⁶⁶ Federico Gómez, “Desnutrición,” *Boletín Medico del Hospital Infantil* 3(1946).

¹⁶⁷ Mercedes de Onis, “Measuring Nutritional Status in Relation to Mortality,” *Bulletin of the World Health Organization* 78, no. 10 (2000): 1271-72.

¹⁶⁸ Low dietary energy supply, wasting, stunting, underweight and low body mass index (BMI) are all used to identify the problem.

In addition to his career as a specialist in child nutrition, Gómez was a novelist and an active promoter of public knowledge about medicine. His successful publications were his weekly columns, published on Sundays in the magazine of the newspaper *Excelsior*. The columns, which appeared from 1945 to 1955, fell right in between his clinical studies and his fiction. Gómez wrote about the young patients at the Children's Hospital, and the thankless job of doctors, nurses and social workers who tried to save the lives of children affected by malnutrition. Dr. Gómez had a talent for melodrama, and had numerous admirers, including schoolteachers, neighbors from working class barrios like La Lagunilla, doctors in provincial towns and even famed painter Dr. Atl. In their letters to Dr. Gómez, most of them noted the skill with which he described “scientific issues while also managing to inspire tears” about the situation of sick children.¹⁶⁹

The column was where he really explained his thoughts about the social and economic backgrounds of the patients. Each column tended to focus on a single patient and his or her social circumstances. He also wanted to give comprehensive information to the general public about diseases, treatments or medical innovations. In general the doctor was particularly concerned with parental negligence or ignorance and he overplayed that in his writing. Although he never said so explicitly, the narratives seemed aimed at parents. In the columns, wealthier parents did not fare any better than poorer ones. It was as if he wanted to alert the general population about all the possible health risks their children could face.

The doctor explained that most diseases did not distinguish among social classes, but there was an exception to this rule: malnutrition. When described his poorest patients, he wrote about the ravages of malnutrition, and about how it could make patients even more vulnerable to

¹⁶⁹ Federico Gómez, *Escenas de hospital II* (México, D.F.: Hospital Infantil de México, 1955), V-VII.

infectious diseases than regular patients. In general, most poor patients in Doctor Gómez's stories had some degree of malnutrition, or at least he made detailed descriptions in his stories about how his protagonist's diets were very deficient.

His first account of the problem in his newspaper columns was simply called Malnutrition (*Desnutrición*), and he explicitly classified it as an urban problem: "These worrisome states of malnutrition are the patrimony of great cities, around which large social groups struggle and succumb due to abandonment, misery and vices... children are the most vulnerable of these groups because they cannot defend themselves from hunger."¹⁷⁰

The evidence provided by Doctor Gómez is important because it offers a glimpse of the problem of child malnutrition in rapidly urbanizing environments. With available data, it is not possible to determine what percentage of infant deaths was caused by the synergy of malnutrition and infectious disease in Mexico City in the 1940s and 1950s. First, Mexican authorities did not have a very comprehensive system to record mortality statistics. The system improved over the years, and some scholars have even asserted, for example, that in 1968 the civil registry recorded 90 percent of deaths in Mexico, especially in cities. However, the underregistry of deaths was not distributed homogeneously among all age groups. The largest omission of death registries was for infant deaths (children under the age of one).¹⁷¹ Many scholars have tried to measure the degree of omission in the registry of infant deaths through several methods. All of them coincided that the rates of infant mortality elaborated with data belonging to the civil registry were inferior to the ones obtained by other indirect methods (collected using surveys, censuses, etc). These scholars calculated that the underestimation oscillated between 25 and 45 percent for 1940,

¹⁷⁰ Federico Gómez, *Escenas de hospital I* (México, D.F.: Hospital Infantil de México, 1949), 90.

¹⁷¹ Eduardo Cordero, "La subestimación de la mortalidad infantil en México," *Demografía y economía* 11, no. 44 (1968).

between 10 and 35 percent for 1960 and between 0 and 30 percent for 1970. Second, there are no homogenous published records of the causes of death for infants and children under five in Mexico City from the 1940s and 1950s.¹⁷²

Even if the number of deaths had been recorded accurately during these decades, both health officials and the civil registry lacked a unified system to classify deaths by cause. It was not until 1948 that the *Diario Oficial* published a presidential decree which made obligatory the use of a model death certificate proposed by the World Health Organization (which included a standard classification of causes of death).¹⁷³ Nonetheless, doctors at several public hospitals complained not only about the quality of data collection of infant deaths, but also about the over-recording of certain causes of death, especially “other non-specified diseases.”¹⁷⁴ Finally, even as late as 1967, a World Health Organization study, using autopsies, revealed that 39 percent of the statements on the cause of death on certificates in Mexico City might have been incorrect (compared with 22 percent in Bristol, England and 26 percent in San Francisco).¹⁷⁵

The doctors at the HIM reported that the interaction between malnutrition and infection was responsible for 50 percent of deaths in hospitalized children.¹⁷⁶ As Gómez insisted in his research, and as it was largely confirmed by subsequent studies all over the world, the interaction between malnutrition and infectious diseases causes a death rate “greater than the sum of the two

¹⁷² José Bobadilla, P. Cerón, and I. Coria, "Cobertura y calidad del registro de defunciones perinatales ocurridas en instituciones de salud del Distrito Federal," *Estudios Demográficos y Urbanos* 2, no. 3 (1987): 257-58.

¹⁷³ Rafael Lozano Ascencio, "Can mortality registration in Mexico be further improved?," World Health Organization, https://www.who.int/healthmetrics/library/countries/Mortality_registration_Mexico_EN.pdf.

¹⁷⁴ Antonio Sordo Noriega, Julio Manuel Torroella, and Mario Cardenas Trigos, "Mortalidad y Morbilidad del recién nacido," *Revista Mexicana de Pediatría* 23, no. 3 (1954): 115-17.

¹⁷⁵ Ruth Rice Puffer and G. Wynne Griffith, *Patterns of Urban Mortality; Report of the Inter-American Investigation of Mortality* ed. Pan American Health Organization (Washington, D.C.: Pan American Sanitary Bureau, 1967), 228-42.

¹⁷⁶ P. Arroyo, M. Mandrujano, and A. Cravioto, eds., *Contribución del doctor Joaquín Cravioto a la ciencia y la salud* (México, D.F.: Fundación Mexicana para la Salud, Fondo Nestlé para la Nutrición, 2001), 90.

individual rates of mortality.”¹⁷⁷ Finally, even the World Health Organization’s methods of classifying causes of death do not account for synergy in causes of death. Determining the synergistic effect of malnutrition and infectious disease on mortality in all of Mexico, would have required that doctors to record accurately not only the causes of death but weight-for age data, like at the HIM. Once they developed a set of diagnostic tools, the team at the Hospital Infantil tried to find ways to reduce the lethality of malnutrition. They claimed that better knowledge of electrolyte imbalance, nutritional requirements, and control of associated infections.¹⁷⁸ But as important as the gradual development of curative treatments were, the doctors realized that they had to pay attention to other variables so their work would have some lasting impact on the patients.

The experience of dealing with patients and seeing traditional medical advice fail forced the doctors at the Hospital Infantil to question their own prejudices and established ideas. One of these ideas is that it was the parents’ fault that their children were malnourished. After many years of observation of a large population of undernourished children, the doctors pronounced that poverty was responsible for almost the totality of the cases, and not as “it was supposed in previous years that ignorance and poverty divided amongst themselves in equal parts the children affected by this ailment.”¹⁷⁹ In his columns, Doctor Gómez seemed ambivalent about this relationship between poverty and ignorance. He also doubted his own capacity to save his patients, as the root and the result of malnutrition were beyond any practical measures he could

¹⁷⁷ R.E. Black, S.S. Morris, and J. Bryce, "Where and Why are 10 million Children Dying Every Year?," *The Lancet* 361, no. 9376 (2003): 2232.

¹⁷⁸ Arroyo, Mandrujano, and Cravioto, eds., *Contribución del doctor Joaquín Cravioto a la ciencia y la salud*, 91-92.

¹⁷⁹ Gómez, Ramos-Galván, and Muñoz, "Nutritional Recovery Syndrome: Preliminary Report.," F. Gómez et al., "Intracellular Composition and Homeostatic Mechanisms in Severe Chronic Infantile Malnutrition: I General Consideration," *Pediatrics* 20(1957).

take. For example, in the column titled “The Boy who wanted to live,” he narrated the case of Emilio and dramatized a typical conversation between a doctor and the parents of a malnourished child:

According to the socio-economic study I had in front of me, Emilio’s family budget was a hundred and fifty pesos per month. Emilio’s parents had ten children. They came to the Children’s Hospital because they heard that we cured everything, even what Emilio had: *tiricia*. The monthly expenses of the budget were lacerating. I did not think I had to ask the parents any more questions because I knew Emilio was hungry and nothing more. But nevertheless, I continued to mistreat that woman asking her more questions, even if the cruelty of the whole situation paralyzed me. I already knew the causes of the child’s ailment: misery and ignorance.

-What do you feed Emilio, ma'am?

-Leafs and a tortilla. But mostly soup and whenever we can get one, a tortilla or a piece of *bolillo*. But yes, sometimes, leaves or bean soup when his siblings leave something behind.

-He eats?

-No, he does not. He hardly chews because it seems like he does not have the strength.

-Until what age did you breastfeed him?

- Like for 14 months or until I was dry

I had almost become immune, to this exact same scene that was repeated daily at the Hospital Infantil. But again my emotions got the best of me and I decided to fight again a losing battle. Extreme malnutrition is a doctor’s cruelest enemy.¹⁸⁰

The waste of resources and the meager results prompted the doctors to rethink their

methods. The doctors admitted in a report, that their “titanic economic and medical efforts to keep afloat all these children failed in hundreds and hundreds of cases.”¹⁸¹ Patients were subjected to rich diets and expensive treatments at the hospital. But at soon as they left the institution, patients again started to consume the organic reserves they had accumulated and became undernourished again. The doctors stated that the majority of the patients treated for malnutrition came back with the same problems. During a period of several months, the hospital

¹⁸⁰ Gómez, *Escenas de hospital II*, 3-4.

¹⁸¹ Federico Gómez et al., "Estudios sobre el niño desnutrido: La recuperación del niño desnutrido, empleando proteínas de origen vegetal y proteínas de origen animal (Exposición de los primeros estudios experimentales)," *Boletín de la Oficina Sanitaria Panamericana* 29, no. 12 (1950): 1228.

typically spent a lot of money, and the end result was that even if some remained healthy, most died in the first or second reinstatement.

The doctors concluded that the vicious circle obeyed to social conditions that lay beyond their means to solve, but decided at least to try to understand the problem at a deeper level. Their own hospital surveys showed that the diet of patients was extraordinarily deficient in calories. They accepted that it was “not a novelty that most Mexicans suffered from great deficiencies especially of protein intake,”¹⁸² but the children they treated only consumed 25 to 30 percent of the proteins their organism needed.

Through the use of the survey, the doctors discovered that some recommendations although technically correct, would not work for Mexico City’s poor patients. When the children came out of the hospital or came to External Consult, most of the hospital’s doctors, guided by “classic and sometimes old fashioned ideas about nutrition,” insisted to the mothers that their children needed to drink milk or eat meat and poultry. The mothers “sometimes felt compelled to obey, and went to the nearest milk shop looking for cheap milk, they would buy a jug of “*leche suelta*,” day’s old milk sold in open bottles. The mothers typically stored the milk in uncovered armories or places unprotected from dust and dirt, so after a couple of hours standing at room temperature, the “*lechita del niño*” (the child’s milk) was pure poison. With this knowledge, the survey team advised all the hospital staff not to prescribe milk to poor people. They thought that milk was an excellent food for people with high living standards, who had refrigerators or iceboxes. They suggested instead telling mothers to buy bananas or giving the child more beans,

¹⁸² Ibid.

atole, tortilla or soup. But the general staff of the hospital complained: How will children grow and have resistance to diseases, if they do not eat any animal protein?¹⁸³

In 1947, the research staff decided to address this question and compare two diets equal in energy value: one purely vegetarian¹⁸⁴ and another that included milk and eggs instead of soy. The study was based on the observation of seventy patients in the hospital. In previous years, Francisco P. de Miranda, the first director of the Institute of Nutrition, had initiated such experiments in rats, and had concluded that the size and weight of the animals had not changed during a period that corresponded to two years in human time.¹⁸⁵ The doctors explained that the quality of a protein depended on its non-synthesizable (by humans) amino-acid content. Proteins independently of their origin could be complemented and could result in a mixture of good biological value. The requirements of each amino-acid were not known at the time, so that is why they thought about the convenience of comparing the results of each diet with the normal evolution of the child.¹⁸⁶ The results were that the vegetarian diet was capable of normalizing the levels of proteins in the blood, in a period that did not surpass sixty days. Children remained healthy for the following two months after they recuperated, maintaining the same diet. The diet that included animal proteins had the same results but it worked faster because proteins reached

¹⁸³ Ibid.: 1229.

¹⁸⁴ The diet included soy flour, corn *masa*, tortillas, frijol, lentils, chickpeas, peanuts, banana, carrots, chayote, potato, *acelga*, *quelite*, *verdolaga*, green beans, tomato, onions, *epazote* and *bolillo* bread. F. Gómez et al., "Estudios sobre el niño desnutrido. X. La recuperacion del niño desnutrido, empleando proteinas de origen vegetal y proteinas de origen animal. Informe de tres experiencias comparativas," *Boletín Médico del Hospital Infantil* 9, no. 399-426 (1952): 399-410.

¹⁸⁵ See F.P. Miranda and M.A. Tapia, "Valoración biológica experimental de dietas vegetarianas de bajo costo," *Boletín Médico del Hospital Infantil* 5, no. 17 (1948).

¹⁸⁶ They studies included: a weekly study of weight, a monthly study of height (talla), monthly bone radiology, monthly study of clinical malnutrition manifestations, a monthly study of the sub-clinical manifestation of vitamin deficiencies, an observation of conduct and activity, an observation of the capacity to react to infections, a study of intestinal activity and a weekly registry of the diet. See also Gómez, Ramos-Galván, and Muñoz, "Nutritional Recovery Syndrome: Preliminary Report."

their normal level in just thirty days. The cost of the vegetarian diet was only 50 percent of the non-vegetarian one. The researchers insisted that the conclusion only proved valid for a period of six months, but still those vegetarian diets could be prescribed to children who had suffered from malnutrition for longer periods.

The researchers at the Hospital Infantil were convinced that these foods could be made widely available to the population and that it would be an excellent disease prevention measure. However, the decision to mass produce, distribute and introduce these kinds of products was beyond the capabilities of an institution like the Hospital Infantil. However, some officials at the Ministry of Health took the idea and decided to promote it as a policy.

Doctor Gómez did not promote his team's findings to be implemented as large scope policy. Gómez's career choices indicate that he was not interested in wider policy decisions, at least outside the hospital setting, unlike his peers Zubirán and Chávez Téllez. Gómez was not very forthcoming about his political preferences either, as his contemporaries in other parts of Latin America. Gómez was not a practitioner of social medicine, an approach to medical practice which developed especially in Chile and Cuba during the 1930s. One of the most important tenets of this approach to medicine was historical materialism and other Marxist interpretations of society. Gómez shared with the practitioners of social medicine a profound interest in "the social determinants of illness and death."¹⁸⁷ But he did not seem interested in combining medicine with political practice. While exponents of social medicine, like Salvador Allende,¹⁸⁸

¹⁸⁷ H. Waitzkin et al., "Social Medicine Then and Now: Lessons from Latin America," *American Journal of Public Health* 91, no. 10 (2001): 1592.

¹⁸⁸ Allende was Minister of Health in Chile at the end of the 1930s, and in the early 1970s he was Latin America's first democratically elected Marxist president.

analyzed in their writings “the relationships between social structure, disease, and suffering,”¹⁸⁹ Gómez’s non-scientific texts are less politically engaged. Gómez criticized the social and governmental indifference for human suffering and condemned the effects of social inequality, but in a vague and sometimes overly sentimental manner. The Mexican doctor was not a critic of what exponents of social medicine saw as positivist and reductionist clinical methods. Gómez managed to introduce social issues as key components of medical research, and set a scientific agenda, interest in malnutrition, for several generations of Mexican doctors. A respected teacher and colleague, Gómez offered technical advice but had little to say about specific measures to remedy economic injustices.

Foreign Institutions, Power Milk and “Mexican Nutritional Thesis” in the late 1950s

Government officials were aware of the policy implications of the work of the Rockefeller Foundation and the doctors at the Hospital Infantil. Both the Rockefeller Foundation and the Hospital Infantil produced information intended to be used in the design of executive programs. However, the two teams at some point highlighted the fact that their position as experts, as scientist and insisted that the problem of implementing policies was better left to competent authorities.¹⁹⁰

In the mid 1950s, the people who made more extensive use of the work of the Rockefeller Foundation and the HIM were the Mexican envoys to the United Nation’s development agencies, like the Food and Agriculture Organization (FAO) and the United Nations Children’s Fund (UNICEF). The language, structure and findings of the studies of the

¹⁸⁹ I refer to Allende’s 1939 book *La realidad médico-social chilena (The Chilean Medico-Social Reality)*. Waitzkin et al., "Social Medicine Then and Now: Lessons from Latin America," 1593.

¹⁹⁰ Rafael Ramos Galván and Joaquín Cravioto, "Desnutrición en el niño," *Revista Mexicana de Pediatría* 27, no. 4 (1958): 133.

Rockefeller Foundation and HIM, were analogous to the interests of both the Mexican representatives and the purpose of the international institutions.

Dr. Jesús Díaz Barriga, one of the leading representatives to the FAO and UNICEF, had been an active promoter of changing Mexican diets for decades. The doctor had been part of the inner circle of Lázaro Cárdenas' close advisers when the latter was governor of Michoacán and, along with another doctor had created the Servicios Médicos Ejidales in the 1930s. The Servicios was a program aimed at ending social injustice in rural areas by linking the expansion of modern medicine to agrarian reform.¹⁹¹ An essential component of the program in Michoacán was that peasants and workers had to be re-educated in their living, dietary and hygienic habits. Díaz Barriga in particular was interested in diets and while he collaborated with the government in his native state of Michoacán he led radio and print educational programs to teach mothers how to cook more nutritious meals. He continued with his efforts of reforming health habits as the local head of the public education department and as a rector of the *Universidad Michoacana*. He frequently stressed the direct relationship between economic productivity and the amount of total energy consumed. For him, the Mexican people did not have “enough energy to work correctly” so agricultural production would stagger unless something was done about diets. So the most important goal to achieve through a governmental nutritional program would be “to increase calories, but not through the consumption of more carbohydrates” in the form of tortillas and beans, which the population “already consumed in an exaggerated manner.”¹⁹²

¹⁹¹ Ana Maria Kapelus-Poppi, "Physician Activists and the Development of Rural Health in Postrevolutionary Mexico," *Radical History Review*, no. 80 (2001).

¹⁹² Jesús Díaz Barriga, “Resumen sobre la situación de la Alimentación del Pueblo Mexicano y lo que conviene hacer para mejorarla,” 29 March 1950, Archivo Histórico de la Secretaría de Salud (hereafter designated AHSS), SSA, Subsya, c. 17, exp. 11,

Díaz Barriga had a defined ideology about how public institutions in Mexico could intervene to defeat poverty through the use of science. In his scheme, nutrition was central. His ideas can be summarized in a memo that was sent to doctors employed by the Social Security Institute:

Before 1950, it was almost impossible to fight efficiently against poor nutrition and malnutrition, because correct nutrition, which includes animal protein in the diet, was too costly. Popular majorities could not afford this diet. These poor families were trapped in the “Vicious Circle of Bad Nutrition and Poverty,” in other words, poor families could not buy foods they needed. First, they had to defeat poverty, to be able to be well nourished. This was not possible because malnourishment prevents productive work. Malnourished people were frequently sick, and precisely that is why they were poor. Unfortunately we did not know how to break that cycle. The nutritional sciences of our country (*at the Hospital Infantil*) discovered a little before 1950 that expensive proteins of animal origin can be substituted in practice with mixtures of cheap vegetable proteins, even if these vegetable proteins by themselves were incomplete. This discovery constitutes the “Mexican Nutritional Thesis,” whose application will result that any family of modest means can be well nourished. These well nourished families will have better health and will be more productive at work, in consequence these families’ income will improve, and subsequently their nutrition will improve. They will then enter the “Ascending Spiral to Progress.”¹⁹³

In the 1950s, the principles and goals of the United Nation’s multilateral agencies were very much in tune with these reformist ideas. Officials at the Food and Agriculture Organization (FAO) were interested in developing new ways of producing more food or increasing consumption of products that were available or easy to produce but were not consumed due to traditions or lack of information. Similar multilateral agencies before WWII were more concerned with food as a trade commodity than with food production and consumption. This outlook changed due to the depression in the 1930s, when the world was afflicted simultaneously with a so-called surplus of agricultural products (which was perceived by many experts as precisely one of the causes of the depression) and widespread incapability to purchase food. This

¹⁹³ Jesús Díaz Barriga, *Su pensamiento sobre la educación y la nutrición popular* (Morelia, Mich.: Universidad Michoacana de San Nicolás Hidalgo, 1981).

situation helped create a broader concept of planning food production and distribution not only with emergency aims in view, but to ensure that in normal times people get enough of the “right sort of food to eat.” The promotion of a correct diet was a goal of the FAO. The international agency had made continuous efforts to persuade governments to make dietary surveys. FAO’s idea was to educate people in nutrition and, in order to achieve this, policy makers had to understand “why people eat what they do in the way they do.”¹⁹⁴

However, it was the experiences of war prisoners and the dramatic situation of food shortages immediately after the Second World War which pushed scientists to reassess the study of the physiological effects of starvation or a very poor diet in human bodies. A precursor for these investigations was Cicely Williams’ 1933 study in West Africa in which she described clinical cases of an unknown disease believed to be produced by insufficient feeding. She named the disease kwashiorkor, which meant in the native language, “sickness that the older children get when the next child is born.” It affected mostly children from six months to four years old and the most common were symptoms skin discoloration, wasting, diarrhea and sores. The rate of mortality of the disease was high. The doctor performed several autopsies and found a fatty liver as the only abnormality. At first, the paper was refuted by several scientists who claimed the doctor was confusing a new disease with infantile pellagra.¹⁹⁵ The argument dragged on for years, until researchers linked to the UN’s Food and Agriculture Organization and the World Health Organization, who were interested in assessing the world’s food supply problems and their consequences to health, decided to re-embark on the study of this reported disease in the

¹⁹⁴ W.R. Aykroyd, "FAO and Nutrition," *Proceedings of the Nutrition Society* 15, no. 1 (1956): 5.

¹⁹⁵ Pellagra is a condition caused by deficiency of the B-complex vitamin nicotinic acid (niacin) or its precursor, the amino acid tryptophan, characterized by dermatitis, diarrhea, and mental disturbance, and often linked to over-dependence on maize as a staple food.

1950s (1951-1955). Up until that point there were no suggestions as to what nutritional deficiencies might have been responsible for the condition.

The object of the investigation was to define the clinical features and to study the food habits of the population, with particular reference to diet during pregnancy, lactation, infancy and early childhood. They wanted to find a correlation between food habits and the occurrence of the disease.¹⁹⁶ Kwashiorkor had been theoretically ascribed to diets composed almost exclusively of carbohydrate, causing high insulin levels, which diminish the rate of protein and fat oxidation. The calorie intake of sufferers was deemed to be sufficient, while circumstantial evidence indicated that kwashiorkor seemed to be a protein deficiency disease. Patients treated in Africa by colonial missionaries or medical services seemed to get better with a richer protein diet. Also, the FAO researchers found the disease was less prevalent in regions that had higher animal protein consumption.

The work of FAO, according to its nutrition director W.R. Aykroyd, had to be based on a more complete knowledge of the protein requirements for the population. Its sister institution, the World Health Organization, had commissioned two doctors to determine if the several diseases reported in Africa were in fact the same one. In the early 1950s, they visited ten African countries and concluded that it was a single disease that had the same characteristics that kwashiorkor. The culprit of the disease was lack of proteins in the diet, and in certain cases there was a gradual transition from other forms of protein deficiency to kwashiorkor.¹⁹⁷ Similar studies were done in Central America and Brazil in 1951-1953, and reached the same conclusion. The highest nutritional authority at the FAO then declared that work on protein- malnutrition was

¹⁹⁶ W. B. Gratzer, *Terrors of the Table: the Curious History of Nutrition* (Oxford ; New York: Oxford University Press, 2005), 151-55.

¹⁹⁷ Aykroyd, "FAO and Nutrition," 7.

needed, because the “most serious and widespread of all deficiency diseases can be prevented only by making more protein foods available.”¹⁹⁸ After the three surveys, various experts conducted feeding experiments at the same time as the ones in the Hospital Infantil.

The question still lingering was about what types of proteins were needed to cure these children. Aykryod simplified the question stating: Is milk a necessary food for children? The question had bearing on a very practical problem which FAO was struggling with at the time. They were preoccupied with “the satisfactory disposal of the enormous stocks of skim-milk powder which were “an embarrassment to certain of our member governments.” The head nutritionist at FAO acknowledged that the problem ran much deeper than providing food assistance to needy children. He agreed that the priority was to raise living standards, “but at the same time much could be accomplished without long delay by the better utilization of existing food resources.” He was uneasy about UNICEF, the agency that controlled the surplus milk, giving the food to countries that did not have any kind of infrastructure to distribute it to the needy populations. Such programs “required complicated administrative arrangements, equipped and trained staff.”¹⁹⁹

The Mexican representative to FAO and UNICEF, Jesús Díaz Barriga, saw a golden opportunity and sought to participate in the surplus milk program, since the country already had in place a distribution system, CEIMSA, and data from the dietary surveys to prove there was a need for this food. The representative from the Ministry of Health went to the FAO meetings and used the information collected by the Rockefeller Foundation’s surveys to secure Mexico’s share of the powder milk.

¹⁹⁸ Ibid.: 7-8.

¹⁹⁹ Ibid.: 12-11.

He also prioritized finding funding for the construction of a milk processing plant for political reasons. The area of Jiquilpan, the place of birth of former president Lázaro Cárdenas, had an incipient cattle industry. Díaz Barriga, as a member of the Cardenista group, was excited about the idea that a milk processing plant might help kill two birds with one stone: promote the production of more animal proteins and economic development in his political strong hold. He managed to get Ignacio Morones Prieto, the Minister of Health and Welfare, on board. The Ministry promised to match any investments made by UNICEF and FAO.²⁰⁰

At the meeting with the international agencies FAO and UNICEF, he supported his assertions citing the five community studies conducted by the Institute of Nutrition since 1942: the Mezquital Valley in Hidalgo, Yustes in Guanajuato, Cápula in Michoacán, Chamilpa in Morelos and Mexico City.²⁰¹ Díaz Barriga wanted to make Mexican diets similar to traditional western diets and his target was to increase animal protein consumption, regardless of the internal production. He justified these policies due to the riboflavin deficiencies found in the majority of the Mexican population.

Of all the studies, he preferred to use Cápula as an example, probably because the town was in his home state but also because the research had been conducted exclusively by members of the Ministry of Health. Cápula was particularly important because it represented a somewhat successful agricultural community, under the *agrarista* scheme, but still was not developed to the optimal level. Even the relatively richer communities in Mexico needed food assistance. With a population that had much higher relative income than the indigenous communities in the Mezquital Valley, but less than the population studied in Mexico City, the community had access

²⁰⁰ Albert Reynolds to Robert Daveé, 11 September 1960, UNICEF Archives, México - MCP (Jiquilpan) LAP-97, Q, F04, 400, Row 036, SU 016, Lv06, Ps 40.

²⁰¹ Jesús Díaz Barriga, "Referencia a los Trabajos Conexos más Importantes de otras Secretarías y de Organismos Semi-oficiales y Particulares del Representante de la SSA ante la FAO," 1948 in AHSS, Subsya, c. 29, exp. 4.

to a well paved road, the highway that connected Michoacán with Jalisco. The region had good harvests of corn and beans which were obtained without any costs by most of the population, so only 20 percent of their income went to food purchases.²⁰²

Even if in comparison with the Mezquital Valley and Mexico City, Cápula residents consumed more calories, officials at the Ministry of Health still thought that diets were deficient due to the low intake of animal proteins. Researchers poignantly remarked that Cápula was a good example of how a somewhat relatively better off community was still far from what they deemed an ideal diet. So they concluded that the diet of Cápula residents could improve, given their agricultural and economic circumstances: “if this people do not eat what they are supposed to, it is due to ignorance and ancestral customs, not to economic deficiencies.”²⁰³ So the Mexican representative to FAO pointed out that it was necessary to design programs to improve the diet of most Mexican communities even if they were relatively better off.

In the end, the negotiations with UNICEF were successful and the council agreed to grant aid to improve child nutrition. The Ministry of Health promised to promote wider distribution of milk through supplementary child feeding programs. Mexico also signed a compromise with the international agencies to find other suitable manufactured sources of protein, such as fish flour and soya products. UNICEF officials noted that for Mexican officials the milk program was very important. Thus, from the budget approved for Mexico, the resources earmarked for food aid, in particular for the construction of a milk production plant in Michoacán, were more than

²⁰² “Estudio del Estado de Nutrición de un Grupo de Personas Vecinas del Pueblo de Cápula, Estado de Michoacán,” 1946, AHSS, Subsy, c. 17 exp. 11,2.

²⁰³ *Ibid.*, 25.

the money destined for vaccination and malaria prevention.²⁰⁴ The Ministry also pledged to promote two programs. First they made a deal with the food distribution agency CEIMSA, to formulate a plan to promote the use of protein food, have the milk readily available to children, and second continue with the efforts to ensure the safety of fresh milk. The largest amount of aid provided by UNICEF in the late 1950s was put toward the construction of a milk processing plant.

The policy of making animal protein or vegetable substitutes more accessible to the general population was taken up as goal by officials at the Ministry of Health, but it was not implemented for many years. The production of protein mixtures was taken up partially by CEIMSA's successor CONASUPO during the mid-1970s. There were several experiments to produce vegetable protein mixtures and protein enrichment programs. Nonetheless, the government resources concentrated in increasing domestic milk production or in importing large quantities of powder milk to distribute among low income populations. In this sense, the "Mexican Nutritional Thesis" as understood by Díaz Barriga and supported by the RF and the HIM studies, that animal proteins were not the only way to improve the nutritional status of Mexican populations, was not implemented by government agencies in charge of regulating the food market.

Conclusion

Conceptions about diets in Mexico during the 1940s and 1950s were still influenced by ideas promoted by the eugenics movement, in particular concerning the links between nutrition

²⁰⁴ "Recommendation of the Executive Director for an Allocation Mexico, Maternal and Child Welfare," 8 February 1954, UNICEF Archive, E/ICEF/L.541 United Nations Children's Fund. "Aide memoire Mexico," 1954 in AHSS, SSA, Spr, c. 124, exp. 1.

and human capabilities, especially hard work. However, groups of public health practitioners influenced by eugenics, like *higienistas*, lost ground in terms of shaping public health institutions to clinicians and laboratory-trained medical researchers. The creation of welfare institutions and public hospitals was driven by doctors trained in clinical medicine, interested in promoting the consolidation of medical specialties, like cardiology and pediatrics, and pursuing biomedical research. Contact with scientists and doctors from the United States also influenced the type of studies and methodologies Mexican doctors used. American nutritional experts worked under the auspices of the Ministry of Health and trained its personnel, used funds provided by the Rockefeller Foundation, and conducted the first dietary surveys in Mexico which included clinical information about dietary deficiencies as well as laboratory testing of biological samples. In sum, a laboratory based experimental analysis of diets slowly became the norm among medical experts in Mexico.

The fact that the clinical medical profession became the primary source of expertise about the links between diet and health does not mean that doctors did not think about the social issues that influenced food intake. The case of Federico Gómez, the founder of the HIM, is an example of how doctors thought that their therapeutic efforts to save the lives of children suffering from malnutrition would be a waste of time if Mexican society did not address the direct sources of the ailment, poverty and economic inequality. Nonetheless, Gómez and his colleagues thought that prevention of malnutrition was beyond the capabilities of public hospitals.

The recommendations of the two teams were to rely on the already existing diet of Mexico. The idea of introducing non-traditional and expensive elements to this diet, like animal products, was not advised. The team at the Hospital Infantil suggested the development of

affordable plant protein mixtures as an alternative to animal proteins like milk. However, these experts considered that their responsibility was only to generate knowledge, and thought that the implementation of their scientific findings was better left to others. Thus, bureaucrats, who had access to these surveys and clinical studies, were free to use them and interpret them according to their own interests. More comprehensive policies to improve diets ended up depending more on the availability of cheap resources, in this case powdered milk. In this case, no matter the threat of malnutrition to health and well-being, the way this accepted scientific consensus among Mexican doctors affected policy choices was contingent on an array of other political forces.

Chapter 3: Conflict, Sanitation and Prices in the Mexican Milk Market (1902-1951)

Complaints about the price and safety of milk in post-revolutionary Mexico were an everyday occurrence. People were suspicious of milk even if the milk was pasteurized. In fact, by the 1940s doctors and laymen alike considered pasteurized milk, contrary to common sense, one of the most dangerous food commodities in the market. Since this product passed through many hands, such as producers, pasteurizers, wholesalers and milkmen, there were ample opportunities to dilute and add foreign substances to it. But the milk, in addition to being unsafe, was also expensive, even if its price was fixed by the government. The sanitary authorities were not highly regarded, especially because they were the ones in charge of food safety. They were also supposed to guarantee that milk price controls were respected. In the 1930s, Newspaper *La Prensa*, amongst other printed sources, constantly mocked health inspectors for being unable to secure the safety of milk. They ran a weekly column in which they published the bacterial count of different brands or kinds of milks, classified by fat content. Almost all pasteurized milk failed the newspaper's laboratory test, and some types of milk even tested positive for alien or noxious substances. The newspaper also reported constant price violations by the milk shop owners. The most common culprit was expensive watered-down pasteurized milk. The situation was such a scandal that even popular comedian Mario Moreno "Cantinflas" made fun of it. In his 1941 film *El Gendarme Desconocido* (The Unknown Police Officer), the actor played a low ranking officer, who in one scene arrests a store owner for diluting milk. The man complained and asked

if he was being arrested for pouring water into the milk, to which Cantiflas replied ironically: “I am arresting you for adding milk to the water, which is a completely different thing.”²⁰⁵

What caused milk to be both expensive and adulterated? In this chapter, I explain the transformation in the milk market that started in the 1900s and continued through the mid-1940s. The complicated struggles between the sanitary authorities and all of the actors involved in the milk market (producers, distributors, sellers, and pasteurizers) which lasted three decades (from the 1920s to the late 1940s) provided an excuse for the government to intervene in the milk market as an economic actor. Neither the Ministry of Health nor the Mexico City authorities had the administrative capacity to ensure a supply of fresh milk which was locally produced, affordable and clean. The alternative was for the government’s food agencies to provide an alternative supply of milk, rehydrating powder milk, a product that became very cheap and abundant in the international market after the Second World War. This intervention was consolidated with the eruption of an epidemic of foot-and-mouth disease in 1946, which further disrupted the milk market of Mexico City.

As I explained in the previous chapter, the federal government created institutions like CEIMSA and NADYRSA in the mid-1930s to purchase and distribute basic foods in order to enforce price controls and drive inflation down. The case of milk is an example of how the government subsidized and controlled the prices of basic foodstuffs to maintain the purchasing power of wages. But the way the government intervened in the market also depended on the particular characteristics of each product. Milk was special for two reasons. First, the fact that it was a perishable good that had to be subject to sanitary measures. Second, that it was widely regarded as a very valuable food because of its nutritional content. The milk market was also

²⁰⁵ *El gendarme desconocido*, DVD, directed by Miguel M. Delgado (1941, México, D.F.: Colección Cantinflas, México en Pantalla, 2010)

shaped by the actions of a wide variety of actors involved in its production and distribution, as well as the legal structure that regulated economic and sanitary practices.

The Mexican legal structure was central in defining not only the economic organization of the milk market but also the producers' resistance to government intervention. In 1925, the federal government approved a Milk Code in order to categorize milk according to quality and price. Local sanitary legislation in all of Mexico was based on this code. The Milk Code was ambiguous about compulsory pasteurization. The Code stipulated that the only kind of milk that could be sold unpasteurized had to come from stables closely regulated by the Ministry of Health and that the milk itself had to have certain characteristics, like very low bacterial count and very high fat content. Milk with high fat content and low bacterial count could be sold at higher prices. In practice, most milk produced in urban and suburban areas in Mexico did not have these characteristics, so it had to be pasteurized and be sold at lower prices. The government institutions in charge of enforcing the law, both with respect to quality control and prices, were the ministries of health at the federal and state levels. The federal Ministry was in charge of coordinating the actions of all the regional ministries, so the policies regarding the issue of milk in all of Mexico had very little regional variation. Producers reacted against the Milk Code and the regional legislation (influenced or based on the Milk Code) by appealing to Constitutional principles, especially those guaranteed by Article 28 of the 1917 Constitution. Article 28 sets regulations against monopolies through the safeguarding of economic freedoms. For this reason, I begin analyzing the milk market in the Porfirian era, because it was during this period that milk producers started justifying non-compliance to government regulation on the grounds of freedom of commerce and liberal economic ideology.

Explaining the changes in the milk market from the mid-1920s to the 1950s (the re-organization of production, supply, pricing, and quality control) serves two purposes. The first is to analyze the unintended effects of the government's milk sanitation policy. The *de facto* pasteurization mandate was responsible for instigating monopolistic practices in the milk industry. Setting up plants was expensive and most small producers could not afford to do it without outside credit. Small producers tended to become dependent on plant owners who, given their access to great quantities of milk, decided also to become distributors of the product. The second purpose is to examine how the government's price setting policies exacerbated conflicts between producers and the owners of the pasteurization plants. All the people involved in milk production, pasteurization, and distribution resisted the prices set by the government. Since these three activities were not generally integrated into a single enterprise, producers, the owners of the pasteurization plants, milk shops, and milk deliverymen all battled each other for a share of the profits. The Ministry of Health was unable to enforce compliance with prices or quality control. All actors at some point, especially non-producers, adulterated milk in order to obtain larger profits.

In the first and second parts of the chapter, I analyze how the urban milk market in central Mexico changed from one dominated by small stables who sold milk inside the cities or in the immediate suburban areas, to a more complex enterprise involving many new actors, including pasteurization plants and intermediaries. In addition to population growth in urban areas which increased the demand of milk, two government policies transformed the structure of the market during these four decades: price regulation and quality control of milk through pasteurization. The effort to control milk quality and prevent it from being a disease vehicle started during the government of Dictator Porfirio Díaz, which ended with the 1910 Revolution.

The Díaz government approved Mexico's first milk sanitation related regulation in 1902. The revolutionary governments continued the milk sanitation project but added a new dimension to it. The post-1910 governments sought to make milk not only safe for consumers but also affordable, and these two goals turned out to be very hard to accomplish due to the producers' resistance.

In the third part of the chapter, I explain how, by the mid-1940s, the market changed again due to two unrelated events. First, by the end of Second World War there was a surplus of powdered milk in the world market. In 1945, the government of Mexico decided to buy this surplus milk at very low prices from producer countries, especially the United States, process it in a rehydration plant, and sell it in the internal market. A year later, there was an epidemic of foot-and-mouth disease in central Mexico (1946-1951), during which one million heads of cattle died or were sacrificed. At that time, there were around five million heads of cattle in all of Mexico, but more than half located in Northern Mexico. The epidemic was disastrous also for the central Mexico area. By the early 1950s, the only viable producers left were the government and private citizens who owned larger farms or had access to credit to replace the cattle they lost to foot-and-mouth disease.

In this chapter, I focus mostly on the case of Mexico City because it was the largest milk market in central Mexico. The size of the milk market in Mexico City increased in importance because the population nearly tripled from 1921 to 1950, from 905,000 to 3,050,000 people.²⁰⁶ Nonetheless, I also include examples concerning the situation of pricing and pasteurization in other cities like the capital of Veracruz, Veracruz, or the city of Tehuacán in Puebla. My purpose is to highlight the structural similarities with Mexico City's milk market before the 1940s. I

²⁰⁶ Nacional Financiera, *La Economía Mexicana en Cifras*, (México D.F.: Nacional Financiera, 1978), 8.

contend that the issues that arose in Mexico City regarding the milk market were representative of the region. The capital also became an attractive market for milk producers in the states of Mexico, Puebla, Tlaxcala and Morelos, who began to introduce and sell their product in Mexico City.

The complicated struggles between the sanitary authorities and all of the actors involved in the milk market (producers, distributors, sellers and pasteurizers), which lasted three decades (from the 1920s to the late 1940s) provided a justification for the government to intervene in the milk market as an economic actor. This intervention was not welcome by the economic actors, and was largely contested. Nonetheless, state authorities framed their intervention as legitimate because it was designed to protect the health, nutrition, and income of urban consumers.

The milk market from the Porfirian regime to the post-revolutionary governments: 1900-1936

The first efforts to regulate the sanitary aspects of the milk commerce in Mexico occurred between 1880 and 1910, when dictator Porfirio Díaz and his collaborators became interested in modernizing the city. Díaz was influenced by medical doctors and engineers affiliated with the *Consejo Superior de Salubridad* (Superior Sanitary Council), a public agency that recommended a series of reforms and public works in order to improve the sanitary conditions of the capital. Their recommendations resulted from a strong belief that unsanitary conditions had their origins in miasmas. The germ theory did not have widespread acceptance and the medical establishment in Mexico favored instead environmental change, provision of public services (especially water), and basic urban infrastructure to solve the health problems in the city. Costly projects like the drainage and sewage systems occupied a large portion of the time and budget of Porfirian health

authorities. Reorganization of urban space also implied new regulations concerning what kinds of activities could be undertaken on the streets and what kinds of behaviors were acceptable at public places. Some of the regulations, for example dress code and the behavior of women, had to do with notions of morality and class distinction, but others, like regulating milk commerce, had more to do with sanitary concerns.

The bulk of milk supply in Mexico City during the Porfirian era was provided by small urban producers that had, at most, a dozen cows. Women and men milked their cows on the streets, on city plazas or in small urban open air stables and sold it there directly to the public. The owners of small cafes or *tendajones* also sold milk. They had a tiny stable next to their commercial establishments, bought the milk from itinerant milk sellers or had a partnership with a neighbor who owned some cows. Women were prominent among the marginal producers that sold milk on the street (*a pie de vaca*). Some of them produced home-made sweet bread or *bizcochos* and sold them with the milk. Larger producers were outside city limits, in different districts and they usually hired or sold milk to distributors that made home deliveries. There was a class-based difference in consumption. Poor urban dwellers bought milk directly from street or very small shops when they could afford it. Wealthier consumers sent their maids or servants to get the milk, or got it directly delivered to their homes from larger milk farms located outside the city.

The sanitary conditions under which the milk was sold was largely unregulated until 1902, when the city government (*Ayuntamiento*) decided to pressure the sanitary authorities, the Superior Sanitary Council, to provide them with a more specific code to regulate the milk commerce inside the city. City government officials argued that sellers should evacuate the streets and milk their cows indoors, but they were not able to enforce this because up to that

point the milk sellers were not violating any specific article in the sanitary code. The Superior Sanitary Council had not provided the city government with a code or list of specific measures which cow owners had to follow in order to sell clean milk. The Council suggested revoking licenses to sell milk in the city and promised to hire a veterinary doctor who would inspect the new milking facilities.²⁰⁷ The Consejo's Food and Beverages Commission quickly began to work on a new code on milk safety for the city council to approve.²⁰⁸ Finally, a new code was approved in 1902. The code outlawed milk street vendors and made mandatory selling milk in stables or shops that were "clean, airy and far from the dormitories or the dwellings of a sick person." It also prohibited the use of old utensils made out of lead, copper or zinc in milk production. The milk sellers had to provide a deposit (*fianza*) of twenty-five pesos and the signature of a guarantor that would declare that they were honorable and sold good quality milk. The seller's license would be revoked if they were caught selling adulterated milk three times.²⁰⁹ The milk distributors and the people working at stables had to be free of any contagious disease and have no skin eruptions in the hands or arms. The itinerant milk sellers also had to have a license that indicated the stable they were working with.²¹⁰

The almost two thousand volumes concerning milk sales from 1903 to 1909 in the historical archive of Mexico City document how hard it was for the city's authorities to control

²⁰⁷ Informe del Ayuntamiento de la Ciudad de México, 16 January 1902, Archivo Histórico del Distrito Federal (hereafter designated AHDF), Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1687.

²⁰⁸ Secretario General del Consejo Superior de Salubridad to Ayuntamiento, 30 January 1902, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1687.

²⁰⁹ Adulterated milk was defined as milk that contained water or any other substance that was produced with no certification from the government. The law did not stipulate any laboratory test that had to be done to the milk to certify its purity. Prescripciones Generales para los Expendios de Leche, 30 January 1902, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1687.

²¹⁰ José de la L. Torres to Ayuntamiento, 4 April 1902, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1687.

milk sanitation. Most papers in the volumes are about disputes concerning licenses and fines between the city government and a variety of actors, especially milk shops, sellers or small producers. Invariably the people involved in the business of selling milk complained about the government interfering with the private economic interests. The government inspectors frequently included in their reports a narrative about how the sellers expressed their grievances against the government. The amount of success that inspectors had in imposing their authority varied from case to case.

Small and large producers and milk shops responded to the initial law and its enforcement in different ways, which indicated their relative position in the market. The weaker they were, the more they tended to resist. However, the government measures were largely successful in the sense that 180 sellers registered and paid the twenty-five pesos fee. Unlike the itinerant women sellers outside the city's markets, who insistently resisted vacating the streets,²¹¹ larger milk sellers complied and turned to their complementary activity, home distribution. The registration process continued up until 1908 and many of the same sellers periodically paid fines or moved into other establishments around the city. In total there were close to 250 people that had permits to sell milk in the city.²¹² At first, the exact number of people who were producing and selling milk in and around the city was hard to determine for the authorities, since some of the permits were issued by the cities' prefectures (Atzacozalco, Coapa, etc). Then the prefectures had to give a copy of the permits of the people that were producing outside the city

²¹¹ Susie S. Porter, *Working Women in Mexico City, Public Discourses and Material Conditions 1879-1931* (Tucson: The University of Arizona Press, 2003, 2003), 133.

²¹² Registros de Lecherías, 1902-1913, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1687-1710.

and that were selling milk in Mexico City.²¹³ Even though the city had outlawed street sellers, the owner of permanent establishments constantly complained about milk being sold in carts on the two largest avenues of the city center (Chapultepec and Balderas).²¹⁴ The sanitary authorities also complained about how the sellers re-sold and circulated milk licenses. They caught many people without licenses who invariably claimed that they had lost them or asked for a grace period to pay the twenty-five pesos. An inspector from the Food and Beverages Commission complained that the sellers also forged the permits or presented them without a stamp.²¹⁵ Registered sellers usually paid their fines but confiscation and sanitary inspections of the milk were thoroughly resisted. When a member of the sanitary office took milk from a seller for inspection, he usually had a policeman with him. The owners of the milk shops claimed that any charges brought against them were tricks by the government to steal their milk or limit their commercial freedom.²¹⁶

The 1910 revolution disrupted completely the milk market as it did with most economic and political activities in central Mexico. During the armed phase of the revolution the quality of the milk was a concern. As with other foodstuffs, revolutionaries were worried also about the availability of continuous milk supply and the prices. Thus, price controls and regulation of consumer and agricultural goods originated during the revolutionary struggle as a means for the different armies to provide food for their troops, maintain control over the supply in the cities,

²¹³ Informe del Ayuntamiento, 23 February 1903, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1689, exp. 27. Unfortunately, copies of the list of permits are not available at the city archive.

²¹⁴ C. Gobernador del DF de G. Gutiérrez, Albino González, Sanitiago González, 14 August 1905, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1690.

²¹⁵ Sr. Presidente Consejo Superior de Salubridad de N.R. de Arellano Primera Comisión de Alimentos y Bebidas, 2 September 1905, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1692, exp. 119.

²¹⁶ Recaudador de Mercados de la Capital al Administrador Principal de Mercados, 15 July 1908, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1694, exp. 179. Oficio del Comisario 2/a demarcación, 4 November 1908, AHDF, Ayuntamiento-Gobierno del Distrito Federal, Lecherías, vol.1694, exp. 184.

and thus prevent famine. Hyper-inflation and scarcity were the result of the dismemberment of the Porfirian monetary system, the disruption of agricultural production and supply, and the seizing of the transportation system for military purposes. As a result of these variables, commerce was left in the hands of very few actors and, as a consequence, monopolistic practices prevailed. In an attempt to normalize the situation of the food market, Venustiano Carranza, the leader of the Constitutionalist fraction, set up a committee in Mexico City that would oversee the operation of retail outlets where the urban poor could buy basic foodstuffs. Other local governments attempted similar measures, but prices and production only stabilized after 1918 when the violence of the civil war receded.²¹⁷

Government intervention in the market was maintained after the critical years of the armed struggle, in part because of the inertia of the war economy, but also because the idea of securing affordable food for the population was embedded in a larger social agenda promoted by most revolutionary fractions. Social rights, such as the right to physical and mental health, were a central change introduced by the deputies that wrote and approved Mexico's 1917 Constitution. In a general sense, the Constitution was the ideological culmination of the program of the winning Constitutionalist fraction, composed of middle class reformists. Nonetheless, the new Constitution included legislation concerning labor, land tenure, and the role of the state in the economy that also reflected the preoccupations of other participants of the revolution, such of as the peasant communities (represented by the Zapatistas, among other groups), middle and lower class *ranchero* landowners, landless rural workers, and organized labor. Another example of this reformist social agenda is the 1916 study, commissioned by the *constitucionalista* leader Carranza and written by Albeto J. Pani, about the sanitary conditions prevailing in the capital.

²¹⁷ Ariel Rodríguez Kuri, "Desabasto, hambre y respuesta política, 1915," in *Instituciones y ciudad: ocho estudios históricos sobre la ciudad de México*, ed. Carlos Illades (México D.F.: FP-SONES-Unión, 2000), 165-69.

Pani claimed that Porfirian authorities did little to address and solve the health problems of the city. For him, overcrowding, hunger and infant mortality were social diseases and needed to be addressed as such. Government intervention was needed beyond investment in infrastructure in order to preserve and promote the health of the Mexican population.²¹⁸

The attempts by the federal sanitary authorities to regulate the quality of the milk resumed during the second half of the 1920s when the government that emerged from the revolution was consolidating its power and re-organizing state institutions. The first pasteurization law was passed in Mexico even before the Porfirian sanitary code was reformed in 1926. On December 29, 1925, the “Milk Code” was published in the *Diario Oficial*. The code determined that two types of milk could be sold in the city: pasteurized and certified milk. Although the latter milk did not need to be pasteurized, the producers had to maintain very strict conditions of hygiene in their stables. The sanitary authorities were in charge of making sure the stable was clean, that the personnel milked the cows under adequate sanitary conditions and that the milk was delivered to the public inside clean bottles. The plan was to gradually pasteurize all of the milk supply. Nonetheless, the purpose was not to exclude producers who wanted to preserve the flavor of un-pasteurized milk, which was deemed to be preferred by most consumers, or did not have the means to pasteurize but could keep a clean stable.

In order to comply with the new legislation, the milk, producers needed to invest in new technology. Also, other independent investors set up pasteurization plants and processed other people’s milk. For example, a prominent Mexican feminist, Hermila Galindo de Topete and her husband decided to set up a pasteurization plant on their property in Tlalpan, one of the largest

²¹⁸ Alberto Pani, *La higiene en México* (México D.F: Imprenta de J. Ballezá, 1916), passim. See also Claudia Agostoni, *Monuments of Progress: Modernization and Public Health in Mexico City, 1876-1910* (Calgary University of Calgary Press, 2003).

milk producing districts around Mexico City. Galindo, who was for many years Venustiano Carranza's secretary, remembered fondly the milk she drank in San Antonio, Texas, where she was undergoing surgery. She remembered asking her husband why the milk had such a different flavor, to which her husband replied that it was pasteurized milk. Galindo wrote that when she left the United States the only thing she lamented was not having the opportunity to drink that milk again. After hearing about the new milk code, Galindo and her husband thought that investing in a plant would be a good idea since the government would provide incentives and prerogatives to new industrialists. While setting up the plant, she sought the advice of the man in charge of one of the stables in Tlalpan. The stableman explained that he and other producers were not too keen on following government regulation because the government could change it with "the stroke of a pen" and leave them broke. Most of the stable owners in Tlalpan and other production areas did not comply with the decree of either pasteurizing the milk or giving the tuberculin test to their cows. The Sanitary authorities first extended the compliance deadline, then they poured down the milk down the drainage as a punishment, so the main street in the district of Tlalpan, looked like a "river of milk."²¹⁹

The authorities were worried not only about the quality of the milk but also about its price. In 1925, in addition to the "Milk code" the city government created a Regulation Council in Charge of Milk Commerce and Consumption.²²⁰ According to different government offices, the primary concern of consumer protection had to be distribution and availability. The junta set up official milk prices and ordered an investigation to find out how it would affect the sellers and producers. Unlike regulation juntas for other products, the Department of Health was in charge

²¹⁹ Hermila Galindo de Topete, "A los tres poderes de la federación," *La Mujer Moderna*, 13 April 1938, AGN, LCR, vol. 652, exp. 521.1/46.

²²⁰ Oficial Mayor to Gobernador del Distrito Federal, 20 August 1925, AHSS, SP, SJ c. 4, exp. 9; Contralor to Jefe del Departamento de Salubridad Pública, 21 August 1925, AHSS, SP, SJ c. 4, exp. 9.

of milk, due to its highly perishable nature and its perceived importance for human diet. The members of the regulation junta, Salvador Batres, Luis Aguilar, and Enrique Castillo gathered information from producers, the people that introduced milk to the city from other states, and the administrators of pasteurization plants. The junta had set the milk prices to twenty-six cents per liter of pasteurized milk and thirty cents per liter of certified milk. The price differential was due to the fact that certified milk had a higher percentage of milk fat, which was deemed more valuable. According to the three representatives, the sellers got four to five cents of profit per liter and the stable owners that sold milk got eight cents of profit per liter. By subtracting expenditures from the income of ten different producers in and around the city, they determined that seven were making money and only three were losing money. The commissioners declared that the reason the three producers were not making any profits was because they were renting the stables and the rent was too high. In addition, the quantities of bran, pasture and alfalfa they claimed to be giving the cows were greatly exaggerated. The expense of maintaining a steady production was one peso and fifty cents per cow, which produced seven liters of milk daily, sold at thirty cents. Each stable sold 233 liters per day so the owners of a standard sized stable (forty to fifty cows) earned 17.84 pesos per day, considering that around 20 or 30 percent of the cows were not productive.²²¹

Still, the city government did not have the exact figures of how many stables were in the city and in the surrounding suburban areas. Table 2 shows the locations of 887 registered stables located in Mexico City. The stables were classified according to production costs. According to the information that stable owners gave to the city government, in 1926 the production costs of a stable with 25 cows was approximately 1,500 pesos a month, while the production cost of a

²²¹ Miembros de la Junta Reguladora to Gobernador del Distrito Federal, 23 March 1926, AHSS, SP, SJ, c. 4, exp. 9.

stable with 140 cows was around 8,400 pesos a month.²²² The stables had variable production, which depended on the breed of the cows, and also variable costs depending on the season and the cost of cattle feed.

During the 1920s, the different activities related to the milk business were highly fragmented. Production, pasteurization, distribution and sales were often done by different and unrelated groups of people. Since the prices were set by the government, the milk market became very conflictive because one sector's gain signified another sector's loss. Producers who did not own shops or pasteurization plants usually sold their product to wholesalers who distributed the milk throughout the city, selling it to pasteurization plants or small milk shops. Producers, wholesalers and shop owners who bought and sold milk from one another tried to get the best price they could. Wholesalers tried to buy the milk as cheap as they could from producers, knowing that the small shops (*lecherías*) might refuse to buy very expensive milk. The *lecherías*'s prices, the prices paid by final consumers, were more tightly regulated than producers' or wholesalers' prices. As Table 2 shows, most stable owners were located relatively far from the city center so they had to rely on milk shops or delivery to sell their product. The producers also sold milk in the surrounding areas where their stables were located, but their primary market was the city's central neighborhoods.

Under these circumstances, most groups appealed for government intervention to protect their interests. In 1925, a producers' organization asked the Ministry of Health for support in order to suppress the intermediaries and contractors in the commerce of milk. The cattle owners complained that the contractors (wholesalers) who had licenses to introduce milk to the city, the owners of the pasteurization plants and the people in charge of the greatest number of milk stores

²²² Anexo 1-15 del Informe sobre establos y lecherías del DF, 23 March 1929, AHSS, SP, SJ, c. 4, exp. 9.

(*lecherías*) were working in complicity and were not receiving any milk from them. They claimed that the Department of Health had promised to give them temporary permits to introduce the milk to the city themselves and force the five pasteurization plants that existed in the city to process their milk. The producers wanted to be able to place their milk outside of the licensed milk shops. They claimed that establishments that sold other food items to the public and that had refrigeration facilities could also be proper sites to sell milk. The producers' organization wanted to close down five hundred unaffiliated milk stores and reduce the number of pasteurization plants to make sanitary controls more efficient. But the Department of Health was not willing to comply with the exigencies of the producers because they claimed they could not hinder freedom of commerce.²²³

These same producers re-organized themselves into the Regional Agrarian Credit Society of Milk Producers a year later. Their society was open to any producer who wanted to join and had no statutes to exclude additional members. The goals of the society were to obtain credit for itself and its members and to organize group purchases, register their cattle, create industrialization departments and to sell cooperatively. They continued to complain about not being able to participate in the market by creating a network of retailers, and for this purpose they proposed that the Milk Code classified milk "scientifically," using as markers bacterial count, fat content and acidity. For them certified milk was unreliable and costly, because government inspectors were not able to give certainty about the health of all the producing cows. They proposed a better distribution of milk shops, because while some city blocks had three or four vending sites, some areas of the city had little access to milk.²²⁴

²²³ "Memorando Departamento de Salubridad Pública," May, 1928, AHSS, SP, SJ, c. 4, exp. 9.

²²⁴ Banco Nacional Crédito Agrícola to Departamento de Salubridad Pública, May 1928, AHSS, SP, SJ, c. 15, exp. 5.

In May 1928, the organization was able to unite more than half of the producers that supplied milk to the city. The Regional Agrarian Credit Society received a loan of a million pesos in two payments. The National Bank of Agrarian Credit provided the money and the partners were able to acquire pasteurization plants, milk shops and afford operational costs. However, the Regional Association which united three hundred and fifty cattle owners who produced a hundred thousand liters of milk a day (50 per cent of Mexico City's milk supply) began losing money. The losses were in part due to bad business decisions, like buying the plants and milk shops at a higher price than they were actually worth. The other reason was that intermediaries and producers not affiliated with the Regional Association initiated a milk pricing war. The intermediaries refused to buy milk and the independent producers adulterated the milk with water to sell it at lower prices. After various interventions to avoid losses and try to collect the quantities the society owed, the Bank asked the federal government to dissolve the society. The government decided instead to save the society and developed a plan to regulate the milk market. The sanitary authorities would be responsible for eliminating any disloyal competition, adulterated milk, or milk that was introduced to the city without a license, which tended to drag down the milk prices. The Bank would manage the business for three years and build two concentration plants. The producers would sell the milk to the Bank at fixed prices. The purpose of the plan was to give the Bank economic control of the market so that, once it was profitable, the business could finally be put in the hands of producers after they organized as a cooperative.²²⁵

The government was not able to control the milk market, so the society got deeper into debt. In 1930, they still owed a million and six hundred thousand pesos. Still the bank signed

²²⁵Luis Arturo Romo and Gonzalo Robles, *Informe y recomendaciones para la reorganización del negocio de la leche*, AGN, GR, vol. 77, exp. 6.

new contracts with the producers and was under the obligation to pay fixed prices for the milk. Since the market was inundated by milk from independent producers, the bank was forced to sell the milk at a very low price, losing around three thousand pesos each day. In a memorandum to the presidency in 1930, the Bank blamed the failure to distribution costs and inefficiencies. The author of the memo cited studies about great consumption sites in the United States, and how the existence of “an army” in charge of promotion, delivery, sales, and bill collection made the milk industry successful. In comparison, Mexico had a mixed system plagued with inefficiencies. Independent milk shops survived alongside home delivery, and these two groups doubled the price of milk without adding any value to the final product.

The Bank commentator concluded that “contrary to the general belief that all competition is beneficial to the consumer, the moral of this story is that in this milk market the consequences of competition generate unnecessary costs that sometimes are concurrent with serious threats to public health.” For him, Mexico had to avoid the so-called milk wars between the producer, the distributor, and the consumer that had been so costly for other countries. Due to those “milk wars,” prices fell without any production increases.²²⁶ The additional product offered to the consumer was very low-quality milk adulterated with water and other substances.

The National Agrarian Bank was pushing the government for the re-organization of the milk market. Otherwise, it would lose the money invested and cause additional losses due to the cancellation of the three year contracts it had with the producer. It would also lose individual credits given to producers and suffer public discredit for the dissolution of a business created by the Bank. The investments in the area to produce milk were around twenty million pesos. The Bank asked the government to take over, build a central pasteurization plant, and invest in

²²⁶ Ibid.

transportation and processing plants. The Bank explained that the institution itself could not afford it, but as an expense of the federal government, it was perfectly justified because it would protect consumers.²²⁷

After 1930, the producers' society and the Bank struggled with wholesalers, pasteurizers, small vendors, deliverymen, and Milk Industry's Workers Union of Mexico City for the control of the milk market. The producers' society wanted the wholesalers to stop introducing milk from small farms in neighboring states that were not members of their group. The "clandestine" milk was usually transported long distances without refrigeration, so some substances needed to be added so that it did not turn sour during the trip. Wholesalers claimed that the milk was pasteurized when it was introduced into the city, so it was safe. The authorities had no control over this milk, and it was easily sold as certified or as pasteurized milk without having to be either. The producers convinced the Department of Health of issuing a decree in January 1931 to prevent all these problems. The decree stated that the milk sold in the city had to be pasteurized within city limits. Another statute made it illegal to introduce milk to the capital from beyond a hundred kilometers from the city center and, that if anyone wanted to bring milk from peripheral towns, it had to be done in refrigerated carts or vehicles.²²⁸ Other cities in Mexico, like Guadalajara and Durango, enacted similar regional legislations, but almost a decade later. The reason was that the market for milk in other cities was not as large as in the capital. Producers from areas close to Durango or Guadalajara did not have incentives to sell their milk inside the city and far from the production site.²²⁹

²²⁷ "Memorandum Banco Nacional de Crédito Agrícola," 17 March 1930, AGN, GR, c. 34, exp. 16.

²²⁸ "Leche," *Boletín Mensual de la Secretaría de Comercio*, 16 March 1931, 7.

²²⁹ Sindicato de Introdutores, Productores y Expendedores de Leche "Dr. Luis E. Pasteur" to Manuel Ávila Camacho, 13 February 1941, AGN, MAC, vol. 595, exp. 523.1/14.

The 1931 decree started a less than amicable debate between the actors participating in the milk market about which kind of public health measures could legitimately limit free commerce. Producers, pasteurization plants, and *lechería* owners began to accuse each other in the press or in government meetings of attempting to monopolize the market. Each side claimed it was defending their rights stipulated in Article 28 of the Constitution.²³⁰ The problem was that this article had a contradictory nature. It had its origins in the 1847 constitution, but the amendments made by the 1917 legislators and the subsequent regulations derived from it did not follow the tenets of classical liberalism, instead favoring the protection of social interests over individual ones. The purpose of the article was not to prohibit monopolies in order to protect unlimited commercial freedom but to protect the public or a particular social class.²³¹ Nonetheless, the livelihoods of various groups of workers and small commercial interests depended on the intermediaries of the milk trade, in particular milk shop owners and independent deliverymen, who formed, along with the wholesalers, the Union of Wholesalers and Deliverymen. In addition, milk shop workers, cart drivers, and milk processing plant workers, mostly affiliated to the Union of Workers of the Milk Industry, had a significant representation within the larger union organization (CROC, Confederación Regional de Obreros y Campesinos) that supported the Partido Nacional Revolucionario (PNR). This political party had the purpose of organizing most political interest groups in the country. Members and groups affiliated with the PNR took the most important decisions concerning government and politics in post-revolutionary Mexico. Thus, the dispute over Article 28 and the nature of monopolistic practices in Mexico was as much a political problem as a legal one.

²³⁰ *Constitución Política de los Estados Unidos Mexicanos*, (Mexico City: FCE, 1994),38.

²³¹ Antonio Huerta Reyes, “La prohibición del Monopolio en el Artículo 28 constitucional y su Ley Orgánica Vigente,” (Thesis, Universidad Autónoma de México UNAM, 1947), 64.

The members of the Union of Workers of the Milk Industry (UTIL, Unión de Trabajadores de la Industria Lechera) were under contract with both the wholesalers and a producer's society which had recently created a company called Leche y sus Derivados S.A. The workers were able to sign a collective contract with the new company, but they had organized a series of strikes against the wholesalers who had refused to pay them the stipulated minimum wage. They also complained that the wholesalers disguised themselves as a workers' union. This fake union was affiliated to the Confederación Nacional de Trabajadores (CNT), but in reality, UTIL complained that the members of the fake union were "capitalist bosses who exploited other people's labor." To solve the wage dispute, the UTIL met with Áaron Sáenz, the chief of the capital's government, and asked to recognize the milk cooperative they were organizing. The workers claimed that the problem of the milk industry as a whole would not be solved "until the workers appropriated the means of production."²³² However, the city government did not take any measures to solve the workers claims against the wholesalers.

The wholesalers reacted mounting a press campaign against both the worker's union and the milk producers' company Leche y sus Derivados. In an editorial in the *La Prensa* newspaper, the author accused producers of wanting to raise milk prices under the pretext that it would be the only way of preventing milk adulteration. According to the editorialist, small producers, whose milk was given directly to the wholesalers, claimed that milk was adulterated precisely in the stables of the owners of Leche y sus Derivados who wanted to raise prices.²³³ The wholesalers union also accused the Union of Workers of the Milk Industry, identified as a group of workers manipulated by CROC leader Vicence Lombardo Toledano, of aiding the

²³² Aarón Sáenz to Javier Gaxiola, 30 October 1934, AGN, ALR, vol. 524.2/33.

²³³ "El monopolio de la leche, El monopolio del cinismo," *La Prensa*, 1 January 1934.

monopolists Leche y sus Derivados.²³⁴ *La Prensa*'s journalist claimed that a commission of deliverymen and sellers visited their headquarters and informed him that a group of foreigners were forming a monopoly that would raise prices for all milk consumers and consequently ruin them.²³⁵ The newspaper *Excelsior* reported that the same commission, composed of around a thousand people, visited them and claimed that the producers of Leche y sus Derivados were throwing away thirty thousand liters of milk every day in order to set higher prices and leave their shops and businesses in ruins.²³⁶

At the end of 1934, the Ministry of the Economy informed the press that they still had not authorized Leche y sus Derivados to function as a company in accordance with the regulations of article 28 of the constitution.²³⁷ Leche y sus Derivados immediately issued a manifesto in which they identified themselves as a society constituted exclusively by cattle ranchers. They claimed to admit any producer as partner on equal grounds, a person whose cattle produced either five or five thousand liters. According to the company, their purpose was to provide the public with first rate milk that was absolutely pure. They explained that the ruin of most cattle owners was adulteration, which the authorities had not been able to tackle. According to the manifesto, the Wholesalers and Deliverymen Union was only constituted by intermediaries who wanted to attack producers, in particular the small and medium ranch owners of Leche y sus Derivados, by portraying them as a monopoly. For them, the only people who should be worried about the creation of a company like Leche y sus Derivados had to be milk adulterators. "True workers,

²³⁴ "La cooperativa de lecheros se defiende del capitalista, *La Prensa*, 11 November 1934; "El Sindicato Único de Mayoristas y Repartidores de Leche del D.F. Adherido a la CGT lanza manifiesto," *El Universal*, 5 November 1934.

²³⁵ "Se pretende acaparar toda la leche que se produzca en el D.F.," *La Prensa*, November 4, 1934.

²³⁶ "Otro monopolio en perspectiva," *Excelsior*, 4 November 1934.

²³⁷ "Es un rompecabezas lo de la leche," *El Universal*, 17 November 1934.

operators in pasteurization plants, milk shop employees, drivers, cowboys and *campesinos*” supported their activities unanimously because they knew that if Leche y sus Derivados prevailed, the milk industry was no longer going to be in crisis. Also, the existence of the company would improve the living standards of producers and workers alike.²³⁸

During the early 1930s, with accusations flying around in the press, the members of Department of Public Health doubled their efforts to control the milk market. However, they were not successful because high ranking officials were still unable to regulate the activities of their own inspectors. Gastón Melo, chief of the Department of Public Health, and Salvador Zubirán, chief of the Food and Beverages Service, prosecuted Jesús Silva, an independent wholesaler who was involved in various frauds concerning milk sales all over the city. Mr. Silva had been illegally using the names of the government officials in charge of general food sanitation or the regulation of milk production for his own purposes. The high ranking officials could never determine if the agents indeed had given consent to Mr. Silva to use their names.²³⁹ Dr. Zubirán recommended that the ministry should investigate eight agents under his charge because he received numerous complaints of bad behavior. The agents were suspected of writing false reports, of extorting money from sellers at public markets, and of not being honest when they revised the milk pasteurization plants and facility. However, the legal service at the ministry could not give the inspectors any administrative sanctions or expel them from the service. A notorious example was a milk agent named Eleazar Gil who was accused of terrorizing a pregnant woman who sold *pulque* clandestinely “until he made her lose her baby,” even though her trade was beyond his jurisdiction. Mr. Gil could not be expelled due to his “influences in the

²³⁸ “Leche y sus Derivados S.A. no es un monopolio,” *El Universal*, 11 November 1934.

²³⁹ Dr. Gastón Melo to Abelardo L. Rodríguez, 17 June 1933, AGN, ALR, exp. 524.2/33.

bureaucracy” and because he “was a good element in the ministry’s football (soccer) team.”²⁴⁰

Also a businessman wrote to Gastón Melo, accusing his agents of illegal conduct. The businessman informed the chief of the Department of Public Health that, while he was looking for potential lucrative investments, he witnessed some illegal activities. He reported to Gastón Melo that he met other investors who offered to make him partner in a business that would report a daily profit of a hundred pesos for many years. The profits were very attractive since the businessman only had to invest twenty thousand pesos. The businessman stated in his letter that his decision concerning the investment depended upon seeing the business in operation. The business in question was a pasteurization plant. When he arrived at the plant, the employees showed him around and he was very surprised to find out that even if the plant initially processed three thousand liters of milk, the final production was four thousand liters. The employees declared that sometimes they were able to dilute the milk even more. The investor wondered why the two chemists employed by the Ministry of Health allowed the adulteration, and the employees responded that the officials had been “co-opted” and received twenty pesos daily. They claimed that the competition with other plants made them work this way. They received the milk with a little more than 44 percent fat and they “completed” it with saccharine and water. If the milk went sour they added caustic soda. The workers accused the minister of receiving a bribe of three thousand pesos. The owner of the plant was Mr. Jaime Grimaud, who *La Prensa* newspaper identified as a partner of Leche y sus Derivados.²⁴¹

²⁴⁰ Dr. Gastón Melo to Jefe de Servicios Jurídicos y Salvador Zubirán, 2 March 1932, AHSS, SP, SJ, c. 30, exp.22.

²⁴¹ Agustín Levesti to Gastón Melo, 2 March 1932, AHSS, SP, SJ, c. 30, exp 22.

“El Sindicato Único de Mayoristas y Repartidores de Leche del DF adherido a la CGT lanza manifiesto,” *El Universal*, 5 November 1934.

In 1935, officials at the Department of Health commissioned a study about the extent of milk adulteration in the city. The study stated that when the producers increased the quality of the milk, the price of the product increased also. The price increased because quality was associated with fat content and the higher the fat content of the milk the higher the price. When the price of certified milk was high, then the wholesalers had the incentive to sell more milk. The strategy wholesalers used to obtain more milk was to buy it in distant stables. The introduction of milk to the city from distant places hurt the quality of the product. The other consequence of introducing milk to Mexico City from distant stables was that the “surplus industry” (production of cheese, cream, and butter) was not developed. Usually producers who lived far from the city and could not sell all of their fresh milk turned to other activities, like making cheese, for their business to be profitable. However, this artisan production of dairy products, such as cheese, was not sophisticated enough to endure the competition of similar products that were introduced to the country from abroad.

The study suggested that the solution was the centralization of milk processing and production. The government would give the concession to the producers of Leche y sus Derivados for twenty years under the condition that the company ceased to be a private firm. The government wanted Leche y sus Derivados to be a mixed enterprise which included public interests. The Ministry of the Economy would determine parameters so the company could run its administration. Then officials would decree the exact level of capitalization and the maximum profits allowed. The government had to guarantee that all the partners received the same benefits. The suggestion was that the producers bore losses of the surplus milk proportionately. Leche y sus Derivados members would be forced to distribute 10 percent of their milk in the *barriadas de gente pobre* (the poor people’s neighborhoods) at a price of twenty cents the liter. The

neighborhoods were to be chosen by the ministry.²⁴² The officials at the department in charge of the study concluded the following:

People who want the Mexican milk market to remain in chaos respond to an ideology of economic ideas that were in vogue a century and a half ago, an ideology which defends a highly individualist notion of unrestrained social Darwinism and assumes the passivity of the state before the efforts of unethical individuals that want to exploit others and profit from them. They put all their faith in unregulated competition and forget that disloyal competition is an unchangeable fact. These individuals dislike cooperation and instead they value freedom more. However, liberty is sometimes abused in detriment of society.²⁴³

The president of the Leche y sus Derivados supported the motion and complained the health authorities had been unable to impose order in the milk market “as the president had ordered.” He continued to explain that Leche y sus Derivados had been able to collect two hundred and fifty thousand liters, 80 percent of what was produced daily in the capital. He stated that various milk concentration plants had appeared when there were none before: Chipilo (Puebla), San Martín de Texmelucan (Puebla), Ixtlahuaca (state of Mexico), Polotitlan (State of Mexico), Toluca (State of Mexico), Huichapan (Hidalgo) and Tulancingo (Hidalgo). Due to these developments, Leche y sus Derivados had forty thousand liters of surplus milk, which produced losses, because the company had to pay others to process the surplus milk and the profits the company made selling other dairy products were meager.²⁴⁴

The growth of the market in the capital affected producers in three other cities in central Mexico: Puebla, Toluca and Veracruz. The producers located closer to the capital, in the state of

²⁴² “Memorandum sobre el Mercado de Leche en el Distrito Federal,” 28 January 1935, AHSS, SP, SJ, c. 43, exp. 14.

²⁴³ Jefatura de Estudios Económicos, “La reglamentación e integración de la industria lechera en el DF y la protesta de los productores clandestinos,” 1935, AHSS, SP, SJ, c. 43, exp. 14.

²⁴⁴ “Memorandum sobre el mercado de Leche en el Distrito Federal,” 28 January 1935, AHSS, SP, SJ, c. 43, exp. 14.

Mexico, were worried that Leche y sus Derivados would get a concession from the government to run the only pasteurization plant in the city. Members of the Union of Toluca Cattle Owners opposed the creation of the company and sent letters to the newspapers. They appealed to consumers, explaining that the project also included raising the prices of certified and pasteurized milk. They claimed that higher prices would affect them also because their sales would decrease.²⁴⁵

According to Mexico City's department of sanitation, in 1936 milk producers from other states regularly came into the capital to sell milk. The figures the Department of Sanitation compiled about milk production according to the information they had on registered producers are summarized in Table 3. Nonetheless, authorities could not account for the origin of all of the milk consumed in Mexico City, since they recorded the production of approximately 130 thousand liters and the city consumed around 270 thousand liters. These discrepancies illustrate the challenges to measure and regulate production.

In the larger cities of the state of Puebla, the problem was that part of the milk supply was diverted to the Mexico City market. Milk in Puebla was scarce and expensive. The producers in Puebla also followed the strategy of Leche y sus Derivados, creating producer cooperatives. Consumers reacted against this kind of organization. A group of citizens in the town of Tehuacán, Puebla organized a "Consumer Resistance League" and, based on Article 28 of the Constitution, called for a milk consumer strike. The producers' cooperative claimed that the milk had a higher sanitary quality than the one being sold before. The Consumer League argued that the new milk was skimmed, losing all of its nutritional properties and cost double the milk they

²⁴⁵ "Reglamento que daría margen a un monopolio," *Excélsior*, 15 June 1935.

previously consumed.²⁴⁶ The five hundred members of the League met in the town council, agreed to strike, raided the milk shop in their community, and poured all the milk they found into the gutters. After this demonstration, the prices dropped again but some of the angry consumers expressed doubt about the long lasting effects of their demonstration.²⁴⁷

Municipal authorities throughout Mexico started promoting milk pasteurization and price regulation in accordance with the measures in the capital. The most dramatic incidents occurred in the port of Veracruz. At the end of 1935, a battle ensued in Veracruz concerning the rights of traditional small milk sellers and producers, organized independently just like the ones in Porfirian Mexico City. The municipal authorities decreed that the milk in the port had to be pasteurized. A group of producers established the only pasteurization plant in the city, but subsequently they started having problems with the municipal authorities regarding the price, especially during the winter, when milk production was down. The group that controlled the plant left the city without milk for a couple of days, arguing that it was not profitable for them to sell the product at the price set by the Ministry of the Economy.²⁴⁸ The municipal authorities along with railroad workers and members of the socialist youth group organized a boycott against the plant and the individuals who were buying milk at higher prices. In order to counter milk scarcity, the authorities legalized again the sale of non-pasteurized milk, but the milk continued to be scarce.²⁴⁹ The ranchers who introduced their milk to the city without pasteurizing

²⁴⁶“Manifiesto de la Liga de Resistencia de Consumidores,” 31 July 1935 AGN, LCR, vol. 639, exp.221.6/ 21.

²⁴⁷ “Liga de consumidores de leche,” *El Día*, 3 August 1935.

²⁴⁸ “Huelga contra los lecheros en Veracruz,” *El Día*, 3 November 1936; “Los veracruzanos se quedaron ayer sin tomar leche,” *El Universal*, 18 December 1935.

²⁴⁹ “Contra el monopolio de leche en Veracruz,” *El Día*, 20 February 1936; “Será libre la venta de leche en Veracruz,” *El Día*, February 21, 1936. “Boicot contra el monopolio,” *El Universal*, 22 February 1936; “Amenaza de paro la cuestión de la leche en Veracruz,” *El Universal*, 23 February 1936: “Sigue faltando la leche en Veracruz,” *El Día*, 25 February 1936, “Lleva cuatro días el puerto de Veracruz sin leche,” *El Día*, 26 February 1936.

it complained that, after the legalization they were still being harassed by the authorities and the milk cooperative that owned the plant. The conflict lasted for months. People demonstrated in the streets against the high prices and the poor quality of pasteurized milk. One of the demonstrations organized by a workers' union turned violent when someone fired a shot from the pasteurization plant. In retaliation, the protestors raided and destroyed the plant.²⁵⁰ A columnist from a Mexico City newspaper acknowledged that the action was symbolic, in the sense that the people in Mexico were not against "the science of Pasteur" but were instead tired of being scammed by "capitalists who were using the technology to create monopolies" and that did not even provide them with high quality milk. A few days later, the newspapers reported that things calmed down and the milk sales were back to normal.²⁵¹

Inflation, Worker mobilization and the Milk Market: 1936-1946

The end of the 1930s was a time of sustained inflation, which affected the milk business in most Mexican Cities, especially for two reasons. First, most milk producers began to suffer losses because the cost of pastures, especially hay and alfalfa, increased steadily. Second, the government, while trying to control inflation, continued to set the prices for basic commodities like milk. This situation generated tensions between the government and milk producers, because on paper the prices of pastures were regulated but producers claimed that in reality the prices continued to increase. General inflation was caused in part by government's monetary expansion, which coincided with a period of droughts and bad weather, which was disastrous for agricultural production. In addition to the meteorological conditions, private investors claimed to

²⁵⁰ "Destrucción de la planta pasteurizadora," *El Universal*, 3 March 1936; "La planta pasteurizadora Destruída," *El Universal*, 3 March 1936.

²⁵¹ Jorge Labra, "Inmoralidad y mercantilismo," *Excélsior*, 18 December 1936.

feel discouraged by land distribution policies promoted during the Presidency of Lázaro Cárdenas' (1934-1940). Private banks and most investors were unwilling to lend money to agricultural producers because they felt insecure about the government's position on private property rights. To solve the problem of lack of credit, the government had to rely on its own banking institutions to aid the new collective land title holders, called *ejidatarios*. Public financial institutions supplied credit, but this credit was not enough to counter the drop in production. Also, since the source of the money was public debt or monetary expansion, these investments also tended to increase inflation even more. However, the government continued to set the prices of basic commodities in the hope of curbing the inflationary spiral.²⁵² Most milk producers were caught in a situation in which their costs were higher than their profits, and in the case of the company Leche y Sus Derivados this drove them out of business.²⁵³

Another factor which affected the situation of the milk market in Mexico City was an increase in labor mobilization during the Cárdenas presidency. Most small milk shop owners, delivery men, and workers at the pasteurization plants had their own workers' organizations, which in turn belonged to larger unions like the Confederación de Trabajadores de Mexico (CTM). This union was organized with the help of President Cárdenas and remained a crucial political ally during his presidency. From 1936 to 1939, pasteurization plant workers embarked in a series of strikes which frequently halted production. Other types of worker activism also affected the operation of the plants in the capital. In August 1936, the workers from the company Mexican Light, which supplied electricity to most of central Mexico, went into a strike that caused service suspension for several weeks. During the strike, the owners of the pasteurization

²⁵² Beteta, *Tres años de política hacendaria, 1947-1948-1949: perspectiva, acción*, 10-15.

²⁵³ "Leche pura o se clausuran las pasteurizadoras," *El Nacional*, 2 July 1937.

plants stated that they could not comply with the sanitary laws if there was no power available. The Union of Electrical Workers, which was also affiliated to the CTM, reached an agreement with the pasteurization plants to provide them with service in exchange for lowering the price of milk from 16 cents to 9 for a couple of weeks. The measure was aimed at generating support from the population of Mexico City for the electrical workers' demands. According to labor leaders, the measure was successful while it lasted and it proved that milk could be sold at lower prices.²⁵⁴ That same year, a senator made an offer to president Cárdenas. The senator wanted to lead a campaign in the legislative body to promote the creation of a single pasteurization plant in the city, a measure which would eliminate intermediaries and thus decrease prices.²⁵⁵ The CTM was also enthusiastic about the project and backed a proposal to build a single large pasteurization plant that would serve all of the producers of Mexico City and the surrounding suburban areas. A year later, in 1937, the Cárdenas government issued a decree that gave a concession to build this plant to milk workers affiliated with the union. The workers were supposed to build and run the plant, but this project kept getting delayed and never came into fruition.²⁵⁶ The end of the 1930s was an unfavorable time for the government to ally with workers to begin a project that would alienate private producers. On May 18, 1938, the Cárdenas government had nationalized oil. Since that moment on, the attention of the administration focused mostly on the legal and political ramifications of this decision, like compensation payment disputes with American and British corporations and the need to organize a national petroleum company. Although there was a decree for the workers to take control of all

²⁵⁴ Campa, *Mi testimonio: experiencias de un comunista Mexicano*, 122-23.

²⁵⁵ El "Ala Izquierda" (A.M. del Castillo) to Lázaro Cárdenas, AGN, LCR, exp. 639, vol. 521.6/2, 1-3.

²⁵⁶ "La solución del problema de la leche en el DF," *El Nacional*, 4 January 1938; "Rectificación a los directivos del ramo lechero," *El Gráfico*, 2 February 1939; "Las violaciones de los industriales lecheros," *La Prensa*, 8 October 1938; "Dueña de una planta Industrial amparada," *El Universal*, 23 June 1938.

pasteurization in the city, neither the Cárdenas government nor the CTM pushed the issue any further.

The new government, which took office in 1941, showed a renewed interest in reorganizing the milk market in the city and finally, enforcing all the sanitary regulations. The new chief of the sanitary services in the capital, Victor Fernández, heavily publicized his campaign against adulteration in the capital's newspapers. The dailies printed the addresses of the fined establishments and the names of the owners. The chief of sanitary services exhorted private citizens to write to the authorities and denounce any violations to the Milk Code. The strategy worked partially because that year the residents of several neighborhoods of the city, especially the city center, wrote to the authorities denouncing clandestine stables or milk adulterators.²⁵⁷

In 1943, a scandal erupted concerning the involvement of prominent leaders of two worker organizations, the CTM and the Confederación de Trabajadores del Distrito Federal (CTDF), in milk monopolization schemes. These two organizations had among their rank-and-file five thousand people who made their livelihood through milk production and sales. Nonetheless, there were tensions between the unions' leadership and the rank-and-file associated with the milk industry. Leaders of the CTM and CTDF wanted to set a profit limit for all the transactions involving milk sales, a decree that would affect milk shop owners and delivery men. In October 1943, the *La Prensa* newspaper reported a heated discussion during a meeting of CTM and CTDF workers at the Hidalgo Theater in Mexico City. Several milkmen and milk sellers began accusing prominent leaders of the CTM, such as Vicente Lombardo Toledano and

²⁵⁷ There is no record in the archives to effectively confirm that the government took action against the accused people. "La leche uno de los más activos venenos que ingiere el pueblo," *La Prensa*, 29 May 1941; "Medidas para obtener pureza de la leche," *El Nacional*, 3 June 1941; "El problema de la leche: cohechos e inmoralidades," *El Universal*, 3 June 1941; "En Pro de los consumidores de leche," *El Nacional*, 4 June 1941; "Los de la vaca y la pata," *El Universal*, 5 June 1941; Telegrams to Manuel Ávila Camacho, 18, 28, 30, 31, November 1941, AGN, MAV, exp. 523.1/24.

Fidel Velázquez, of being allied with the owners of the pasteurization plants, two “Spanish citizens,” Luis Gutiérrez and Justino Madariaga. The milk delivery men complained that the CTM and the official Party, the PRM, wanted to push them out of the business.²⁵⁸ A few days after the meeting, *La Prensa* reported that in fact Lombardo was the owner of a pasteurization plant and that several politicians including members of congress were involved in the corrupt practices of milk adulteration. According to the newspapers, these politicians and union leaders had secured public contracts with hospitals and public institutions and sold their milk at higher prices than the ones permitted by the law.²⁵⁹ The scandal reached the chamber of deputies. During a debate, Deputy Ramón Bonfil insisted that the real problem behind the milk scandal was that the Mexican people were very concerned and upset by general inflation. He stated that newspapers always blamed authorities for economic problems, but in the case of the milk scandal, the press had gone too far by slandering probably innocent people like Vicente Lombardo Toledano, Fidel Velázquez and former deputy Alfonso Sánchez Madariaga (cousin of the pasteurization plant owner Justino Madariaga). Other deputies claimed that the accusations were unfounded and that judicial authorities had to conduct a thorough investigation concerning the milk monopolies.²⁶⁰ A few days after the debate in the chamber of deputies, the CTM leaders publicly denied the accusation published in *La Prensa*.²⁶¹ The rumors about the corruption of labor leaders disappeared from the press as did the proposal to set profit limits for milk sales.

²⁵⁸ “Denuncian los trabajadores criminal monopolio de la leche,” *Novedades*, 29 July 1943, “Líderes de la CTM aparecen mezclados en el monopolio de la leche,” *La Prensa*, 22 September 1943, “Grave acusación contra líderes de la CTM,” *Novedades*, 27 September 1943; Unión Sindical de Vendedores y Repartidores de Leche del Distrito Federal to Manuel Ávila Camacho, 2 October 1943, AGN, MAC vol. 516, exp. 523.1/24.

²⁵⁹ “Quiénes mangonean con la leche y cómo,” *La Prensa*, 13 December 1943.

²⁶⁰ “La Prensa, los hambreadores y el petardo en la cámara,” *La Prensa*, 16 December 1943. “Desató una tempestad en la cámara el tráfico con la leche,” *La Prensa*, 16 December 1943; “Un general en el monopolio de la Leche en el DF,” *Excelsior*, 16 December 1943

²⁶¹ “Desmiente una venenosa y lépera calumnia del Diario La Prensa,” *El Popular*, 12 December 1943.

However, during the following months, the owners of the pasteurization plants continued to battle with milk shop owners and milkmen. In December of 1943, the pasteurization plants ceased to sell milk to two thousand milk shops in the city. The newspapers claimed that it was a strategy on the part of the pasteurization plants to create artificial scarcity and force the authorities to increase the official price of milk. The Ministry of Health stated publicly that the milk scarcity was real, and that it was due to the seasonal nature of production, which tended to decrease during the winter months.²⁶²

But the scarcity was not only due to the seasonal nature of milk production, it was caused also by Mexico's participation in the Second World War, which officially started in June 1942. The War disrupted Mexico's food production and distribution system. The country became again vulnerable to shortages and price increases as it was during the Revolution in 1910. Basic foodstuffs were especially susceptible. Lands that produced grains were shifted to cultivate highly sought after oil-seeds and export crops, such as *henequén*, resulting in a decline in the amount of land planted with subsistence agriculture crops. The milk market was affected by the war because the prices of pastures and animal feed went up again significantly. These factors often contributed to shortages, prompting the government to take action.²⁶³

In 1945, government officials were still trying to solve the milk problem in the capital. For this end, president Manuel Ávila Camacho commissioned Francisco Doria Paz, who was representative of the industry before the price council of the city, as the person in charge of making executive recommendations. Doria Paz collaborated closely with American technicians

²⁶²“Plan técnico para aplicar al problema de la leche,” *El Nacional*, 8 December 1943, Carlos Denigri, “Ríos de leche correrán en las calles de nuestra ciudad,” *Excélsior*, 23 December 1943; “Otro esfuerzo para abaratar la leche,” *Excélsior*, 27 January 1944.

²⁶³ “Realidad Nacional,” *La Prensa*, 17 December 1943; “Otro esfuerzo para abaratar la leche,” *Excélsior*, 27 January 1944; “Lucha contra El Monopolio Lechero,” *El Nacional*, 2 July 1944.

specializing in milk problems. In their opinion, a permanent supply to the city could not be provided by the Mexican stables because of the lack of pure breed cattle, a very limited supply of pastures and other feeds, as well as the terrible hygienic conditions of fresh milk. The only solution which the American technicians found was the installation of a re-hydrating powdered milk plant. The experts proposed that the plant should be managed by the government, but the president, whose policy was not to interfere with private industrial production, ordered the governor of the Federal District to try to convince private investors to build a plant, offering tax exemptions as incentives. Then the executive branch negotiated with the U.S. government, who agreed to subsidize the import of powdered milk to Mexico. At that time the U.S. produced a lot of surplus powdered milk and they were looking for a market. Mexico had been an ally during the war, and sometimes did not receive the promised allocation of grain quotas. The U.S. government considered that allowing the transaction to take place excluding tariffs was a very effective friendly measure towards Mexico, a reliable ally during the War. The primary beneficiaries of the agreement were import companies (Kraft Foods) and a Mexican owned re-hydration and pasteurizing plant called Lechería Nacional.

In October of 1945, the corporation (*sociedad anónima*) named Lechería Nacional was established with an initial capital of two million pesos. Afterwards, in May 26, 1946, the capital increased to 4,500,000 pesos. The primary stockholders were Joaquín M. Bourde, William A. O'Connell, Lic. Francisco Doria Paz, Lic. David Cazares Nicolin and Lamberto Urrieta. The company signed a contract with "Kraft Foods Company" in the state of Delaware, from which Lechería Nacional bought all the milk that was going to be used in the plant. The first goal of the investors was that the plant produced a maximum of 500,000 liters per month during the first six months of operation. Before production started, they bought a company called Productos

Metálicos Arlette. The industrial plant, in the area of Azcapozalco, was adapted to the needs of the milk company. During this process, the Mexican president, in a collective arrangement with the Minister of the Treasury, the governor of the Federal District, and the Minister of Economy, decided to give various advantages to the company. The federal government gave Lechería Nacional a subsidy equivalent to the amount of the import taxes of machinery, equipment and primary materials. The most important primary materials were: 182,500 pieces of carton “Pure-Pak” to package milk, 15,000 aluminum boxes and 20,987,500 kilos of powdered ‘Kraft’ milk.²⁶⁴ The authorities also declared the re-hydrating plant property of Lechería Nacional as a “necessary industry” for Mexico City. As a consequence, the corporation would not have to pay taxes in the Capital.²⁶⁵

Producers’ organization reacted immediately to the government’s plan to rehydrate powdered milk and sell it in Mexico City. The Cattle Rancher Organization of the State of Mexico, which represented all regional producers’ organizations from the suburban areas of Mexico City, as well as the Chamber of Milk Producers of the Federal District and the United Farms of the District of Coapa, published several open letters to the president protesting state interference in the milk market. The producers claimed that the authorities of Mexico City no longer cared about the ruinous state of the milk business in the area because the country in general was receiving enormous quantities of powdered milk from the United States and Canada. The producers also complained that these government measures represented illegal competition, since the government was going to sell a product that could hardly be considered as nutritious as

²⁶⁴ The people who founded the corporation argued that Mexico did not even produce the most elementary materials that were necessary for the business. So they were also granted an export permit for 20,987 kilos of cord to hold the packages, 2,770,350 kilos of paraffin and 267,363 of fiber boxes to transport packaged milk.

²⁶⁵ The Zebu breed was deemed ideal for Mexico because it adapted easily to hot climates. Enrique Hurtado Alvarado to Jefe del Departamento de Industrias (Actividades de Lechería Nacional), AGN, MAV, exp. 473, vol. 513.1/14.

fresh milk.²⁶⁶ Nonetheless, the government did not stop importing milk and, in the following months, milk producers would be forced to divert their attention to a more pressing matter.

Milk production and the Foot-and-mouth Disease Crisis: 1946-1950

Immediately after the end of the Second World War in 1946, Mexico faced the threat of an external enemy that put in danger the entire cattle industry of the country: an epidemic of foot-and-mouth disease. Foot-and-mouth disease is a viral disease of cloven-hoofed animals (such as cattle, sheep, goats, swine, and deer). The disease is highly infectious and it is characterized by painful blisters on the lips, tongue, feet, udder, and teats of infected animals. Symptoms include lameness, slobbering, rapid loss of weight, and near cessation of milk production. A few cases of human infection have been reported, but it is generally not dangerous to humans. The disease also produces an important reduction in the growth rate of meat animals, loss in draught power and reduction in fertility. During the epidemic in Mexico, which lasted from 1946 to 1951, a large percentage of the cattle in central Mexico (the states of Veracruz, Hidalgo, Morelos, Guerrero, Tlaxcala, Mexico, Federal District, Guanajuato, Jalisco, Oaxaca, Aguascalientes, and Queretaro), around 90 percent, were infected, and 80 percent died or were sacrificed during the outbreak. Most producers in Mexico did not use specialized cattle for milk production. Cattle in general was also used indistinctively either for slaughter, milk production, and farm work, so the epidemic reduced milk, meat and agricultural production significantly.²⁶⁷

²⁶⁶ “Carta Abierta del la Unión Ganadera Regional del Estado de México, Cámara de la Industria y Producción de Leche del Distrito Federal y Granjas Unidas de Coapa,” *Excélsior*, 15 May 1946. Cámara de la Industria y Producción de Leche Autorizada por la Secretaría de la Economía Nacional to Manuel Ávila Camacho, 27 November 1945, AGN, MAC exp. 596, vol. 523.1/26.

²⁶⁷ “México dejará de consumir leche fresca, la tomaremos en polvo por la Aftosa,” *Novedades*, 23 April 1947. “Urgencia de que México Consuma Leche Sana,” *El Nacional*, 27 July 1947; Secretaría de Economía, *Anuario Estadístico de la República Mexicana*, (México D.F.: Secretaría de Economía, 1952), 31.

The story of how foot-and-mouth disease entered Mexico is full of contradictions and uncertainties in part due to the multiplicity of interests involved. The government of Mexico at first was not sure why or where the outbreak started. After an investigation, the official story became that the outbreak originated after a herd of Zebu bulls arrived in Mexico directly from the ranch of Brazil's President Getulio Vargas.²⁶⁸ Vargas had met with Marte R. Gómez, the Mexican Secretary of Agriculture and Development, in 1946 to negotiate the purchase of the cattle. Vargas wanted to promote the sale of Brazilian cattle for breeding purposes, not only in Mexico but also in the United States.²⁶⁹ After the cause of the infection was known, Marte R. Gómez was ostracized, and he argued that it was never clear that the virus came with the Zebu bulls, but that it was endemic to cattle living in small ranches in isolated areas of southern Mexico. He claimed that the movement of these cattle through central Mexico was the culprit for the outbreak. As no serious outbreaks occurred before the initial 1946 epidemic, nor after the disease was definitely eradicated in 1951, it is most likely that foot-and-mouth was not endemic but it was caused by the Brazilian cattle.

The first report of an unidentified disease reached Mexico City in November 1946. Dr. Felipe Manquivar, the regional veterinarian for Veracruz appointed by the Ministry of Agriculture, reported a case of infectious stomatitis he noticed in his zone. Dr. José Figueroa, Director of the National Institute of Pecuarian Investigations and Dr. Fernando Camargo, chief of the laboratories at the same institution, went to Veracruz to verify the diagnosis. Upon their

²⁶⁸ House Committee on Agriculture, *Eradication of Foot-and-mouth Disease: Hearings before a Subcommittee of the Committee on Agriculture*, 80th. Cong., 1st. sess., December 3, 4 and 5 1947.

²⁶⁹ Manuel A. Machado, *An Industry in Crisis: Mexican-United States Cooperation in the Control of Foot-and-Mouth Disease*, University of California Publications in History (Berkeley,: University of California Press, 1968).

return they reported not only that the mysterious disease was *aftosa* fever, foot-and-mouth disease, but that it had spread to other states in central Mexico: Tlaxcala, Puebla, and Mexico.²⁷⁰

The Mexican government rapidly organized a campaign designed to control the disease. This effort, first known as the Alemán-Ortiz Garza (the latter was the Secretary of Agriculture who replaced Marte R. Gómez) plan, consisted on inspection, slaughter of infected and exposed livestock, deep burial, disinfection, and quarantine. A National Commission, consisting of agricultural bureaucrats and veterinarians, was quickly organized to fight the disease. The Mexican Army came to the aid of the Commission. The Army not only maintained quarantine stations in various sectors, but soldiers were authorized to arrest anyone who interfered with the work of the Commission. All of these measures were included in a decree issued by the newly elected president of Mexico, Miguel Alemán, on December 25, 1946. The measures were considered temporary until the outbreak was controlled. However, when the Mexican congress met again in 1947, the Federal Agricultural Sanitary Law was modified, including the new policies created for the use of the Alemán-Ortiz plan.²⁷¹ The new law gave the Executive, acting through the Secretary of Agriculture, the authority to promote the measures it deemed necessary to control the outbreak of any kind of plague, including slaughter, quarantine and restriction of movement of animal and agricultural products. After the Revolution, numerous agrarian leagues and organizations participated actively in Mexican politics and the national party, which had changed names from PNR to PRI. Cattle ranchers were no exception; most of them were incorporated into various forms of assemblies either local or national. The Cattle Ranchers Union for Veracruz, which included not only the owners of medium and large ranches but also peasants

²⁷⁰ Alfredo Aguirre Sánchez, "Contribución a las Medidas que deben tomarse para prevenir un brote de Fiebre Aftosa en México," (México D.F.: Universidad Nacional Autónoma de México, 1969), 7-9.

²⁷¹ *Ibid.*, 9.

who owned a few cows, quickly agreed with the government measures, but demanded retribution for lost cattle and participation in the decisions concerning the measures to control the spread.²⁷²

Not only affected owners had to be informed of the measures. Due to a 1928 sanitary cooperation treaty, Mexico had to notify the United States immediately about the outbreak. The Department of Agriculture sent technicians in November to confirm the Mexican veterinarians' diagnosis. When the U.S. technicians informed their government that the virus was indeed foot-and-mouth disease, negotiations were set in motion for the creation of a joint commission to fight the spread of the disease.²⁷³

American officials had the incentive to collaborate with Mexico because it was the only way to control the spread of a disease that could cause severe losses to the cattle industry not only in Mexico but also in the U.S. southwest. Although the negotiations concerning the creation of a control commission went relatively smoothly at the elite level, the daily interactions of the inspectors and veterinarians with the rural population were much more problematic. Popular resistance forced the Mexican government to introduce vaccination as a control strategy instead of relying exclusively on the slaughter of cattle. The vaccination strategy went against the desires of American officials, who thought that the procedure would be too costly and would not help accomplish the final goal: the eradication of foot-and-mouth disease from North America. The United States government had relied exclusively on slaughter and quarantine during previous outbreaks of the disease in the first two decades of the 20th century. The members of the Department of Agriculture and U.S. cattle ranchers thought that what worked for their country had to work for Mexico.

²⁷² Unión Ganadera Regional de la Zona Central del Estado de Veracruz to Miguel Alemán, 30 December 1946, AGN, MAV, exp. 29, vol 425.5/2.29.

²⁷³ Machado, *An Industry in Crisis: Mexican-United States Cooperation in the Control of Foot-and-Mouth Disease*, 28.

Foot-and-mouth was an unknown animal disease in Mexico and local doctors and peasants confused it with other diseases, such as infectious stomatitis, known by the population as Grass Malady or Mouth Malady. Local veterinarians and cattle owners wrote to the president urging him to use treatment instead of slaughter, since the disease, believed to be other than foot-and-mouth disease, could be cured using different methods.²⁷⁴ Another source of confusion was that the ranchers and peasants felt that the slaughter of apparently healthy cattle was unnecessary. The Commission not only sacrificed animals that had foot-and-mouth symptoms, like lesions in the animals' mouth and feet and /or extensive salivation, but also those suspected to have been in contact with the virus. The reason was that the virus could be present without the animals necessarily showing any symptoms. Dr. Oscar Flores reported that, for example, in the Municipality of Degollado in the state of Jalisco, known across the country for its cattle production, 42 percent of the cows were sick but showed no symptoms. The Commission had to go to great lengths to explain the situation to the owners, who still did not accept the sacrifice but finally complied.²⁷⁵ In Querétaro, the organizations that represented the commercial and industrial elite complained to the government about the situation of resentment and instability created by the sacrifice of seemingly healthy cattle. For them, indiscriminate sacrifice caused misery because people fled the region, affecting commerce and industrial production.²⁷⁶

²⁷⁴ Roberto Diez y Diez to Miguel Alemán, 31 December, 1946, AGN, MAV, exp. 291, vol. 425.5/2; José L. Acosta to Miguel Alemán, 31 December 1946, AGN, MAV, exp. 292, vol. 425.5/2-29; Salvador Silva Chacón Srio. Ayuntamiento de Minatitlán to Miguel Alemán, 27 June 1947, AGN, MAV, exp. 292, vol. 425.5/2-29. Julio Barbosa to Miguel Alemán, 16 August 1947 AGN, MAV exp. 293, vol. 425.5/2-44.

²⁷⁵ Oscar Flores to Roberto Amorós G., 16 August 1947, AGN, MAV, exp. 298, vol. 425.5/2-13.

²⁷⁶ Cámara Nacional de Comercio de Querétaro, Centro Patronal de Querétaro, Cámara Nacional de Comercio en Pequeño de Querétaro, Cámara Nacional de la Industria de Transformación, Asociación Agrícola Local del Centro, Federación de Trabajadores del Estado de Querétaro to Miguel Alemán, 25 April 1947, AGN, MAV, exp. 291, vol. 425.5/2-21.

Cattle owners in the countryside were not the only people affected by the foot-and-mouth crisis. The epidemic also significantly reduced milk and meat production and supply to the cities. The government predicted there would be a shortage of milk in Mexico City and the other surrounding urban centers in central Mexico.²⁷⁷ Several months after the foot-and-mouth disease outbreak, President Miguel Alemán's government made arrangements to promote the use of milk produced by Lechería Nacional with powdered milk imported from the United States; nonetheless, officials were aware that Mexican consumers preferred fresh milk. The executive also promoted the purchase of foreign milking cows to meet the demand of the urban population.²⁷⁸ Regional milk producers tried to cooperate with the government but most felt sabotaged by the increased support the government gave to imported dairy products. The producers demanded raises in taxation for imported products and the suspension of ads for these products in the media,²⁷⁹ although nobody acknowledged that the plan to create Lechería Nacional preceded the foot-and-mouth outbreak. Echoes of these demands were repeated in rural towns of states like Guerrero, where a Municipal president stated that rumors were spreading that the disease "was a conspiracy by the *gringos* to sell powdered milk."²⁸⁰ Multiple cartoons started appearing in Mexico City's dailies about how powdered milk imports affected local producers

²⁷⁷ "La producción de leche aumentará," *El Universal*, 29 December 1946.

²⁷⁸ Memorandum sobre las actividades que está desarrollando la Comisión México-Americana para la Erradicación de la Fiebre Aftosa y lo que en concepto del gobierno debe hacerse para que la campana sea más efectiva y en consecuencia más rápida la erradicación y menores los prejuicios para México, AGN, MAV exp.298, vol. 425.5/2-38.

²⁷⁹ Unión de Pequeños productores de Leche Pro Granjas to Miguel Alemán, 8 January 1947, AGN, MAV, exp. 290, vol. 425.5/2-8; Productores de Leche de Chalco to Miguel Alemán, 17 August 1947, AGN, MAV, exp. 291, vol. 425.5/2-14.

²⁸⁰ José I. Girón González to Miguel Alemán, December 1947, AGN, MAV, exp. 290, vol. 425.5/2-11; Pablo Fuentes to Miguel Alemán, 12 January 1948, AGN, MAV, exp. 291, vol. 425.5/2-12.

and consumers.²⁸¹ Most notably, the Taller de la Gráfica Popular (Popular Graphics Workshop), made up of radical print workers and artists,²⁸² published and distributed in Mexico City's streets a series of prints that depicted people, drawn as skeletons, suffering the effects of the foot-and-mouth epidemic and raising milk prices. For example, one print by artist Luis Mendez, called *Calaveras Aftosas con Medias de Nylon* (Foot-and-mouth Skeletons with Nylon Stockings—which were considered superfluous imports) depicted a poor woman as a cow skeleton with a shotgun who was angrily driving away another cow skeleton. The second cow skeleton was stuck in a barrel that had a banner which read “Klim Milk” (Klim was one of the brands made with Kraft powdered milk). In the background there was an emaciated bull attacking a small milk shop vendor.²⁸³

According to American officials, infection reached a critical point after September 1947. They estimated that the number of cattle that had been in contact with the sick animals was around five million cows and a similar number of small animals. The American government proposed that all five million livestock should be sacrificed. The Mexican government argued that it was too costly economically and politically to slaughter such a large number of animals. At this point the two governments had a serious disagreement on how to approach the problem. The Mexican proposal was to control the disease within the infected area and use a vaccine,

²⁸¹ *La caricatura en México*, (México D.F.: Grijalbo, 1988), 23.

²⁸² *El Taller de la Gráfica Popular* were a group of working class artists and artisans in Mexico City who followed the footsteps of the most celebrated popular artist in Porfirian Mexico: Jose Guadalupe Posada. El Taller also printed their work and distributed it as free pamphlets in the city. Pedestrians were their most popular audience in Mexico City's center and workers in official unions. See José Luis Pano Garcia, "El Taller de la Gráfica Popular: un paradigma del grabado mexicano del siglo XX," *Antigrama* 17(2002).

²⁸³ El Taller de Gráfica Popular, *Doce años de obra artística colectiva* (México D.F.: La Estampa Mexicana, 1949), 10-15.

while the Americans were pushing for complete eradication.²⁸⁴ The Mexican proposal was finally accepted by the U.S. officials, who sent it to the American Congress to be reviewed. The U.S. officials also drafted a proposal to begin research of foot-mouth-disease in the United States.²⁸⁵ However, both proposals were not secure since the American Congress (and the Committees that were to decide the budget for the campaign in 1948) continued to question both the effectiveness of the campaign and the capabilities of Mexican officials. Cattle ranchers from the South Western United States opposed any attempt at eradication of foot-and-mouth disease through the use of a vaccine because for them “the slaughter-and-burial” was “the only proven method of successful eradication.”²⁸⁶ They also opposed experimentation with foot-and-mouth in the United States because “the fact that such experimentation would have to be done with the active live virus would constitute a serious danger to our industry from a possible outbreak of the disease induced by such virus escaping from the control of the researchers.”²⁸⁷ For the cattle ranchers in the United States, it would have been very expensive to risk having a foot-and-mouth outbreak. The disease had been used as an excuse to protect their market against meat and livestock imports from Argentina and Brazil, countries that had endemic foot-and-mouth since the early 1900s.²⁸⁸ A foot-and-mouth epidemic could also endanger the U.S. producers’ commercial relations with other markets, particularly in Europe.²⁸⁹ Thus, the representatives of

²⁸⁴House Committee on Agriculture, *The Eradication of Foot-and-Mouth Disease:Hearings before a Subcommittee of the Committee on Agriculture*, 80th Cong., 1st. sess., April 12-13 1948. 166.

²⁸⁵ Senate Committee on Agriculture and Forestry, *Research on Foot-and-Mouth Disease:Hearings before the Committee on Agriculture and Forestry*, 80th Cong., 2nd sess., February 5 1948.

²⁸⁶ House Committee on Agriculture, *Threat of Foot-and-Mouth disease: Hearings before a Subcommittee of the Committee of Agriculture*, 80th Cong., 1st. sess., 12-13 April 1948, 34.

²⁸⁷ *Ibid.*, 34.

²⁸⁸ Manuel A. Machado, *Aftosa: A Historical Survey of Foot-and-mouth Disease and Inter-American Relations* (Albany: State University of New York Press, 1969), 114.

²⁸⁹ *Ibid.*, 115.

the industry preferred, instead of a vaccination, an education program to explain to the Mexican population, especially to “the Indians who did not speak Spanish,” the virtues of the slaughter-and-burial methods.²⁹⁰

Even without the support from American cattle ranchers or the American Congress, the Mexican government and veterinarians built a special laboratory to create and test a vaccine in Palo Alto, in the State of Mexico. Beginning in January 1948, after scientists produced the first vaccine using a Mexican foot-and-mouth disease virus, the Mexican government requested the laboratory to manufacture 53,524,000 vaccine doses. From 1948 to 1950, 15 million heads of livestock received 60,000,000 vaccine injections. Each animal was vaccinated a minimum of three times and most of them received four doses at intervals of three or four months.²⁹¹

Vaccination continued until August 1951, when the disease was finally controlled in the eyes of the government.²⁹² By that time the government of the United States had spent 120 million dollars, including retributions for sacrifice and salaries of supplies and personnel.²⁹³ Considering the budgets for the previous outbreaks of foot-and-mouth in the United States and the proportions of the epidemic, the expenses do not seem so large. Carl H. Wilken, an economic analyst working for the department of agriculture, argued that the losses of an outbreak of foot-and-mouth in Texas similar to the one in Mexico would cost the American government around

²⁹⁰ House Committee on Agriculture, *Eradication of Foot-and-mouth Disease:Hearings before a Subcommittee of the Committee on Agriculture.*, 80th Cong.,1st. sess. 3, 4 and 5 December 1948, 39, 43,78.*The Erradication of Foot-and-Mouth Disease:Hearings before a Subcommittee of the Committee on Agriculture.*

²⁹¹“Entrevista con la Dra. Aurora Velázquez Echegaray,” *Imagen Veterinaria*, 1, no. 4, 2001. Dr. Velázquez was one of the two women veterinarians involved in the production of the Mexican vaccine.

²⁹² César Chávez Villareal, “El combate de la CPA contra la fiebre aftosa en México,” *Imagen Veterinaria* 1, no.4 (2001).

²⁹³ Machado, *An Industry in Crisis: Mexican-United States Cooperation in the Control of Foot-and-Mouth Disease*, 47.

700 million dollars.²⁹⁴ The United States officials were more than willing to spend large sums to protect the cattle industry in the South West.

Mexican authorities declared that the disease was controlled after the slaughter of one million cows and another million combined goats, sheep and pigs. The number of heads of cattle reported by the Agrarian Census before the epidemic was fourteen million, of which 50 percent was concentrated in the northern states. Since all of the slaughter took place in states where cattle ownership was lower and less concentrated, it was very expensive for a great proportion of rural households in central Mexico. After the 1949 epidemic, the only reported cases were in 1953, when the appearance of the disease alarmed local authorities for three days. The outbreak was controlled using quarantine and selective slaughter.²⁹⁵

The result of the outbreak was disastrous for milk producers. According to a memorandum commissioned by President Miguel Alemán with the purpose of assessing the state of the milk market during and after the epidemic, Mexico imported four million kilos of whole powdered milk in 1946, six million during 1947 and three million during 1948. This figure did not include the skim milk that *Lechería Nacional* bought from U.S. producers. The memorandum stated that the milk producers were urging the government to limit all the powdered milk imports because it was ruinous to their business. However, the memorandum also defended the dry skim milk imports because at that moment this type of milk could not be produced in Mexico. Powdered skim milk was used by a variety of industries, like bakeries, and could not be replaced

²⁹⁴ House Committee on Agriculture, *Eradication of Foot-and-Mouth disease: Hearings before a Subcommittee of the Committee of Agriculture*, 80th Cong., 1st. sess., 10, 11-12 February 1948, 79.

²⁹⁵ “El Gobierno declaró totalmente eliminado el brote de Aftosa,” *Excelsior*, 27 May 1953 Alejandro Ortiz Reza, “Fue controlado el nuevo brote Aftoso,” *Excelsior*, 23 May 1953. “Se aplicara desde hoy el Rifle Sanitario en Gutiérrez Zamora,” *Excelsior*, 26 May 1953.

with fresh milk because there was not enough of it.²⁹⁶ The statistical reports of the Ministry of Agriculture revealed that the imports of powdered skim milk, condensed, and evaporated milk during 1945-1947 were 16,726,503 kilos.²⁹⁷ The Ministry of Agriculture did not provide disaggregated numbers, so it is hard to know what percentage of those figures corresponded to whole and skim powder milk. In other words, there is no available information about how much skim milk the government imported through Lechería Nacional during the foot-and-mouth epidemic. Producers in Mexico City and the surrounding areas were dissatisfied about the state of the market in the 1950s particularly with regard to government intervention.²⁹⁸ In order to be able to negotiate with the government concerning skim milk imports, which were processed into re-hydrated milk that competed with their production, cattle owners from Mexico City and the State of Mexico decided to auto-regulate and promote pasteurization. They founded the Association of Pure Milk Producers. This association included the owners of larger private ranches, who owned from fifty to three hundred cows, and private pasteurization plants. The members of the organization claimed that a great percentage of small milk producers had disappeared with the epidemic.²⁹⁹ The epidemic not only consolidated the growing intervention of the government in the milk market, but made the business viable only to those producers that had a larger capital at their disposal to invest.

Conclusions

²⁹⁶ “Memorandum relacionado con la importación de México de leche entera en polvo,” 19 October 1949 AGN, MAV, exp. 569, vol. 545.

²⁹⁷ Ochoa, *Feeding Mexico: the Political Uses of Food Since 1910*, 117.

²⁹⁸ “Subirá el precio de la Leche,” *Excelsior*, 2 February 1949.

²⁹⁹ Asociación Nacional de Productores de Leche Pura A.C. to Miguel Alemán, 30 January 1952, AGN, MAV, exp. 1009, vol. 368-9868

The struggle between government authorities and all the actors involved in the production, processing, and sales of milk from the 1900s to the 1950s illustrates the difficulties of making private economic interests compatible with the introduction of new technology and sanitary practices. As I explained in chapter one, since the mid-1930s, the Mexican government started subsidizing and controlling the price of food as a way to regulate class relations. Unlike previous periods in the history of Mexico, consumption became an important variable to take into consideration in economic planning. Due to the nature of the economy in the immediate post-revolutionary era, from the 1930s to the early 1950s, government officials decided to focus on measuring the consumption of the most basic commodity: food. Fixing their attention on items necessary for survival, state officials found a useful tool to intervene in class relations in general, in the linkages between employers and employees. Economic analysis not only by the government but by the employer groups themselves identified early the existence of an unbalance between the supply and demand of labor, which in their eyes would necessarily depress salaries. As wages were going to remain low, the government decided to defend the purchasing power of these wages intervening on price regulation and food supply (sales and distribution). Amongst the different food commodities whose prices were controlled by the government, milk occupied a special place. Sanitary authorities wanted to make milk safe for human consumption and prevent the spread of disease. In addition to sanitation, other health concerns were fundamental in the government's milk regulation policies. As I explain in chapter two, doctors and nutritional experts began researching urban and rural diets in Central Mexico. Their most important finding was the existence of deficiency diseases and malnutrition, especially among children. It was due to these discoveries in the early 1940s that government policies regarding milk became central in the national agenda.

Nonetheless, the failure of government officials to secure a safe supply of milk and control the actions of the different sectors involved in the milk market undermined their prestige and authority. The complex nature of the milk market in central Mexico, particularly in urban areas, pushed the government to look for an alternative solution to negotiating with producers, wholesalers, pasteurization plants, and workers involved in the sale and distribution of milk. The alternative became available when the international market was flooded with affordable powdered milk. The government began importing powdered milk from the United States, processing it and selling it in the urban markets, particularly in Mexico City. The epidemic of foot-and-mouth disease accelerated the changes in the milk market that started with the decision to create the company *Lechería Nacional*. After the foot-and-mouth crisis, the remaining milk producers in Mexico City and neighboring states (Puebla, Tlaxcala, Hidalgo) created a civil organization to defend their interests called the Asociación Nacional de Productores de Leche Pura (ALPURA, National Association of Pure Milk Producers). The aim of the organization was to cooperate with sanitary authorities as a block, and to negotiate the price of fresh milk with the government. The producers used this platform to organize the first Mexican owned dairy company that could compete with foreign producers at a national level. However, the foot-and-mouth epidemic, the introduction of powdered milk imports and the subsequent growth of transnational companies, such as Kraft, drove the few remaining smaller producers in Mexico City to the margins of the market. These producers still owned some stables inside the city, but due to their size and lack of capital, their negotiating power and ability to affect the market was almost non-existent.

Regulating the milk market was the first instance in which the Mexican government devised a policy to protect consumers not only by securing the safety of a product but by making

an effort to provide an affordable supply. The government deemed milk as an essential food to which all of the Mexican population had to have access to. The example of the milk market also illustrates how the authorities studied the structure of production, distribution and sales of a commodity in order to be able to set prices and guarantee supply.

Regulating food consumption was a challenge for different levels of government in Mexico. This regulation was set up as an alternative that would permit the stabilization of factors of production, especially wages. But securing a market of cheap and, in the case of milk, safe agricultural commodities was a challenging task for the government. Milk was deemed as an essential food, particularly due to the empirical studies of nutritional experts who signaled that Mexicans in general, and children in particular, were not consuming enough animal proteins. Changing the food consumption patterns and nutritional status of the population was a task that required attention not only to studying demand but working on supply. The capacity of the state to influence food consumption patterns was strengthened since the 1930s due to increasing intervention in the food market not only as regulator and producer. Nonetheless, the results of the intervention did not only depend on the intentions of the policies, as this chapter has shown, but on the everyday interactions with the actors involved in the market.

Part II: Introduction: Change and Development in Mexico (1955-1982)

Politics and economics in Mexico (1955-1982)

During the 1955-1982 period, Mexican politics were dominated by the Partido Revolucionario Institucional (PRI). The country had a stable presidential system in which the executive power changed hands every six years. Elections were held but it was a closed system in which the same party always won the highest percentage of votes. The organizations linked to the PRI (Confederación de Trabajadores Mexicanos, Confederación Nacional de Campesinos,

Congreso Nacional de Organizaciones Populares) had particular political functions like distributing patronage, organizing political rallies, and procuring votes for PRI candidates.³⁰⁰

A development central to the formulation of policy at the federal level was the increasing importance of technical and bureaucratic management knowledge for public office. For many scholars, the party and the government apparatus became two different structures (again at the federal level), and mobility between these two spheres became less common. Personal networks and loyalty to a political faction (called *camarillas*) were more important than party allegiances for government jobs (not dependent on elections). The people employed in some ministries, like agriculture, health, and development banks, tended to have more technical backgrounds and few links with party decisions. In contrast to previous years, PRI candidates who were elected presidents of Mexico in 1970, 1976 and 1982 (as well as in 1988 and 1994) had never before run for elective office.³⁰¹

The federal government implemented a set of policies intended to foment economic growth while controlling inflation, which led to the period of *desarrollo estabilizador* (stabilizing development). In terms of macroeconomic performance, the policy was successful from 1955 to 1970, but policymakers ignored or underestimated factors that later undermined this macroeconomic growth. First, price regulation policies decreased investment in the agricultural sector in relation to other economic activities. As I explained in the previous section, the government regulated the grain market but, starting in 1963, prices for basic foods were frozen for a decade. This was a great disincentive to increase food production. Growth in this sector fell below the rate of demographic growth since 1965. Another factor that explains this

³⁰⁰ M.A. Centeno and S. Maxfield, "The Marriage of Finance and Order: Changes in the Mexican Political Elite," *Journal of Latin American Studies* 24, no. 1 (1992): 61.

³⁰¹ R.A. Camp, "The Political Technocrat in Mexico and the Survival of the Political System," *Latin American Research Review* 20, no. 1 (1985): 97-99.

decline was the widening gap between the modernized agricultural sector, which benefited from the use of technological improvements (hybrid seeds, fertilizers and pesticides), and the subsistence sector. Also, by 1972 the prices established in 1963 were no longer sufficient to cover production costs in the areas dependent on rainfall.³⁰²

Two other factors that undermined macroeconomic growth in the long run were price controls of hydrocarbons and lack of development in local productive technology. Price controls affected the nationalized oil industry, *Petróleos Mexicanos* (PEMEX), because lack of resources decreased investment and production for exploration and technology. In 1966, Mexico ceased to export crude oil, and by 1971 it was importing it. The country was also dependent on foreign production of gasoline and diesel, and consumption of these products expanded steadily in the 1960s.³⁰³ In the case of industrial development, trade protection was an instrument to promote import substitution, but there was no explicit policy from the public or private sector to improve the country's exports. Mexico became dependent on high-technology capital goods, which negatively affected the trade balance.³⁰⁴

Even as the Mexican economy grew during 1955 and 1970, the wealth was not evenly distributed among social sectors. Table 4 shows how the top 20 percent of Mexicans controlled between 59.8 percent of wealth in 1950 and 64 percent in 1969. As conditions of inequality worsened, the president elected in 1970, Luis Echeverría Álvarez, adopted a political platform called shared development, that had the objective of reversing this income distribution trends. In

³⁰² See Cynthia Hewitt de Alcántara, *Modernizing Mexican Agriculture: Socioeconomic Implications of Technological Change, 1940-1970*, UNRISD studies on the "green revolution" (Geneva: United Nations Research Institute for Social Development, 1976).

³⁰³ Isidro Morales, "Pemex during the 1960s and the Crisis in Self-Sufficiency" in *The Mexican Petroleum Industry in the Twentieth Century*, ed. J.C. Brown and A. Knight (University of Texas Press, 1992), 240-41.

³⁰⁴ D.D. James, "Capital Goods Production and Technological Learning: The Case of Mexico," *Journal of Economic Issues* (1991): 291.

practical terms, the policy, implemented through increased government spending, failed to reach the desired goals, as income distribution remained practically unchanged through 1975. The political logic behind these economic policies was that the legitimacy of the Mexican regime was faltering. The Echeverría administration increased intervention in order to “distribute in exchange for political support, or at least quiescence.”³⁰⁵

In part, the policy of shared development failed due to changes in the international economy and the particular vulnerabilities of Mexico in relation to these changes. Oil price shocks of the early 1970s had a great impact on overall production costs since Mexico was at that time a net importer of oil. Also, the contraction of external demand following the oil shocks affected Mexico’s balance of payments. The country also had a growing foreign debt due to increased public investment paired with a fixed exchange rate.³⁰⁶ The government depended on foreign loans because the Echeverría administration was unable to enact a substantial tax reform to support government expenses. The government’s fiscal deficit increased through the 1970s, as well as inflation (see table 5). Public spending drove economic expansion almost single-handedly during this period. Due to the increasing imbalance in the trade deficit, economic officials increased import controls and tariffs but, due to the lack of improvement, in 1976 the government abandoned the exchange rate parity that had been in place for more than twenty years, which resulted in a financial crisis.

After the 1976 crisis, economic prospects improved with the discovery of vast oil resources. The Mexican government re-structured its debt again. The trade deficit decreased as

³⁰⁵ Centeno and Maxfield, "The Marriage of Finance and Order: Changes in the Mexican Political Elite," 80.

³⁰⁶ J.C. Moreno-Brid and J. Ros, " Mexico’s Market Reforms in Historical Perspective," in *Ideas, Policies and Economic Development in the Americas*, ed. E. Pérez-Caldentey and M. Vernengo (New York: Routledge Studies in Development Economics, 2007), 139-41.

Mexico received resources from oil sales. The government used the increased income in several social programs, like increasing medical services, and in an ambitious food policy, the Sistema Alimentario Mexicano (SAM, Mexican Food System), which started in 1980 and lasted until 1982. The purpose of the SAM was to reverse the trends of agricultural decline and produce more basic foodstuffs to attain self-sufficiency. The program subsidized production costs, increased prices and expanded the marketing outlets for basic grains. The policy was intended again to maintain cheap prices of food, and consumers continued to receive growing subsidies. The program came to an abrupt end due to the financial crisis that started in 1981.³⁰⁷

The economic growth strategy of the late 1970s was based on two assumptions, which seemed reasonable at the time but proved to be erroneous. First, that oil prices would continue to rise and thus government income and stable trade balances were secure. Second, that foreign debt would not be a problem given the low interest rates that had prevailed during the previous decade. In 1981, oil prices started to fall and foreign interest rates increased. Government officials calculated that these changes would be transitory, and borrowed more money to cover losses. The increase of foreign indebtedness was almost 10 percent of the GDP (see table 6). In 1982, oil prices fell dramatically and Mexico was a highly indebted country subject to new levels of interest rates.³⁰⁸

The government used an orthodox stabilization strategy with the goal of reducing inflation and stabilizing the balance of payments, and which included drastically reducing the public deficit. The attempts to control inflation failed, and an additional oil price shock in 1986

³⁰⁷ K. Appendini and D. Liverman, "Agricultural Policy, Climate Change and Food Security in Mexico," *Food Policy* 19, no. 2 (1994).

³⁰⁸ Francisco Gil Díaz, "Mexico's Path from Stability to Inflation," in *World Economic Growth*, ed. A. Harberger (San Francisco: Institute for Contemporary Studies, 1984), 351-52. See also Moreno-Brid and Ros, "Mexico's Market Reforms in Historical Perspective."

further undermined official efforts. In 1987, the government, in collaboration with official unions and the private sector, implemented the Economic Solidarity Pact, which combined wage and price controls, with fixed exchange rates and conservative fiscal policies. After the pact, economic officials accelerated market reform measures, especially trade liberalization and privatization of public enterprises.³⁰⁹ From 1982 to 1988, policies to support agricultural production practically disappeared and the priority became to guarantee low prices since income had contracted. During this period, food self-sufficiency and agricultural productivity ceased to be public policy goals.³¹⁰

Problems of measurement: the impact of economic development in wellbeing in Mexico

The Mexican economy was transformed during the stabilizing development years, and macroeconomic growth continued, although less uniformly until the early 1980s. Determining how these economic changes affected the wellbeing of populations is a question social scientists and historians have tried to answer using different data. Data relating to income and wages is sometimes limited or unavailable, so anthropometric indicators such as physical stature have helped historians evaluate the effects of economic and social changes on human wellbeing, including improved nutrition.³¹¹ In Mexico, anthropometric studies indicate population height increases accompanied with persisting inequality for the period of the late 1960s to the 1990s.

National surveys that record information about height, weight and nutritional intake at different ages for successive cohorts is the most reliable method to record changes in the nutritional status of a population. When these surveys are not available, comparisons of adult

³⁰⁹ Moreno-Brid and Ros, "Mexico's Market Reforms in Historical Perspective," 142-43.

³¹⁰ Appendini and Liverman, "Agricultural Policy, Climate Change and Food Security in Mexico," 156.

³¹¹ John Komlos and Jörg Baten, "Looking Backward and Looking Forward: Anthropometric Research and the Development of Social Science History," *Social Science History* 28, no. 2 (2004): 192.

height (data derived from sources like military draft records) and incidence of child stunting (low-height for age) across generations are used as proxies to assess changes in nutritional status. Historians who analyze height data do not use definitions of living standards based on monetary aggregates but instead focus on “the biological standard of living,” which is defined as “how well the human organism thrives in its socio-economic and epidemiological environment during childhood and adolescence.”³¹² Economic historians John Komlos and Jörg Baten summarize their ideas stating that “health...and longevity both contribute to welfare, independent of income.”³¹³ Anthropometric history has found that, in general, higher income people tend to be taller than lower income people. Difference of height between birth cohorts indicate better living conditions during the time the taller cohorts were born. In other words, for anthropometric historians, “height generally increases in good times and contracts in adversity.”³¹⁴ For example, the main finding of anthropometric history in Britain and the United States is that during the early stages of industrialization the biological standard of living declined.

Historians of Latin America have used data about stature to determine the biological standard of living during different periods.³¹⁵ For the case of Mexico, Moramay López Alonso has used anthropometric data to stress social inequality during the Porfirian era and the early decades of the twentieth century. She studied records of the federal military and the rurales armed forces (which reported directly to the president).³¹⁶ López Alonso estimated that heights increased for the 1840-1850 birth cohort, which is consistent with the increase in agricultural

³¹² *Ibid.*: 193.

³¹³ *Ibid.*

³¹⁴ J. Komlos and M. Baur, "From the Tallest to (one of) the Fattest: the Enigmatic Fate of the American Population in the 20th Century," *Economics & Human Biology* 2, no. 1 (2004): 58.

³¹⁵ R.D. Salvatore, "Stature Decline and Recovery in a Food-rich Export Economy: Argentina 1900-1934," *Explorations in Economic History* 41, no. 3 (2004): 233.

³¹⁶ Moramay López-Alonso, "Paradoxes of Growth: The Standards of Living of the Mexican Working Class, 1850-1950," in *Living Standards in Latin American History: Height, Welfare, and Development, 1750-2000*, ed. Ricardo D. Salvatore, John H. Coatsworth, and Amílcar E. Challú (Cambridge: David Rockefeller Center for Latin American Studies at Harvard University, 2010), 75.

production during those decades. Heights declined for the birth cohort of 1860-1870, which according to López-Alonso coincided with the privatization of public lands, something that might have a detrimental effect for rural diets. Heights improved slightly for the cohorts of 1880-1900, but did not return to the levels of the 1840-1850 cohort.³¹⁷ Another decline in heights for the 1910 cohort might be associated with lower agricultural production during the armed phase of the Mexican Revolution. Finally, the biological standard of living (always measured by average heights) stagnated until the late 1930s.³¹⁸ Economic historian Max Henderson calculated estimations of adult heights for the second half of the twentieth century, using the 2000 National Health Survey (which, in contrast to military records, included women). He found that the height of adults in Mexico increased since the 1950s. His data shows that population height increases began to take place during the mid to late 1960s and continued in subsequent decades. Henderson found that people in northern Mexico tended to be taller than in southern Mexico, in accordance with the findings of López-Alonso. Henderson also concluded that “when comparing height across social groups... individuals born during the first quarter of the century were significantly shorter than those born in second half of the century, independently of their educational attainment.”³¹⁹ As educational attainment is strongly correlated to socio-economic position, this means that the general population of Mexico became taller since the 1960s. Henderson compared height increases, mortality and life expectancy since the early twentieth century, and concluded that “Mexico is increasingly more equal in regional terms and living conditions are tending toward convergence.”³²⁰

³¹⁷ Ibid., 85-86.

³¹⁸ Ibid., 88-91.

³¹⁹ Max R. Henderson, "Essays on the Evolution of Health Capital" (Ph.D. diss., University of Chicago, 2005), 35.

³²⁰ Ibid., 46.

Studies with other populations (lower class rural children) from the 1950s to the early 1970s on different regions of Mexico indicate modest changes in stature and prevalence of stunting. Unlike the studies for adult height, most recent studies about children are studies about growth, in other words they take into consideration relationships between body size (height and weight) and age and compare it with a reference population.³²¹ Joaquín Cravioto recorded that heights of children in a rural population in Morelos did not change between 1957 and 1965.³²² In the case of urban children, Doctor Rafael Ramos Galván constructed anthropometric tables for pediatric use based on measurements of middle class children in Mexico City in the early 1970s. Ramos Galván showed that children of lower socio-economic classes in Mexico City were shorter than middle class children. He also found that middle class children's heights approximated U.S. height reference medians.³²³ Recent studies compare Ramos Galván's data with cohorts of urban and rural children born in the late 1980s and early 1990s. These studies show that samples of urban lower class school children are generally similar in height but are consistently heavier than the middle class children studied by Ramos Galván.³²⁴ Other recent studies compare samples of urban and rural indigenous children born in the early 1970s with children born at the end of the 1980s, and also show height and weight increases for the later cohorts. For example, a group of researchers found that children's height in Yucatán did not increase significantly between 1938 and 1987, but did between 1987 and 1998. Nonetheless, according to this study, Yucatán children still have low height-for-age and have a high

³²¹ For reference values and studies about stunting see Mercedes De Onis, "Child Growth and Development," in *Nutrition and Health in Developing Countries*, ed. Richard D. Semba and Martin W. Bloem (Springer, 2008).

³²² R.M. Malina, M.E. Peña Reyes, and B.B. Little, "Socioeconomic Aariation in the Growth Status of Urban School Children 6–13 years in Oaxaca, Mexico, in 1972 and 2000," *American Journal of Human Biology* 21, no. 6 (2009).

³²³ M.E.P. Reyes et al., "Growth Status of Children 6-12 Years from Two Different Geographic Regions of Mexico," *Annals of Human Biology* 29, no. 1 (2002): 11; Rafael Ramos Galván, "Patrones de referencia para peso y talla en niños mexicanos," *Cuadernos de Nutrición* 1(1976): 118.

³²⁴ Reyes et al., "Growth Status of Children 6-12 Years from Two Different Geographic Regions of Mexico," 22.

prevalence of childhood obesity.³²⁵ In conclusion, most studies coincide that height and weight increased among rural children since the late 1980s, but not in earlier periods.

Contemporary surveys confirm regional and socio-economic differences in terms of child growth and nutrition. Health authorities, especially the National Institute of Nutrition and the National Institute of Public Health, compiled information about malnutrition and stunting (low height-for-age) in rural areas during the 1970s. The three national nutritional surveys were conducted in 1972, 1979 and 1989 (all three used different methodologies see Table 10 in Annex). With respect to the 1979 survey, doctors concluded that there was almost no improvement in the nutritional status of preschool children in this decade (about half of the surveyed children were classified as underweight).³²⁶ However, public health experts now use different standards to classify stunting, so according to these new measurements the number of underweight children for the 1970s surveys would be lower. Nutritional experts in Mexico have focused on comparing child stunting data of the 1989 Mexican Nutrition Survey (MNS-1) with data of MNS-2 conducted in 1999.³²⁷ The national prevalence of child stunting (generally caused by undernutrition in childhood) decreased by 23 percent between these two surveys. Nonetheless, substantial differences remain among region and socio-economic classes.³²⁸

It must be mentioned, however, that historical anthropometric studies have to be treated carefully. The studies available for Mexico and other countries are better at confirming height changes and their correlation with environmental factors than at adjudicating specific causation in terms of which environmental factors lead to that improvement. This is not a problem

³²⁵ Thomas Leatherman, Alan Goodman, and Tobias Stillman, "Changes in Stature, Weight, and Nutritional Status with Tourism-based Economic Development in the Yucatan," *Economics & Human Biology* 8(2010): 156-57.

³²⁶ A. Ávila Curiel et al., "La desnutrición en el medio rural mexicano: análisis de las encuestas nacionales de alimentación," *Salud Pública de México* 35, no. 6 (1993): 662-64.

³²⁷ S. Barquera et al., "Food Consumption, Food Expenditure, Anthropometric Status and Nutrition-related Diseases in Mexico," in *The Double Burden of Malnutrition, FAO Food and Nutrition Paper* (Rome: Food and Agriculture Organization, 2006), 164.

³²⁸ *Ibid.*, 188.

exclusive to historical analysis but a methodological controversy among epidemiologists working with current datasets.³²⁹ Two separate issues are in play in the studies of height as a measure of wellbeing: one is identifying changes in population height and another one is establishing causation between specific environmental factors and those changes. These environmental factors include variables such as living conditions (drainage, sanitation, electricity), regional environment (pollution, water availability and quality), household factors (income of the family, infant feeding practices, family size, status of women), and availability and type of health services (clinics, visiting nurses), nutrition (cost, dietary quality), among others. Isolating the specific factors that caused improvements in anthropometric measures is very difficult and available evidence is not conclusive, particularly with historical data.

According to public health scholar Roberto Rona, “the study designs most frequently used to assess the impact of environment on height provide a low degree of evidence of causation.”³³⁰

That said, population height is still widely considered the best available proxy for the study of long term improvements in well being. To sum up, studies about height and nutrition in Mexico emphasize changes occurred during the twentieth-century and the persistence of inequality in this period. Adult heights stalled during the first half of the twentieth century and recuperated in the mid-1960s. Since height is associated to nutrition, sanitation and access to health services (among other environmental factors), all these elements appear to have improved during the second half of the twentieth century. However, the specific factors that contributed to these improvements cannot be isolated with the data and studies available. In the case of rural schoolchildren, scholars have recorded significant height and weight increases only for the

³²⁹ K. Silventoinen, "Determinants of Variation in Adult Body Height," *Journal of Biosocial Science* 35(2003): 264.

³³⁰ R.J. Rona, "The Impact of the Environment on Height in Europe: Conceptual and Theoretical Considerations," *Annals of Human Biology* 27, no. 2 (2000): 114; Maria Eugenia Peña Reyes et al., "Community Well-being and Growth Status of Indigenous School Children in Rural Oaxaca, Southern Mexico," *Economics & Human Biology* 8, no. 2 (2010): 185.

generations born in the late 1980s. In addition, contemporary studies document the persistence of high inequality in terms of nutrient intake and access to health services, especially among rural and indigenous populations. For the period I studied (1930s-1980s), most research confirms the prevalence of stunting among rural low income infants and children. As it will be seen in the next chapter, this was a concern for doctors and public officials.

Chapter 4: Poverty and Nutritional Sciences in Late Twentieth-Century Mexico

During the 1970s, Elena Poniatowska, a young journalist who gained prominence with her book about the student massacre of 1968, published several interviews with notable Mexicans in the newspaper *Novedades*. Poniatowska was interested in social issues, and that is perhaps why she chose to interview Salvador Zubirán, the head of the National Institute of Nutrition (INN). Poniatowska asked the doctor: “Since when are we dying of hunger? (*¿Desde cuándo estamos muertos de hambre?*)” The doctor thought the question was misleading and he answered: “Why hunger, Elena? Do not say we are hungry, say we are malnourished. In our case there is malnutrition, not hunger.” Zubirán wanted to clarify that Mexico was not in an emergency situation, where people were visibly dying of starvation (famine), as it was the case in regions of Africa during 1974, when this interview took place. Zubirán explained that the Mexican Revolution had ended this type of widespread hunger “but it had not eradicated malnutrition.”³³¹ According to the doctor, the Mexican population in general was eating enough. However, the nutritional quality of the food and the child feeding practices were deficient. Although individuals could survive malnutrition, the consequences of the ailment, which were not necessarily visible, jeopardized Mexico’s development prospects. The doctor explained that malnourished children “had less brain cells.” Poniatowska then asked the doctor: “Are these children stupid?” To which he replied: “No, they are not stupid, but they have less capacity to think than well nourished children.”³³²

³³¹ Elena Poniatowska, “Habla el Dr. Salvador Zubirán: se alimentan mal la mayoría de los mexicanos por bajo ingreso,” *Novedades*, 16 June 1974.

³³² *Ibid.*

This conversation illustrates how nutritional experts talked about the negative influence that deficient diets had in Mexico's development perspectives. During three decades of research (1950s-1970s), Mexican doctors and nutritional experts debated theories about the nature and effects of malnutrition amongst the Mexican population. These doctors, mainly affiliated with the Instituto Nacional de Nutrición (INN, National Institute of Nutrition), promoted their findings as an explanation to the continuation of poverty, backwardness and social inequality in Mexico. While these doctors were studying diets in the 1960s and 1970s, intellectuals and social scientists (both in Mexico and abroad) were discussing the "causes, consequences, and cures" of poverty. The interpretive framework of doctors and nutritional experts was influenced by ideas about poverty developed in the social sciences, particularly the notion that poverty in Mexico was deeply rooted in stubborn self-reproducing cultural practices and psychological characteristics.

The doctors' interpretations about the reinforcing links between poverty and malnutrition were contingent on the methodologies they used. When doctors utilized community surveys to analyze food consumption and availability, they tended to highlight two factors that influenced diets: socioeconomic structures (income inequality, social organization) and deficient production and distribution of adequate food. When they used clinical studies, longitudinal observations, and supplementation trials with control groups, individuals and individual behavior were the units of analysis and the focus of their explanations.

Out of these three factors (social structures, food supply and individual behavior), the last two were the focus of policy interventions. While they did not ignore the importance of unequal social structures in their analysis as a direct cause of malnutrition, Mexican doctors and nutritional experts considered that the state could still reduce the incidence of the ailment, even

without addressing larger problems of inequality. The state could intervene in the food supply and induce behavioral changes (better infant feeding practices and food choices) through education. According to the doctors income, did not have to be an insurmountable obstacle, for people could always manage better their limited resources to improve their children's diet. Experts at the INN jealously guarded their status as "advisors" backed by scientific legitimacy instead of becoming direct agents of change. They knew that income was a crucial variable to solve malnutrition problems, but their recommendations to politicians focused on how to solve malnutrition without necessarily altering income structures. They offered solutions to malnutrition within the limits of what other government agencies, like CONASUPO or the Ministry of Health, could afford and implement.

The chapter is organized in five sections. In the first section, I provide a summary about the development of the science of malnutrition at the international level. The second section is about the institutional framework in which nutritional research took place in Mexico. Doctors and nutritional experts worked for public hospitals, like the INN, but also maintained a certain degree of institutional and monetary autonomy from the state to conduct scientific research without political interference. The predominance of the INN in nutritional research permitted the creation of a coherent set of ideas about malnutrition shared by members of the elite medical profession in Mexico. In the third section, I address the specific clinical and epidemiological research, as well as the findings, of doctors and nutritional experts. The three main areas of research were nutritional community surveys, malnutrition and mental development of children and infant feeding practices. It was from these types of studies that doctors drew conclusions about the links between malnutrition and diminished human potential, in particular regarding physical and mental development. Fourth, I analyze how doctors and nutritional experts went

beyond purely medical research, and started formulating theories about influence of diet deficiencies in the development of communities and social life in Mexico. In the fifth section, I address the policies the state implemented based on the advice of the INN. Due to the nature of nutrition policy, there was a certain degree of overlap between consumer agencies analyzed in the next chapter and nutritional policies analyzed in this chapter.

The Science of Malnutrition during the Twentieth Century

Before delving into the case of Mexico, I would like to provide some background about the international development of the science of malnutrition in the twentieth century. Although I touch upon the international dynamics of nutritional science throughout the chapter, I here focus more specifically on the changing conceptualization of protein deficiency as the leading cause of malnutrition. Among the contemporary medical community, malnutrition is defined as “suboptimal nutritional health,” in other words low consumption of calories and nutrients.³³³ It took the international community of nutritional experts almost six decades (1930s-1990s) to agree on a working definition of malnutrition and arrive to a relative consensus among about its causes. Protein deficiency was by and large the dominant hypothesis to explain malnutrition until the late 1970s, when a few researchers hypothesized that low energy consumption was the main cause of malnutrition. This hypothesis did not hold for long, and by the 1980s nutritionists found that malnutrition is caused by “multiple and simultaneous” nutrient deficiencies including protein and energy among others.

Researchers in the twentieth century, most notably Cicely Williams in the mid-1930s, identified the symptoms of malnutrition. Williams, who worked in West Africa, could not

³³³ D.G. Schroeder, "Malnutrition," in *Nutrition and Health in Developing Countries*, ed. Richard D. Semba and Martin W. Bloem (Springer, 2008), 341.

explain the direct causes of the syndrome, for which she used the local name kwashiorkor, but she hypothesized that it was related to protein deficiency.³³⁴ This idea became popular and accepted throughout the world. From the 1930s to the late 1950s, the international medical community led by the World Health Organization (WHO) and other specialized agencies focused on proteins alone as a measure to target the high prevalence of the syndrome. Led by the WHO, nutritionists and doctors specialized in malnutrition set to work on producing new foods to prevent clinical protein deficiency. In 1955, a group of international experts founded the Protein Advisory Group (PAG), which was affiliated with the WHO. The PAG had the purpose of formulating and promoting programs to increase protein consumption and production, and thus reduce what they considered as a “world protein gap.”³³⁵ A prominent member of the PAG was Nevin Scrimshaw, the director of the INCAP (Instituto de Nutrición de Centro América y Panamá), which had a close relationship with Mexican nutritional researchers and medical institutions.

Nonetheless, some experts most notably Donald McLaren, who worked at the American University in Beirut, questioned the idea that protein was the only or the most important cause of malnutrition. During the late 1950 and the 1960s, doctors such as McLaren found evidence that malnourished children could gain weight with low protein diets.³³⁶ Surveys from different parts of the world showed that other forms of malnutrition existed, for example nonspecific stunting caused by low energy consumption. Derrick Jelliffe from the University of East Africa in Uganda coined the term protein-calorie malnutrition (later renamed protein-energy malnutrition) in order to “cover the various syndromes that may result, including kwashiorkor, incomplete

³³⁴ John Ruxin, "The United Nations Protein Advisory Group," in *Food, Science, Policy and Regulation in the Twentieth-Century*, ed. David F. Smith and Jim Phillips, *Routledge Studies in the Social History of Medicine* (London and New York: Routledge, 2000), 152-53.

³³⁵ *Ibid.*

³³⁶ Schroeder, "Malnutrition," 343.

kwashiorkor, nutritional marasmus, and unclassifiable intermediate clinical pictures, as well as such lesser manifestations as growth retardation.”³³⁷ Jelliffe insisted that all of these syndromes were “related to protein lack, but with varying associated intakes of calories in the form of carbohydrates.”³³⁸ The protein-energy hypothesis became the most accepted theory of malnutrition during the 1960s and early 1970s because it provided a better explanation for the multiple symptoms observed in different populations throughout the world.

However, during the 1960s there were still many gaps in the research and malnutrition data gathered in different countries was not always comparable. The Eighth Joint Expert Committee on Nutrition of FAO and WHO (1971) exhorted researchers to seek a universal definition of malnutrition “that would allow meaningful comparison of prevalence rates in different countries.”³³⁹ One of the researchers working on the topic was J.C. Waterlow of the London School of Hygiene and Tropical Medicine. Waterlow explained in 1972 the two leading hypothesis about malnutrition. The classical theory indicated that kwashiorkor resulted “from a deficiency of protein with a relatively adequate energy supply, whereas marasmus” was “caused by an overall deficiency of energy and protein.”³⁴⁰ Waterlow cited Indian doctor C. Gopalan and his colleagues who had demonstrated that there were not quantitative or qualitative differences in the diets of children who subsequently develop kwashiorkor or marasmus. The problem then for the Indian researchers was that children had different capacities to adapt to equally limited diets. Given the data provided by Gopalan, researchers all over the world began to investigate the effects of calories and energy on malnutrition.³⁴¹ Waterlow summarized and reviewed available

³³⁷ D.B. Jelliffe, "The Incidence of Protein-Calorie Malnutrition of Early Childhood," *American Journal of Public Health* 53, no. 6 (1963): 905.

³³⁸ *Ibid.*

³³⁹ J.C. Waterlow, "Classification and Definition of Protein-calorie Malnutrition," *British Medical Journal* 3, no. 5826 (1972): 566.

³⁴⁰ *Ibid.*

³⁴¹ *Ibid.*

research in 1975 and concluded that dietary studies indicated that worldwide protein intake was near the recommended requirements.³⁴² Protein intake as a percentage of the total diet was also almost in accordance with expert recommendations. Waterlow explained that available research indicated that the problem for most poor populations was total energy intake. When the diet was low in calories, the adequacy of protein intake would not matter, as the body metabolized protein as energy, and thus would cause protein deficiencies to appear.³⁴³ Given this findings, some nutritionists began to argue that feeding populations with foods high energy and low in nutrients (like sugar) would prevent the malnourished from burning the protein as energy and improve nutritional status.³⁴⁴ In the mid-1970s, Donald MacLaren denounced the protein gap as a myth, and insisted that the real problem was an overall lack of food and energy. Researchers who disqualified the protein gap hypothesis “argued that if most traditional diets were consumed at levels sufficient to satisfy energy needs, protein needs would also be met.”³⁴⁵ Experts from the Protein Advisory Group disagreed with these programmatic statements, including Nevin Scrimshaw and Joaquín Cravioto a Mexican doctor and the last president of the PAG,³⁴⁶ who had found limited evidence of energy deficiency and still found substantive evidence regarding the prevalence of malnutrition in Central America and Mexico.

The hypothesis that explained malnutrition by highlighting the importance of energy consumption fell out of favor relatively quickly. By the mid-1980s, a substantive body of scientific research proved that stunting and poor growth could not be solved by increasing the consumption of energy of traditional foods such as grains.³⁴⁷ The United States Agency for

³⁴² J.C. Waterlow and P.R. Payne, "The Protein Gap," *Nature* 258(1975): 117.

³⁴³ *Ibid.*

³⁴⁴ Schroeder, "Malnutrition," 343.

³⁴⁵ *Ibid.*

³⁴⁶ Ruxin, "The United Nations Protein Advisory Group," 158-59.

³⁴⁷ Schroeder, "Malnutrition," 343.

International Development (USAID) funded several Nutrition Collaborative Research Support Programs (CRSP), in which U.S. universities worked with scientist from different countries including Egypt, Kenya, and Mexico.³⁴⁸ The goal of the Nutrition CRSP program, which started operating in 1977, was to determine if “chronic mild-to-moderate malnutrition affects the functional outcomes of individuals.”³⁴⁹ Researchers involved did not agree with the idea that shortage of staple foods and energy deficiency was the most common cause of malnutrition, and the recommendation of increased consumption of energy-rich foods to alleviate the problem was incorrect. The CRSP researchers reviewed how energy, protein, zinc, iron, copper, iodine and vitamin A affected linear growth and stunting in children. The results of the nutrient interventions varied across countries and populations, so the general conclusion of the studies was that human growth “is limited by multiple and simultaneous deficiencies in many populations”³⁵⁰ and not just lack of energy. In other words, the interactions among the nutrients might be as important as the nutrients themselves. The findings of the CRSP programs and other publications in the late-1980s and early 1990s, initiated another stage of research about malnutrition which has focused “on the importance of dietary quality.”³⁵¹ Contemporary malnutrition research focuses on defining this dietary quality. The factors most commonly considered by doctors as indicators of dietary quality are nutrient density (measurement of macro and micro nutrients) and bioavailability (amount absorbed, retained/amount ingested). Currently the international health community understands by the term malnutrition as “the syndrome of

³⁴⁸ In Mexico the CRSP collaborated with the Instituto Nacional de Nutrición.

³⁴⁹ L.H. Allen et al., *People Cannot Live by Tortillas Alone: The Results of Mexico CRSP Final Report*, Functional Applications of Malnutrition (Washington, DC: Human Nutrition Collaborative Research Program, USAID, 1992), 1.

³⁵⁰ L.H. Allen, "Nutritional Influences on Linear Growth: a General Review," *European Journal of Clinical Nutrition* 48, no. 1 (1994): S75.

³⁵¹ Schroeder, "Malnutrition," 361.

inadequate intakes of protein, energy, and micronutrients, combined with frequent infections, which result in poor growth and body size.”³⁵²

Doctors and nutritional researchers in Mexico adhered to classical protein-energy malnutrition hypothesis and would later subscribe to the multiple deficiency hypothesis. The hypothesis that emphasized the importance of energy consumption promoted by doctors like McLaren was never popular. The explanation, as suggested above, is that Mexican researchers after the 1950s typically observed marginal communities with very monotonous diets, who experienced growth-stunting (height, weight or both), but not so much severe malnutrition or wasting, in contrast to populations surveyed by doctors in other countries who favored the energy hypothesis. Doctors in Mexico did not find evidence to support the energy deficiency hypothesis.

Since the most important problem they observed was growth-stunting and not severe malnutrition, from the 1950 to the mid-1980s Mexican doctors and nutritionist advocated the consumption of a more varied array of food products, including animal protein to decrease the incidence of mild and moderate malnutrition. Mexican doctors understood malnutrition as a spectrum disease, influenced by the founder of malnutrition studies in Mexico, Federico Gómez. He described the nutritional status of infants admitted to the Children’s Hospital in Mexico City during the 1950s and created a classification of various degrees of severity according to weight for age. During the second half of the twentieth century, Mexican doctors in general took into consideration Gómez’s conception of malnutrition as a spectrum in their studies. In consequence, doctors in Mexico moved directly from the protein-energy paradigm to the multiple deficiencies paradigm. In the mid-1980s, they adopted the current understanding of malnutrition (multiple nutrient deficiency), more applicable to the spectrum-like malnutrition found in the country.

³⁵² Ibid., 344.

Money and Networks: the Institutional Context of Nutritional Research in Mexico

Nutrition research in Mexico from the 1950s to the 1970s was a continuation of the work done in previous decades and was embedded in the network of international research and ideas reviewed in the previous section, as well as of foreign institutions interested in the same subjects that provided logistical and financial support. Doctors in Mexico were part of a global network of scientists who worked on similar topics, and in particular, they embraced the paradigm which stated that protein deficiency was the most urgent nutritional problem that the world faced in the twentieth century. Moreover, the heads of Mexican hospitals and medical schools cultivated close relationships with American philanthropies, research institutes and universities. These relationships not only fomented intellectual exchange but made it possible to fund research and maintain a certain degree of independence from the vagaries of the internal political process.

Beginning in the 1940s, observations of malnutrition in developing countries led numerous experts to think that the ailment was linked to inadequate protein consumption. In 1955, in order to be able to outline policy prescriptions, the World Health Organization (WHO) organized a conference in Princeton. The result was the creation of the Protein Advisory Group (PAG) which, through the national Research Council in the U.S., obtained support from the Rockefeller Foundation for a world-wide research program. In 1957, research by J.C. Waterlow and Nevin Scrimshaw helped consolidate the protein field by showing that kwashiorkor in Africa and Latin America were indistinguishable, despite often presenting different symptoms. These discoveries reinforced previous studies that concluded that protein intake was linked with kwashiorkor. Fueled by data proving that kwashiorkor was more prevalent than what had been originally thought (as well as preventable), WHO legitimized the importance of protein research

and policy. WHO's commitment to protein began "to shape something of a priesthood of nutritionists, exercising substantial influence over policy."³⁵³ Scrimshaw, who was the head of the ICAP, rose to prominence as the head of the Protein Advisory Group. He became the primary promoter of research to develop dietary treatments for malnourished children. Following PAG's lead, many prominent nutritionists all over the world focused on trying to find low cost mixtures of proteins to develop formulas for infants and young children.³⁵⁴

The discussions in the international arena reinforced the interest of Mexican doctors in proteins. As I explained in chapter three, Mexican doctors had been studying kwashiorkor and other nutritional diseases in children before the creation of the Protein Advisory Group. The availability of American grant money to study nutritional problems, particularly those having to do with protein deficiencies, steered the interest of researchers in that direction.

Since the 1950s, two institutions in particular were at the forefront of conducting nutritional studies: the National Institute of Nutrition and the Children's Hospital (HIM). Physicians at both institutions and others, like the National Academy of Medicine or the Pediatrics Society, formed a fluid professional network. Mexican doctors who studied diet at public institutions influenced each other and debated issues related to the interaction of diet and health. For four decades (1950-1980), doctors trained or employed by these institutions held prominent positions in the public health system and as health advisors to the federal government.³⁵⁵ For example, out of the 170 doctors who were residents at the INN between 1946

³⁵³ Ruxin, "The United Nations Protein Advisory Group," 153.

³⁵⁴ *Ibid.*, 154-55.

³⁵⁵ Enrique Cárdenas de la Peña, *Enlace Salvador Zubirán-Instituto Nacional de Nutrición, crónica de un instituto*, ed. Instituto Nacional de la Nutrición Salvador Zubirán (México, D.F.1991), 770-74.

and 1963, 120 became professors at the UNAM's school of medicine, heads of hospital departments and unit chiefs at public medical institutions in Mexico.³⁵⁶

The prestige and influence of the INN had much to do with Salvador Zubirán, a skilled administrator who achieved autonomy and human resource quality for the institute. His friend Ignacio Chávez, the founder of the cardiology hospital, stated that Zubirán was an “organizer... a person that inspired others to work hard, someone who modernized old structures, as well as a very rigorous and scientific professor.”³⁵⁷ Both Zubirán (1946-1948) and Ignacio Chávez (1961-1966) were appointed as deans of the National University, and left this post in similar controversial circumstances. Both doctors attempted to amend the bureaucratic structures, which created many political problems. The two doctors made admission requirements to medical school stricter. Zubirán was more successful in the INN, where he had more influence, and made it a highly selective institution.³⁵⁸ The INN followed the model of the HIM, seeking to attract quality students and residents from other parts of the continent.³⁵⁹ Zubirán was suspicious of political meddling in what he considered technical decisions and managed to shield medical research from budget changes at the Ministry of Health. As part of the generation of doctors who founded the specialized medicine schools (cardiology, pediatrics, neurology, etc), which included Federico Gómez and Ignacio Chávez, he made sure doctors retained a great amount of decision making power in the governing boards of the hospitals. Independence and autonomy of the governing boards meant that these institutions could raise private funds more easily either for

³⁵⁶ José Baéz Villaseñor, "El Instituto Nacional de la Nutrición: creación y desarrollo," in *Doctor Salvador Zubirán: 50 años de vida profesional*, ed. Instituto Nacional de la Nutrición (Mexico: INNSZ, 1973), 140.

³⁵⁷ Ignacio Chávez, “Salvador Zubirán,” *Uno más uno*, 7 October, 1985.

³⁵⁸ Salvador Zubirán to Virgil Scott (Associate Director Rockefeller Foundation) November 19, 1962, RAC, Rockefeller Foundation Archives, RG 1.2, Series 323, Box 33, folder 227

³⁵⁹ Grant Resolved, RAC, Rockefeller Foundation Archives, 54180, Hospital Infantil de Mexico, 1959, RAC, Rockefeller Foundation Archives, RG 1.2, Series 323, Box, 32 Folder 217, 1.

research or special projects (while retaining funding from the Ministry of Health).³⁶⁰ This was important given that the budget situation of public hospitals in the 1950s and 1960s was precarious. The federal government made great investments to create medical infrastructure, particularly in the capital, to give service especially workers insured by the Mexican Social Security Institute. This great investment was accomplished by cutting current expenses, in particular doctor's salaries.³⁶¹ The autonomy of the INN allowed the institution to give continuity to research projects.

The two primary areas of interest of the INN were nutritional research and training of physicians and, for this purpose, Zubirán and his staff applied for money from several institutions. The INN received grants and appropriations from the Wenner-Gren Foundation, the Rockefeller Foundation, the National Institute of Health, the United Nations, and the Kellogg's Institute, among other international and private foundations.³⁶² From 1955 to 1961, the INN was the third largest Mexican recipient of grant money from the Rockefeller Foundation, behind the National University and almost on par with the University of Guadalajara.³⁶³ The Institute also received funds from several pharmaceutical companies, like BMS, Hoffman-La Roche, Searle,

³⁶⁰ Chávez and Sepúlveda Amor, *Humanismo médico, educación y cultura: conferencias y discursos (homenaje de El Colegio Nacional en su octogésimo aniversario)*, 78.

³⁶¹ J. Frenk Mora et al., "Políticas de formación y empleo de médicos en México 1917-1988," *Salud Pública de México* 32, no. 004 (1990): 440-41.

³⁶² "Informe de Labores, Hospital de Enfermedades de la Nutrición 1957-1961," RAC, Rockefeller Foundation Archives, RG 1.2, Series 323, Box 45, Folder 346. Roberto Santiago, "Rango constitucional al derecho a la alimentación, pidió Zubirán," *El Día*, 8 October 1986.

³⁶³ "Summary of Grants and Appropriations 1955-1961," RAC, Rockefeller Foundation Archives, RG 1.2, Series 300, Box 2, Folder 11, p. 12-13.

Robapharm and Syntex. This money was used for the study of protein biosynthesis, but also for research about endocrinology that was later used for the development of contraceptive pills.³⁶⁴

Zubirán considered very important that doctors in Mexico were knowledgeable in basic science and laboratory use. Thus, he promoted the creation of a biochemistry unit, led by young doctor Guillermo Soberón, who worked with Nevin Scrimshaw in the 1960s. Federico Gómez of the Hospital Infantil agreed with Zubirán on this point. He thought Mexican hospitals needed larger staffs with biochemical and physiological training who could conduct tests that had to be done abroad in the past.³⁶⁵ During the 1950s and 1960s, the INN was one amongst two or three institutions in Mexico that had state of the art biochemical laboratories used for non-commercial purposes. The primary research topics at the laboratories were food analysis and basic problems of metabolism.³⁶⁶

The retirement of Federico Gómez from the HIM indirectly helped the INN to become the most important nutritional and clinical research institution in Mexico. Gómez left the HIM in 1962 when the Minister of Health appointed the ex-governor of the state of Sinaloa Rigoberto Aguilar as president. The Rockefeller Foundation characterized this change as a purely political appointment, since Aguilar, although a pediatrician, knew little about research. Due to Gómez's resignation, many researchers and doctors left the hospital to work with Salvador Zubirán or took positions at other pediatrics hospitals all over Mexico.³⁶⁷

³⁶⁴ Guillermo Soberón to Hugo Theorell, 26 August 1962, RAC, Rockefeller Foundation Archives, RG 1.2, Series 323 d, Box, 46 Folder 347, 1.

³⁶⁵ Interviews: JMW, Hospital Infantil, Mexico City, 19 May 1960, RAC, Rockefeller Foundation Archives, RG 1.2, Series 323, Box, 32 Folder 218.

³⁶⁶ Interviews: JMW, Hospital de Enfermedades de la Nutrición, Mexico City, 20 May 1960, RAC, Rockefeller Foundation Archives, RG 1.2, Series 323, Box, 45, Folder 345. "La investigación biomedical Mexicana tiene el reconocimiento internacional," *El Dia*, 17 July 1968.

³⁶⁷ VCS Scott (Diary), 29-30 April 1962, RAC, Rockefeller Foundation Archives, RG 1.2, Series 323 d, Box, 32, Folder 220.

Since the 1950s the doctors at the INN and those trained at the HIM who later left to pursue careers in other hospitals became the leading researchers on human nutrition in Mexico. The work of these doctors was the result of their institutional and intellectual links with doctors in other countries, especially the United States. These intellectual networks gave further legitimacy to their scientific research. From the 1950s onwards, most of the graduates of the INN attained influential positions either as professors in the most important medical school of the country (UNAM) or in at large public hospitals. This network disseminated and popularized the INN findings about malnutrition amongst the medical community in Mexico. In the following section, I analyze the research and findings conducted in this institutional setting.

Research on diets in Mexico (1950-1970)

Nutritional studies in Mexico were almost always structured as a combination of food consumption surveys and clinical studies of sample populations. There were also groups of doctors who conducted purely laboratory based biomedical research, especially concerning the nutritional and chemical composition of food and food engineering trials. For the purposes of this chapter I will concentrate on the epidemiological and clinical surveys, because from these studies doctors drew conclusions about the nature of malnutrition. Nutritional experts in Mexico classified malnutrition as an ailment that was not purely biological and could not be studied without taking into account social structures and individual behavior.

Doctors at the INN and the HIM were interested in a wide set of problems. First, they studied the nature of Mexican diet in terms of nutrient and calorie consumption and sought to determine the relationship between mortality and malnutrition. Second, doctors studied the impact of malnutrition on people who survived the ailment and the impact of endemic

malnutrition in communities. Third, doctors concentrated on studying social practices, like infant feeding, which could lead to malnutrition, and on developing techniques of nutritional education for communities. Doctors were interested not only in diagnosing malnutrition and discovering its causes, but also in offering a set of solutions to prevent and cure it. For this purpose, these doctors developed experimental research tools and used pilot studies to test methods to improve nutrition. The doctors hoped that their findings would influence effective public policy backed up by scientific evidence. The INN and the HIM focused on these studies more than previous generations.

The INN dietary surveys were parallel to growing efforts by the government to quantify and qualify nutritional and food needs in all of Mexico. Surveys and censuses became increasingly important tools to make decisions about policy and public administration.³⁶⁸ The government had expanded data-collecting services in most ministries, especially those in charge of planning industrial or agricultural policy. The growth of technical expertise as a tool of government in Mexico and the rest of Latin America has been well documented by scholars.³⁶⁹ The INN surveys were part of that expansion, since doctors and nutritional experts agreed in general that the ultimate goal of the surveys was to develop policy tools to improve the diets of the community. INN doctors were more interested in collecting epidemiological and clinical data, like mortality and nutrient intake indicators, and not so much in the social structures that influenced food production, distribution and consumption. The opposite was true about the

³⁶⁸ *Encuesta sobre ingresos y gastos familiares en México, 1963*, ed. Oficina de Estudios Sobre Proyectos Agrícolas (México, D.F.: Banco de México, 1966).

³⁶⁹ See Ervin, "The 1930 Agrarian Census in Mexico, Middle Politics, and the Negotiation of Data Collection."; Mara Loveman, "The Race to Progress: Census Taking and Nation Making in Brazil (1870 - 1920)." *Hispanic American Historical Review* 89, no. 3 (2009). For the United States see M.G. Hannah, *Governmentality and the Mastery of Territory in Nineteenth-Century America*. (Cambridge, Cambridge University Press: Cambridge University Press, 2000).

anthropologists who participated in the surveys. Nonetheless, the doctors were influenced by the insights of anthropological research, especially concerning the language anthropologists used to state the goals of the medical interventions they devised. However, the doctors preferred to use their own methodologies and data to plan and evaluate their pilot programs.

In the 1960s and 1970s, the INN conducted country-wide dietary surveys that led to findings and conclusions that became accepted knowledge amongst the medical establishment. The studies did not incorporate significant innovations to those used by other doctors in the late 1940s: extensive food questionnaires and clinical studies. The first one to use these methods systematically in Mexico was R.K. Anderson, an American doctor sent by the Rockefeller Foundation in the 1940s (cf. chapter two).. In general terms, Anderson and his team did not find any dramatic nutritional deficiencies in any of the communities that they studied: indigenous, urban and rural. However, those early studies indicated that most Mexicans had a very monotonous diet, based on two grain staples, corn and beans. The INN researchers obtained similar results but they articulated their conclusions in a very different way than Anderson.

Salvador Zubirán, who also led the research teams, created a classification for Mexican diets based on a series of regional surveys conducted between 1958 and 1974. The teams traveled to several regions, including communities in the north, center and south of Mexico, but not all thirty-two states. The surveys covered locations throughout the Mexican territory, especially the most populated states (see images 1A and 2A in annex for exact locations). Researchers compiled socio-economic and demographic data, then randomly selected a sample of families and conducted qualitative diet research (direct observation and questionnaires) as well as clinical exams and, in some cases, anthropometric measurements.

Zubirán identified three typical diets: indigenous diet, mestizo diet and western diet. The first type of diet relied very heavily on corn and beans. The mestizo diet, in addition to corn and beans, was complemented with milk, coffee, bread, pasta, rice, and sometimes meat. Finally, the western diet included a great diversity of foods, and was the diet of the higher income groups.³⁷⁰ The team explained that half of the rural population in Mexico had an indigenous diet and the other half a mestizo diet. Both mestizo and indigenous diets were characterized as monotonous, lacking proteins and deficient of several vitamins. Zubirán considered that indigenous diets in particular were not healthy. The INN conducted a total of 32 regional surveys between 1958 and 1974. The doctors considered that nutritional problems were most acute in the south, in the southeast, and in the central plateau. The population who resided in the coasts and the north of the country had a more varied diet. Salvador Zubirán and his team insisted that the more diets relied on corn and beans, the incidence of malnutrition tended to be higher.

Throughout the 1960 and 1970s, anthropologists Guillermo Bonfil Batalla and Gonzalo Aguirre Beltrán expressed disagreement with the INN and Zubirán's conclusions about indigenous diets. Bonfil and Aguirre thought that Zubirán's characterization of indigenous diets as unhealthy was reductionist. Many indigenous communities used foods that were unacceptable by western standards but had high nutritional content. Aguirre and Bonfil cited, in addition to their own research, Anderson's discovery that the overall nutritional conditions of indigenous communities in the Mezquital Valley, a very dry, isolated and poor part of Mexico, were acceptable. The anthropologists were worried that the INN was applying European standards to communities that had very different customs. For that reason, sometimes surveys in indigenous communities did not record the "unapparent diet," because certain individuals hid their dietary

³⁷⁰ Salvador Zubirán and Adolfo Chávez, "Algunos datos sobre la situación nutricional en México " *Boletín de la Oficina Sanitaria Panamericana* 54, no. 2 (1963).

customs from researchers due to embarrassment. This also happened in the case of recent immigrants to the cities, who did not want to discuss their dietary “transgressions” like eating frogs, snails, wild herbs, or other foods outside the western dietary cannon. Aguirre and Bonfil Batalla were against attaching negative connotations to these kinds of foods for cultural reasons. However, they agreed that indigenous diets did have some inconveniences and could be improved with the inclusion of “western delicacies,” like meat, eggs and milk.³⁷¹ This is an example of how anthropologists like Aguirre and Bonfil clarified inconsistencies in Zubirán’s theories while at the same not contradicting the nutritional scientific canon, like for example the link between protein consumption and a healthy diet.

The most important collaboration between doctors and social scientists was research conducted in the community of Sudzal in the Yucatán peninsula (see Image 1A in annex). This case illustrates the different interpretations but also the points of contact doctors and anthropologists had regarding the causes and solutions to malnutrition. The Sudzal project was particularly significant because, along with the surveys, the INN ran a series of pilot programs with the purpose of testing methods to improve diets. Sudzal, where the INN stayed from 1960 to 1965, was representative of those regions in Mexico where diets were less varied.

Anthropologist Guillermo Bonfil Batalla accompanied the INN doctors to Sudzal in order to study “the mechanisms that condition malnutrition in Sudzal and collaborate in creating solutions that could be applied experimentally.”³⁷² Bonfil later described his theoretical influences in his book about Sudzal. He was particularly critical of American cultural anthropologists and ethnographers, like Margaret Mead, who “considered the subjective factors

³⁷¹ Salvador Zubirán, *La desnutrición del mexicano* (Mexico City: Fondo de Cultura Económica, 1974).

³⁷² Guillermo Bonfil Batalla, *Diagnóstico sobre el hambre en Sudzal, Yucatán; un ensayo de antropología aplicada* (México: Instituto Nacional de Antropología e Historia, 1962).

as primary and determinant, relegating the objective material reality to second term.”³⁷³ Bonfil disagreed also with scholars whom he called “cultural relativists” who did not believe in “the ascendant evolution of humanity through the dialectical progress of the material living conditions and changes in the mode of production.”³⁷⁴ As a Marxist scholar, Bonfil thought that social development “did have a direction and it was possible to talk about progress, advancement and not just change.”³⁷⁵ To exemplify his point, he gave an example about an imaginary nomad tribe. The individual members of this tribe could be happy about their way of life, but that did not mean that it “could be considered as unbeatable or even worthy of being defended or perpetuated.” In his analysis of Sudzal, he explored the mutually influential interaction of economic factors and “ideological superstructures” made up of social practices and beliefs.³⁷⁶

Bonfil’s teleological analysis was not limited to linear historical development; he was also influenced by biologically deterministic theories that linked nutrition to individual personality traits. On this particular point, his views were no very different from those of medical nutrition experts like Salvador Zubirán. The final piece of what Bonfil called “a dialectical system of inter-influences” was the nutritional state of a population, which had “variable repercussions in the culture.”³⁷⁷ He echoed other intellectuals like Manuel Gamio, who I mention in chapter two, stating that deficient diets diminished the work capabilities of a society and that this problem “would reach an alarming magnitude if it was prolonged during several generations.” Bonfil thought that inadequate nutrition had other consequences, like a negative

³⁷³ Ibid., 10.

³⁷⁴ Ibid., 16.

³⁷⁵ Ibid., 24.

³⁷⁶ Ibid., 24-27.

³⁷⁷ Ibid., 30.

influence on the “psychological capacities of individuals,” even though he acknowledged that still no researcher had “satisfactorily demonstrated” this or the relationship that existed between malnutrition and “other types of social pathologies, like alcoholism.”³⁷⁸ At the time Bonfil wrote about Sudzal, Mexican doctors were looking for ways to study this relationship between mental development and nutrition.

The goal of the research Bonfil and the rest of the INN team conducted in Sudzal was to experiment with different methods to improve the diet of the population and develop evaluation methodologies for these programs. The INN team fomented local food production, introduced new foods, enriched regularly consumed products like corn and wheat flour, provided medical attention, and gave nutrition education talks to local population.

Bonfil recounted that he and the doctors had a disagreement about how to evaluate the programs and experiments conducted in Sudzal. For Bonfil, the source of the tension was that the dominant logic in the health field was the “laboratory criteria.” But according to anthropologists, societies were not “laboratory objects, but products of history and are always in an ascendant evolution process.” So Bonfil did not want to study not the final results of the experiments but to observe the interventions and “modify the programs along the way, if researchers considered that they were not obtaining the desired results.”³⁷⁹ But the INN doctors refused this suggestion because they considered that the goal was not immediate success but “knowledge, which was equally valuable if it resulted from success or from failure.”³⁸⁰ Changing the conditions of the experiment would tamper with the results. The doctors involved in the evaluation, Zubirán, Pedro Daniel Martínez, Gilberto Balam, and Adolfo Chávez, sought to record measurable

³⁷⁸ Ibid.

³⁷⁹ Ibid., 32-35.

³⁸⁰ Ibid., 35.

indexes, particularly the weight and size of children, clinical status, nutrient consumption, income and quantity of foods produced with resources provided by the INN.³⁸¹ The doctors wanted to find indicators which would serve to quantify change, just like in clinical trials. In this sense, their professional training made Bonfil suggestions unacceptable.

In his final analysis, Bonfil concluded that economic structural change was indispensable to eradicate malnutrition. He considered that natural resources, modes of production and exchange, and the power relations between social groups and individuals were the factors that ultimately determined the nutritional state of a population. In the case of Sudzal, the income of the peasants was tied to the henequen buyers and the fiber industrial plants. Bonfil stated that the “real solution to unequal wealth distribution” would be that the ejidos gain ownership of the fiber machine and develop alternative forms of peasant organization, such cooperatives. The anthropologist insisted that “anthropology could propose revolutionary solutions” but the actual implementation of these solutions depended on the capabilities of institutions. According to Bonfil, the INN was not in a position to affect those kinds of changes.³⁸²

Bonfil advocated a public intervention strategy that would not strangle the community’s initiative and agency and drew an explicit link between nutrition and development. The INN could awaken “conscious dietary needs” in the population. The Institute could utilize mechanisms to provide incentives for the community itself to fulfill these dietary needs, orient the community, create a dialogue, but not by imposing external solutions. To exemplify this method, Bonfil imagined a hypothetical scenario: that the INN (using an effective educational initiative) managed to convince the community that adults had to drink milk. This change would

³⁸¹ Instituto Nacional de la Nutrición, "Programa piloto de alimentación rural en Sudzal Yucatán," *Salud Pública de Mexico* 5, no. 2 (1963).

³⁸² Bonfil Batalla, *Diagnóstico sobre el hambre en Sudzal, Yucatán; un ensayo de antropología aplicada*, 120.

not just solve the nutrition problem. For Bonfil, such a success would be a catalyst of dormant tendencies within communities themselves. The anthropologist thought that the need to drink milk would stimulate the community to look for further solutions, such as finding ways to improve their incomes to buy milk. This need-solution nexus would establish “a chain reaction that would provoke the development of the community.”³⁸³

After the Sudzal study was over, the INN Department of Community Nutrition published a set of guidelines to administer regional nutritional programs. The justification for these nutritional programs was that good nutrition was conducive to better health, reduced mortality, and promoted economic development by improving the population’s productivity. Community nutrition programs were supposed to prevent “the tragic vicious circle of underdevelopment.”³⁸⁴ The INN advocated for preliminary studies, like the regional surveys they conducted from 1958 to 1974, as well as pilot programs and internal and external program evaluations. With respect to these evaluations, the INN favored longitudinal evaluations as well as experiments with control groups to determine the actual effects of a program on a population.

The guidelines highlighted different public programs to improve nutrition, which included educational campaigns, community visits, school meals and nutritional supplementation programs. Adolfo Chávez, who wrote the guidelines, agreed with Bonfil Batalla’s ideas about “awakening needs” in poor populations, since he thought that the ultimate goal of nutritional education campaigns was not to teach people to “survive in poverty but to motivate them to live better.”³⁸⁵ However, Chávez did not think like Bonfil that development had a set trajectory, nor

³⁸³ Ibid., 122-23.

³⁸⁴ Adolfo Chávez, *Manual de administración del programa de nutrición*, ed. División de Nutrición, vol. 1-6 (México, D.F.: Instituto Nacional de Nutrición, 1966), 8.

³⁸⁵ Ibid., 72.

endorsed any specific changes in political power or economic structures like the anthropologist. Chávez believed that such programs “could condition notable improvements in family nutrition” even if the economic conditions of families did not change. Infant feeding was a particularly important area which could be improved without necessarily altering income structures. For Chávez, “a family, no matter how poor, could always give their children more beans, more vegetables, correctly and hygienically prepared.”³⁸⁶ Chávez’s recommendations were based on information collected by the INN surveys (1956-1974) regarding infant feeding practices, which recorded weaning ages for children and what kinds of foods mothers feed to infants and at what ages.³⁸⁷

Chávez and the INN recognized that programs like community education about infant feeding and food supplementation were but a small part of a larger national strategy against malnutrition. According to the INN guidelines, there were two institutes of nutrition: a “big institute,” the federal government, which worked on “nutritional programs” such as agricultural production, transportation, industrialization and commerce; and a “small institute” staffed by doctors and nutritionists who served as government advisors.³⁸⁸ In other words, the INN doctors thought they had an advisory and technical role, while the overall food strategy had to be the government’s responsibility. Chávez and the INN as an institution constantly insisted in their role as experts whose advise was technical, backed up by scientific evidence, and that by this

³⁸⁶ Ibid., 73.

³⁸⁷ Instituto Nacional de Nutrición, *Encuestas nutricionales en México*, 2d ed. (México, D.F. 1965); Adolfo Chávez, Carlos Pérez Hidalgo, and Instituto Nacional de Nutrición, *Encuestas nutricionales en México* (México: División de Nutrición, 1974).

³⁸⁸ Chávez, *Manual de administración del programa de nutrición*, 77-78.

virtue it did not have any political implications.³⁸⁹ Political decisions were made by others in the federal government. However, the nature of the expert recommendations of the INN was not necessarily apolitical, in the sense that they recommended extending or reforming already existing programs, not implementing substantial innovations or challenging the status quo.

Adolfo Chávez explicitly attempted to shape policies by addressing the planning commission of the governing party, the PRI. His presentation before the PRI is an example of how the INN tried to differentiate their role of advisors from the political decisions made by the government. He specified these distinct functions of the federal government and the INN when he presented the nutrition program guidelines to the economic planning commission of the party in 1965.³⁹⁰ He advocated for increased investment in agricultural extension programs as well as extending the activities of the state food agency (CONASUPO) to improve the structural conditions of the food economy. He also insisted that the government should also focus on lower income vulnerable populations and substantially expand social assistance programs like school meals, milk distribution and targeted educational programs. Chávez explained to the planning commission that technical supervision and evaluation were key to the success of any nutritional policy.³⁹¹ The set of policies he recommended worked well within the already existing framework of government intervention measures.

By the mid-1960s, Zubirán and his team at the INN had settled on a group of questions and methodologies regarding how to conduct research about nutrition as well as some specific

³⁸⁹ Gilberto Balam was a notable exception amongst INN trained doctors. He participated directly in the political arena and was candidate for governor of Yucatán (1963) representing the left-wing party *Frente Electoral del Pueblo*. He was imprisoned from 1966-1972 for political dissidence. See J. Reyes del Campillo, "El Frente Electoral del Pueblo y el Partido Comunista Mexicano (1963-1964)," *Revista Mexicana de Sociología* 50, no. 3 (1988).

³⁹⁰ Chávez did not mention month or date. Chávez, *Manual de administración del programa de nutrición*, 8.

³⁹¹ *Ibid.*, 199.

policy recommendations. But it was not until a decade later, in the mid-1970s, that the INN doctors could participate in the implementation of larger scale programs as the ones they recommended. In the meantime, doctors at the INN and other institutions in Mexico focused their attention in two related research areas: first, the links between nutrition and children's mental capacities; second, infant feeding practices.

Malnutrition and Mental Development

Doctors and other experts working at the INN insisted in the 1960s that malnutrition was one of the most pressing social problems in Mexico. This was in part because it affected "greatly the health, well-being and the physical and mental capacity of at least half of the population in Mexico." Doctors specialized in nutrition in Mexico suspected since the late 1940s that malnutrition diminished human potential, in particular regarding mental development. Nonetheless, as Bonfil Batalla explained in his book about Sudzal, in the early 1960s there was still not substantive evidence to back up this claim. Proving this hypothesis drove the research agenda on nutrition in Mexico during the 1960s and 1970s.

Research on the links between nutrition and child development had began at the HIM, where Federico Gómez conducted research on the effects of malnutrition in children. In the late 1940s and early 1950s, the group at the hospital focused on proving Gomez's thesis: that malnutrition was a "spectrum" disease. Different people who suffered from malnutrition had different symptoms, but they suffered from the same ailment. The symptoms of malnutrition varied according to the circumstances of each person. Thus, Gómez created a classification which measured the ailment by degrees (first degree malnutrition was the least dangerous to the patient's overall health and third degree malnutrition was the most dangerous). In addition to

creating the classification, Gomez's team documented the effects of malnutrition on the body's organs, and developed various treatments. But by the end of the 1950s, the doctors at the HIM had ended what they saw as the "inventory stage" in the study of malnutrition. In a review of a decade of research at the HIM, doctors Rafael Ramos Galván and Joaquín Cravioto insisted on the need to conduct different kinds of studies in order to transition from a view of malnutrition as a purely clinical condition to viewing it as a "socio-medical entity with implications for a child's subsequent psychomotor development."³⁹²

Joaquín Cravioto in particular followed this path and continued to pursue studies about the effects of malnutrition on mental development. In 1955, the HIM founded the Center of Rural Studies in Tlaltiztlan, in the State of Morelos. Cravioto was in charge of creating an infrastructure to study the genesis of malnutrition on site. There, he formulated the questions that would occupy the rest of his life as a researcher. Cravioto thought that children who survived malnutrition would nonetheless suffer long term damage that would be reflected in their adult life. As protein deficiency and the lack of essential amino-acids could cause growth stunting, these same deficiencies could be responsible for delays in the structural development or physiological damage of the central nervous system. The purpose of the Tlaltiztlan project was to complement the clinical studies conducted at the HIM and collect more evidence to support his theories.

In the 1960s, Cravioto began using the research of psychologists Albert Gesell and Jean Piaget to design epidemiological studies. Gesell was famous for creating a set of developmental norms, which were to be used by clinicians to diagnose abnormality in development. The norms referred to postural, adaptive, social, and linguistic capabilities, observed from infancy to

³⁹² M. Mandrujano and Carmen Sánchez-Pérez, "Contribution of Joaquin Cravioto to the Research on Malnutrition and Mental Development," *Nutrition Reviews* 59, no. 8 (2001).

adolescence.³⁹³ Cravioto and his collaborators made small modifications to Gesell's scale to conduct a study of small children in Mexico.³⁹⁴ They found that children who at one point of their lives had suffered from third degree malnutrition lagged behind normal growth patterns of development even after receiving treatment.³⁹⁵

In his next projects, Cravioto used Jean Piaget's theories. Piaget was interested in the development of thought and thinking, and also created specific developmental "age-stages." To this end, Piaget conducted research on the development of concepts and language, children's interactive behavior with objects, as well as internal mental manipulations of symbols. A crucial concept that Cravioto took from both Gesell and Piaget was that mental development was not a cumulative process, but that there were critical periods of development in a child's life. In other words, he insisted in focusing in these critical stages both in research and policy.

In the 1950s and 1960s, Cravioto conducted several pioneering studies using developmental psychology and nutrition. Through his clinical observations at the HIM and Morelos, the doctor had casually observed that malnourished children were less responsive to their environment, and also that those months or years of malnourishment counted as lost periods of experience. He thought that malnutrition could have interfered with certain critical periods of learning. Thus, patients recovering from third degree malnutrition might not recoup their mental

³⁹³Esther Thelen and Karen E. Adolph, "Arnold L. Gesell: The Paradox of Nature and Nurture," *Developmental Psychology* 28, no. 3 (1992).

³⁹⁴ The Gessell scale, like most reference scales has limitations, but because constructing them is usually very costly and time consuming, not many are produced. Gessell designed the scale as data set that could serve to compare populations. Reference scales in general "embody certain characteristics or patterns of normality" and researchers tend to use them a standards or norms. On the limits and usefulness of reference scales see M. de Onis et al., "Comparison of the WHO Child Growth Standards and the CDC 2000 Growth Charts," *Journal of Nutrition* 137, no. 1 (2007).

³⁹⁵ See Joaquin Cravioto and Elsa R. DeLicardie, "Operación Nimiquipalq: desarrollo intersensorial en niños escolares en función de la edad cronológica y del estado de nutrición," in *Memorias de la XIX Reunión Reglamentaria de la Asociación de Investigación Pediátrica, AC.* (Mexico City1964).

age deficit during the recovery period. While treating patients at the hospital, he saw a reduction of a child's responsiveness to stimulation. So he began to study the phenomenon more systematically, attempting to prove a connection between mental development and malnutrition. His first effort was to look at two groups of preschool children, one of high and middle income parents and one of very low income parents. The study was based on an assumption: in Morelos, Cravioto collected evidence that children who had suffered episodes of malnutrition tended to be the shortest and the smallest children in the community. Thus, the smallest children in a poor Mexican community were assumed to be survivors of third degree malnutrition. He recorded the differences of height in both groups. In the case of the lower income group, the smallest children (those in the lowest quartile of size per age group) had poorer performance in multiple tests of inter-sensory integration than larger children (those in the upper quartile of size per age group). Height and performance in the tests had no correlation when he studied higher income children.³⁹⁶

By the mid-1960s, Cravioto extended the geographical scope of his studies, when he went to work at the ICAP headed by Nevin Scrimshaw. His job was to act as field supervisor of the "Three village study" in Guatemala. This study was designed to compare the effects of supplementary feeding and medical care in opposition to no intervention. At the time, Scrimshaw and his institute were focused on developing a cheap and easy way to use protein supplements as a solution to protein malnutrition, which he considered the most urgent nutritional problem in the world. The preschool children in one of the villages were receiving Incaparina, a supplement developed by Scrimshaw. Groups of children in the other two villages received milk or no

³⁹⁶ Joaquin Cravioto, Elsa R. DeLicardie, and Herbert G. Birch, "Nutrition, Growth and Neurointegrative Development: An Experimental and Ecologic Study," *Pediatrics* 38, no. 2 (1966); Joaquin Cravioto, Elsa R. DeLicardie, and Herbert G. Birch, "Background to the Study," *Pediatrics* 38, no. 2 (1966); Joaquin Cravioto, Elsa R. DeLicardie, and Herbert G. Birch, "The Present Study," *Pediatrics* 38, no. 2 (1966); Joaquin Cravioto, Elsa R. DeLicardie, and Herbert G. Birch, "Results," *Pediatrics* 38, no. 2 (1966).

supplement. Cravioto soon obtained funds to conduct inter-sensory tests in the three villages. The doctor started collaborating with H.G. Birch, a specialist at the Albert Einstein College of Medicine, in order to be able to use Piaget's school methods of behavioral psychology to prove his hypothesis. Birch developed a method of evaluating children using geometric forms either as visual or material objects. The children were then required to judge if these objects were the same or different. The test was designed to show how children processed information across different sensory systems.³⁹⁷

Cravioto thought that in Guatemala, as in Mexico, short stature of children in low socio economic groups implied a high probability of past malnutrition. Therefore, in groups of underprivileged children, intellectual performance could be tested between extremes of height. In all the tests, the poorly nourished children in the village had a worse performance than the more privileged children. The team found a weak correlation with the father's educational level, no significant associations with economic status, home facilities income, or food expenses.³⁹⁸ However, the educational status of the mother had a relevant effect, although Cravioto could not determine the exact reasons. A possible explanation, Cravioto argued, was that better educated mothers "relied less on traditional methods of feeding" which were a direct cause of reduced intake of nutrients.³⁹⁹ This finding was later relevant for policy in Mexico, which tended to target the mothers' education regarding infant feeding practices.

After working in Guatemala, Cravioto returned to Mexico to continue studying the relationship between malnutrition and mental development. Back in Tlaltizpan, he followed for a decade a cohort of children who had suffered malnutrition, as well as three control groups of

³⁹⁷ H.G. Birch, "Malnutrition, Learning, and Intelligence," *American Journal of Public Health* 62, no. 6 (1972): 774.

³⁹⁸ Cravioto, DeLicardie, and Birch, "Results," 442.

³⁹⁹ *Ibid.*: 443-47.

children who had not. Cravioto and his collaborators concluded that children who suffered from chronic third degree malnutrition had delays in the development of a conceptual frame and that part of that delay was associated to lack of stimuli in the household and another part to nutritional factors that affected intellectual development indirectly.⁴⁰⁰

Cravioto and his co-authors insisted on the limitations of their work, and that they did not provide definitive evidence about the precise mechanisms of how malnutrition directly affected intellectual competence. Cravioto explained that damage to cerebral structure was not necessarily a sufficient condition to explain cognitive alterations. He considered alternative possibilities, such as that early childhood cerebral lesions caused by malnutrition were reversible or that other non-nutritional variables were more important to determine cognitive alterations. Cravioto and his collaborators also considered another possibility, that the timing of exposure to malnutrition was important, since it could “interfere with development at critical points in the child's growth course and produce abnormalities in the sequential emergence of competence.”⁴⁰¹ Birch pointed out that testing this particular hypothesis experimentally was not acceptable because it would mean interfering with the development of children at a critical period. He suggested that the alternative was for researchers to use animal models.

The influence of Cravioto's research agenda in nutritional studies in Mexico was substantive, especially during the 1970s. At the INN, nutritionists and clinicians began numerous longitudinal studies inspired by Cravioto's insights, for example using and adapting the Gesell test for use in agricultural communities. Adolfo Chávez, his wife Miriam Muñoz de Chávez, and other collaborators like nutritionist Celia Martínez conducted several community studies, mostly

⁴⁰⁰ Arroyo, Mandrujano, and Cravioto, eds., *Contribución del doctor Joaquín Cravioto a la ciencia y la salud*, 51-57.

⁴⁰¹ Birch, "Malnutrition, Learning, and Intelligence," 776.

in central Mexico and Oaxaca state. They sought to find out more about child feeding practices, as well as the effects of different nutritional interventions, especially diet supplementation and education. They placed particular importance in the relationship between mothers and infants and the effects of moderate malnutrition on mental development.

Adolfo Chávez, Celia Martínez and other collaborators made most of their observations in a small agricultural community in the state of Puebla called Tenzonteopan. The town was attractive to researchers because the socioeconomic conditions of the population were very homogenous, which would permit observation using control groups. The Chávez and Martínez team wanted to isolate nutrition as a variable that would explain not only physical development but behavior. The method of research was longitudinal observation of forty mother-children units over several years. Observations began in 1968, when a group of thirty-nine women became pregnant. The mother-children units were selected according to the weight and condition of the children at birth, which had to be from very similar to almost identical. Then the researchers selected another group of women who could possibly become pregnant and whose physical and socioeconomic characteristics were similar to the mothers in the first group. This new cohort of women received food supplementation since the beginning of their pregnancy, and subsequently their children would also receive supplementation. The supplements consisted of whipped cow milk with added minerals and vitamins.⁴⁰²

Unlike other researchers in the past, the Chávez and Martínez team considered the ethical implications of working with a control group. However, in the end the team stuck to a basic no-harm principle (known to physicians as part of the the Hippocratic Oath) and stated that “all the

⁴⁰² Adolfo Chávez and Celia Martínez, *Growing up in a Developing Community: A Bio-ecologic Study of the Development of Children in Poor Peasant Families in Mexico* (Mexico City: Instituto Nacional de la Nutrición, 1982), 6-7.

activities of the program were always of a positive nature; that is nothing was ever taken from anyone.”⁴⁰³ As it was the case with most medical studies at the time in Mexico, researchers decided not to explore in depth (at least in their published work) how their experiments affected the communities they studied. For them, the fact was that “poor and hungry mothers and children existed in the world whether or not anybody studies them longitudinally.”⁴⁰⁴ In other words, for the doctors the project had validity because of the knowledge that it would produce, which in turn would help to “find better solutions to the problems of children who live under similar conditions.” In general, doctors at the INN saw their work as technical, and thus devoid of any political implications.

During the Tenzeopan project researchers did not want the two groups (the supplemented and non-supplemented) to have sustained contact with each other to prevent “transfers of knowledge” that might influence behavior and make the observations invalid. In the written accounts of the community studies, Chávez and Martínez made clear that the mothers were not supposed to know what type of behavior the researchers were observing because that would influence the outcomes.⁴⁰⁵ Without the use of these methodologies, this group’s hypothesis would have been more seriously questioned in the research community they belonged to. The INN doctors considered more important to their work the experimental results than their subjects’ opinions or points of view about their intervention.

Thinking about the ethical implications of community work had to do with the shifting viewpoints within the global medical community during the 1970s. Before that decade, almost no doctors, clinicians and nutritionist in Mexico included any kind of reflections about this topic

⁴⁰³ Ibid., 10.

⁴⁰⁴ Ibid., 11.

⁴⁰⁵ Ibid., 12.

in their written accounts about methodologies and intent in locally published medical journals. It was certainly not acknowledged by doctors like Federico Gómez and others at the Children's Hospital who also used control groups for nutritional clinical studies. Moreover, this was not unusual under the standards of the time. When the project started in 1968, there were still no widespread discussions in the international medical community about the ethical implications of the use of human subjects in clinical research. In the United States, the country with which doctors in Mexico had the closest ties, this topic started to get particular attention from the medical establishment after the scandal caused by the Tuskegee Syphilis Study, which had been conducted since the late 1930s. The U.S. Public Health Service had been in charge of this study which medical subjects, in particular African American men, were knowingly denied treatment and not informed about the conditions of the clinical trials. A subsequent public condemnation in 1972 resulted in a more careful consideration of the rules and regulations about the use of human subjects in medical research in the United States.⁴⁰⁶ The international medical community was slow to react to these developments, as the World Health Organization made a substantial declaration about the use of human subjects only in 1989.⁴⁰⁷

An experiment like Chávez and Martínez's has to be understood as part of a set of practices in disciplines (like medicine and more recently development economics and political science) which value experimental results above almost all other considerations except physical or psychological harm to participants and deception or propagation of false information. The INN experiments are an early example of community interventions with the purpose of designing

⁴⁰⁶ Allan M. Brandt, "Racism and Research: The Case of the Tuskegee Syphilis Study" *The Hastings Center Report* 8, no. 6 (1978): 21.

⁴⁰⁷ Marcia Angell, "The Ethics of Clinical Research in the Third World," *The New England Journal of Medicine* 337, no. 12 (1997): 847.

effective public policy for development, a field that even today has not “clearly codified nor universally endorsed” principles to respond to ethical concerns.⁴⁰⁸

The primary research question for Chávez and Martínez was to find out “whether moderate malnutrition, which affects most children, really leaves mental lesions of importance.”⁴⁰⁹ The implications of these questions would be important not only for the medical community but from an educational point of view. The authors addressed the issue concerning the roles of nature and nurture in human development, in this case in particular nature being diet and how it affected the physical development of children’s brains. Given that children who suffered moderate malnutrition lived in the most poor, isolated and “ignorant” environments, like Tenzoteopan, Chávez and Martínez did not discard the impact of social interactions in the observable behavior of children.⁴¹⁰ On the contrary, their study focused on the interaction of the two variables, nutrition and social conditions, although they expected to isolate one of them, poor nutrition, using a supplemented control group.

By the mid 1970s, most scholars agreed that extreme deprivation of nutrients and calories did affect brain development.⁴¹¹ Chávez and Martínez wanted to focus instead on the imperceptible lesions brought on by moderate malnutrition. By the authors’ own account, they were not measuring intelligence, a concept that could have multiple and contested definitions. Instead, the team measured the children’s ability to do certain tests or respond to certain

⁴⁰⁸ M Humphreys and JM Weinstein, "Field Experiments and the Political Economy of Development," *Annual Review of Political Science* 12(2009).

⁴⁰⁹ Chávez and Martínez, *Growing up in a Developing Community: A Bio-ecologic Study of the Development of Children in Poor Peasant Families in Mexico*, 85.

⁴¹⁰ Ibid.

⁴¹¹ Ibid., 82-83.

stimuli.⁴¹² Amongst the tests administered to the children there were some that measured body reflexes and muscle movements. The researchers also observed when children began to walk and talk. In terms of language and behavior, the INN team adapted several internationally used tests to the conditions of rural Mexico. All of the studies were kept blind. The psychologists hired by the INN were kept in the dark about whether the children they were examining were supplemented or not.

Chávez and Martínez found that children who did not receive nutritional supplements suffered from delayed development. The non-supplemented children fell behind, but some did not stay behind indefinitely; they did catch up with their counterparts, only to fall behind again. The two experts called this phenomena “evolution in leaps” but could not explain if the cause was “functional incapacity” that had to do with moderate malnutrition or it was due to changes in the environment. The team did not know if a child “recuperates only when he reaches a certain maturity” or “when environmental conditions are more appropriate and he has the will and the motivation... so he almost reaches the language level of the better nourished children.”⁴¹³ Although Chávez and Martínez found “consistent, persistent and significant differences” between the two groups of children, they acknowledged that some previously malnourished children could “catch-up” to children who did not suffer from malnutrition.

The researchers did find that interactions amongst community members were important to determine language development. According to their own tests, the supplemented children also showed some delay regarding the types of sound or number of words they could say at 12 months of age. They found that this could be attributed to the limited relationship between adults

⁴¹² Ibid., 86.

⁴¹³ Ibid., 93-94.

and children, because the mothers and the fathers did not converse frequently with their young children. Also, the less demanding the children were (the less they cried and fidgeted) the less the mothers took them outside or carried them in their backs. Non-supplemented children tended to be more withdrawn, timid and inactive than their counterparts, which resulted in fewer interactions with their mothers.⁴¹⁴

Neither Cravioto nor the researchers at the INN were able to definitively answer what would be the future significance of the differences in development that they observed in non-supplemented children. Were these children at real disadvantage compared to other children who did not suffer these delays? On one hand, some researchers that these authors quoted affirmed that there were “critical moments on physiological development” and, once a child was behind in a crucial stage, he or she could not recuperate the lost ground. On the other, there was another school of thought that espoused that the human brain could always continue to learn beyond one’s age and functional needs.⁴¹⁵ Even if the authors acknowledged this second point of view, as I explain in the following section, the public debate about the effects of moderate malnutrition in Mexican children favored the first theory: that the lesions of malnutrition were irreversible.

Doctors and Interpretations of Malnutrition and Poverty in 1970s Mexico

Mexican doctors developed a common public discourse about the concept of malnutrition as well as the social consequences of the ailment. This discourse went beyond a purely clinical definition of malnutrition, although it was influenced by the clinical and longitudinal observations made by the doctors at the INN as well as other institutions. Doctors and experts

⁴¹⁴ Ibid., 105-09.

⁴¹⁵ Ibid., 93.

were less cautious with the evidence when they talked about the social consequences of malnutrition, as opposed to the physiological consequences. The doctors linked physical signs of malnutrition observed during childhood to the personality, behavior, and worldview of adults. Nutritional experts considered that moderate malnutrition was both cause and effect of Mexican poverty and backwardness, especially in rural areas.

Doctors used their findings about malnutrition and mental development to justify and endorse theories about Mexican national character that were popular in Mexico's intellectual world of the 1960 and 1970s. Nutrition experts were heavily influenced by social sciences such as anthropology and sociology, in part because diet research at the INN was from the start interdisciplinary. The money that funded the building of the department of nutrition of the INN was from the Wenner-Gren Foundation, which specialized in giving grants to anthropology projects. As I explained in the first section of this chapter, anthropologists like Gonzalo Aguirre Beltrán and Guillermo Bonfil Batalla, among others, studied indigenous communities sponsored by the nutrition section of the Institute as well as the Instituto Nacional Indigenista (National Indigenous Institute), a government agency focused on indigenous communities in Mexico. Thus, at the INN and in the circles of health specialist dealing with malnutrition, there was an awareness of advances in several fields of the humanities with respect to the study of developing societies.

A particularly influential figure in the social sciences in Mexico was American anthropologist Oscar Lewis. Lewis began his intellectual engagement with the country in 1943, when he collaborated with anthropologist Manuel Gamio in a project about rural Mexican communities. However, it was his work on urban Mexico which generated the greatest interest and controversy. Lewis studied urbanization and the effects of rural migration to cities in social

and family life. He formulated a theory later known as “the culture of poverty” in three books about the overlapping autobiographies of members of the Sanchez family, a working class family in Mexico City. In particular, his “culture of poverty” consisted of two interrelated ideas: “firstly, the poor have a distinct way of organizing and reproducing their social life, which is articulated in a distinct value system and, secondly, this particular modality of the poor finds an echo in different parts of the world.”⁴¹⁶ It was in this second point in which Lewis’ interpretations differed from other Mexican intellectuals, in particular Octavio Paz. Paz identified “violence, authoritarianism, fatalism and machismo” as particularly Mexican character traits which evolved from historical circumstances (including, for example, the Spanish conquest and indigenous traditions).⁴¹⁷ For Lewis, these traits were not unique to Mexico but could be observed in other nations, in working class or deprived environments. Moreover, Paz, as an artist and essayist, was not especially preoccupied with backing up his assertions with empirical evidence, like social scientists like Lewis were expected to. While Lewis was looking for universal scientific principles, Paz was interested mostly in Mexico.

In Mexico, the books about the Sanchez family generated outrage. Anthropologist Matthew Gutmann has documented how several Mexican commentators at the time considered the book *The Children of Sanchez* slanderous, offensive and damaging to Mexico’s “decorum.” Critics chastised Lewis for choosing to depict “the worst elements of Mexican society.”⁴¹⁸ The evidence in Lewis’s books did not support the idea that economic growth during stabilizing development was benefiting all social groups. Lewis was also unwilling to support a nationalist

⁴¹⁶ Marit Melhuus, “Exploring the Work of a Compassionate Ethnographer. The Case of Oscar Lewis,” *Social Anthropology* 5, no. 1 (1997).

⁴¹⁷ T. Hoy, “Octavio Paz: The Search for Mexican Identity,” *The Review of Politics* 44, no. 3 (2009): 389.

⁴¹⁸ Matthew Gutmann, *The Romance of Democracy: Compliant Defiance in Contemporary Mexico* (Berkeley, CA: University of California Press, 2002).

narrative that implied that Mexico's backwardness had anything to do with the exploitation of the country by other nations. Statements like the following (given to the press) probably did not endear him with government circles:

Mexicans are responsible for Mexico being poor. I recognize that the United States has pressured the Mexican economy, acquiring many raw materials at very low prices. However, I also believe that, although Mexico was poorer at the end of the Cárdenas' government, there was more social justice. Then, Mexico had a more just distribution of income than now (1966), when Mexico, as a whole, became richer. You have to read Ifigenia Martínez de Navarrete's book to understand this.⁴¹⁹

Lewis was talking about the economic development model chosen by the Mexican elites, which economist Ifigenia Martínez de Navarrete criticized because she thought it exacerbated inequality (I will address Martínez work at length in chapter five). In this case, Lewis was making a particular point about the structural factors and political decisions which perpetuated poverty in Mexico. Lewis's answer to the Mexican situation and that of other underdeveloped countries "was nothing short of social revolution to redistribute resources and power to the poor."⁴²⁰

Several scholars have pointed out that a particular incident in the United States caused Lewis's scholarship to be misunderstood. This incident involved a 1964 internal document of the U.S. Department of Labor entitled "The Negro Family: The Case For National Action," better known as the Moynihan report. Critics of the text argued that Daniel Patrick Moynihan, the author, tried to prove that poor African Americans and their culture were the culprits of their own poverty. Oscar Lewis was seen by many as the intellectual "father" of this form of social

⁴¹⁹ "En el banquillo de los acusados de Siempre!, Oscar Lewis se defiende," *Siempre!*, 7 September 1966.

⁴²⁰ Alice O'Connor, *Poverty Knowledge: Social Science, Social Policy, and the Poor in Twentieth-century U.S. History, Politics and Society in Twentieth-century America* (Princeton, N.J.: Princeton University Press, 2001), 198.

analysis, derogatorily known as “blaming the victim.”⁴²¹ A large group of scholars and civil rights activists in the United States disagreed with this “understanding of poverty as a way of life, hence self-perpetuating and beyond the reach of the state.”⁴²² There is still disagreement about whether Lewis’ ideas were misunderstood and oversimplified for political reasons in the 1960s. However, his influence was still considerable in the field of debate about poverty even if people agreed or disagreed with him.

In the social sciences, particularly in the United States, Lewis’s work sparked substantial debate for equating culture with behavior and treating it like an inherited trait. The issue of inheritance implied certain determinism and negated that there could be opportunities for change. For example, sociologist Herbert Gans criticized Lewis and insisted on a “situational” approach to culture, which treated culture as “a kind of coping strategy for dealing with the changing vicissitudes of life.” For researchers like Gans, “lower-class culture was a reflection of the limited opportunities a society offered and would persist within families only as each succeeding generation faced the same deprived conditions as the last.”⁴²³ Thus the key issues being debated in the United States were inheritance and adaptability, two concepts widely used in the biological sciences.

In the case of Mexico, anthropologist Larissa Adler de Lomnitz tackled the issue of adaptability in her book *Networks and Marginality*, about Mexico City slums, a subject that

⁴²¹ See Douglas S. Massey and Robert J. Sampson, "Moynihan Redux: Legacies and Lessons," *Annals of the American Academy of Political & Social Science* 621(2009); Sara McLanahan, "Fragile Families and the Reproduction of Poverty " *Annals of the American Academy of Political & Social Science* 621(2009); William Julius Wilson, "The Moynihan Report and Research on the Black Community " *Annals of the American Academy of Political & Social Science* 621(2009).

⁴²² David L. Harvey and Michael H. Reed, "The Culture of Poverty: an Ideological Analysis," *Sociological Perspectives* 39, no. 4 (1996).

⁴²³ O'Connor, *Poverty Knowledge: Social Science, Social Policy, and the Poor in Twentieth-century U.S. History*, 198-99.

became central after Lewis research. For Adler, Marginal people (*los marginados*) were those who did not participate in industrial production and survived doing menial non-skilled work. Adler was interested in the issue of social solidarity networks and reciprocity, which were supposed to disappear with modernization giving way to a more individualistic culture. The chronic insecurity of unemployment forced marginal people to rely on the only resource, or capital, they had, which was of a social nature: kinship and friendship networks. In her conclusion, Adler used a metaphor lifted from the biological sciences:

Latin American marginality represents a successful evolutionary response of traditional populations to the stresses of rapid urbanization and industrialization. The marginal have carved out an ecological niche within the urban milieu that provides for their basic survival needs. How will they evolve?⁴²⁴

Doctors working on nutritional problems in Mexico were influenced by Lewis's theories and ideas about human beings adapting to their environments and used modified versions to explain Mexico's sustained underdevelopment. The concept they took from him was that of the "cultural reproduction of poverty in everyday life." Lewis referred to certain practices that served as a defense against poverty's daily uncertainty. Nutritionists saw Mexican rural diets as a form of adaptation used by communities in the face of continuous food scarcity. However, doctors thought that not only cultural practices were at play in the perpetuation of poverty, but biological factors produced by a deficient diet. The evolutionary language used by social scientists was well within the paradigm of doctors and nutritional experts, who felt comfortable using a language that fitted in with their own professional training.

For example, Adolfo Chávez and Celia Martínez used a native term from the studied communities to describe a socio-biological adaptation of people to poverty, which in turn also

⁴²⁴ Larissa Adler de Lomnitz, *Cómo sobreviven los marginados*, 1. ed., Antropología (México: Siglo Veintiuno Editores, 1975), 207.

served to reproduce and perpetuate poverty: the *chipil* syndrome. Chávez and Martínez analysis of this syndrome illustrates how doctors developed explanations for broader social behavior based on medical studies and how they used these hypotheses to formulate theories about how societies in rural Mexico functioned. In their longitudinal studies in Tenzonteopan, Chávez and Martínez found that non-supplemented children were more clingy and dependent on their mothers than supplemented children. The mothers described the mood of these children as *chipil*, which in Nahuatl language means jealous. According to members of the community, infants usually became clingy and *chipil* when they realized their mother was pregnant again. What Chávez and Martínez thought was that “upon becoming pregnant, the mother’s supply of milk” dropped and this meant less nourishment for the young child.⁴²⁵ Although these children were not severely malnourished, the description of *chipil* syndrome coincides with the traditional definition of the word kwashiorkor, which means in the Ga language “the syndrome the first child gets when the second child is born.” When the children got older, the *chipil* traits, which included passivity, insecurity and timidity, did not go away. According to the researchers, communal culture rewarded these same traits in school-age children, who tended to be obedient and did not cause problems for their parents or teachers. This *chipil* state might “be considered advantageous to the survivor who wanted to lead a tranquil life in a poor and limited community.” When *chipil* children got older, these behavior and personality characteristics “made it easy to adapt to a simple, stereotyped culture in a small community, to being without work, or entertainment, and to having few opportunities.”⁴²⁶ In this case, Chávez and Martínez made a substantial leap linking a behavior they observed in children and extended it to make a

⁴²⁵ Chávez and Martínez, *Growing up in a Developing Community: A Bio-ecologic Study of the Development of Children in Poor Peasant Families in Mexico*, 129.

⁴²⁶ *Ibid.*, 129-31.

psychological portrayal of the motivations and attitudes of individuals in small rural communities in Mexico.

Another doctor who used malnutrition and the metaphor of adaptation to provide an explanation to Mexican backwardness was Pedro Daniel Martínez, who worked in the health bureaucracy since the 1950s.⁴²⁷ He coined the term “social malnutrition,” which meant a cycle in which “a malnourished person lives and interacts with other malnourished persons and their malnutrition comes from previous generations and remains their whole life and replicates itself indefinitely.”⁴²⁸ The doctor favored this kind of circular and deterministic explanations which largely caricaturized malnourished individuals and were based on rather simple interpretations about the intergenerational reproduction of poverty. In an interview, Pedro Daniel Martínez painted a grim picture of rural Mexico, particularly those places where the economy depended on subsistence corn production:

There everything is malnourished, corn does not grow, every other tree bears fruit, and these fruits are plagued by parasites. Domestic animals are very few, and people usually have some chickens, but their bodies are small and they do not lay eggs. Starving dogs that do not bark or bite are everywhere. Everything is quiet and exhausted, the men, the animals, the plants. The land, dry, is only the echo of destruction and silence.⁴²⁹

Pedro Daniel Martínez believed that due to malnutrition Mexicans could not attain certain character traits necessary for development, like entrepreneurship. For him, this individual stagnation due to a deficient diet led to social stagnation. Rural Mexico was a “sick society” and “the communities are not active, social relations are minimal.” As he conjured images of

⁴²⁷ From 1950 until 1984 Dr. Martínez held the following positions: General Director of Maternal and Infant Hygiene at the Social Security Institute, undersecretary of Health, Director of the School of Public Health, Chief of Infectious Disease Prevention, and Director of the Children’s Hospital.

⁴²⁸ Pedro Daniel Martínez, “El hábitat del desnutrido,” *Gaceta Médica de México* 107, no. 4 (1974): 269-70.

⁴²⁹ Zubirán, *La desnutrición del mexicano*, 7.

stillness, he argued that “the lack of rational experiences intensifies underdevelopment, weakens the social structure and conscious changes are exceptional. The formation of individuality with inventive spirit is almost impossible.” These traits (individualism, inventive spirit) were associated with economically successful nations, like the United States and certain European countries. For Martínez, the first step to achieve success and transcend the vicious circle of poverty was to eat better.

When they talked about the social consequences of malnutrition, most doctors were careful to differentiate this syndrome with hunger. For example, this is what Salvador Zubirán did in his interview with Elena Poniatowska that opened this chapter.⁴³⁰ For doctors like Zubirán, the difference between hunger and malnutrition was very important because each phenomenon had distinct social consequences. Doctors equated hunger with social unrest and malnutrition with passivity. For example, Pedro Daniel Martínez thought that hunger, when it presented itself “in all its aggression,” could provoke violent reactions, “or positive actions that would tend to remedy it.”⁴³¹ But malnourished people were conformists. A malnourished person did not think he or she could eat better and more. Malnourished people continued to experience and express their “incapacity and ineptitude without even noticing.”⁴³² Silvestre Frenk, the head of the IMSS children’s hospital in Mexico City made a similar observation about conformism. The mothers of his patients who suffered third degree malnutrition did “not react, instead they conformed,” when health providers explained the reasons why their children were sick. Frenk explained that the women were “not even resigned” because resignation came “when someone fights for something

⁴³⁰ Elena Poniatowska, “Habla el Dr. Salvador Zubirán: Se alimentan mal la mayoría de los mexicanos por bajo ingreso,” *Novedades*, 16 June 1974.

⁴³¹ Martínez, “El hábitat del desnutrido,” 269.

⁴³² *Ibid.*

and loses.” Conformism was different because it involved previous acceptance of defeat. The defeatist attitudes of the mothers of malnourished children were “inherited from their parents and their grandparents.”⁴³³ As they did not “experience aggressive hunger, these mothers did not rebel. They conformed and that was it.”⁴³⁴ The doctors’ analysis about the effects of malnutrition went beyond the carefully documented hypothesis concerning mental development in children, into the realm of identifying character traits in whole groups of the population. The fact that large sectors of the population did not eat well according to doctors’ standards made them passive and prone to be compliant victims (or promoters) of authoritarian practices. Passivity was not a trait identified with a vigorous democracy or an informed and alert citizenship.

Thanks to Joaquin Cravioto’s research, doctors also began to argue more forcibly that there were links between food consumption and people’s performance at the workplace and school. Cravioto insisted that malnourished individuals suffered from delays in the development of mental processes, like form recognition, from which reading and writing depended. It was possible that malnutrition was responsible for some children’s failure at school. Doctors suspected that these limitations applied both to marginal urban population and rural ones.

The doctors and experts working at the INN summarized their multiple findings and theories about the relationship between malnutrition and poverty in Mexico in an illustrated book intended for diffusion and educational purposes suggestively entitled *The Child, Malnutrition, and Mexico* (the book did not list any individual author and was credited to the INN). According to the book, malnutrition was a challenge because “not only it was the consequence of great social inequalities but a mechanism” that served to maintain and reproduce this inequality. The

⁴³³ Chávez and Martínez, *Growing up in a Developing Community: A Bio-ecologic Study of the Development of Children in Poor Peasant Families in Mexico*.

⁴³⁴ Zubirán, *La desnutrición del mexicano*, 32-33.

INN insisted that there was a direct link between the physiological consequences of malnutrition and the culture and practices of poor people. This cycle of poverty started when poor children were not able to fulfill their potential due to malnutrition. The book cited studies by Cravioto and research teams led by Adolfo Chávez at the INN which indicated a strong relationship between early onset of malnutrition and poor performance in intelligence and academic tests. Trying to remedy these disadvantages later on in life would be difficult, costly, and probably insufficient. The INN endorsed the view that public investment in education would only be a good investment for children that were well nourished. Malnourished children “did not perform well at school due to their low learning capabilities and consequently had no aspirations.”⁴³⁵ If malnutrition continued to exist in Mexico, schools would only be mechanisms to maintain social inequality. Schools would continue to be stratifying institutions if authorities did not recognize the existence of social advantages, which distorted the assessment of children capabilities as being only the result of “innate and individual qualities.” The book concluded that, in the realm of education, there was “nothing more unjust than to give equal shares to unequal people.”⁴³⁶

The book also stated that existing social customs and structures in Mexico, like machismo and “badly understood religiosity that bordered fanaticism,” interacted with malnutrition and exacerbated conformism. As “shyness, insecurity and apathy were rooted inside every undernourished person,” Mexican society was led by the “Confederation of Mexican Malnourished, a confederation of irresponsible, dependent, alcoholic, narcissist men that feared women and despised life.”⁴³⁷ The INN was making a statement about national character, linking

⁴³⁵ Instituto Nacional de la Nutrición, *El niño, la desnutrición y México* (México, D.F.: Instituto Nacional de la Nutrición, Departamento de Difusión, 1979), 100.

⁴³⁶ *Ibid.*, 103.

⁴³⁷ *Ibid.*, 105.

its apparent failings to the biological repercussions of undernourishment. Where intellectuals like Octavio Paz used historical readings and psychological explanations to analyze supposedly general character traits (like machismo), the INN doctors reinforced and endorsed this depiction of Mexican society using their scientific research as a form of proof. But unlike cultural or historical explanations, the doctors identified the roots of Mexican backwardness as a biological problem that could be addressed through technical means. In other words, the cause of underdevelopment was something within the means of public policy and government action.

This is the reason why these explanations of underdevelopment were popular not only among the medical community in Mexico but also for international development agencies like the United Nations and the World Bank. Linking malnutrition to an array of social problems allowed the medical community not only to place the ailment in the public agenda but also to provide technical solutions and policy recommendations that allegedly would have a direct impact on development. In his 1971 report to the board of governors, World Bank president Robert Macnamara insisted that “the implications of malnutrition for development” were “recently discovered.”⁴³⁸ McNamara’s speech was written in collaboration with Nevin Scrimshaw, founder of the INCAP and the United Nations’ Protein Advisory Group. Cravioto’s findings about the links between cognition and malnutrition were popularized in the international development community in part due to his relationship with Scrimshaw (Cravioto succeeded Scrimshaw as president of the PAG). McNamara explained at the 1972 United Nations Conference on Trade and Development that economic growth did not reflect “improvement in individual lives.” The World Bank president, adopting the language used by Mexican doctors at

⁴³⁸ Robert S. McNamara and World Bank, *The McNamara years at the World Bank: Major Policy Addresses of Robert S. McNamara, 1968-1981* (Baltimore: Published for the World Bank by the Johns Hopkins University Press, 1981), 141.

the time, expressed that reduced mortality levels did not spare “two-thirds of the children who have escaped death” from “a malnutrition that can stunt their bodies and minds alike.”⁴³⁹

When Mexican newspapers addressed malnutrition, they also focused on its relation to national development. Journalists often presented malnutrition as a problem that would negatively impact children’s performance in school as well as their future employment prospects.⁴⁴⁰ Doctors working at public health institutions like the INN were interviewed and quoted in these articles. For example, Pedro Daniel Martínez stated in *El Día* that malnutrition “created genetic lesions” in children. Not only doctors expressed publicly these types of concerns.⁴⁴¹ For example, *Excelsior* reported that in a campaign meeting in Campeche, the engineer Victor Lomelí, a specialist in fisheries, told the presidential candidate José López Portillo that Mexico “was bringing up generations of children of irreversibly low mental capacities” and that Mexico’s numerous malnourished children “would not assimilate lessons at school, even if education was of the highest quality.”⁴⁴²

The public figure that did the most to publicize ideas about the relationship between diet and backwardness in 1970s in Mexico was not a doctor or a journalist but the very popular political cartoonist Eduardo del Rio, better known by his pen name Rius. Rius’s publications

⁴³⁹ Ibid., 172.

⁴⁴⁰ “Aumenta el índice de mortalidad infantil,” *El Día*, 10 January 1974, 2. Roberto Águila, “Alarmante el nivel de la desnutrición en México,” *El Día*, 25 January 1974, 4. Dr. Arturo Aldama, “En realidad qué comemos,” *Excelsior*, 27 January 1976, 4-A. Roberto Vizcaino, “Suspenden estudios sobre nutrición por reducción en el presupuesto,” *Excelsior*, 29 Enero 1976, 7. José Reveles, “Pese al aumento en la producción de cereales, las reservas están debajo de los mínimos de seguridad: FAO,” 4 February 1976. Ángel Trinidad Ferreira, “Ridículo que México no produzca sus víveres: JLP,” *Excelsior*, 12 February 1976, 1-A. Sara Moirón, “Stavenhagen: No se justifica una visión catastrófica del futuro,” *Excelsior*, 20 January 1976, 7. “800 millones en el mundo sufren hambre y desnutrición: el director de la FAO,” *Excelsior*, 23 October 1977, 2. Carlos Cantón Zetina, “Millones de Desnutridos, Pide FAO apoyo a JLP,” *Excelsior*, 27 October 1977, 1. Antonio Garza Morales, “No morir de hambre arte de los mexicanos,” *Excelsior*, 19 October 1978, 1.

⁴⁴¹ “La desnutrición uno de los factores principales en la deserción escolar,” *El Día*, 14 February 1974, 5.

⁴⁴² Ángel Trinidad Ferreira, “Se forman generaciones de baja capacidad cerebral- se dijo a JLP,” *Excelsior*, 6 March 1976, 1.

certainly had a wider readership in Mexico than any of the INN's specialized scientific articles could ever have. The cartoonist promoted the idea that the lack of quality of Mexican diets was directly related with economic underdevelopment in his weekly illustrated magazines *Los Agachados* and *Mis Supermachos*, but especially in his biggest selling book throughout his career, "The Belly Comes First" (*La panza es primero*, 1973). In essence, the book was another re-interpretation of the lack of quality of Mexican diets, an idea that had been around since the nineteenth century. The title was a word play on a phrase by Vicente Guerrero, a Mexican independence hero: "the nation comes first" (*la patria es primero*). For Rius, before the nation came the belly "because a nation full of sick individuals is a poor nation," unlike a nation "full of healthy people with a belly in optimal state, which is a great nation." (*una patria llena de gente sana y con una panza en buen estado es una patria a todo dar*).⁴⁴³

As the researchers and doctors specialized in nutrition, Rius insisted in the relationship between deficient diets and the national character of Mexicans. Mexicans were the way they were because of malnourishment. According to Rius, "malnutrition and the perpetual state of indigestion altered the Mexican nervous system." Machismo for him was "nothing else but a chronic state or irritability originated in intoxication and bad digestion, that is translated to a lack of normal development of the organism (and of the nervous system especially)."⁴⁴⁴ The biological expression of not eating proteins, in particular good proteins (according to Rius) like milk, eggs, soy, and whole wheat, was that Mexicans and Latin Americans in general were spineless, lazy, irresponsible, wasteful, disorganized, and aggressive. The root of the problem for Rius was the corrupt politicians who were "thieves that did not know how to govern and solve

⁴⁴³ Rius, *La panza es primero*, Colección Duda (Editorial Posada, 1972), 78.

⁴⁴⁴ *Ibid.*, 133.

the basic problems of the country,” which were agriculture and education. The failure of a “true” agrarian reform had led to dependence and low agricultural production. In addition to that problem, Rius claimed that in “sixty three years of revolution, no one had tried or pretended to educate the public about nutrition and a good diet.”⁴⁴⁵ In the next section, I will address how the federal government in the 1970s implemented policies intended to improve nutrition in Mexico, (including educational policies) as a development strategy.

Nutritional Education Programs in 1970 Mexico

The debates about the nature of malnutrition and how it affected national development informed policies applied since the early 1970s by the government of Luis Echeverría and by his predecessor José López Portillo. Policies focused on two broad areas, intervening in the food supply and promoting changes in behavior (better infant feeding practices and food choices) through education. Zubirán repeatedly explained that the position of the INN was very straightforward: “If you really want to combat malnutrition, you have to make sure that the food is available at the market, well preserved and within the reach of consumers. To reach this objective we have to intensify and extend the programs to build roads, refrigeration and storage facilities and increase the productivity of agriculture and farming.”⁴⁴⁶ Zubirán thought that campaigns to teach people how to eat would not work unless no resources were invested to give access to foods people needed: “If we tell *campesinos*, eat this and that, soy, milk or eggs, if the *campesino* does not have money to buy them it is useless.”⁴⁴⁷ The government of Luis

⁴⁴⁵ Ibid., 139.

⁴⁴⁶ Elena Poniatowska, “Habla el Dr. Zubirán; El más alto valor biológico del alimento ingerido mejora la capacidad de trabajo,” June 18, 1974.

⁴⁴⁷ Ibid.

Echeverría started working with the INN early on. In 1971, the executive power consulted the INN to formulate the National Food System. Salvador Zubirán was named chief technical advisor in a meeting to determine the goals of the program. He and fellow doctor Adolfo Chávez wrote a memo that was supposed to guide the activities of the National Food System. Their proposals were: improving the methods of production to increase availability of different foods in the country; achieve more justice in food consumption to prevent social inequality; direct specific government actions to rural areas and protect the most vulnerable groups (mothers and children).⁴⁴⁸

The creation of the National Food System provided the INN with funds to increase their research activities and collaborate with the government to promote practical application of their findings. Government funds were channeled to the INN through CONACYT, an institution created by the Echeverria government to promote scientific research in Mexico. Zubirán was on the board of CONACYT and funded the study of nutritional problems as a field of unique national interest for Mexico.⁴⁴⁹

Part of the applied programs developed by researchers at the INN had to do with finding new protein sources. It was a common practice in other countries, promoted by institutions such as the ICAP in Guatemala and the United Nations Protein Advisory Group. The INN developed different foods based primarily on soy products or milk. The most successful foods were Isolac, Soyacyt (flavored soy drinks), Nutrinpi (pastille based on milk), Moli-da (ground meat enriched with soy) and Conalac (baby formula). Several were sold by CONASUPO, the government's food distribution agency, and popular markets all over the country. Others, like the baby formula

⁴⁴⁸ Cárdenas de la Peña, *Enlace Salvador Zubirán-Instituto Nacional de Nutrición, crónica de un instituto*, 127.

⁴⁴⁹ Ibid.130

and flavored milk (Chocolac) were distributed through school meal programs and social aid by federal institutions like the National System for Family Development (DIF, Sistema Nacional para el Desarrollo Integral de la Familia).⁴⁵⁰

From 1974 to 1978 doctors at the INN researched the markets of “key foods” in order to increase their availability to the neediest groups. Adolfo Chávez, Miriam Muñoz de Chávez, and Salvador Zubirán elaborated two priority programs, one to improve the availability and consumption of milk and another to promote the use of soy in the Mexican diet. The doctors argued that the diet problem was not one that depended on the levels of production or imports, but it was due to the improper distribution of the products. The case of milk was an example, because the apparent consumption was 283.3 ml per person per day, but surveys made at the INN indicated that 4 million children under five did not consume milk. Their recommendation was that children should have priority, because adults did not require more than 250 milliliters of milk a day. They recommended substituting milk with other products and suggested the use of all the imported milk for infant foods of low cost. Another suggestion was to industrialize and subsidize milk production.⁴⁵¹

The INN was insistent in promoting a nutritional education initiative, in addition to the policies to intervene in the food market, and was finally able to do so in 1974 and 1975 with the Programa de Orientación Nutricional (Nutrition Education Program). The Nutrition Education

⁴⁵⁰ Alfredo Cuéllar Ramírez, “El problema nutricional. Un desafío a las generaciones presentes,” *Cuadernos de Nutrición* 1(1976): 1.

⁴⁵¹ Rodolfo Guzmán, “No falta carne ni leche; se reparten mal,” *Excelsior*, 9 March 1976, 1, “Mala distribución alimentaria,” *Excelsior*, 9 March 1976, Guillermo Jordan “Un problema de ahora: sin alimentos para el futuro,” *Excelsior*, 11 March 1976, 7-A Adolfo Chávez and Juan Ramírez, “La concentración de alimentos en el Distrito Federal,” *Comercio Exterior* 8, no. 2 (1978): 42.

Program's main goal was to educate mothers in rural areas concerning feeding practices.⁴⁵²

Adolfo Chávez and his collaborators were in charge of the program and wanted mothers to introduce foods other than breast milk in the children's diets at three months of age. The idea was for rural children to eat foods readily available to their families, prepared in a hygienic manner.

The principles of the program were based on ideas promoted by Federico Gomez since the 1950s which revolutionized thinking amongst Mexican doctors about infant feeding. Under his leadership there was a transition in the profession from "physiological criteria" of infant feeding to "infectious processes criteria." The "physiological criteria" consisted in considering that babies cannot easily digest foods as adults or older children did, which limited the variety of foods that could be included in a child's diet. The "infectious processes criteria" referred to food contamination as the origin of diarrhea and intestinal ailments in children. The HIM served as a forum to discuss these two points of view. At the end, the view prevailed that infants should be allowed to eat any type of food. The HIM fought for mothers to equate infection and diarrhea with food contamination, not with the food itself.⁴⁵³

Nutritionists from the INN recommended that mothers introduced other foods to the children's diet while they were lactating. All of their studies showed that when families began to share their own total diet with their infant even though food was scarce, this prevented children from becoming seriously malnourished and permitted them to survive during the crucial weaning period.⁴⁵⁴ The presence of a primary care physician or nurse near the studied communities

⁴⁵² Adolfo Chávez, "Estado actual de la investigación en nutrición en México," in *Vigésima Reunión del Comité Asesor sobre Investigaciones Médicas de la Organización Panamericana de la Salud* (Washington D.C.1981), 8.

⁴⁵³ "Dr. Pedro Daniel Martínez," *Cuadernos de Nutrición* 6(1983).

⁴⁵⁴ Miriam Muñoz de Chávez, "La salud y la nutrición de la mujer en México," *Cuadernos de Nutrición* 2(1977): 41,47-49.

improved the chances of survival of children. The primary care provider sometimes treated severe cases of malnutrition, but in most cases they gave simple advice to mothers on the routine feeding of a simple diet.⁴⁵⁵ The INN considered that women in rural communities could perform simple primary care duties like, giving routine feeding advice. It would be more cost effective to train community members and leave the more complicated health issues to the primary care doctors.

The goal was to reach two million families with the nutritional education program, a third of the rural population in Mexico, by training women living in the community as teachers and facilitators. Chávez and the INN were able to convince the Echeverría government that the educational program would be effective and low cost, which made it more attractive.

The government selected 1,100 regional volunteers in total and paid for these volunteers to receive a two week course in Mexico City. INN nutritionists in coordination with workers of the DIF organized the courses and supervised the volunteers. The primary function of the regional volunteers was to organize regional groups of fifty to a hundred women. The groups of women trained by the volunteers were known as the “B promoters” or local promoters. The total number of “B promoters” recruited nationally was 140,000. The local promoters were sent to work in their communities and educate mothers about infant feeding using the guidelines developed by Chávez and his team at the INN. The regional volunteers supervised the work of the local volunteers.

Chávez had insisted on the importance of evaluating nutritional programs to test their effectiveness. So the 1974-1975 nutritional education programs included an evaluation component. Before the officials began implementing the program, the INN team selected a

⁴⁵⁵ Muñoz de Chávez, Miriam. "Searching for Ways to Improved Nutrition in Less Developed Areas." *Journal of Nutrition Education* 4, no. 4 (1972): 167-70.

region using data from the 1970s Food Surveys. Then the INN randomly chose nineteen communities from the region to evaluate the effect of the programs. The evaluation took place eighteen months after the program concluded. The INN also conducted an evaluation in an area with indigenous population.⁴⁵⁶ The INN concluded that 68.5 percent to 83.1 percent of community mothers had contact with the local promoter. The INN team interviewed 1,909 families before and after they had contact with the promoters. In terms of infant feeding practices, only 16.3 percent of children younger than two had a supplemented diet, after the program the proportion increased to 48.9 percent. Another finding was that, after the program, 83 percent of mothers breastfed their children for more than 18 months, and after the program only 61.1 percent did. Feeding practices concerning older children also changed, since before the program 30 percent of mothers used the same foods consumed by the rest of the family to feed children, a figure that increased to 60 percent. The researchers were not as optimistic about the results of the survey in the indigenous communities of southwestern Mexico (Chiapas), as only 6 percent of the interviewed families knew about the program. In contrast, 50 percent of the indigenous families surveyed in Yucatán came into regular contact with local promoters.⁴⁵⁷

Doctors from other public health agencies also implemented nutritional education programs that targeted poor families. In hospitals in Mexico City, doctors pushed to improve intra-family food distribution during the Echeverría administration. This preoccupation was informed by the work of several INN studies of rural Mexico, which indicated that the best and most abundant quantities of food went to fathers in detriment of other members of the family. Other observers insisted that this was a widespread phenomenon also in urban Mexico. Silvestre

⁴⁵⁶ Miriam Muñoz de Chávez and Adolfo Chávez, "Evaluación de un programa de educación masiva para mejorar la alimentación infantil rural," *Revista de Investigaciones Clínicas* 38, no. suplemento (1986): 153.

⁴⁵⁷ *Ibid.*: 156-57.

Frenk, the head of the IMSS children's hospital in Mexico City (1971-1975) (who began his career as a pediatrician under Federico Gómez) explained that the working class population (served by public hospitals in Mexico City) was unscrupulous in terms of how they spent their money "as they did not suffer from urgent hunger."⁴⁵⁸ He perceived that "socially" it was more important to "pay the monthly installment to buy a television" than to feed children properly.⁴⁵⁹ According to Frenk, common sense amongst Mexican families was that the father needed more food because he was the one who worked and consumed more energy. Thus, similar considerations were not awarded to women, who also worked inside or outside the household. The doctor thought that Mexican fathers had suffered from the same deprivations as their children during their childhoods, and as adult they took "advantage of the situation as the men of the house, it was time to get even with the world (*el desquite*)."⁴⁶⁰

In the 1970s, public health institutions like the Social Security hospitals had nutritional education divisions to promote certain health practices among families, and to raise awareness about intra-family food distribution. Nutritionist Evangelina Riva Palacio, who worked at the *Centro Médico La Raza*, the central hospital of the Social Security Institute, ran a program with patients and their families about budgeting and nutrition. According to Riva Palacio, "they had managed to convince fathers that going to the classes did not mean they were not still very manly (*no dejan de ser muy hombres*). The nutrition service at the IMSS provided information about infant and child feeding practices, especially the importance of giving children enough to eat. The people who attended the course also received instruction on how to feed up to ten people

⁴⁵⁸ Zubirán, *La desnutrición del mexicano*, 34.

⁴⁵⁹ Ibid. 38

⁴⁶⁰ Ibid.39

with a very limited budget.⁴⁶¹ The nutritional informational guidelines of the IMSS clinics in Mexico City cited extensively the research by the INN about infant nutrition practices. Family practitioners at IMSS clinics received these guidelines and special training to use them.⁴⁶²

The López Portillo administration continued offering nutritional programs similar to the ones initiated by the Echeverría government. The government decided to address the decline of the volume of basic products in Mexico, which had been decreasing steadily since 1973. The agricultural export sector in Mexico expanded dramatically while basic food production for internal consumption stagnated. Scholars have argued that the first sector's success came at the expense of the second. Agricultural credit was unevenly distributed, and most of it went to the irrigated commercial farms of the North and Northwestern states. Rain-fed areas of central Mexico received limited resources both from commercial banks and the government. Building irrigation systems in these areas was more expensive and difficult due to geographical reasons and the lack of access to fluvial water sources. A process similar to the one that occurred during the Second World War happened again during the 1960s: corn production for human consumption was slowly replaced by commercial production of other grains, like sorghum and soy, both for exports or to be used as animal feed. Most agricultural credit was provided to farmers in irrigated zones and over half the irrigated land devoted to those crops benefited from official credit in 1977.⁴⁶³ By 1970, Mexico was no longer a net exporter of cereals, but it became instead a major importer of basic grains, especially corn. The government was responsible for the

⁴⁶¹ Ibid.40

⁴⁶² Instituto Mexicano del Seguro Social, "Subdirección general médica clínica no.64

programa de enseñanza sobre nutrición infantil, " 1975, Archivo Histórico del Instituto Mexicano del Seguro Social, 104 94/84, sobre 149 23278.

⁴⁶³ Steven E. Sanderson, *The Transformation of Mexican Agriculture: International Structure and the Politics of Rural Change* (Princeton, N.J.: Princeton University Press, 1986), 48.

grain imports through the CONASUPO. Since 1973, the share of imports in CONASUPO's total grain purchases increased substantially (see Table 7 in annex).

The Echeverría presidency ended in the midst of a major economic crisis, so it was left to the next administration to continue coping with the effects of agricultural decline. The government of José López Portillo revived the idea of having a national plan to manage Mexico's food production and consumption. This strategy was based on attaining agricultural self-sufficiency, a goal that was discussed under Echeverría. The fact that the country increased its oil reserves, and that the wealth generated would be in public hands, was seen as an "unrepeatable opportunity."⁴⁶⁴

A strategic planning document delineated the government intentions to prevent a food crisis, in part based on the INN's recommendations for the National Food System. The Sistema Alimentario Mexicano (SAM) was created in March 1980 to "re-orient the consumption of the majorities to the satisfaction of the minimal nutritional needs." The SAM had a coordination agency, which was not part of any ministry and responded directly to the president. The SAM coordination employed around two hundred people and was responsible for working with other agencies such as CONASUPO.⁴⁶⁵ The strategic planning document of the SAM stated that "the country could rescue its agriculture and increase its internal market only through the road of massively producing and distributing basic foods."⁴⁶⁶ Instead of going for the easiest alternative, importing foodstuffs, the government wanted to "rescue" the country's agriculture and increase

⁴⁶⁴ Carlos Tello, *La política económica en México, 1970-1976*, 6. ed. (México: Siglo Veintiuno Editores, 1983), 85.

⁴⁶⁵ Rose J. Spalding, "El Sistema Alimentario Mexicano (SAM): ascenso y decadencia," *Estudios Sociológicos* 3, no. 8 (1985): 321.

⁴⁶⁶ Secretaría de Programación y Presupuesto, *Antología de la planeación en México (1917-1985)*, 20 vols., vol. 7 Programas de Decentralización Sectorial (1978-1980) (México D.F.: Secretaría de Programación y Presupuesto, 1985), 242.

rural employment, “which would guarantee a better income distribution.”⁴⁶⁷ In the government’s opinion, the food market was “imperfect” and state action could regulate these imperfections.⁴⁶⁸ On the supply side, state price subsidies to food crops and community oversight of grain sales (to aid small producers versus oligopolistic wholesalers) were the principal policy instrument of the SAM.⁴⁶⁹

The INN was again called in as an advisor to set consumption goals and basic diet recommendations. The INN goals and recommendations took into account two issues. The first was malnutrition or the problems of under-consumption of food in certain regions of Mexico, especially rural ones. The second was the need to maintain a balanced diet and was based on studies and observations concerning the eating habits of working class urban populations, which the INN considered that relied too much on processed and sugary snacks foods, an issue I will address in chapter six.

According to the Ministry of Programming and Planning, in charge of distributing the budget among federal agencies, the SAM was based on the results of a 1979 survey commissioned to the INN.⁴⁷⁰ The areas of the country which consumed less than 2,750 calories per day were deemed at risk. In 1979, 9.5 million people in Mexico consumed 25 percent to 40 percent less than this amount. In Mexico City, one million people consumed less than two thousand calories. The INN calculated that the target population of the SAM would be nineteen million people.⁴⁷¹ The INN calculated the frequency of consumption of each food, the percentage

⁴⁶⁷ Ibid. 243

⁴⁶⁸ Ibid.244

⁴⁶⁹ See Fox, *The Politics of Food in Mexico: State Power and Social Mobilization*.

⁴⁷⁰ Secretaría de Programación y Presupuesto, *Antología de la planeación en México (1917-1985)*, 198.

⁴⁷¹ Ibid., 250.

that food represented in the expenses of families and the structure of consumption in low income populations. The results of this research were called the Canasta de Consumo Actual (Current Consumption Basket). According to the research, Mexicans included in their diets fifty-two products, of which thirty-eight corresponded to 86 percent of the expenses. The recommendation was to focus on these thirty-eight foods to improve supply and demand.⁴⁷² As the target population was mostly in rural areas, during the López Portillo administration, CONASUPO's store operations focused mostly on the countryside and by the end of his presidency rural stores outnumbered urban stores four to one.⁴⁷³ In order to achieve these changes in consumption, the López Portillo government launched the National Nutrition Education Campaign (NNEC), which was part of an integral strategy which was supposed to function alongside changes in the production, distribution and sales of basic agricultural products in Mexico. The improvement of "nutritional education" was considered decisive for the SAM, particularly the introduction of complementary foods for the population under one year old.⁴⁷⁴ The proposed goals of the National Nutrition Education Campaign were the following:

1. To provide the target population with practical and realistic information that would enable that group to consume a diversified and better diet with minimal family budget;
2. To motivate the target population to modify those food habits that imply unnecessary expenditures;
3. To improve the target population's food habits, considered important for the normal growth of children;
4. To motivate the target population to adopt hygiene habits and food conservation techniques for health and economic reasons;

⁴⁷² Herlinda Madrigal, *Las zonas nutricionales del país, Encuesta Nacional de Alimentación en el medio rural (resultados preliminares)*, ed. División de Nutrición de Comunidad, vol. L-896 (México, D.F.: INNSZ, 1990), 17-19.

⁴⁷³ *Ibid.*, 190.

⁴⁷⁴ Secretaría de Programación y Presupuesto, *Plan global de desarrollo 1980-1983* (México, D.F.: Poder Ejecutivo Federal, 1980), 200.

5. To achieve a better intra-family food distribution, according to the specific family needs.⁴⁷⁵

The list of goals shows how diet was a policy target that demanded the involvement of several institutions. While most points were based on the observations made by doctors and public health researchers, the second point corresponded to the goals and functions of the National Consumer Institute, which was supposed to provide information to the public about prices and help consumers make the best budgeting decisions. The INN collaborated with the National Consumer Institute (INCO) to elaborate contents for public awareness campaigns. Since 1979, the INN was in charge of the consumption division of the SAM, including nutritional education. One of its functions was to provide technical assistance to the Ministry of Public Health, the INCO and CONASUPO. Doctors and specialists from the Institute of Nutrition appeared regularly in the TV programs and the magazine produced by INCO. Another example of collaboration was “Journey to Nutri-Land,” an animated film for children scripted and coordinated by Salvador Zubirán, which appeared as part of the Consumer agency’s public awareness campaigns. The film illustrates the goals of the INN in terms of nutritional education, to make the public aware of the importance of nutrients and food combination.⁴⁷⁶ The INN and the SAM produced a series of audiovisual spots that relied on the use of expert advice regarding nutrition. A radio ad that ran in 350 stations all over Mexico informed the public that the INN

⁴⁷⁵ Martha Navarro de Macías, "Development Policy and Nutrition: a Case Study of the Nutrition Education Campaign of the Sistema Alimentario Mexicano" (Ph.D. diss., Stanford University, 1988), 198.

⁴⁷⁶ “Programa de control de alimentos-Viaje a Nutrilandia,” M44, 1981-1983 Videoteca de la Procuraduría del Consumidor, M44. Cárdenas de la Peña, *Enlace Salvador Zubirán-Instituto Nacional de Nutrición, crónica de un instituto*, 321.

and SAM had created a “Table of Foods for Improved Nutrition” (which would be available through major newspapers) designed to help families eat better while saving money.⁴⁷⁷

In the case of the educational campaigns about consumption, the government in general targeted women as more responsible consumers than men, an issue that I will address also in chapter five. In the case of this educational campaign, it was assumed that women were in charge of planning their family’s diet. When the food combination campaign posters featured a person, it was always a woman (see Image 1). Another example was an advertisement designed for SAM’s “Combination of Foods” campaign, which aired between 1981 and 1982, in which the TV presenter stated the following: “Lady, you can improve your family’s nutrition without spending more. SAM and INN have prepared this food table which is very simple. Here you can identify the foods that provide the body with energy, proteins, vitamins, and minerals... you will be able to do your own combinations according to your preferences and budget. Shop like an expert.”⁴⁷⁸ The SAM nutrition education campaign included billboards, grocery paper bags, calendars, newspaper and magazine advertisements, pamphlets and comics. In addition to the SAM, the Ministry of the Treasury (SHCP), the Institute of Social Security for State Employees (ISSSTE), CONASUPO, the Ministry of Public Works (SAHOP) and the INCO participated printing materials for the food combination campaigns. In total, the state agencies printed a hundred million materials for distribution between 1981 and 1982 (see Table 8 in annex).

Image 1. Print Ad for the food combination campaign.

⁴⁷⁷ Navarro de Macías, "Development Policy and Nutrition: a Case Study of the Nutrition Education Campaign of the Sistema Alimentario Mexicano", 168.

⁴⁷⁸ Ibid., 174.

food so it satisfies each member of the family.”⁴⁷⁹ CONASUPO and the Consumer Institute published several variations of these recipes and others starting in 1980.⁴⁸⁰

The government also started another educational campaign that targeted women and publicized the benefits of breastfeeding and a correct diet for pregnant women and newborns. The SAM recruited popular *telenovela* actress Verónica Castro, who had just had a child, to star on radio, television and print ads. The advertisements ran for ten months and featured Castro talking about how breastfeeding was a healthy practice which protected children from infections. She was also featured in three other ads in which she and a group of actresses explained that pregnant and lactating women had to eat more and breastfeed their children exclusively for three months and then start to supplement their diet with different foods.⁴⁸¹

The government evaluated the impact of these campaigns in several urban settings like Mexico City, Cd. Nezahualcóyotl, Monterrey, Puebla City and Veracruz City. Officials working for the SAM did a random survey of people of all of these cities and found out that 71.1 percent of people were familiar with the food combination campaign and 92 percent of women interviewed knew about the “Advantages of Breastfeeding” campaign. The government did not thoroughly study the actual impact and reception of the messages among the people that had seen the advertisements, but they were able to assess that the information was available for people in urban settings.⁴⁸²

⁴⁷⁹ M.E. De Valvidia, *Estudio de aceptación y comprensión de recetas*, vol. L-43 (Instituto Nacional de la Nutrición, 1981), 10.

⁴⁸⁰ See for example, Beatriz Fernández, Maria Yani, and Margarita Zafiro, *Y la comida se hizo...* (México D.F.: CONASUPO, ISSSTE, 1985).

⁴⁸¹ Navarro de Macías, "Development Policy and Nutrition: a Case Study of the Nutrition Education Campaign of the Sistema Alimentario Mexicano", 169.

⁴⁸² *Ibid.*, 181.

The years of the SAM were when the state was the most active in terms of formulating a policy integrating food policies and nutritional interventions. The following administration, headed by Miguel de la Madrid (1982-1988), canceled the SAM.⁴⁸³ Due to financial limitations and a different ideological outlook (less state intervention in the market) de la Madrid's new food programs did not include a food production component and focused instead on subsidies.⁴⁸⁴ Zubirán and the INN criticized these changes and blamed the end of SAM's more comprehensive policies for what they saw as the worsening of malnutrition in the 1980s.⁴⁸⁵ Data for the decade shows almost no improvement in the nutritional status of preschool children in rural areas (about half of the surveyed children were classified as underweight). It is, however, hard to isolate the effects of the SAM, because surveys were conducted in 1979 and 1989, a ten year gap (for the comparison of the 1979 and 1989 surveys see Tables 9 and 10 in annex).

Conclusion

From the 1950s to the 1970s, doctors and nutritional experts studied the causes and consequences of malnutrition, and served as technical advisors to the government to implement policies to combat the ailment. The doctors' interpretations about malnutrition were based and informed by ideas about poverty endorsed by social scientists. In this scheme, poverty, like the causes and effects of malnutrition, was based in self-reproducing cultural practices and psychological characteristics. Doctors studied the effects of malnutrition in children and

⁴⁸³ For a thorough analysis of the SAM's agricultural policies and demise see R.J. Spalding, "The Mexican Food Crisis: an Analysis of the SAM," *Research report series/Center for US-Mexican Studies, University of California, San Diego (USA)* (1984).

⁴⁸⁴ M. Redclift, "Agricultural Development in Latin America Since 1960: The Unsustainable Options," *Bulletin of Latin American Research* 6, no. 1 (1987): 80.

⁴⁸⁵ Andrea Barcena, "Zubirán y su equipo de nutriólogos denuncian: generaciones de mexicanos son ya débiles físicos y mentales," *Proceso*, June 1 1987. Cárdenas de la Peña, *Enlace Salvador Zubirán-Instituto Nacional de Nutrición, crónica de un instituto*, 839-40.

concluded that it affected mental development in infants, although they could not explain the precise physiological mechanisms that caused these developmental delays. Nonetheless, the doctors used this type of research as a platform to talk about and elaborate theories about Mexican society. Doctors and nutritional experts, from the 1950s to the 1970s, related the physical scars of malnutrition observed during childhood to adult behavior, personality and culture. For the INN, and doctors formed in this institution who worked in public hospitals, malnutrition was both cause and effect of Mexican poverty and backwardness, especially in rural areas.

These questions and ideas about the implications of childhood malnutrition for economic development are still pervasive today, not only in Mexico, but in international academic and policy networks. In the case of population assessment, studies like Cravioto's and Chávez's, which focus on stunted children using supplementation trials and control groups, are still the norm. A whole field, nutritional neuroscience, is devoted to finding the precise mechanisms by which nutrition affects brain development and subsequently behavior. Generally these specialists study nutritional effects not just in post-natal development like Cravioto and the INN researchers, but also pre-natal effects. One of the most popular hypotheses is that nutrient deficiencies (iron, zinc and energy acting separately or together) cause motor development delays and low activity levels, which in turn affect cognitive skill acquisition.

The institutional framework and connections with the international scientific community provided to the INN scientific legitimacy and a degree of financial independence from the government to conduct research. In part based on this premise, and on the legitimacy provided by their own research, the INN doctors insisted that as experts they did not participate in political decisions. As much as Zubirán defended the technical and advisory role of the INN, doctors and

nutritionists intervened in the public debate and these interventions were not politically neutral or simply based on the scientific evidence. The doctors' theories that related nutritional status with culture and individual practices had political meaning and had policy consequences. The doctors thought the state had to have a role in changing dietary patterns. The INN in particular supported some forms of state intervention over others, like the state being directly involved in the production and distribution side of the food market. Doctors also thought the implementation of medical educational policies would have positive effects on malnutrition even if social structures remained relatively unchanged.

Chapter 5: “*Vivir con poco*”: The Rise of Consumer Policies in 1970s Mexico

In late 1970s Mexico, the state started promoting the protection of consumer rights. These rights became a policy issue in Mexico for two reasons. First, the government of Luis Echeverría Álvarez (1970-1976) sought to modify the economic model that had prevailed in Mexico since 1955 (called stabilizing development) because it was no longer producing sustained GDP growth without inflation. Echeverría’s government followed the advice of critics of stabilizing development, mainly economists, who stated that for the Mexican economy to continue growing, the government had to curb growing income distribution disparities. To control these disparities, the government intended to regulate consumption to prevent wastefulness. On one hand, government officials thought that the money the upper and middle classes spent on unnecessary consumption could be saved and channeled to productive investments. On the other hand, these officials considered that working class consumption could be optimized and rationalized, making the working class better off with the same amount of money. Second, the government pursued consumer protection policies for political reasons. From 1971 to 1976, Mexico again began to experience a period of growing inflation, which in turn incited labor activism intended to increase wages. The government used consumer protection to address union demands and demobilize them.

The government had used intervention in the consumer market as a way to regulate class relations since the 1930s. Previous administrations created specialized food agencies charged with food distribution and sales, which intended to change the structure of the market. Just like the intervention in the food market was a government strategy to contain labor in an era of inflation, the creation of consumer protection agencies followed the same logic. However, the institutions the government created in the 1970s focused more on individual consumer behavior,

not in market structure. The goal of these institutions was to educate consumers about budgets and products, as well as providing a forum to mediate disagreements between consumers and businesses (producers, shopkeepers or service providers).

The economic ideas that the government used as a framework to increase growth and the political negotiations with labor in the 1970s gave shape to a particular view of consumers, in which the latter were being victimized in the market and had to be protected by the state. For the state, Mexican consumers of all social classes were not empowered and informed individuals on the contrary, state actors considered that consumers were in weaker position relative to producers and commerce, who could manipulate them through advertising and marketing.

The Mexican government created two new public agencies in order to address this perceived weaknesses of consumers. The National Consumer Institute (INCO, Instituto Nacional del Consumidor) was a federal cabinet-level independent consumer protection agency with broad powers to intervene on consumers' behalf and enforce consumer regulation. The INCO had to give consumers good information about the market and instruct them on how to make better use of the family budget. Second, the government created the Procuraduría Federal del Consumidor (PROFECO, Federal Consumer Protection Agency), an organism that acted as an arbiter between individual consumers and individual producers or service providers.

The emergence of state sponsored (top-down) consumer activism was also part of an overall strategy intended to promote self-sufficiency and economic growth. Since the late 1930s, the Mexican state had implemented price controls, collective salary contracts for industrial unions and increased public spending in productive and welfare projects. The state had also protected the private sector, by providing subsidies as well as taxing and regulating imports. By the 1970s, government officials recognized that these protections to the private sector had

defects. For example, given the lack of foreign competition, the private sector in Mexico lacked strong incentives to improve the quality and quantity of the goods and services produced. So, these incentives had to come from the government, which would help empower national consumers. Thus, consumer protection policies would serve to kill two birds with one stone: improve the quality of goods and services without completely opening up the economy to foreign competition, and help improve the purchasing power of poor consumers through the effective enforcement of economic regulations, like price controls. INCO's goal was to educate consumers by providing information about products and services, and about strategies to save money while still purchasing quality goods. The consumer protection institutions were designed to recruit individual consumers in the vigilance of the quality and prices of products and services.

In the first section of this chapter, I explain the economic model (stabilizing development) that government officials implemented in Mexico since the late 1950s until the early 1970s and the criticisms to this model. Stabilizing development was a set of fiscal and monetary policies “intended to stimulate voluntary savings, through a low inflation rate, a stable exchange rate, positive real interest rates and low taxes on interest income.”⁴⁸⁶ In other words, stabilizing development provided a general pro-business economic environment to increase investment and GDP growth. Some Mexican economists thought stabilizing development had serious limitations. I will focus in particular on Ifigenia Martínez de Navarrete, who was one of the first academics, both local and foreign, to articulate an economic theory about the effects of stabilizing development on inequality in Mexico. Her criticisms of stabilizing development centered on the limitations the great majority of Mexicans faced in terms of their capacity to consume. She also insisted that overconsumption by the upper and middle classes, caused by income polarization, resulted in low savings and investment, and in turn in lack of economic

⁴⁸⁶ Gil Díaz, "Mexico's Path from Stability to Inflation," 337.

growth. The second part of the chapter is about how these criticisms about stabilizing development influenced economic policy in the 1970s and the changes in policy with relation to consumption and consumers in particular. I analyze the positions of organized labor and the government with respect to the importance of consumption for the economy and consumer rights. The next section is about how these positions were in the end translated into legislation that permitted the creation of government consumer protection institutions, the National Consumer Institute and the Consumer Protection Agency. These two institutions began operating in 1976, and started public awareness campaigns to promote particular views about the role of consumption in the economy, which encouraged moderation and thrift.

The Model of Stabilizing Development and its Critics

Stabilizing development was a strategy implemented by the Mexican government from 1956 to 1970 to achieve economic growth without inflation. The Ministry of the Treasury, headed by economist Antonio Ortiz Mena, with the aid of the Bank of Mexico (which operated monetary policy), was in charge of designing and executing stabilizing development. The Mexican economy grew at a sustained pace during the late 1950s and 1960s, as real GDP grew 6.5 percent annually in 1959 to 1967, at a faster rate than in the previous decade from 1951-1958 when the rate of growth was 5.6 percent.

Ortiz Mena was very interested in controlling inflation because it is directly related to exchange rates and interest rates, two factors that largely determine investment in physical and financial assets. The Ministry of the Treasury was able to manage inflation, and maintain it constant and predictable, as shown in Table 11, which summarizes annual changes in GDP, the GDP price deflator and wholesale prices for 1961 to 1978. During the 1960s to 1970 the average

price deflator was relatively low, 3.5, in comparison with the 1950-1959 when it was 7.5. As Mexican economists at the Treasury and the Bank of Mexico achieved stability in inflation, exchange rate and interest rate private investment in equipment and materials to produce goods increased. The gross fixed investment, measured as a percentage of GDP, rose (at 1960 prices) from 16.2 percent in 1958 to 20.8 percent in 1970. Also, since Mexico placed no limitations to capital mobility, the stable and credible exchange rate helped reduce capital flight.

In order to maintain low inflation and low inflationary expectations, and increase capital investment and accumulation, the government maintained tight control of public finances. Mexico had small budget deficits, which government officials achieved through limiting fiscal expenditures, not by increasing tax revenues. Instead, taxes were reduced and the pricing policies of public enterprises and subsidies in key areas (energy, transportation and food) were regulated to stimulate private investment, especially in industry. Regulating the prices of public enterprises also served to control inflation: “insofar as these prices were kept nominally constant, inflationary expectations would be reduced and the credibility of the exchange rate enhanced.”⁴⁸⁷

The government also controlled the prices of certain commodities produced by the private sector. As I explained in the first chapter, growing inflation before 1955 had led to popular unrest, so public officials had to pay special attention to the prices of food as well as urban transport, electricity and other services. Price controls of basic commodities were essential to maintain the alliance between the federal government and industrial unions, even more so because wage increases were also subject to official regulation.

⁴⁸⁷ Carlos Bazdresch and Santiago Levy, "Populism and economic policy in Mexico 1970-1982," in *The Macroeconomics of Populism in Latin America*, ed. Rudiger Dornbusch and Sebastian Edwards (Chicago: The University of Chicago Press, 1991).

The model of stabilizing development was based on a particular set of assumptions held by its creators with respect to the mechanisms and goals of economic growth. Economists like Antonio Ortiz Mena, the minister of finance who was the main architect of stabilizing development, thought that Mexico was at a particular stage of development in relation to other countries. Thus, for him, the goal of the government was to implement policies that would permit Mexico to catch up with those more developed countries. Capital accumulation was central to this “catching up” process, because it would permit the expansion of the share of industrial production in the overall output of the national economy. Industrialization was thought to give more marginal benefits and produce more wealth than focusing on the production of primary goods or agriculture.⁴⁸⁸

By the late 1960s, Mexican economists began discussing some of the effects of stabilizing development, especially what the government was and was not able to achieve with this model. Most experts considered that the economy had grown significantly since the 1940s, when Mexico participated in the Second World War, but this growth had done little to alter the distribution of wealth. In fact, since the mid-1950, observers like economist and former advisor to the presidency (1946-48) Manuel Germán Parra argued that economic policies in Mexico since the end of the revolution had only favored a minority of the population and that inequality since 1940 to 1955 only got worse.⁴⁸⁹

One of the first scholars who analyzed the importance of income inequality in terms of its effects on economic growth was Ifigenia Martínez de Navarrete, who during the 1960s was the dean of the economics school at the National University. Her work is particularly relevant for

⁴⁸⁸ Antonio Ortiz Mena, "El desarrollo estabilizador," *El Trimestre Económico* 37, no. 146 (1970).

⁴⁸⁹ Morris Singer, *Growth, Equality, and the Mexican Experience*, Latin American monographs, (Austin,: Published for the Institute of Latin American Studies by the University of Texas Press, 1969), 123.

two reasons. First, she was one of the few non-Marxist economists to tackle the subject of income distribution and inequality in Mexico in the early 1960s and to make use of available economic statistical evidence.⁴⁹⁰ Most importantly, she argued that in conditions of extreme inequality the upper and middle classes spent resources in overconsumption instead of saving and investing in productive projects that made the economy grow. According to her, the government had to curb overconsumption and waste of resources. Martínez's work was important also because many of her students at the National University continued to study the subject and make it a priority for key government institutions like the Bank of Mexico, Secretaría de Hacienda and the Secretaría de Programación y Presupuesto.

In order to highlight the importance of a more equitable distribution of wealth, Martínez framed it in terms of the prevailing economic thought. She acknowledged that capital accumulation was without a doubt necessary to make any economy grow, and clarified that she thought that total equality in a society was not the goal because it led to stagnation. Thus, an unequal distribution of income was “inevitable” for a dynamic economy.⁴⁹¹ She explained that the orthodox reasoning in her field was that “inequality contributed to economic progress because it limited global consumption and increased the level of savings.”⁴⁹² According to orthodoxy, a better income distribution would lead to more consumption, thus a lower level of savings and capital formation, and a lower rhythm of economic development.

Martínez agreed with the orthodoxy but argued that if income distribution was too unequal, economic growth would suffer, too. A society with a very unequal income distribution,

⁴⁹⁰ Unlike Martínez, Manuel Germán Parra quantified inequality using incomplete or incomparable data, for which he was criticized by other economists. See *Ibid.*, 122-24.

⁴⁹¹ Ifigenia Martínez de Navarrete, *La distribución del ingreso y el desarrollo económico de México* (México, D.F.: Universidad Nacional Autónoma de México, 1960), 20.

⁴⁹² *Ibid.*, 22.

like Mexico, had a “dynamic sector,” composed by a small number of people who obtained a sizable part of the national income and whose consumption pattern was one of imported goods. This high income population did not “carry out the necessary repression of consumption to generate the necessary savings to accumulate capital.”⁴⁹³ In such unequal society, the investments that generate the highest monetary returns were not those that resulted in further industrialization. Instead, investment went to the production of luxury goods and services, speculation, and to activities that perpetuate the low productivity of labor. In this unequal society, the rest of the population had a limited income, operated on the margins of the monetary economy, and provided abundant and cheap labor. The low volume of consumption of the working population decreased total demand and did not create incentives to establish industries specialized in large scale production.

Martínez measured income inequality using various figures produced by the Mexican government, and concluded that Mexico needed different policies to sustain economic development, particularly policies related to consumption. Given Mexico’s polarized income distribution, the government needed to “force national savings or, in other words, to increase the difference between national income and the level of consumption.”⁴⁹⁴ Martínez insisted that these forced savings were not inflationary because a reduction in consumption would not come from price increases, but from “a consumption policy that allowed gradual increments in popular consumption, and contained non-essential consumption.” According to Martínez, financial authorities, in addition to taking care of monetary stabilization policies, had to determine which collective needs of investment and consumption should be satisfied. In other words, it meant that

⁴⁹³ Ibid., 26.

⁴⁹⁴ Ibid., 34.

a large part of the country's "resources had to be fairly subtracted of the private consumption of higher income groups to be used to satisfy the collective needs of investment and consumption." Martínez also proposed to invest more public resources in "collective consumption," such as better educational opportunities, housing, sanitation and medical care. These investments would lead to increased worker productivity. Martínez made this proposal during a time when public expenditure in social services was reduced if not severely curtailed.⁴⁹⁵ Since 1952, during the presidency of Adolfo Ruiz Cortines (1952-1958), public social expenditure (education, health and welfare) had been decreasing as percentage of the total budget.⁴⁹⁶ The participation of the state in the process of capital formation or, in other words, the state's overall investment in the economy, decreased from a coefficient of 0.7 to a record low of 0.27 in 1971.⁴⁹⁷ Ortiz Mena and the Ministry of the Treasury successfully maintained a tight fiscal policy and a limited public debt.

As the case of Martínez illustrates, the consensus about the benefits of stabilizing development started to fade at the end of the 1960s. For example, in 1970, David Ibarra, who would later become Minister of the Treasury from 1977 to 1982, argued that traditional sources of growth like agrarian reform, investment in infrastructure and import substitution were losing their dynamism. Instead, what Mexico needed was to redistribute income to stimulate internal demand of "popular articles" (*artículos de alcance popular*) and alleviate social tensions. The

⁴⁹⁵ Ibid., 36. See

⁴⁹⁶ Dale Story, "Policy Cycles in Mexican Presidential Politics," *Latin American Research Review* 20, no. 3 (1985): 140-41.

⁴⁹⁷ M.D. Ramírez, "Public and Private Investment in Mexico, 1950-90: an Empirical Analysis," *Southern Economic Journal* 61, no. 1 (1994): 5-6.

state also needed to elevate the income of the public sector and its expenditures.⁴⁹⁸ The limitations of stabilizing development were also evident to its own architects, not so much because of concerns about low internal consumption but because of the weakness of Mexican exports. In 1970, Antonio Ortiz Mena gave a seminal speech at the Interamerican Development Bank where he praised the achievements of the Mexican model. However, he warned about the fragility of these achievements and insisted that Mexico had to expand its exporting capacity to ensure continuing growth. For him, Mexico needed to increase the productivity of its workers as well as create incentives to stimulate the faltering agricultural production. Ortiz Mena acknowledged that an important fiscal reform was needed. The existing fiscal structure, which featured several exemptions to productive investments, was not adequate to support the necessary increases of government expenditure brought by the growth in the economy and the population.⁴⁹⁹

The novel view that high income inequality was a threat to economic development was not without detractors, especially in the private sector. In 1969, the magazine *Transformación*, the official publication of the industrial group CANACINTRA, which represented industrialists who had benefited greatly from import substitution policies, ran an article about income distribution. The author stated that, in Mexico, social justice was confused with the concept of income distribution, and also taken as synonym of living standards. Although those were similar concepts and were linked, they were not the same thing. The article claimed that there could be “imperfections in income distribution, at the same time that there could be improvements in social justice and living standards.” To be able to determine “if social conditions and social

⁴⁹⁸ Lawrence Whitehead, "La política económica del sexenio de Echeverría: Qué salió mal y por qué?," *Foro Internacional* 20, no. 3 (1980): 485.

⁴⁹⁹ Ortiz Mena, "El desarrollo estabilizador," 446-47.

justice improve,” it was “not only important to consider monetary income but social services.” In other words, the life of a citizen improved “if his street was illuminated, the road was paved, or if he had access to medical care through social security institutions.” All of this, according to the article, was independent of individual income. The author acknowledged that “without a doubt an improved income distribution could help achieve social justice goals and increase internal demand.” But unequal distribution was not necessarily “the result of injustice and exploitation of the laboring masses,” but was due to low productivity of the great majority of the population. The disparity in income was caused by “unbalances in productivity that could not be typified as a social injustice.”⁵⁰⁰ This article is an example of how the ideas of the private sector regarding inequality would diverge from those adopted by the government in the 1970s.

In spite of CANACINTRA’s opposition, the Mexican government took up the idea that income inequality was a real problem that would hinder economic development. The 1970s began with a new president, Luis Echeverría Alvarez, who in his first speech in office made a reassessment of the failures of stabilizing development in terms of income distribution:

It is not true that there is an inevitable dilemma between economic expansion and income redistribution. Those who proclaim that we should first grow and then distribute, are wrong or lie... If we consider only global figures we could think that we have vanquished underdevelopment. But if we look at the reality around us... there is an elevated percentage of the population that does not have housing, water, food, and sufficient medical services.⁵⁰¹

This quote and other parts of Luis Echeverría’s inauguration speech, echoes many of the criticisms Ifigenia Martínez made to the model of stabilizing development. In the policy guidelines drafted in its first fourth months in office, the new government made reference to

⁵⁰⁰ "Producimos hombres para tener un gran mercado nacional," *Transformación* 1969, 10-11.

⁵⁰¹ Luis Echeverría, "'Mensaje a la nación'," in *El gobierno mexicano*, ed. Dirección General de Información y Relaciones Públicas (México, D.F.: Presidencia de la República, 1970), 9.

economic figures compiled by federal agencies and interpreted by Martínez and other economists, such as Leopoldo Solís and Carlos Tello, in relation to income distribution.

Expert interpretations, assessments, and measurements of inequality and its effects on economic growth influenced the economic policies of the incoming government, but specific political factors and economic circumstances were also very important in shaping the economic decisions of the era. Overall, the purpose of the reformism of the governments of Luis Echeverría and his successor José López Portillo (president from 1977-1982) was to sustain the levels of macroeconomic growth that the country had since mid-1950s. To achieve this goal, they would work within the framework of the economic policies conducted in the past decades, with the difference that the federal government would dramatically increase public expenditure, and really situate the state as the engine of the economy.

The consumer protection policies emerged in a particular context in which the Echeverría administration sought to implement economic policies to sustain growth. Three factors influenced the federal government's policy decisions during the presidency of Luis Echeverría. The first is the public opinion backlash against the government that occurred after the violent repression of the student movement in Mexico City in 1968. The second is the international inflationary tendencies related to the 1973 oil embargo, which affected Mexico's overall macroeconomic performance. The third is the beginning of a more contentious relationship between organized groups of industrialist, bankers and businessmen and the federal government. In the case of López Portillo, he continued with the overall project of his predecessor Echeverría, with two important differences. First, he mended the relationship with financial and industrial groups. Second, the discovery of large oil reserves provided the government access to resources to take on an even larger role in the economy.

According to several scholars, many of the policies of the Echeverría administration responded to the reaction of the public opinion to the repression of the 1968 student movement, which created a crisis of legitimacy for the Mexican political regime. The inability of the federal government and the official party to solve the challenge without resorting to violence severely undermined their standing in the eyes of the population, and electoral participation in the 1970 elections plummeted.⁵⁰² Thus, Echeverría had to make certain concessions in order to maintain order and stability and preserve the PRIsta political regime.

The regime was certainly influenced by the events of 1968, which resulted in limited electoral and education reforms, as well as the political inclusion of and dialogue with some of the remaining leaders and supporters of the student movement. During his presidential campaign, Echeverría stressed publicly that he wanted to prevent the repetition of the 1968 student riots and the subsequent army repression. As a candidate, Echeverría “encouraged an atmosphere of reprisal and self-criticism” of the regime and invited students and intellectuals to accompany him during his campaign visits to different regions of Mexico.⁵⁰³ This does not mean that during his presidency Echeverría cooperated in all instances with members of the student movement. On the contrary, when the strategies of cooptation failed, there is evidence that the Echeverría administration resorted to the use of violence against dissident groups, particularly members of the student movement who joined urban and rural guerrillas.⁵⁰⁴

⁵⁰² Yoram Shapira, "The Impact of the 1968 Student Protest on Echeverría's Reformism," *Journal of Interamerican Studies and World Affairs* 19, no. 4 (1977): 566.

⁵⁰³ Leopoldo Solís M., *Economic Policy Reform in Mexico: a Case Study for Developing Countries*, Pergamon Policy Studies on International Development (New York: Pergamon Press, 1981), 39-49.

⁵⁰⁴ Elaine Carey, *Plaza of Sacrifices: Gender, Power, and Terror in 1968 Mexico*, 1st ed. (Albuquerque: University of New Mexico Press, 2005).

The 1968 student movement did not have a direct bearing on the new consumer protection policies; however, the latter were initiated in a context in which the president was trying to reassemble the credibility of the government. As Lawrence Whitehead asserts, “the need to recapture popular credibility after” the 1968 confrontation “cannot be used to explain or excuse every decision of Echeverría’s administration... but nothing it did can be properly understood unless that priority is seen as central.”⁵⁰⁵ The Echeverría regime wanted to re-establish political normalcy after the traumatic events of 1968.

Nonetheless, the student movement was indirectly related to changes in economic strategy. Echeverría appointed people associated with the student movement to economic positions on the presidential cabinet. The president’s choices for the Ministry of the Treasury and the Ministry of Industry and Commerce were traditional. Hugo Margain, a moderate lawyer with expertise in tax law, was appointed Minister of the Treasury, the agency in charge of taxes, executing debt operations, and controlling public sector spending. Progressive economists Carlos Torres Manzo (1970-1973) and José Campillo Sainz (1973-1976) were appointed heads of the Ministry of Industry and Commerce, in charge of administering import licenses, manufacturing programs and price controls. However, the president named self-proclaimed leftist and sympathizer of the student movement Horacio Flores de la Peña as the Minister of National Properties, an institution that supervised the operations of government owned corporations and checked on the procurement practices of the public sector.⁵⁰⁶ De la Peña was a former director of the School of Economics at UNAM. Echeverría also included people connected to the student movement in the Secretariat of the Presidency, which coordinated public sector tasks and

⁵⁰⁵Lawrence Whitehead, "Mexico from Bust to Boom: A Political Evaluation of the 1976-1979 Stabilization Programme," *World Development* 8(1980): 844.

⁵⁰⁶ Solís M., *Economic Policy Reform in Mexico: a Case Study for Developing Countries*, 45-46.

handled public investment.⁵⁰⁷ The inclusion of people of different political persuasions and views of the economy was supposed to generate dialogue and unbiased policies.

Another indication that the student movement influenced the selection process of the government cadres was the failed presidential aspirations of Antonio Ortiz Mena (one of the main architects of stabilizing development). For the 1970 election, Ortiz Mena was another possible candidate for the presidency of Mexico, but he was passed over in favor of Echeverría, who was elected as the candidate for the official party. Ortiz Mena was unpopular among many experts and people involved with the student movement of 1968, who increasingly saw the stabilizing development strategy as a polarizing force that created more economic inequality. Ortiz Mena reciprocated this feeling. In an interview during the 1980s, when the country was immersed in an economic crisis, Ortiz Mena, dismissed the student movement as a “local movement” whose members later had active participation in government decisions. According to the former minister “that group came in trying to establish a different system and they did.”⁵⁰⁸ He was referring in particular to Ifigenia Martínez and Carlos Tello (who was Minister of Budget and Planning 1976-77 and President of the Bank of Mexico in 1982), and to others involved in the National University’s economics school like “Flores de la Peña and those people” who sold a “particular development program to Luis Echeverría.”⁵⁰⁹ Horacio Flores de la Peña was one of the economists who argued that the development policies of stabilizing development had failed

⁵⁰⁷ Ibid., 47.

⁵⁰⁸ Antonio Ortiz Mena, *¿Qué pasa en México?* (Mexico City: Edamex, 1984), 11.

⁵⁰⁹ Ibid.12

“since economic growth had resulted in higher income concentrations and decreases in real salaries.”⁵¹⁰

In addition to political changes in 1960s Mexico, the policies of the Echeverría administration were also influenced by the global financial downturn of the early 1970s. Higher world inflation increased internal inflation through import prices. At first, the Echeverría presidency followed closely the model of the previous years, in the sense that the fiscal and monetary budgets were restrictive and the government spent even less in 1971 than in 1970. Economists considered essential to maintain the exchange rate and free convertibility, to keep inflation low. However, these restrictive policies did not have any effect on economic growth this time. Consumer prices increased in 1971 more than in 1970 (See Table 11). Due to the attractiveness of the internal interest rates, the free convertibility, and the parity to the dollar, the banking system was flooded with internal and external resources. These excess resources were underutilized because there was no effective demand by the private sector. In addition to the accumulation of resources in the central bank, the 1973 oil shock enlarged substantially the country's access to the international financial system. Outlets for the large, private capital flows became a more important source of external savings.⁵¹¹

According to economists Carlos Basdrech and Santiago Levy, the expansion of public sector expenditure that occurred between 1972 and 1974 reflected rising expectations about the expansionary capacity of the world economy that misled not only Mexican policymakers but also the governments of most developed countries, and the international financial community in

⁵¹⁰ *Problemas del Desarrollo Económico Mexicano*, ed. Escuela Nacional de Economía (Mexico City: Universidad Nacional Autónoma de México, 1957), 30.

⁵¹¹ Tello, *La política económica en México, 1970-1976*, 55.

general. Increased borrowing was in part the result of the unprecedented scale in which international credit for development was available to Mexico during this era.⁵¹²

Easy international credit increased resources available for public spending. Two areas (education and health) that were considered critical for the Echeverría administration benefitted the most from this expansion. The number of government employees grew from 876,000 to 1,315,000 and the public deficit increased from 2.5 percent of the GDP to 9.3 percent from 1970 to 1976. More than half of the employees were hired to cover deficiencies in the educational sector, so that five million more children would have access to elementary education. The second sector that received resources was health and social security, which increased coverage from 24 percent to 36 percent of the total population.⁵¹³

The increasing availability of external resources coupled with failed attempts to increase tax revenues. Federal authorities attempted to institute a new tax reform in 1971, and again in 1972, but these initiatives failed and only brought the animosity of the industrial and business community in Mexico. The proposal for tax reform included changes in the personal income tax, spending surtaxes and the wealth tax. The Treasury drafted both 1971 and 1972 proposals, which were very similar. The Treasury stated that tax reform would “increase public revenue, promote the distribution of wealth, establish an equitable tax burden, avoid waste of resources and sumptuary expenditures, and promote investment by Mexicans.” Like Ifigenia Martínez a few years before, and the Consumer Institute a few years later, the Treasury saw curbing wasteful consumption as a crucial matter of national economic policy.

⁵¹² Bazdresch and Levy, "Populism and economic policy in Mexico 1970-1982," 225-26.

⁵¹³ Whitehead, "La política económica del sexenio de Echeverría: Qué salió mal y por qué?."

The attempts of fiscal reform hurt the relations between the business sector and the government (which would later prompt Echeverría's administration to seek allies elsewhere, especially in the labor sector). When the fiscal reforms were attempted, the Echeverría government was under pressure to reactivate the economy, so the threats of a "strike against investment" as well as capital flight, undermined the tax reform proposals.⁵¹⁴ The Secretary of the Presidency even commissioned a private study of investors' attitudes (a random sample anonymous survey with an additional qualitative questionnaire) in order to assess "the opinion prevailing in large business regarding capital formation in 1972 and 1973."⁵¹⁵ In this study, Mexican businessmen and investors demonstrated a very negative attitude towards the government and tax reform. These businessmen expressed that taxing profits of enterprises, like the government wanted, would "reduce the funds available for capitalization." Businessmen did not think redistribution of wealth could be achieved through tax reform and they expressed resentment of the government's positive attitudes towards labor unions and the student movement. The survey indicated that businessmen and investors feared the government was on the "road to socialism" and opposed any state participation on the market through price controls, government run stores, or social security reform.⁵¹⁶

As the government was dealing with the discontents of industrialists and businessmen, public officials also attempted to reform its relationship with organized labor. The federal government initially wanted to allow more democratic participation not only in electoral politics, but in other institutions like official unions. So, at the beginning of the *sexenio* (1970 to 1972)

⁵¹⁴ Tello, *La política económica en México, 1970-1976*; Bazdresch and Levy, "Populism and economic policy in Mexico 1970-1982," 239.

⁵¹⁵ Solís M., *Economic Policy Reform in Mexico: a Case Study for Developing Countries*, 71.

⁵¹⁶ *Ibid.*, 207-15.

the Echeverría government did challenge the entrenched leadership of official unions, like for example, Fidel Velázquez of the CTM, and encouraged independent unions. These policies were gradually abandoned because official union leadership proved resilient to intervention from outside actors.⁵¹⁷

In fact, the strongest sectors of official unions showed their mobilization capacity to the regime, organizing successful strikes against employers during years one through four of the Echeverría administration.⁵¹⁸ The federal government changed its strategy and decided to collaborate more closely with the official unions. As the public spending increases and the attempted tax reform disrupted the relationship between the federal government and organized industrialists, bankers and commercial interest groups, the federal government turned to the unions. One effect of this close cooperation was the creation of several important programs designed to benefit industrial and urban workers, including the creation of consumer protection institutions, extension of government credit for consumption for individual workers, and housing credit.

In the last months of the Echeverría presidency, the budget situation in Mexico became untenable, in part due to the inability of the government to pass tax reform. The government had been trying to control inflation via higher subsidies and an overvalued exchange rate, because Echeverría did not believe in stabilization by cutting expenses. His whole presidency was based on the idea of government-led economic growth. The foreign debt had almost doubled between 1975 and 1976, in order to finance the public sector deficits and increasingly the effects of capital flight. The peso remained firmly tied to the dollar using a parity that was established in

⁵¹⁷ Shapira, "The Impact of the 1968 Student Protest on Echeverría's Reformism," 570.

⁵¹⁸ Ibid.

1954. But price levels were further and further away from those in the United States, so devaluation became inevitable.⁵¹⁹ Also, an open frontier with the U.S. did not help the government's inefficiency to regulate monetary flows through the exchange rate. In September 1976, the government devalued the currency by 59 percent. The reserves were depleted and there was a yearly rate of inflation of 22 percent, as well as continued strained relations with the private sector. Echeverría's six year term ended with an agreement with the International Monetary Fund.⁵²⁰

The government of Luis Echeverría had a reformist agenda whose ultimate goal was to maintain macroeconomic growth in Mexico, but also having redistributive policies to decrease the levels of income inequality. The goals of the administration were informed by criticisms of the stabilizing development model, during which Mexico's GDP grew but there was little income redistribution. During Echeverría's *sexenio* the government increased public spending, as international credit was available,

Ideas about Consumption and Economic Policies in the 1970s

The challenge to stabilizing development, which regarded income inequality as a problem for economic growth, and the political circumstances of 1970s Mexico, which pushed the government closer to labor unions, led the Echeverría administration to devise new policies and institutions with the purpose of protecting consumers and regulating consumption in Mexico. Inspired in diagnoses like Ifigenia Martínez's, government officials tried to moderate overconsumption in order to increase investment resources, which would allegedly lead to

⁵¹⁹ Bazdresch and Levy, "Populism and economic policy in Mexico 1970-1982," 245.

⁵²⁰ Ibid., 246.

economic growth. Officials were also attempting to control inflation and appease union unrest caused by constant price hikes. The state consumer protection policies were influenced by various social actors, including economic experts, government officials, and union leaders. Each of these actors saw a different benefit in these policies. Official unions expected the new consumer agencies to help control price increases, provide information to workers about family budgeting, and promote a more equitable relationship between commercial interests and workers. Economic experts and government officials heavily criticized “the consumerist tendencies” of the middle and upper classes. Conspicuous consumption was for them something that hurt Mexico and its chances for economic growth. It was these two groups, official unions and economic experts, who were responsible for creating institutions intended to manage and “guide” private consumption.

In order to understand the position of organized labor regarding consumption, it is important first to explain the role of this sector in relation to the political system as a whole. Some scholars have pointed out that the labor movement was part of the corporate structure of the official party, so in many instances it did not act as a truly independent political force, but instead was dependent and subservient to the federal government. However, as mentioned in the previous section, the first years of the Echeverría presidency were marked by a serious confrontation between Fidel Velázquez, the leader of the CTM, the largest worker organization in the country, and the president, due to the issue of independent unionism. During the 1970s, unlike the previous decade, some unions (representing mostly electrical, telephone and automobile workers) attempted to gain independence from the CTM, or in other cases simply to renew their leadership and election procedures. In general, the timing of movements for union democratization is not solely explained by presidential labor policies, but by the internal

dimensions in the politics within each union. During the 1970s, there was an identifiable dynamism within urban organized labor in all of Mexico, so much that some scholars have baptized this period as “*la insurgencia obrera*” (labor insurgency).⁵²¹

Although unionism in Mexico was experiencing a turbulent decade, this does not mean that as a sector it lacked mechanisms to negotiate politically with the government and business. The highest instance of representation of unions in Mexico was the Labor Congress. This organization was created in 1966 by labor leaders as a measure to institutionalize conflict amongst the CTM, the Central Nacional de Trabajadores (the second largest union confederation) and other independent unions. In the 1970s, the Labor Congress was composed by five sectors: the CTM, other national union confederations,⁵²² the Federation of Unions of Government Workers, regional and sector worker federations, and autonomous national unions (metal workers, electrical workers, and oil workers). The relationship between these sectors was not static; it varied according to membership as well as, in the case of autonomous unions, the increasing rate of employment in the industry they represented.

Given the structure of the labor market in Mexico at that time, workers who belonged to unions were a privileged group.⁵²³ The Labor Congress was the organization that represented the highest percentage of unionized workers. In 1978, the number of non-agricultural workers and

⁵²¹ Samuel León and Maria X. López, " Las burocracias sindicales y la política del gobierno " in *El obrero mexicano*, ed. Pablo González Casanova, Samuel León, and Ignacio Marván (México, D.F.: Siglo Veintiuno Editores, 1985); Middlebrook, *The Paradox of Revolution: Labor, the State, and Authoritarianism in Mexico*.

⁵²² Confederación Revolucionaria de Obreros y Campesinos (CROC), Confederación Regional Obrera Mexicana (CROM), Confederación General de Trabajadores (CGT), Confederación Obrera Revolucionaria (COR), Confederación Revolucionaria de Trabajadores (CRT), Federación de Agrupaciones Obreras (FAO).

⁵²³ César Zazueta and Ricardo de la Peña, *La estructura del Congreso del Trabajo: estado, trabajo y capital en México, un acercamiento al tema*, la ed. (México, D.F.: Fondo de Cultura Económica: Centro Nacional de Información y Estadísticas del Trabajo, 1984), 41.

employees of 14 years and older was four million and a half.⁵²⁴ All of these workers could theoretically belong to a union, but the total number of officially registered unionized workers was 2,600,000 workers, of which 83.9 percent were affiliated to the Labor Congress.

Given the rising levels of inflation in the first years of the Echeverría administration, official unions pushed for the revision of collective labor contracts. The rate of increase of the national consumer price index, which went from 5 percent in 1972 to 12 percent in 1973, severely limited the purchasing power of workers. In 1972, the Labor Congress initiated a campaign to institute a mobile wage scale in accordance to inflation and revived older demands, such as extended participation of workers in the PRI. The federal government proposed the creation of the Tripartite Commission so that unions, the government and the private sector could discuss ways to control inflation. In March 1973, the government proposed a program to control inflation which did not incorporate any labor demands; instead, it focused on extending official price controls. Most chambers of commerce in the country rejected the proposal, and it failed in its initial stages. Organized labor pressured the government and criticized the reaction of the chambers of commerce.⁵²⁵ The Labor Congress then presented a document to the president that insisted on the creation of laws to protect working class consumers from inflation and the abuses of organized commerce.⁵²⁶

The Tripartite Commission continued meeting in 1974, but the measures continued to focus on maintaining a firm grip on prices. The Ministry of Industry and Commerce compiled a list of 300 products that would correspond to the “Mexican’s Basic Basket” (*la Canasta del Mexicano*). During meetings of the Tripartite Commission, producers, commercial, and industrial

⁵²⁴ In 1970s Mexico 3 out of 10 employed people, could be considered to be in a position to find work as an industrial worker and subsequently join a union. *Ibid.*, 40.

⁵²⁵ Tello, *La política económica en México, 1970-1976*, 63.

⁵²⁶ *Ibid.*, 65.

groups agreed that prices of the products in the basket would be maintained throughout 1974. However, several groups complained about the effectiveness of the measure. Congress representative Concepción Rivera, a member of the Federation of Workers of the Federal District, insisted that many of the products included in the list did not have anything to do with Mexican diets. Rivera lamented that the “so-called basket” did not include meat, eggs, or fresh milk, “the most important articles in any diet.” The newspaper *El Día* reported that businessmen increased the prices of many articles included in the basket before the government published the list, which invalidated the efforts beforehand.⁵²⁷

Worker groups insisted that price increases were caused by extraordinary profit margins of private industrial and commercial groups. They promoted alternative ways in which workers would be able to access consumer goods. For example, in December 1973 an official union, the Confederación Obrera Revolucionaria (COR, Revolutionary Worker’s Federation) began experimenting and established a store called the Center of Sales and Consumption. The union claimed that stores in the Federal District increased the prices of most articles by 200 and 300 percent, especially household items and clothing. These increases nullified the benefits of workers’ end of the year bonus (*aguinaldo*). The members of the Center insisted that with their experiment they proved that one of the causes of price increases “was the dishonesty of businessmen and the overburdened systems of distribution.” The Center bought wholesale from the industries with which COR had collective labor contracts and then sold at heavily discounted prices. Angel Olivo, the leader of the COR, shared economic experts’ concern about wasteful consumption, and said that “workers generally spent their end of the year bonuses in useless objects, manipulated by the pressures of marketing.” According to him, Mexicans did not “live

⁵²⁷ "Situación económica general," *Comercio Exterior* 24, no. 9 (1974): 919.

in a consumer society, they suffered it (*la padecen*).”⁵²⁸ This conception differed from characterizations of consumers as the empowered sovereigns of the liberal market economy that employers associations like CONCANACO and CANACINTRA promoted. According to Angel Olivo, workers as consumers were weak and uninformed individuals easily deceived by marketing, an image that would later inform the ideas and imagery of the Consumer Institute.

At the 1973 Labor Congress meeting, workers negotiated two initiatives with the federal government to protect purchasing power and consumption. The first was the creation of another committee, the National Salary Protection Committee (CONAMPROS), coordinated by the Ministry of Industry and Commerce. Many of the policies that were later institutionalized by the consumer protection agencies after 1976 were first promoted by the CONAMPROS. For example, the Committee produced a program which aired in the state’s TV station called “A Basket full of...” (“*Una Canasta llena de..*”) about where to find and how to use the best food products. Armando Victoria Galván, an official of CONAMPROS, recalled that these meetings between the Labor Congress and the government planted the seed of what would become the consumer protection laws.⁵²⁹

The Committee was intended to 1) lead the fight against speculation and hoarding of basic commodities; 2) create institutions to protect wages or increase purchasing power of workers; 3) promote collaboration between unions and authorities to ensure the compliance with measures to protect the living standards of workers and; 4) compile and disseminate information to orient working class consumption. To justify these measures, the Labor Congress issued a statement saying that the process of income polarization had increased in the early 1970s and

⁵²⁸ Lozano, Pedro, “Denuncia la COR: aumento hasta de 300 por ciento en ropa y artículos del hogar, durante diciembre,” *El Día*, 9 January 1974, 4.

⁵²⁹ “Armando Victoria Galván,” *Revista del Consumidor*, (1977) No.1, 32.

“had been superior to any other period in history.”⁵³⁰ The communiqué also explained that capital accumulation “had not favored wages in any way,” that inflation was caused by “hoarding and speculation, and not just international prices,” and it was due to “the inconsistencies and irrational motivations of business sectors.”⁵³¹ The Labor Congress, along with the Minister of Commerce and Industry, José Campillo Saiz, exhorted worker groups to denounce price violations.

The second initiative was the creation of the Fondo Nacional de Fomento y Garantía al Consumo de los Trabajadores (FONACOT, National Fund for Promotion and Guarantee of Worker Consumption), which was an innovative institution since it provided direct public credit for popular consumption. The purpose of the institution was to give workers access to credit, mostly to buy household appliances (which were not deemed as wasteful consumption). Many workers did not have access to this type of credits through the banking system or commercial houses, and those who did were subject to interests higher than 35 percent. High interest and installment payment plans often doubled the prices of consumer products. One of the goals of the credits was to “increase workers’ savings and help them make budgets and assign most of their income to acquire necessary goods.”⁵³² The FONACOT would also strengthen demand and secure a market for industrialists. Any financial institution could be an affiliate of FONACOT, and could give loans. FONACOT would act as guarantor for the loan for up to 50 percent and would take a 2 percent commission. Another prerogative of FONACOT was to finance and operate stores and distribution centers. The first year of operation (1973), 250,807 workers

⁵³⁰ "Creación del Comité Nacional Mixto para la Protección del Salario," *Comercio Exterior* 24, no. 4 (1974): 352.

⁵³¹ *Ibid.*, 353.

⁵³² "La creación del FONACOT: un esfuerzo para aumentar el consumo," *Comercio Exterior* 24, no. 5 (1974): 440.

received loans to buy 605,268 products which included, in order of importance, household items (refrigerators, ovens, washing machines), furniture, televisions and clothing.⁵³³

None of the anti-inflationary measures proposed by the CONAMPROS stopped the inflationary spiral, and by the fall of 1974 the Labor Congress began pushing for wage increases. The organization approved a demand for wage increases of 35 percent, after stating that the purchasing power of workers had declined 42 percent in 1972 and 1973. Also, the labor leaders decided to call for a general strike in September, which would include 180,000 businesses and industries, if their wage demands were not met.⁵³⁴

Like Ifigenia Martínez before, the leader of the CTM, Fidel Velázquez, claimed that an unequal distribution of resources was causing Mexico's economic problems. For him, the Labor Congress' demands sought merely temporary solutions. He made reference to a study by the Mexican stock market that stated that while the sales of ninety-four enterprises increased by 23.3 percent in 1972 and 1973, their profits increased 113.8 percent. In other words, profits were almost five times larger than sales. If industrial groups "limited themselves to just prices, more in accordance with production costs," inflation would be reduced. The government negotiated a deal with the Labor Congress which would increase wages under five thousand pesos a month by 22 percent.⁵³⁵

During 1973 and 1974, officials from the CONAMPROS considered that they lacked a legal framework as well as administrative tools to achieve the task they were charged with.

Ernesto Rojas Benavides, who was the legal advisor to the CONAMPROS, noted that, although

⁵³³ "Actividades de Fonacot," *Comercio Exterior* 25, no. 3: 764.

⁵³⁴ Although the CTM had a special relationship with the PRI, the strike threat was a credible one. See Solís M., *Economic Policy Reform in Mexico: a Case Study for Developing Countries*, 100.

⁵³⁵ "Situación económica general," *Comercio Exterior* 23, no. 9 (1979): 920.

citizens complained about certain acts of businessmen and service providers, these acts were perfectly legal. The lawyer explained that the CONAMPROS had to make such an effort to address the individual consumers' complaints that he decided to make a film showing the intricacy and complexity of the process. Rojas Benavides's office sent the videos to *Los Pinos*, where there was a screening for the president and all his ministers. His intention was to inform cabinet members of the problem so they could do something about the protection of consumer rights. The economic cabinet showed interest in the problem.⁵³⁶

Officials at the CONAMPROS also complained about the difficulty of involving citizens in price regulation activities, one of the central stated goals of the Committee. The head of the Committee, Santiago Sánchez Herrera, explained that, in his experience, Mexicans were victims of abuses or injustices in the marketplace because they did not trust the authorities. He thought that, in general, people were right not to trust public servants because they "acted despotically and they only treated well someone who had a recommendation or money in their hands. It was only natural that in Mexico businessmen abused this situation."⁵³⁷ Even considering these limitations, the bureaucracy at the CONAMPROS, staffed by officials of the Ministry of Industry and Commerce, processed around twenty thousand complaints for price alterations, differences of weight, hiding of merchandise, and fraudulent sales. In ten months of operation between 1973 and 1974, the Committee visited 227,000 commercial distribution centers, imposed 39,900 fines and closed 633 businesses. Yet, members of the Committee explained that their efforts were undermined because new products continued to appear in the market and the CONAMPROS did not have the jurisdiction to review the new products and determine price controls. Producers

⁵³⁶ Cesar Garizurieta, "El problema no radica en la aplicación del derecho, sino en el derecho mismo," *Revista del Consumidor*, no. 27 (1981): 12-13.

⁵³⁷ "Afriman el director y el jefe de CONAMPROS: Los consumidores carecen de valor cívico para hacer valer sus derechos," *Excélsior*, 1 February 1976, 14-15.

simply rebranded or used legal resources like *amparos* to modify prices, which undermined the efficacy of the committee.⁵³⁸

However, the inability to control prices was not the only issue that worried Mexican economic authorities. By the mid 1970s, officials at the Ministry of the Treasury were worried that Mexico had been rapidly accumulating foreign debt while macro-economic growth began to slow down. The state's economic experts thought that, in order to maintain growth, they had to do something to control consumption, especially upper and middle class consumption patterns. For example, Miguel de la Madrid, under-secretary of the Treasury (during the presidency of Luis Echeverría) censored "unnecessary consumption and lifestyles incongruent with reality," because "given the need of the great majorities" this consumption not only provoked "social irritation but it also affected savings." For him "consumerism was one of the main factors that contributed to Mexico's indebtedness." In 1976, the Treasury diagnosed that the country's problems were due to the fact that "Mexico had followed the model of developed countries which fomented consumption propelled by all kinds of personal credit and advertisement. This unnecessary consumption affected productive investment and satisfaction employment needs." Treasury officials insisted that, in terms of consumption, it was a mistake for Mexico to emulate the United States, because "this country was in a different stage of development than Mexico."⁵³⁹ Leopoldo Solís, an economist who worked for the Secretariat of the Presidency in 1971 and served as special advisor concerning tax reform issues, insisted that the Mexican middle class

⁵³⁸ Ibid. 15.

⁵³⁹ Luis de Cervantes, "Fue censurado el consumo suntuario," *Excélsior*, 1 April 1, 1976, 5.

acted in “support of imported consumption patterns” and increased “present consumption at the expense of both future consumption and consumption more equally shared.”⁵⁴⁰

Before the Echeverría presidency began, Ortiz Mena had expressed the same view that private “unnecessary consumption” had a negative effect on the country’s development. He explained that the proliferation of these consumerist desires of the Mexican upper and middle classes was due to the close contact that Mexico had with the United States.⁵⁴¹ His ideas were an interpretation of James Duesenberry’s work entitled “Income, Savings and the Theory of Consumer Behavior.” In his book, Duessenberry explained that previous theories about consumption choices were flawed because they did not recognize the importance of habit formation and human interactions in consumption choices. The author called these social factors that influenced consumption the “demonstration effect.” In other words, the spending habits of people depended not only on changes in income or prices, but on contact with superior goods generated by the consumption expenditures of others with whom the individual or family came into frequent contact. Duessenberry argued that the demonstration effect was significantly reinforced by the “Veblen-effect,” which promoted a general desire for distinction and encouraged individuals to emulate the consumption behavior of others in order to protect or increase their social status or prestige.⁵⁴²

⁵⁴⁰ Solís was also General under-director of the Bank of Mexico (1976-1985). Solís M., *Economic Policy Reform in Mexico: a Case Study for Developing Countries*, 105.

⁵⁴¹ Ortiz Mena, "El desarrollo estabilizador."

⁵⁴² Although the term ‘demonstration effect’ quickly entered the economic vocabulary, by the 1960s Duesenberry’s theories did not represent the mainstream of American liberal economic thought. In fact, economists like Milton Friedman and others, ignored or dismissed these findings in their own work about consumption. These theories about consumption found supporters in other fields like business administration, marketing and advertisement. Economist looked at Dusenberry’s theories with renewed interest in the 1970s, but the work never again achieved any real status or authority within the discipline. Roger Mason, "The Social Significance of Consumption: James Duesenberry's Contribution to Consumer Theory," *Journal of Economic Issues* 34, no. 3 (2000): 556-58.

The interpretation of the “demonstration effect” and the noxious effect of Mexicans mimicking American consumption patterns was not limited to specialist circles. For example, in a cartoon that appeared in the left leaning newspaper *El Día*, Mexico’s commerce with the United States was compared to the “Legend of the *Chincuate*” (Image 2). In the original legend, the *chincuate*, a serpent, hypnotizes a mother to steal her breast milk from her emaciated child. In the cartoon, North American business interests acted like the *chincuate* serpent and hypnotized Mexican consumers with marketing and advertisements. The cartoon shows Mexicans of all ages desperate and anxious to buy American goods, while expressing thoughts such as: “Let’s get rid of national ideas. It is a backward way of thinking.” A lone figure, sporting a sombrero and a *zarape*, stands in the way of the desperate consumers and warns them that their attitudes will “result in the disequilibrium of (Mexico’s) terms of trade.”⁵⁴³

⁵⁴³ Alberto Beltrán, “La Leyenda del Chincuate,” *El Dia*, 17 February 1974, 5.

Image 2. Legend of the *Chincuate*



Source: *El Dia*, 17 February 1974, 5.

As illustrated by the cartoon, the import of foreign consumption patterns was not only seen as a problem for national investment and growth. The “demonstration effect” promoted imports from the United States, which also hurt the current account balance. Mexico actually experienced disequilibrium in the current account balance. Between 1940 and 1980, the current account balance of Mexico was negative. During the 1950s, the deficit was an average of 2.8 percent of the GDP, in the 1960s 2.4 percent and in the 1970s 3.5 percent. The proportion of final consumer goods with respect to total imports increased almost every year from 1960 to

1972 (only fell in 1966 and 1967) going from 6.2 percent in 1960 to 16.7 percent in 1972 (see Table 12). While during the same period the import of intermediate goods fell, the import of capital goods almost doubled. Private consumption of final goods was not the only factor that caused trade deficits in Mexico. Nonetheless, decreasing dependence on capital goods is more complicated, in terms of long costs and investment technology, than focusing on private consumption of final goods.

Industrial groups considered that the most pernicious American cultural import was not consumerism, but rather counter-cultural anti-consumerism. An editorial in the magazine *Transformación*, the official social communication organ of industrial group CANACINTRA, stated that young Mexicans “who were opposed to living in an opulent society” were imitating trends that corresponded to more advanced societies. The trend to oppose consumerist society was also an import from the United States. So for the editorialists, anti-consumerist “jipis, yipies and underdeveloped *provos*” had nothing to offer to the great “misinformed and voiceless masses” of Mexico.⁵⁴⁴ The country could not afford to ponder if “we should accept the insanity of consumer society or not.” Instead, the editor thought that consumers in Mexico needed to be transformed and the way to do it was to “orient their taste to useful things, to the things that could provide them real satisfactions.” But he warned that “the assault to the fortress of consumption should not be an attack to the citadels of production.”⁵⁴⁵ This view is significantly different by the one endorsed by economic officials. There was a lack of understanding between the government and the private sector about foreign influences over consumption and the effects

⁵⁴⁴ Luis Guevara, “El editor dice: revolución del Hommo Consumens,” *Transformación*, Abril 1971, 19.

⁵⁴⁵ *Ibid.* 19.

of consumerism over Mexican society. What officials considered as a waste of resources, industrialists saw as an engine of industrial growth.

Making Thrift into Law: the Consumer Protection Legislation

Between 1973 and 1974, the federal government began to organize a more comprehensive strategy to regulate and guide private consumption and ensure that it would incite national economic development, not hinder it. The government wanted to accomplish three objectives: create institutions that would regulate prices effectively, improve the living standards of the workers, and improve the quality of Mexican manufactured products and services.

One of the first steps towards consumer legislation was a series of meetings organized in December 1973 by the PRI, in which party leaders, economists and official union representatives discussed the current economic situation and future policy options. In these meetings, the Ministry of the Treasury, the Ministry of Industry and Commerce, and a special group of labor representatives from the Party suggested updating the functions of the CONAMPROS. They worked closely with legislators from the PRI, who came from the ranks of different national unions, as well as with legislators of the opposition party *Acción Nacional*, PAN. Economists, bureaucrats and legislators decided to draft a Federal Consumer's Protection Law. Officials working for this Committee were later employees of the consumer protection agency.

Echeverría announced in his 1974 Report to the Nation that the government was working on the creation of a consumer protection mechanism. According to the president, the purpose of these institutions was to “put a stop to abuses, speculation, and hoarding through a legal system for the protection of consumers... that would prevent the transfer of unjustified increases that do not correspond to a real increment of the cost of productive factors to the popular classes.” Echeverría remarked that his economic and social program would decrease inflation “by

reducing unnecessary consumption, strengthening the income policy, stimulating production and would defend the purchasing power of the popular classes and decrease social tensions.”⁵⁴⁶

During the congressional debates on the Federal Consumer’s Protection Law, legislators and officials framed consumption not just as an economic problem, but as a crucial issue of equality and social rights. The proposal for the law, presented by the Ministry of Industry and Commerce, stated that the Echeverría administration sought to promote “social democracy.” This meant that in a very unequal society, democracy needed “perfecting.”⁵⁴⁷ The state had to prevent any kind of subordination in the economic arena that prevented “the effective exercise of freedom.”⁵⁴⁸ The text echoed other public statements of Luis Echeverría, explaining that the Mexican government sought to abandon the idea that development consisted of “the mere increase in the production of goods and material riches.” Development had to be more just, and the country had “to realize its potentialities in conditions of dignity.”⁵⁴⁹

The proposal of the Ministry of Industry and Commerce characterized consumer rights as social rights. Unlike civil laws, which are based on the assumption of equality between parts of a contractual obligation, the laws that regulated social rights in Mexico were based on the notion that unequal persons should be treated in an unequal way.⁵⁵⁰ This assumption had informed labor rights since the 1917 Constitution. The Minister of Industry and Commerce explained that, since the passage of the 1917 Constitution, labor contracts were no longer regulated by civil law, but the parts entered a tripartite relation with the State, which was present because in labor disputes

⁵⁴⁶ Luis Echeverría Álvarez, *IV Informe de Gobierno* (México, D.F.: Cultura y Política, 1974), 16-17.

⁵⁴⁷ *Diario de los debates de la H. Cámara de Diputados*, XLIX Cong., Periodo ordinario, 27 December 1973:88-90 PAN

⁵⁴⁸ *Ibid.* 91.

⁵⁴⁹ *Ibid.*, 88.

⁵⁵⁰ *Ibid.* 93.

“collective and social interests were at stake.”⁵⁵¹ The minister was referring to the labor tribunals (*juntas de conciliación y arbitraje*), a mechanism that I explained in detail in chapter one. He equated these tribunals with the consumer protection institutions he was proposing, thus treating consumer rights within the same frame as labor rights.

Rules that regulated the relationship between consumers and business and between consumers and service providers were scattered through several civil and business codes. The purpose of the Federal Consumer’s Protection Law was to encompass all the pertinent legislation in addition to recognizing that consumer rights “were in the arena of social law.”⁵⁵² In other words, laws which regulated the relationship between producer and consumer would cease to be based on the assumption that these two actors were equal.

According to the draft for the consumer protection law, the equality between consumer and producer was a myth propagated by the liberal claim that “the consumer is the supreme king of the market, the one that dictates its conditions.”⁵⁵³ According to the Ministry of Industry and Commerce, the truth was that the consumer was “a manipulated entity” at the mercy of a great variety of actors who created needs through advertisement and marketing. Consumers, lured by these “created needs,” gave up their rights and accepted unfair contracts and all kinds of abuses from commercial interest and producers, which ranged from usurer loans, dangerous or defective products, lack of guarantees and deceitful information about products.⁵⁵⁴ The law proposal also considered that the State had to have an activist role in the matter of consumer rights. The Minister of Industry and Commerce explained that the Federal Consumer’s Protection Law

⁵⁵¹ *Diario de los debates de la H. Cámara de Diputados*, XLIX Cong., Periodo ordinario, 24 September 1974:6-7

⁵⁵² *Ibid.* 8.

⁵⁵³ *Ibid.* 8.

⁵⁵⁴ *Ibid.* 9.

would not be effective if it depended only on the individual decisions of consumers to go to the arbitration tribunals and denounce that their rights were violated. The state would have to intervene actively to supervise these laws and impose sanctions.

The Ministry of Industry and Commerce highlighted the role of organized labor in drafting the consumer protection law and explained why workers were interested in this legislation. The law was designed to protect consumers from terms and conditions they had been forced to accept due to need or to the difficult economic situation. Workers as consumers were often “treated as inferiors” to the businessmen who took advantage of them.⁵⁵⁵ Legislators from the PRI affiliated to the CTM and the COR insisted that organized labor was conscious that the living conditions of workers “did not only depend on their wages but on prices and the conditions under which they can buy the goods they need.”⁵⁵⁶ Hence, the consumer protection legislation had to be in accordance with other government initiatives to protect wages, like the increase in the number and scope of operation of state stores that sold products included in the basic basket.⁵⁵⁷

Legislators from the PRI were not alone in promoting this legislation. In fact, José Ángel Conchello, a representative of the PAN who had long experience in the private sector, was the one who proposed the creation of the congressional sub-committee in charge of revising the consumer protection law in September 1973. Later that year, another PAN deputy, Margarita Prida de Yarza, presented the initiative to create the National Consumer Institute (INCO). The PAN legislators made small revisions to the Ministry’s proposals, such as specifying how long a

⁵⁵⁵ Ibid. 10.

⁵⁵⁶ *Diario de los debates de la H. Cámara de Diputados*, XLIX Cong., Periodo ordinario, November 14 1975, Diario 25: 18-19.

⁵⁵⁷ Ibid.18.

consumer could wait to demand arbitration (up to one year), but accepted the substantial principles of the initiative.⁵⁵⁸

The conservative party PAN saw the new consumer policies as an alternative way to improve salaries of workers as well as an opportunity to protect and strengthen the family. Like the unions and the PRI, Margarita Prida de Yarza associated salary improvement with the rationalization of family consumption. She stated that if “thanks to the education of the consumer we make the family budget go a long way, the economic effect would be equivalent to an increase in salaries.”⁵⁵⁹ The actions of the Agency and the Institute would serve as a “complimentary way to increase the living standards of the population.”⁵⁶⁰ Prida de Yarza, one of the fourteen women out of 238 deputies in congress,⁵⁶¹ justified her party’s proposal to create a consumer institute stating that “housewives and fathers” could greatly benefit from the existence of a government institution designed to educate them and protect them. Acción Nacional saw great potential in consumer protection institutions and highlighted how campaigns to orient consumers in other countries had been successful. Prida de Yarza said that the example of the work of the United Nations in Guatemala⁵⁶² was of particular importance for Mexico, because the consumer orientation provided by this agency “had changed the food consumption habits” of the Guatemalan population. The deputy stated that in “Mexico, our food consumption habits are defective, most of the time our meals have very little or no protein content,” so “a

⁵⁵⁸ Ibid. 21.

⁵⁵⁹ Ibid. 34.

⁵⁶⁰ Ibid. 11, 37.

⁵⁶¹ Roderic A. Camp, *Mexican Political Biographies, 1935-1981*, 2nd ed. (Tucson, Ariz.: The University of Arizona Press, 1982), annex (congress).

⁵⁶² Prida de Yarza was referring to the Institute of Nutrition of Central America and Panama (INCAP) to which I refer to in chapter 4.

Consumer Institute dedicated to orient housewives could change consumption habits” and encourage intake of more nutritious foods.⁵⁶³

The law mandated the creation of two institutions: the Procuraduría Federal del Consumidor (PROFECO, Consumer’s Protection Agency) and the Instituto Nacional del Consumidor (INCO, Institute of the Consumer). The PROFECO was responsible of handling the arbitration of individual consumer demands. This institution would mediate between individual consumers and producers, businesses or service providers. Congress gave PROFECO the power to impose sanctions to those who violated the price control measures imposed by the government. The role of INCO was to “create conscience in the mind of consumers concerning their role in economic development.”⁵⁶⁴ According to the Minister of Industry and Commerce, INCO had to educate consumers so that they would not be easily induced into buying unnecessary things and make sure they did not imitate foreign consumption patterns. INCO would provide concrete advice on how to organize personal finances and would induce a more rational use of resources. For example, INCO had to provide guidelines about nutritious foods and make consumers aware of cheaper alternatives to the food products promoted on TV.⁵⁶⁵

Law professors and lawyers from the Ministry of Industry and Commerce participated in the formulation of the consumer protection law, and in general jurists were in agreement with the final result.⁵⁶⁶ For example, Jorge Barrera Graf, expert in commercial Law and professor at the National University (UNAM), thought the new law solved some of the limitations of the Civil

⁵⁶³ *Diario de los debates de la H. Cámara de Diputados*, XLIX Cong., Periodo ordinario, 27 December 1973:88-90.

⁵⁶⁴ *Diario de los debates de la H. Cámara de Diputados*, XLIX Cong., Periodo ordinario, 14 November 1975, *Diario* 25: 31.

⁵⁶⁵ *Ibid.* 33.

⁵⁶⁶ Jorge A. Sánchez Cordero, ed. *La protección al consumidor* (México D.F.: UNAM, Editorial Nueva Imagen, 1981), 108-09.

Code with respect to consumer protection. Barrera considered that Mexican legal practices and jurisprudence “had been timid in the interpretation and application” of commercial contract laws. “The limitations of the Civil Code were insurmountable,” particularly regarding the responsibility of producers with consumers, because of the principle of contract relativity.⁵⁶⁷ This principle meant that when a consumer bought something, he or she had only entered into a contractual relationship with the seller. Consumers could only sue for general damages (*daños y perjuicios*) from commerce (sellers) not from producers. In order to sue a producer, consumers had to prove that there was an actual contractual relationship between them. Barrera explained that the new law made three substantive contributions. First, it abolished the principle of contract relativity, so consumers could now sue producers. Second, the law regulated contracts mostly ignored by civil law, like all types of service provision as well as leases and transfers (objects or real estate). Third, contracts regulated by the new law were now federal, which solved problems of jurisdiction.⁵⁶⁸ Other jurists thought that the law constituted a substantial improvement from civil law, for the reasons cited by Barrera. Jurists had punctual criticisms of the law, like for example that it was not very specific or strict regarding credit for consumption. Lawyers pointed out that the law excluded banks from the clauses regulating how much interest a creditor could charge for the purchase of consumer goods.

Business groups did not mount as great an opposition to the law as they did with regards to the 1973 tax reform attempt (addressed in the first section of this chapter). The relationship between Echeverría and the private sector, represented by organized business and industrial groups, had deteriorated greatly by the time the Ministry of Industry and Commerce and

⁵⁶⁷ Ibid., 102-03.

⁵⁶⁸ Ibid., 103.

congress were drafting the consumer protection law (1974-1975). This explains why the Echeverría administration did not consult with business groups about the consumer protection law as it did with the tax reform initiative. Jurist Barrera Graf explained that “specialized economic organizations” like industrial and business groups were not able to see the bill draft until substantial parts were completed.⁵⁶⁹ In February 1976, government officials along with COPARMEX and CANACINTRA organized seminars in Mexico City to present to business leaders the final details of the law. In these meetings, COPARMEX president Armando Fernandez expressed that a “bad application of the consumer law could slow down economic development.” He also explained that business leaders feared an “unfair application of the consumer law.”⁵⁷⁰ The Mexico City Chamber of Commerce expressed doubts about the government creating “inefficient bureaucratic agencies” that might block freedom of commerce.⁵⁷¹

The First Years of Operation of the Consumer Agencies (1977-1981)

The actual implementation of the consumer policies was to be left mostly to the next administration, since the elections took place in 1976 just a few months after the law was approved. During the years when the government drafted consumer protection law, the rate of inflation almost doubled, while GDP growth decreased by a couple of percentage points. Inflation decreased in 1975 and 1976 but economic growth continued to fall behind. The public deficit from 1973 to 1976 increased substantially. Economist (and president of Mexico 1996-

⁵⁶⁹ Ibid., 108.

⁵⁷⁰ “Mañana entra en vigor la ley federal del consumidor,” *Excélsior*, 4 February 1976, 3. “Foro Empresarial COPARMEX: Nueva ley de protección al consumidor,” *Excélsior*, 21 January 1976, 9-A.

⁵⁷¹ “Con nuevos artículos se manipula al consumidor dice Campillo Saiz,” *Excélsior*, 21 January 1976, 3.

2000) Ernesto Zedillo's analysis of the period is that an "explosive mixture of phenomena - mounting fiscal deficits, high rates of inflation, a fixed exchange rate, negative real interest rates and bitter exchanges between the public and the private sectors about their respective roles in the economic and political life of the country - was bound to provoke capital flight." Capital outflows increased through 1975 and 1976, an election year, and president Echeverría was forced to announce on the eve of his last presidential address that the fixed parity between the peso and the dollar was over, and that the Mexican currency would be allowed to float. As I explained in the first section, Mexico struck a deal with the IMF as its external sources of funding dried up. The year 1977 was one of structural adjustment, but this all changed with the discovery that Mexico had substantially more oil reserves than expected. The model of economic growth dependent on public investment continued with the new administration.⁵⁷²

Nonetheless, the overall interpretation of what kind of problems and issues the laws and institutions were designed to address remained the same. This has to do with the fact that the government of López Portillo acknowledged a continuing compromise with the social goals of the Echeverría administration. A few months before the presidential elections, members of the PRI stated that the next administration would face two related problems: first, "insufficiency of resources to satisfy the general social needs of the population" and; second, a terribly polarized income distribution. The candidate and future president José López Portillo accepted that Mexico's unbalanced income distribution had generated certain patterns of consumption in the upper and middle classes but, given the resources available, the government could not expect to extend these exact consumption patterns "to the rest of society." To discuss these issues, López Portillo met with the members of the Instituto de Estudios Políticos, Económicos y Sociales,

⁵⁷² Ernesto Zedillo, "Mexico's Recent Balance-of-Payments Experience and Prospects for Growth," *World Development* 14, no. 8 (1986): 963-65.

(IEPES, Institute of Political, Economic and Social Studies) the PRI's think-tank in charge of producing plans and position papers.⁵⁷³ López Portillo asked members of the IEPES: “What patterns of consumption can we reasonably satisfy with the resources we have?” After a couple of months, the institute elaborated a set of three consumption priorities for the government: food, health and housing (in that order). However, to be able to protect and expand necessary consumption, food, health and housing, party officials recommended first to strengthen the mechanisms to protect salaries and income.⁵⁷⁴

The first action of the Ministry of Commerce and Industry was to apply the consumer protection law to grocery stores and food production businesses. In the first forty days, the ministry inspected 40,851 commercial establishments in Mexico City and imposed 5,296 fines.⁵⁷⁵ The first industry sanction was for milk producers because, according to newspaper *Excelsior*, there were “beyond tolerable” discrepancies between the measurements included in the milk cartons and the actual milk contained in them.⁵⁷⁶ The brands *Lala*, *Portales*, *Alpura*, *La Palma*, and *Estrella de Jalapa* received fines up to a hundred thousand pesos. In Mexico, especially in urban areas, sanitary authorities had problems regulating the quality of milk and the safety measures applied in its production. Milk was a representation of the many ways Mexican consumers were at the mercy of unscrupulous businessmen. Thus, the first reference that appeared in a national newspaper regarding the application of the new law and the revised role of the Ministry of Industry and Commerce was a cartoon that depicted a female consumer

⁵⁷³ Centeno and Maxfield, “The Marriage of Finance and Order: Changes in the Mexican Political Elite,” 71.

⁵⁷⁴ Sara Moirón, “La brecha entre pobres y ricos preocupa al IEPES, Oteyza,” *Excelsior*, 19 January 1976, 1A - 10A.

⁵⁷⁵ Ángel Rivera, “Las envasadoras de leche en cartón consignadas, no dan litros completos,” *Excelsior*, 12 February 1976, 1. “Clausurados por ocultar artículos,” *Excelsior*, 12 February 1976, 9.

⁵⁷⁶ “Hasta con \$ 100,00 multó la SIC a envasadoras de leche,” 12 February 1976, 7.

accompanied by a state representative demanding a business owner to give her the exact amount of milk she purchased (see Image 3). The businessman was happy to comply with the request by filling the milk carton with water. The cartoonist was referencing popular concerns about the quality of this product and signaling the opportunity to finally solve these types of problems using the consumer protection law. The editorial accompanying the cartoon in the newspaper *Excelsior* said that before the law was passed “consumers did not even have the resource of punishing the businessmen that defrauded them, modifying their preferences, and going to another store” since the sale of incomplete liters was such a generalized practice. The editorialist acknowledged that not everybody could afford pasteurized milk, but he thought that “this circumstance alone could not lessen the value of administrative sanctions that set a precedent: that producers or intermediaries could no longer abuse consumers with impunity.”⁵⁷⁷

Image 3. “Whatever the client asks for”



⁵⁷⁷ “Leche: litros incompletos,” *Excelsior*, 13 February 1976, 2.

Source: *Excélsior*, February 13, 1976.

The main goal of the INCO was to educate the public about responsible consumption. To this end, the INCO published the Consumer's Magazine (*Revista del Consumidor*) which served as the social communications mechanism of the Consumer Protection Agency. The purpose of the magazine was to inform the public about the activities of the consumer protection institutions. However, the two institutions wanted the magazine to be accessible and fun, like a regular commercial magazine. For this purpose, they hired Carlos Ulanovsky, an Argentine journalist residing in Mexico who had previously directed the entertainment publication *Interviú*.⁵⁷⁸

The first issue was published in March 1977 and is still published today. The tone of the magazine in its first years can best be described as anti-consumerist. It reflected exactly the views of the officials who drafted the consumer protection law. In its inaugural issue the editorialist clarified what consumer institutions wanted to promote. The most important suggestion the government gave to consumers was to “live with less” (incidentally avoiding the “Veblen-effect”). The magazine listed the basic principles promoted by consumer institutions:

When people describe modern life the first word that comes to mind is “buying...” However, we suggest consumers... 1) Do not buy things just to buy them. Do not buy things that you do not need; consider the price and the usefulness of objects. 2) Do not buy hastily; plan your budget. 3) Avoid purchasing things due to irritation, ostentation or prestige. It is useless to compete with friends and neighbors to prove who has the most or the best things. 4) Do not buy articles that are beyond your means. 5) Try not to distort the essential function of things, for example, books are for reading, not for decoration.⁵⁷⁹

⁵⁷⁸ Carlos Ulanovsky, Interview by the author September 2007.

⁵⁷⁹ “Vivir con poco,” *Revista del Consumidor*, no. 1 (March, 1977): 42-43.

INCO and PROFECO wanted to promote individual responsibility with respect to consumption. A ‘good consumer’ was “a person who thought about their consumption according to a scale of needs.” A ‘good consumer’ was someone who planned her expenses, spent less than she earned, and had cash reserves.⁵⁸⁰ Good consumers would not let themselves be pressured by a businessman and would be very conscious of examining carefully the merchandise they were buying.⁵⁸¹ In other words, the government’s version of a good consumer was more akin to what industrial groups CANACINTRA criticized as “countercultural” anti-consumerism and “hippie” import from the United States.

One of the functions of INCO was to regulate advertising. Therefore, the magazine repeatedly uncovered the artifice of selling techniques. A regular section, called “anti-ads” (*anti-comerciales*), dissected television and print advertisements of a variety of products, from cigarettes to financial services. The purpose was for consumers to think about exaggerated claims or about the insufficient information they were given to judge a product. For example, the magazine ran an “anti-ad” about detergent *Ariel*. In the original TV commercial, the cleaning power of the detergent was represented by a bucket magically turning into a washing machine. The “anti-ad” asked housewives if they really thought *Ariel* had any magical or electrical powers.⁵⁸² The magazine also conducted interviews with actors and public figures and asked them to comment on consumerism or advertising campaigns of different products in a section called “Consummated and Consumed.” For example, actor Alfonso Arau referred to the *Ariel*

⁵⁸⁰ “El perfil del buen y el mal consumidor,” *Revista del Consumidor*, no. 1 (March 1977): 4.

⁵⁸¹ “Hay que saber cuánto dinero entra y cuánto sale.” *Revista del Consumidor*, no. 1 (March 1977): 19, “Ganar comprando,” *Revista del Consumidor*, No. 2 (April 1977): 83-86. “Cómo ahorrar energía eléctrica,” *Revista del Consumidor*, no. 28 (June 1980): 30-31. “Formas alternativas de consumo,” *Revista del Consumidor*, No. 30 (August 1980): 30-33.

⁵⁸² “No hay chaca chaca con Ariel,” *Revista del Consumidor*, No.39 (May 1980), 22.

commercial and recalled a story about a relative that “believed the television commercial of a soap that magically converted a bucket into a washing machine, and got upset when the bucket would not turn on.”⁵⁸³ Popular comic actor Eduardo Manzano, from the show “Los Polivoces,” told the magazine he defended advertisers, “but only because they paid for his show,” and that he thought people in Mexico were to blame for being credulous. Personally, Manzano said he did not like advertisements because he could not stand when people bossed him around telling him to “drink this, put this lotion on, swallow this, chew that or smoke this.”⁵⁸⁴

Others were not sure about the new terminology employed by the government. Writer Renato Leduc disagreed with the term consumerism because he thought it was an invention of technocrats who thought up new words to name “old things and old phenomena.” He thought that it was misused by petty politicians (*grillos*) and small time bureaucrats (*burócratas de medio pelo*). For Leduc, advertising agencies played the same role as a character known in popular culture as “the idiot who makes suggestions” (*el buey que sugiere*):

One morning, three or four *sexenios* ago, when life was still cheap in Mexico, *El Fantasma*, the driver of Paco Perez Rios, the electrical workers’ union leader, asked for 25 pesos. The driver wanted to go have lunch at the restaurant *Los Guajolotes* with his girlfriend. The union leader replied: “You are crazy. In that joint, with 10 pesos you can stuff yourself silly.” Calmly, *El Fantasma* explained to the boss: “That was then, Paco...but now they have some idiot waiter (*un buey*) who shows the specials to your girlfriend, American lobster, angel breasts, canary tongue, frog legs, Moorish crab and all kinds of strange and expensive platters that she then chooses, either out of curiosity or to mess with you (*para fregarte*).⁵⁸⁵

This image of a woman as the most easily manipulated partner in a couple was not common in the public communications strategy of the INCO. In fact, women were a very

⁵⁸³ “Alfonso Arau,” *Revista del Consumidor*, No. 5 (July 1977): 212.

⁵⁸⁴ “Eduardo Manzano,” *Revista del Consumidor*, No. 6 (August 1977): 261.

⁵⁸⁵ “Renato Leduc,” *Revista del Consumidor*, No. 1 (March 1977): 13.

important target audience for the publicity campaigns of the consumer agency. As deputy Margarita Prida de Yarza explained in her proposal to create the INCO, the institute was designed to provide advice and information for wage earners *and* their wives to run their household better. In terms of gender, the materials produced by the consumer agencies identified women as more responsible consumers. Working class men were identified as reckless, uncaring and *macho*. An INCO television program aired in 1980 compared the consumption habits of the two members of a working class couple. The video is about “Gastón,” an industrial worker. His name suggested a particular characteristic to the audience, since in Spanish the verb *gastar* means “to spend.” As soon as he receives his salary, Gastón rushes to buy tickets for a raffle from a businessman, portrayed as a vampire with fangs and cape. After buying the tickets, the worker goes to the *cantina* and gambles the rest of his money. The scene ends with Gastón singing a mariachi song with his friends and yelling: “*Vivan los machos!*” Gastón arrives home in the morning, after a night of partying, and is shown sitting in a dilapidated couch amongst broken bottles and a broken piggy bank. His wife berates him for not having any money left for the family. Their children are in the background, looking sad, thin, and wearing dirty clothes. The narrator of the video announces that in that moment the family “lost confidence” in Gastón. The video then focuses on the wife, who is thrifty and has a shopping list. After going to the market, she comes back to the house carrying a basket filled with basic products. She feeds her children and they seem happier and start doing their homework. In the end, the husband comes around and starts acting like his wife, saving money and planning his expenses.⁵⁸⁶ Another example of this gender differentiation is a cartoon that appeared in the magazine in 1979. It depicted two supermarket aisles, one filled with men and the other with women. Smiling men

⁵⁸⁶ “Consumo en general,” June 1980, Video M21, Videoteca y Audioteca de la Procuraduría Federal del Consumidor.

filled their carts with soft-drinks, liquor and chips. In contrast, women looked very serious while buying food and household items like soap. In general, the materials produced by the INCO advocated for change and were positive about men's capacity to learn from their wives, or from any other member of the family who advocated better spending habits.⁵⁸⁷

The government released audience figures of consumer education TV and radio programs (see Table 13). However, this information does not include an explanation of the methods used to produce these ratings, nor if the campaigns accomplished the desired goals. The López Portillo government directly studied the effectiveness of only one consumer education campaign, about infant feeding practices and breastfeeding. While the published audience ratings increased between 1979 and 1981 (Table 13), private television had much larger audiences than public television in Mexico, where the INCO's programs were broadcasted. Commercial television and radio stations in Mexico were required by law to devote around 12.5 percent of airtime for government use and public service announcements; although often public use of private broadcasting air was lower.⁵⁸⁸ INCO's publications were distributed through various channels. The first director of the Consumer Magazine (1977-1981), Carlos Ulanovsky, explained that part of the print run of the publication was sent to official unions, another part was distributed without cost, and the rest was sold in newspaper stands.⁵⁸⁹

Although their records are far from complete, both the national office of PROFECO and the national archives show that around half of PROFECO's arbitration efforts went to cases of real estate and construction. This suggests that consumers were more likely to involve

⁵⁸⁷ Palomo, "Supermercado," *Revista del Consumidor*, no. 87 (May 1985), backcover.

⁵⁸⁸ Victor M. Bernal, *Anatomía de la publicidad en México: monopolios, enajenación y desperdicio* (México, D.F.: Editorial Nuestro Tiempo, 1974), 145.

⁵⁸⁹ Carlos Ulanovsky, Interview by the author September 2007.

PROFECO (which meant calling or appearing in person in a local office) for complaints about higher cost goods or services than about cheaper transactions. For the 1981 period, the National Archive of Mexico has only a portion of the arbitration files for Mexico City.⁵⁹⁰ PROFECO has records of Mexico City for the years 1982 to the present, while the records for 1977-1980 were misplaced or lost.⁵⁹¹ Of the 1982 to 1983 files (approximately fifty thousand per year), 40 percent are classified as pertaining to real estate, rents and construction. The remaining 60 percent of complaints are classified in three categories: non-durable consumer products, durable consumer products, and services, with no breakdown by percentage.⁵⁹² Unfortunately, the data available does not allow for a more detailed analysis of the cases handled by the PROFECO.

INCO and PROFECO were an important part of the education and social communications strategy of one of the most important policies of the López Portillo government, the Sistema Alimentario Mexicano. This policy (1980-1982) was intended to increase agricultural production, improve distribution systems and popular diets. In chapters four and chapter six I analyze in detail the specifics of the SAM education campaigns in which the INCO participated and that were informed by the research by the National Institute of Nutrition. In these campaigns the INCO used the “anti-consumerist” message developed as an agency mission

⁵⁹⁰ For 1981, the National Archive has approximately 3,000 arbitration files. However, the government did not release any official figures about the total number of complaints and arbitrations for the years of operation 1977-1981. Without official information it is impossible to determine the actual number of arbitrations per year. Around half of these files refer to cases related to real estate and construction. In the case of the arbitration files at the National Archive, there are 128 arbitration files not referring to real state, and of these half (52 percent) were solved in favor of the consumer, less than fourth(19 percent) in favor of the seller or business and the rest of the files (29 percent) are incomplete. However, there is no indication of the representativeness of the sample. I consulted available files at the National Archives contained in boxes 1 to 26, files were numbered from 1 to 7778, but the actual number of files in the archive was 300. AGN, Fondo: Procuraduría Federal del Consumidor.

⁵⁹¹ Archivo de Concentración, Procuraduría Federal del Consumidor, Sección Alimentos y Bebidas, Sección Inmuebles, 1982. I consulted the summary lists of two sections as well a portion of individual files (100 in total). Access to individual records for 1983 to the present is not permitted due to privacy issues.

⁵⁹² PROFECO opened regional offices or delegations in 32 states by 1982, but the records were not filed in the federal office but stayed in the individual offices.

by legislators, officials of the Ministry of Industry and Commerce and in the first issues of the Consumers' Magazine.

Conclusion

The Echeverría government's consumer protection policies were the result of a strategy to contain labor demands about better wages during an era of inflation. These policies were influenced by the economic context of Mexico in the 1970s, when macro-economic growth stalled and general consumer prices went up due to the international petroleum crisis. Government officials from the Ministry of Industry and Commerce and the Treasury considered consumer policies as part of the general economic policies intended to generate growth. Critics of stabilizing development, like Ifigenia Martínez, urged the government to take a more active role in regulating upper class consumption to generate more savings. Government officials, as well as organized labor and members of the conservative opposition party PAN, saw rationalizing consumption and fomenting consumer education as an alternative to wage increases. All these actors thought that budgeting and moderating consumption would make most people's salaries go a long way. The government message was that "living with less" lead to economic growth.

The consumer legislation was based on the principle that consumer rights were social rights, in the same vein as labor rights. The ideas that informed the legislation, assumed that workers were consumers and vice versa. The model of consumer protection was based on tripartite negotiation mode used by the government to mediate wage disputes between organized labor and employers. The government assumed that in the same way labor and employers were not in equal position to enter a contractual relationship, the same was true between consumers

and producers (and sellers or service providers). The state had to regulate certain aspects of these contractual relationships to ensure that the law was not used mostly in favor of the most powerful parties to the contract.

As a strategy to make more efficient disputes between consumers and providers, the consumer protection law was effective, but to achieve other goals like controlling inflation it was not. The new institutional framework made it easier for consumers to present complaints to authorities without paying legal fees. Consumer protection institutions did not help curb inflation. Individual consumers were charged with the role of denouncing price modifications and abuses of businesses and service providers to the government. Individual consumers got individual personalized solutions from the consumer protection agencies. Case by case assessment of price abuses is not the optimal or most efficient way to monitor price increases.

Legislators and government officials did not contemplate that the policies they designed and legislations that they passed would have the effect of preventing collective action. In particular, the arbitration model in particular used by the Federal Labor Conciliation and Arbitration Board to solve labor disputes assumed that one of the parts of the disputes, labor, would be represented by collective organizations: unions. In contrast, the consumer protection law assumed that consumers were individuals not groups of people with the same interests. The consumer education policies were also aimed at individual consumers and families and highlighted personal responsibility. The consumer protection policies in Mexico isolated individual consumers from others who had similar problems. A state institution, the INCO, was supposed to represent collective consumer interests. There is no evidence that the Mexican government looked for an alternative model to enforce consumer rights, like the class action lawsuits used in the United States, in which consumers can act collectively.

Chapter 6: Sugar, Soft-drinks and the Mexican Government's Nutrition Education Campaigns

Since the mid-1970s, federal officials began to regard diet not only as an object of health intervention and macroeconomic policy, but also as a crucial component of the new consumer culture. Newly instituted government agencies, such as the Instituto Nacional del Consumidor, prompted citizens to control and rationalize their spending on food as a way to improve their household economy. This chapter is about the intersection of consumer and nutritional policies in Mexico during the late 1970s and the early 1980s. Presidents Luis Echeverría and José López Portillo designed policies intended to palliate and reduce the effects of growing economic inequality in Mexico, and one of the areas that both presidents prioritized was improving food consumption. Through different strategies that depended on the economic and political resources available at the time, both administrations sought to modify the dietary patterns of Mexican citizens. Authorities saw increased consumption of “junk food” as an example of wasteful spending. This was especially true in a setting in which the most important social policy promoted by the government in the late 1970s and early 1980s was the Sistema Alimentario Mexicano (SAM, Mexican Food System), which sought to improve rural income, agricultural output and the overall nutritional status of the Mexican population. Additionally, the SAM was at its core a nationalist program. The ultimate goal of the SAM was to turn Mexico into a self-sufficient food producer. Thus, the government also took issue with the fact that a significant number of the companies that manufactured and profited from “junk foods” were not Mexican.

Soft-drinks were a particularly significant product in Mexico because they were widely consumed. Since the late 1970s, Mexico became the second largest consumer of soft-drinks in

the world, only behind the United States.⁵⁹³ The government considered this rising consumption of soft-drinks as both an economic and a public health problem. It was an economic problem because subsidizing the sugar industry and consequently the soft-drink industry was a burden to the already overstretched Mexican public budget. In terms of public health, most nutritionists and doctors agreed that soft-drinks did not have any nutritional value. As shown in the previous two chapters, public officials thought that, given the fact that Mexican families had limited economic resources, their budget should be used rationally. In other words, money had to be used exclusively to buy cheap and nutritious foodstuffs, which did not include soft-drinks and junk food.

This chapter examines first how the government reacted against the growing consumption, mostly in urban areas, of processed and industrialized foods of low nutritional value. Health officials and nutritional experts were not only worried about the public health consequences of these diet changes, but also about the effects on family budgets and the Mexican economy in general. The state took it upon itself to educate the public about nutrition and “rectify” consumption habits. As I explained in chapter five, since the early 1970s the government formulated a policy concerning consumption and consumer rights based on curbing unnecessary and sumptuary spending by most social classes. This thrift was supposed to have the double effect of helping improve Mexico’s balance of payments and curb national inflation. At the same time, it would help stretch the meager salaries of many private citizens.

The case of the sugar and soft-drinks is an example of how the Mexican government’s contradictory policies influenced the market. On the one hand, the federal government by the late 1970s controlled most of the sugar mills in the country, and had to subsidize production and

⁵⁹³ Larry Jabbonsky, "The Mexican Resurrection," *Beverage World* 112, no. 1547 (1993): 38-39.

costs to prevent scarcity. For the federal government, supporting and managing sugar production was politically important because large sectors of the peasantry were employed in this sector. On the other hand, during the presidency of José López Portillo the National Consumer Institute and health authorities began campaigning against increasing consumption of sugar by the Mexican population, particularly in the form of soft-drinks. In other words, the government promoted and discouraged consumption at the same time.

From 1980 to 1982, while the Mexican Food System (SAM) was in place, in addition to promoting a balanced diet, the Mexican government insisted on trying to discourage the consumption of non-nutritious foods. Soft-drinks became popular symbol of foreign influence due to their growing importance in the Mexican diet. However, the state faced challenges to implement the project of reducing the consumption of this product, which led to a major contradiction in terms of public policy. Given the particular political importance of the sugar industry and the consequent importance of the soft-drink manufacturers -who were the largest industrial clients of this economic sector-, the Mexican State subsidized these two products at the same time it was trying to lower its overall consumption. Different agencies of the government had diverging interests, and acted accordingly. These policy contradictions indicate the non-monolithic nature of the Mexican state.

In order to explain these contradictions, this chapter is divided in three parts. In the first part, I explain the way the sugar industry operated in post-revolutionary Mexico up to the 1970s. The purpose is to explain how price controls and government subsidies changed sugar production and the market for the product from the late 1950s to the late 1970s. The second part is about the expansion of the soft-drink industry in Mexico as well as the growing importance of soft-drink companies as sugar buyers. In the third part, I examine the criticisms of increasing

soft-drink consumption by different actors, particularly doctors and the media. Finally, I will explain the consequences of the decline of the sugar industry in the context of the implementation of the SAM and the policy repercussions of subsidizing this sector of the economy.

Sugar manufacture and subsidies in twentieth-century Mexico

Since the end of the Revolution, the sugar industry was subsidized mostly because of political reasons. Sugar production tended to be localized in the areas where the most radical elements of the agrarian revolution, the Zapatistas, were dominant. Land reform was obtained at the expense of large plantation owners, some of whom managed to retain their sugar mills, if not their land.⁵⁹⁴ In 1938, the mill owners organized under a collective name, the Unión Nacional de Productores de Azúcar, S.A. (UNPASA, National Union of Sugar Producers), and would be the sole suppliers of sugar to the country. Starting in 1943, the Ministry of Agriculture decided, in conjunction with the mill owners, which ejido lands would supply the mills. The cane producers became dependent on the mills “for credits for sowing and cultivation, and for fertilizers, irrigation, and transportation.”⁵⁹⁵ Under this scheme, which lasted approximately into the late 1950s, the government in essence licensed a system of oligopoly capitalism, combined with a system that utilized mill owners as middlemen or caciques for the control of their dependent peasant populations.⁵⁹⁶

⁵⁹⁴ Peter Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," *Latin American Research Review* 28, no. 1 (1993): 68.

⁵⁹⁵ Susan Kaufman Purcell, "Business-Government Relations in Mexico: The Case of the Sugar Industry," *Comparative Politics* 13, no. 2 (1981): 215.

⁵⁹⁶ Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," 69.

During the Second World War, when most of the agricultural produce was scarce, sugar retained its value and in the following years it remained a very important commodity, which Mexico used to maintain favorable terms of trade. In the war years, UNPASA publicized its role as a productive sector of the Mexican economy that maintained fair prices. The organization started an advertising campaign promoting sugar as healthy and nutritious food and celebrating its consumption. An advertisement published in 1940 made the following claims: “The Mexican people have increased sensibly their sugar consumption since the year 1939. The most important factor is that a small volume of sugar provides energy and resistance. It also has a very agreeable flavor. It is also the cheapest food out there thanks to the efforts of UNPASA. Before, sugar was a luxury product, but now it is a product of common and current use.”⁵⁹⁷ In the ad, producers also included a comparative table of the prices of rice, flour, corn, lard, meat, coffee and sugar, between 1933 and 1939. The price of sugar remained very stable while the prices of all of the other products increased two or three times.

The 1950s were characterized by worker unrest and, in order to mitigate the effects of wage controls, the government froze the prices of a series of basic commodities that were or had become staples in the diets of the poor. The government froze the price of sugar in 1958, a particularly contentious year in terms of labor conflict. The state officials considered that sugar production “was high enough to enable the mill owners not only to satisfy the domestic demand but also to earn sufficient profits through export of the surplus sugar.”⁵⁹⁸ Since the 1958 price freeze, different public economic dependencies were in charge of setting prices, taxing the import revenue and giving affordable credit for the cane growers. In order to allay suspicion and

⁵⁹⁷ “Consuma Usted más Azúcar,” *Revista Hoy*, 1 January 1940.

⁵⁹⁸ Kaufman Purcell, “Business-Government Relations in Mexico: The Case of the Sugar Industry,” 218.

fear that UNPASA's profits were gained at the expense of the poor, the government gradually decided to increase its role in the organization itself.⁵⁹⁹

Production of sugar increased in the 1950s (see Table 14) and mill owners used advertisement to promote their product and expand their sales. In the mid 1950s, UNPASA's advertisements depicted workers, athletes, indigenous people, and housewives eating or drinking foods or beverages prepared with sugar. For example, an advertisement featuring an industrial worker claimed the following: "He needs sugar. The capacity to work of industrial laborers results in increasing production. The tired worker produces less. The worker conquers his fatigue with sugar. That is why sweetened beverages should never be absent in the workshop or the factory."⁶⁰⁰ UNPASA also claimed that sugar "did not make you fat."⁶⁰¹ In this ad, sugar producers capitalized on popular ideas at the time among doctors and some public health authorities. Sugar producers linked consumption of their product with modernity and productivity, and the idea that Mexico's success and development depended on the diet of workers.

From 1940 to 1976, Mexico increased its internal consumption of sugar every year (see Table 10), an event celebrated by the Mexican press. By 1965, UNPASA informed that Mexico had consumed 1,359,484 tons of sugar in the previous year, a figure that increased to 1,430,277 tons in 1966.⁶⁰² Industrial consumption of sugar increased at a higher pace than domestic

⁵⁹⁹ Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," 70.

⁶⁰⁰ "Él necesita azúcar," *Revista Hoy*, 1 October 1955, 2.

⁶⁰¹ *Ibid.* 2

⁶⁰² "Peligro de escasez de azúcar en la República," *Excélsior*, 28 November 1968. "Satisfactorios resultados, en la campaña pro consumo de azúcar," *El Nacional*, 14 December 1962. "Mayor consumo nacional de azúcar," *Novedades*, December 4 1963, "Exporta México sus excedentes de azúcar," *El Universal*, 3 October 1963, "Se consumió mas azúcar el año pasado," *El Universal*, 18 April 1967, "Cada mexicano consume por año 34 kilos de azúcar," *El Universal*, 6 November 1967.

consumption since the 1950s. Domestic sales of sugar more than doubled from 1956 to 1976 (from 661,730 tons to 1,502,498), while industries consumed in 1976 more than four times the amount of sugar that they did in 1956 (204,675 to 1,007,863 tons). Thus, the share of industrial sugar consumption in relation with total consumption did increase over time (see table 10). Domestically, soft-drink manufacture became the most important industrial outlet for sugar. In 1960, soft-drink manufacturers bought 176,411 tons of sugar (57 percent of the total industrial consumption), a figure that increased to 276,862 tons (62 percent of industrial consumption), in 1965.⁶⁰³ During the 1970s, the soft-drink industry consumed an average of 56 percent per year of total sugar production.⁶⁰⁴

Production was high enough even to satisfy this domestic demand, so the government permitted cane producers to export sugar, which was very a profitable business. Mexico exported an average of half a million metric tons a year between the mid-1960s and the mid-1970s. In the early 1960s, international sugar prices were generally high, but the business became even more profitable for Mexico due to the cancellation of the Cuban sugar quota in the U.S. because of the Cuban Revolution.⁶⁰⁵ The government controlled the domestic price of sugar from 1958 to 1970 and also appropriated export profits through taxation, so private investment in the industry declined even in the context of favorable international prices. The government provided private owners with numerous loans to modernize the mills and increase production. However, this money was invested in other industries and in urban real estate. For this reason, the sugar

⁶⁰³ "La burbujeante industria de los refrescos," *Transformación* 1965, 16.

⁶⁰⁴ Ricardo del Muro, "Más de la mitad del azúcar del país es para la industria refresquera," *Uno más uno* 24 November 1982.

⁶⁰⁵ Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," 69-72.

infrastructure deteriorated more and more since the late 1950s and production did not grow at the rates the government expected.⁶⁰⁶

As investment in the sugar industry became less attractive, many private mill owners left the industry. This was a problem for the government not just in economic terms but also in political terms. The departure of private mill owners from the industry “implied the breakdown of the mechanisms for political control of a substantial portion of the peasantry,” so the government gradually stepped in and took their place from 1958 to 1970.⁶⁰⁷ The takeover of the industry was done in a disorganized fashion. By the mid-1970s there were several government agencies in charge of different mills all over the country. Further government intervention drove away more private mill owners. The Echeverría administration also started to build additional mills, instead of refurbishing the existing ones, as a strategy to palliate rural unemployment and solve problems of land invasions that had proliferated during his term. In 1970, the administration created the Comisión Nacional de la Industria Azucarera (CNIA), which incorporated UNPASA, and had the goal of eliminating subsidies through coordinating the relationships between the government and various sectors of dedicated to the production of cane.⁶⁰⁸ Also between 1970 and 1976, cane growers mobilized and occupied mills in Veracruz and Morelos to protest working conditions, delayed payments and wage levels. The official party, through affiliated peasant branch the Confederación Nacional Campesina, and the CNIA

⁶⁰⁶ Kaufman Purcell, "Business-Government Relations in Mexico: The Case of the Sugar Industry," 218.

⁶⁰⁷ Ibid. 219.

⁶⁰⁸ Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," 70.

stepped in. The PRI used concessions, cooptation of leadership or repression and solved these conflicts.⁶⁰⁹

The price of sugar in the international market increased between 1970 and 1974, but this fact became increasingly irrelevant since rising domestic demand hindered the industry's capacity to export. The international price of sugar collapsed between 1975 and 1976, and Mexican sugar became too costly for foreign markets.⁶¹⁰ The federal government continued to subsidize the sugar industry, which after the collapse of international prices went bankrupt. Starting in 1976, most of the private sector lost the mills to foreclosures and the government was now in charge of operating, maintaining, and increasing production in the outdated factories. Sugar became a very expensive commodity for the government. In 1976, sugar exports disappeared (see Table 10) and by 1979 Mexico did not produce enough sugar to satisfy the growing domestic demand, so imports became necessary. The government was in charge of these imports. As the public sector controlled nearly 70 percent of the sugar industry, the López Portillo administration instituted yearly increases sugar prices for industrial uses, in order to sustain production. The government wanted to restore private control of the industry using subsidies and a modest average profit rate of 6 percent. However, this policy "neither relieved the outstanding debts nor promoted profit rates sufficient to permit new capitalization of the industry."⁶¹¹

The sugar industry in Mexico experienced almost two decades of steady growth in production, with declining involvement of the private sector in favor of the public sector. State

⁶⁰⁹ P. Singelmann et al., "El desarrollo capitalista periférico y la transformación de las relaciones de clase en el campo. Papel de los campesinos cañeros en la industria azucarera mexicana," *Revista Mexicana de Sociología* 41, no. 4 (1979): 1173.

⁶¹⁰ Kaufman Purcell, "Business-Government Relations in Mexico: The Case of the Sugar Industry," 224.

⁶¹¹ Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," 82.

price regulations on the price of sugar did not encourage investment, even when the international market was favorable to profitable exports. Nonetheless, the sugar industry was politically important for the government as a means of controlling large sectors of the peasant population. In 1976, the industry employed around 12 percent of the economically active population in rural communities.⁶¹²

At the end of the 1970s, the sugar industry was in decline and increasingly under government control. The federal government subsidized the industry and began to operate mills when private investors went bankrupt. Between 1958 and 1970, the price of sugar did not vary and the government appropriated export profits through tariffs. This situation led to reduced investment and the government began to take over the mills, concerned that bankruptcy would result in mass unemployment and backlash of the peasantry whose livelihood depended on the industry. In the next sections, I address the soft-drink industry, which became one of the most important buyers of Mexican sugar since the 1960s as well as the policies implemented after 1970s to address the decline of the industry.

Soft-drink companies in Mexico

The soft-drink industry in Mexico grew in part thanks to the presence of American companies such as Coca-Cola in the Mexican market. The rise of this particular company is part of a larger process that started with the expansion of the Mexican economy since the end of the Second World War, which made consumer markets attractive to foreign investors. Some companies, for example the advertisement agency J. Walter Thomson and the department store Sears, began operating without regard for local customs, and struggled to become competitive.

⁶¹² Kaufman Purcell, "Business-Government Relations in Mexico: The Case of the Sugar Industry," 213.

However, these companies learned from their mistakes and quickly made institutional and personnel changes that would permit them to increase their sales. By the 1950s, American manufacturers and advertising companies had adapted some of their practices to the Mexican business environment, and to Mexican culture in general.⁶¹³

The Coca-Cola Company's business model was tailor-made for these market conditions, in which imposition or disregard for local business and consumer culture was unprofitable. Coca-Cola's key business strategy, in Mexico and all over the world, was the franchise system. Since 1886, when Coca-cola first made its appearance, the company has remained primarily the manufacturer of the syrup or concentrate. The bottling of the product was promoted as an independent business.⁶¹⁴ This was an attractive strategy for the Mexican government because it permitted the promotion of an existing native industry. Bottling plants were Mexican even if the brands were the property of American companies. Thus, in the first part of the century, soft-drink bottling plants that produced American brands were business ventures of independent Mexican businessmen residing in the community and operating with their own capital. Retail sales and distribution of soft-drinks were also businesses operated by Mexican nationals (small merchants, dealers, shopkeepers and vendors). The profit structure of Coca-Cola is such that the dealers receive the largest share, the bottlers the next largest and the Company the smallest share.⁶¹⁵ More importantly, the establishing of a local Coca-Cola bottler necessarily created demand for other local businesses to supply the bottler with everything from sugar and glass to packing

⁶¹³ Moreno, *Yankee Don't Go Home!: Mexican Nationalism, American Business Culture, and the Shaping of Modern Mexico, 1920-1950*.

⁶¹⁴ E. J. Kahn, *The Big Drink* (New York,: Random House, 1960); Mark Pendergrast, *For God, country and Coca-Cola: the Unauthorized History of the Great American Soft Drink and the Company that Makes It* (New York: Scribner's, 1993).

⁶¹⁵ "Algo que usted debe saber sobre Coca-Cola," *Revista Hoy*, 5 March 1960, 7-8.

cases, delivery trucks, and uniforms. This business scheme fitted perfectly with Mexico's development scheme, with the availability of raw materials and an existing bottle producing infrastructure linked to beer manufacture.⁶¹⁶ The soft-drink commercialization benefited from the explosive growth of micro-businesses that sold food. In 1938, the Soft-drink Producers Association sold their product to a little more than 30,000 small businesses in all of Mexico. By 1966, the points of sale for the Coca-Cola Company were calculated in around a million and a half for the entire republic, without counting restaurants.⁶¹⁷ The Patent and Trademark Law also helped Coca-Cola expand its share of the Mexican market. At first the government granted patents to a myriad of Coca-Cola imitators. However, the Coca-Cola Co. sued all of its competitors before the Mexican Supreme Court. The avalanche of rulings mostly in favor of the Company were concentrated in 1947 and were only challenged by a prominent nationalist judge, Manuel Bartlett, who did not see the benefit of providing protection to a product with "no eminent value," which instead restricted the growth of local brands. According to Bartlett "the only intrinsic value of Coca-Cola as a product is advertisement."⁶¹⁸

The rise of massive use of advertisement to sell soft-drinks in Mexico coincided with the birth of the national motion picture industry. Founded by joint American and Mexican capital to distribute films in all of Latin America during the War, it was notable for its not so shy use of product placement. Films showcased the comforts and lifestyles available to urban dwellers,

⁶¹⁶ For glass and beer production, see Michael Snodgrass, *Deference and Defiance in Monterrey: Workers, Paternalism, and Revolution in Mexico, 1890-1950*, Cambridge Latin American studies ; (Cambridge, UK ; New York: Cambridge University Press, 2003).

⁶¹⁷ Asociación de Fabricantes de Aguas Gaseosas y Minerales de la República Mexicana to SEcretario de Hacienda y Crédito Público, May 19, 1938, AHSS, Salubridad Pública, Sección Jurídica, caja 52, exp. 4. "Datos importantes de la Industria Coca-Cola de la República Mexicana," *Bebidas* 47 no. 3, (1966), 8.

⁶¹⁸ *Semanario Judicial de la Federación*, Epoca V, Tomo XCL, Numero 8, Antigua Imprenta de Murguía, 1947. 1434-1447.

from Good Year tires to Coca-Cola, that could also be transplanted to idyllic rural settings.⁶¹⁹ Even Spanish director Luis Buñuel, probably not inclined to receive direct sponsorships, provided a veiled social commentary in his 1950s film *Los Olvidados* about working class youths in Mexico City. He placed both oversized and small Coca-Cola ads as a background to the action, to replicate the appearance of marginal areas in the City. Soft-drink manufacture became a symbol of Mexican industrial modernity and growth, and of collaboration between foreign and local investors.⁶²⁰ The story of the soft-drink brand Mission Orange illustrates how the interests of manufacturers, advertisers, and the government coincided in selling this idea. The government considered soft-drink manufacture an expanding sector, but one that had to be less dependent on imported primary materials. Economic officials were concerned about growing imports of syrups for soft-drinks, so much that they granted a loan to two orchard owners in Veracruz who wanted to produce citric acid and artificial flavors. The orchard owners sold citric acid to other manufacturers and used it for their own company, a franchise of the California brand Mission Orange.⁶²¹ The product was featured prominently in the 1949 movie “Café de Chinos” (Chinese Coffee-House),⁶²² a premier example of the urban movie genre. The main character was a Chinese immigrant with a heart of gold who served food and refreshments to the impoverished dwellers of a Mexico City neighborhood. The drama unfolds as he competes for the affections of a young single mother with a Mission Orange delivery man. In the melodrama, the soft-drink company delivery man, whose name was rarely mentioned, and to which other characters

⁶¹⁹ “Informe referente al balance al 30 de junio de 1948 de la Mission Orange de Mexico, S.A.,” AGN, Gonzalo Robles, vol. 77, exp.7, 1-2. “Antecedentes de la Industria,” AGN, Gonzalo Robles, vol. 77, exp.7, 1-6.

⁶²⁰ *Los Olvidados*, DVD, directed by Luis Buñuel (1950, México, D.F.: Televisa, 2004).

⁶²¹ “Informe referente al balance al 30 de junio de 1948 de la Mission Orange de Mexico, S.A.,” 7.

⁶²² *Café de Chinos*, DVD, directed by Joselito Rodríguez (1949, México, D.F.: Tesoros del Cine Mexicano, 2002).

referred to as the “Missionary” (El Misionero), drove a pristine white truck in a clean polished uniform into the crowded city streets. He was greeted with deference by the neighbors for having an “honorable job.” This character got the girl in the end, beating the Chinese man who, disappointed and heart-broken, was transformed into a true Mexican when he surrendered his Buddhist faith in favor of the Virgin of Guadalupe. In this movie, the soft-drink brands represented modern industry, new products that improved the livelihood of people by providing new consumption options and decent employment.

Another characteristic that made the soft-drink industry an attractive investment was that many people believed that soft-drinks were safer and cleaner than tap water in Mexico. The companies used the media to promote this positive characterization of their products. Long articles with photographs of soft-drink plants and how they operated appeared in national newspapers. These articles explained that the water that the soft-drink plants took from the municipal system was filtered and disinfected.⁶²³ However, given the lack of records concerning exactly how and where soft-drink companies obtained their water supply and treated the waters they used for their products, the accuracy of this characterization is hard to determine. In terms of the effects of the quality of the water on health, higher mortality and morbidity was associated with housing with no water supply (nor linkages to the sewage system) rather than with the quality of the water provided by the municipal system.⁶²⁴

What is clear is that officials noticed the claims made by the soft drink companies and they were not pleased with the perception that Mexico City had poor quality drinking water. Officials had been trying to improve the quality of the water for many years. From 1956 to 1960,

⁶²³ Humberto Ruiz Sandoval, “Lecciones industriales de Excélsior: la fabricación de refrescos,” *Excélsior*, 21 December 1959, suplemento, 1-2.

⁶²⁴ David J. Fox, “Patterns of Morbidity and Mortality in Mexico City,” *Geographical Review*, 62, no. 2 (1972): 151-57.

chemists at the Ministry of Health checked if the quality of the water supply complied with public health regulations. Samples were taken from the municipal system, treated waters from different springs that supplied Mexico City, water tanks in residences, and purified waters sold to the public. On average, around 25 percent of the water samples were not potable, but the samples of purified water sold to the public in cases or water trucks fared much worse: they were declared not potable in 46 percent of the cases.⁶²⁵ Given these continued efforts, soft-drink companies were forced to acknowledge the work of public health authorities. The National Association of Producers of Bottled Waters A.C., which included bottlers of Coca-Cola, Pepsi-Cola, Squirt, Delaware Punch, Canada Dry and Orange Crush as well as Mexican brands like *Pep*, *Del Valle*, *Sidral*, *Jarritos*, *Manzanita Sol*, and *Refrescos Pascual* addressed a public letter to the Minister of Health which appeared in seven newspapers. The Association publicly condemned the idea “that the people of low economic conditions were forced to buy their products” due to the danger of contaminated drinking water in the Federal District. In fact, the companies claimed that the water contained in their soft-drinks came exclusively from “the municipal water line.”⁶²⁶

Bottlers also fought for their product to be included in the basic commodities basket in order to obtain state protection with respect to the price of raw materials and import tax exemptions. Most bottling companies used an organization created in the mid-1940s to defend their interests before the government. The Soft-Drink Association formed an alliance with small shop owners and soft-drink distributors which proliferated all over Mexico. The Chambers of Commerce of several states organized successfully to block an initiative to tax soft-drinks sales

⁶²⁵ Armando Romero Alaniz, “Clasificación Bacteriológica de las Aguas que se Consumen en el Distrito Federal,” *Salud Pública de México* 3, 3 (1961), 385-389.

⁶²⁶ “Asociación Nacional de Productores de Aguas Envasadas, A.C.,” *El Universal*, 27 June 1968, 12.

in 1938.⁶²⁷ Distributors, bottlers, commerce and industry unions protested again when the president approved a 5 percent tax on soft-drinks in 1947. They claimed, using the government's own vocabulary, that soft-drinks were a basic commodity, a staple in the diet of Mexicans, which contained the necessary sugar to get the workers through the day. A particularly enthusiastic writer pointed out how the product combined two essential elements: "sugar for calories and the protection of the purified waters, an element that so many of our popular classes lack."⁶²⁸ It was not until 1957 that the government was finally able to increase taxation and modify the terms of the fiscal obligations, terminating the deductions these companies could claim for advertisement expenses, as well as taxing the soft-drink companies per sales and not per production unit.⁶²⁹

However, the way soft-drinks were classified in the Mexican economic and tax codes was contradictory. For the Ministry of Industry and Commerce, soft-drinks were basic commodities which were subject to official prices. At the same time, soft-drinks were listed as luxury articles in the tax code created by the Ministry of Finance in 1957 and were taxed accordingly. The producers paid a 5 percent tax to the government. The bottlers liked the protection and the subsidies provided by the government (for glass production and water services) but disagreed

⁶²⁷ "El Aumento de los Impuestos a Gaseosas," *El Gráfico*, 2 June 1938, "Peligro que desaparezca la Industria de Aguas Gaseosas," *El Universal*, 3 June 1938, "Reunión Local de Trabajadores de Aguas Gaseosas," *El Nacional*, 3 June 1938, "Impuesto solo a aguas minerales," *El Universal*, 7 July 1938.

⁶²⁸ Telegrams to Miguel Alemán Valdez from bottlers, (Embotelladores de Coahuila, Embotelladora del Pacifico, Embotelladora Chapala, Embotelladora La Victoria, Embotelladora Potosi, Embotelladora Tropical, Asociacion de Embotelladores Pepsi-Cola, Harold Circuit Embotellador, Embotelladora La Higienica, Embotelladora Tropical, Bebidas Purificadas, Industria Embotelladora de Durango, Embotelladora Nacional, Embotelladora Monterrey), workers (Sindicato de la Fabrica de Gaseosas La Victoria Cuerpo de Obreros Embotelladora Potosi, Sindicato de Obreros y Aguas Gaseosas y Similares del Distrito Federal), distributors (Carlos Klein, Gilberto Campos, Francisco Gordillo, Petronilo Villalobos, Manuel Franco Cárdenas, Guillermo López, Ernesto Garcia Fierro, Genaro Mendoza, Antonio Serna Morales., Mariano Díaz), commerce (Comerciantes de Covarruvas Veracruz, Comerciantes la Oaxaquenia, Comerciante de Alvarado Veracruz, Comerciantes de Rio Verde, San Luis Potosi, Comerciantes de Cardenas San Luis Potosi) 22-29 April 1948. Manuel Perez to Miguel Alemán Valdez, 24 April 1948, AGN, MAV, vol. 564.2/140, exp. 1,

⁶²⁹ "Varias embotelladoras están en peligro de desaparecer," *El Universal*, 17 August 1956. "Mayor Equidad en un Impuesto," *El Nacional*, 27 December 27, 1957.

with the tax classification and the price controls. In 1966, the soft-drink producers decided to increase prices without consulting the government and obtained an *amparo* from a district judge in the city of Puebla to prevent authorities from sanctioning them for the increases. The bottlers cited increases in production and labor costs to defend their actions. The Ministry and newspapers reported many complaints of consumers, especially in the Federal District. The conflict was resolved in favor of the government, who forced the bottlers to return to the original prices.⁶³⁰ An editorialist commenting on the incident acknowledged that soft drinks were not “essential to life, not even modern life.” For him, the government setting prices limited freedom: “people cannot even determine for themselves how to use their own money. If someone wants to buy an expensive soft-drink the government does not have to intervene.” The columnist thought that prices for soft-drinks had to be decided in the open market.⁶³¹

In the early 1970s, problems regarding taxation and classification of soft-drink as luxury articles were solved. The government needed to raise funds to continue to subsidize the sugar industry so, in January 1971, the official price of sugar increased 50 percent (from 1.60 to 2.40 pesos per kilo). Soft-drink producers were also given permission to raise their prices after 12 years of maintaining them frozen. The government passed a new law that would provide additional benefits to soft-drink companies but would also increase tax revenue. The 5 percent tax charged directly to the producers was eliminated and the authorities imposed a 25 percent indirect tax, in other words the tax was transferred to consumers.⁶³² The 1971 price increases

⁶³⁰“Sección Editorial: Abuso,” *El Universal*, 29 July 1966, Antonio Lara Barragán, “No autoriza la SIC ningún aumento al precio,” *El Universal*, 29 July 1966, “El Amparo a los Embotelladores debe impedir sanciones en su contra,” August 8, 1966, “Tiene dos caras el problema refresquero,” *El Universal*, 9 August 1966, Octavio Medal, “No Habrá aumento en los precios de los refrescos embotellados,” *El Nacional*, 10 August 1966.

⁶³¹ Enrique Maza, “El México esencial y los refrescos,” *Excélsior*, 10 August 1966.

⁶³² Luis Felipe Dávila Durante, “Problemas económicos de la industria y la empresa de refrescos” (Tesis, Universidad Nacional Autónoma de México, 1974), 90-91.

reduced sales that year but the industry quickly recuperated. The total value of the production of the soft drink industry increased since 1960, and it remained stable as percentage of the total GDP, after a period of growth in the 1960s. In contrast, the value of the sugar industry as a percentage of GDP declined since 1970 (see Table 15).

Changing Perceptions about Sugar and Soft-Drink Consumption in 1960s and 1970s

Mexico

Starting in the early twentieth century, doctors and researchers all over the world had accumulated evidence that diet played a major role in the development of chronic diseases, like cardiovascular ailments and non-insulin dependent diabetes (type-two diabetes). Since the beginning of the century, experts and nutritionists had been recommending moderate sugar intake as a preventive health measure. For example, an editorial published in 1954 in newspaper *El Universal* summarized the mid-century knowledge regarding health and sugar consumption. Sugar was a food “whose properties were contrary to human physiological needs.” According to the article, immoderate consumption of this product was related to higher incidence of dental caries, diabetes, liver problems and obesity.⁶³³ In the 1960s and 1970s, while evidence collected using epidemiological and clinical studies was still far from conclusive,⁶³⁴ the medical establishment agreed on the pernicious effects of high sugar intake.

In the mid-1960s, both the INN and the World Health Organization conducted some of the first studies of the possible effects of diet changes in urban populations in Mexico. Salvador Zubirán and Adolfo Chávez of the INN recruited twenty two doctors to conduct a nutritional

⁶³³ “Medicina: hasta dónde es buena la azúcar como alimento,” *El Universal*, 13 June 1954.

⁶³⁴ J.I. Mann, "Diabetes mellitus: nutritional aspects of aetiology and management," *Recent Advances in Clinical Nutrition* 2(1986): 271-72.

survey and clinical check up of general health and weight of approximately 400 families (including 4,933 adults) residing in a working class neighborhood of Mexico City (*Unidad Independencia*). The doctors found a higher prevalence of type-two diabetes at age 40 to 70 years in Mexico City (2.3 percent) than had been reported from other countries. Almost half of the people (41.6 percent) who were diagnosed as diabetics through the survey did not know that they had the disease.⁶³⁵ The doctors found that family history and obesity were important factors that predicted the prevalence of the disease in the population they studied. As genetic factors could not be modified, Zubirán and Chávez recommended focusing on good dietary practices, like limiting sugar intake, as a prevention measure.⁶³⁶ The WHO study yielded similar results in terms of the prevalence of diabetes in the Mexican capital. Mexico City had the highest death rate due to diabetes among twelve cities.⁶³⁷ The rate was almost twice the next highest rate (Caracas), and more than eight times the lowest (Bristol). After reviewing several possibilities for error, the WHO concluded that “that the death rate from diabetes mellitus in Mexico City was unusually high seems incontestable.” The WHO experts considered that the high prevalence of diabetes in the city could be related to genetic factors, since contemporary studies pointed to “a very high prevalence of diabetes among North American Indians, ethnically related to the indigenous population of Mexico.”⁶³⁸ The Social Security Institute (IMSS) used the data compiled by the INN and the WHO and designed a diabetes detection and control scheme. The doctors at this institution considered the high incidence was due to the prevalence of an “unbalance diet based primarily on the intake of carbohydrates” and a “hyper caloric diet that

⁶³⁵ Salvador Zubirán and Adolfo Chávez, "Estudio epidemiológico de diabetes en la Ciudad de México," *Revista de Investigación Clínica* 16(1964): 369.

⁶³⁶ *Ibid.*: 382.

⁶³⁷ Mexico City, Caracas, Guatemala City, Sao Paulo, La Plata, Lima, Santiago, Bogotá, San Francisco, Cali and Bristol, UK.

⁶³⁸ Puffer and Griffith, *Patterns of Urban Mortality; Report of the Inter-American Investigation of Mortality* 206.

lead to obesity.” By the 1970s, most public health authorities agreed that the Mexican population needed to maintain a balanced diet, with a moderate consumption of fats and processed sugars.⁶³⁹

Doctors at public hospitals and medical research centers like the INN had reservations about the changes in the diets in urban communities, in particular regarding increases in consumption of processed foods. Most opinions regarding this matter were based on their experiences as clinicians as well as their own prejudices about popular consumption practices. For example, in a 1974 interview, Silvestre Frenk, the director of the Pediatrics Hospital at the National Medical Center in Mexico City, referred to soft-drinks as “demon-like” (*los endemoniados refrescos*). The doctor considered that working class fathers were malnourished and that is why they drank “excessive quantities of soft-drinks.” For Frenk, these items represented “cheap calories and that is why everyone can spot one liter bottles in the hands of construction workers.” Frenk thought that nutritional education was an option to modify these noxious consumption habits, because he thought money could be better spent in other kinds of foods.⁶⁴⁰

In 1970s Mexico, it was not just doctors who were concerned about the rising levels of soft-drink consumption. Guided by different interests, people such as artists and local soft-drink producers promoted negative images about foreign soft-drink brands and portrayed them as the enemies of the national economy, culture and well being. There was a lot of anxiety about the growing dominance of international brands, like Coca-Cola, which before the 1970s were being hailed as “Mexican businesses.” Local producers who owned the rights to their own products

⁶³⁹ Rafael Alvarez Alva and Blanca Raquel Ordóñez, “Programa de detección y control de la diabetes sacarina en el Instituto Mexicano del Seguro Social,” *Salud Pública de México* 12, no. 3 (1970): 318.

⁶⁴⁰ Zubirán, *La desnutrición del mexicano*, 41.

were being driven out of the market, which was especially troublesome since it was a particularly profitable local market which continued to expand.

One of the most popular opponents and critics of soft-drinks and junk food was political cartoonist Eduardo del Rio, better known by his pen name, Rius. The cartoonist was a strict vegetarian and, as I explained in chapter four, he published a book and several issues of his weekly magazines *Los Supermachos* and *Los Agachados* about the inadequacies of Mexican diets. Rius targeted junk food in general but was an acute critic of soft-drinks in particular because in his youth he had worked manufacturing these products. In an interview with the Consumer's Magazine, Rius said that he was bothered by poor food habits but thought that the "biggest crime was the consumption of soft-drinks in Mexico."⁶⁴¹ Rius ideas about Coca-Cola and other transnational soft-drink companies had a lot common with those of other intellectuals and artists in Latin America. These preoccupations in particular revolved around the issue of the deception implied in the techniques applied to market the products. A long section of Rius' 1972 book "How to kill yourself without a teacher" (*Como suicidarse sin maestro*) is devoted in part to "unmasking" and analyzing Coca-Cola's ingredients.⁶⁴² He claimed that his critique of the product was not just "another attack to the US" caused by a Mexican "mania of trying to find the defects of the capitalist *gringitos*."⁶⁴³ Instead he wanted to point out the effects derived from the ingredients in Coca-Cola: refined sugar, phosphoric acid and caffeine. The first two ingredients were linked to tooth decay and cavities, while caffeine was a stimulating drug, which caused insomnia, headaches, nausea and anxiety. Rius stated that "the danger of drinking coke is that people ignore that this soft-drink is a true drug, which is not the case with marihuana, which is

⁶⁴¹"La entrevista del mes: Eduardo del Rio, Rius," *Revista del Consumidor*, no. 7 (1977): 30.

⁶⁴² Rius, *Como suicidarse sin maestro: en 30 lecciones*, Colección Duda (México, D.F.: Editorial Posada, 1974).

⁶⁴³ *Ibid.*, 114.

classified as what it is: a drug.”⁶⁴⁴ For Rius, it was common sense that the Mexican government made sure that consumers were informed about properties of a soft-drink like Coca-Cola. The Consumer magazine and several chemistry professors from the Autonomous University of Mexico expressed similar concerns with regards to the high caffeine content and the phosphoric acid of Coca-Cola.⁶⁴⁵

Mexican rock-folk group Los Nakos echoed other people’s disdain for Coca-Cola in their 1973 song Droga-Cola, a parody of the famous Coca-Cola commercial “I would like to buy the world a Coke.” The alternate lyrics of the Los Nakos song were:

I would like to swindle the world and fill it with gas
With Droga-Cola you will see, that you will soon explode
Bubbles here, bubbles there, Droga-Cola
(*Quisiera al mundo estafar, y llenarlo de gas*
Con Droga-Cola ya verás que pronto explotarás
Burbujas por aquí, burbujas por allá, Droga-cola)⁶⁴⁶

Criticism of multinational soft-drink companies was not confined to artists and government officials. Rafael Jiménez, the owner of the Mexican soft-drink brand Pascual interpreted these popular attitudes against foreign soft-drinks as a business opportunity, promoting his products as a healthier national alternative. The product, “Boing!” had been around since 1963 and manufacturing it had been the result of substantial efforts on the part of Jiménez and his employees. In the early 1950s, Jiménez had tried his hand in the Cola market

⁶⁴⁴ Ibid., 119.

⁶⁴⁵ “Fraude al público con el contenido de los refrescos: Madero Iturbe,” *El Día*, 28 March 1980. “Cómo un “elíxir” se convirtió en transnacional,” *Revista del Consumidor*, no. 40 (1981): 32.

⁶⁴⁶ Original Spanish version: “Quisiera al mundo yo enseñar dulces armonías, con Coca-Cola y buen humor y dulces armonías, El mundo entero ha de cantar esta alegre canción.” English version (I’d like to buy the world a home and furnish it with love, Grow apple trees and honey bees, and snow white turtle doves. I’d like to teach the world to sing in perfect harmony, I’d like to buy the world a Coke and keep it company). Mary Bellis, The History of Coca Cola, I’d Like To Buy The World A Coke, accessed April 20, 2008, http://inventors.about.com/od/cstartinventions/a/coca_col_2.htm

with Mexi-cola. The product sold well, but the downside was that the syrup was imported and he could not maintain the brand competitive. The failure of Mexi-cola forced Jiménez to re-think his strategy, and instead he tried to produce machinery and the syrup locally.⁶⁴⁷ For this purpose, Jiménez recruited the engineer Rafael Chávez Teixeira and Mexico City's trade university, Instituto Politécnico Nacional. Jiménez and Rafael Chávez wanted make their products distinctive, and started to manufacture flavors made out of Mexican fruits, like tamarind, guava, mexican hawthorn, soursop and mamey, instead of artificial flavors.⁶⁴⁸

In the late 1970s, Jiménez used the language employed by doctors and Coca-Cola critics to sell “Boing!” and other products produced by Refrescos Pascual. The company's print advertisements acknowledged that the bottles and other products used by his competition were manufactured in Mexico. In contrast, Refrescos Pascual's concentrate was also made in Mexico “and made out of real Mexican fruit juices and pulps whose consumption benefits rural populations.” Even more importantly, the ads stated that Pascual's products “did not pay anything to foreigners from the use of brands or concentrates and everything that we invest in their production and earn of their commercialization stays in Mexico.” Instead of paying revenue to transnational companies, Refrescos Pascual proposed to invest in national agro-industries.⁶⁴⁹

Jiménez had used the presence and dominance of American companies and brands in Mexico in his favor before. He manipulated the same trademark law with which Coca-Cola had wiped out their Mexican competition in the Cola market during the 1940s and 1950s. Jiménez adopted for his trademark an image of Donald Duck, renamed in the Mexican dailies as Pato

⁶⁴⁷ *Memorias de la Sociedad Cooperativa de Trabajadores de Pascual*, 3 vols., vol. 3 (México, D.F.: Sociedad Cooperativa de Trabajadores de Pascual, n.d.), 99-100.

⁶⁴⁸ *Ibid.*, 109-11.

⁶⁴⁹ “Somos mexicanos y trabajamos para México,” *Proceso*, 14 August 1978, 7.

Pascual.⁶⁵⁰ Two months after establishing a partnership and expanding his firm, in April 2nd 1940, he was sued by the representatives of Walt Disney in Mexico. In his defense, he claimed that the cartoon was published every day in the newspapers since 1936, and since that time it had entered the public domain. A figure so familiar, Jiménez claimed, adopted by Mexicans with no reference to nationality, could not be usurped by a single person. The law clearly stated that if an author published an image she or he would lose the rights to that image if they did not register it within three years. Once that term concluded, the image or art work would no longer be protected by the trademark law and people could use it freely. Jiménez had registered his trademark in 1939, while Walt Disney Co. registered Donald Duck in 1940.⁶⁵¹ The courts ruled in favor of Jiménez, since the legislation gave no grounds for Walt Disney's complaint. Art historian Maria del Carmen Suescun Pozas has analyzed the work of several Latin American visual artists who produced "anti-ads" or work using Cola-Cola's imagery, inscribing "national characteristics" into objects or imagery that many people thought served "as a U.S. imperialism mechanism to produce cultural uniformity."⁶⁵² Jiménez had managed to do the same, by "nationalizing" Donald Duck and using the same laws that tended to favor transnational companies to protect his advertising strategy and brand image.

The Coca-Cola Company tried to fit in with the paradigm of health and nutrition promoted by companies such as Pascual as well as institutions like the INN. In May 1978, the company launched a "protein" soft-drink called Sansón. The advertising agency in charge of the

⁶⁵⁰ *Memorias de la Sociedad Cooperativa de Trabajadores de Pascual*, 66.

⁶⁵¹ *Ibid.*, 67-68.

⁶⁵² For other examples of symbolic uses of the Coca-Cola logo and advertisements see María del Carmen Suescun Pozas, "From Reading to Seeing: Doing and Undoing Imperialism in the Visual Arts," in *Close Encounters of Empire: Writing the Cultural History of U.S.-Latin American Relations*, ed. Gilbert M. Joseph and Ricardo Salvatore (Durham: Duke University Press, 1998).

campaign cited the National Institute of Nutrition's research concerning the daily nutritional recommendations for school age children.⁶⁵³ Doctor Héctor Bourges chief of the Department of Physiology of the hospital, stated to the press that the Institute did not endorse the drink nor gave permission to the Coca-Cola Company to use their name in their ads. The INN ran some test on the product and disclosed that the primary ingredient were the residues that resulted from the industrialization of milk and cheese. The product did contain proteins and lactose but in negligible quantities. Bourges explained that the public would be paying two or three pesos for two grams of proteins, when they could be purchasing an egg (7 grams of proteins) or a liter of milk (32 of protein) for one and six pesos respectively. The doctors at the institute were worried that the "image of these soft-drink could become very popular and make consumers falsely believe that soft-drinks were nutritious." Bourges thought that the publicity campaign of a product like Sansón could derail all the educational objectives and programs of the government to re-orient Mexican diets. The INN contacted the Ministry of Health and the manufacture of this product was cancelled.⁶⁵⁴

Besides public perceptions of the threat soft-drinks and increased sugar consumption presented to public health, actual measurements through INN's nutritional surveys in the 1950 and 1960s recorded increases of sugar and soft-drink consumption. Mexican economic officials calculated per capita sugar consumption using "disappearance estimates", a method to measure consumption using information about the "amount of sweeteners delivered by refiners or importers to food industry, wholesalers, and retailers of such commodities."⁶⁵⁵ By the 1970s Mexico's rate of sugar availability (calculated by disappearance estimates) was comparatively

⁶⁵³ Alberto Morgan, "México es el primer consumidor de refrescos en AL," *Excelsior*, 15 June 1982.

⁶⁵⁴ "Los Refrescos no alimentan," *Proceso*, 5 June 1978, 21.

⁶⁵⁵ J.M. Navia, "Carbohydrates and Dental Health," *American Journal of Clinical Nutrition* 59, no. 3 (1994): 719S.

very high, with more than forty kilos of sugar per capita per year (109 grams of sugar per day), far over the world average of eighteen kilos per capita.⁶⁵⁶

Other consumption figures of soft-drinks and sugar became available as the INN conducted a national nutritional survey financed by the Mexican Food System (SAM) in 1979. SAM officials also requested more information about food consumption and diets in urban areas, so the INN did an additional survey focusing on working class households in Mexico City in the same year.⁶⁵⁷ According to the rural survey, sugar consumption varied per region, and consumption was higher in northern and central Mexico than in southern states. The INN noted that soft-drink consumption increased substantially since they started recording it in 1960s.⁶⁵⁸ Average sugar consumption was 41.9 grams per day for adults and 13.2 grams per day for preschool children. In the case of soft-drink consumption the average was 3.3 ounces per adult and 2.2 for children, with regional variations for adults going from 8.9 ounces in northern Mexico to 0.6 ounces the mountains of Puebla.⁶⁵⁹ Soft-drink sizes in 1970s Mexico ranged from small (6 ounces), normal (12 ounces) to family size (26 ounces).⁶⁶⁰ In all of the rural populations, sugar and soft-drink consumption was higher in higher income groups. The limitation of this survey regarding sugar consumption is that it did not measure the quantities of sugar contained in other manufactured products other than soft-drinks, particularly pastries and candies.

⁶⁵⁶ Kaufman Purcell, "Business-Government Relations in Mexico: The Case of the Sugar Industry," 222; Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital," 73.

⁶⁵⁷ Perez-Gil S.E., A. Ysunza, and A. Chávez, *La situación nutricional de algunos barrios urbanos de México*, vol. L-42 Publicaciones de la División de Nutrición y Comunidad (México, D.F.: INNSZ, 1981), 1-2.

⁶⁵⁸ H. Madrigal Fritsch, O. Moreno-Terrazas, and A. Chávez, *Encuesta nacional de alimentación 1979: resultados de la encuesta rural analizada por ponderación presentada por entidad federativa y desagregada según zonas nutricionales*, vol. L-46. (México, D.F.: Instituto Nacional de la Nutrición, División de Nutrición, 1982), 52.

⁶⁵⁹ *Ibid.*, 53.

⁶⁶⁰ "Datos importantes de la industria Coca-Cola de la República Mexicana," *Bebidas* 1968, 7.

The 1979 INN survey focused on households in forty neighborhoods of Mexico City that represented a population of three million people. Marginal areas in the periphery of the city and middle class neighborhoods were excluded. The sample was divided in three income levels. The high income sample corresponded to an income higher than the minimum wage. The medium income sample earned approximately the minimum wage (in that year set as \$4,968 pesos a month). The lower income sample was comprised by families whose income was less than the minimum wage. Researchers noted an increase of consumption of animal foods in relation to the surveys of the 1960s.⁶⁶¹ Soft-drink consumption for adults ranged from 8.3 ounces to 7.8 ounces depending on the household income (the higher the income the higher the consumption for adults).

The survey included a qualitative study of the eating habits of pre-school children (younger than six years old), which included anthropometric measurements. The diet of poorer preschoolers in the study was less varied than in the two upper categories of income. For example, the proportion of tortillas and rice in their diet was significantly higher. This result did not differ significantly from the information compiled by other studies. However, researchers were struck by the high ingestion of soft-drinks of preschoolers in the selected sample. They thought that this level of consumption was “illogical, given the cost of a liter of soft-drinks, which was the same as half a liter of milk.”⁶⁶² The children were consuming between 6 and 8 ounces of soft-drinks per day (between 183 and 260 grams/milliliters), which the INN deemed very high.

⁶⁶¹ Perez-Gil S.E., Ysunza, and Chávez, *La situación nutricional de algunos barrios urbanos de México*, 17.

⁶⁶² Ibid.

Was 6 to 8 ounces of soft drink consumption for Mexican urban preschoolers so high?

The INN recorded the soft-drink consumption of Mexican rural preschoolers in the 1979 National Nutrition Survey. The national average was 2.2 ounces (62.7 milligrams) per day, with wide regional variations going from 6.3 ounces (178 milligrams ounces) in the northern states to 0.4 ounces (11 milligrams) in highlands in the state of Puebla. Soft-drink consumption was higher among urban preschoolers than rural preschoolers in central and southern Mexico. The United States was the highest consumer of soft-drinks at that time. While the 1977-1978 U.S. Nationwide Food Consumption Survey (NFCS) did not record soft-drink consumption of children younger than six, the mean consumption among children between six years and ten years old per day was 3 to 4 ounces a day, 5 ounces per day for children between eleven and thirteen years old, and 7 ounces for children between thirteen and seventeen years old.⁶⁶³ Since older children in the U.S. tended to consume more soda than younger children, it is likely that preschoolers consumed even less than 3-4 ounces. Thus, taking into consideration all the limitations of the comparison, low income urban preschoolers in Mexico City might have been consuming more soft-drinks (between 6 to 8 ounces) than U.S. children of all income and age groups (between 3 to 7 ounces).

Using the information from the 1979, surveys the INN contrasted the characteristics of rural and urban working class diets in a book intended for educational purposes. According to the INN a typical working class urban family was depicted in the following terms:

This is the family of Don Pepe Fábricas (Joe Factory). He will have a new son called *Pepito*. The future of Pepito is not as frightening as that of Pedrito Tierras (Pete Lands), the rural boy. Maybe Pepe's family will have money to eat well, as long as they know how to use their money correctly. But it is very likely that instead of milk he will

⁶⁶³ S.A. French, L. Biing-Hwan, and J. Guthrie, "National Trends in Soft Drink Consumption among Children and Adolescents Age 6 to 17 Years: Prevalence, Amounts, and Sources, 1977/1978 to 1994/1998," *Journal of the American Dietetic Association* 103, no. 10 (2003). The NFCS was a nationwide survey, which selected data per age group and gender. Also, the way income levels were classified in both surveys was different. The results of the INN's urban survey and NFCS are not completely comparable but provide a reference point.

drink soft-drinks, instead of whole grains he will eat Twinkies and instead of fruits and vegetables he will eat sugary snacks.⁶⁶⁴

By the end of the 1970s, increased soft-drink and sugar consumption already had a bad reputation amongst doctors and large sectors of the public. Growing consumption of these products by the Mexican urban working class was seen as public health problem because it increased the risk of obesity, diabetes, caries and cardiovascular disease. Another issue was that nutritionists thought that the money spent on sugar and soft-drinks could be better invested in other types of foods. Also, in the 1970 began a public backlash against the transnational soft-drink companies, which in the past had been represented in the popular media and newspapers as modern institutions that brought quality products to Mexicans. Companies like Coca-Cola, which operated under the premise that their business was local and that it benefited economically the host country not foreign investors, were viewed with growing suspicion by health experts and competitors.

Sugar, soft-drinks and consumption campaigns during the SAM

The sugar industry had been in crisis since the mid 1970s, and the situation aggravated in 1976, when Mexico stopped importing sugar. Government expenses to sustain and subsidize sugar production and sugar imports increased over the 1970s. In 1979, when the López Portillo government introduced the SAM one of the objectives was to improve sugar production and gradually return the industry to private hands. One of the primary goals of the SAM was to make Mexico self-sufficient in food production. The consumption increases of refined sugar and soft-drinks were a matter of concern for the SAM planners. Moreover, the consumer policies of the

⁶⁶⁴ Instituto Nacional de la Nutrición, *El niño, la desnutrición y México*, 23.

López Portillo government were designed with the objectives of the SAM in mind. The consumer protection legislation passed during the previous administration had included several provisions that made the government responsible for “guiding popular consumption.” The SAM’s strategy to guide consumption included a provision to “re-orient “the consumption of the “majority of the population to ensure the satisfaction of minimal necessities.”⁶⁶⁵ According to the SAM template, the food modernization pattern, which included a growing proportion of industrialized foods, was beginning to occur in Mexico. But authorities considered that “unrestrictive translation” of those patterns of consumption and production corresponded to countries with “different income levels” and was not beneficial to Mexicans in terms of nutrition. The document referred specially to industrialized foods of low nutritional value, including soft-drinks.⁶⁶⁶

One of the first SAM measures was that in 1979, after a long period of price freezes, the federal government increased the price of sugar by decree in order to slowly eliminate subsidies, as costs had become unsustainable. The president of the Comisión Nacional de la Industria Azucarera (CNIA, National Sugar Commission), Mario Trujillo García, who oversaw the sugar industry as a whole, promoted the measure explaining to the press that the subsidies really did not benefit individual consumers but big industries. The official claimed that a lot of the sugar supposedly destined for retail at supermarkets and markets ended up in the black market and was subsequently sold to soft drink companies.⁶⁶⁷ The sugar industry distributed three thousand tons

⁶⁶⁵ Secretaría de Programación y Presupuesto, *Antología de la planeación en México (1917-1985)*, 246.

⁶⁶⁶ Ibid.250

⁶⁶⁷ Fernando Valdéz, “Consumo familiar, subterfugios y subsidios,” *El Universal*, 5 April 1979

daily to Mexico City for individual consumption, a thousand of which according to the government never reached consumers and instead was sold to industries.⁶⁶⁸

Nonetheless, when the price increases were announced, the government also decided to sell refined sugar at lower prices in its network of retail outlets throughout the country, operated by the state food regulation agency CONASUPO. This measure was orchestrated to counter any protests by labor and agrarian groups represented in congress or in the national party. Selling sugar at lower prices in CONASUPO stores was the way the government tried to save face in the context of a deeply unpopular measure as increasing the price of a basic commodity. Organized commerce immediately protested the interference of the government in yet another commodity market, and claimed that CONASUPO stores were incurring in disloyal competition.

CONASUPO claimed that they would determine the “daily ration of sweet that each family would need to survive, and that ration is what would be available” in government operated stores.⁶⁶⁹

The price increases were followed by scarcity and public finger pointing by public officials concerning speculation and contraband. Sugar production in the late 1970s was insufficient to meet internal demand, as productivity in the sector had stalled. As mentioned before, private investment in the industry decreased over the years, and the mills were operating with old and outdated machinery. By 1980, the government began to import sugar and sell it both

⁶⁶⁸ In 1978, total consumption of sugar for all of Mexico was 3,080, 000 tons. Using the base number of 2,000 tons per day given by Mario Trujillo Garcia, the disappearance rate for Mexico City was 730 000 tons per year and 226 grams of sugar per day per person (population 8,831,079 in 1980). Using the total consumption figure for 1978 would mean that there was an availability of 126 grams of sugar per day for all Mexicans (population 66,846,833 in 1980). Mexico City was home to 13.21% of the total population and using the consumption figure of 2,000 tons per day means the city consumed 23.7% of total sugar in 1978. From 1976 to 1991 the world’s total sugar availability has been 158 grams per person. “Toda el azúcar destinada al consumo debe ser distribuida por CONASUPO: CNC y CCI,” *Avance*, 22 November 1979, “México logro la zafra más alta de su historia,” *El Universal*, 29 August 1979.

⁶⁶⁹ Jesús Rangel and Alfredo Marrón, “CNIA: Terminará el Subsidio al Consumo Popular de Azúcar,” *Excelsior*, 21 January 1980.

to industries and wholesalers. However, during the first months of 1980 there was scarcity of sugar in Mexico City. Government officials blamed the soft-drink industry for the scarcity and speculation and for placing a burden on the state, because government-subsidized sugar imports could become a “necessity” given the demands of soft-drink producers. According to the CNIA, in 1980 bottlers requested the government 1,300,000 tons of sugar, close to 50 percent of total production for 1979.⁶⁷⁰ According to various industry observers and government officials, the price differentials between sugar in Mexico and the United States were the cause of sustained contraband outside of the country since the mid 1970s, which in turn caused scarcity both in the markets for individual and industrial consumers.⁶⁷¹

Sugar industry officials like Mario Trujillo García systematically avoided the issue of the inefficiencies of the Mexican production system and instead found soft-drink manufacturers a convenient target. According to him, the “consumption crisis” that made Mexico become a sugar importer was linked to the unmanageable growth of industrial needs and companies that created in Mexicans “fictitious needs.” Thus, it was necessary to abate “internal consumption of soft-drinks... because Mexico produced enough sugar, but speculation and voracity of industrial manufacturers was destroying the popular budget.”⁶⁷²

⁶⁷⁰ Sara Lovera, “Se tomarán medidas para evitar el desvío del azúcar de consumo popular,” *El Día* 13 February 1980, Carlos A. Medina, “No hay Escasez de Azúcar sino Especulación y Manipuleo: CNIA,” “Poco mas de 50% de la producción desviada para la industria,” *El Universal*, 17 February 1980. (8900)

⁶⁷¹ Ángel Gómez Granados, “Cárcel al que lucre con el hambre del pueblo,” *El Universal*, 16 April 1975, Mario Quintero Barrera, “Medidas drásticas para evitar el contrabando de azúcar hacia E.U.,” *El Universal*, 11 December 1975. “Contrabando de azúcar,” *Excélsior*, 22 June 1977, Young Coral, “Investigan la denuncia de UNPASA de Posible Contrabando,” *El Nacional*, 23 June 1977, “Contrabando de Azúcar,” *Excélsior*, 8 September 1980, “Denuncian los industriales contrabando de azúcar a países vecinos,” *El Universal*, 27 August 1980, “Hay contrabando de azúcar hacia EU, denunció UNPASA,” *Excélsior*, 13 August 1982, Rodolfo Guerrero, “Mala distribución del azúcar propicia contrabando a EU,” *El Universal*, 13 October 1982.

⁶⁷² Ángel Gómez Granados, “Cárcel al que lucre con el hambre del pueblo,” *El Universal*, 16 April 1975.

From 1979 to 1981, the government used several strategies to try to control sugar consumption. All these strategies did not constitute a single coordinated response but operated according to the interests and institutional goals of different government actors. On the one hand, the López Portillo administration was interested in reducing overall sugar consumption for health reasons. Through the consumer agencies, the government vowed to spend money on public information and educational campaigns to promote a healthy diet. Also, less reliance on sugar as a staple in the diet would also facilitate the gradual reduction of subsidies and spending in the industry. On the other hand, the SAM system earmarked 14,000 million pesos to subsidize the price of sugar. As I explained earlier, the federal government owned and operated ailing sugar mills. The livelihood of millions of peasants depended on these mills, so the federal government was forced for political reasons to continue to spend money on the ailing sugar industry. In addition to these investments, the government also took an active role to try to prevent scarcity and unrestricted price increases by controlling sugar imports. Although in the long term the government wanted the sugar industry to go back to private hands and reduce pressures on the federal budget, the decisions made during the late 1970s were aimed at solving short term challenges.⁶⁷³

The SAM officials considered that food consumption habits in Mexico have been increasingly influenced by radio, television and print advertisement. The Division of Research and Strategy of the SAM suggested that effects of advertisement were mostly negative. Consumption of food products of low nutritional value could only be modified first by policies and actions that regulated the content of advertisements and second by the government advertisement to promote better nutritional practices. The SAM planners suggested a Política

⁶⁷³ Singleman, "The Sugar Industry in Postrevolutionary Mexico: State Intervention and Private Capital."

Nacional de Publicidad Alimentaria (National Policy of Food Advertisement).⁶⁷⁴ The National Consumer Institute (INCO) had to coordinate other ministries and institutions to achieve these particular goals of the SAM. INCO took on soft-drink companies as the targets of their public awareness campaigns concerning a healthier lifestyle. The overall message of the federal government food consumption campaigns was that of promoting a healthy diet while at the same time making consumers save money by purchasing less costly and more nutritious food items. The anti-soft drink campaigns of the INCO integrated public health messages with ideas about economic and national independence. These economic and public health messages were based on research conducted by the INCO itself or other agencies like the National Institute of Nutrition, for example the 1979 urban and rural surveys.

The government commissioned the INCO to investigate the effects of marketing and television advertisement in junk and sugary food consumption. This research, unprecedented for any agency of the Mexican government, had to do with the consumption policies articulated in the mid-1970 with the creation of the consumer protection institutions. As I explained in the fifth chapter, the administrations of Luis Echeverría and José López Portillo wanted to promote frugality and better use of the family budget among low income consumers. The INCO compared the average national consumption of a single junk food product, Twinkies, to the average consumption of eggs, fish and meat. In all cases, the consumption of Twinkies represented between half and three quarters of each of these products, which the INCO considered very high.⁶⁷⁵ The INCO promoted the studies conducted by the researchers at the

⁶⁷⁴ Dirección General de Estudios y Estrategias, *Distribución del ingreso, consumo y bienestar social* (México, D.F.: Sistema Alimentario Mexicano, Dirección de Consumo, 1980), 31-32.

⁶⁷⁵ “Pastelillos industrializados: contra la salud, el bolsillo y...el sentido común,” *Revista del Consumidor*, No. 23, 1980, 5-8. Martha Navarro de Macias, “Development policy and nutrition: A case study of the nutrition education campaign of the Sistema Alimentario Mexicano (SAM),” Stanford University, 1988, 187.

National Institute of Nutrition about urban consumption and the long term effects of these diets on health to raise public awareness. Newspapers reported on studies conducted by the INCO about increased sugar consumption, which averaged 44 kilos per person each year, counting soft-drink consumption, which in turn was linked to “cardiovascular problems, diabetes and caries.”⁶⁷⁶ Officials at the INCO as well as the National Institute of Nutrition linked increased sugar consumption with obesity and poor health, especially in children. Before the 1970s, this increased consumption was not a relevant issue of primary concern for any particular government agency, but given declining production and the promotion of consumer protection policies, it became something relevant for public institutions to tackle.

The INCO recorded popular attitudes about soft-drinks using surveys and interviews with consumers in which they asked them to explain why they consumed these products. In the early 1980s, some survey respondents confirmed the suspicion of the consumer agency that soft-drinks were nutritious or a necessity when houses lacked running water or had deficient water services.⁶⁷⁷ But by the mid-1980s, the magazine reported that “most adults interviewed by the institute were aware that excessive consumption of soft-drinks could be harmful to health, but they continued to consume them anyway.”⁶⁷⁸ The consumer magazine insisted that Mexican consumer’s “dependency on these products could be directly attributed to television advertisement.”⁶⁷⁹ The INCO publicized in newspapers that in 1980 the soft-drink industry spent

⁶⁷⁶ “Excesivo consumo de azúcar en el DF,” *El Dia*, 27 November 1979. Victor Payán, “Altísimo el consumo per cápita de azúcar: 44 kilos anuales,” *Excelsior*, 13 May 1980.

⁶⁷⁷ “Estudio comparativo: nada más que agua, azúcar y sustancias artificiales,” *Revista del Consumidor* 27, (1980), 12.

⁶⁷⁸ “Refrescos: un consumo que nos ahoga,” *Revista del Consumidor*, no. 84 (1985): 3-8.

⁶⁷⁹ Some examples: Raúl Cremoux, “Carácter de un niño televidente típico,” *Revista del Consumidor*, no.27 (1980): 38. “El festival del consumismo,” *Revista del Consumidor*, no.31, (1980): 8. “Cuéntele a sus hijos los cuentos de la publicidad,” *Revista del Consumidor*, No. especial (1980): 32-33, “Publicidad para niños: escuela de consumistas,” *Revista del Consumidor*, No.36 (1981): 12-15, “Frente a la publicidad, los pobres son más pobres,” *Revista del*

ninety million pesos advertising its products on television.⁶⁸⁰ Newspaper editorialists criticized the practices of soft-drink producers, for example Guillermo Knochenhauer (of *Excélsior*) stated that “some people might think that transnational companies are not to blame for the fact that people do not know how to use their budget, but they are responsible due to the multimillion publicity campaigns they use to induce the consumption of their products. The state is also to blame because it does nothing to restrict these advisement attacks.”⁶⁸¹ Before the 1970s, when sugar production was high enough to cover demand, and the soft-drink industry was growing, only doctors expressed concerns about the actual benefits of these products to health or to Mexican society in general.

Nonetheless, advertisement expenditures say little about the relative importance of soft-drink and industrialized food advertisement in relation to total advertisement in radio, television and print media. Available information about this topic in 1980s Mexico is limited. However, a 1984 study about gender role portrayal in television advertisement includes valuable observations about the distribution of commercials according to product categories in three countries (based on weekday programming from 8 a.m. to 4 p.m. and 7 p.m. to 11 p.m. in the highest rated television stations). In the case of Mexico, the information was based on private broadcaster Televisa’s channel 2. The top three categories in Mexico were personal and beauty care; food snacks and soda; and alcoholic beverages (see Table 16). The prevalence of the personal and beauty care category may be explained by the programming of channel, mostly

Consumidor, no.37 (1981): 31-35. “Los niños y la T.V.” *Revista del Consumidor*, no. 39 (1981): 46, “Distorsión de la canasta básica recomendable. El SAM propone...¿la publicidad dispone?,” *Revista del Consumidor*, no. 49 (1982): 32-35.

⁶⁸⁰ “Ganancias Anuales por 63 mil millones de pesos logra la industria refresquera,” *El Sol de México*, 17 July 1981.

⁶⁸¹ Guillermo Knochenhauer. “Agua con química: consumidor embotellado,” *Excélsior*, 30 September 1980. Similar editorials include: Luis Cordova. “Los tapones del hambre,” *El Nacional*, 3 December 1979, Magdalena Galindo, “Pobres refresqueros,” *El Día*, 8 February 1980, “Derroche en Refrescos” *El Universal*, 9 February 1980. Luz María Díaz-Caneja, “Enorme consumo de refrescos,” *Excélsior*, 14 June 1980.

targeted at women and adults, and which included mostly telenovelas.⁶⁸² Televisa's other channels had special programming for children, and distribution of product categories could have been different in those channels.

The government used surveys and opinion studies to try to prove the point that certain modes of spending promoted by TV advertisement were harmful to Mexico. Since 1979, the social communication branch of the SAM conducted three surveys to try to measure the impact of television advertisements in small communities which would receive a clear television signal for the first time, via satellite. The first stage of the study (1979) was a simple consumer preference survey in all of the selected localities. At the suggestion of UNICEF, at the second stage of the survey (1980) the localities were divided in two groups, one that had the satellite signal, and a control group which included localities where there was a TV signal but it was intermittent. By the third stage (1981), all localities studied had a strong TV signal and 62.4 percent of the families interviewed had TV sets (in comparison 49.1 percent of the same families who had running water).⁶⁸³

The methodology and the questionnaires used by the SAM researchers were not included in the available publications of the study, nor actual demographic information about the chosen localities. It is not clear then how they linked the incidence of consumption of certain products with TV advertisement. In general, the analysis the researchers did of their own survey was based in their own preconceived ideas which had no relation with the data they actually gathered. For example, the researchers stated that advertisements "referred to an economic and social elite" and manipulated everyone else's desires to "belong to that small and envied social group, in a

⁶⁸² Mary C. Gilly, "Sex Roles in Advertisement in Australia, Mexico and the United States," *Journal of Marketing* 52, no. 2 (1988): 77-78.

⁶⁸³ *Resultados de la tercera etapa de la encuesta "cultura alimentaria y publicidad televisada"*, (México, D.F.: Dirección de Comunicación Social del Sistema Alimentario Mexicano, 1982), 1-2.

country with so much poverty and inequity as Mexico.”⁶⁸⁴ For the researchers it was “obvious, that the consumerist high and medium sectors were the targets of advertisements” but these messages had “secondary effects in other classes.” In order to establish this manipulation, SAM employees asked people if they “desired to eat the same things as the wealthy.”⁶⁸⁵ Only 32.3 percent of the respondents agreed with this statement. Instead of asking people about what kind of products they preferred and why, SAM surveyors used these types of questions based on preconceived notions of consumer behavior. Also, the survey documented that consumers tended to purchase certain brands more than others. For example, Coca-Cola was the most consumed soft-drink.⁶⁸⁶ Yet, it was not clear if this popularity was the effect of television advertisement, since the researchers did not even mention other possibilities like the general availability of certain products in the market or prices. This study tells us more about the agenda of the government and the ideas of austerity that they wanted to promote than real changes in popular consumption or the causes of these changes in preferences or patterns of purchases. During the early 1980s, the INCO also conducted different surveys to assess consumer attitudes, intended to measure external influences. The INCO surveys had a nationalist bias, which reflected negative attitudes to what surveyors saw as imported consumption patterns that affected the Mexican economy.⁶⁸⁷

Government interest on this subject resulted in funding of similar research projects. In 1981, the INN studied the relationship between exposure to television advertisement and food

⁶⁸⁴ Ibid.4

⁶⁸⁵ Ibid.4

⁶⁸⁶ Ibid. 18

⁶⁸⁷ For example “¿Todos somos consumidores?” No.28, (June 1980):9. “¿Qué te comprarías con 100,000 pesos?” No.28 (June 1980): 28. “Los ricos (y los pobres) también consumen,” No.36, (February 1981): 37. “¿Qué pasa si no regala nada?” No.46, (December 1981):12.

choices. To conduct the survey, they used a socio-economic class categorization system designed by the Bureau of Market Research (BIMSA), the largest market research firm in Mexico. The study centered on a representative sample of lower-income people. Per capita consumption of soft-drinks was particularly high. The survey included visits to the subjects' houses where the researchers weighted and measured everything they ate for 48 hours. Researchers also recorded cases in which the products consumed by families coincided with the products homemakers declared to have seen or heard advertised on TV or on the radio. These measurements were then related to the number of hours homemakers watched TV and listened to the radio. The products more strongly associated with exposure to TV advertisement were breakfast cereals, soft-drinks and soup cubes. As in the case of the SAM study, the researchers did not take into account other variables such as prices or product availability in the market. What they did account for were the particular beliefs held by homemakers regarding the affordability of certain food products. Some families did not buy foods such as meat, milk and eggs because the homemakers thought these items were too costly. Researchers, who did consider the relationship between nutrients and costs, characterized this behavior as irrational. For example, each gram of protein in 1981 pesos contained in industrialized foods was more expensive (4.5 pesos) than milk, meat or egg proteins (1.16 pesos).⁶⁸⁸

The INCO based their consumer education campaign on this very proposition: that the cost per nutrient in industrialized foods tended to be higher. For example, a series of posters produced in conjunction by the state's consumer agency, food distribution agency and the National Labor Congress incited consumers to "compare before buying" and insisted that fruit juices prepared at home were healthier and cheaper than soft-drinks (See Image 4). These types

⁶⁸⁸ Judith Aguirre et al., "Publicidad y Consumo de Alimentos," *Revista de Investigaciones Clinicas* 38, no. Suplemento (1986).

of campaigns reflected the idea that consumers could “live with less” and still improve their nutrition. INCO and supporting institutions tried to supply this information to consumers through visual and audiovisual media in cities

Image 4. Compare before buying (INCO, Mexican Labor Congress, CONASUPO)



Source: National Library of Medicine (1980-82), <http://ihm.nlm.nih.gov/images/A27822>

The INCO and the PROFECO tried to use the same medium as food companies to get their messages across and aired several TV programs aimed at children and parents with educational goals in mind. The programs featured some of the anti-consumerist messages that characterized the communications campaigns of the consumer agencies since its creation, as I explain in chapter five. For example in 1980-1981, several episodes of a regular television segment called Foro del Consumidor (Consumer’s Forum) aired on the government’s TV channel were devoted to discussing soft-drinks and junk food consumption. The Consumer’s Forum consisted of a TV presenter and several puppet characters, similar to the ones used in popular children’s TV programs such as Sesame Street (Plaza Sésamo, as the Spanish version is

called, which began to air in the mid-1970s in Mexico). The program featured a puppet of a pig that represented an overweight spoiled girl who claimed that consuming soft-drinks denoted a “refined taste” and high socio-economic status. The other two puppets who starred on the show were a caterpillar and a cowgirl. These two characters stood in for national authenticity, as opposed to the pig’s foreign tastes and attitudes, and had stereotypical regional accents (the caterpillar was from Yucatán and the girl from Monterrey).⁶⁸⁹ The Consumer’s Forum also regularly portrayed businessmen and manufacturers as vampires and monsters, which were intent on extracting every cent from underpaid consumers by selling them useless products. In the case of an episode aimed at children, a vampire businessman is the head of Vampi-Cola, which sells a product that tastes like “gruel with a little soil mixed in” (*engrudo con tierrita*). Another character asks the vampire to taste his own product to which he responds “let’s not get carried away” (*no es para tanto*).⁶⁹⁰

The government nutrition information campaigns against increased sugar and soft-drink consumption did not seem to have any actual effects over consumption. According to the Household Income and Expense Surveys conducted by economic authorities in the years 1975, 1984, 1989 and 1994, per capita consumption of sugar (not counting indirect sugar consumption), did no change substantially, and averaged 21.6 kilograms per year. A comparison with the figures of apparent consumption of sugar for the same years indicates that in Mexico indirect sugar consumption, through soft-drinks, pastries and other types of processed foods had increased since 1975. Researcher Luis García Chávez from Mexico’s National Agriculture

⁶⁸⁹ “Foro del consumidor: los refrescos,” 1980, M172, Videoteca de la Procuraduría Federal del Consumidor.

⁶⁹⁰ See also “Foro del consumidor: una sociedad desechable,” 1980, M132, “Foro del Consumidor: días de gastar,” 1980, M168, “Foro del consumidor: refrescos, papas y frituras,” 1983, M172, Videoteca de la Procuraduría Federal del Consumidor.

University in Chapingo calculated that domestic sugar consumption grew only 1 percent per year since 1975, while industrial consumption grew 4.5 percent per year.⁶⁹¹

The efforts to reform the Mexican food market ended with the decline of the price of oil and the financial crisis of the early 1980s. State activism with regards to public education campaigns with the purpose of modifying consumption habits were also abandoned with the demise of the SAM. Government subsidies of sugar manufacture continued until the end of the 1980s, when the industry as a whole was privatized. The Mexican sugar industry began to flourish again after 1992. The harvested area and production levels varied constantly since the mid-1980s, but by 1997, sugar production was 22 per cent higher than ten years before. Production increases continued due to a combination of the introduction of new technologies and producer incentive measures.⁶⁹²

Conclusion

Overall trends in the availability of sugar for consumption in Mexico show a large increase in calories available for consumption. The growth and subsequent decline of the sugar industry, whose revenues represented 0.85 per cent of the GDP in 1960 and 0.42 in 1980 (see Table 15), did not alter domestic and industrial consumption trends. The government continued to subsidize the industry because the livelihood of a large percentage of the rural population depended on sugar production. Moreover, the goal of the SAM was to increase Mexican agricultural self-sufficiency. Production of corn and other basic grains did improve. Economic authorities did increase the wholesale prices for sugar and subsidized the industry during the

⁶⁹¹ García Chávez, L.R., "El mercado azucarero mexicano y el Tratado de Libre Comercio de Norteamérica," accessed 12 December 2009, <http://www.agrinet.tamu.edu/trade/papers/azucar.pdf>

⁶⁹² Stephen Haley and Nydia Suarez, "U.S.-Mexico Sweetener Trade Mired in Dispute," *Agricultural Outlook* (1999).

1980-1982 period. However, these policies were not enough to encourage new investment to improve the infrastructure of the industry. By importing sugar, the government subsidized the cost of raw materials for secondary industries like soft-drinks.

Institutions like the INCO and the INN elaborated campaigns to inform consumers about the pitfalls of increased consumption of sugar or processed foods containing sugar, like soft-drinks. These agencies, in addition to the coordination unit of the SAM, investigated the effects of modern mass-media like television on consumption patterns. Certainly, international soft-drink brands had been heavily advertised through print and audiovisual media, so much that their ubiquity created a backlash among various commentators in the media by the 1970s, including local producers of soft-drinks. The INCO and SAM officials equated growing consumption of soft-drinks with the import of consumption patterns from the United States. These institutions wanted to counter these effects by offering guidance and information concerning how to improve dietary habits and substitute processed foods for natural products. In this case, the campaigns that encouraged consumers to compare food before buying assumed that Mexicans were making poor shopping decisions due to lack of information. For example, the INCO campaigns were based on information gathered by institutions like the INN and their own studies about consumption habits. Educational campaigns highlighted individual responsibility, but said nothing about other types of state action dedicated to improve food consumption habits, like regulating the supposedly noxious advertisement messages used by transnational companies like Coca-Cola.

The soft-drink industry has remained the most important buyer of Mexican sugar. For that reason, Mexican sugar producers and the government have resisted the adoption of the U.S. model of using High Fructose Corn Sweetener (HFCS) for beverages, in a model similar to the United States. The exports of HFCS from the U.S. to Mexico increased under NAFTA, which

began reducing the sweetener market of sugar producers.⁶⁹³ These imports reduced the Mexican domestic market for Mexican sugar. Mexico tried to negotiate the issue with the United States in a dispute settlement stipulated by the free trade treaty, but it was unable to do so for many years. A parallel measure was to begin an antidumping investigation of U.S. exports of HFCS to Mexico. This led to the imposition of duties to HFCS imported from the U.S. in 2002. As a substitute measure, Mexico imposed a 20 percent tax on soft-drinks produced with sweeteners other than sugar. This tax achieved the desired effect, eliminating HFCS exports to Mexico, at least until when it was canceled in 2008.⁶⁹⁴

Regardless of trade disputes over sweeteners, the Mexican soft-drink market remains robust but, in terms of public health, there is no evidence that there is a significant difference between sugar and HFCS in regard to the effects on the human body, particularly the incidence of obesity. Levels of obesity, and the related health risks, are similar in Mexico and the United States, which have similar levels of soft-drink consumption. Current studies indicate that increased soft-drink consumption produced either with sugar, HFCS, or any fructose containing sweeteners increases the risk of obesity in children and adults alike and consequently chronic ailments like cardiovascular disease and type-two diabetes.⁶⁹⁵ By the 1990s, the soft-drink consumption averages among children in the U.S. and Mexico became very similar. A comparison of the 1977-1978 NFCS survey with the 1994-1996 NFCS survey indicates a mean increase of 123 percent in soft-drink consumption (from 5 ounces to 12 ounces daily) for all U.S.

⁶⁹³ W. Davey and A. Sapir, "The Soft Drinks Case: The World Trade Organization and Regional Agreements," *World Trade Review* 8, no. 1 (2009): 7-8.

⁶⁹⁴ *Ibid.*

⁶⁹⁵ John S. White, "Misconceptions about High-Fructose Corn Syrup: Is It Uniquely Responsible for Obesity, Reactive Dicarbonyl Compounds, and Advanced Glycation Endproducts?," *The Journal of Nutrition* 139(2009): 1227s.

children between six and seventeen years old. In Mexico, according to the 1999 National Nutrition survey (comparable in scope to the 1996-1995 NFCS), school-aged children (six to twelve years old) were consuming approximately 12 ounces of soft-drinks daily.⁶⁹⁶ Public health officials in both countries considered these levels of soft-drink consumption risky, in terms of being associated with obesity, cardiovascular disease and type-two diabetes.⁶⁹⁷

⁶⁹⁶ S. Barquera et al., "Energy intake from beverages is increasing among Mexican Adolescents and Adults," *The Journal of Nutrition* 138, no. 12 (2008); Juan A. Rivera et al., *Encuesta Nacional de Nutrición: Estado nutricional de niños y mujeres en México* (Cuernavaca, Morelos: Instituto Nacional de Salud Pública., 2001).

⁶⁹⁷ Rivera et al., *Encuesta Nacional de Nutrición: Estado nutricional de niños y mujeres en México*

Chapter 7: The Rise of the Milk Conglomerates: Private and Public Cooperation and Conflict in the Milk Market

Since the beginning of the century, several government agencies, including the Ministry of Health, had been addressing problems concerning the volume of supply and the quality of the milk available in the market. As I addressed in chapter three, the decision of the Ávila Camacho administration to become a major player in the milk market was in part related to the internal problems amongst producers, distributors and pasteurization plants as well as to the availability of cheap supply of powdered milk in the international market. In this chapter, I will examine the changes in the organization of the milk market in Mexico from the late 1950s until the late 1980s. It was during this period in which the major players in the milk market re-organized themselves into viable companies, many of which exist to this day. The configuration of this sector of the economy was intimately related to the actions of the different sectors of the federal government in the market, like for example CONASUPO and the National Agrarian Bank, which took on a role of leadership by embarking in investment projects and securing loans for various producers. Also, for a sector of milk producers the government also represented an antagonist, a competitor, who regulated pricing and acted as the main supplier and importer of powdered milk in the market.

In the first section of the chapter, I analyze the role of the state in importing and distributing powdered and reconstituted milk to urban areas in Mexico. The second part is about the re-structuring of the milk market in Mexico City due to two unrelated processes. The first is the introduction of new players in the market, milk producers from the northern region of Mexico known as La Laguna. Second, the relocation of traditional producers located in Mexico City to the neighboring state Tlaxcala, and the creation of the parastatal company Boreal Milk.

Another group of producers who supplied milk to central Mexico, the members of the Asociación Nacional de Productores de Leche Pura (ALPURA, National Association of Producers of Pure Milk), created a single vertically integrated company to better cope with the exigencies of the new market. The final section is about the collapse of milk production in late 1970s Mexico, and the disputes between producers and the government to salvage this agro-industry and prevent shortages of milk in major urban areas.

The State Role in the Milk Market: CONASUPO and Rehydrated milk

During the late 1950s and 1960s, as shown in chapters two and four, doctors and nutritional experts in Mexico talked publicly about the problem of protein malnutrition among the population. Federico Gómez, head of Mexico's Children Hospital, and Salvador Zubirán of the National Institute of Nutrition had regularly commented on the problems inherent to agrarian populations and to newly immigrated peasants residing in urban centers. In 1963, Roberto Amorós, the head of the food distribution company CONASUPO, referred to these insights and commented that the poorest sectors of the population in Mexico consumed large quantities of vegetable proteins from corn and beans, which prevented anemia, but "that nutritional equilibrium was broken when organic demands increased for any cause, like sickness and excessive work."⁶⁹⁸ For him, the latter were exactly the conditions the new urban population of Mexico City faced. The capital was a metropolis largely populated by "people from the interior who immigrate looking for work opportunities and better standards of living."⁶⁹⁹ This population, exposed to pressures of different types of work and insalubrious environments,

⁶⁹⁸ Compañía Nacional de Subsistencias Populares S.A., *Leche CONASUPO* (México, D.F.: Compañía Nacional de Subsistencias Populares, S.A., 1963), 7.

⁶⁹⁹ *Ibid.*7

needed the defenses provided by animal protein. According to Amorós, such was the goal of CONASUPO: increasing milk consumption first in the cities and then in the whole of Mexico. The officer informed that milk consumption per capita in Mexico City was “scarcely 70 liters per year, which is equivalent to less than one daily glass of milk, and is less than 30 percent than the national median.”⁷⁰⁰

CONASUPO was in charge of supplying rehydrated milk with added vitamins and minerals to populations who presented “evident nutritional deficiencies and due to their low purchasing power did not represent a competitive market for private fresh milk producers.”⁷⁰¹ CONASUPO officials considered that the poorest populations in Mexico City, consisting of new proletarians and former peasants could hardly afford fresh milk. The CONASUPO milk packaging was marketed to this population in mind. The packaging of the two products manufactured by CONASUPO, regular and chocolate milk, featured a cartoon of a peasant in traditional *campesino* clothing (Image 5). Also, the government’s photographs to publicize their stores portrayed women and children whose clothing, hairstyle and demeanor indicated their rural background. The marketing campaign also referred to the quality of fresh milk in the city, which had been a problem for health authorities since the 1920s, as I explained in chapter three. CONASUPO, using the (justified) preconceptions that people had about the milk market in Mexico City, promised to deliver a fresh quality product and to deliver the exact quantity of milk stipulated in the package.

⁷⁰⁰ Compañía Nacional de Subsistencias Populares S.A., *Leche CONASUPO*, 8.

⁷⁰¹ *Ibid.*, 8

Image 5. Print Ad for CONASUPO milk 1963



Source: *Leche Conasupo*. Mexico City: Compañía Nacional de Subsistencias Populares, S.A., 1963.

CONASUPO made substantial investments in order to increase milk production and consumption in the city. In 1959, the government built a new re-hydration plant and acquired a patent from the Tetrapak Company of Sweden to be able to sell milk in carton packages. This was important because vacuum-packed reconstituted milk lasted longer than fresh milk (either pasteurized or not) and could be stored outside a refrigerator, which in the 1950s and 1960s was somewhat a luxury appliance.⁷⁰² Mexico City, which in 1963 was the home of two million people, had 517 CONASUPO milk shops distributed throughout the city.⁷⁰³ Despite

⁷⁰² Articles like refrigerators were considered luxuries by economic authorities in the early 1960s. See Banco de México, *Encuesta sobre ingresos y gastos familiares en México, 1963* (México, D.F.: Oficina de estudios sobre proyectos agrícolas, Banco de México, 1966).

⁷⁰³ *Ibid.*, 8

CONASUPO's efforts, milk production was not enough to meet the consumption standards promoted by the United Nation's Food and Agriculture Organization and nutritionists in Mexico. However, as the population of the city kept growing. The government decided to measure which would be the consumption requirements for the years to come.⁷⁰⁴

During the second half of the twentieth century, the Mexican government through CONASUPO became one of the most important buyers of powdered milk in the world, (purchases of powdered milk from 1965 to 1987 can be seen in Table 17).⁷⁰⁵ CONASUPO bought most of the powdered milk from sellers from New Zealand, France, Britain, Ireland, the United States, and Canada using annual buying plans. CONASUPO developed these plans taking into account the subsidies available to the exporting countries, immediate availability, and the seasonal production of exporting countries. Changes in purchases from abroad reflected growing demand for the product linked to demographic growth, but also the annual agreements CONASUPO made with producer countries.

The government had the monopoly of importing powdered milk and selling it to industrial processing plants in Mexico. These included international dairy firm Nestlé and a wide array of Mexican processing firms which produced evaporated milk (Carnation milk), cheese and boxed bread among other products. A commission headed by the Ministry of Agriculture and formed by representatives of the government and the private sector decided the sales to private dairy industry. Before 1990, these sales were not decided by competitive open bids, but through closed door sector agreements. The allocation of powdered milk varied through the years, but in general around 60 percent to 70 percent went to the public sector (including CONASUPO) and

⁷⁰⁴ Compañía Nacional de Subsistencias Populares S.A., *Leche CONASUPO*, 10.

⁷⁰⁵ W. Dobson et al., "Estudio de la cadena de comercialización de leche en polvo en México," (México D.F.: Secretaría de Agricultura y Recursos Hidráulicos, 1992), 78.

30 percent to 40 percent the private sector.⁷⁰⁶ This distribution would change since the late 1970s and early 1980s. During the 1980-83 period, from 52 percent to 63 percent percent of the milk was allocated to the state sector. CONASUPO administered its share through its milk subsidiary LICONSA. The national school meal program managed by the National System of Family Development (DIF) got around 2 percent. The percentage allocated to the private sector was distributed among the Carnation Company, Nestlé and other industries (which included dairy producers and bread).⁷⁰⁷

The importation of powdered milk by the government was a variable that shaped how the milk industry developed in Mexico. CONASUPO subsidized all these private buyers of powdered milk because it did not charge for the costs of storage and delivery of the product (Table 18).⁷⁰⁸ The importance of these subsidies was that it also affected milk producers who complained about the unfair competition of the government which displaced on the market of industrial milk sales.

New Production Zones and the Re-organization of the Milk Market in Mexico

The government had a parallel strategy to relying on imports to increase the supply of milk. Several state agencies like the Agrarian Development Bank supported the development of several local milk production zones, including the area of Jalisco, La Laguna and the area

⁷⁰⁶ Ibid. 80-81, "Mexico: Dairy Development Project, Reconnaissance Mission Report," 4 September 1984, 25; "Technical assistance to the Dairy Development Project in Mexico" World Bank Group Archives (hereafter designed WBGA) L00200, PX01643: Dairy Development Project, R1990-110, 29006 B, 7.

⁷⁰⁷ Secretaría de Agricultura y Recursos Hidráulicos, Comisión Nacional para el Fomento de la Producción y Aprovechamiento de la Leche, A.C., Proyecto de Desarrollo Lechero, FAO Banco Mundial, WBGA, L00108B, PX01643: Dairy Development Project, R1990-103, 31536B, 21.

⁷⁰⁸ Dobson et al., "Estudio de la cadena de comercialización de leche en polvo en México," 81.

surrounding Mexico City. This was not a unified strategy, but it depended on the particular circumstances in which this type of economic activity emerged in each region.

In the case of Jalisco, milk production developed largely because of the initial presence and investment of a transnational company, Nestlé, which was responsible for the appearance of milk cattle ranches in the first place, but then hindered the creation of local dairy brands. Nestlé began its operations in the state of Jalisco with the construction of a condensed milk processing plant in Ocotlán in 1934, which operated with powdered milk purchases from the government. Later, in 1942, Nestlé built a plant of Lagos de Moreno which had the effect of re-organizing and increasing milk production in the region. Most cattle owners in Lagos de Moreno did not own specialized milk cow breeds but traditional *criollo* cattle (cattle bred for different functions like farm work or beef production). Nestlé worked out a partnership with the Ministry of Agriculture of the Jalisco government to provide credit to *campesinos* and small cattle owners in the region so they could buy specialized breeds like Holstein and Holland cows and crossbreed them with their existing *criollo* cattle. The Nestlé Company recovered the loans deducting money from the cattle owners when they sold the milk produced by these cows to the company. Allied with the local government, the company gave agricultural extension services to the cattle owners, like artificial insemination using a semen bank of high register cows, construction of silos for cattle and development of cattle feed varieties.⁷⁰⁹

The position of Nestle vis-à-vis the structure of the milk market in Mexico was contradictory. While the company strongly promoted the creation of a fresh milk production center, it also bought powdered milk from the government to manufacture its products, which

⁷⁰⁹ Patricia Gutiérrez Casillas and José Rubén Orantes García, *Reconfiguración de los espacios socioeconómicos: la Nestlé en el proceso histórico de Lagos de Moreno, Jalisco*, vol. 13, Científica (México D.F.: Universidad Autónoma de México, Programa de Investigaciones Multidisciplinarias Sobre Mesoamérica y el Sureste, 2006), 21.

was cheaper. In the mid-1940s and later in the mid-1960s, Nestlé cancelled milk purchases in Lagos de Moreno and fired workers employed in the processing plants. The company blamed the unrestricted powdered milk imports that flooded the Mexican market and made local production too expensive.⁷¹⁰

The importance of Nestlé as a player in the milk market is that it quickly expanded to other areas that did not traditionally produce milk and because it was the largest buyer of milk for industrialization for all of Mexico. By the early 1980s, Nestlé received milk from around 15,000 small producers, including suppliers from tropical areas such as Tamuin, Chiapa de Corso, Emiliano Zapata in the State of Tabasco, and Xalapa in the State of Veracruz in addition to the older suppliers in Jalisco. The majority of producers (65 percent) who did business with Nestlé were small farmers that owned less than twenty cows.⁷¹¹ Nestlé was represented by an organization called the Chamber of Food Products Elaborated with Milk (CPAEL), which was organized by people and companies who bought milk and then produced different dairy products. The ranchers and cattle owners who produced and processed their own milk were not represented in this organization.

In contrast to the operations of a private transnational company in Jalisco, the federal government promoted the creation new production zone of fluid milk for Mexico City in a region known as La Comarca Lagunera, the basin of the Nazas and Aguanaval rivers. This region between the states of Durango and Coahuila had traditionally been one of the most productive agricultural areas in Mexico, in part due to the fertility of the land and the availability of water. During the Porfirian era, large Haciendas specialized in the production of cotton. In the mid-

⁷¹⁰ Ibid.25

⁷¹¹ Secretaría de Agricultura y Recursos Hidráulicos, Comisión Nacional para el Fomento de la Producción y Aprovechamiento de la Leche, A.C., Proyecto de Desarrollo Lechero, FAO Banco Mundial, WBG, L00108B, PX01643: Dairy Development Project, R1990-103, 31536B, 12.

1930s, agricultural workers organized in unions and led a general strike which culminated in the expropriation of cotton haciendas by President Lázaro Cárdenas and the creation of collectively owned *ejidos*. However, by the late 1950s the price of cotton had plummeted and the irrigation system was outdated, which caused agricultural producers multiple problems such as flooding, lack of water and wastefulness.⁷¹² Credit institutions suspended loans to the region, so producers stopped cultivating approximately twenty thousand hectares, which represented 30 percent of the agricultural land in the region. In order to prevent massive bankruptcy and secure credit payments, in 1962 the federal government created a special fund (Fondo de Rehabilitación para la Agricultura de la Comarca Lagunera). Out of a hundred properties that sought government relief, only sixty six qualified for the rescue. Out of those properties, thirty-six fell under the control of the banks and the rest remained in the hands of their original owners. In 1967, after five years, agricultural producers organized in thirteen groups to get back their lands from the Fondo. Four of these groups switched from cotton production to basic grain production, while nine began to specialize in milk production.⁷¹³

In the 1950s, the Ministry of Agriculture and the National Bank of Agrarian Credit were already providing credit to traditional milk producers in La Laguna, who were organized in credit unions, in order to import calves from Canada and improve productivity.⁷¹⁴ An extension of credit activities along the same lines started in the late sixties with the institution of these nine groups of former cotton producers. During the 1960s, government loans for milk production

⁷¹² "Mexico: Dairy Development Project, Reconnaissance Mission Report," 4 September 1984, WBGU, Doc, L00200, PX01643: Dairy Development Project, R1990-110, 29006 B.

⁷¹³ Arturo Martínez, "La cuenca lagunera," *La Leche*, 1, 1989, 5-6.

⁷¹⁴ "Carta Abierta a Sr. Adolfo Ruiz Cortinez de Unión de Crédito de Productores de Leche de Torreón, Unión de Crédito de Productores de Leche del Estado de Durango, Pasteurizadora Laguna, Pasteurizadora Higiénica, Pasteurizadora Nazas, Asociación Local Ganadera de Productores de Leche de Torreón," *Excelsior*, 18 March 1958.

went mostly to these individual borrowers who owned land. One of the most important sources of money for the agricultural projects promoted by the government was the International Bank of Reconstruction and Development, a branch of the World Bank. In 1965, the Mexican government, with IBRD assistance, embarked on a technically assisted development program for commercial farms and ranches and related agro-industries. This program, administered by the Bank of Mexico, received three successive IBRD loans, of twenty-five, sixty-five and seventy-five million dollars respectively, from 1965 to 1973. The names of the institutions that managed the funds for milk producers in La Laguna were Fideicomisos Instituidos en el Banco de México en Relación con la Agricultura (FIRA) and Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura (FONDO). Beef producers, who owned on average 1,363 hectares, received the largest percentage of the loans (from 37 percent to 38 percent depending on the year), followed by commercial agricultural production of annual crops like corn, beans and alfalfa (from 23.2 percent to 31 percent). Both beef and annual crop producers who received loans were distributed all over Mexico. Milk producers who received loans were concentrated in La Laguna or central Mexico and they received 11.7 percent of the FONDO loans on average. Dairy farms (milk producers) tended to be the most productive and profitable of all of the agricultural enterprises that received loans from the World Bank.⁷¹⁵ Milk farms also presented more substantial increments in the value of fixed (land and machinery) and cash assets than other agricultural businesses.⁷¹⁶ Out of these dairy farms, the more profitable ones received more loans

⁷¹⁵ John D. Schmidt, Bank of Mexico, Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura, "Final Report: Special Impact Study of the First and Second IBRD supported Livestock and Agriculture Development Projects Mexico," 1 September 1972, WBG, 1696800, Administration 69/71-02, Loan #610-P007518: Livestock and Agricultural Development, A1995-047, 170764B..

⁷¹⁶ Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura, Sistema de Registros Continuos, "Primer Reporte Sobre la Evaluación de las Empresas Acreditadas Bajo el Programa de Productores de Bajos Ingresos, Primera Parte, México, DF, Febrero 1977," WBG, 1383684, Mexico-Livestock and Agriculture Project (03)-C (1-2), Loan #747 P00721: Livestock III, R1977-043, 169741B, 13.

due to their ability to pay back the cash loans and their relative stability. In total, the bank gave loans to twenty-four milk farms that were operated by between thirty-nine and thirty-six partners each. These twenty-four farms were affiliated with five pasteurization plant companies. Together, they formed a corporation called Leche La Laguna, which commercialized their products under the brand name Leche Lala.⁷¹⁷

A study of the fluid milk market of Mexico City in the late 1960s tracked the number of farms that supplied milk for pasteurization. The region with the lowest number of farms but most productive was La Laguna. The shipments from La Laguna to Mexico City began in 1966, and by 1967 represented an estimate of almost 20 percent of the pasteurized milk sold in the city (see Table 19). Initially, the milk was pasteurized in La Laguna, packaged and then sent by truck to the capital, where it was pasteurized again in a new plant.⁷¹⁸

The development of the production zone in La Laguna followed regional agricultural trends that had to do with the decreasing importance of cotton due to the fall of prices. Milk production was seen by regional agricultural agencies, national development banks and agricultural producers themselves as a viable and profitable alternative to other crops. The expansion of demand in urban centers, especially Mexico City, was an attractive option for producers and Mexican government planners from the Ministry of Agriculture.

Even with the growth of alternative production zones, the majority of farms that produced milk for Mexico City were situated inside the metropolitan area, which by the late 1960s had become a problem for public health authorities. Neighbors and neighborhood organizations were constantly complaining about the nuisances caused by living in close proximity to cattle. These

⁷¹⁷ Ibid. 27.

⁷¹⁸ Paul H. Kipps and Donald K. Freebairn, *Organization and Structure of the Mexico City Milk Market*, vol. 22, Cornell International Agricultural Development Bulletin (Ithaca, New York: New York State College of Agriculture and Sciences at Cornell University, 1971), 30-31.

included dirty streets, noise very early in the morning, illegal parking of milk trucks, as well as the unsanitary conditions under which the milk was sold.⁷¹⁹ Milk cows sometimes roamed down the streets in residential neighborhoods and were kept in accommodations that were not fit for milk production. For example, a large scale producer and founder of the ALPURA group remembered the disruptions caused by a group of milk cows that were kept in a storage building next to his office in the city center and transported outside using industrial elevators to graze in nearby parks.⁷²⁰

In 1973, the government of president Luis Echeverria set up a program, headed by his son Luis Vicente, to implement a strategy to relocate the stables outside the city. The program was called Programa de Descentralización de las Explotaciones Lecheras del Distrito Federal (PRODEL, Milk Production Decentralization Program). The first findings of the program were not surprisingly that having production confined to a metropolitan area made it inefficient, unsafe and costly. The farms were located in all areas of the Federal District, but most of the 35,000 heads of cattle living in the city were concentrated in places where residential housing construction was expanding, like Xochimilco, Tlahuac, Ixtapalapa, Tlalpan, Milpa Alta, and Gustavo A. Madero. Given this expansion, the costs of land and water use were steadily rising, and therefore not competitive for an activity such as milk production. These rapidly transforming districts (*delegaciones*) concentrated 80 percent of the farms and 76 percent of milk production. According to PRODEL studies, in addition to the high cost of rents and water, production was inefficient, as a result of an incorrect management of cattle. Space per cow was not sufficient, as

⁷¹⁹ Professor Caritino Maldonado to Guillermo Posada (Oficial Mayor de la SSA), 22 June 1965, Dr. Campos Salas to Rafael Illescas Director General de Registro de Alimentos y Bebidas, 12 August 1965, Vecinos de San Pedro Xalapa Atzacapozalco to Dr. Aceves, 7 July 1969, Vecinos de la Colonia Juan Escutia to Secretario de Salubridad, 22 July 1969, Colonos de la Providencia to Alfonso Corona del Rosal, 19 September 1969, Vecinos de Barranca del Muerto to Gines Navarro Díaz de León, 10 September 10, 1968, AHSS, SSA, Spr 132, exp.1.

⁷²⁰ Alfredo Gutiérrez (founder of ALPURA), interview by the author, November 2006.

cows living inside the city were trapped in restrictive facilities where they did not walk enough, had no access to direct sun light, and producers were not able to isolate sick cattle from the rest of the herd.⁷²¹

PRODEL had to offer the Federal District milk producers a viable alternative that would be economically attractive. As one of the goals of relocating these producers was to increase the flow of pasteurized milk to Mexico City, the commission planned to build a state of the art facility in Tizayuca, Hidalgo, a community located 53 kilometers outside the capital, which would include stables, feeding stations, processing and pasteurizing plant all in one place. PRODEL received funds from the National Bank of Agrarian Credit, which managed a loan from the Inter-American Development Bank. The money was used to buy the terrains and equipment in Tizayuca.⁷²² The milk producers who wished to relocate had to come up with the money so they so wished they could eventually buy up the land in Hidalgo from the government. They would also have the opportunity to upgrade their *criollo* cattle with high registry cows imported by the government. Financing to buy these new cows would come from payments made by the government of Mexico City, which would pay for the relocation of up to 12,000 heads of cattle. PRODEL would be responsible for the sacrifice or relocation of the rest of the cattle in the city.⁷²³

A challenge for authorities trying to relocate these farms outside Mexico City was the diversity of ownership, management styles and herd sizes. PRODEL had to convince a very diverse array of producers, some of which owned more than one thousand cows, and some which

⁷²¹ Convenio: Fideicomiso Fondo del Programa de Descentralización de las Explotaciones Lecheras del Distrito Federa, 16 de Agosto 1976 AHSS, SSA, Spr C332, exp. 2, 5.

⁷²² Dr. Mario Calles López Negrete, "Memo: Banco Nacional de Crédito Rural SA," 20 August 1980, AHSS, SSA, SubRSD c. 36 exp.1, 7.

⁷²³ Ibid.9

owned just one or two, to accept the terms of the program and the loans or liquidate their farms. PRODEL had to have a close collaboration with the Ministry of Health and the city government which were in charge of ensuring the sanitary conditions of milk production in the city. The producers that did not pasteurize their milk were generally not in compliance with sanitary standards. The threat of enforcing those standards was used as a measure to make the government's relocation program work. The producers organized themselves and served the sanitary authorities with several *amparos*, legal resources used to protect private citizens from government measures, in order to delay relocation.⁷²⁴

Resistance to the PRODEL program was not only due to economic reasons (like that some producers were unwilling or were not sufficiently solvent to enter the Tizayuca deal). An unexpected challenge the commission faced was that a large percentage of dairy farms were managed by women. The farms were usually family enterprises, and while the husbands and sons had other professions and worked in the city, the wives took care of milk production. The women saw this activity as their work and an independent source of income which they contributed to the household. Some of these women sold unpasteurized milk, and were very used to having direct contact with their clients, and claimed no knowledge of alternative farm management style or milk industrialization processes. Moving to the Tizayuca facility would mean that the men in the house would take over the family business. In most cases, the owners of the land and the cattle were men, and the government was embarking in a business venture with them. According to Luis Vicente Echeverria, the most challenging part of moving milk producers out of Mexico

⁷²⁴ Dirección General, Fernando Lanz Duret, Fideicomiso: Fondo del Programa Descentralización de las explotaciones lecheras del DF Quincuagésima primera reunión del comité técnico 2-20, Archivo Histórico de la Secretaría de Salud, SSA, SubRSD, c. 36, exp.1

City was trying to negotiate with the families this radical change of lifestyle and intra-familial responsibilities.⁷²⁵

In contrast, when men managed the business, negotiations with the government were easier. Such was the case of Adolfo Ramírez, who saw milk production as his true calling, which he reached after different entrepreneurial activities in which he embarked throughout his life. He started out as an employee of a *pulque* hacienda, and then moved on to work at a stable. With his savings he purchased a little ranch, but the revenue was meager and he decided to move to the city. With the money he made from selling his land, he set up a pharmacy, a business that flourished and later permitted him to go back to buy another ranch inside the city. He sold milk outside the door of his stable in Pantitlán in which he housed around 75 cows. Mr. Ramírez recalled that when the government started promoting the Tizayuca complex, he immediately applied. With the government loan he went to the United States to buy new cows. Once in the Tizayuca complex, he managed to get his five sons started in the business. After a couple of years, both father and sons owned about 150 cows each.⁷²⁶ Producers like Ramírez were the type of business partners the government was looking for, people really interested in milk production as their primary trade.

By 1982, 110 producers moved to the Tizayuca Industrial Complex. They retained ownership of the land and the cattle, while the pasteurization plant and the balanced feed plant was owned by the Agrarian Credit Bank (BANRURAL). The Tizayuca complex received technical assistance and began a breeding program which produced 7,500 calves annually, something that would have been unimaginable if production remained in Mexico City.⁷²⁷ The

⁷²⁵ Luis Vicente Echeverría (former director of PRODEL), interview by the author, December 2006.

⁷²⁶ Marco A. Silva, "Ganadero de Tizayuca," *La Leche* 1, no. 1 (1989).

⁷²⁷ Mario Schacher, "PRODEL unites Mexico City's Dairy Farmers," *Dairy Record*, no. 83 (1982).

bank and the producers established a co-management plan, which included the creation of the Boreal milk brand. The joint venture company established thirty-four distribution centers in the capital and shipped 299,047 liters of milk daily to the city.

Although most producers agreed to move out of the city or leave the milk business in three years, the process dragged on until 1985. The producers who moved to Tizayuca complained about unfair competition from the people who decided to stay in the city and avoid sanitary regulations. This brought some conflict between agencies. PRODEL officials complained to the Ministry of Health that it was not holding up to its end of the bargain. Luis Vicente Echeverría, head of PRODEL, stated that the remaining stables in the Federal District had not been subject to the sanitary control stipulated by the law. Inspectors had not been acting diligently and had hindered the imposition of fines and closures of the stables. The government was in danger of losing the *amparos* to the remaining cattle owners because the Ministry of Health had not filed a complete technical report about the sanitary violations. The *amparos* were finally resolved in the last months of 1985 in favor of PRODEL.⁷²⁸

A related change in the milk market of the 1970s was the creation of ALPURA, a new company set up by established businessmen who owned individual milk brands that were mostly sold in Mexico City. These were the businesses that had remained standing after the epidemic of foot-and-mouth disease that had hit Mexico in the late 1940s (see chapter three). In 1952, these producers, who owned 50 to 300 cows each, as well as private pasteurization plants, founded the Association of Pure Milk Producers, a trade association, in order to negotiate milk prices and sanitary legislation with the Ministry of Health. The Association also gave technical assistance to the members, most of which were advised to look for different locations outside Mexico City

⁷²⁸ Atenta nota a la Secretaría en relación a la visita a la cuenca lechera de Tizayuca que se realizó el día de hoy, 12 August 1980, AHSS, SSA, SubRSD, c. 36, exp.2.

even before the PRODEL began operating in the 1970s.⁷²⁹ With the creation of new production areas in Tizayuca and La Laguna, the members of the Association decided to abandon their individual brands and look for investment opportunities that would permit them to centralize processing, pasteurization and distribution and make production more cost efficient. According to founding partners, Emilio Olivar and Ernesto Larondó, the association was able to secure a loan from private Mexican bank Banamex through personal connections of the individual ranchers. The founders explained that, in the 1970s, private banks were not interested in agriculture and considered milk production a very risky investment because it was subject to government price controls. Once the loans were secured the producers formed a cooperative.⁷³⁰

ALPURA began functioning in 1973, with 46 members. Membership expanded by the mid-1980s to 162. The participating producers received company stocks according to the number of heads of cattle they owned and their production quota. The CEO of the company, Víctor Gavito, which the founding members considered a business innovator, decided to create a series of measures and incentives to increase productivity and the quality of the milk production. Even in a cooperative context, the ranchers considered important to maintain some of the competitiveness the members of ALPURA displayed towards one another before being partners.⁷³¹ Most of these producers had relocated to Querétaro, Tlaxcala, and Hidalgo since the early 1960s. The most important production zone was Querétaro, where almost half of the cooperative members had their ranches. On average, the farms had 225 high yield Holstein-

⁷²⁹ “Mexico: Dairy Development Project, Reconnaissance Mission Report,” 4 September 1984, WBGA, PX01643:Dairy Development Project, L00200, R1990-110, 29006 B.

⁷³⁰ Emilio Olivar (founder of ALPURA), interview by the author, October 2006. Ernesto Larondo (founder of ALPURA), interview by the author, October 2006.

⁷³¹ Ibid.

Friesian cows (some producers had fifty cows, other close to one thousand).⁷³² What made the organization attractive was that milk producers benefited from the overall financial results of the enterprise to which they supplied milk. In other circumstances, if the producers had not formed the cooperative, the prices the pasteurization plants paid for their milk would have been fixed by the government. Instead, as members of Alpura, they received payments above the official producer price for their milk. Alpura members also organized a credit union, which allowed them to commercialize other products like lime peels, cotton seeds and, corn.

Loans and assistance by different government agencies focused mostly on larger scale operations, or in regions where individual producers had already substantial investments. Nonetheless, during the 1970s the Ministry of Agriculture developed pilot programs to encourage milk production among lower income agricultural producers and *ejidatarios*. These programs in general were linked to larger hydraulic infrastructure development programs like the Lerma Plan in central Mexico.⁷³³ These programs in general were not very successful in part because of economic officials' lack of knowledge about local politics, reticence or inability to intervene in communities. For example, anthropologist Kathleen DeWalt did fieldwork in the late 1970s in Temascalcingo (State of Mexico), a community where one of these programs was tried. In 1973, the Ministry of Agriculture developed a mix of grasses and clovers that grew well in the region and would support dairy and beef cattle. The Ministry's goal was to promote the organization of dairy cooperatives, which would receive loans from development banks.⁷³⁴ By

⁷³² "Mexico: Dairy Development Project, Reconnaissance Mission Report," 4 September 1984, WBGA, PX01643:Dairy Development Project, L00200, R1990-110, 29006 B, 35.

⁷³³ The Lerma Plan (1946-1976) included the Chapala river basin, and mostly affected Michoacán, Jalisco, State of Mexico, Guanajuato, Queretaro and Mexico City. See P. Wester, "Capturing the Waters: the Hydraulic Mission in the Lerma–Chapala Basin, Mexico (1876–1976)," *Water History* 1, no. 1 (2009).

⁷³⁴ Kathleen Musante DeWalt, *Nutritional Strategies and Agricultural Change in a Mexican Community*, Studies in cultural anthropology (Ann Arbor, MI: UMI Research Press, 1983), 42.

1977, *ejidos* in Temascalcingo participated cultivating forage crops and building a barn. The Ministry, through the Bank of Agrarian Credit, bought specialized milk cattle from Canada and sold it to the cooperative. De Walt explains that controls on the price of milk did not allow the cooperative to make a profit. In its plans the Ministry of Agriculture did not contemplate at all the local market. The milk cooperative sold its milk to a pasteurization plant in the capital of the State of Mexico, Toluca, which meant that most of the milk produced in Temascalcingo was not sold locally, even if it commanded high prices in the community as raw milk. Some arrangements within the cooperative itself decreased cohesion among its members. For example, cooperative members who took care of the barn received a wage, which provoked that these members began to see as themselves workers of the development bank, not as active participant of a profit making entity (the cooperative). The bank was also constantly involved in the cooperative operations in order to recuperate its investment. This created resentment in members of the cooperative who saw bank officials as outsiders out to usurp their *ejido* land and make them peons. In addition, cooperative members and the rest of the *ejido* who did not participate in the cooperative had serious disagreements over land use. The fact that a single family dominated the cooperative created resentments in the entire community. The cooperative failed after three years of operation.⁷³⁵ These types of projects were very hard to implement, because they implied abrupt changes in how *ejidos* or small rural communities organized agricultural production and land use. This made small dairy production projects risky investments for agricultural development banks.⁷³⁶

⁷³⁵ Ibid., 43-44.

⁷³⁶ Other examples were the Plan de Chontalpa in Tabasco. The Ministry of Agriculture reported similar initial results with loans given to small scale producers during the early 1970s. "Estudio para el establecimiento y desarrollo de una cuenca lechera en el plan de la Chontalpa estado de Tabasco," AHSS, SSA, SPR, c., 237, exp. 3.

In summary, increases in milk production from the early 1960s to the late 1970s occurred because of the reorganization of production zones and more investment. Usually investment either public or private tended to favor large scale productive operations, because they were safer and more likely to result in high yield production. The development of production zones obeyed also to regional logics and it was not due to a unified strategy on the part of government agencies.

Changes in the Milk Market in the late 1970s

Despite all of the investment and the innovations intended to expand the production of milk in the 1970s, growth in the sector began to stall in 1978. From 1970 to 1978 total milk production grew 4.4 percent per year. In contrast, from 1978 to 1983 milk production in general increased 1.4 percent per year. However, pasteurized milk production grew annually 6.6 percent from 1970 to 1978 and decreased 0.2 per year from 1978 to 1983. The rate of growth of industrialized milk production (other product categories excluding regular milk) also declined from 1978 to 1983 by 1.6 percent, while production of raw milk increased 4 percent annually the same period.⁷³⁷ From 1978 to 1980 there were 116 pasteurization plants in Mexico, a number that decreased to 110 by 1985. The distribution of pasteurization plants was the following: 19.2 percent in the Federal District, 17.5 percent in the State of Mexico, 7.6 percent in Nuevo Leon, 7.3 percent in Jalisco, 6.1 percent in Hidalgo, 6 percent in Durango and the rest in other states.

⁷³⁷ "Mexico: Dairy Development Project, Reconnaissance Mission Report," 4 September 1984, WBGA, PX01643:Dairy Development Project, L00200, R1990-110, 29006 B, 39.

The primary pasteurizers were ALPURA, *Lala*, and *Boreal*, but all pasteurizers in general operated from 1973-1985 at around 60 percent of their production capacity.⁷³⁸

Milk production also stalled because the cost of the factors of production, especially water went up. Most cattle feed for milk production was forage, particularly alfalfa and corn foliage. Forage production in central Mexico, Jalisco and La Laguna depended on underground water resources for irrigation. Due to the expansion of irrigation resources for agriculture in general in those areas, underground water supply was not fully recharged, which increased costs for existing water and transportation of water from other areas. Some areas had more deficits on alfalfa production than others, but regardless of this fact, prices went up for forage feed from 1978-1983.⁷³⁹

Due to this lack of growth of milk production since the late 1970s (see Table 15), producers and the government began a public struggle to negotiate the prices of pasteurized milk. Producers wanted to eliminate price controls and revise the process by which the government imported powdered milk from abroad. CONASUPO officials resisted any price control increases and tried to curb public outcry about milk scarcity, particularly in urban areas in Mexico. Since 1980 CONASUPO's powdered milk imports increased substantially, compared with imports in the 1970s (Table 20). From one year to another CONASUPO more than doubled its milk imports, from 78.4 thousand tons to 194.6 thousand tons, as part of a strategy of the Mexican Food System to improve food consumption in Mexico.⁷⁴⁰

⁷³⁸ Secretaría de Agricultura y Recursos Hidráulicos, "Comisión Nacional para el Fomento de la Producción y Aprovechamiento de la Leche, A.C.," México: Proyecto de Desarrollo Lechero FAO-Banco Mundial, 1986, WBGA, PX01643:Dairy Development Project, L00111, R1990-103, 31536B, 7.

⁷³⁹ "Mexico: Dairy Development Project, Reconnaissance Mission Report," 4 September 1984, WBGA, PX01643:Dairy Development Project, L00200, R1990-110, 29006 B, 7.

⁷⁴⁰ *Ibid.*, 8

Part of the problem for cattle owners whose production was destined for pasteurization was the laxity of controls for unpasteurized milk. The raw (unpasteurized) milk market began to expand again in the 1980s, as it did in the 1940s, before the consolidation of the specialized milk production sites in Central Mexico and La Laguna. Violations to the sanitary code abounded and the state and federal Ministries of Health were not able to control all areas of Mexico equally. The same was true with regards to price controls, which were not universally enforced. Given the decline of milk production for pasteurization in 1981, the Ministry of Agriculture announced a program to increase milk production, but this plan was halted due to the devaluation crisis of 1982. A group of experts of the Food and Agriculture Organization of the United Nations (FAO) began assessing the possible conditions required for a loan that was to be financed by the World Bank to save Mexico's dairy sector.⁷⁴¹

Since 1981, Milk producers met with officials of the Ministry of Agriculture to try to stop the decline of the real price for milk production. In theory, official producer prices were supposed to be revised periodically and adjusted according to inflation. What actually happened, however, was that producer prices lagged behind the increase of general consumer prices. This phenomenon was particularly serious starting in 1982 when Mexico began to experience high rates of inflation.⁷⁴²

A new formula to determine the official producer price was introduced in January 1984. This formula was to take full account of the effect of inflation on production costs and guarantee a minimum (14 percent) profit for dairy farmers. Official prices approved in January 1984

⁷⁴¹ Mexico: Dairy Development Project, Reconnaissance Mission Report, 4 September 1984, WBGA, PX01643:Dairy Development Project, L00200, R1990-110, 29006 B, 35

⁷⁴² Secretaría de Agricultura y Recursos Hidráulicos, "Comisión Nacional para el Fomento de la Producción y Aprovechamiento de la Leche, A.C.," México: Proyecto de Desarrollo Lechero FAO-Banco Mundial, 1986, WBGA, PX01643:Dairy Development Project, L00111, R1990-103, 31536B.

represented an increase of 50 percent over the November 1983 prices and, together with the announced policy of periodical revision of these prices, created an incentive to continue production among dairy farmers. Some of them took immediate steps to expand milk production, by importing specialized cattle. Nonetheless, failure on the part of the government to revise producer prices after the first quarter of 1984 once again tempered dairy farmers optimistic expectations and discouraged any further investment.⁷⁴³

According to Dr. Gonzalo F. Cevallos, a veterinarian who has served as representative of milk producers in central Mexico since the early 1980s, the weakness of producers during price negotiations was that forming a united front of all milk producers to negotiate with the government was a slow and complicated process. The primary milk production areas (Jalisco, La Laguna, Tizayuca and Central Mexico) did not encounter the same problems regarding price controls. The production areas that sold milk to Nestlé were dominated by very small producers who did not have to negotiate with anyone else but the transnational company. Moreover, most of Nestlé's production, as it was composed of industrialized dairy products, was not subject to direct price controls. Nestlé had space to maneuver and pay small producers higher prices for their raw milk than the ones stipulated by the government. Also, the government did not enforce price controls the same way in all of Mexico. The farther from the central urban areas, the less control the federal government exercised.⁷⁴⁴

Since the early 1980s, ALPURA also had conflicts with other producers in addition to government pricing agencies, especially with Leche Lala, because the former claimed that the government pricing structure favored the latter. There were two types of price controls. First,

⁷⁴³ El Mercado de la Leche de Vaca en México Comisión Nacional de Precios 1984, p. 2-12, 14-30 32-35, 37-47, Archivo Histórico de la Secretaría de Salud, SSA, SPR, c. 321, exp.2

⁷⁴⁴ Gonzalo Cevallos (president of the ANGLAC, Asociación Nacional de Ganaderos de Leche), interview by the author, October 2006. Ernesto Larondo (founder of ALPURA), interview by the author, October 2006.

government controlled milk prices to producers, determined according to milk quality and production zone. The second price control was a maximum for the price consumers could be charged per liter of milk, also decided according to quality and zone. There were eight equivalent production and consumer price zones. In other words, it was assumed that producers sold milk for consumption in their own zones, but that was not the case. There was interregional movement of milk, all to the highest price zone (relative to population concentration, Mexico City), where ALPURA had most of its market. The ALPURA partners claimed that *Leche Lala* operated with relative advantage due to this price structure.⁷⁴⁵

The final challenge to form an organization that represented most milk producers was that cattle owners were already part of the Confederación Ganadera (Cattle Confederation), one of the sector associations accredited by the Ministry of Agriculture. Inside the Confederación, milk producers were a relative minority, and the leadership was controlled by meat producers. Since 1979, milk producers had regional associations, like the Asociación Nacional de Ganaderos Lecheros, composed by members of the ALPURA group and other producers from central Mexico. In 1985, milk producers spearheaded by the ALPURA group and Antonio Haro, who represented La Laguna region, recruited 150,000 members to be able to found a branch of the Confederación, for milk producers only.⁷⁴⁶ Their organization was approved by the Ministry of Agriculture in 1986 with the name Asociación Ganadera Nacional de Productores de Leche (ANGALC, National Association of Milk Producers).

Another obstacle to negotiations with the government was that each increase of the price of milk brought with it immediate backlash, especially by middle class consumers and organized

⁷⁴⁵ El Mercado de la Leche de Vaca en Mexico Comisión Nacional de Precios 1984, 2-12 14-30 32-35 37-47, AHSS, SSA, Spr, c. 321, exp. 2.

⁷⁴⁶ Mariángeles Comesaña, "Entrevista con José Antonio Haro," *La Leche* 1(1992): 20-21.

worker groups. Politicians and bureaucrats were also reluctant to the milk producers constant petitions to cease or decrease the imports of powder milk from abroad, since a substantial part of this product was destined for social programs.⁷⁴⁷

ALPURA decided to try to counter the trend of growing powder milk imports by getting permission to participate in this market. In 1981, the CEO of ALPURA, Víctor Gavito, argued that the strategy of the Mexican Food System (SAM) was not achieving its objectives of making Mexico self sufficient in food production nor improving the quality of the diet of the people, since the most important basic product, milk, was disappearing from the market. ALPURA associates began quitting in 1980, leaving the cooperative because it was no longer capable of paying them enough for their milk. These former associates instead sold their milk to industrializing plants (who made butter, cream and other dairy products) or simply sold it without pasteurization. The reduction of the supply of pasteurized milk by ALPURA had the effect of increasing the prices of milk in Mexico City, so consumers ended up paying more than the authorized prices. Thus, the ALPURA cooperative requested the Mexican government permission to start processing reconstituted milk.⁷⁴⁸ For this purpose, they would recondition their pasteurization plants and use their excess storage and processing capacity. The goal of these producers was to sell this milk (reconstituted milk) at lower prices and attempt to compete with non-pasteurized milk. The competition would create an excess supply of milk that could again be channeled to pasteurization plants. In order for ALPURA to manufacture reconstituted milk, the Sanitary Code had to be revised because up to that point the government had a monopoly over this type of production. ALPURA requested a permission to buy powdered milk from abroad.

⁷⁴⁷ Gonzalo Cevallos, interview by the author, October 2006.

⁷⁴⁸ Víctor Gavito to Mario Calles López Negrete, 16 March 1981, Archivo Histórico de la Secretaría de Salud, SSA, SPR, c. 321, exp. 2.

The Ministry of Health objected to ALPURA's intentions, claiming that further imports of pasteurized milk would depress the milk market even more.⁷⁴⁹

ALPURA was merely asking for permission to manufacture fluid milk using powder milk, a practice consumers were accusing other producers of incurring without authorization in the production zone of La Comarca Lagunera. The Ministry of Health received reports that stable owners in the area of La Laguna were mixing their milk with powdered milk and then sending it to pasteurization plants. The fraud was discovered when they sent the milk to a pasteurization plant outside Gómez Palacios in Durango. According to reports, regional consumers, who were used to these types of milk mixtures, realized immediately because they were not able to produce home-made *jocoque* (yogurt).⁷⁵⁰ Consumers in Durango had been protesting and denouncing to the local consumer protection authorities what they regarded as abuses by milk producers. These included adulteration with powdered milk and other substances, conditional milk sales, and milk contamination. A veterinary doctor sent a lengthy letter to the Ministry of Health denouncing that cattle owners used powder milk as filler. This powdered milk was sold by local CONASUPO officials at very low prices to milk producers.⁷⁵¹

Members of the Regional Association of Workers and Peasants of La Laguna affiliated to the Confederation of Mexican Workers (CTM), the official national union, investigated the matter. The workers collected samples of milk and sent these samples to doctors at the local Social Security Hospital. The results confirmed that the milk samples were adulterated, but with water, and in many case not even pasteurized. Officials at the local Ministry of Health were

⁷⁴⁹ Ibid.5.

⁷⁵⁰ Lic. Armando Vazquez Galvan Director General de Inspeccion y Licencias to Minister of Health, Archivo Histórico de la Secretaría de Salud, SSA SPR c321 exp. 2. "Verdades y Rumores," *El Siglo de Torreón*, 27 June 1981, AHSS, SSA, SPR, c. 321, exp. 2.

⁷⁵¹ Lorenzo Avilés to Miguel de la Madrid, 13 January 1983, AHSS, SSA, SPR, c. 321, exp.2.

ignoring the workers' claims of adulteration, which led them to believe that they were colluded with the producers and pasteurization plants. The workers' organization claimed that price increases were not really benefiting producers, which were sending their milk cows to the slaughter house in droves. Members of the union explicitly linked this adulteration to the problem of malnutrition. They informed the national Ministry of Health that the decline of La Laguna milk shed was contributing to "the high incidence of malnutrition in Mexico" which was undermining the government's effort to combat this ailment.⁷⁵²

Complaints about the price and the quality of milk by several unions from Durango, Coahuila, Nuevo León and Chihuahua continued during 1983 and 1984. The workers stated that price increases had no impact on the quality of the milk. According to the reports filed by workers, local consumers could not afford the national milk brands like ALPURA and Leche Lala, which due to their high costs "only millionaires could buy them."⁷⁵³ Instead, they were subject to consuming milk produced by the local pasteurization plants, which used to own milk cattle. The unions confirmed reports that the local pasteurization plants were adding some kind of powder, which could be powder milk or another food additive, introduced illegally from the United States. The federal Ministry of Health ordered an investigation. The regional authorities denied any responsibility, presenting as evidence documents that proved that the pasteurization plants had been fined for violations to the sanitary code. The unions confirmed that the plants were fined but claimed that they never actually paid these fines.⁷⁵⁴

⁷⁵² Federación Nacional Obrera y Campesina (Gómez Palacios) to Miguel de la Madrid, 23 June 1983, AHSS, SSA Spr c321 exp.2.

⁷⁵³ Federación de Sindicatos de la Construcción (CTM) to Miguel de la Madrid, 2 February 1984 AHSS, SSA, Spr, c321, exp.2.

⁷⁵⁴ Dirección de la CROC Regional to Lic Miguel de la Madrid, October 28, 1983, AHSS, SSA Spr, c321, exp. 2.

Groups worried about milk quality continued to make the argument to authorities that the current state of the milk business in northern Mexico was endangering children's health. In 1983, the members of the Red Cross in Monterrey sent a letter to President Miguel de la Madrid claiming that the consequences of the mismanagement of pasteurization plants in the region was increasing the incidence of childhood malnutrition.⁷⁵⁵ A year later, in 1984, a group of nurses from the Social Security Institute of Monterrey organized a series of lectures to talk about this problem and the issue of CONASUPO milk, which according to several nurses was not reaching its intended target. The regional branch of Social Security had formed several medical brigades to go to the most impoverished neighborhoods and give medical attention to children. These doctors reported to the Minister of Health that they found children who suffered from severe allergic reactions to the milk available in those neighborhoods, which came directly from the pasteurization plants accused of adulterating milk. Doctors were trying to raise awareness and decrease the mothers' reliance on cow milk; both pasteurized and unpasteurized, and instead advised them to continue breastfeeding their children when they were young.⁷⁵⁶ As I explained in chapter four, the federal government in the late 1970s had programs to promote breastfeeding and supplementary feeding practices for new mothers. It was widely accepted among the medical community that these practices were healthier than using regular milk or infant formula.

In Mexico City, negative reactions to price increases and scarcity began as early as 1979. For example, poet and columnist Margarita Michelena complained "once in the stove, once in the SECOM (Secretaría de Industria y Comercio, Ministry of Industry and Commerce), the fate of milk is to rise." She wrote that milk was becoming mythological in supermarkets. While the

⁷⁵⁵ Damas de la Cruz Roja de Monterrey to Alfonso Martínez Domínguez, 13 February 1984, AHSS, SSA, Spr, c. 321, exp.2.

⁷⁵⁶ Dr. J. Otoniel C., Valdez, Dr. Manuel C. Villacania, Enfermera Marilu Estrada to Dr. Guillermo Soberón, March 1984, AHSS, SSA, Spr, c. 321, exp. 2.

government had an “abundance of plans, orders, and other mechanisms to elevate production,” housewives in Mexico saw no changes. For Michelena, the price of milk was a herald of things to come, and a symbol of the government’s lack of control of inflation.⁷⁵⁷

From 1980 to 1981, the government and producers had negotiated a slight increase in prices, but milk continued to be scarce in the metropolitan area. Newspapers reported long lines outside supermarkets and neighborhood stores to buy milk. Stores also resorted to conditional sales of milk, which forced consumers to buy other products to be able to buy a liter of milk.⁷⁵⁸

No matter how much milk producers complained about powder milk imports, the government was unwilling to consider letting go of the subsidized milk used for social programs. Much effort had been invested in organizing the coupon program to distribute milk. In 1972, CONASUPO was reorganized and milk distribution was allocated to a special branch called LICONSA (Leche Industrializada CONASUPO). The purpose of LICONSA was to provide low income families (those who earned less than two minimum wages) with an income transfer in the form of low cost milk. The government wanted to ensure milk consumption to improve the nutritional status of children, and later began to include pregnant and lactating mothers as well as elderly people. From 1972 to 1990 the selection of beneficiaries was done using geographic and socioeconomic data which measured poverty and risk of malnutrition. The second set of indicators was based on the results of National Institute of Nutrition (INN) surveys about diets. Each family received a baseline of 570 ml of milk per day, which increased according to the

⁷⁵⁷ Margarita Michelena, “Hermana Engracia, Hermana,” *Excelsior*, 13 October 1979

⁷⁵⁸ Sara Lovera, “Estudiará comercio la escasez de leche,” *El Día*, 29 July 1980, Javier Mendoza Maya, “Por falta de leche, la industria de productos lácteos se ha visto frenada,” *El Universal*, 22 September 1980, Javier Mendoza Maya, “Se agravó la escasez de leche en toda el área metropolitana,” *El Universal*, 21 September 1980, Antonio Lara Barraga, “Alegan las empresas escasez en la producción, faltara hasta diciembre,” *El Universal*, 28 August 1980, Humberto Aranda, “Sin seguridad en la tenencia segura la crisis lechera,” *Excelsior*, 20 September 1980, “Sigue escasa la leche en el DF y zonas suburbanas,” *El Día*, 15 February 1981, Isaac Villalba, “De mala calidad y un vehículo de enfermedades la leche de vaca,” *Novedades*, 13 July 1981.

number of family members eligible for the program.⁷⁵⁹ The design of the LICONSA program was different from other food subsidy programs because it was not based on a generalized subsidy but on a focalized one. In 1974, the program introduced a family card to improve the selection criteria to choose beneficiaries. Most of the beneficiaries were localized in the Federal District and the State of Mexico, although the program started to expand to other cities.⁷⁶⁰

Nutritional experts like Salvador Zubirán and Adolfo Chávez of the INN criticized the LICONSA's way of distributing milk in a 1983 memo to the Ministry of Health. The doctors pointed out that milk usually did not reach those who needed it most (malnourished rural children) and that the provision of this milk could also affect breastfeeding practices. Institutions like the INN, the Social Security Institute and the Ministry of Health had been monitoring breastfeeding practices amongst different populations since the 1970s. In this decade, there were discussions among the global medical community about the consequences of women, mostly in developed urban areas, abandoning breastfeeding in favor of the use of infant formula. The studies about rural children in Mexico yielded similar results to those conducted in other developing countries since there was no significant decline or abandonment of breastfeeding.⁷⁶¹ In the case of urban children, a survey conducted by doctors and nurses in 1973 at the clinics of the Ministry of Health in Mexico City indicated that two out of three mothers in the sample (of 5,011 mothers) still breastfed their newborns. The main reasons cited by mothers to abandon breastfeeding were medical advice, work, and that the Social Security services provided them

⁷⁵⁹ Judy L. Baker, "Mexico: The LICONSA Milk Coupon Program," in *From Platitudes to Practice: Targeting Social Programs in Latin America, II, Case Studies*, ed. Margaret Grosh (Latin America and the Caribbean Technical Department, Regional Studies Program, 1992), 1-2.

⁷⁶⁰ Barquera, Rivera-Dommarco, and Gasca-García, "Políticas y programas de alimentación y nutrición en México," 470.

⁷⁶¹ Mercedes Hernández et al., "La lactancia en el medio rural: una encuesta sobre las prácticas de alimentación infantil," *Cuadernos de Nutrición* 3(1976); Celia Martínez, Adolfo Chávez, and Héctor R. Bourges, "La lactancia en el medio rural," *Cuadernos de Nutrición* 3(1976).

with industrialized milk.⁷⁶² An internal study commissioned by the Social Security Institute in 1976 showed that the provision of free milk (lactic formulas developed by CONASUPO) during the first six months of the lives of infants had contributed to changes in breastfeeding practices in urban Mexico. Obtaining milk provisions was ranked eighth among the reasons for pediatric appointments in the Social Security System. The Family Doctor System was in charge of medical appointments for children, which amounted to 45 million appointments a year. Of these, 12 percent of the medical appointments were for children younger than one (5,400,000 medical appointments in total). The report calculated that one million out these five and a half million consultations were for milk provisions. Moreover, the gynecology and obstetrics units of the Social Security Institute tended to limit “natural feeding practices” of mothers due to the application of measures to control transmissible diseases in the hospital setting.⁷⁶³ The study recommended a more careful assessment of the provision of milk for new mothers. However, these practices continued because it was administratively difficult and unpopular among patients of Social Security hospitals to take away a *prestación* (benefit), particularly one considered a right by beneficiaries.⁷⁶⁴

Regardless of the criticisms by experts, government officials who headed CONASUPO defended milk provision as a valuable social program, because of the nutritional impact it had over disadvantaged populations. Both Manuel González de Cosío, who headed CONASUPO

⁷⁶² Leopoldo Vega Franco, Teresa Toca, and Francisco Torres Muñoz, "Alimentación al seno en las clases populares de la Ciudad de México," *Salud Pública de México* XIX, no. 2 (1977).

⁷⁶³ "Instituto Mexicano del Seguro Social, Programa de Mejoramiento de la nutrición del menor de un año," Archivo Histórico del IMSS (1976), vol. 003, est. 63/87, sobre 65,24903.

⁷⁶⁴ A new assessment of milk formula supplementations in the 1990s again insisted that they had a negative impact in breastfeeding practices in addition to being wasteful and expensive. see Pilar Torre, "Los sucedáneos de la leche materna en la seguridad social mexicana durante 1990," *Salud Pública de México* 35, no. 6 (1993): 700.

from 1976 to 1979, and his successor Enrique Díaz Ballesteros, director from 1976 to 1982,⁷⁶⁵ highlighted the importance of proteins in general, and animal proteins in particular according to the recommendations of the Protein Advisory Group (PAG). As mentioned in chapter four, and also emphasized by Ballesteros, the PAG, a group of nutritionists affiliated with FAO including prominent Mexican nutritionists like Joaquín Cravioto, warned that children who did not include proteins in their daily diets “would face irreversible physical and mental damage.”⁷⁶⁶ María Luisa “La China” Mendoza, a feminist writer who held several public office posts also defended the program by publicly stating that “LICONSA milk, with vitamins, nourishes the poor children of my city.” For Mendoza people who criticized the program “were either soulless rich people” or special interests.⁷⁶⁷

This system of milk donation by public institutions continued throughout the 1980s, even if some of the doctors in charge of managing it did not think it was the best option to combat nutritional problems in Mexico in the long term. An example of institutional inertia is how the public health institutions of Mexico managed a donation of seventy thousand tons of powdered milk, butyric acid, and canned cheese from a U.S. charity called CARE. In 1984 Guillermo Soberón, the Minister of Health, embarked in talks with CARE to consider the possibility of a donation of food. Soberón consulted Zubirán and the INN to decide how to manage the donation. Zubirán was worried about inducing dependency in marginal communities to food aid, but given Mexico’s economic situation in 1984, he decided that, given the circumstances, temporary relief

⁷⁶⁵ Ballesteros was Vice-Director of Operations of with a previous president of CONASUPO.

⁷⁶⁶ Enrique Díaz Ballesteros, *XXIII Meeting of the Protein -Calorie, Advisory Group of the United Nations System, Informatory notes on the National Company of Popular Subsistences of Mexico* ed. Protein Advisory Group (1977), passim.

⁷⁶⁷ Maria Luisa Mendoza, “La buena y la mala leche,” *Excelsior*, 15 June 1988.

was necessary.⁷⁶⁸ Zubirán and the INN assembled a working group with the division of Health Services at the Ministry with the purpose of determining the storage and distribution capabilities of different government agencies. The other goal of the working group was to decide who the beneficiaries of the food aid would be. Two years later, in 1986, the working group determined that the Ministry of Health did not have the administrative capacity to handle the donation in its entirety, only CONASUPO did. Individual states would receive a donation that would be channeled through the National System of Family Development (DIF). The INN would manage a program in marginal populations of the states of Chiapas, Oaxaca and Guerrero (cf. chapter four). In the end, CONASUPO took charge of 20 percent of the donation, while the DIF, the INN and the Ministry of Health used the rest for their programs. At least in the programs not managed by CONASUPO the food donations would be focalized to children under 5 years old like Zubirán advised.⁷⁶⁹ The Ministry of Health created a program called “Nutrition and Health” in order to distribute the powdered milk and the dairy products to low income and lactating mothers (see Table 21 in annex for distribution by program and beneficiaries), which would include an oral rehydration program for children suffering from diarrhea.⁷⁷⁰

In addition to the opposition of milk producers regarding growing imports of powder milk and the criticism of doctors for its lack of focalization criteria, LICONSA faced a major scandal due to careless mismanagement and corruption with regard to these imports. In 1987, Ireland sold CONASUPO a shipment of powder milk that did not comply with the existing

⁷⁶⁸ Cárdenas de la Peña, *Enlace Salvador Zubirán-Instituto Nacional de Nutrición, crónica de un instituto*, 839-40.

⁷⁶⁹ *Ibid.*, 841.

⁷⁷⁰ Comisión Nacional de Alimentación, “Informe sobre el cumplimiento de parte de los compromisos establecidos en el préstamo sectorial Agrícola del Banco Mundial al Gobierno de México (Nutrition and Food Study),” WPGA, 17518, Nutrition and Food Security Study, Mexico-Population Health and Nutrition Sector, R1995-011,93770B, 8.

sanitary laws. Due to the accident in the nuclear plant of Chernobyl, large quantities of dairy products and processed foods of various kinds in Western Europe presented high levels of radiation contamination. In the 1980s, Mexico had no existent sanitary regulation to supervise and control food exposed to radiation. Sanitary authorities inspected some of the shipments from Europe in the port of Veracruz and suspended the distribution of milk which did not comply with sanitary standards approved by the European Community. The Minister of Health confirmed that for a year (1986) CONASUPO “imported milk from the regions affected by the Chernobyl accident without being subject to any sanitary controls.”⁷⁷¹ The Ministry assessed the “potential harm to populations by the consumption of this contaminated product, especially because marginalized groups with nutritional problems were the ones who bought this product.”⁷⁷² The minister also acknowledged that he had “evidence backed” news of unauthorized imports that were not subject to inspections. Ministry reports indicate that contaminated shipments were confiscated by the sanitary authorities and that distribution of contaminated milk was halted at a processing plant in Querétaro. Reports of the incident appeared in the national press, but no direct action was taken against the people responsible for importing the contaminated milk.⁷⁷³ The scandals of corruption that appeared in the press did little to change the structure of LICONSA, which continued to operate within the same parameters and even increased its volume of milk imports in 1988, a year after the scandal.

Changes in LICONSA operations only started after 1988 when a new government, headed by Carlos Salinas de Gortari (1989-1994), was elected. The economic plan of the new

⁷⁷¹ Guillermo Soberón Acevedo to Dr. Jaime Mastucelli, Octubre 28 1987, AHSS, SubRSD, c. 2, exp. 2.

⁷⁷² Ibid. See also Sergio Sandoval Hernandez (SSA) to Lic. Ernesto Costemalle (CONASUPO), 2 October, 1987. AHSS, SubRSD, c. 2, exp. 2.

⁷⁷³ Guillermo Zamora, *Caso CONASUPO: la leche radioactiva, un crimen más contra el pueblo mexicano* (Mexico City: Planeta, 1997).

administration was to reduce direct state intervention in every commodity market, including food. CONASUPO was a target for this new change of policies. In the late 1980s, CONASUPO still had a considerable number of subsidiaries, including LICONSA. During the early 1990s, the operations of CONASUPO were gradually “dismantled, privatized or transferred to farmers, and by 1999, the liquidation of CONASUPO was practically complete.”⁷⁷⁴ Nonetheless, LICONSA survived to all of these administrative transformations, but it underwent substantial changes in terms of focalization and targeting of its beneficiary populations, as well as reducing the number of milk rehydration operations. The criticisms of people like Salvador Zubirán, institutions like the INN, the World Bank and the UN’s Food and Agriculture Organization were slowly incorporated into the institutional design of LICONSA.⁷⁷⁵ As the political system opened up for more transparent and democratic political participation, opposition parties have demanded that operations like LICONSA have regular evaluations and open lists of beneficiaries. Public health institutions and health research in Mexico, like the National Institute of Public Health, consider the distribution of fortified milk as a valuable strategy to combat malnutrition and anemia.⁷⁷⁶

Conclusion

Government intervention in the milk market since the 1950s until the late 1980s created a situation in which milk producers became reticent to invest. Local producers thought governmental action as acting in detriment of their interests. Milk producers disagreed with the

⁷⁷⁴ Antonio Yunez–Naude, "The Dismantling of CONASUPO, a Mexican State Trader in Agriculture," *World Economy* 26, no. 1 (2003): 5.

⁷⁷⁵ See Baker, "Mexico: The LICONSA Milk Coupon Program."

⁷⁷⁶ S. Villalpando et al., "La fortificación de la leche Liconsa con micronutrientos: un ejemplo del uso de la investigación para la toma de decisiones en políticas sociales," *Nutrición y pobreza. Política pública basada en evidencia. México, DF: World Bank-Sedesol* (2008).

fact that the government's food regulation agency, CONASUPO, participated in the market regulating the imports and local sales of powdered milk, because they argued that it was an unfair competition that lowered business opportunities for local firms. It also tended to favor transnational companies, particularly Nestlé, instead of locally owned dairy industries. Price controls determined by locality also distorted the market, and favored producers from La Laguna region in detriment of those of central Mexico.

Nonetheless, milk production in central Mexico increased from the 1950s to the late 1970s obeying to increased demand but also to the reorganization of production which followed regional economic dynamics. Various government agencies, including the development banks, the Ministry of Agriculture, and PRODEL, made an effort to increase investment in the sector, make it more efficient and modernize its productive plant. All these efforts did not in any way reflect a centralized policy or long term plan to improve the supply of pasteurized milk in all of Mexico. These were the result of efforts to solve localized problems, and respond to short-term demands, like moving milk production outside of the confines of the capital where this activity had become an urban sanitation problem.

The government justified intervention in the milk market in the name of low income consumers who were supposed to benefit from low prices and availability of a quality product. However, these benefits were mostly confined to urban markets, and health experts criticized the focalization criteria of the milk provision program for not targeting low income rural populations, in which incidence of nutritional deficiencies was higher. This intervention in the milk market also went against the interest of consumers for other reasons. For example, in the early 1980s CONASUPO did exert total control over the distribution of powdered milk. However, due to either mismanagement or corruption on the part of the agencies, powdered milk

entered the black market. Producers and pasteurization plants in northern Mexico adulterated their products, thus deceiving consumers. Also, although nutritional experts advised the Ministry of Health about the dangers of excessive reliance on free milk provisions and the abandonment of breast feeding in favor of infant formula in populations served by public hospitals and assistance institutions, CONASUPO continued supplying public hospitals and welfare agencies with these products.

Economic liberalization policies in the late 1980s modified the way the milk market had been operating since the mid-1950s. Economic officials in Mexico abandoned the import substitution scheme dependent on trade protection, and embraced free trade through the negotiation of international agreements. This affected agriculture in particular, since import controls of basic products were gradually eliminated, as well as subsidies to maintain price supports. CONASUPO was slowly dismantled and the state stopped the purchase, storage and processing of basic grains. In the case of dairy products, reduction of tariffs started with the signature of the General Tariff and Trade Agreement (GATT) in 1986. The timetable for liberalization was accelerated with the signature of the North American Trade Agreement (NAFTA) in 1994. The tariff rate quotas that Mexico implemented for powder milk was scheduled to be eliminated by 2008.⁷⁷⁷

As part of the new strategy, the government agreed with milk producers to liberalize the price of milk starting in 1986. This was partly possible because in that same year the most important groups that produced milk for pasteurization, especially ALPURA and Leche Lala, were able to consolidate their leadership under the Asociación Ganadera Nacional de Productores de Leche. A critical year for milk producers was 1989, when the Ministry of

⁷⁷⁷ Dobson et al., "Estudio de la cadena de comercialización de leche en polvo en México," 28.

Industry and Commerce transferred to the state governments the responsibility to fix prices, except in the Federal District.

The process culminated in 1996, when the price controls for pasteurized milk were abolished. Milk production in Mexico finally began to grow from 7,398 million of liters a year in 1995 to 9,868 million liters a year in 2005, an increment of 35 percent. At the same time, imports of dairy products in general increased from 365.1 tons in 1995 to 627.3 tons in 2005. Mexico became the number one importer of powder milk in the world.⁷⁷⁸

The consequences of price liberalization and the subsequent increase of the supply of milk marginalized small producers who sold their milk without pasteurizing it. The price increases made selling the milk to processing or pasteurization plants more attractive. The authorities tightened the sanitary controls over non-pasteurized milk, especially in urban centers. In the 1990s, pasteurization and dairy product imports became even more concentrated in the hands of very few enterprises. In the mid-1990, ALPURA, Lala, and Boreal controlled between 40 and 50 percent of the total pasteurization capacity in Mexico.⁷⁷⁹ With the sale of the pasteurization plant of the Tizayuca industrial complex to Lala in 2003, Boreal was marginalized as a player in the market. In the case of dairy products, the dominance of Nestlé as the primary buyer of milk in regions of Mexico like Jalisco, Veracruz and Tabasco became absolute.⁷⁸⁰ In a sense these policies tended to benefit the same actors that managed to control a great portion of

⁷⁷⁸ Gonzalo F. Cevallos, "El mercado de la leche en 2008 y prospectiva de la competitividad de la producción nacional," *Entorno Ganadero* 3, no. 21 (2007).

⁷⁷⁹ L. A. García Hernández et al., "Transformation of Dairy Activity in Mexico in the Context of Current Globalization and Regionalization," *Agriculture and Human Values* 17(2000).

⁷⁸⁰ T. Poméon et al., "Las dinámicas colectivas en dos cuencas lecheras Mexicanas: Tlaxco, Tlaxcala y Tizayuca, Hidalgo," *Agroalimentaria* 11, no. 2 (2006).

the fresh milk market during past decades: large vertically integrated cooperatives of wealthy producers and transnational corporations.

Conclusion

In 2010, the organization Doctors without Borders (DWB) launched a media campaign entitled “Starved for Attention” in order to raise awareness about the incidence of childhood malnutrition in the world. One of the countries prominently featured was Mexico, which the organization praised for running a locally funded program to prevent the ailment, Oportunidades. The media campaign featured a video depicting a rural village in the state of Oaxaca, which photographer John Stanmeyer described as the “wild west, full of cowboy hats” and “lots of machismo.” The camera focuses on a group of local women as they are given health and nutrition education talks from a doctor and receive nutritional supplements. These supplements are “powdered milk filled and packed with vitamins and nutrition,” which DWB describes as a “lifeline for pregnant mothers and children under the age of three when the most important development of their life is happening.”⁷⁸¹

The rationale for providing milk to children and educating mothers about nutritional practices in marginal communities in Oaxaca in the twenty-first century did not appear overnight. The development of policies that focus on improving infant nutrition and food consumption in Mexico is the result of more than half a century of projects and discussions among experts and economic authorities about the role of the government in improving diets. State intervention in the food market and food consumption was an important part of Mexico’s twentieth-century history. During this era, public officials began to consider food consumption as a practice that had to be addressed and managed by the state. What people ate turned into an issue linked with economic development and the wellbeing of the nation. Food consumption

⁷⁸¹ Doctors Without Borders/*Médecins Sans Frontières* and VII Photo, “Starved for Attention, Mexico: a Solution from Within,” YouTube video, 6:11, posted by “MSF,” June 4 ,2009, <http://www.youtube.com/watch?v=ILpXmm6auug>

became a crucial policy domain because it would have direct consequences for the economic development programs of the different post-revolutionary administrations.

One of the most unique features of food consumption is that it is located at the intersection of various forms of public intervention. Diet is not an exclusive domain of one area, whether economic, political, or scientific. This dissertation studied the ways in which diet was constructed and addressed as an object of policy in Mexico by different actors and different interests. I have delved into apparently disconnected actions of the government and other agents, such as doctors studying nutritional intake of infants and measuring cognition development; economists debating the role of elite and working class consumption for economic development; milk producers working and negotiating with government agencies, international organizations and transnational companies seeking to change the market for their products. All these actions form part of a complex whole that made food consumption into a legitimate realm for public intervention.

Underlying the history of diet policies in Mexico in the twentieth century, this dissertation proposed three axes of analysis. First, the measurement, regulation, and intervention on diets were for the government means of regulating class relations. Diets were crucial because food expenses represented a large part of the spending of the working class; therefore, they had a significant bearing on the real power of the salary. Food consumption was in part subordinated to the state's economic development project. For the Mexican government, the road to development implied industrialization and the modernization of agricultural production, as well as the investments in infrastructure required for both processes. From the late 1930s until the mid - 1950s factors such as the growth in public spending and Mexico's participation in the Second World War led to almost two decades of inflation. Inflation returned again in the early 1970s,

after almost fifteen years of stability, caused by both domestic and international variables. In both of these inflationary contexts, which I address in chapters one and five, different government administrations used food consumption policies to maintain the costs of wages stable while demobilizing union demands. In the case of the first half of the twentieth century, interventions rested on the creation of institutions like NADYRSA and CEIMSA, and later CONASUPO, intended to regulate prices as well as food imports. During this time, officials also started classifying and defining the consumption habits of the working class under the concept of standard of living. In the 1970s, the government maintained the food regulation agencies but introduced new policies focusing more on individual behavior, which intended to improve the individual shopper's ability to make purchasing decisions, harmonize them with larger macro-economic development goals, and stretch the purchasing power of workers without significant distribution. At the same time, both in the early and late twentieth century the Mexican government's power and capacity to lead was based on an alliance with organized labor and peasants groups, articulated through a national party. Food consumption policies were also a contradictory reflection of the organized labor's alliance with the government. The private sector, represented by various trade organizations like COPARMEX, insisted on maintaining the cost of labor low, systematically opposing wage concessions, in part to control or prevent inflationary spirals. The alternative for the government in order to maintain the costs of the factors of production as well as social peace was to secure the supply of cheap food to the cities. This assurance of affordable food supply was the means Mexican officials found to keep the larger economic development goals in the context of the alliance with organized labor.

Second, since the 1940s, food consumption in Mexico became increasingly an object of scientific and clinical gaze. The importance of diet for Mexico's development model led

administrations since the 1940s to promote systematic research about what and how Mexicans ate, as well as the nutritional qualities of the products. The modernizing Mexican government created and expanded public hospitals and public health institutions. These institutions were led by doctors trained in clinical research. Clinical medicine displaced earlier forms of medical knowledge like eugenics, and substituted them with laboratory based experimental analysis of diets. In both chapters two and four, I explained how clinical medical analysis became the most important source of expert knowledge about the relationship between diets and health.

Medical knowledge about nutrition was to be also a tool for development and would serve to analyze the needs and nutritional deficiencies of popular classes. For doctors, this knowledge could then be applied to solve these problems, find therapies or recommend policies to politicians. Nonetheless, clinicians were not unaware of the intricacies and complexities of the ailments they were studying, especially malnutrition. Prevention of malnutrition was not only a medical problem, but a social one. Clinicians integrated social factors into their study of the effects of diet on health and insisted that economic inequality and low income were the direct causes of malnutrition.

Doctors even ventured into the world of social analysis, suggesting the inverse relationship: that malnutrition, by its effects on human cognition and productivity, was at the heart of the poverty, backwardness, and underdevelopment of the nation. Yet, while pointing to larger economic structures, experts in nutrition ultimately based their suggestions on clinical observation, which focused on individual behavior and pathologies. Thus, they provided policy recommendations addressing those behaviors and pathologies, which could be attempted without major redefinitions of the income structure.

The third axis of the analysis proposed here was a close look at how efforts to influence and regulate food consumption demanded aggressive policies to order, optimize, and regulate the production of food. These policies involved intervening in the complex economic relations between the actors implicated in that production. The government sought to address access to foods, in particular animal protein, that were deemed important by clinicians. One of these products was milk, which through various policies the government sought to increase production from the late 1920s to the 1980s. Milk was a particularly difficult product to regulate not only because it is perishable and an especially dangerous vector of disease (i.e. tuberculosis) but also because the production and distribution chain involved many actors with diverging interests. Milk producers, distributors, pasteurization plants, milk shop owners and delivery personnel were able to adulterate and modify the product and in many occasions they did. The government tried to regulate all these actors in different regions of central Mexico, particularly around the capital. Nonetheless, the resources and personnel of sanitary authorities were insufficient for the magnitude of the task. An alternative arose in the late 1940s, when there was an abundant and cheap supply of powder milk in the international market. The government chose to intervene directly in the milk market as a producer, rehydrating powder milk in public plants, and selling this fluid milk made out of powder in working class neighborhoods at subsidized prices. This decision fundamentally altered the prospects of dairy production in Mexico. Milk producers had to constantly negotiate with government agencies about prices and supply. In many instances, there was cooperation between government and producers to incentivize production, but in many other cases the supply of milk responded to regional economic dynamics. The case of milk, addressed in chapters two and seven, illustrates the multiplicity of processes and actors involved in ensuring the supply of basic foods, and their conflictive relationships. Sugar, addressed in

chapter six, illuminated the contradictory character of food policy in Mexico. Sugar and sugar-based products like soft-drinks were not essential to diets, and if consumed in excess could even be detrimental to health. In the 1970s, health authorities and consumer agencies discouraged sugar consumption, but at the same time the government continued funding and subsidizing sugar production for political reasons. The nutritional health of Mexicans was in conflict with the political needs of the government to keep social peace in sugar-producing areas. Different government areas promoted substantially different policies with substantially different goals; this shows that public policy is not a unitary, monolithic practice, but rather the result of equilibriums, negotiation, conflict, and power.

This dissertation has covered the period between the 1930s and the early 1980s. Since that time, policies relating to food consumption underwent a transformation. As government administrations since the mid-1980s turned to market reforms and restraining the role of the state in the economy, direct intervention in the food market became increasingly contradictory with the neoliberal rationale of their policies. Officials had to look for alternatives to food consumption policies that had served to regulate class relations and ensure certain levels of welfare for the working class by keeping food supply stable and affordable. Like many of the policies applied until the 1980s, these changes in policies were also influenced by the rationale and findings of the nutritional sciences analyzed in this dissertation, as well as by the continuing preoccupation with malnutrition, which remained a serious problem, especially among children in marginal communities.

New social programs like Oportunidades (which was featured in the Doctors Without Borders campaign) contain several of the features promoted by experts since the 1960s, particularly focalization in low income rural populations, nutritional education components, and

evaluations. These alternative policy formulations were also the result of the retreat of efforts to regulate the food market and subsidize prices. Since the economic crisis of the early 1980s, the Mexican government sought to reduce public debt and expenditures. The administrations of Miguel de la Madrid and Carlos Salinas de Gortari implemented new economic policies based on the privatization of public enterprises as well as trade liberalization and increased focus on fomenting exports. Expansionary fiscal policy was no longer used as a tool to generate growth. At the end of 1987, the de la Madrid administration introduced an economic stabilization plan, based again on tripartite agreements among the government, the private sector and organized labor, to agree on wages and prices. These reforms contributed to modest economic growth (an average of 3.1 percent each year from 1989 to 1994) and reduced inflation. Several factors, like weak banks, reliance on a semi-fixed exchange rate, and political uncertainty during the presidential elections of 1994, caused currency devaluation and a subsequent financial crisis. The incoming administration, headed by Ernesto Zedillo, was concerned about the impact of the economic contraction of low income populations.

Initially, the prevailing alternative was to continue with the existing programs, like the ones analyzed in this dissertation, which focused mostly on subsidizing milk and tortillas. A group of public officials, headed by the Undersecretary of Finance Santiago Levy, criticized this approach as ineffective because it was poorly focalized, as they were concentrated in urban areas. Also, for Levy “food subsidy programs and nutritional or health interventions were run independently of each other, and they did not focus adequately on the most vulnerable members of the family (generally, children under two years of age and pregnant or nursing women).”⁷⁸²

⁷⁸² Santiago. Levy, *Progress against Poverty: Sustaining Mexico's Progresa-Oportunidades Program*. (Washington, D.C.: Brookings Institution Press, 2007), 6.

Levy and his collaborators agreed that “not trying to correct inequalities in income distribution (and hence food consumption) was not an option” for the Zedillo administration. Economic experts like Levy were looking for an alternative “that would be more effective and efficient in transferring income to the poor and have greater positive impacts on their health and nutritional status.”⁷⁸³ In March 1995, as part of inter-ministerial talks, there were proposals to increase the coverage of subsidies to milk and tortillas as a strategy to “overcome the economic emergency.”⁷⁸⁴ The Ministry of the Treasury and Levy in particular pushed for a different approach: transforming the food programs into cash transfers linked to the use of health clinics.

By the 1990s, knowledge about the determinants and causes of poverty had continued along the lines that social scientists, doctors and nutritional experts in Mexico had followed since the late 1950s, which highlighted the relationships between food consumption, nutrition, health and educational attainment. Moreover, Mexican economists were influenced by the “New Poverty Agenda” theories promoted by institutions like the World Bank. These “New Agenda” was a combination of human capital theory and theories of participatory politics developed by non-profit activist organizations in the 1980s.⁷⁸⁵ Economists at the University of Chicago had developed the human capital theory, in which they emphasized the role of individual choice and “that workers should be viewed in the same light as their profit maximizing employers, as rational actors operating without constraints to maximize their own individual self-interest.”⁷⁸⁶

⁷⁸³ J.R Behrman, "Policy-Oriented Research Impact Assessment (PORIA) Case Study on the International Food Policy Research Institute (IFPRI) and the Mexican PROGRESA Anti-poverty and Human Resource Investment Conditional Cash Transfer Program," *World Development* 38, no. 10 (2007): 1474.

⁷⁸⁴ Santiago Levy and Evelyne Rodríguez, *Sin herencia de pobreza: el programa Progres-Oportunidades de México* (México, D.F.: Banco Interamericano de Desarrollo, Editorial Planeta, 2005), 65.

⁷⁸⁵ M Molyneux, "Mothers at the Service of the New Poverty Agenda: Progres/Oportunidades, Mexico's Conditional Transfer Programme," *Social Policy & Administration* 40, no. 4 (2006): 429.

⁷⁸⁶ O'Connor, *Poverty Knowledge: Social Science, Social Policy, and the Poor in Twentieth-century U.S. History*, 141.

Under this scheme, for example, education was a personal investment, and individual skills, not systemic factors, explained why some people were poor and others were not. In poor households, people did not invest enough in human capital while devoted their earnings to basic necessities. The government launched a pilot cash provision program in 1995 in the state of Campeche, in which families received cash instead of transfers in kind of tortillas and milk. As the program was new and controversial, external parties, such as the Instituto Tecnológico Autónomo de México (ITAM, a private university) and the National Institute of Nutrition (now called Instituto Nacional de Nutrición Salvador Zubirán, INNSZ, after his founder) were in charge of evaluating its economic and nutritional components.⁷⁸⁷ In its economic aspects, the evaluation concluded that the cash transfer was better than direct food distribution because it did not create disloyal competition with local producers and businesses, a conclusion in part echoing the struggles of milk producers who insisted throughout the last century that government intervention reduced investment. In terms of nutrition, neither cash transfers nor distribution of food prevented unequal intra-family food distribution. Thus, the evaluators recommended distributing nutritional supplements to vulnerable populations through clinics and health authorities which could also give educational talks about nutrition and infant feeding to mothers. For this purpose, also in 1995 the Ministry of Health put together an expert panel which included the INNSZ, the HIM, the National Institute of Pediatrics and the National Institute of Public Health to define and test the formula for a food supplement, which ended up being enriched powdered milk food formulas. According to Levy, the experts in charge of evaluating the pilot program concluded that “use of income does not only depend on the level of income, but on the

⁷⁸⁷ Levy and Rodríguez, *Sin herencia de pobreza: el programa Progres- Oportunidades de México*, 79.

person who received the income.”⁷⁸⁸ In this case, women, as they spent more on food and health than men, were deemed as more responsible beneficiaries. The program would give women more information about health and nutrition to guide “their purchasing power.”⁷⁸⁹ The program Progresa (Programa de Educación Salud y Alimentación, now called Oportunidades) was created after this early experiments, and began to operate in 1997. It was designed to “break the vicious cycle of poverty.”⁷⁹⁰ By providing cash incentives to reduce insecurity and make families invest in the education of their children, the income transfer was given only if recipients changed individual practices, including mandatory visits to the health clinic and school enrollment for children.

Two of the program’s most important goals were to eliminate malnutrition and for children to complete basic education. For this purpose, it was necessary that “school performance was not affected by ill-health or a deficient diet,” citing the long tradition of research in Mexico about the links between malnutrition and delays in mental development discussed in chapter four.⁷⁹¹ Beneficiaries also had to be responsible and active participants in improving their education, health and diet. Finally, the program sought to redistribute income to poor families. Levy and the experts responsible for creating Progresa (later called Oportunidades) considered that constant evaluation and correct focalization were necessary for the program to achieve its objectives.

In general, the evaluations of Progresa-Oportunidades have been good in terms of health and educational outcomes. Observers agree that it is too soon to know, even after more than ten

⁷⁸⁸ Ibid., 73.

⁷⁸⁹ Ibid.

⁷⁹⁰ Ibid., 58.

⁷⁹¹ Ibid., 53.

years of operation, if it will achieve its larger goal of breaking the cycle of poverty. Reduction of the incidence of childhood mortality, nutritional deficiencies, better indicators of wage per age, and increased school completion rates are indeed good news. Nonetheless, the percentage of people classified as living below the poverty line remains high. Current evaluators of the program, just like Mexican researchers in the 1960s and 1970s, place great importance on identifying the links between improved nutrition and cognitive development as well as the impact of an improved diet on future work productivity and earnings. A recent study identified that a larger cash transfer tended to improve children's attainment in cognitive tests, although the authors were unsure about the actual mechanism for this improvement to occur. Their hypothesis is that a higher income improved the psychological well being of family members and with it "the care, support and nurture of children."⁷⁹² The testing and analysis of the effects of low income on individual behavior remains the measure of success or failure of these programs. The affinity that human capital theories and clinical medicine have, of focusing on individual results or individual pathologies, has fomented a particular way of analyzing poverty in Mexico, in which larger social structures and macro-economic policy decisions become invisible.

In the first decades of the twenty-first century, Mexico is at a crossroads with regards to food consumption and diets. Fat, animal products, and sugar intakes are increasing, and at the same time the consumption of plant based products like vegetables and fruits is declining. Increased risks of chronic disease and a surge in childhood obesity are associated with these diet changes. These transformations imply an additional burden which affects health provision systems that are additionally coping with malnutrition and prevention of infectious diseases.

⁷⁹² L. C. Fernald, P. J. Gertler, and L. M. Neufeld, "Role of Cash in Conditional Cash Transfer Programmes for Child Health, Growth, and Development: an Analysis of Mexico's Oportunidades," *Lancet* 371, no. 9615 (2008): 853.

Programs like Oportunidades have been put in place by the authorities to improve the nutritional conditions in marginalized communities, but malnutrition and related ailments like iron- and zinc-deficiency anemia are still prevalent. As I explained in the introduction to this dissertation, consumer advocacy and civil society organizations are pushing the government to take a stand with regards to the negative effects of this dietary transition. These groups advocate for two solutions for the harmful consequences of this diet transition. First, they insist that “nutritional education” and consumer protection regulations have to be managed by the state in the name of public interest and using public health criteria. Second, they propose that the government guarantees food security and sovereignty in basic food production. In this dissertation I have explained how food consumption became a legitimate arena of public intervention, as well as the intricacies and complex relations involved in managing these policies. Now new actors, like these civil society organizations, are getting involved and proposing public policies to improve diets in Mexico. These activists face substantive challenges, since food supply and demand are not only affected by the traditionally multifaceted interactions of business interests, trade and macroeconomic policies, but also environmental changes which greatly affect agricultural production. In the long run, only comprehensive and collaborative food policies will help Mexico (and other countries which face similar challenges) achieve food consumption patterns that are more equitable and healthy.

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Annex. Tables 1 to 21

Table 1. Percent structure of GDP 1910-1955 (based on 1960 prices)

	1910	1926	1932	1940	1955
Agriculture	24	19.7	24.1	19.4	18.3
Mining	4.9	9.3	7.2	6.4	4.8
Industry	12.3	14.7	13.3	18.7	22.1
Manufacturing*	10.7	11.6	10.2	15.4	17.5
Services	58.7	56.3	55.4	55.5	54.7

*Percentage of GDP already included in Industry

source: With information from Banco de México. *Producto interno bruto y gasto: cuaderno 1970-1978*, Información económica. México, D.F.: Banco de México, Subdirección de Investigación Económica y Bancaria, 1979,28.

Table 2. Classification of Invested Capitals in the Federal District Exclusively for Milk Producing Cattle March 19, 1926

Mexican Pesos	200 to 1000	1000 to 2500	2,500 to 3,500	3,500 to 4,500	4,500 to 6000	6000 to 7000	7000 to 10,000	Total number of stables
Location								
Mexico-Center		13	8	10	16	25	36	108
Guadalupe Hdgo.	1	3	2	3	1	2	3	15
Azcapotzalco	14	28	14	6	13	9	13	97
Tacuba	4	10	5	4		3	15	41
Tacuaya		7	2	2	2	5	9	27
Mixcoac		2	2	7	7	3	6	27
Cuajimalpa	9	1						10
Coyoacan	10	8	8	4	4	6	4	44
San Angel	21	6	2		4	3	1	37
Tlalpan	2	4					1	7
Ixtacalco	36	12	3	5	2	2	4	64
Ixtapalapa	310	4	8	2	6	1	2	333
Xochimilco	35	8	3	2	2	1	3	54
Gral. Anaya	1	6	6	2	3	2	3	23
Milpa Alta	0	0	0	0	0	0	0	0
Total	443	112	63	47	60	62	100	887

Source: Anexo del Informe sobre establos y lecherías del Distrito Federal, March 23, AHSS, SP,SJ, c. 4, exp.9.

Table 3. Daily Production and Consumption Destined for Mexico City According to the Department of Sanitation (1936)

Production Mexico City		Production other states		Consumption Mexico City	
	liters		liters		liters
Tlanepantla	26,034	Toluca (State of Mexico)	16,610	Pasteurized	154,804
Chalco	9872	Ixtlahuaca (S. of M.)	860	Certified	118,170
Cuatitlán	40,415	Tenango (S.of. M.)	1,440	Total	272,974
Texcoco	15,561	Jilotepec (S. of M.)	1,250		
Zumpango	2,500	Tlaxcala	1,425		
Lerma	1,705	Puebla	6,244		
		Hidalgo	6,767		
Total (A)	96,087	Total (B)	34,596	Total A + B	130,683

Source: La cuestión de la leche, AHSS, SP, SJ, box 43, 14.

Table 4. Distribution of Family Income after tax in percentages 1950-1975

Percentage of total family income	1950	1958	1963	1968	1969	1975
Lowest 20%	6.1	5	4.2	3.7	4	4.1
30% below the median	13	11.7	11.5	10.7	11	10.1
30% above the median	21	20.4	21.7	22.5	21	19.4
Top 20%	59.8	62.9	62.6	63.1	64	66.4
Gini-index	0.5	0.53	0.55	0.56	0.58	0.58

Source: Van Ginneken, W. "Socio-economic Groups and Income Distribution in Mexico." In *Towards income distribution policies: from income distribution research to income distribution policy in LCD's*, edited by Hans-Peter Nissen, xiii, 369 p. Tilburg, The Netherlands: Executive Secretariat, EADI, 1984, 315.

Table 5. Economic indicators 1971-1977

Year	Real GDP Growth	Inflation	Public sector deficit (as % of GDP)	Public expenditure (as % of GDP)
1966-1970*	6.9	3.5	2.5	21.1
1971	4.2	5.3	2.5	20.9
1972	8.5	5	4.9	23.6
1973	8.4	12	6.9	27
1974	6.1	23.7	7.2	28.3
1975	5.6	15.1	10	33.2
1976	4.2	15.8	9.9	33.6
1977	3.4	27.2	6.7	30.9

*Average for the period

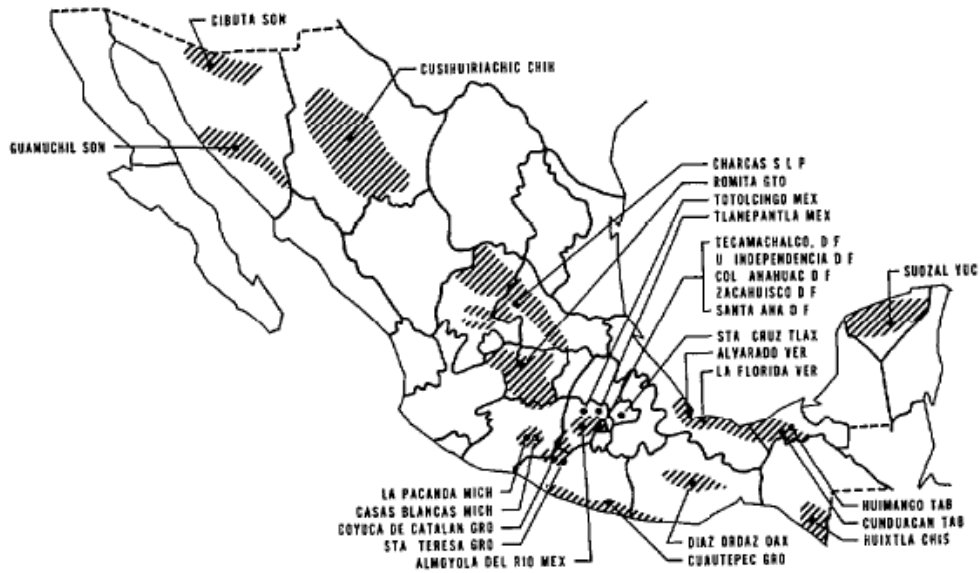
Source: Zedillo, Ernesto. "Mexico's Recent Balance-of-Payments Experience and Prospects for Growth." *World Development* 14, no. 8 (1986): 968.

Table 6. External debt of Mexico 1978-1983

	External debt in millions of dollars		External debt as a percentage of GDP	
	Public	Total foreign debt	External public debt	Total foreign debt
1978	26422.5	33,622.50	25.7	32.7
1979	29757.2	40257	23.2	31.4
1980	33872.7	509772	20.9	31.3
1981	52,156	74056	27.6	39.1
1982	58,145.60	84145.6	29.8	43.1
1983	64279	89779	37.2	51.9

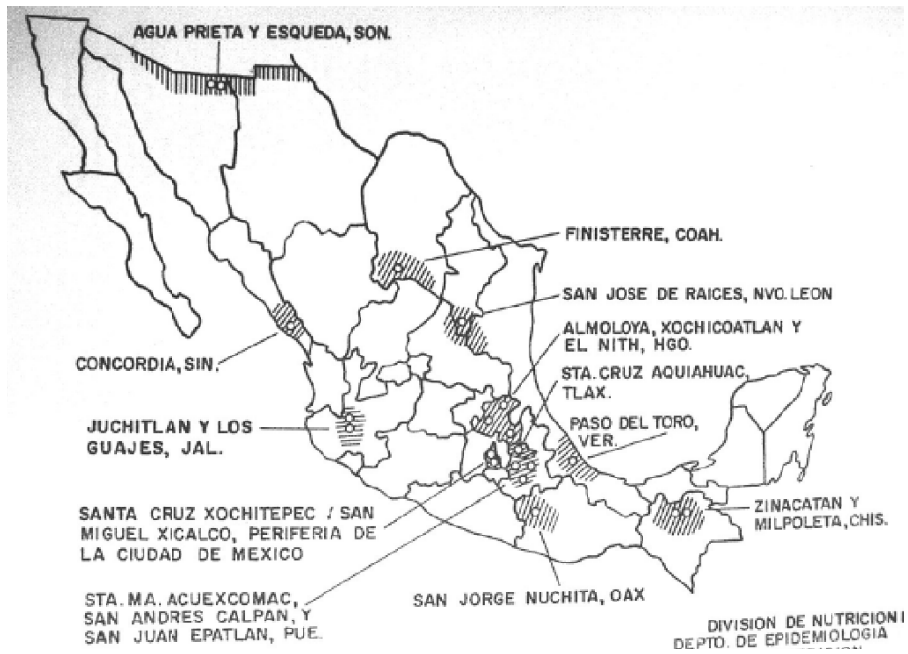
Source: Zedillo, Ernesto. "Mexico's Recent Balance-of-Payments Experience and Prospects for Growth." *World Development* 14, no. 8 (1986): 973.

Image 1A. Location of nutritional surveys (1958-1961)



Source: Salvador Zubirán, Adolfo Chávez, *Algunos Datos sobre la situación nutricional de México*, Boletín de la Oficina Sanitaria Panamericana, 52, 2, 1963, 102.

Image 2A. Location of nutritional Surveys (1963-1974)



Source: Adolfo Chávez, Carlos Perez-Hidalgo, *Encuestas Nutricionales*, Instituto Nacional de Nutricion, 1974.

Table 7. Corn Purchases by CONASUPO (1965-1987)

Year	National Purchases	% of total purchases	Imports by CONASUPO	% of total purchases	Total Purchases	National Production	Total national production plus imports = Total supply	% of Supply by CONASUPO
1965	1860980	100		0	1860980	8936381	8936381	20.8
1966	1811846	100		0	1811846	9271485	9271485	19.5
1967	1911362	100		0	1911362	8603279	8603279	22.2
1968	1776897	100		0	1776897	9061823	9061823	19.6
1969	1463077	97.6	36463	2.4	1499540	8410894	8447357	17.8
1970	1194150	62	732356	38.0	1926506	8879384	9611740	20.0
1971	1535720	100		0.0	1535720	9785734	9785734	15.7
1972	1437557	88	190698	11.7	1628255	9222838	9413536	17.3
1973	804442	41.1	1154569	58.9	1959011	8609132	9763701	20.1
1974	779254	37.1	1318373	62.9	2097627	7847763	9166136	22.9
1975	344980	11.6	2625238	88.4	2970218	8448708	11073946	26.8
1976	968147	50.3	955127	49.7	1923274	8017294	8972421	21.4
1977	1430425	45.3	1727426	54.7	3157851	10137914	11865340	26.6
1978	1808754	55.2	1465180	44.8	3273934	10930077	12395257	26.4
1979	1952119	70.2	827158	29.8	2779277	8457899	9285057	29.9
1980	863210	21.4	3167262	78.6	4030472	12374400	15541662	25.9
1981	2914173	54	2478099	46.0	5392272	14765760	17243859	31.3
1982	3272140	93.5	225925	6.5	3498065	10147167	10373092	33.7
1983	1607325	28	4128801	72.0	5736126	13952731	18081532	31.7
1984	2493185	51	2392513	49.0	4885698	12890427	15282940	32.0
1985	2121113	56.6	1629098	43.4	3750211	14075379	15704477	23.9
1986	2437139	66.9	1204299	33.1	3641438	11816690	13020989	28.0
1987	1679022	44.1	2124023	55.9	3803045	12187800	14311823	26.6
Total	38467017	57.5	28382608	42.5	66849625	236830959	265213567	24.4

Source: Compañía Nacional de Subsistencias Populares. *El mercado de las subsistencias populares: cincuenta años de regulación*. Vol. 2. México D.F.1988:213.

Table 8. Advertisements for the SAM Better Nutrition Campaigns (1981-1982)
Printed materials

Topics	Medium	Paid by	Reproductions (in thousands)
Table of foods to improve nutrition	billboards	SAM	200
		SHCP	3
		ISSSTE	2
	grocery bags	ISSSTE	10,000
		UNAM	9,000
		SAH	5,600
		UAM	750
Combine, eat better and spend less	calendars	SAM	1,118
		CONASUPO	1,000
		DIF	150
		SHCP	3
		ISSSTE	500
	newspaper ads	SAM	2,182
		INCO-SAM	800
	pamphlets	SAM	3,304
	Rules for good nutrition	pamphlets	SAM
CONASUPO			200
SHCP			3
ISSSTE			500
Eat better without spending more	billboards	SAM	26
		ISSSTE	500
combination is nutrition	comics	SAM	1,500
	billboards	SAM	950
		SEP	17
		SHCP	3
We can eat better without spending more	newspapers	SAM	18,000
	magazines		
Combine and eat better	newspapers	SAM	42,000
	magazines		100,411

Source: Martha Navarro de Macías, "Development Policy and Nutrition: A Case study of the Nutrition Education Campaign of the Sistema Alimentario Mexicano (SAM)" (Stanford University, 1988), 172-173.

Table 9. Nutritional Areas used by the INN 1970-1989

Zone 1 (Frontier): Municipalities right in the frontier with the United States, includes the states of Baja California Norte, Sonora, Chihuahua, Coahuila, Nuevo Leon and Tamaulipas.
Zone 2 (Baja California): the municipalities of both Baja Californias.
Zone 3 (Northwest): Sinaloa and Sonora
Zone 4 (North): part of the states of Chihuahua, Durango and Nayarit
Zone 5 (Center North): part of the states of Coahuila and Nuevo Leon.
Zone 6 (Northeast): parts of the state of Tamaulipas
Zone 7 (Pacific North): Part of the states of Sinaloa and Nayarit
Zone 8 (Center North): part of the states of Zacatecas and San Luis Potosi
Zone 9 (Occident): Part of Zacatecas, Aguascalientes and Jalisco
Zone 10 (Bajio): part of San Luis Potosi, Guanajuato, Mexico and Queretaro.
Zone 11 (Huasteca y Sierra): includes part of San Luis Potosi, Hidalgo, Veracruz y Puebla.
Zone 12 (Altiplano Norte): parts of Hidalgo and Mexico
Zone 13 (Southeast): parts of Morelos, Colima, Michoacán and Guerrero
Zone 14 (Altiplano Este): part of Tlaxcala and Puebla
Zone 15 (Center Gulf): central part of Veracruz
Zone 16 (Mixteca and Cañada) part of Puebla, Guerrero and Oaxaca
Zone 17 (South Pacific): eastern part of Oaxaca and east part of Chiapas
Zone 18 (Gulf Southeast): Tabasco and north part of Chiapas
Zone 19 (Peninsula): States of Campeche, Yucatan and Quintana Roo.
Nutritional areas (INN classification)
Region 1 or North: Zones 1 to 8 (Baja California Norte y Sur, Sonora, Chihuahua, Nuevo Leon, Tamaulipas, Sinaloa, Nayarit, Durango, north part of Zacatecas and San Luis Potosi)
Region 2 Center Occident: Zones 9 to 14 (Aguascalientes, Jalisco, Guanajuato, Queretaro, west part of Hidalgo, Tlaxcala, Colima, Michoacán, west part of Guerrero and Puebla, Mexico and Morelos)
Region 3 Gulf: Zones 11, 15 and 18. Veracruz Tabasco, region of the Huasteca of San Luis Potosi and Hidalgo, North Mountains of Puebla, and north part of Oaxaca and Chiapas.
Region 4 South: Zones 16 and 17 (east part of Guerrero, Oaxaca and Chiapas, except the north).
Region 5 Southeast: Zone 19 (Campeche, Yucatan and Quintana Roo).

Source: Herlinda Madrigal, "Las Zonas Nutricionales del Pais," INNSZ, Encuesta Nacional de

Alimentacion en el Medio Rural: Resultados Preliminares, Division de Nutricion de Comunidad, INNSZ

L-896, 1990, 17-19

Table 10. State of nutrition in rural Mexico, according to weight per age in children aged 1-5 years (%), Comparison of National Food Surveys 1974, 1979, 1989

Zone	1974			1979			1989		
	Malnutrition			Malnutrition			Malnutrition		
	Mild	Moderate and Severe	Normal	Mild	Moderate and Severe	Normal	Mild	Moderate and Severe	Normal
1	27.5	5.5	66.9	23	6.9	70	15.9	5.9	78.2
2	13.2	2.6	84.2	15.5	7	77.5	13.6	6.8	79.6
3	26.2	5.5	68.3	18	6	76	12.6	3.5	84
4	29.4	6	64.7	19.9	7.1	73	31.7	15.2	53.2
5	25.5	6.3	68.2	22.4	13.4	64.2	24.2	7.3	68.5
6	29.9	7.9	62.2	24.7	7.6	67.7	27.5	5.1	67.4
7	23.9	10.2	66	29.3	23.3	47.3	25.6	5.2	69.2
8	31	10.8	58.2	35.6	24	40.4	36	11.6	52.4
9	25.8	9	65.2	24.3	7.8	67.9	25.9	7.8	66.3
10	38.3	20.4	41.4	31.1	20.2	48.5	28.4	12.7	59
11	37.5	20.1	42.4	27.3	28	44.7	35.2	33.7	31.1
12	29.3	14.9	55.8	31.9	25.8	42.3	30.7	15.4	53.9
13	37.4	18.7	43.9	34.6	23	42.4	30.4	16.5	53.1
14	44	18.6	37.4	38.6	20.7	40.7	23.9	16	60.1
15	34.4	20.9	44.8	31.1	30.4	38.4	30.7	23.7	45.5
16	40.2	41.2	18.5	27.1	40.7	32.3	30.5	39.9	29.6
17	38.7	31	30.3	25.4	41.4	33.2	36	33.3	30.7
18	38.8	14.2	47	30.5	22	47.5	34.5	19.7	45.8
19	32.2	17.2	50.7	32.4	20.3	47.3	37.4	29.8	32.8
Country	33.3	17.4	49.3	28.4	21.9	49.8	28.3	19	52.7

Total Sample 1974, 7108 cases

Total sample 1979, 11498 cases

Total sample 1989, 12 391 cases

Mild means -1 SD of average, Moderate and Severe -2 and -3 SD points of Total S average

Source: Ávila Curiel, A., A. Chávez, T. Shamah Levy, and H. Madrigal Fritsch. "La desnutrición en el medio rural mexicano: análisis de las encuestas nacionales de alimentación." *Salud Pública de Mexico* 35, no. 6 (1993):662.

Table 11. Economic Indicators (Annual Changes, 1961-1978)

Year	GDP at 1960 prices	GDP price deflator	Wholesale Prices
1961	4.9	3.4	0.9
1962	4.7	3	1.8
1963	8	3.2	0.6
1964	11.7	5.6	4.2
1965	6.5	2.3	1.9
1966	6.9	4	1.3
1967	6.3	2.9	2.9
1968	8.1	2.4	1.9
1969	6.3	3.9	2.6
1970	6.9	4.5	6
1971	3.4	4.5	3.7
1972	7.3	5.6	2.8
1973	7.6	12.4	15.7
1974	5.9	24	22.5
1975	4.1	16.7	10.5
1976	2.1	21.7	22.2
1977	3.3	32.1	41.2
1978	7.1	17.4	15.8
Average			
1960-70	7	3.5	2.4

Source: Leopoldo Solis, *Economic Reform in Mexico, A Case Study for Developing Countries*, Pergamon Press, New York, 1981, 133.

Table 12. Imports of goods by economic source as percentage of total imports (1960-1982)

Years				Annual Variation (% of absolute figures)		
	Intermediate	Final	Capital	Intermediate	Final	Capital
1960	77.8	6.2	16			
1961	77.4	7.2	15.4	-9.6	6	-12.3
1962	77.5	7.6	14.9	-0.5	5	-3.5
1963	77.3	8.3	14.4	6	16.7	2.4
1964	76	8.4	15.6	26	30.6	39
1965	72.3	9.4	18.3	-2.3	14.4	20.3
1966	71.9	9.3	18.8	-5.1	-5.7	-1.9
1967	70.3	8.5	21.2	8.3	1.7	25
1968	67.7	9	23.3	0.9	11.4	14.9
1969	66	10	24	-3.5	9.3	1.6
1970	59.7	12.1	28.2	-11.8	17.6	15.1
1971	61.3	14.1	24.6	-1.7	11.8	16.6
1972	57.7	16.7	25.6	8.1	36.3	19.5
1973	60.3	16.1	23.6	32.8	22.2	17.3
1974	66.1	12.1	21.8	32.4	-9.6	11.4
1975	61.7	9.9	28.4	-12.2	-23.1	22.7
1976	61.2	10.7	28.1	-12.4	-4.2	-12.8
1977	67.8	9.5	22.7	-6.1	-24.4	-31.4
1978	68.1	8.7	23.1	23.8	11.8	25.3
1979	62.8	8.6	28.6	21.2	30.2	63.1
1980	60.9	10.4	28.7	33.2	66.5	37.7
1981	58.4	10.2	31.4	12.1	14.9	27.7
1982	60.2	10.4	29.4	-38.4	-39	-44

Source: Instituto Nacional de Estadísticas y Geografía. Sistema de cuentas nacionales de México: oferta y demanda global y PIB anual a precios constantes de 1980, serie 1960-1993. México, D.F.: INEGI, 1993:45-49.

Table 13. Consumer Campaigns and Publication Figures (1979-1981)

Year	Medium	Audience (number of people)	Printings	
			Consumers' Magazine	Periódico del Consumidor
1979	Radio	241 224	50 000	N/A
	Television	596 431		
1980	Radio	245 824	50 000	350 000
	Television	751 756		
1981	Radio	333 160	60 000	850 000
	Television	1 587 785		

Source: *Antología De La Planeación En México (1917-1985)*. 20 vols. Vol. 8 Programas de Decentralización Sectorial (1980-1982). México D.F.: Secretaría de Programación y Presupuesto, 1985. 79

Table 14. Sugar production, sales and exports (in tons) 1940-1976

Year	Mills	Production	Sales			Exports
			Total	Domestic	Industrial	
1940	81	294,176	356,048	NA	NA	NA
1941	83	330,296	365,163	NA	NA	NA
1942	86	419,765	392,949	NA	NA	NA
1943	82	412,236	421,688	NA	NA	NA
1944	83	389,760	446,388	NA	NA	NA
1945	78	373,070	452,215	NA	NA	NA
1946	79	376,325	445,623	NA	NA	NA
1947	84	490,456	431,493	NA	NA	NA
1948	88	611,689	501,995	NA	NA	NA
1949	87	645,419	561,163	NA	NA	NA
1950	84	589,965	586,251	NA	NA	NA
1951	81	665,824	630,380	NA	NA	NA
1952	86	691,144	650,681	556,803	94,058	NA
1953	83	779,265	678,294	583,191	95,103	54,000
1954	81	828,703	734,722	629,388	114,334	74,600
1955	73	801,336	800,365	650,232	150,133	76,924
1956	73	744,130	866,405	661,730	204,675	35,094
1957	71	1,018,041	891,756	657,581	234,175	88,566
1958	73	1,122,944	934,420	710,922	223,498	176,845
1959	74	1,264,137	976,478	715,094	261,384	127,964
1960	74	1,497,657	1,030,386	721,957	308,429	432,419
1961	71	1,387,794	1,063,449	772,982	290,467	584,763
1962	71	1,427,457	1,149,444	829,721	319,723	364,232
1963	69	1,618,139	1,207,012	854,890	352,122	388,716
1964	69	1,815,463	1,309,721	893,967	415,754	485,401
1965	72	1,982,969	1,359,484	912,277	447,207	541,253
1966	71	2,011,390	1,430,277	944,741	485,536	500,022
1967	68	2,327,250	1,517,833	983,881	533,952	556,805
1968	67	2,195,728	1,624,934	1,036,302	588,632	661,432
1969	65	2,393,964	1,733,367	1,037,441	695,926	605,554
1970	64	2,207,984	1,840,768	1,078,382	762,386	592,536
1971	67	2,359,428	1,774,654	1,061,855	712,799	533,670
1972	65	2,359,428	1,909,975	1,128,178	781,797	579,512
1973	64	2,592,277	2,124,673	1,250,640	874,033	567,905
1974	64	2,649,182	2,173,353	1,270,123	903,230	479,887
1975	65	2,548,297	2,434,268	1,392,800	1,041,468	137,650
1976	65	2,546,596	2,510,361	1,502,498	1,007,863	0

Source: Nacional Financiera. *La economía mexicana en cifras*. México, D.F.: NAFINSA, 1978:202-203.

Table 15. Monetary value of Food Products and Beverages in thousands of 1980 pesos,

Table 15. Value of Sugar and Soft drinks as percentage of (GDP)

Years	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
GDP	125229 3	130638 3	136463 1	146765 3	162915 1	172932 4	183474 6	194216 9	212518 5	219783 7
Total Food Production	88,710	88,513	91,260	98,034	106,75 5	112,62 0	119,71 2	127,37 2	133,72 7	142,64 7
Sugar	10665	10565	10814	12228	13776	15123	15240	17536	16538	18018
Soft-drinks	4800	4963	5613	5913	6850	7525	8288	9100	9825	11463
As percentage of GDP										
Total food & beverages	7.1	6.8	6.7	6.7	6.6	6.5	6.5	6.6	6.3	6.5
Sugar	0.85	0.81	0.79	0.83	0.85	0.87	0.83	0.90	0.78	0.82
Soft drinks	0.38	0.38	0.41	0.40	0.42	0.44	0.45	0.47	0.46	0.52
Years	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
GDP	234075 1	242882 1	262868 4	283532 8	299912 0	317140 4	331149 9	342378 0	373044 6	409223 1
Total	150091	152176	161117	172290	179161	190196	195840	202706	216979	232043
Sugar	16637	17994	17818	19666	20079	19263	19122	19102	21647	22014
Soft-drinks	12500	10770	11854	13192	12662	15568	13238	14968	18197	21956
As percentage of GDP										
Total food & beverages	6.4	6.3	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.7
Sugar	0.71	0.74	0.68	0.69	0.67	0.61	0.58	0.56	0.58	0.54
Soft drinks	0.53	0.44	0.45	0.47	0.42	0.49	0.40	0.44	0.49	0.54
Years	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
GDP	447007 7	486221 9	483168 9	462893 7	479605 0	492043 0	473572 1	482360 4	488367 9	504720 9
Total	243123	254519	265002	261611	265415	275410	273924	276493	277023	298264
Sugar	20010	19826	20242	23981	24093	25216	28780	29824	26688	26007
Soft-drinks	23063	23847	24885	23593	22092	24608	23640	22971	24608	29106
As percentage of PIB										
Total food & beverages	5.44	5.23	5.48	5.65	5.53	5.60	5.78	5.73	5.67	5.91
Sugar	0.45	0.41	0.42	0.52	0.50	0.51	0.61	0.62	0.55	0.52
Soft drinks	0.52	0.49	0.52	0.51	0.46	0.50	0.50	0.48	0.50	0.58

Source: Instituto Nacional de Estadísticas y Geografía. Sistema de cuentas nacionales de México: oferta y demanda global y PIB anual a precios constantes de 1980, serie 1960-1993. México, D.F.: INEGI, 1993:106-109.

Table 16. Distribution of Commercials Across Product Categories

Distribution of Commercials Across Product Categories						
Product Category	United States		Mexico		Australia	
	n	%	n	%	n	%
Food, snacks, soda	85	30.9	28	13.7	17	12.3
Personal and beauty care	30	10.9	32	15.7	6	4.3
Automobile and accessories	7	2.5	7	3.4	6	4.3
Restaurants and retail outlets	24	8.7	10	4.9	26	18.9
Drugs and medicines	36	13.1	1	.5	4	2.9
Household appliances/furnishings	6	2.2	6	3.0	11	8.0
Institutional/public service	4	1.5	0	0.0	0	0.0
Alcoholic beverages	0	0.0	22	10.8	0	0.0
Pet food and related products	7	2.5	0	0.0	5	3.6
Household cleaning agents	30	10.9	19	9.3	11	8.0
Clothing	11	4.0	12	5.9	3	2.2
Finance and real estate	3	1.1	7	3.4	16	11.6
Others	32	11.7	60	29.4	33	23.9
Total	275	100.0	204	100.0	138	100.0

Source: Mary C. Gilly, Sex Roles in Advertisement in Australia, Mexico and the United States, *Journal of Marketing*, 1988, 52,2, 79.

Table 17. Government Purchases of Powdered Milk in Tons (1965-1987)

Year	National	%	Imports	%	Total
1965			10658	100	10658
1966			20407	100	20407
1967			20550	100	20550
1968			27443	100	27443
1969			26447	100	26447
1970			36300	100	36300
1971			45366	100	45366
1972			41856	100	41856
1973			43366	100	43366
1974	173	0.2	94630	99.8	94803
1975	3727	19.8	15054	80.2	18781
1976	6407	10.8	53192	89.2	59599
1977	4538	5.6	72774	94.1	77312
1978			77699	100	77699
1979			67038	100	67038
1980			179018	100	179018
1981			149198	100	149198
1982			97427	100	97427
1983			122449	100	122449
1984			99986	100	99986
1985			145458	100	145458
1986			139413	100	139413
1987			154237	100	154237

Source: Compañía Nacional de Subsistencias Populares. *El Mercado de las Subsistencias Populares: Cincuenta Años de Regulación*. Edited by Compañía Nacional de Subsistencias Populares. 2 vols. Vol. 2. México D.F.1988.

Table 18. Percentage of sales of powdered milk from CONASUPO to its different clients

Year	LICONSA*	DIF	Carnation	Nestle	Industry	Total industry
1977	45.68	3.83	23.64	11.05	15.62	50.31
1978	43.72	5.18	27.03	11.89	12.18	51.1
1979	40.93	3.75	25.71	14.93	14.68	55.32
1980	44.67	2.83	22.62	13.61	16.27	52.5
1981	52.91	2.07	24.88	15.29	14.85	55.02
1982	42.44	2.79	23.14	13.14	18.44	54.72
1983	63.64	0.7	11.58	9.98	14.04	35.6

*Leche Industrializada CONASUPO S.A.

Source: Mexico: Dairy Development Project, Reconnaissance Mission Report, September 4, 1984, 25, World Bank Archive, Technical assistance to the Dairy Development Project in Mexico L00200, R1990-110, 29006 B, 7 (Anexo7, Cuadro 14)

Table 19 . Farm Characteristics by State or region, Mexico City market 1967

Characteristics	All Farms	Federal District	Mexico, Puebla and Hidalgo	Queretaro & Guanajuato	La Laguna
Number of farms	10,047	643	309	69	26
Size range	1-1,200	1-1,200	1-900	1-640	15-670
Cows per farm (average)	77	49	116	134	150
Daily milk production average liters per farm	717	412	1,101	1,319	2,096
Percent of total supply originating from the zone	100	35	45	12	7

Source: Kipps and Fairbairn, Organization and Structure of the Mexico City Milk Market, 32.

Table 20. Milk imports and production 1977-1985

	Milk imports* (in thousands of tons)	Equivalent liters (in millions of liters)	Total national production^ (in millions of liters)	National availability (in millions of liters)	% National	% Imported
1977	77.5	775	6442.8	7217.8	89.2	10.8
1978	75.8	758	6775	7533	89.9	10.1
1979	78.4	784	6513.7	7297.7	89.8	10.2
1980	194.6	1946	7021	8967	78.3	21.7
1981	133.2	1332	7150	8482	84.3	15.7
1982	97.4	974	7228.1	8202.1	88.1	11.9
1983	87.2	872	7057	7929	89.1	10.9
1984	104	1040	7158.8	8198.8	87.3	12.7
1985	134	1340	7172.9	8512.9	84.3	15.7

*By CONASUPO, powdered milk

^ Includes non-pasteurized milk

Source: Secretaría de Agricultura y Recursos Hidráulicos, "Comisión Nacional para el Fomento de la Producción y Aprovechamiento de la Leche, A.C.," México: Proyecto de Desarrollo Lechero FAO-Banco Mundial, 1986, World Bank Archive, L00111, R1990-103.

Table 21. Number of beneficiary families (in thousands) of nutritional programs

Programs	Entity	Years					
		1983	1984	1985	1986	1987	1988
Social provision of milk*	LICONSA	742.4	788	1029	1166.9	1450.4	1859
Rural nutrition*	CONASUPO	3320	3820	4420	4680	5220	5540
Tortillas	CONASUPO	NA	NA	483.5	217.5	872.4	1081.7
Community Action*	IMSS	NA	NA	196.4	589.9	732.5	88.8
Lactancia Social*	DIF	343.1	417.2	940.4	749.7	715.3	1108
Health and Nutrition*	SSA	NA	NA	NA	NA	83.2	215.1
Rural nutrition*	INNSZ	NA	NA	NA	NA	15.3	NA

*Program includes reconstituted milk made with powder or other dairy products

Source: Comisión Nacional de Alimentación, "Informe sobre el cumplimiento de parte de los compromisos establecidos en el préstamo sectorial Agrícola del Banco Mundial al Gobierno de México," Nutrition and Food Study, World Bank Archive, 17518, R1995-01, 10.