

## **The impact of agricultural policy in Mexico 1910-2012 and the effect of high food prices in the Mexican economy**

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This paper presents an evaluation of the Mexican agricultural sector at different stages, marked by certain structural reforms such as the stabilization and liberalization, and not for the real needs of the sector. So, this has turned Mexico into a net importer of food unable to meet domestic demand, to develop markets, to increase productivity and as a consequence has generated low income levels for most producers. Hence, Mexico has a high dependence on food imports from abroad and it has adversely affected the Mexican economy and has influenced the highest food prices in the international market since 2008, compared to those 30 years ago. This has increased the vulnerability of Net Food Importing Countries (NFIC's) as Mexico. It is also important to note that Mexico at present has no programs grains storage and better policies for productive development. It is therefore necessary to implement medium and long term government policies to promote food sovereignty and raise the character of national security.

### **Liberalization, structural reforms, trade balance, self-sufficiency.**

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### Introduction

Between 1910 and 2012, agricultural production and rural population have played an important role in the Mexican economy; however, the proportion of share of the agriculture sector has been shrinking. From the end of the Mexican Revolution, was developed and designed an institutional framework with specific reference to the rights of rural land ownership. Emerged the *ejido* and the smallholding<sup>1</sup>. The smallholder property is usually so small that the producer has barely enough to live in a land area of 5 hectares on average. Since then Mexico is still characterized by a marked fragmentation of land and a large number of subsistence farming. The fragmentation of land called smallholding remains the most common form among farms whose production cannot meet the basic needs of the unit who works it, and administrate it, which are indispensable for goods or money earned outside the farm to survive and, added to the problem of smallholdings, another problem is the aging of the rural population.

Added to the fragmentation of land, unfortunately most of the land is rain fed and does not generate enough income for the subsistence of a peasant family. More than 40 percent of Mexican farmers live in extreme poverty and from the 50 million poor people in Mexico; 30 million live in rural areas.

The share of production in the agricultural sector in the Mexican economy over the last century, was the following: in 1900 had a direct agricultural product of 30 percent, 35 percent if it is added up the value-added from agribusiness. At the end of this century the direct added value was a little more than 5 percent of the total. The agricultural sector declined while the rest of the Mexican economy was still growing and diversifying.

Agricultural production grew eightfold between 1900 and 1990. The rural per capita output grew 3.3 times in the same time period and the population grew 2.4 more (Warman, 2001: 113). In addition, to over a century, about half of the population shifted from the rural to urban residence, the rural population was always an average below the national average in terms of per capita GDP, while the urban population had a higher average to national average. In 1990, inequality was very marked between urban and rural population, since 51 percent of the rural population was poor, and 24 percent were in extreme poverty (Alain de Janvry, 1995).

In the last century the Mexican economy was multiplied by 30 in constant values and the population multiplied six fold, and output per person increased fivefold. These data should be counted as given after the Revolution and the reconstruction of the Mexican economy, ie from 1930 (Warman, 2001). Noting that during the so-called economic miracle of 1938-1971, Mexico achieved self-sufficiency in the food sector. However, it is noteworthy that from 1960 this was reversed and the country began to import more and more, becoming gradually into a net importer of food (NFIDCs), a situation that has prevailed until today. It was left behind the system of import substitution and in the early nineties; Mexico chose to liberalize their markets unilaterally.

There were strong government measures that involved reductions to agricultural support and deregulation of agricultural food sector, the institutions to support agricultural policy were reduced and restructured. Gradually state enterprises were sold; the storage, purchases and sales were pulled out from the government; and the sector was left to the impact of the market.

<sup>1</sup>In Mexico, *ejidos*, are known as rural properties for public use.

During the last two and a half decades, the Mexican agricultural sector has suffered the most dramatic changes in its history.

It faced the most aggressive structural reforms to trade liberalization promoted by the GATT and NAFTA. The agricultural sector is characterized by stagnation, lack of production and bid that supplies domestic markets; as well as lack of competition in the sector, increased migration and poverty in rural areas. Furthermore, there are no public policy goals of food sovereignty to ensure food self-sufficiency<sup>2</sup>, so Mexico is currently a country NFDCs. For decades public policies have promoted cheap food imports heavily subsidized by developed countries. This has discouraged many Mexican producers to continue to produce for the market. Now, the economic, physical and productive wastage is a peculiarity of the Mexican countryside.

Nowadays, the economic conditions of the global food industry have changed. Rising food prices, is a crucial concern for governments and organizations around the world due to the high risk of triggering a global food crisis. From the year 2008 the world has faced high food prices, which have meant the highest prices for 30 years, so it has a direct impact on the economy and increases the vulnerability of countries like Mexico NFDCs. In response, the Mexican government should take steps to encourage investments that increase productivity in food production and take advantage of the situation of high prices to encourage its farmers to produce and thus help increase global food supply and reduce their vulnerability to food imports.

### **Characteristics of the Mexican agricultural sector and assessment of the future of agricultural policy**

To understand the background of the situation of the Mexican countryside today we will do a retrospective analysis. In 1910 with the outbreak of the Mexican Revolution, a social mobilization and a large-scale uprising was created, who was seeking freedom from oppression in the rural sector by landowners to most of an exploited and poor population. When the conflict period was finished, negotiations were generated. One of results of the Revolution was the Constitution of 1917 that started a new social order and a new hegemony and thus, was the beginning for the restoration of peace in 1920, a pact that allowed the destruction of the large estates.

Land reform generated the fragmentation of land that was divided among the peasants who worked it, thereby creating the unique characteristics of the Mexican countryside. With Article 27 of the Constitution of 1917 the President had the power to divide the land, which was worth as a powerful instrument of social control. But an important question we ask ourselves is whether this distribution was really an effective tool of economic progress. Or, whether or not, this atomization of the land was the trigger for the prolongation of a life of poverty and subsistence for the farmers.

It was during the 1930s when the recovery began after the devastation left by the revolution, with a production growth at an annual rate of 2.3 percent exceeding the increase in rural population and the national population which was 1.5 and 1.7 percent respectively.

<sup>2</sup> In food self-sufficiency, the consumed food in the country are produced domestically, there is no need to be imported. Food

sovereignty is a positive agricultural trade balance between what we sell and what we buy from abroad.

This growth was promoted by increasing the international prices and that Mexico knew how to insert in reviving global markets.

The country was characterized by sustained growth for the whole economy including the field from 1938 which was called as the Mexican miracle stage. Agricultural production grew by 5.1 percent, surpassing the national growth of the population and exports of agricultural sector increased 75 percent. This miracle was because they took advantage of opportunities, to good agricultural policy led by the government that got the land distributed during the Cardenas period and was incorporated into the accelerated production of the agricultural sector. Agricultural prices rose and demand widened, and when agricultural exports of cattle which provided half the value of exports were curtailed by FMD in the 40s, exports diversified into the export of cotton, which came to represent half the value of exports to the 1950s, and the cotton sector growth of around 9 percent per year for 1960, accounting for 15 percent of production in the agricultural sector (Warman, 2001:118).

Unfortunately for the decade of the sixties the rise producer and exporter of agricultural sector finished, to the extent that the results of that decade were deplorable. It grew the duality in the field, duality that persists today.

On one hand, we have the rain fed peasant with subsistence production, without support or with support and drabs of government and, on the other hand, the production of business type, with irrigation system that deals with the supply of the domestic market and export, and get great benefits and government support.

But government support did not translate into improvements since growth of agricultural production started descending steeply to the extent that it recognized a serious production crisis. By 1965 the population grew above agricultural production.

Rural Mexico was being impoverished due to the undercapitalized agricultural production and its increasing dependence on public resources, in fact, already beginning to display the growing external dependence of food resources from abroad to supply the growing Mexican population, also stagnation and impoverishment of the population's income rural producer.

For the decade of the seventies the crisis was even much higher for the Mexican countryside, massive food imports continued and was increasing both with the undercapitalized and the lack of production. Corn as staple for Mexican families remained and continues to be imported in masse, fact, which has showed the ineffectiveness of the agricultural sector and the terrible dependency on foreign imports to feed the Mexican people. Since then the country plunged into a spiral of dependence on outside food staples, it was cheaper to import what brought serious consequences for producers and the Mexican rural itself. The balance tipped toward cheap imports from abroad, rather than a goal of food sovereignty accompanied by appropriate policies to follow.

For Mexico, according to statistics "in the 1970s, output growth had an average annual rate of 3.9%, half a percentage point above the national average population. There were no year of decline in agricultural output and the last three years of the decade, the annual increase was greater than 5%.

With these solid and encouraging numbers, it is a little disturbing that in 1981 the National Food System was launched to rescue a prostrate sector of the national economy with substantial and unsustainable subsidies. Therefore bonanza marking the statistics was marked by suspicion and mistrust "(Ibid, 2001: 121).

For the decade of the eighties agricultural production decreased to 6 percent of national production, with growth of only 0.3 percent per year, quite below the national population at about 2 percent. The presidential term was certainly characterized by a severe crisis compounded by a terrible earthquake that struck Mexico City and elsewhere in the State of Jalisco.

The 1990s conceived changes for the transition to an economy embedded in globalization. The agricultural sector growth remained below the national population growth, reaching approximately between 1.3 and 1.5 percent. Sector exports grew to reach about 10 percent. Maquiladoras of animal production swine and poultry have grown strongly and with them the import of cheap grain for animal feed. Another important event happened in 1992, Article 27 of the Constitution of 1917, which regulates the land, was amended. An important fact, since this reform, gives the certainty of legal ownership of the land in all its forms. It granted to *ejidos* and communities ownership of the land that was granted and recognized and that before this legal modification *ejidatarios* were only beneficial owners of lands owned by the nation. Through this law *ejidos* and communities are recognized as owners of the land and rules were established so that partners were able to circulate their endowments. Size limits of private property were kept but allowed that it may be exercised from corporations.

Mexico has remained constant in terms of length of about 200 million hectares or a little less than two million km<sup>2</sup> devoted to agriculture. In the last decade of the twentieth century, the land use is 20 and 30 million hectares eligible for agricultural use, ie between 10 and 15 percent of the land area of Mexico is arable with large variation in take risks and returns that can be expected.

In the agricultural census of 1991 listed 31 million hectares, indicating that there is no open land planted permanently, which initiates the importance of shifting cultivation or land with long rest periods. Also according to the census mentioned, the agricultural area will not exceed 25 million hectares, ie 12.5 percent of the national territory. This states that the agricultural frontier is closed (Ibid, 2001:12).

It is noted that the Mexican agricultural sector has grown discontinuous and irregular and this has different explanatory factors:

- 1) The government's agricultural policy was not continued or been directed to the optimization of economic and productive regions of the country,
- 2) The swing of resources, with an agricultural policy without long-term goals,
- 3) The instability and lack of market efficiency
- 4) The economic and social conditions, as well as the lack of opportunities and
- 5) The sector has suffered from lack of resources and funding for production and lack of investment.

**The impact of neoliberal policies in Mexico**

The proposed reforms to the global agricultural policies are located within the context of influence of neoliberal policies that are characterized, although with many national facets, to the macroeconomic policies in the international arena since the eighties.

Mexico is not the exception, since its agricultural policy is strongly influenced by neoliberal policies.

It is noteworthy that in Mexico the agricultural sector reforms have been driven by the stabilization and structural reform of the economy and not by the real needs of the agricultural sector. In the last four decades Mexican agriculture has been characterized by low supply capacity to meet domestic demand, poor market development and income levels for most producers. Adding to low productivity of agriculture and the lack of a true plan to achieve food self-sufficiency, which has been rather unfortunate, and the abandonment of the field, has helped Mexico to become a dependent country on imports of food from outside and a net importer of food. Since the country has been flooded with highly subsidized imports of agricultural production against which most producers cannot compete, causing widespread bankruptcy and migration and displacement of many producers, which shows the lack of vision of governments in question of sound policies in the medium and long term strategies to self-sufficiency and food security.

We have to recall that this implementation of neoliberal programs of stabilization and structural change were given to Latin America for prescriptions that were prescribed by the World Bank and the International Monetary Fund.

In the case of Mexico in 1983 there was a neoliberal economic orientation, which transferred to the private agents and the market the role previously assigned to the State. The market was seen as a mechanism for optimal allocation of resources, maximizing production, correcting economic imbalances, attracting investment and promoting economic development. All this triggered the reduction of state interference, liberalization of domestic prices, external trade liberalization, liberalization of the financial system, and privatization of most state enterprises.

This opened to cause the formation of monopolies and oligopolies and reduced or canceled economic development programs in various sectors such as agriculture and manufacturing, among others.

In 1984, the first steps towards trade liberalization with a decrease of permits up to 83 percent of the value of total imports were taken. In that year, economic growth returned, but with high inflation. In 1985 and 1986, the earthquake in Mexico City required emergency spending, in 1986, when oil prices were halved; all complicated adjustment processes and caused higher inflation. The increased import prices and real incomes fell. GDP fell nearly 4 percent in 1986. In 1987, cumulative inflation was 159 percent for a single year, so the stabilization program called Solidarity Pact was launched. It was based on the assumption that competition that would represent the cheapest imports would lead to establish a ceiling on inflation, according to the pact, whose aim was to stabilize the main economic variables and support growth. So controls were established in 1988 for both the exchange rate, and wages and the prices of a basic basket of goods. Maximum duties were reduced by 20 percent in 1989 and GDP grew by 2 percent in 1987 and 1 percent in 1988.

In the years prior to 1982, Mexico's trade balance became negative due to currency appreciation. But later due to the devaluation of the currency in 1982, the decline in domestic demand and a better exchange rate, the sign of the trade balance was reversed, getting a surplus until 1989. In the mid-eighties, Mexico was oriented towards an open economy and in 1986 Mexico joined the GATT (General Agreement on Tariffs and Trade) to try to achieve greater trade in different sectors of the economy. However, in 1987, Mexico reduced tariff rate by 20 percent because of the commitments demanded by the GATT.

In 1988, 62 percent of the value of crop production and 60 percent of animal production were subject to export licensing.

These licensing requirements were eliminated, namely cotton in 1984, cattle in 1987, wheat, rice, fruits and vegetables in 1990, cocoa in 1992, tobacco in 1992, and coffee in 1993. The rest of the licenses were eliminated with the entry of the NAFTA (North American Free Trade Agreement with the U.S. North America and Canada).

In 1994, all import permits were converted into tariffs or tariff quotas. In the same year NAFTA took effect. This treaty had strong impact on trade and agricultural policy in Mexico, as it promoted trade without modifying domestic support policies and export subsidies.

All tariffs will be abolished according to different schedules to complete disposal in 2008. And it must be said that Mexico's commitments under NAFTA are stiffer than those acquired in the Agreement on Agriculture of the WTO (OECD, 1997: 16-27).

From the opening of markets in the mid-eighties, Mexican imports and exports began to increase for other sectors. Industry managed to increase its exports by 68 percent during 1988-1994.

Imports mainly intermediate and capital goods promoted the modernization of Mexican companies to fight international competition. In 1994, Mexico had a negative trade balance with strong current account deficits, but the capital that financed the deficit left the country, so there was a sharp devaluation of the peso, improving Mexico's competitiveness internationally and in 1995 the balance was close to balance.

In 1995, the agreement prices established in 1989 were removed, and instead they were replaced by the indifference prices with reference to international prices<sup>3</sup> so that the buyer will be indifferent between buying an imported or national product. For corn prices, guarantee prices were replaced by minimum prices or price per floor, supported also in international prices.

Mexico has had several major economic crises and changes in the orientation of its agricultural policy, which has impacted their agricultural and rural sectors, also strongly influenced by changes made over time as trade liberalization and world market-oriented policies. One feature until 1995 was the high rates of inflation and low rates of domestic savings. The deepest crisis, in 1994, was characterized by large capital outflows and high debt. Agricultural production had a total value of \$ 28 billion dollars in 1994.

<sup>3</sup> These prices are calculated based on each consumer area in Mexico and it is equivalent to the border price (CIF) plus import duty and transport costs between the border and the main

consumer, less the domestic cost of mobilization between different areas of production and consumption OECD, 1997.

Vegetable products accounted for three-fifths of production and animal products the other two fifths. Grains, fruits and vegetables represent the major production in Mexico while vegetable production is very diversified. Also crops such as sugar cane, coffee and fodder are important. Besides, animal products such as beef, milk, pork, poultry and eggs account for 29 percent of the total animal production. Cereal production has had ups and downs depending on prices, weather and droughts. The cultivated area in agriculture is mainly devoted to corn production. In 1994, the area under perennial crops was 18.9 million hectares, corn representing 43 percent of it, followed by 11 percent bean, sorghum with 7 percent and fruits and vegetables 8 percent.

Livestock production has increased in response to the greater elasticity of demand due to economic growth since 1990. Maize yields are variable depending on weather, input use and management of agricultural structures. The most productive State, in the corn crop, is Sinaloa where average yields are between 7 and 8 tons per hectare, while rain fed lands harvested from 0.4 to 3 tons per hectare.

In 2001, external liabilities were 371,999.9 million dollars. All this created as a result that the evolution of poverty were diametrically opposed both in the Keynesian, as in the neoliberal model. In the first model, according to Boltnikov, the percentage of poor population declined from 77 percent in 1963 to 48.5 percent in 1981. In the second model, poor people rose from 69.8 percent in 1984 to 75.8 percent in 1994 and to 81 percent, after the economic crisis, in 1995 and fell to 76.9 in 2000.

The allocating productive values were left to market forces and private actors.

It was thought that all this would lead to increase private investment in agriculture, would increase efficiency and develop the production of raw materials and food. However the results were not as expected. The value per capita, in 2001, GDP agriculture and forestry were found to be 14.3 percent less than in 1981. In 2001, the production of the eight major grains was 21.8 percent less than in 1981. Food imports have soared to 1.790 million in 1982, to 7.274 in 1994, and to 11.077 in 2001 (Schwentenius, 2004: 23-25).

### **The Free Trade Agreement (NAFTA)**

In 1992, Mexico agreed to North America Free Trade Agreement (NAFTA) formed by Canada, the U.S. and Mexico, which entered into force on January 1, 1994.

The country granted duty-free access to their markets and agreed to 36 percent of agricultural imports from the United States of America and 41 percent of agricultural imports from Canada. Also, duty-free import quotas were established for most agricultural products previously subject to the system of import permits, based on trade flows from 1989 to 1991.

Quotas were increased every year by three percent and five percent for certain products. In addition, the tariff was reduced, for corn, beans, barley and milk, by 24 percent in the first six years of NAFTA, and the remaining 76 percent over the next 2-9 years depending on the product. Furthermore, tariffs on products such as sorghum, coffee, cattle and beef were eliminated at 57 percent of imports made between Mexico and the U.S. in 1993.

Moreover, tariffs were gradually eliminated by the year 1998 to products that meant 6 percent of the weights based in 1994, 32 percent by 2003 and 5 percent in 2008 (sugar, corn, beans, milk powder).



As Mexican exports agreed NAFTA, ie access to 61 percent of food products in U.S. and 89 percent in Canada. It was also established tax-free contributions to most Mexican products requiring import permits and quota levels were set above the levels of trade in the period 1989 - 1991 for the two countries.

Since the entry into force of NAFTA, Mexican exports have tripled, going from 52.000 million dollars in 1993 to 161.000 million in 2002, implying a growth of 12 percent per year with a trade balance growing surplus each year (CATO INSTITUTE, 2003). NAFTA has achieved its objectives of increasing trade, investment and strengthen international competitiveness.

Agricultural exports have grown by 8 percent annually since the entry into force of NAFTA and in 2006 the Mexican agricultural imports reached 10.2 billion dollars. U.S. investment, 1.7 billion dollars, in Mexican processed food companies arrived in 2003. In 2005 and 2006, the private sector and universities made an investment of nearly \$ 20 million in over 120 projects to support agricultural issues and Mexican agribusiness. With more than 96,000 million dollars in foreign direct investment from 1994 to 2001, trade in general, is a strong component of the Mexican economy. This represents 60 percent of GDP. Mexican consumers have benefited from the trade that has generated a wider variety of products and services.

Agricultural food exports, including processed products with higher value added, increased by 9.4 percent annually from 1994 to 2002. Total food exports had an increase by 150 per cent, of which 78 percent is absorbed by the U.S. market in the same period. U.S. investment in Mexican food industry was 6,000 million dollars and Mexican investment in U.S. for Mexican food marketing was more than 1.000 million.

Agricultural imports in Mexico increased 6.9 percent annually, which has an impact on price declines as rice 37 percent; beans 34 percent; corn 43 percent; wheat 26 percent; cotton 79 percent; soybean 53 percent; cattle 36 percent; and dairy 32 percent. This drop in prices have discouraged Mexican producers and aggravated their situation. But we should not blame the backwardness of Mexican agricultural sector to NAFTA as this is prior to NAFTA, due to low productivity, wrong policies, misdirected and poorly implemented, as well as the rural abandonment by the government of Mexico.

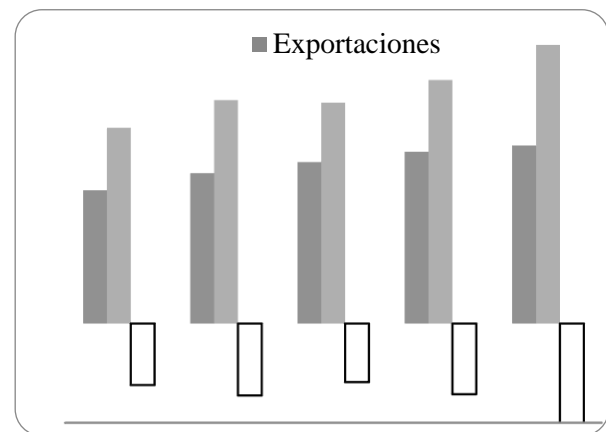


Figure 1

In the NAFTA area there are profound asymmetries in productivity, natural resources and technology resources. From 1997 to 2001, 2.4 tons of maize per hectare, were harvested in Mexico against 08.04 tons in the U.S. and 7.3 in Canada.

In the production of beans, Mexico gained 606 kg per hectare, U.S. and Canada scored 1.846 1.849; Mexico obtained a production of 4.4 tons per hectare of rice, against 6.8 in the U.S.

It further increases the gap when the comparison is made per worker, in which the gross value of agricultural output per worker in Mexico ranged from \$ 3,758.9 in 2001, while in the U.S. was \$ 67,871.3 and \$ 54,081.6 in Canada. All US databases regarding NAFTA begin in the years 1989, 1990 and 1991, the years that were the basis for the negotiation of NAFTA.

Import quotas and safeguard measures were set, although the Mexican government takes as base the year 1993. Mexican deficit agribusiness increased by 92 percent from 1989 to 2002, with an increasing loss of self-sufficiency in grains and oilseeds.

In 2001, the following imports: 3.775 percent soy; rice 227 percent; cottonseed 204 percent; wheat 91 percent; sorghum 83 percent; corn 31 percent; chicken 31 percent; meat bovine 24 percent; pork 35 percent were increased.<sup>4</sup>

In Mexico, the president presented a new program called Special Concurrent Program (PEC) for Sustainable Rural Development 2007-2012, which spent 204 million pesos to the Mexican countryside by 2008. It was also committed to provide the supports more directly as possible to avoid corruption and bureaucracy. With the imminent opening of the grains sector in NAFTA, the government was forced to make new programs and forms of coordination among the three levels of government (Bravo, 2007).

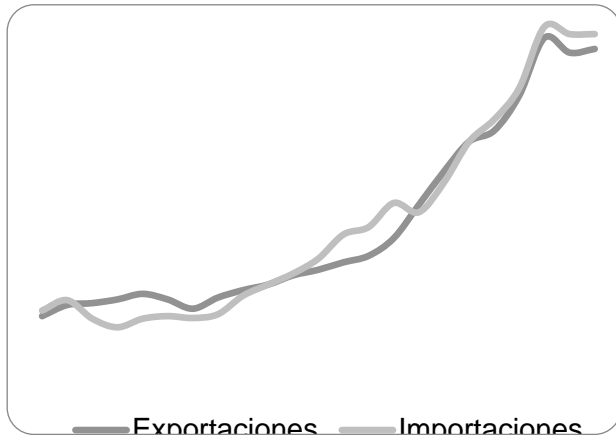
The World Bank acknowledged at the time that the Mexican agricultural sector was not prepared for the competition that posed NAFTA (World Bank in Schwentesius, 2004).

Besides, during the last two and a half decades the Mexican agricultural sector has suffered the most dramatic changes in its history. It faced the most aggressive structural reforms not only with the trade liberalization promoted by the GATT and NAFTA, but also with the removal of price controls, the government sector retreat, leaving to the impact of markets; as the reform of tenure earth. All this with disappointing results, according to the World Bank, since has been triggered the stagnation of growth in the rural field, the lack of competition in the sector and the increase of poverty in rural areas.

Among the products most affected to 2003 by NAFTA include: the poultry, pigs, potatoes, animal fat, barley, apples and fresh cheeses. All these products had tariff protection by 25 and 50 percent and / or import quotas until December 31, 2002. In 2003, also chicken and pork were liberalized as temperate fruits, rice, wheat, and edible offal, roasted and processed coffee, with the exception of dairy milk powder, grape wine, food preparations, tobacco, liquor, copra, vegetable oils, sheep and mutton.

Importantly, there is a wrong view of both the government and NAFTA which states: 1) there is no crisis in the rural field, 2) Mexico is a winner with the NAFTA because it has trade surplus with the U.S.; 3) there is no increase in the trade deficit of the agricultural sector and 4) Cheap food benefit consumers.

<sup>4</sup> Schwentesius (2004) indicates that the data are underestimated due to smuggling and lack of control in customs.



**Figure 2**

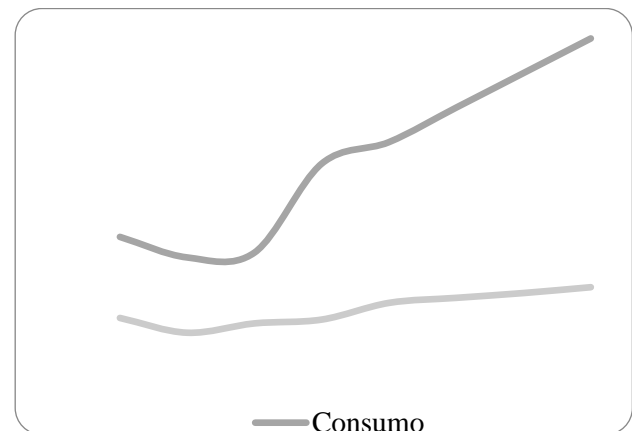
Indeed, Mexico had a trade surplus with the U.S which was \$ 26.422 million in 2001 and in 2002, and has exceeded the amount of \$ 30.484 billion in October 2002. This behavior includes maquiladoras and the oil sector, which are outside the NAFTA package. But when excluding maquila trade, oil and oil products reached a deficit of 8.705 million dollars. Only one percent of trade in the two countries is related to the grain trade.

Food imports into Mexico were \$ 11.077 billion in 2001. Besides, the food deficit was \$ 2.946 million dollars which represents 29 percent of Mexico's total trade deficit and is generated by food imports. In 2002, was \$ 11.400 million, with a deficit of 3,232 million representing almost 40 percent of the total trade balance (Schwentesi, 2004). However, at present, NAFTA has successfully benefited Mexican exports of fruits and vegetables, which have been inserted competitively in international trade. Today, these exports represent 119 percent more than accounted for over 10 years. In addition, the 72 percent of tomato consumption in the U.S. is of Mexican origin as 89 of cucumbers, 99 percent of the peppers, 95 percent of the pumpkin, 90 percent of lemons, 98 percent of strawberries and 67 percent of the avocado (Hernandez, 2007).

The rural sector crisis has been deepening since most crops and livestock and forestry products are no longer profitable. Farming and forestry undercapitalized, production is reduced, food dependency increases, the productive plant is destroyed, and production chains are disarticulated. In the rural sector is becoming increasingly the expulsion of the population, the jobs are reduced, natural resources are degraded, the foreign exchange needed for development are used to pay for imports of food, income of farm families have fallen, poverty and marginalization in the rural sector are increased.

This would have occurred by the state's withdrawal of its functions of planning, development and regulation of agricultural and rural economy, the decline of the country's budget, the state investment withdrawal, neglect of maintenance and creation of infrastructure and services, privatization of public enterprises, reduction of subsidies.

The little protection to domestic production and the domestic market, the lack of credit for millions of farmers, lack of research, technological innovation, training and technical assistance.



**Figure 3**

Mexico currently ranks first worldwide as importer of maize, sorghum and milk powder. Just, in the case of maize, purchases abroad have increased at 119 percent according to the National Institute of Statistics, Geography and Informatics (INEGI); due to lack of appropriate policies for the rural field.

The abandonment of the sector has resulted in the inability to produce and to meet domestic demand, which puts Mexico in a highly vulnerable situation due to rising international food prices.

Also in the case of rice, Mexico has become the largest importer of rice from the U.S; in the 80s Mexico imported 17 percent of consumption and currently imports 80 percent of rice consumption, due to domestic markets have been flooded with paddy *rice* at low prices, so that Mexican producers have been replaced by U.S. *dumping* prices (Hernandez, 2007).

Situating between 2001 and 2006, the GDP of the agricultural sector in Mexico, including the activities of agriculture, livestock, forestry and fisheries, increased at an average real rate of 2.1 percent annually. The contribution of agriculture to total GDP declined from 5.2 percent in 2001 to 5.0 percent in 2006 (Bank of Mexico and the National Institute of Statistics, Geography and Informatics WTO, 2008:101)

From 2001 to 2006, employment in this sector fell from 17.5 percent of the total employed population to 14.3 percent due to the result of the rural exodus and the increase in non-farm activities in the rural population. Mexico remains a net importer of agricultural products, and the total value of imports of these products was at \$ 16.261 million dollars in 2006.

The main agricultural imports include corn, soybeans, beef, wheat, cotton, oilseeds, pork and milk powder. The National Development Plan 2007-2012 establishes new objectives, including improving the income of farmers by increasing exports, value-added processes and production of bioenergy.

The low productivity of rural Mexico is due to many reasons: the low productivity of rural and agriculture activity; a weak investment; the fragmentation of production that prevents capture economies of scale; supports that are not linked to productivity, uncontrolled rural population growth and still too high; little economic orientation in agricultural production (inputs whose price does not reflect their true opportunity costs and price supports that subsidize inefficient production) corporatist approach in channeling resources; communal properties where there is no individual responsibility for efficient use; and uses and customs that are not geared to the economic development of the individuals.

In addition, low agricultural productivity growth is concentrated in crops that have been the most "tapped" by agricultural policies (e.g., corn and beans), which contrasts with little government support to other crops with which Mexico has comparative advantages, and they have attracted enough investment, reaching productivities that can dominate the U.S. market.

Agricultural trade balance							
Concept	2007	2008	2009	2010 P	2010	2012	2012 P
Exports	1973.9	2194.9	2087	1212	513.7	565.7	759.7
Cattle	475.2	311.9	395.9	208.7	7.23	1.21	48.8
Red beans	8.20	3.30	7.28	6.14	1.7.	2.6	2.4.
Green coffee beans	305.9	288.2	310.4	196.6	21.2	45.1	63.1
Wheat	149.3	589.6	276.3	7.17	4.20	48.1	70.1
Corn	71.3	8.23	87.9	62.5	52.7	0.6	49

Tobacco	8.27	32.2	29	7.6.	2.5	4.8	1.2
Cotton	65.1	78.6	46.7	9.3.	0.3	2.5	0.8
Other fresh vegetables	858.5	840.3	912.1	695	37.9	42.3	40.4
<b>Imports</b>	<b>6958</b>	<b>9187.4</b>	<b>6267.9</b>	<b>3019.4</b>	<b>744.8</b>	<b>1031.6</b>	<b>945.4</b>
Cattle	89.5	134.8	30.7	3.19	2.3	2.5	0.1
Milk and milk products	950.6	773.7	598	290.3	56.6	57.8	9.
Egg	8.25	22.1	4.23	9.9	1.5	4.5	3
Red beans	67.3	91.6	170.9	52.7	7.6.	6.1.	21.5
Wheat	856	1246.9	727.9	328.2	84.3	79.4	76.3
Corn	1554.3	2391.4	1436.8	759.1	101.3	248.6	215.7
Rice	247.8	370.8	245.4	149.8	20	40.3	40
Sorghum	347.1	364.1	442.2	230.4	9.23	68.1	41.8
Soybeans	1177	1800.9	1419.1	632.1	116.2	162.5	129.3
Tobacco	144.1	154	144.5	61.9	5.3	2.8.	3.7
Cotton	461.9	539	11.9	29	53.8	72.5	35.4
Other seeds and oleaginous fruits	413	546.3	436.5	191.6	7.29	35.7	29
Other cereals	75.5	154.4	77	31.5	0.8	2.5	8.14
Other agricultural products	548.1	597.4	503.6	233.6	42.9	49	48.3
<b>Balance</b>	<b>(-) 4984.1</b>	<b>(-) 6992.5</b>	<b>(-) 4180.9</b>	<b>(-) 1807.4</b>	<b>(-) 231.1</b>	<b>(-) 465.8</b>	<b>(-) 185.7</b>

Table 1

Table 1 shows the balance of agricultural trade which is heavily in deficit for Mexico for the tested products, and in 2010, 2011 and 2012 the deficit decreased substantially. The products that have greater weight in imports are corn and soybeans, followed by milk and its derivatives. It shows, once again, that the agricultural sector presents that this deficit still exists because it has been the most heavily punished and also indicates Mexico's heavy dependence on foreign food products.

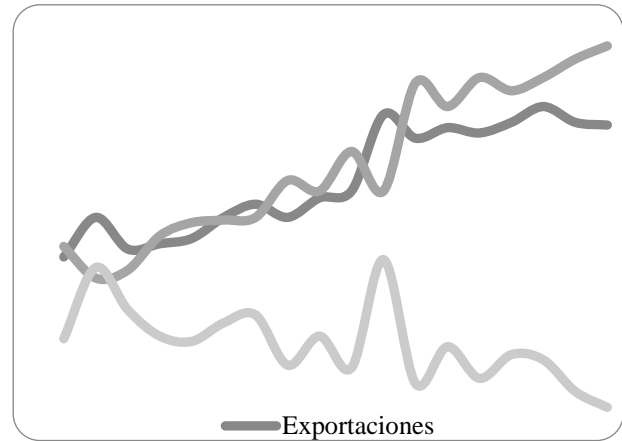


Figure 4

The result of the two previous stages is a deficit trade for most years but with moderate levels except for 1995, time, where there is a strong peso devaluation that resulted in a surplus in the balance as a result of the fall in imports of nearly 23%, then we can say that the Mexican agricultural balance has had negative balances in almost every year of NAFTA (Figure 4).

In short, we must say that for decades the integrated and sustainable rural development has not been provided to achieve food sovereignty to ensure sufficient supply of basic food through domestic production; thus, this provokes to unemployment or migration of a large amount of rural population.

These public policies for several years, which have not been designed to strengthen the production for the domestic supply, food self-sufficiency and cheap food imports, have driven much of the population of the rural area and have discouraged to continue producing for the market. The economic, physical and productive wastage is a peculiarity of the Mexican rural sector, so this brings back to the question, what will be done with most of the staples that are expensive and imported to achieve reverse of high dependence on imported food from outside?

### The food crisis and rising food prices: effects for Mexico

During 2008, the world, has faced high food prices, which have meant the most highest prices for 30 years, have plunged into chronic hunger to millions of people and have increased the vulnerability of the NFIDCs countries like Mexico. In response, the Mexican government should take steps to encourage investments that increase productivity in food production and take advantage of the situation of high prices to encourage farmers to produce, and thus, will help to increase global food supply and reduce their vulnerability to food imports. Rising food prices is a crucial concern for governments and organizations around the world due to the high risk of triggering a global food crisis.

The economic theory tells us that high prices mean positive signals that can encourage increased supply, in this case, to promote the increase for agricultural production. However, this response depends on the responsiveness of producers, markets and public policies implemented by governments.

In this case, however, and despite the positive incentives which represent high prices for producers, it is expected the responsiveness of these, low or slow due to high oil prices, input as fertilizer and energy. So, these have been increasing at par and even at higher proportion of the increase in commodity prices, and this discourages the producers of low and medium productivity of developing countries, who have little or no technology and are most affected by high input prices. Thus, we can observe that up to 2006, there was a first stage where prices of food basket had fallen by nearly half for the last thirty years, which discouraged the production of many farmers.

And now that food prices are high, producers are not able to recover to produce because they are strongly capitalized, unmotivated and many have emigrated.

Consequently, the Mexican government is to resolve several issues, including:

1. - Ensuring affordable food prices, ie to ensure food security for its population.
2. - Encourage farmers to produce food, to increase the supply to ensure food availability.
3. - Find public policy strategies that support productivity and competitiveness in food production and help meet its domestic demand.
4. - Modify the criteria of planting and harvesting in view to greater adaptation to climate changes that occur in each region.
5. - Encourage research and technology that will support the increased productivity and sector development.

Comply with the above points is of great value to avoid economic, social and food problems, therefore, we must act on it, when there is still time to do so.

Since the increase in food prices and the decline in purchasing power tend to affect the vulnerable population and may generate social unrest (there are families who spend 80 percent of their income on food). In response some measures on public policy should be taken for the short, medium and long term, as to increase production, productivity, improve marketing and distribution sector.

The fact that Mexico is a net importer of food (NFIDCs), a serious problem for balance of payments is expected. Commodities such as grains, oilseeds and dairy are the ones that got the highest increase of international prices.

We have mentioned that the high volatility<sup>5</sup> of prices in agricultural markets is quite marked, taking high and low prices on a frequent basis, and however it is considered that high food prices that markets are facing will continue in the medium to long term.

As a result, Mexico has great challenges to break the cycle of food dependency, including, redirecting public policy and encourage small and medium farmers and overcome their limitations such as:

- 1) Lack of rural infrastructure
- 2) Limited access to inputs
- 3) Lack of modern irrigation facilities
- 4) Lack of roads
- 5) Lack of storage facilities
- 6) Rudimentary technology
- 7) More education of farmers on modern agricultural technology
- 8) Lack of access to credit
- 9) Reduced market share
- 10) Fewer or null investment

Countries that rely heavily on the export or import of commodities often have unwanted effects, including:

1. - The agricultural exporting countries may have a temporary support for high prices but then the high prices of agricultural inputs and other foodstuffs and often devour profits and,

2. - Importing countries often have balance payments problems, causing severe pressure on its economy and will damage their efforts to reduce poverty.

On one hand, producers in Mexico have suffered from high prices of inputs that actually devour their profits and secondly inputs have strong economic impacts because high food prices that currently characterize the global markets have led to a strong pressure on the Mexican economy and high poverty lines.

Another important aspect is the strong change of weather that has impacted the world food situation with profound implications for the supply; in the same way, shocks in oil prices have caused a major impact on food production, which has also contributed to the decrease in the food supply worldwide, also aggravated, due to the increase of produced bio-fuels demand from food supplies.

Mexico, has presented, for more than twenty years, a strong dependence on cheap food imports highly subsidized by developed countries, based on policies that leave the agricultural sector to the free market forces, without the government constituting as an arbitrator or policy maker for achieving self-sufficiency goals.

All this has contributed to the loss of sovereignty and has increased the dependence of food cheap imports from abroad.

In addition, for decades, several OECD countries have given heavy subsidies to agricultural production and are net food exporters to developing countries and LDCs.

<sup>5</sup> The high volatility quantifies the fluctuation in the prices of one or more products in a given time, uses the standard deviation of

prices. And a great price fluctuation in a short period of time is "highly volatile".

This is the case of the United States of America (USA) where corn is largely being channeled to ethanol production and the European Union (EU) that was a strong sugar exporter and now has changed its agricultural policy. This paradigm of agricultural subsidies led to rising prices by lowering supply situation that lasted for several decades. Nowadays, the establishment of new policies has also performed market changes, and has reduced strongly cheap stocks from these countries for certain products.

Mexico, like other net food importing countries, for decades, preferred to import grain and other cheap foodstuffs highly subsidized by developed countries, causing an imbalance in the market and widespread bankruptcies of Mexican producers. But, the government never anticipated that one day imported food would stop being cheap, the financial crisis in developed countries has also resulted in the reduction of some subsidies. In addition, it was never anticipated that food prices would be as high as those achieved in recent years and now Mexico, like other countries (NFIDCs) pay the consequences of bad decisions made about food policy. For decades, it has been diminished of growth prospects and food sovereignty of the rural Mexican.

It is also unacceptable that governments have no grains storage programs and better policies for productive development and be dependent on outside food is like having the cupboard empty or buy per day which is to be consumed, and worry not to produce and store to feed our family.

Therefore, it is important that the governments of the NFIDCs countries, including Mexico, implement public policies in the short, medium and long term with specific goals to achieve food sovereignty and elevate the character of national security as EU and US have made for decades.

And as China that already have very significant levels of self-sufficiency in some products in recent years.

The question is, what actions should governments take to counteract the impact generated by the high food prices on the population? It is necessary to implement good public policies towards medium and long term; with achievement goals of food self-sufficiency and food sovereignty as a national security project before the global food crisis reach us. Rubio (2008) mentions that "The food crisis will give way a new global food order which is emerging and will generate significant changes in the national agrifood.

A lot of world changes have precipitated, in recent months, in rural areas. Unusual rise in commodity prices, food shortages in the poorest countries, population revolts by rising food prices, growth of ethanol plants, not only in developed countries but also in the developing ones; unusual processes of productive recovery together with commodity shortages and financialization <sup>6</sup> of the foodstuffs, which generally has been called, the global food crisis."

Mexican agricultural development could overcome their state of food dependency and achieve international levels of productivity while creating enormous economic value.

<sup>6</sup> It was respected the term *financialization* that comes inside the quotation from B. Rubio.



If it is promoted well-targeted policies, with short, medium and long term to support obtaining greater productivity with greater investment and technology in farming methods, seeds, inputs as well as to guide those produced crops that have structural advantages on competitive grounds. Corn, beans and rice are special cases for being very essential commodity in our country, so they should be treated in a special and strategic way.

It is necessary to generate economies of scale. To take advantage of trade agreements to attract inputs<sup>7</sup> whose prices reflect true opportunity costs: water, labor, energy, technology, finance, etc. And to pay workers according to the higher value added per capita and benefiting them with improved conditions for marketing and distribution of their products. Promote workers training. To limit and remove the corporatist domes, policies and other actors of the industrial and commercial chain derived from the rural field, that are used for themselves with all the benefits and supports, possessing advantages and canonries, who serve as caciques.

### **Conclusions**

The Mexican agricultural sector has had strong changes in trade patterns over time. In the first eight decades of the twentieth century, the agricultural trade balance was favorable for Mexico. However, from the beginning of the sixties, Mexico gradually loses food self-sufficiency that was achieved at the time of the economic miracle era; the balance begins to be unfavorable and negative, leading the country into a spiral of food dependency.

Some governments tried various policies to alleviate the crisis in the country, but none was continuous or wise.

The lack of an appropriate policy for the rural field with short, medium and long term, equitable integration, no vision and productivity were the triggers to fall back into crisis and stagnation.

Mexico became a net importer of food because food is imported in bulk, there is a steadily increased undercapitalized and there is lack of field production. Inequality is a major feature of the Mexican rural countryside, on the one hand, the temporary peasant with subsistence production, without support or with support and drabs of government and, secondly, irrigated production, enterprise-class production to domestic supply and exports, with benefits and government support. Also, for many years, field braces have been used as political power and social control.

It is important to be recognized by all decision makers and the civil population, that agriculture provides an important role in food security and economic and social development of Mexico. And the neglect of domestic food production and food safety risks associated with external deficits and imbalances also affects the pattern of development of the country, and especially in the rural sector, increasing poverty lines.

The high food prices on world markets since 2008, are threatening to drag on for decades, which impacts on the trade balance and spending.

The future option is to adopt a new economic strategy for the Mexican rural countryside.

<sup>7</sup> Tactics used in Brazil after its economic opening.

It is urgent to launch a new agricultural policy with a clear objective of increasing productivity and improvement for the field and a full goal of food sovereignty. To generate economies of scale with input prices that reflects true opportunity costs: water, labor, energy, technology, finance, and so on.

To pay workers according to the higher value added per capita to benefit them with improved conditions for marketing and distribution of their products. Promote rural worker training. To limit and remove the corporatist domes, policies, and other actors of the industrial and commercial chains derived from the rural field, using all of the benefits for themselves. To take a proactive approach to ensure that, at this time of crisis, can emerge a modern and fair scheme to both producers and consumers.

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