

Rural Poverty and Agricultural Mechanisation Policies in Mexico

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Abstract

Mexico has a territory of 198 million hectares of which fifteen percent is dedicated to agricultural crops and fifty eight percent is used for livestock production. Much of the country is too arid and too mountainous for crops or grazing. Forests cover 67 million hectares or thirty four percent of the country. The climate and topography limits agricultural production to 20.6 million hectares or 10.5% of the nation's territory. Even though agriculture in Mexico occupies a minor role in the gross domestic product (less than 4%) and the overall revenue of the country's income, it still remains one of the main activities in Mexico employing approximately 10% of the population, for the obvious reason that food production is critical for any nation. The cultivable area in Mexico is broad, since according to data from the world bank , about 13% of the land has been used for agriculture. Mexican agriculture is divided into a highly capitalized commercial sector, a sector of small farmers with ties to the market, particularly in the domestic market and subsistence sector producing for household consumption and whose income depends to a considerable degree of external activities. This group use the field as a primary source of income and to supplement their own food. These farmers usually do not have the technology (tractors, modified seeds, irrigation systems or others) to do their job. This way being the farmer his own employer, he has no wage labor, but perhaps only during the strongest periods, such as the periods of planting and harvesting, since most of the time is his family who supports him, all this had caused rural poverty .The only way to reverse the situation of extreme poverty in rural areas in Mexico is reviewing agricultural mechanization policies, as these are properly applied to increase the productivity of farmers to not to come this mechanization, smallholders engaged in the domestic market and subsistence farmers.

Keywords: Rural Poverty, Agriculture, México, Productivity, Agricultural Mechanisation

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1. Introduction

Mexico has a territory of 198 million hectares of which fifteen percent is dedicated to agricultural crops and fifty eight percent is used for livestock production. Much of the country is too arid and too mountainous for crops or grazing. Forests cover 67 million hectares or thirty four percent of the country. The climate and topography limits agricultural production to 20.6 million hectares or 10.5% of the nation's territory. Twenty five percent of this land must be irrigated. About half of the territory or 98 million hectares is used for grazing including natural grassland, various scrublands, tropical forests and conifer-oak forests. About 75% of grazing land is in northern Mexico.

The growing of crops is the most important aspect of Mexico's agriculture, accounting for fifty percent of agricultural output. Main crops include corn, sugarcane, sorghum, wheat, tomatoes, bananas, chili peppers, oranges, lemons, limes, mangos, other tropical fruits, beans, barley, avocados, blue agave and coffee. The most important crops for national consumption are wheat, beans, corn and sorghum. The most important export crops are sugar, coffee, fruits and vegetables, most of which are exported to the United States. The most important animal feed crop is alfalfa followed by sorghum and corn.

Corn is still the most important crop in Mexico, grown on almost sixty percent of its cropland and contributing to just over nine percent of human calorie intake and fourteen percent of protein intake.

Even though agriculture in Mexico occupies a minor role in the gross domestic product (less than 4%) and the overall revenue of the country's income, it still remains one of the main activities in Mexico employing approximately 10% of the population, for the obvious reason that food production is critical for any nation. The cultivable area in Mexico is broad, since according to data from the world bank, about 13% of the land has been used for agriculture.

Mexican agriculture is divided into a highly capitalized commercial sector, a sector of small farmers with ties to the market, particularly in the domestic market and subsistence sector producing for household consumption and whose income depends to a considerable degree of external activities.

In the case of Mexico, it is estimated that these subsectors account for 15%, 35% and 50%, respectively, of the agricultural population, but in terms of production these percentages would be reversed. Each of the above sub-sectors have technology, information, and different social and economic needs. The first needs to stay competitive in export markets, while the second focuses on domestic markets. For the group of subsistence priority is to have access to other sources of income to escape the poverty trap representing subsistence agriculture. Agriculture is a relatively small sector in Mexico, down with respect to the total economy and about 4% of GDP. However, this figure alone minimizes the social and economic importance of the sector. Agriculture employs about 13% of the labor force, representing about 3.3 million farmers and 4.6 million workers and unpaid family workers. Of greater relevance even for territorial development is the fact that approximately 24% of the total population lives in rural areas (using 2005 dates).McMahon,et al. (2011).

This group use the field as a primary source of income and to supplement their own food. These farmers usually do not have the technology (tractors, modified seeds, irrigation systems or others) to do their job. This way being the farmer his own employer, he has no wage labor, but perhaps only during the strongest periods, such as the periods of planting and harvesting, since most of the time is his family who supports him, all this had caused rural poverty.

Extreme poverty is primarily, though not exclusively, a rural phenomenon, although only a quarter of the population lives in rural areas, about two thirds of the population lives in extreme poverty these areas. In 2004, 28 percent of rural residents was in extreme poverty and 57 percent in moderate poverty. Thus, although only a quarter of the population lives in rural areas in these regions lies the 60.7 percent of the population in extreme poverty and 46.1 percent of the moderately poor the country. Agricultural growth reduces extreme poverty, the intensity of poverty and income inequality for society in general. By contrast, the lack of dynamism in agricultural growth and the absence of improvements in the productivity of land and labor are a significant threat in terms of rural poverty.

It is therefore essential for rural poverty alleviation are resolved challenges facing the agricultural sector, including increasing the productivity of labor and ensure that small-scale agriculture and rainfed crops segment are more competitive. Anonymous.(2013).

The importance of agricultural mechanization development is therefore unquestionable. However, the effects achieved with the programs dependent on the successful development are employed with various types of existing technology.

Agricultural mechanization is essential in increasing production, Gyl(1995) , Srivastava (1996), Botta (2003),Cortez (2009),FAO (2013), since it allows to increase the cultivated area, improving cultivation techniques, lower costs and dignify human work, to carry out such machining the small farmer needs economic energy sources, practical, easy maintenance and operation, and whose working capacity and costs are appropriate to the size of the property.

Summarizing, the only way to reverse the situation of extreme poverty in rural areas in Mexico is reviewing agricultural mechanization policies, as these are properly applied to increase the productivity of farmers to not to come this mechanization, smallholders engaged in the domestic market and subsistence farmers.

1. Agricultural Mechanization Policies

Mechanization policies are defined as those government measures, both direct and indirect, to influence the decisions of farmers and others on the selection of energy sources and machinery and tools to be used in the energy, also covers international trade, and the development of agricultural machinery industry countries. Binswanger (1988).

According Pellizi (2000)cited by Ortiz (2002), each country should base its policy of mechanization;

- a.-A definition of mechanization levels more in line with the technical and economic factors.
- b.-The creation of the necessary infrastructure for the development of agro-mechanical industry through strong local partnerships with well established industries in industrialized countries.
- c.-A definition of the criteria applied to standardization of production.
- d.-The efficient networking service for repair and maintenance in the country.
- e.-The promotion of professional training programs both in agriculture and in manufacturing.

Agricultural mechanization policies most commonly applied are:

- 1.-credit to purchase agricultural machinery subsidized interest rates.
- 2.-Subsidy fuel prices.
- 3.-System tariffs and customs duties (elimination or minimization)
- 4.-Tax deductions for their cost.
- 5.-Limits to the proliferation of brands.
- 6.-Discrimination spares tariff.
- 7.-Public sector participation in the production of agricultural machinery.
- 8.-Fixing industry standards and standardization of components.
- 9.-Public support for the training of farm machinery operators and service personnel.
- 10.-Control of prices of agricultural machinery.
- 11.-Legislation regarding the percentage of domestic parts content of foreign agricultural machinery.
- 12.-Legislation on the obligation of the manufacturer to maintain a stock over the average life of farm machinery.
- 13.-Provision of research, teaching, and extension in agricultural machinery.
- 14.-Development of national agricultural machinery industry.
- 15.-Government Plans agricultural machinery rental for farming and other agricultural operations.
16. - Subsidy for the capital market to stimulate mechanization due to the decrease in the price of capital goods imported and domestic.
- 17.-Provision of evaluation, testing and certification of agricultural machinery.
- 18.-Creation of the Department of Agricultural Machinery in the Agriculture Secretary.

2. Policies of Agricultural Mechanization in Mexico

Although suffering from a lack of well-defined policies that stimulate agricultural mechanization Aguirre (1969), you need to promote it, being fundamental policy analysis used in other countries that have been successful and implement in developing countries.

According to Ramirez (2007) due to the country's agrarian structure is unworkable modernizing smallholding with capital-intensive technology packages, for two main reasons: first, agricultural machinery is designed to cultivate large tracts of land and would remain idle most of the agricultural cycle, and on the other side small production units are unable to generate the necessary resources to capitalize.

Through mechanization promotes economic growth through increased yields and expansion of the cultivated area, either by the incorporation of new land or the possibility of more than one seed per year, in the same unit area. This should rethink public policies to promote, which should promote research, teaching and development of agricultural machinery consistent average size of farms in the country. Negrete (2006).

So not only has it been a clear policy to promote the mechanization but quite the opposite, as from 1941 the federal government decided to turn the country towards industrialization Espadas (2005), and starts the substitution policy imports in the agricultural sector has to fund the development of the industrial sector.

Mexico has implemented the following policies of agricultural mechanization;

1.-Credit for the purchase of agricultural machinery subsidized interest rates

The history of mechanization policy in Mexico dates back at least to 1918, in this period, imports from the United States 112 tractors that were transferred, at cost, private farmers.

From then until the late thirties, I move very little mechanization. From the presidency of Avila Camacho, nevertheless gave a decisive impetus to the introduction of tractors and in generating, modernization of agricultural labor instruments, were awarded grants of up to 50% in the price of agricultural machinery, and a substantial portion of long-term agricultural loans headed for the purchase of tractors. Hewitt(1978) cited by Masera(1999.)

In the period of Miguel Alemán was strengthened and comprehensive program. Between 1940 and 1970 tractors were introduced mainly in the irrigation districts.

Particularly since 1974, and until 1981, when agricultural policies were reoriented to promote rainfed agriculture, the number of tractors in Mexico had an increase of 8.7% annually. Link, (1985) cited by Masera,(1999)with this policy in the recurrently country only benefits the few manufacturers of tractors and implements, as well as farmers who own large tracts of land, as the offered machinery is profitable only for those properties.

2.-Subsidy Fuel Prices

During the seventies, the mechanization of agriculture was supported by fuel subsidies and credit subsidies as the number of tractors has increased steadily since 1982 but began to see the other side of the coin, indeed , once the official credit support was greatly reduced Villa Isa (1988),and González (1988) cited by Masera(1990) and that were removed fuel subsidies, the investment and operating costs for tractors rose steeply and mechanization entered in a period of crisis.

3.-Public Sector Participation in Agricultural Machinery Manufacturing

The first public sector involvement in the manufacture of agricultural machinery was held in the manufacture of agricultural implements "Industrial Mechanic" largely funded by the government, later became a cooperative state participation, beginning from 1935 operations, fabricated on equipped with high depreciation costs produced plows, seeders and then a single groove. The planning and operation were deficient because no directors working administration and authorities prepared without knowing the involved repairing manufacturing processes, and this originated specifically manufactures the only planned to produce agricultural implements not respond to the needs that motivated its creation. Gleason (2006).

Later in the country the state dabbled unsuccessfully in the manufacture of tractors through Siderurgica Nacional SA(SIDENA) tractor home with Soviet T-25 Vladimir, which produced more than 17,000 small tractors between 1970 and 1989.

Unfortunately not care about the service and supply of spare parts for these tractors which resulted in many of these end up unemployed for lack of spare parts.

4.-Setting Industry Standards and Standardization of Components

To develop agricultural mechanization in the country is required to farm machinery and equipment that is sold in the market is regulated by certain quality standards that ensure performance, performance and durability. These regulatory standards contemplate a process that begins with the application to the teams for testing and evaluation and, to be complete and successful, should conclude with certification thereof.

In response to this need for certification of agricultural machinery and equipment, the National Institute for Forestry, Agriculture and Livestock created the Certification of Agricultural Implements and Machinery (OCIMA), which will be responsible for carrying out the certification of such equipment, in accordance with Mexican law rules. With the participation of the main actors involved in the certification process and construction of agricultural machinery and equipment, the September 27, 2004, settled the Steering Committee of the OCIMA, thereby officially began operations this Agency. The chairmanship of this committee is formally represented by the Confederation of Foundations Produce (COFUPRO), the Vice Presidency by the National Agricultural Council (CNA), Section 113 of the CANACINTRA, the Mexican Association of Secretaries of Rural Development (AMSDA), the SAGARPA and INIFAP himself while delegationships are represented by non-governmental representative of the Commission of Product Systems, Case-New Holland of Mexico, Mexico Industrias John Deere, Agco Mexico, a representative of the manufacturer of attachments, the Antonio Narro Agrarian Autonomus University (UAAAN), the Autonomous University Chapingo (UACH) and the Mexican Association of Agricultural Engineering (AMIA). The Executive Secretariat is represented by the Director of OCIMA.

It was not until 2002 that the first country was established norm in regard to agricultural machines and drills specifically was the norm NMX_-O-168-SCFI-2002, later settled NMX standards for agricultural tractors are: Determination of the power to the PTO (NMX-O-169-SCFI-2002), determination of power and traction to the drawbar (NMX-O-203-SCFI-2004), determination of power and strength Hydraulic lifting the three-point hitch (NMX-O-207-SCFI-2004), booths and security frameworks (NMXO-181-SCFI-2003).

Later the following standards were certified: Corn Sheller (NMX-O-216-SCFI-2004) bean threshers (NMX-O-221-SCFI-2004) and seeders (NMX O 222-SCFI-2004). Ayala(2010).

5.-Provision of Research, Teaching, and Extension in Agricultural Machinery

In research by the National Institute of Forestry ,Agriculture and Livestock Research (Inifap) in Mexico, established programs for the improvement of animal drawn implements in experimental station in Cotaxtla, Ver. since the early eighties. Unfortunately there has been strong governmental support for the development and dissemination of these devices and their impact has been only local or regional .Masera (1990). In other aspects of agricultural machinery and implements are only a few investigations isolation and without the most important .It is more important this aspect in conducting thesis mainly in institutions that have teaching programs in the area which was initiated in 1976 by the National Autonomous University of Mexico, continued in 1979 Agrarian Autonomus Antonio Narro University and the University of Guanajuato and the last in 1983 Autonomus Chapingo University. Being the latter which currently has the three levels of teaching with a specialty in agricultural mechanization, undergraduate, master's and doctoral degrees.

The Autonomous University of Morelos with race engineer Agricultural Machinery and Equipment although late nineties will cancel, and the Faculty of Agronomy of the Autonomus University of Nuevo Leon. He taught agricultural engineering career from 1998 to 2006 with a specialty of farm power, which is the one that handles agricultural mechanization.

Inexplicably the Graduate College suspended not only expertise in agricultural machinery, three years after its inception in 1996, achieving only enrollment of 11 students, but was not a pioneer of teaching and research in this branch of agronomy as he corresponded, which gives an idea of the interest of the largest research center in the country as agricultural topics that relates the development of mechanization of our agriculture.

Small countries tend to have limited markets and developing countries generally have imperfect agricultural markets due to limited infrastructure, monopsonic exporting companies or government interventions. These countries are not able to generate enough demand to justify private sector research. For this reason, public sector intervention will have to play an important role in the generation and transfer of agricultural mechanics technology. The needs of low-income producers are generally ignored by private sector research. Either because they are not attractive enough production to justify the interest of producer associations, or because their production systems are quite different from those employed by large producers. Thus, the type of research in the products they can run is not suitable for the needs of low-income farmers. The public sector research should provide an alternative source and a type of alternative technology absorbing the costs of such research for the promotion of the private sector. Mechanical technologies have always been led by the private sector. Capital requirements, patents and trade secrets to the private sector have provided some comparative advantage. Success in these technology areas also depends on the relationship between technological development and macroeconomic policies such as industrial policy. For example, the development of the tractor and its parts in Brazil was collateral to the national strategy of developing a car industry and trucks. This industry started with a local adaptation of imported machinery, then produced parts and finished designing and producing the tractor.

It is an irrefutable fact that not been carried out in the country, in a systematic, research and development of mechanical technology for agriculture. It was cheaper to buy equipment and negotiate licenses manufacturing machines designed for the conditions of other countries .Ortiz(2002).

There is also a research institute in agricultural mechanization, are only attempts agricultural research in mechanical engineering unit INIFAP agricultural mechanization and teaching universities with undergraduate and graduate students in agricultural mechanization not be a body to coordinate and direct these efforts.

There is limited coordination between research institutions and industry agricultural machinery manufacturing, which has led to the development of national agricultural mechanical technology is a low-tech. The industry must recognize the important role of research institutions, take advantage of the experience, the infrastructure already created and linked with greater decision interdisciplinary working groups. This will allow you to extend and improve the range and quality of its products. Ortiz (2002)

Besides not having a research institute of mechanization in the country, research centers and development of metalworking industry are not interested in the design and development of new agricultural equipment, with rare exceptions. In our country, it is of second category or demeaning even to the researchers any matter related to the field, as if it were not priority for any researcher to focus on improving the productivity of our farmers.

Proof of this is that in our country there are research centers for everything except for agricultural mechanization, it is more important to study mathematics, optics, astrophysics, etc.. to support the introduction and development of technologies and machines that help with the country's agricultural development Negrete(2006),(2011),(2012),(2014).

In Mexico, are considered as priority tasks of modernizing agricultural policies holding and improving the social and economic status of the inhabitants of rural areas through increased productivity by promoting the mechanization of agricultural work the small-scale producers. However, there is a crucial factor inhibiting agricultural mechanization, there is no system of investigation for the development and improvement of agricultural machines.

The only project to respect is jointly Guanajuato University and Agricultural Tecnomec Company, SA de CV and is titled "Creating a research and design center of agricultural machinery", which was held with the support of the National Council of Science and Technology (CONACYT) and runs the center from December 15, 2009 in Aguascalientes, Mexico. on the premises of the company mentioned above. Anonymous (2011).

In Extension activity is completely void of agricultural machinery in the country.

6.-Public Support for the Training of Operators of Agricultural Machinery

In 1958 was created the Instructor Training Center of Agricultural Machinery in Chapingo, Mex. and run from 1959-1972.

Also in the late seventies began education in the area of agricultural machinery in some schools a high school level of the National College of Professional Technical Education (CONALEP) with racing terminals Professional Agricultural Machinery Technician and Professional Maintenance Agricultural machinery Technician but were canceled in 1984 having graduated just two generations, and some centers Bachelor of Agricultural Technology (CEBETas) with dual Bachelor studies Agricultural Machinery Technician, but as this misguided mentality of those who have been and now day are responsible for this situation of lack of professionals in this area, in the Ministry of Education who came to the degree of cancellation.

Currently only technical career is taught in agricultural machinery in CET of the agriculture and livestock high school of de Guerrero state depends on the Secretary of Agriculture, Livestock , Rural Development , Fishing and Nutrition. (SAGARPA) and in September 1976 when the school began its operation to create the Regional Education Center for Agricultural and Forestry (CREAM) located in Huitzuco , Gro. standard level , teaching specialties Oilseeds Technician in Forest , in coffee production and Agricultural Machinery ; changing its name in 1977 by Training Center in Agricultural Mechanization (CCMA) and providing the specialties of Agricultural Technical and Agricultural Machinery ; and in 1984 changed to its current name as Technical Studies Center (CET) providing specialty Technical Agriculture, Agricultural Machinery Technician and incorporated in 2002 , specializing in Agricultural Technical Computer .

7.-Government plans hire tillage farm machinery and other agricultural operations.

In the country for some time in the seventies to late eighties the parastatal worked Ejidales Services, SA (SESA) who served maquila rental and agricultural works, currently in some states local governments still provide this service to farmers

8.-Legislation Regarding the Percentage of Domestic Parts Content of Foreign Agricultural Machinery

Due to the importance of acquiring the import of agricultural tractors until 1965, the federal government developed a policy whose purpose was the national integration of the products that were imported primarily for the automotive industry and could produce parts for agricultural tractors. The Secretariat of Industry and

Commerce urged importers of agricultural tractors to submit manufacturing programs on the following basis:

- a)., Reaching 60% of national integration at least in the direct cost of production
- b).-That the companies were willing to have majority Mexican capital
- c).-That the cost of technical assistance they received from foreign companies would not exceed 3% of net sales
- d).-Accept that the retail prices of tractors in Mexico, did not exceed 25% of revenue in the country.

The four brands that manufacture and presented programs that meet the requirements set by the Ministry of Industry and Trade were, in 1966 International Harvester and John Deere in 1967 and joined National Steel Massey Ferguson, SA .Gallardo (1977).

Based on the Law on Promotion of New and Necessary Industries, tax exemptions were granted in exchange for meeting certain requirements, including that of most national capital. This was met by John Deere SA through the acquisition of a portion, 25% for the group Banamex, leaving 26% available to domestic investors. Companies International Harvester and Massey Ferguson, conducted each, agreements with the Ministry of Finance, creating a trust for the majority of its shares with Mexican financial companies in the private sector, to be offered for sale to the public.

9.-Provision of Evaluation, Testing and Certification of Agricultural Machinery

It is until 1999 that the Mexican government requested the government of Japan with Type Technical Cooperation Project in order to introduce and strengthen a uniform system of testing and evaluation of agricultural machinery by an official institution. The project is named National Center of Standardization of Agricultural Machinery, and was operated for five years jointly by JICA, the National Institute for Forestry, Agriculture and Livestock (INIFAP) and the Directorate General of Public Works Agriculture of the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food. Takao (1999). And in 2004 it created the Certification Agency implements and agricultural equipment(OCIMA).

In Mexico even if Japan supported the operation began and now has running the test center for agricultural equipment (CENEMA) and certifies tractors and farm equipment is not required by law to certify as Nebraska law requires manufacturers to certify agricultural tractors and machines.

The OCIMA headquarters is located in the premises of the Valley of Mexico Experimental Research Center under the Central Regional, Km 18.5 Carretera Mexico-Lecheria , Texcoco, State of Mexico.

The Certification Agency Agricultural Implements and Machinery (OCIMA) is responsible for carrying out the formalities required for the issue of agricultural machinery and equipment that meets the requirements specified in the respective certification schemes.

From 2005-2011, the OCIMA awarded 93 certificates to 82 different models of tractors. The difference between the number of certificates issued and the number of models, is that some teams have been recertified. The teams were tested certified testing laboratory, with reference NMX-O-169-SCFI-2002 "Tractor - power to the PTO" and Standard Tractor - Power and hydraulic lifting force to engage in the three points lift capacity to 610 mm. NMX-O-207-SCFI-2004. In addition to the above rules, the ocima certified rollover protection structures as NMX-O-181-SCFI-2003 "Tractor - cabs and protection frames of agricultural and forestry tractors-specifications and test method (static test) ". The purpose of the cabin and / or structure is to maintain a buffer zone for the operator in case of rollover.

Currently there are 68 models of tractors with a power certificates to the "drive" that ranges from 24.6 to 130 hp or horsepower (hp horse-power, for its acronym in English), equivalent to 18.3 kW to 96.98 kW (kilowatt) Ayala 2010.

3. Agricultural Mechanization Policies need to Apply in the Country to Promote the Same

1.-Legislation on the obligation of the manufacturer to maintain a stock over the average life of farm machinery

As example of this is the Nebraska law and forcing manufacturers to test their tractors and publish the tests, also had to have replacement parts. This rapid mechanization momentum law in the United States because farmers were protected from the vagaries of the manufacturers who have manufacturing many models and not comply with the rules of evidence and also failed to ensure the supply of spare parts.

2.-Promotion of national agricultural machinery industry

This industry should be encouraged because according to Ortiz (2002) .The least developed branch of capital goods in Mexico is the equipment and non-electrical machinery, and within this sector of agricultural machinery and equipment for agribusiness is to less developed. This is due to:

- 1.-A production of tractors and highly fragmented in a market whose size and speed of expansion does not allow the achievement of economies of scale.
- 2.-The overuse of technology and imported parts that significantly raises production costs.
- 3.-The low returns achieved by users of agricultural machinery, for lack of expertise in their operation, maintenance and administration.
- 4.-The little or no supply of agricultural equipment and implements designed for the particular conditions of many crops, a lack of development, national technological innovation or adaptation.

Domestic manufacturers should be aware of the need for development and improvement of agricultural machines, whose ultimate goal is to obtain a useful and acceptable to the farmer and can be manufactured at a profit.

This is important for the government to require research institutions to establish the number and quality of research, concerning the use of agricultural implements and their effects on the working environment, and that the results can be applied to the development of a particular class or group of tools or machines.

Since 2006 it has started importing Chinese tractors lower power source that assemblies in the country, this relieves some of the need for tractors in the Mexican countryside.

Another action would promote the creation of the Association of Manufacturers and Traders of Agricultural Machinery.

Most of the agricultural implement manufacturers in the so-called unorganized sector consists of small companies operating locally and there are no data on production levels, sales, etc..

These companies are often small workshops that manufacture products with low technological component at very low price, making entry difficult for companies in the organized sector.

To take the path of industry recognition of agricultural machinery manufacturing is necessary for full participation by an organization, and this agency representative must possess the virtues of generating union activities not only training but with complete database, doing activities with this merger also symbolizes overcoming the division between manufacturers and importers, meaningless in a global market, bearing the following functions;

Lumping farm machinery manufacturers defending their general interests and representing them before public and private agencies.

Encourage and coordinate the production and marketing of agricultural and agro-industrial equipment.

Promote and support research, technological development and the improvement of quality in this sector.

The association must be nonprofit and must appeal to its members (all manufacturers of agricultural machinery and its components) in order to promote quality, technological development, training of their workers, the implementation of regulations and promote export to third countries.

The great challenge is to prepare for this sector of the national economy for this organized looking to help the country's agriculture to its insertion in the competitive globalized world.

Significant is the fact that the Club of Bologna which has 75 members from 40 countries on five continents, promoting agricultural mechanization worldwide UNACOMA is sponsored by the Union of Italian manufacturers of tractors and agricultural machines.

This gives us an idea of what you can accomplish an association of manufacturers committed to the development of their country and that we should take such manufacturers associations other agricultural machinery countries have given a strong impetus to the mechanization of their agriculture and then strengthened and can generate foreign exchange by exporting their agricultural machines.

Another association of manufacturers with the same interests than Italy is Argentina is to lower achievement although it has members not as powerful as the CNH group.

4.-Creation of the Department of Agricultural Machinery in Agriculture Secretary

From the period of President Obregon think of Agricultural Machinery Department under the Ministry of Agriculture and Development, the department is dedicated to bring the United States agricultural machinery in large quantities imported implements were gradually sold to farmers with facilities payment and affordable. Stocks were not renewed, the action of the department of agricultural machinery progressively faded when extinction was agreed in 1928 and he had no storage but features a small item of machinery, incomplete and in poor condition Gleason (2006).

Inexplicably never existed more agricultural machinery department since extinct for over 83 years, with a notorious lack of this if only to keep statistics of the existence of the park tractors and other agricultural machinery, as there is a lack of consensus.

This does not happen Negrete (2011)(2012) it would be one of the functions of the department of agricultural machinery to establish a common statistical system so that the industry can depend on reliable figures for its determinations.

The other functions would
Coordinate sector stocks

Propagate the use and proper management of agricultural machines in the country

Organisation of events of all kinds to disseminate agricultural mechanization
Assist in the creation of the professional association of agricultural mechanization to cooperate with the department in all functions incumbent.

Final Considerations

In politics, when the rules are clear and open and fair competition, the results are usually positive and favorable impacts shed therefore agricultural mechanization policies should be analyzed deeply, for a century has passed and this continues as at the beginning of this, in most agricultural production units in the country, by should therefore implement clear policies and insert them into the national development plan.

You should also disappear the discrepancy between agricultural policy and industrial policy, which must converge in agricultural mechanization policy.

The branches of intensive labor and technology, particularly the sectors producing capital goods can not boost the economy, internal growth and external growth either exporter, as they are major consumers of imported inputs.

The conditions in Mexico are not ideal for longer sustain growth model based on exports, you can implement an industrial policy that promotes domestic market from the first branches of economic activity, supplier of basic inputs, which generate most of the jobs are located many companies and responds quickly and efficiently to changes in the sectoral composition of intermediate and final demands, with more jobs and more product.

Only with government incentives (in the form of spending or tax exemption), you can achieve the basic input suppliers branches generate joint industrial fabric and that will determine how far the industry's export reorientation contributes to the expansion high and sustained throughout the economy, leaving behind the recurrent currency crises.

It must articulate a technology policy that considers both industrial policy and agriculture because it depends on the policy of mechanization, and you can not continue as before, in that both policies are and have separate approaches, and that perspective is not elementary can be done as they are very much intertwined, and what you have to do is to implement a technology policy that considers both sectors, for the benefit of both, and which can not exist without each other as we have tried so far.

That is industrial policy should be directed primarily to the production of capital goods primarily in the following phases;

1. - Production of capital goods such as machine tools primary

This ensures that industrial capital goods production will be independent of fluctuations in foreign as devaluations, etc..

2.-production of capital goods for basic industries such as agriculture, construction and transport as these are the backbone of the country's economy.

I mean this is based on is part of the strategy for the overall development of the country's economy since for example the production of tractors is essential for the sectors mentioned as tractors can be used for agriculture, construction and transport with slight modifications

In addition to defining an industrial development policy is not clear that such a policy must be consistent with agricultural policies because one depends on the other is that they are very interrelated, since agriculture provides raw material to a part of the industry mainly agribusiness and back part of the industry provides inputs for the modernization of agriculture, metallurgy industry provides mechanical agricultural equipment to improve productivity of agriculture, the chemical industry provides agrochemicals, such as fertilizers, insecticides, herbicides etc.

Agricultural machines are capital goods that increase productivity of agriculture on the grounds that capital goods have the property of being diffusers technological progress, because according Mialhe (1996) in the world of so called capital goods agricultural machines differ from other segments for a special reason, your product native metal-mechanical processes of manufacture, is fundamental to increasing the productivity of agricultural production systems. That is agricultural mechanization policy that is not backed by an industrial policy and an agricultural policy that give sustenance, is doomed to failure, as is what happened in most countries developing, while condemning farmers are not progressing, wherein when the policy has existed myopia that have been developed to try to separate the agriculture industry not carried too far, the first thing is to understand can not exist without the other, and agricultural mechanization is the result of both. Finally hoped that this work will contribute to decision-makers in the country reconsider and begin the study for the implementation of a law to promote agricultural mechanization And significantly reduce poverty levels in rural Mexico. Negrete (2011),(2012),(2013).

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