#### **THE PACIFIC FOOD SYSTEM OUTLOOK 2006 – 07**

#### RISING ENERGY COSTS: CONSEQUENCES FOR THE REGION'S FOOD SYSTEM

# PANEL 4: PERSPECTIVES FROM NORTH AMERICA, SOUTH AMERICA AND OCEANIA

- 1. EXTERNAL OIL INCOME AND THE MEANING FOR THE MEXICAN ECONOMY
- 2. VALUE OF OIL EXPORTS VS GNP AND FEDERAL GOVERNMENT BUDGET
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- 6. AGRICULTURAL EXTERNAL TRADE OF MÉXICO

CONCLUSIONS

### THE PACIFIC FOOD SYSTEM OUTLOOK 2006 – 07

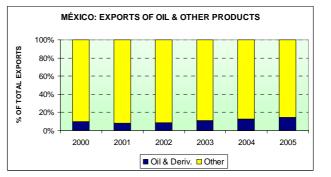
#### RISING ENERGY COSTS: CONSEQUENCES FOR THE REGION'S FOOD SYSTEM

## PANEL 4: PERSPECTIVES FROM NORTH AMERICA, SOUTH AMERICA AND OCEANIA

## • 1. EXTERNAL OIL INCOME AND THE MEANING FOR THE MEXICAN ECONOMY

Crude oil represents the main export product of Mexico. In 2000, the Mexican sales of this hydrocarbon represented the 9,7% of the value of the Mexican total exports; whereas for 2005, this percentage increased at 14,6% of the total sales to the world.

Year	Oil & Deriv.	Other
2000	16,041	150,080
2001	12,594	146,185
2002	14,273	146,773
2003	18,407	146,359
2004	23,371	164,627
2005	31,200	182,511

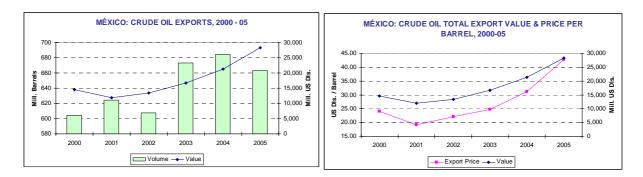


The oil exports and their derivatives increased from 16.040 MDD in 2000 to 31.200 million dollars in 2005, giving an Annual Growth Average Rate (TMAC) of 14,2%. On the other hand, the imports also had an increase, from 5,002 million dollars in 2000, to 11.346 million dollars in 2005, showing TMAC of 17.8%. The accumulated commercial balance in this period registered a surplus of 78,198 million dollars.

Year	Exports	Imports	Balance	MÉXICO: OIL AND DERIVATIVED PRODUCTS EXTERNAL TRADE, 2000-05
2000	16,041	5,002	11,038	
2001	12,594	4,993	7,602	<u> <u> <u> </u> <u> </u> <u> </u> 25,000</u></u>
2002	14,273	4,103	10,171	g 20,000
2003	18,407	5,269	13,138	10,000
2004	23,371	6,976	16,395	5,000
2005	31,200	11,346	19,854	2000 2001 2002 2003 2004 2005
				Exports Imports Alance

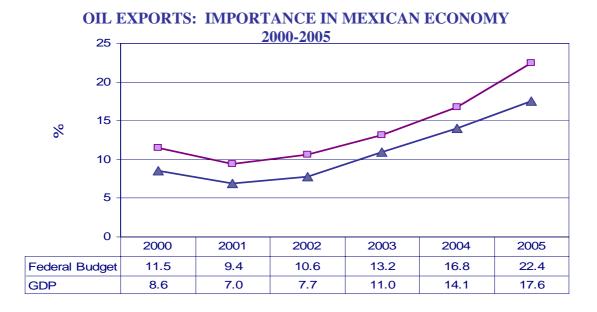
In 2000 the value of the oil exports increased from 14.553 million dollars to 28.334 million dollars in 2005, registering a TMAC of 14,3 percents in period 2000-2005. The price average of the Mexican crude oil exports had also an increase, from 24,07 U.S. DIs./Barrel in 2000, to 42,72 U.S./Barrel DIs. in 2005. During the period of reference the volume of the petroleum exports displayed a TMAC of 1.9%. (An oil barrel contains 42 gallons -58,98 litters).

Year	Volume	Value	Expo. Price
	(Mill Barrels)	(Mill US Dls)	(US DIs/Barr.)
2000	605	14,553	24.07
2001	624	11,928	19.11
2002	608	13,392	22.04
2003	673	16,676	24.78
2004	685	21,258	31.05
2005	663	28,334	42.72



# • 2. VALUE OF OIL EXPORTS VS GNP AND FEDERAL GOVERNMENT BUDGET

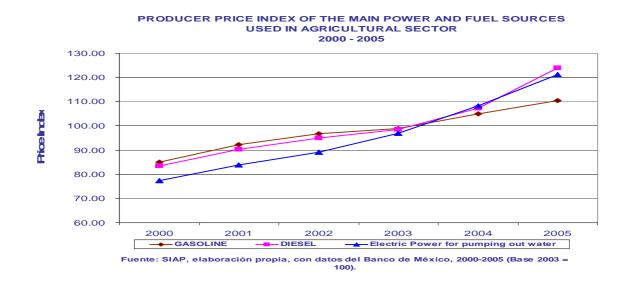
The income share from oil exports in Mexican economy has been increasing. In 2000 they represented 11.5 % of the Federal Budget, whereas in 2005 their contribution to this one was 22 %. In other words, they increased in 10.5 percentage points. Similar trend is observed by respect of the Gross Domestic Product (GDP), in which the share of the oil exports in 2000 meant 8.6 %, while in 2005 was 22 %. The average contribution in the GDP was 11 % during 2000-2005.



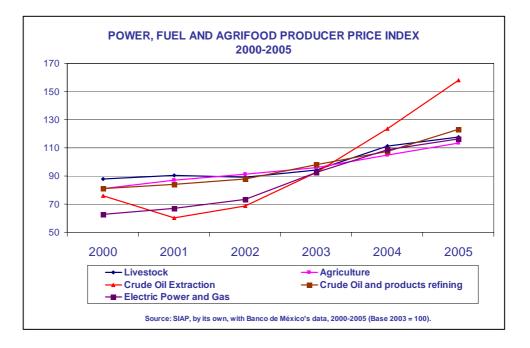
Source: SIAP, by its own, with Presidential Inform data.

## **3.** ENERGY PRODUCER PRICE INDEX AND THEIR INCIDENCE ON THE AGRICULTURAL COSTS

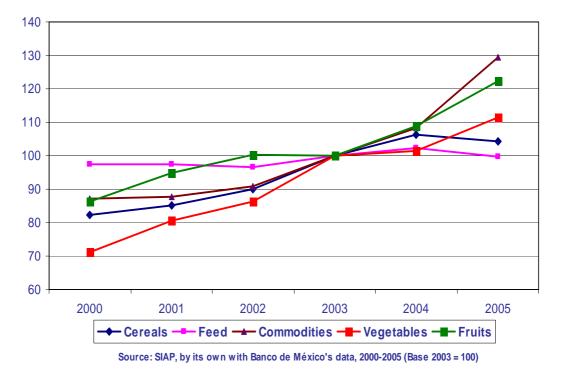
The Producer Price Index of the main power and fuel sources used in the primary sector (from the base year 2003) presented the following behavior: gasoline had an annual average increase of four points; for diesel was ten percentage points and electric power for pumping out water for agricultural uses had twelve points.



We observed that the growth of crude oil and products refining producer price index were over other group indexes of this graph, that increased 66 percentage points en percentage between 2003 and 2005. The index with the smaller growth was relative to agriculture, registering an increase of 18 points in the same date.

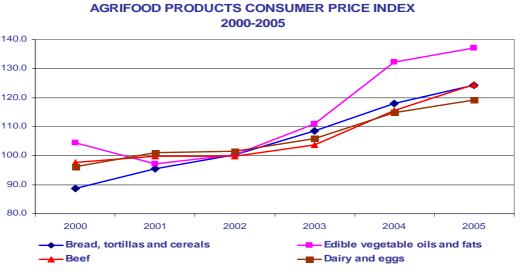


In the analysis period, the group of agricultural products whose index price increase more than the others was commodities, that grew from 2003 to 2005 29 percentage points; following of the group of vegetables, that registered relatively stable prices in 2001 and 2002. During 2003–2005 had an increase of 11 points; the group of products with greater stability are the one of the feed, which practically remains stable from 2000 to 2005.



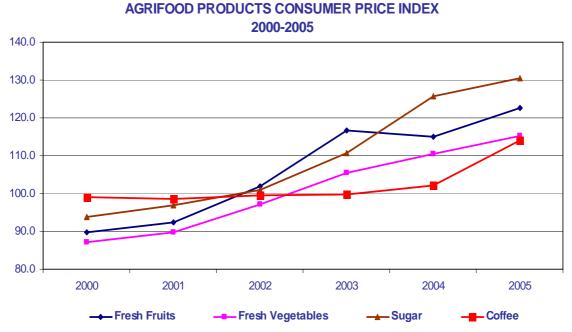
## AGRICULTURAL PRODUCTS PRODUCER PRICE INDEX 2000-2005

In this graph it is observed that the price index of edible vegetable oils and fats increases more than the other groups, because the oily seeds, in a huge magnitude must be acquired in foreign markets, to be processed domestically. Whereas the product group from cereals and the one of dairy products and eggs, have smaller growth, partly due to the pressures of the similar product imports.



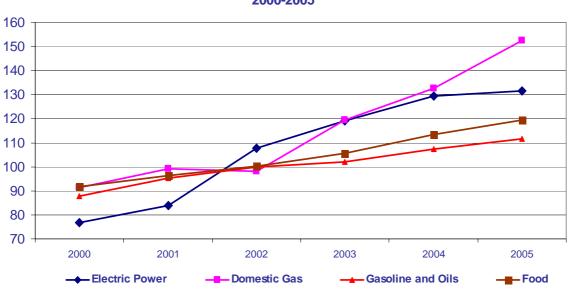
Source: SIAP, by its own, with Banco de México data, 2000-2005 (Base 2a.quincena junio 2002 = 100)...

CPI of coffee stayed stable during 2000-2004; nevertheless, for 2005 it grows in 14 percentage points, in spite of the previous thing, it continues being the product that increased in smaller proportion in the period of reference. In counterpart, the CPI of sugar registered a continuous growth through the analysis period. The index of fruits registered the higher growth, although a reduction from 2003 to 2004 due to the good harvest obtained in that cycle. Similar trend observes vegetable index.



Source: SIAP, by its own, with Banco de México's data, 2000-2005 (Base 2a. Quincena de junio 2002 = 100).

Consumer price indexes of domestic gas and electric power were over than food, in 32 and 12 percentage points; at the same time, gasoline had another behavior, because its consumer price index increased only about 10 percentage points between 2002 and 2005.



POWER, FUEL AND FOOD CONSUMER PRICE INDEX 2000-2005

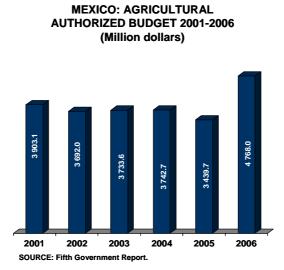
Source: SIAP, by its own, with Banco de México's data, 2000-2005 (Base 2a. Quincena de junio 2002 = 100).

#### 4. SAGARPA'S BUDGET AND AGRICULTURAL ENERGY SUBSIDIES

#### AGRICULTURAL AUTHORIZED BUDGET 2001-2006

Average agricultural authorized budget in 2001-2006 is 3.9 billion dollars. The agricultural authorized budget in 2001 was 3.9 billion dollars and decline -5.4 percent in 2002. In 2003 the authorized budget up 1.1 percent to reach 3.7 billion dollars, but 4.3 percent less than 2001.

In 2004 the budget was similar to previous year and 2005 down -8.1 percent and the lowest in the analysis period. In 2006 the economic conditions are more favorable in Mexico, in consequence the Congress authorized the largest budget in the period, increased 38.6 percent respect the previous year, and 22.2 percent up 2001.

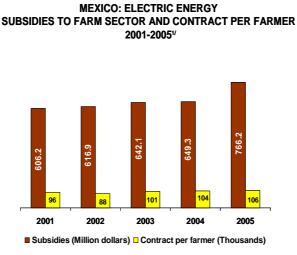


#### ELECTRIC ENERGY. SUBSIDIES TO FARM SECTOR AND CONTRACT PER FARMER

The economics government in agricultural has been subsidy the farmers activities with low rates in energy through the Electric Federal Commission and the Light and Power Company.

Average volume and subsidies in 2001-2005 is 7458 Gigawatts-hour (4.6 percent of average whole sales of energy in this lapse) and 6.6 thousand dollars per farm, respectively. Average farmer in the same period is 100 thousand.

In the other hand, the subsidies have been incremented 6 percent per year among 2001 and 2005 and the farmers' number increased 2.5 percent.



SOURCE: Fifth Government Report

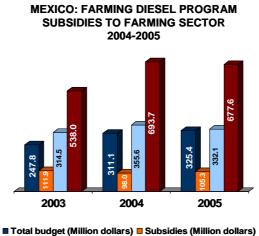
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#### FARMING DIESEL PROGRAM. SUBSIDIES TO FARMING SECTOR

To promote productive development, Mexico's government implement farming diesel program, like support income farmers.

Average budget 2003-2005 was 295 million dollars, and the subsidies were 105 million dollars, equivalent to 636 million liters.

Even though number liters and farmers increased among 2003-2005 in 2.8 and 12.2 percent annual, respectively, subsidies down 3 percent each year in the same period.



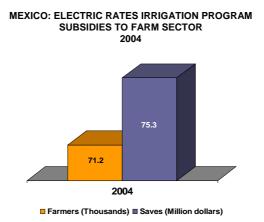
Farmers (Thousands)
 Liter (Million)

#### ELECTRIC RATES IRRIGATION PROGRAM. SUBSIDIES TO FARM SECTOR

SOURCE: ASERCA reports.

Additional program implement to actual administration are the subsidies electric rates irrigation to farming sector. This subsidies impact the cost production of grains and vegetables; the extension land benefit is estimated in 3 million hectare irrigation.

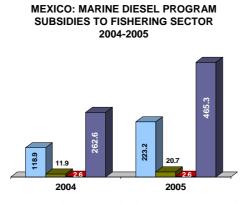
This program began 2004 and attended 71.2 thousand farmers; the saves were 75.3 million dollars; average per farmer was 1.1 thousand dollars.



SOURCE: Fifth SAGARPA Activities Report.

#### MARINE DIESEL PROGRAM. SUBSIDIES TO FISHERING SECTOR

The object this program is the same that farming diesel program: support income fishers. In 2005, total budget increased 88 percent, liters raised 77 percent and subsidies up 74 percent. Number ships attended were the same in 2004 and 2005.



Total budget (Million dollars)
 Subsidies (Million dollars)
 Ships (Thousands)
 Liter (Million)

SOURCE: ASERCA reports.

#### • 5. AGRICULTURAL ENERGY COSTS IN MÉXICO

In Mexico, the production is realized under different technological characteristics:

- a. **BMF** = Pump irrigation, use of improved seed, use of fertilizer;
- b. **TCF** = Temporary, use of creole seed, use of fertilizer;
- c. **TMF** = Temporary, use of improved seed, use of fertilizer;
- d. **GMF** = Irrigation, use of improved seed, use of fertilizer

The cost of the energetic ones depends on the technological package that is in use. For example, the package BMF has a major cost because electric power and diesel are consumed. In the following chart is registered the share of energetic costs of different commodities inside the total investment.

Commodities	Technological Features	Share Regional Electric Power Costs in Total Investments by Product (%)	Share Regional Diesel Costs in Total Investments by Product	Share Regional Energy Costs Total Investments (%)
Grains				
Corn	BMF	6.4	11.5	17.9
Sorghum	BMF	7.4	8.3	15.7
Wheat	BMF	6.6	8.9	15.5
Soybean	GMF	0.0	11.0	11.0
Corn	TMF	0.0	12.0	12.0
Sorghum	TMF	0.0	7.2	7.2
Fruits and Vegetables				
Avocados	BMF	0.9	6.1	7.0
Lemons	BMF	8.6	0.0	8.6
Mangoes	TCF	0.0	12.2	12.2
Oranges	TMF	0.0	6.9	6.9
Potatoes	BMF	2.5	5.2	7.7
Tomatoes	BMF	2.2	6.4	8.6

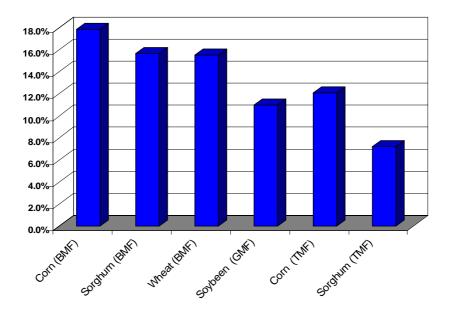
## SHARE OF REGIONAL COSTS IN TOTAL INVESTMENTS BY COMMODITY AND TECHNOLOGIC FEATURES 2005

#### Source: SIAP-SAGARPA, MÉXICO

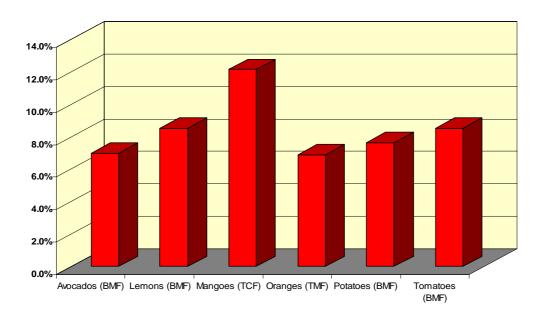
In this one is observed that the share of regional energy costs in commodities production showed in irrigation of pumping in the total investment is major that of the costs that do not consume electric power.

Nevertheless, also is observed that the participation of the costs derived from the consumption of diesel is major than that of electric power.

#### SHARE OF REGIONAL ENERGY COST IN TOTAL INVESTEMENT BY PRODUCT AND TECHNOLOGICAL FEATURES \* 2005



SHARE OF REGIONAL ENERGY COST IN TOTAL INVESTEMENT BY PRODUCT AND TECHNOLOGICAL FEATURES \* 2005



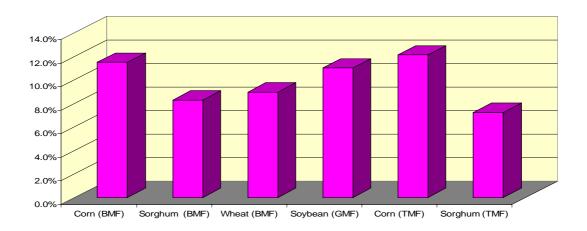
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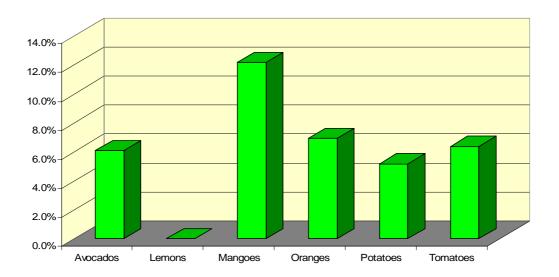
Source: SIAP / SAGARPA, MÉXICO.





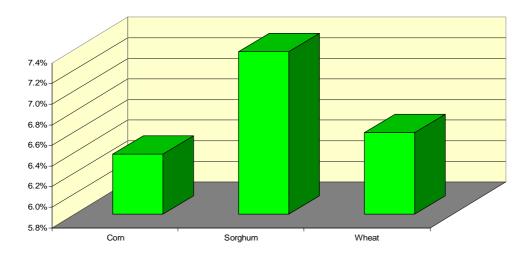
Source: SIAP / SAGARPA, MÉXICO.

## SHARE OF REGIONAL DIESEL COST IN TOTAL INVESTEMENT BY PRODUCT 2005



Source: SIAP / SAGARPA, MÉXICO.

#### SHARE OF ELECTRIC POWER COST BY PUMP IRRIGATION INVESTMENT BY PRODUCT 2005

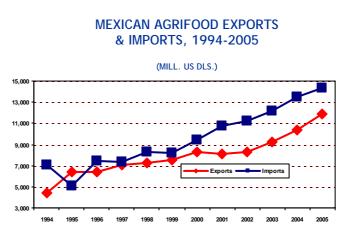


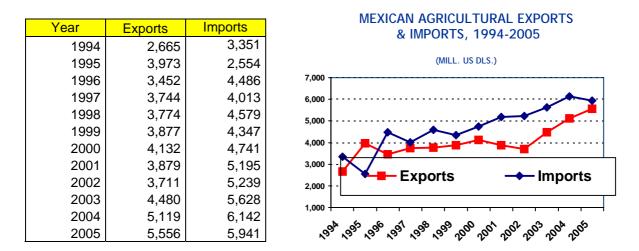
Source: SIAP / SAGARPA, MÉXICO

#### • 6. AGRICULTURAL EXTERNAL TRADE OF MÉXICO

The agrifood trade balance of Mexico with the world in period 1994-2005 showed an accumulated deficit of 19.424 million dollars. In 1995 our country registered a surplus of 1.377 million dollars. Spite of this deficit, the Mexican exports displayed an Annual Growth Average Rate (TMAC) of 9,3% in this period, whereas the TMAC for imports was of 6,6%.

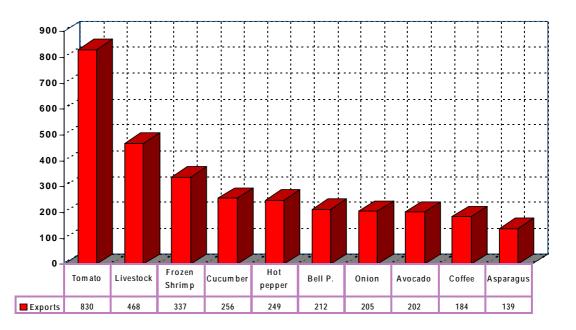
Year	Exports	Imports
1994	4,439	7,075
1995	6,410	5,033
1996	6,427	7,400
1997	7,089	7,323
1998	7,283	8,252
1999	7,541	8,229
2000	8,269	9,430
2001	8,125	10,789
2002	8,259	11,194
2003	9,225	12,206
2004	10,388	13,503
2005	11,856	14,293





Mexico is one of the most important agrifood and fisheries exporters around the world. The main products exported by México in value terms during the period 2001-2005 are: tomato: 830 million dollars; livestock: 468 million dollars; frozen shrimp 337 million dollars; cucumbers and chili peppers with 256 and 249 million dollars respectively.

#### MÉXICO: PRINCIPAL AGRICULTURAL EXPORTS



(VALUE - MILL. US DLS - AVG. 2001-05)

On the other hand, the feed grains and oilseeds are the highest agricultural imports for México, during the period 2001-2005 the main imported products are: soybeans: 973 MDD; corn: 548 MDD; wheat: 537 MDD; cotton neither carded or combed: 503 MDD, and sorghum: 437 MDD.

MÉXICO: PRINCIPAL AGRICULTURAL IMPORTS

1,000 900 800 700 600 500 400 300-200 100 0 Broken Wheat Cotton Soybean Corn Sorahum Grapes Apple Rice Pears corn 🗖 Im ports 973 548 537 503 437 265 153 115 95 66

(VALUE - MILL. US DLS - AVG. 2001-05)

- CONCLUSIONS
- CRUDE OIL SHARES ALMOST 15% OF THE MEXICO'S EXPORTS TOTAL VALUE AND MORE THAN 22% OF THE FEDERAL BUDGET, DUE TO IT'S INCREASING PRICE
- THE AVAILABILITY OF THESE RESOURCES HAVE ALLOWED MEXICAN GOVERMENT TO RAISE IT'S EXPENDITURES ON RURAL SECTOR, INCLUDING SUPPORT PROGRAMS FOCUSED IN ENERGY COSTS
- ENERGY SUBSIDIES ON AGRICULTURE HAVE REDUCED THE IMPACT IN COSTS, AS SHOWN IN FOOD CONSUMER PRICE INDEX, WHICH HAS INCREASED LESS THAN THAT OF ELECTRIC POWER AND GAS
- THESE PROGRAMS COVERS PRODUCTS SOLD IN THE DOMESTIC MARKET (GRAINS), AS WELL AS EXPORT PRODUCTS (FRUITS AND VEGETABLES)
- IN BOTH CASES, ENERGY SUBSIDIES HAVE STRENGTHEN COMPETITIVENESS OF MEXICAN PRODUCERS





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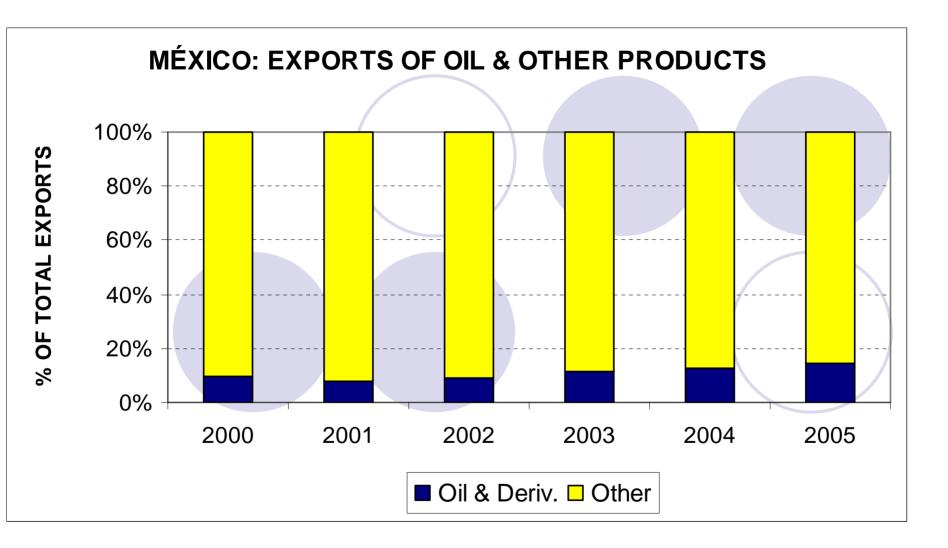
JUAN MANUEL GALARZA MERCADO

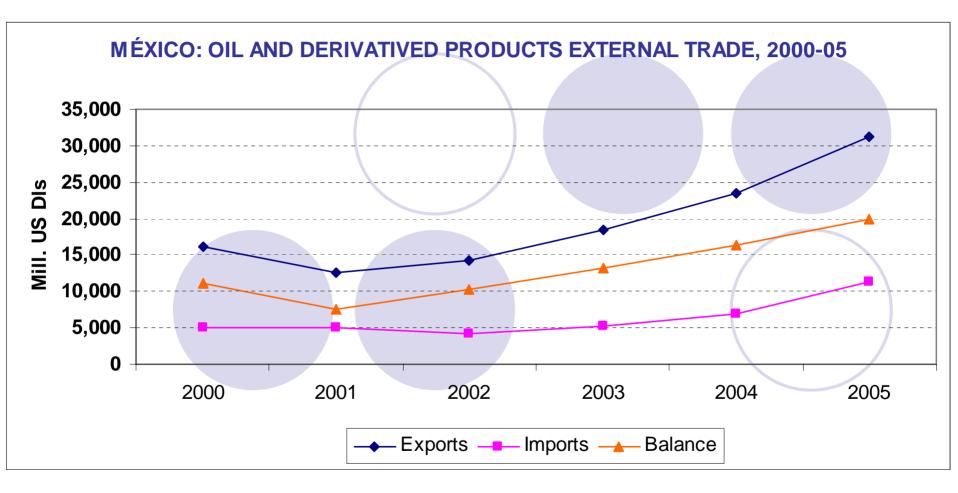
SINGAPORE. MAY 17-19, 2006.



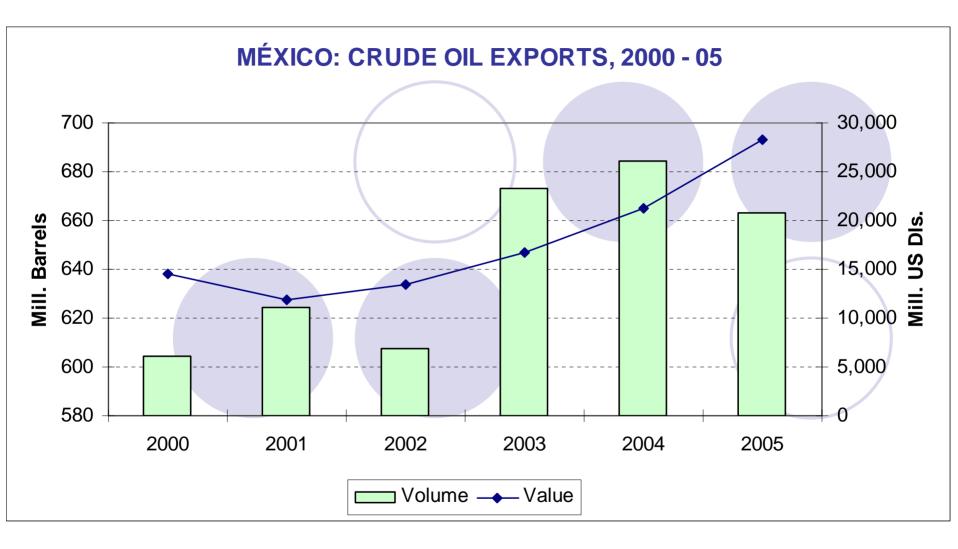
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- CONCLUSIONS

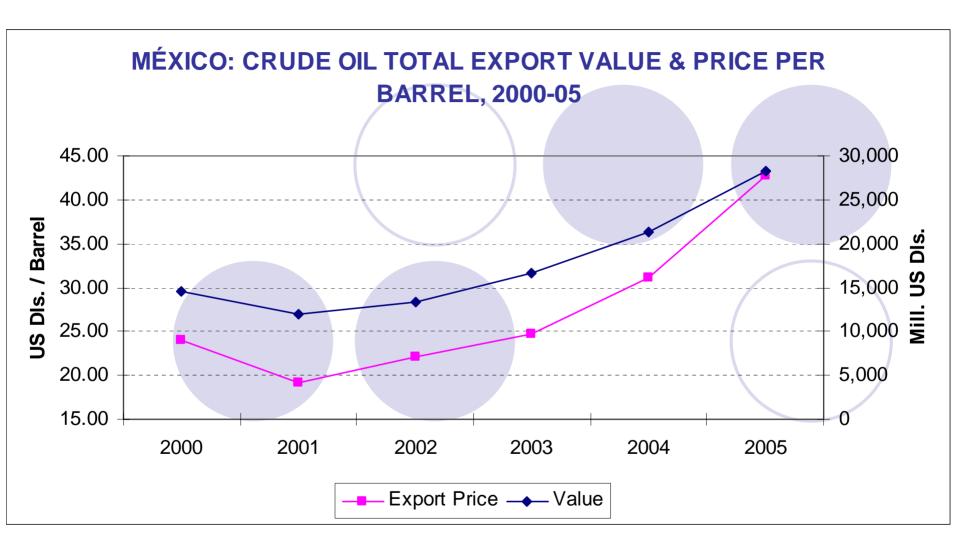
# EXTERNAL OIL INCOME AND THE MEANING FOR THE MEXICAN ECONOMY



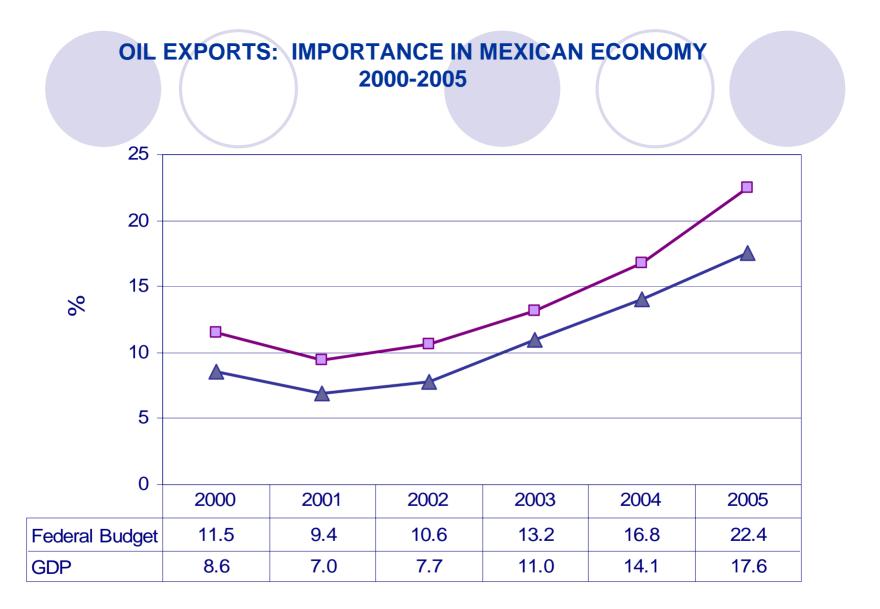


Source: Banco de México and Secretary of Economy.





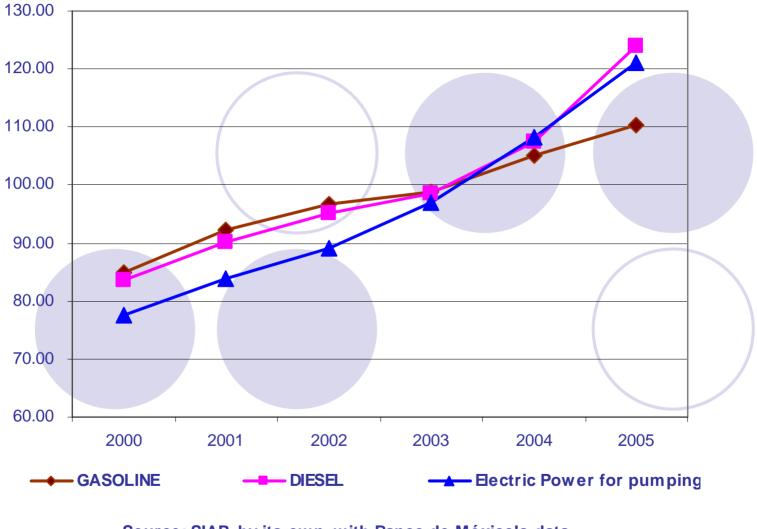
# VALUE OF OIL EXPORTS VS GNP AND FEDERAL GOVERNMENT BUDGET



Source: SIAP, by its own, with Presidential Inform data.

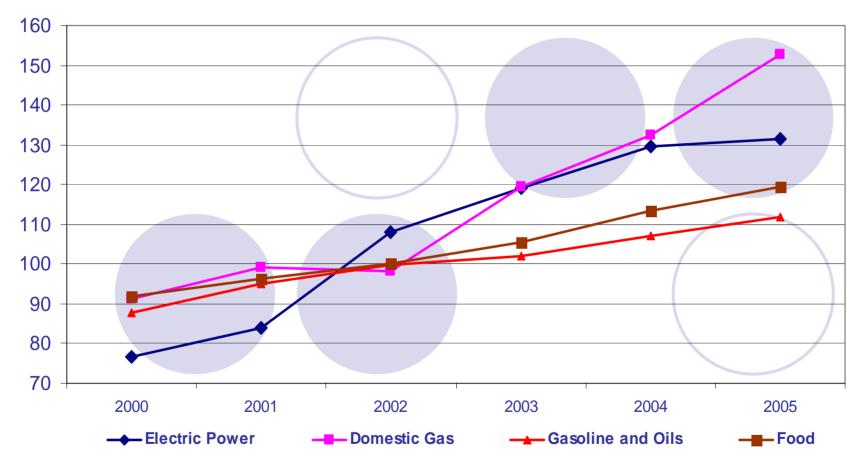
# ENERGY COSTS AND THEIR INCIDENCE ON THE AGRICULTURAL COSTS

#### PRODUCER PRICE INDEX OF THE MAIN POWER AND FUEL SOURCES USED IN AGRICULTURAL SECTOR 2000 - 2005



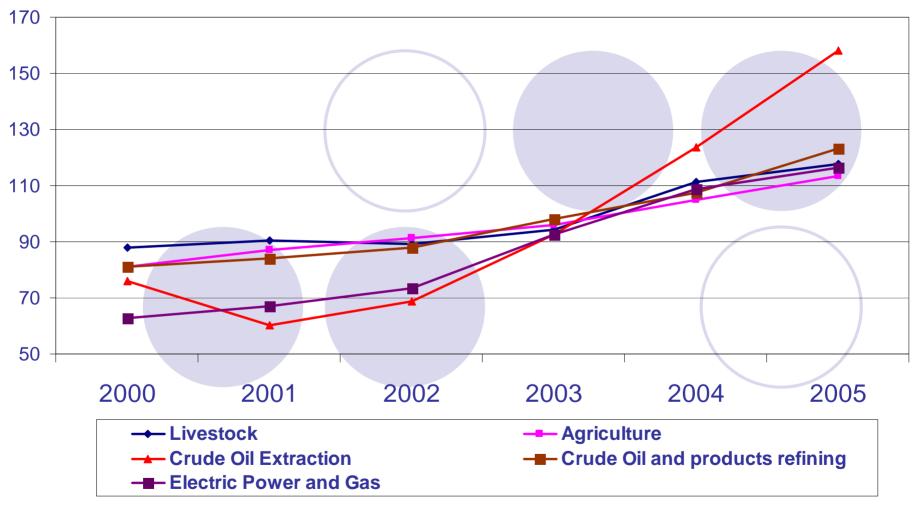
Source: SIAP, by its own, with Banco de México's data, 2000-2005 (Base 2003 = 100).

# POWER, FUEL AND FOOD CONSUMER PRICE INDEX 2000-2005



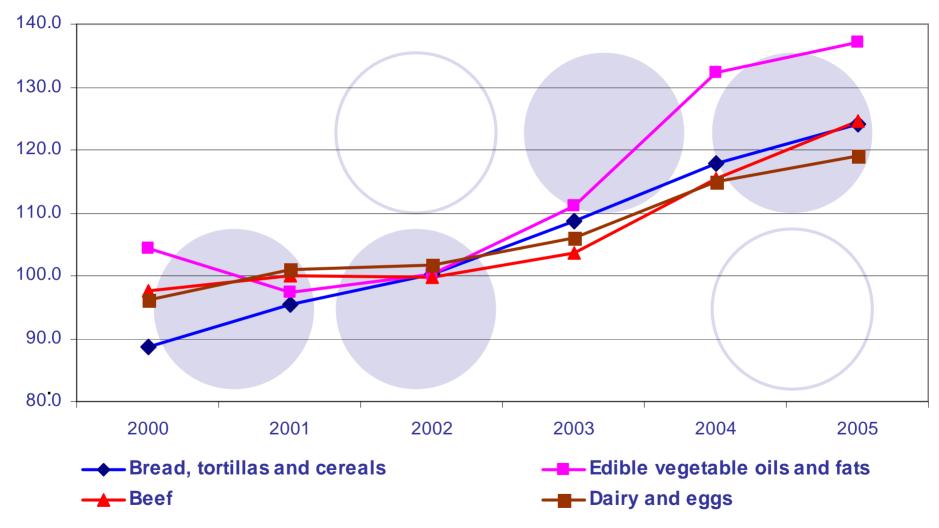
Source: SIAP, by its own, with Banco de México's data, 2000-2005 (Base 2a. Quincena de junio 2002 = 100).

# POWER, FUEL AND AGRIFOOD PRODUCER PRICE INDEX 2000-2005



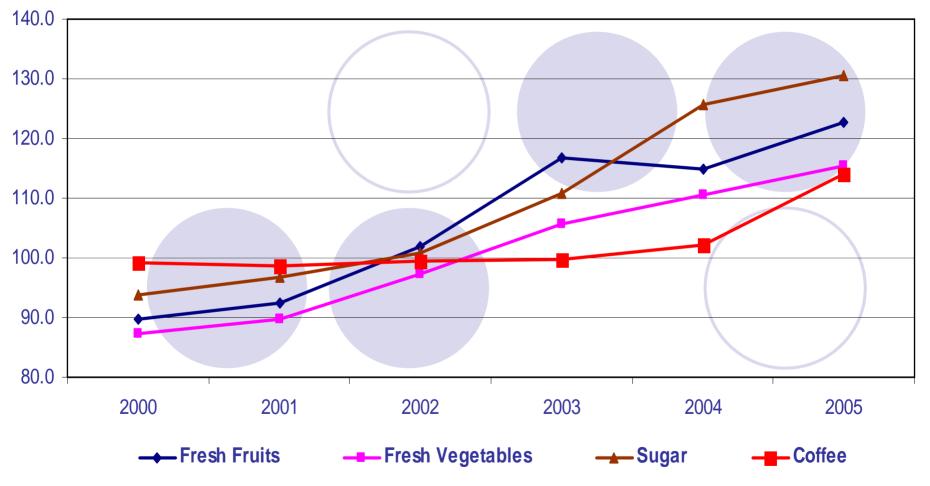
Source: SIAP, by its own, with Banco de México's data, 2000-2005 (Base 2003 = 100).

# AGRIFOOD PRODUCTS CONSUMER PRICE INDEX 2000-2005



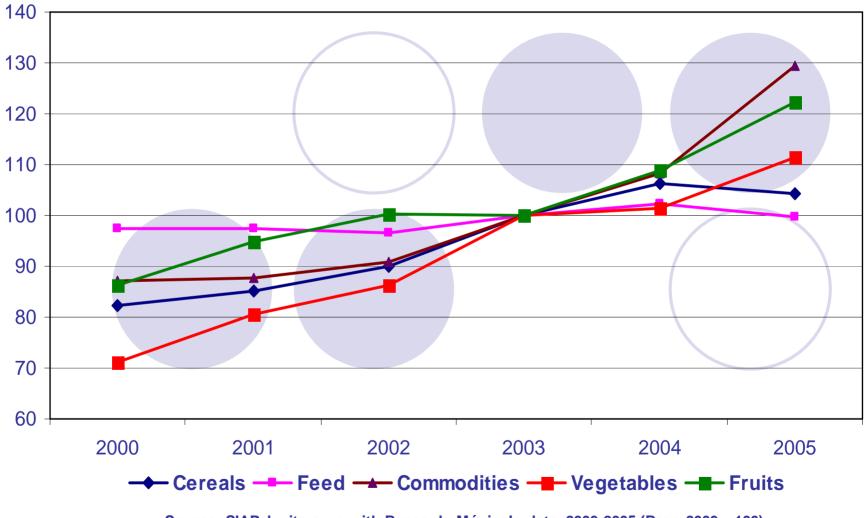
Source: SIAP, by its own, with Banco de México data, 2000-2005 (Base 2a.quincena junio 2002 = 100)..

# AGRIFOOD PRODUCTS CONSUMER PRICE INDEX 2000-2005



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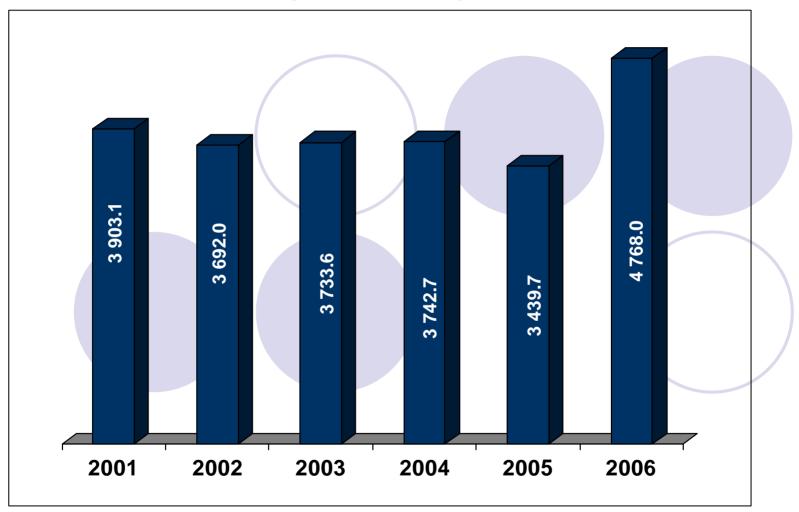
# AGRICULTURAL PRODUCTS PRODUCER PRICE INDEX 2000-2005



Source: SIAP, by its own with Banco de México's data, 2000-2005 (Base 2003 = 100)

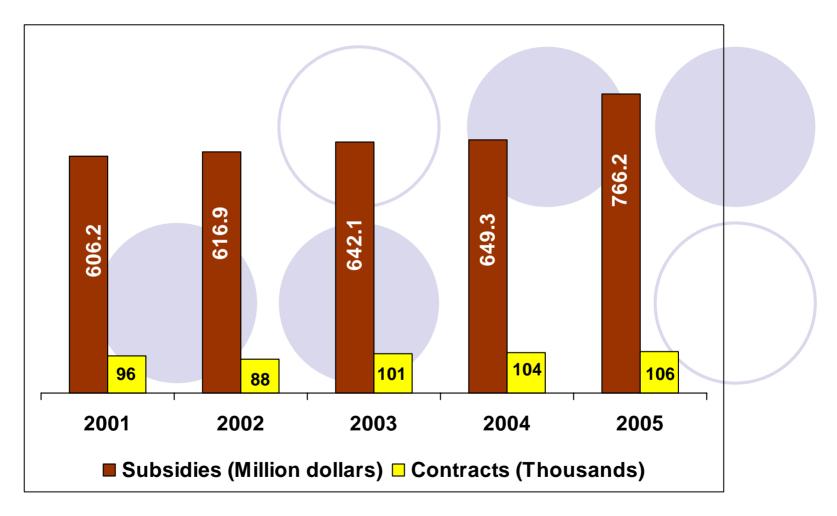
# SAGARPA'S BUDGET AND AGRICULTURAL ENERGY SUBSIDIES

MÉXICO: AGRICULTURAL AUTORIZED BUDGET 2001-2006 (Million dollars)



SOURCE: Fifth Government Report.

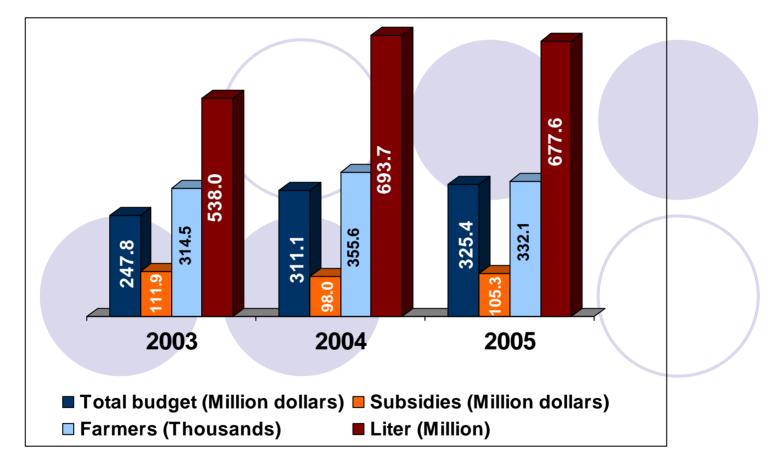
## MÉXICO: ELECTRIC ENERGY SUBSIDIES TO FARM SECTOR AND CONTRACT PER FARMER 2001-2005 <sup>1/</sup>



SOURCE: Fifth Government Report.

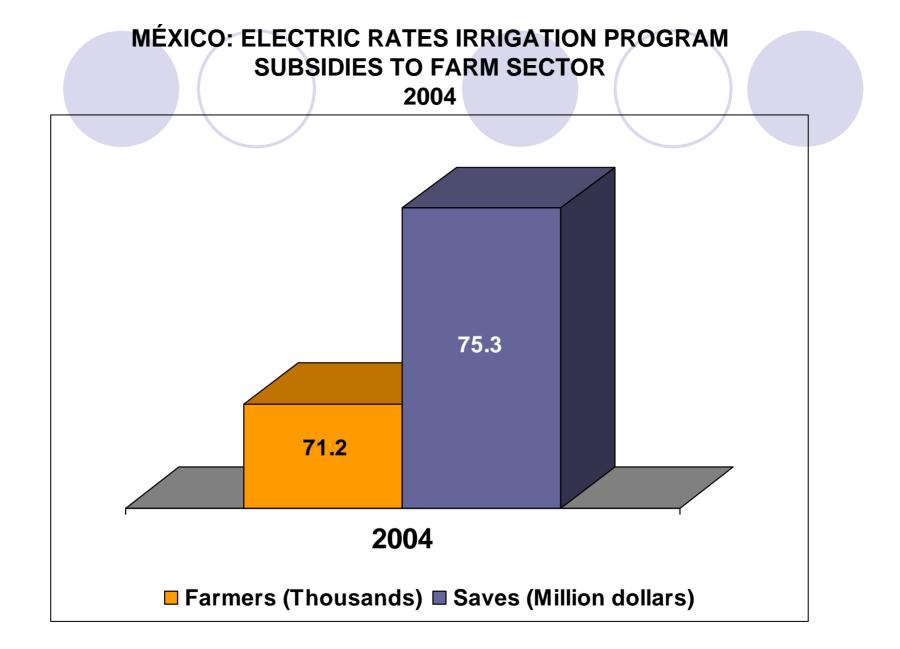
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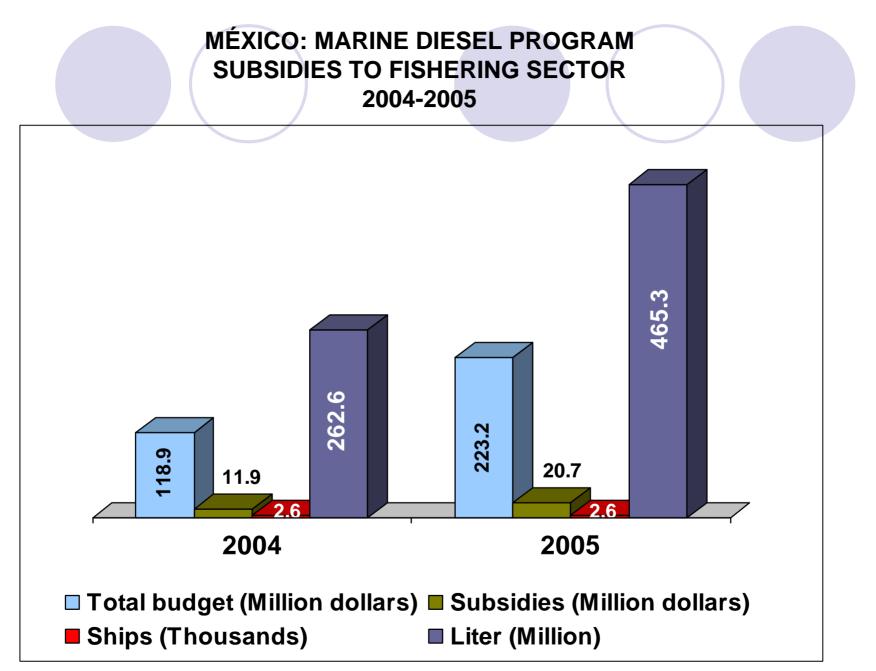
### MÉXICO: FARMING DIESEL PROGRAM SUBSIDIES TO FARM SECTOR 2004-2005



# THIS PROGRAM ALLOWED FARMERS TO SAVE 45 PERCENT PER LITER IN 2003, 32 PERCENT IN 2004 AND 32 PERCENT IN 2005

SOURCE: ASERCA reports.



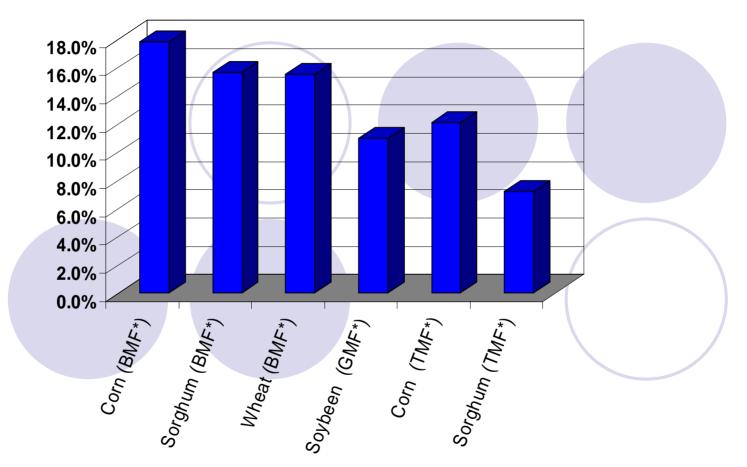


SOURCE: ASERCA reports.

# **AGRICULTURAL COSTS IN MÉXICO**

## 5. SHARE OF THE REGIONAL ENERGY COSTS IN TOTAL INVESTEMENT BY PRODUCT AND TECHNOLOGIC FEATURES \*

2005



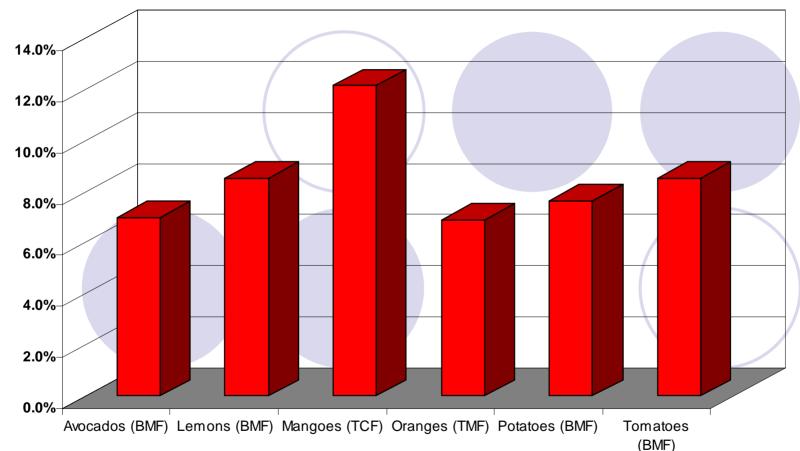
\*/ BMF = Pump irrigation, use of improved seed, use of fertilizer ;

TCF = Temporary, use of creole seed, use of fertilizer;

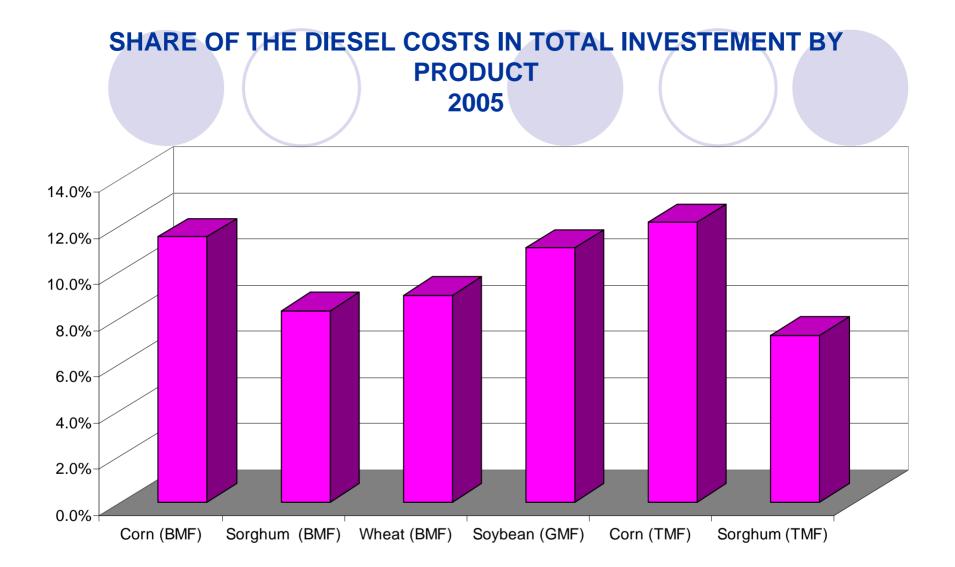
GMF = Irrigation, use of improved seed, use of fertilizer.

Source: SIAP / SAGARPA, MÉXICO.

## SHARE OF REGIONAL ENERGY COST IN TOTAL INVESTEMENT BY PRODUCT AND TECHNOLOGICAL FEATURES \* 2005

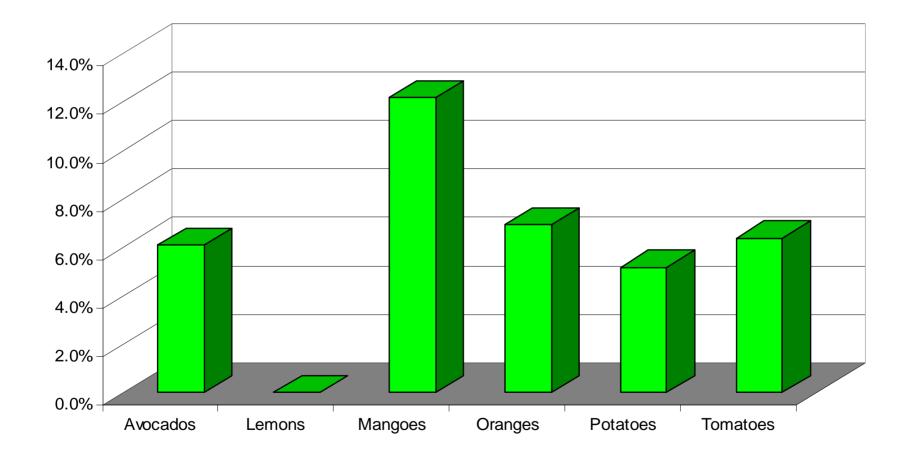


- \*/ BMF = Pump irrigation, use of improved seed, use of fertilizer;
  - TCF = Temporary, use of creole seed, use of fertilizer;
  - TMF = Temporary, use of improved seed, use of fertilizer;
- GMF = Irrigation, use of improved seed, use of fertilizer Source: SIAP / SAGARPA, MÉXICO.



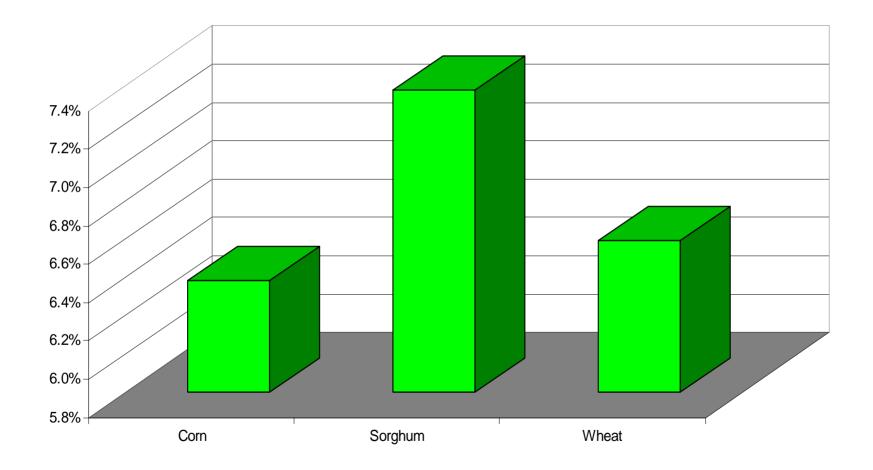
Source: SIAP / SAGARPA, MÉXICO.

## SHARE OF THE DIESEL COSTS IN TOTAL INVESTEMENT BY PRODUCT 2005

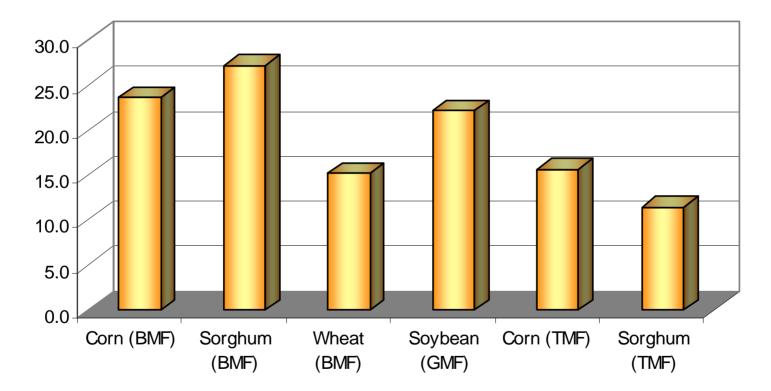


Source: SIAP / SAGARPA, MÉXICO.

## SHARE OF THE ELECTRIC POWER COSTS BY PUMP IRRIGATION INVESTEMENT BY PRODUCT 2005



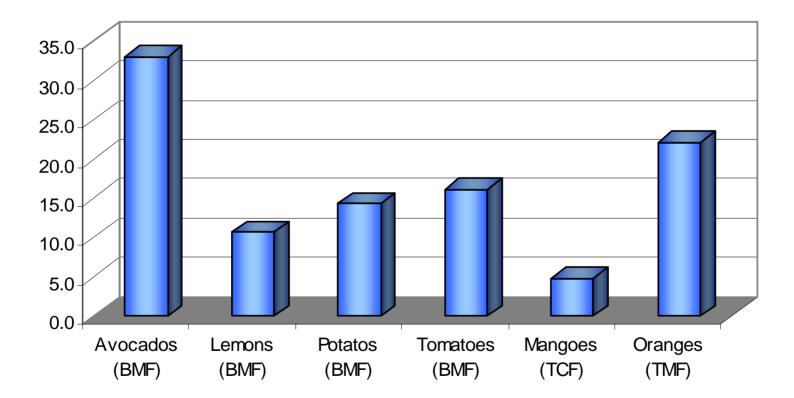
### SHARE OF REGIONAL FERTILIZER COSTS IN TOTAL INVESTMENTS BY COMMODITY AND TECHNOLOGICAL FEATURES 2005 (%)



#### SOURSE: SIAP / SAGARPA. MÉXICO.

- BMF = Pump irrigation, use of improved seed, use of fertilizer;
- TCF = Temporary, use of creole seed, use of fertilizer;
- TMF = Temporary, use of improved seed, use of fertilizer;
- GMF = Irrigation, use of improved seed, use of fertilizer

## SHARE OF REGIONAL FERTILIZER COSTS IN TOTAL INVESTMENTS BY COMMODITY AND TECHNOLOGICAL FEATURES 2005 (%)



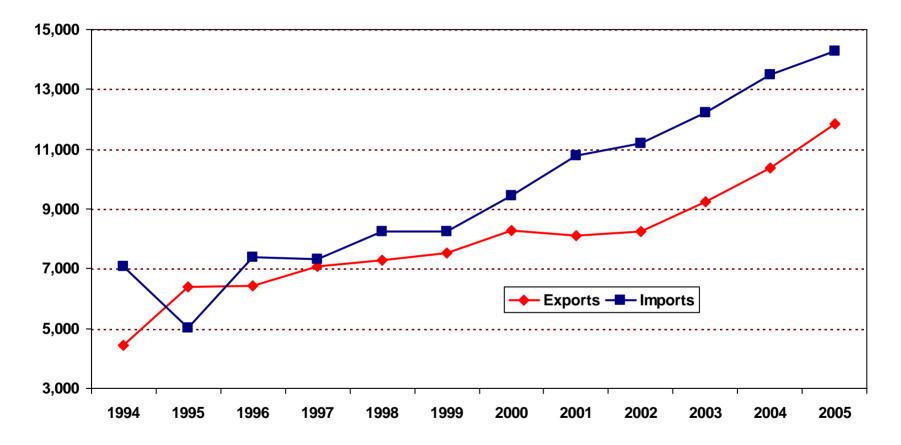
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# AGRICULTURAL EXTERNAL TRADE OF MÉXICO

## **MEXICAN AGRIFOOD EXPORTS & IMPORTS, 1994-2005**

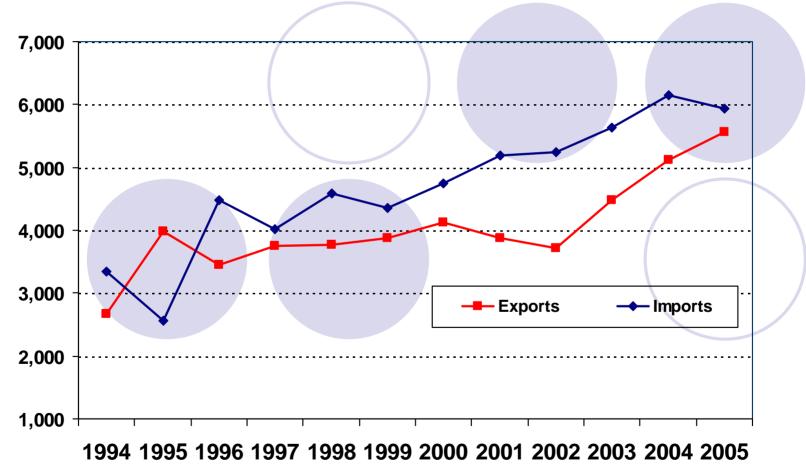
(MILL. US DLS.)



Source: Banco de México.

# MEXICAN AGRICULTURAL EXPORTS & IMPORTS, 1994-2005

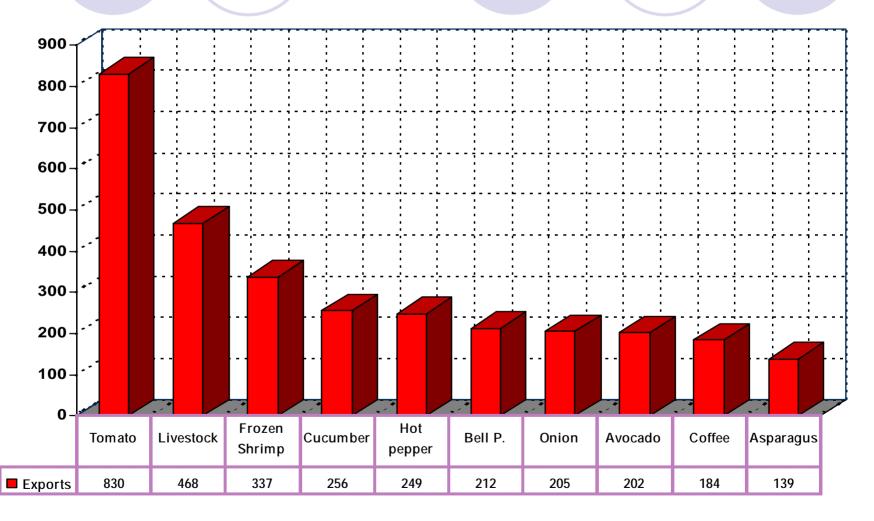




Source: Banco de México.

## MÉXICO: PRINCIPAL AGRICULTURAL EXPORTS

(VALUE - MILL. US DLS - AVG. 2001-05)



Source: Secretary of Economy.

## MÉXICO: PRINCIPAL AGRICULTURAL IMPORTS

(VALUE - MILL. US DLS - AVG. 2001-05)



Source: Secretary of Economy.

## CONCLUSIONS

• CRUDE OIL SHARES ALMOST 15% OF THE MEXICO'S EXPORTS TOTAL VALUE AND MORE THAN 22% OF THE FEDERAL BUDGET, DUE TO IT'S INCREASING PRICE

• THE AVAILABILITY OF THESE RESOURCES HAVE ALLOWED MEXICAN GOVERMENT TO RAISE IT'S EXPENDITURES ON RURAL SECTOR, INCLUDING SUPPORT PROGRAMS FOCUSED IN ENERGY COSTS

• ENERGY SUBSIDIES ON AGRICULTURE HAVE REDUCED THE IMPACT IN COSTS, AS SHOWN IN FOOD CONSUMER PRICE INDEX, WHICH HAS INCREASED LESS THAN THAT OF ELECTRIC POWER AND GAS

•THESE PROGRAMS COVERS PRODUCTS SOLD IN THE DOMESTIC MARKET (GRAINS), AS WELL AS EXPORT PRODUCTS (FRUITS AND VEGETABLES)