



**SECRETARIAT OF AGRICULTURE,
LIVESTOCK, FISHERIES
AND FOOD**

**UNDERSECRETARIAT OF AGRICULTURE
POLICIES AND FOOD**

National Directorate Of Agrifood Markets

**PRELIMINARY REPORT OF GRAIN
TRANSPORTATION IN ARGENTINA**

**Directorate of Agrifood Markets
Commercial Infraestructure and Special Regimes Area**

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**MR. SECRETARY OF AGRICULTURE, LIVESTOCK, FISHERIES
AND FOOD**

Dr. Javier de Urquiza

**MR. UNDERSECRETARY OF AGRICULTURAL POLICIES AND
FOOD**

Lic. Fernando Nebbia

NATIONAL DIRECTOR OF MARKETS

Lic. Gerardo Petri

DIRECTOR OF AGRIFOOD MARKETS

Lic. Ruben Ciani

**Directorate of Agrifood Markets
Av. Paseo Colón 922 1° Piso Of. 124
Buenos Aires- Argentina
Tel: (5411) 4349-2266/2297**

INDEX

Introduction	1
Different Kinds of Transports (Automotive, Rairoad)	2
River Transportation	3
Maritime Transportation	4
Comparative Freight Values	7
Means Participation in Grain Cargo Transportation in Different Countries	8

Consults:

Phone: 00 54 11 4349-2266/ 97 E-mail: cibane@mecon.gov.ar

Web site: www.sagpya.mecon.gov.ar

PRELIMINARY REPORT OF GRAIN TRANSPORTATION IN ARGENTINA

INTRODUCTION

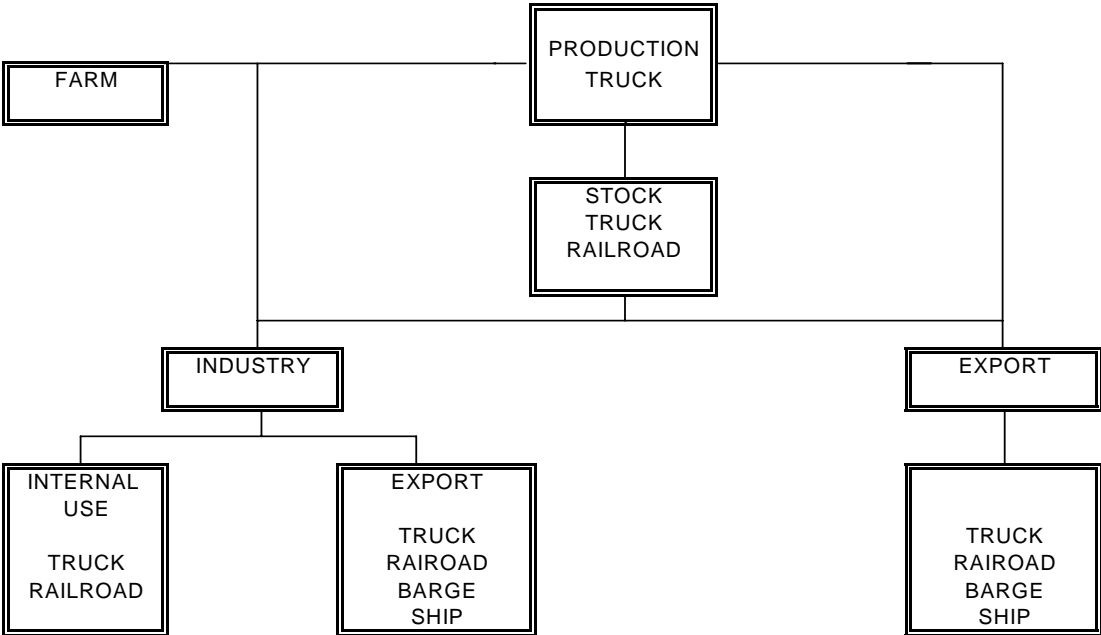
Freight value has a direct influence over production and commercialisation costs of our grain products and its derivatives. Therefore, the correct election of our means of transportation may compensate for market structural disadvantages, further more considering that 70% of Argentine exports are conformed by low value/volume relation.

In Argentina means participation varies if its utilization is for internal or extra territorial transportation. Grain exportations are carried out mostly, aproximatly 90%, by ship, 7% by truck and the rest by railroad and barges. Instead, in internal movements due to the location of productive areas the most used transportation is the lorry by 84%, followed by the railroad by 14,5% and barges by 1,5%.

The operative for grain and byproducts transportation obligates to the interconection of all means, therefore we will see the various participations weather is automotive, railroad or maritime.

Its important to point out that for the elaboration of the present report we utilized official data from different state organisms and also from seaports and shipping companies.

MEANS DISTRIBUTION WITHIN THE COMMERCIALIZATION CHAIN OF GRAINS AND BYPRODUCTS



1.5% of barge participation in internal movements corresponds to product removal between ports

Report elaborated by the SPECIAL REGIMES AREA
 Author: Carlos Maria Ibañez
 Colaborators: Javier Sosa – Mariano Ibañez
 Translation: Maria João Alves

This report analyzes the data from the year 2006 over a total Argentine grain crop of 76 million tons, with an estimate for internal use of 17 millions, from which 6 millions are destined to farm consumption, with this information we can calculate that the volume to transport is the following:

CHART 1

MEANS	TONS	DESTINATION
Ship	53 millions	Exportation
Truck	63 millions	Internal/exportation
Railroad.	12 millions	Internal/exportation
Barges	1 million	Internal/exportation

Includes solid byproducts

1) AUTOMOTIVE TRANSPORTATION

From chart 1, results evident the high participation of trucks in internal freights, this is due to their speed and adaptability to conditional structures. Stock centers are usually close to the productive areas or in a radio of 20 km and about 300km from industrial points and port terminals. The national road infrastructure counts with an approximate 38.000km.

The available information about the operative capacity of this means of transportation results minor, because it is basically a divided area. On one side we have the small carriers where the freight cost is practically given by the price of gas and tolls, that have an almost inexistent administration as in the case of independent owned trucks and on the other side we have the big express companies that count with several units with administrative personel that provide a more complete service, In this case the most sensitive cost would be administration, warehouses and distribution, and places them in a less competitive position.

Nevertheless, according to the information obtained from the different operators, we calculate that the freight automotive park is of approximately 400.000 units, and for the transportation of grains and oil seeds there are 5000 special units, nonetheless we count with an approximate of 60.000 units adaptable to this purpose.

2) RAILROAD

In the case of the railroad, there wasn't since its privatization a strong investment on the contrary we could appreciate the slow deterioration of the instalations including the closing of railways that for the private owned companies resulted unprofitable but of vital social importance and to the zone development. According to the railroad users the lack of alternative railways near the river ports (Rosario, San Lorenzo and San Martin in the margins of the Parana River), occasions a slow arrival of the trains therefore a low yield in the wagon rotation. Fact that favours the automotive use.

Nevertheless, the railroad use has increased in its importance the last few years, as consequence of the enlargement of the agricultural frontier in the pampean zones NOA and NEA (North West and North East) farther away from the ports favouring the use of this means of transportation as its advantage is long distance trajects with a lower freight cost (see chart 2).

CHART 2

Km	TRUCKS	RAILROAD
20	10,52	-
300	49,86	17,00
600	79,50	31,20

Source CATAC, CNRT, Transportation agents

These are estimate values taking into account that the freight fares are conditioned according to the time of the year and the volumes to transport. It stands out that being an unregulated market, moreover there are differentiations and special bonifications according to the magnitude and contractor trajectory.

About its operative capacity in the transportation of grains and its derivatives, it actually possess approximately 6.500 cars between solid and liquid cargo and a railway of 28.000 km. In chart 3 we can note the amount of available wagons and the average freight of grains and byproducts realized the last two years.

CHART 3

COMPANY	CARS	TONS	AVERAGE DISTANCE (KM)
ALL-C	750	1.600.000	840
ALL-M	380	198.000	597
FS.R.	174	250.000	382
F.E.P.	1.600	3.400.000	431
N.C.A.	2.160	6.300.000	460
F.B.C.	800	670.000	1.046

Source CNRT, Transport agency

- (ALL) Ex – BAP. – wide path
- (F.E.P.) Ferro Expreso Pampeano S.A. – wide path
- (FS.R.) Ferrosur Roca S.A. –wide path
- (N.C.A.) Nuevo Central Argentino S.A. –wide path
- (F.B.C.) Ferrocarril Belgrano Cargas S.A. – narrow path

3) RIVER TRANSPORTATION

The barges and the relation between volume capacity and freight costs, result the most effective transport for the displacement of commodities in the vicinity of the Parana river .Its biggest limitation is the lack of navegable transversal waterways in the principal productive zones. The average barge capacity is 1400tons, equivalent to the capacity of 40 or 50 trucks, with a consumption of 1lt/ton each 250kms against 23km for the trucks and 90 kms to the railroad.

On chart 4, we can see the static capacity of the Argentine fleet regarding his partners in the MERCOSUR. Likewise we can prize the bigger operative capacity of the bolivian and paraguayen fleets that utilize this means as an efficient way to the ocean.

CHART 4

BANNER	TUGBOATS		GRAIN BARGES	
	Number	Power (HP)	Number	Capacity (Ton)
Argentina	25	45.496	141	211.274
Bolivia	17	52.250	334	534.540
Brasil	19	17.650	72	106.460
Panamá	3	10.800	21	35.400
Paraguay	49	127.998	393	605.594
Uruguay	0	0	12	19.200
TOTAL	113	254.194	973	1.512.468

Chart from CLEMSON UNIVERSITY – source Tomas Reynal.- Año 2006

4) MARITIME TRANSPORTATION

About maritime transportation there is no doubt that for its relation cost /profit, geographical grounds for long distance trajectories and volume transported, is the means by excellence in exports of grains and byproducts, not only for argentine commerce, but for all international commerce.

Argentina has its main buyers (excepting Brasil) in South Asia, Japan, Russia and China and in minor scale European countries, therefore distance is a determining factor in freight costs and can only be minored with a good portuary system that allows a lesser stay of ships for loading, an adequate waterway and access to the ports. These conditions have been reached in the last few years through remodeling of old installations and the opening of new terminals, besides the permanent dredging of the accesses, with a navigable waterway in the Parana river with at least 32feet minimum draught, to the Rosario Port and adjoining waterways.

Though distance is the variable with the biggest incidence in freight costs, the operative growth assumes an important attractive for shipowners, to which, to diminish the carriers idle time optimises their rentability and is directly proportional to the major number of voyages in the lesser time.

On the other hand, the bigger the draught the bigger the carriers, allowing the application of the theory, to a bigger cargo a lesser freight value.

A continuation we will see the general characteristics of the different types of ships used in the transportation of grains in Argentina in the year 2006.

Handy: Are quite used in the transportation of grains and oils, not only for their adaptability to our harbours but also to the ports of destination like South Brasil and Uruguay. Within this segment regarding the tonnage we can diferenciare the **Handy Small** that have a dead weight of 20.000 tons, the **Handy Size** that generally have a dead weight between 20.000 and 40.000 tons. And a draught of 34 feet, with a carling between 180/200 mts. and a beam of 26/28mts. and by last the **Handy Max** tha have a capacity of cargo of 15.000 tons. And a carling of 38 feet.

Panamax: They receive this denomination by their perfect adaptability to pass through the Panama Canal with a dead weight of 52.500 tons., their dimensons hover 220/270mts. of carling and a beam of 30/32 mts.. They are the most utilized for grain transportation.

Cape Size: Are the least used in grain transportation due to their dimensions that are over the 270mts. of carling. They can't transit the Panama Canal and generally are used for minerals with a dead weight superior to 100.000tons.

The choice of the right carrier, doesn't depend only of the loading harbour but also of the destination, essentially because of the carling. In the following charts we can see the participation of the different tonnages for the transport of grains and solid byproducts during the year 2006, regarding the amount of trips and the average cargo, we included their destination.

For the following analisis we considered the exported volume in the year 2006 of aproximatly 50million tons, that includes grain coomodities and its solid derivatives, said information comes from the principal port terminals and maritime agencies. The same has as objective to appreciate through a selection of dead weight and trips made, the type of vessel and the principal destinations of the same. We ordered the carriers according to the tons boarded on Argentine Ports, facts that allows some margin of error.

SHIPS OPERATIONS DURING THE YEAR 2006

TOTAL AMOUNT OF SHIPS	897
TOTAL AMOUNT OF TRIPS	1.423
AVERAGE TRIPS BY SHIP	1,59
AVERAGE CARGO TRANSPORTED BY SHIP (TONS)	54.901
AVERAGE TRANSPORTED BY TRIP (TONS.)	34.608

DISTRIBUTION ACCORDING TO DWT

HANDY SMALL (TO 20.000 TONS)

TONS TRANSPORTED	2.265.184
AMOUNT OF TRIPS	182
AMOUNT OF SHIPS	117
AVERAGE CARGO TRANSPORTED BY SHIP (TONS)	19.361
AVERAGE TRANSPORTED BY TRIP (TONS.)	12.446
PARTICIPATION IN AMOUNT OF TRIPS ACCORDING TO DWT	8,22%

HANDY SIZE / MAX (FROM 20.000 TO 50.000 APROX.)

TONS TRANSPORTED	24.183.208
TRIPS MADE	802
AMOUNT OF SHIPS	481
AVERAGE CARGO TRANSPORTED BY SHIP (TONS.)	50.277
AVERAGE TRANSPORTED BY TRIP (TONS.)	30.154
PARTICIPATION IN AMOUNT OF TRIPS ACCORDING TO DWT	33,80%

PANAMAX

TONS TRANSPORTED	22.486.368
AMOUNT OF SHIPS	436
AMOUNT OF SHIPS	296
AVERAGE CARGO TRANSPORTED BY SHIP (TONS)	75.967
AVERAGE TRANSPORTED BY TRIP (TONS.)	51.574

PARTICIPATION IN AMOUNT OF TRIPS ACCORDING TO DWT 20,80%

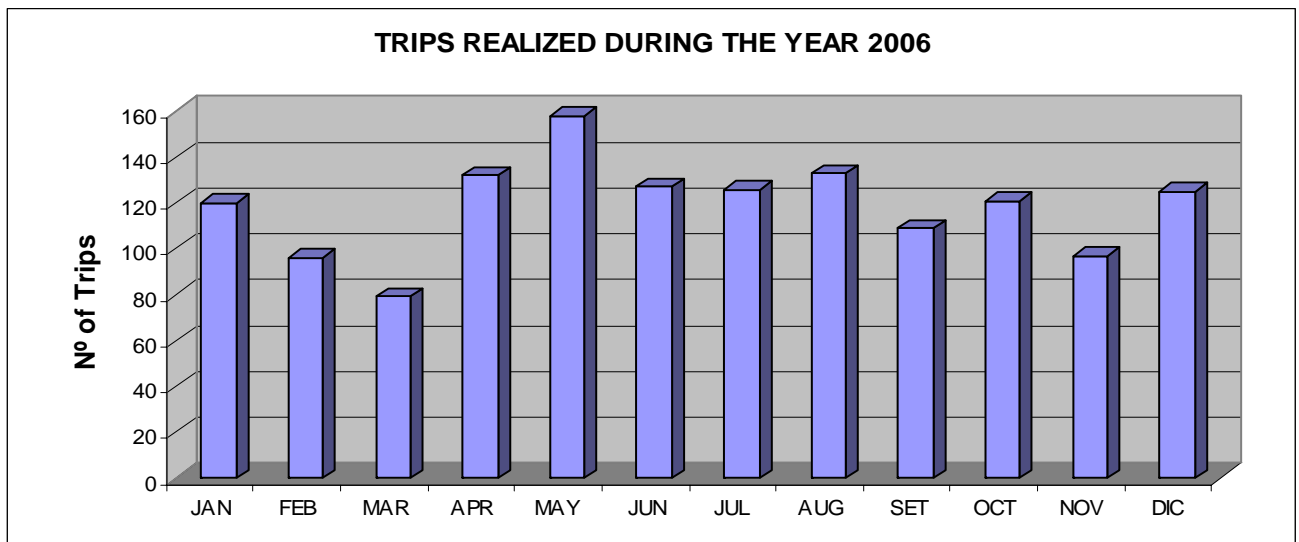
CAPE SIZE

TONS TRANSPORTED 311.823
 TRIPS MADE 3
 AMOUNT OF SHIPS 3
 AVERAGE CARGO TRANSPORTED BY SHIP (TONS.) 103.941
 AVERAGE TRANSPORTED BY TRIP (TONS.) 103.941
 PARTICIPATION IN AMOUNT OF TRIPS ACCORDING TO DWT 0,21%

MONTHLY TRIPS REALIZED DURING THE YEAR 2006

MONTH	TRIPS
JANUARY	120
FEBRUARY	96
MARCH	79
APRIL	132
MAY	158
JUNE	127
JULY	126
AGOST	133
SEPTIEMBER	109
OCTUBER	121
NOVIEMBER	97
DICIEMBER	125
TOTAL ANUAL	1423

UNIT. TRIPS



As we can appreciate in the previous charts, the ships that can be included in the Handy Size and Max category together with the Panamax are the most utilized, with the 34% of trips made and 48% of all tons transported in the Handy case. In relation to the Panamax, these would occupy the second place, 20% of trips made and 45% of tons transported.

Although if from this data we don't have the destinations, to the Size and Max Handy from the total voyages realized 19% was to Brasil, 8.5% to Spain, 7% to South Africa, 6.7% to Peru and 5.9% to Italy. In the case of the Panamax 16% to China, 14.6% to Holland, 8.4% to Spain ,6.8% to Malasia and 5% to Indonesia.

5) FREIGHT VALUES

In the following charts we can observe the difference in freight values among the different means of transportation according to the year 2006 average. We haven't included a direct comparison with maritime transportation because it has very different characteristics.

MEANS	\$x TON	\$ / TON / KM.
TRUCK (28 TONS.)	79,50	0,13
RAILROAD (40 TNS.)	31,20	0,052
BARGE (1.400 TN.)	26,70	0,044

Source CATAAC, CNRT, transport Agents

REFERENCE:

MEANS	REFERENCE
TRUCK V. BARGE	3,25 a 1
RAILROAD V. BARGE	1,18 a 1
TRUCK V. BARGE	2,50 a 1

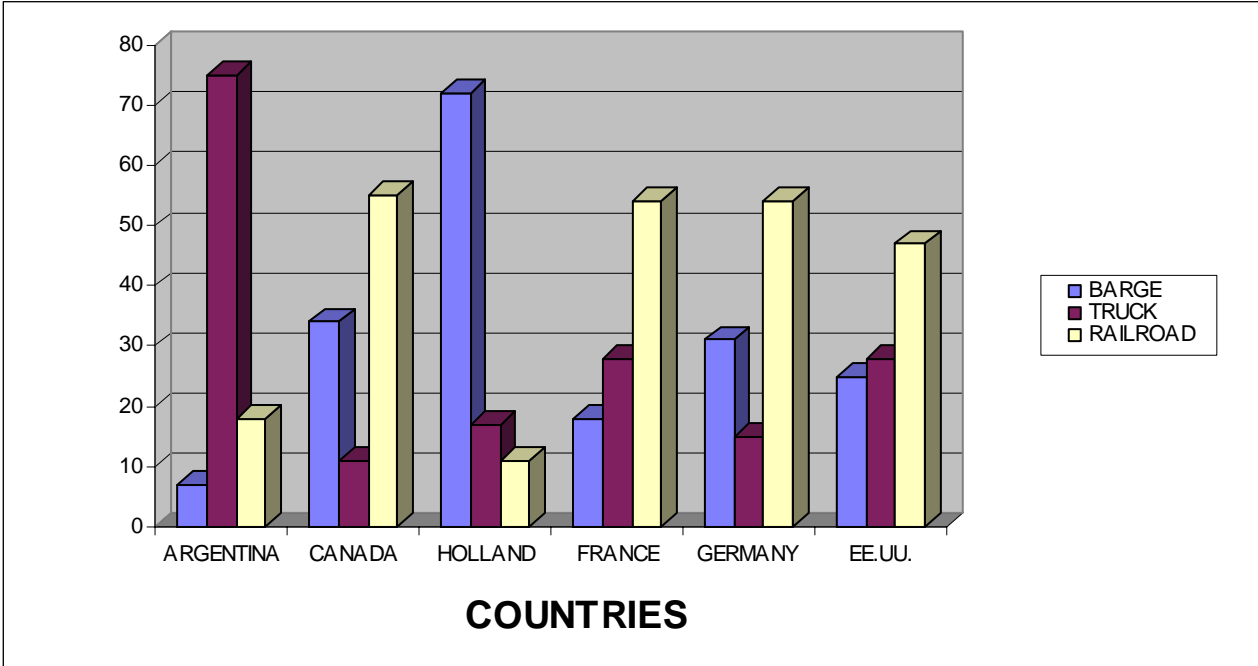
ORIGIN/DESTINATION	HOLLAND	SPAIN	JAPAN
ARGENTINA	37,80	37,30	43,89
GULF (USA)	26,19	26,69	41,88

Source Maritime Agency

In this case the value for Ton/Km, taking into account as example the distance between Argentina and Holland (6.248 Nautical miles- equivalents to 11.571 km.) would be of U\$S 0,0033 or \$0.0011 Argentine pesos.

6) MEANS PARTICIPATION IN GRAIN CARGO TRANSPORTATION IN DIFFERENT COUNTRIES (YEAR 2004)

COUNTRY	BARGE	TRUCK	RAILROAD
ARGENTINA	7	75	18
CANADÁ	34	11	55
HOLLAND	72	17	11
FRANCE	18	28	54
GERMANY	31	15	54
EE.UU.	25	28	47



Source -Transport Commission Rosario and Santa Fe Stock Market

The preceding charts show as in the more economically developed countries the railroad assumes a leading roll in the transportation of general cargo, followed by the fluvial. In this context we should point out Holland's particular situation where the most important means of transportation is the fluvial, fact that is fundamented by the strong participation in international trading, from the Port of Rotterdam nexus to the remaining countries of Europe through the Rhin River and his affluents.

Regarding grains transportation in the following chart we expose the participation of the means of transport regarding the United States of America and Brasil, clear continental competitors of Argentina within international commerce. In this respect the high grade of participation of the automotive sector In Argentina differs from the other mentioned countries, and its due to the fact that the areas of production and stocking are situated at 300km from the harbour areas, as much from the Province of Santa Fe seacoast as the Province of Buenos Aires port cereal complex at Bahia Blanca.

The previous charts show as in countries with mayor economical development the railroad assumes a relevant roll in the transportation of general cargo, followed by the fluvial. In this context we should point out Holland's particular situation where river transportation is the mostly used, fact that its widly demonstrated by their participation in international commerce, from the Rhin River and its afluents.

In the particular case of the United States, the Mississippi River and its afluents conform a waterway (45 feet deep) that allows overseas ships to navigate to the Harbour of Baton Rouge , where the cargo is transboarded, and through the use of barges supply the areas of Missouri, Arkansas and Ohio which is around the 50% of this country.

COUNTRY	BARGE	TRUCK	RAILROAD
ARGENTINA	1,5	84	14,5
BRASIL	5	67	28
EE.UU.	55	7	38

Source Rojas, USDA.-Año 2006