The eonomy of Chaco and Santiago del Estero provinces

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Chaco The economy of Chaco province economy is based on both the primary sector and wooden manufactures. The main agricultural activities are the cultivation of soybeans, cotton, sunflower, sorghum and corn. Plus, livestock farming and forestry are other very important economic activities. Soybean is the crop with the greatest planted area in the province; followed by cotton, sunflower and corn. In the last decade, Chaco has become the province with the largest cereals and oilseeds cultivated area outside the Pampa region. The growth of the cultivated area is partly explained by the incorporation of land, as well as the substitution of crops. The most significant change has been the decline of cotton cultivation and its replacement by soybeans and sunflowers. During the 2016/17 crop Chaco produced 4.4 MT of grains that represent 3.4% of the country's total output. Soybean harvest was of 1.42 MT, while sunflower harvest exceeded the 711 thousand tons, representing 2.6% and 20% of the national production, respectively.

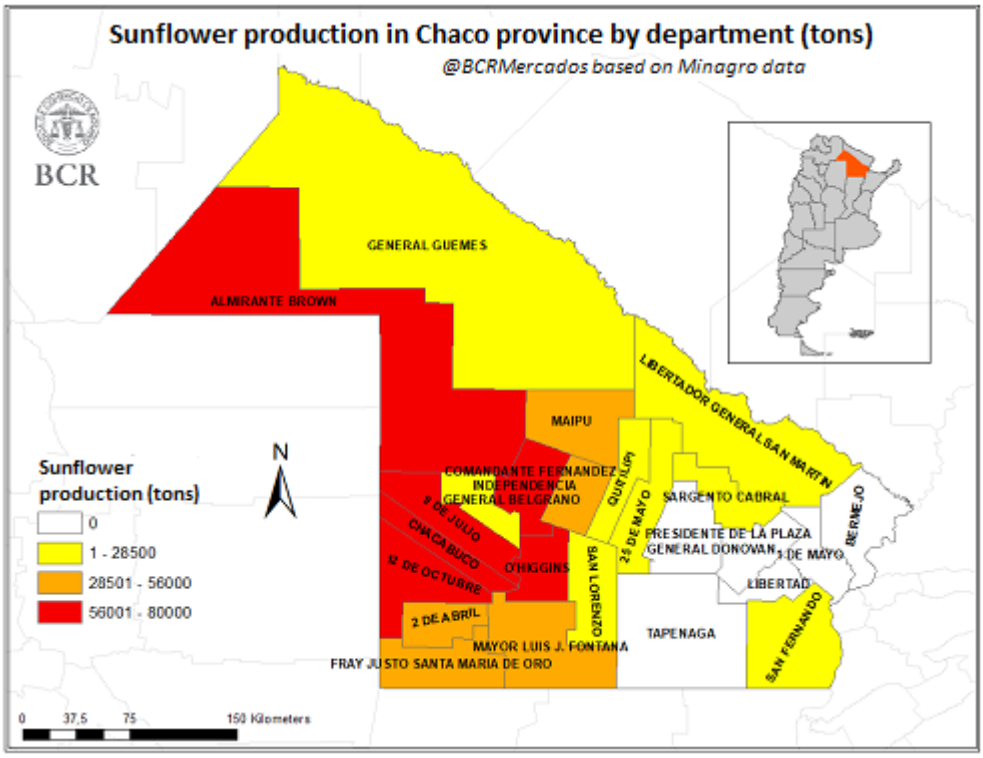
Grain production in Chaco province by department (tons)
2016/17 crop

Department	Corn	Soybean	Sorghum	Wheat	Sunflower	TOTAL	Share (%)
Almirante Brown	513.689	325.546	9.750	7.908	72.500	929.393	21,13%
12 de Octubre	223.335	214.400	12.650	10.773	76.960	538.118	12,23%
9 de Julio	234.960	128.220	11.712	5.544	79.344	459.780	10,45%
Chacabuco	157.542	146.240	9.760	7.196	78.080	398.818	9,07%
2 de Abril	176.400	103.800	12.320	14.008	39.480	346.008	7,87%
Independencia	145.275	119.223	15.880	6.237	56.250	342.865	7,79%
Gral. Belgrano	93.262	131.670	8.640	4.935	28.500	267.007	6,07%
Maipú	115.320	53.354	8.715	2.893	38.220	218.502	4,97%
Comandante Fernández	55.500	83.934	22.160	3.784	44.850	210.228	4,78%
Mayor Luis J. Fontana	82.869	34.810	17.280	13.155	38.190	186.304	4,24%
O'Higgins	37.808	4.603	4.699	25.725	74.560	147.395	3,35%
Fray Justo Santa María de Oro	41.250	30.450	10.200	4.606	47.535	134.041	3,05%
Gral. Güemes	68.788	15.557	7.920	830	15.210	108.305	2,46%
San Lorenzo	14.384	3.270	2.322	572	5.586	26.134	0,59%
Quitilipi	2.204	11.192	574	650	11.200	25.820	0,59%
San Fernando	18.414	2.873	1.295		2.087	24.669	0,56%
Libertador Gral. San Martín	11.609	2.702	1.044	352	650	16.357	0,37%
Sargento Cabral	4.875	2.718	5.220	114	1.200	14.127	0,32%
25 de Mayo	1.980	97	1.820		625	4.522	0,10%
Pte. De la Plaza	420		126			546	0,01%
Total Chaco	**1.999.884**	**1.414.659**	**164.087**	**109.282**	**711.027**	**4.398.939**	
National total	**49.475.895**	**54.971.626**	**2.526.931**	**18.557.532**	**3.546.707**	**129.078.691**	
National share (%)	**4,04%**	**2,57%**	**6,49%**	**0,59%**	**20,05%**	**3,41%**	

Fuente: @BCRmercados en base a Ministerio de Agroindustria

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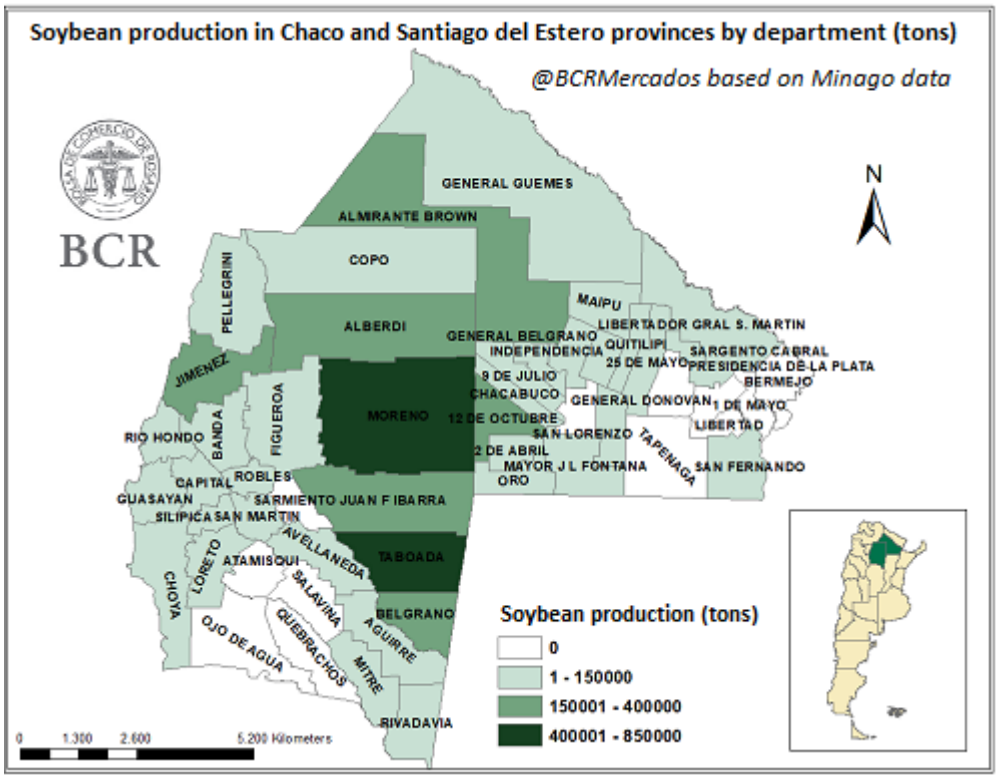


Chaco's cereals output stands out in the national totals. The record corn crop of 2016/17 almost reached the 2 MT, having a year-on-year growth of 68.5% and representing 4% of the national total. In contrast, sorghum (a traditional crop in the province) had great fluctuations throughout the current decade, period in which this cereal has lost ground in the national level. Chaco's sorghum harvest in 2016/17 was of about 165 thousand tons, 6.5% of Argentina's total. According to the Cotton Census carried out by the Professional Council of Agricultural Engineers of Chaco (CPIACH) 48% of the province's cropland is currently cultivated with soybean while 32% is dedicated to cotton and sunflower almost in equal proportions. The remaining area is planted with corn (9%) and sorghum (8%), while 3% is dedicated to other extensive crops. This distribution was consolidated in the past years due to different factors. On the one hand, soybean cropland gained ground from the end of the 90s onward. Today, 600,000 to 650,000 hectares are dedicated to the cultivation of oilseed. Secondly, there is the reduction of cotton planted area, which is Chaco's second most important crop after soybean. Cotton competes for area with sunflower, depending on market conditions and especially on autumn-winter rains that determine each year's final planted area. However, in the 2016/17 crop, the distribution of the area, according to the Ministry of Agribusiness data, was considerably different from the CPIACH prospects for the last six seasons. Soybean and sunflower had similar shares in Chaco's cropland, 32.3% and 31.7% respectively. As corn crop, on the other hand, had an important growth reaching 21% of the provincial planted area. More than one fifth of Chaco's production comes from Almirante Brown department, located in the northwest area of the province, on the border with Santiago del Estero and Salta. In the 2016/17 crop, almost 930 thousand tons of grain were produced in this department, including the outstanding harvests of soybeans and corn that exceed by far the volumes obtained in the other departments of the province. The corn output was of 514 thousand tons, more than 25% of Chaco's total, while soybean production reached the 326 thousand tons, 23% of the total oilseed production.

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The departments of 12 de Octubre and 9 de Julio , located in the border with Santiago del Estero province, are other two of the most important departments in terms of production. The department of 12 de Octubre had a total production of 538 thousand tons, as 9 de Julio output was of 160 thousand tons for the 2016/17 crop, 12.2% and 10.5% of Chaco's harvest, respectively. These three departments - Almirante Brown , 12 de Octubre and 9 de Julio - together with Chacabuco and O'Higgins originate more than half of the province's sunflower production. Each of the departments produced around 72-80 thousand tons. Chaco's oilseed production is transported through Paraná-Paraguay rivers system to the industrial cluster of Rosario Hub to be crushed and/or exported. The major ports in Chaco are Barranqueras and Vilelas (managed by the Association of Argentine Cooperatives, ACA). In 2017, these ports shipped more than half a million tons of grains (soybean, corn and wheat), setting a new record. In 2017, barges transported almost 506 thousand tons of grains, a year-on-year increase of 25.7%. If compared to 2015's records, the number of grain water freights originated in Chaco increased by 76.6%.

Grain shipments from Chaco's ports (million tons)

Ports	2015	2016	2017
Barranqueras	127.116	250.856	269.162
ACA (Vilelas)	159.402	151.752	236.734
Total	**286.518**	**402.608**	**505.896**

Fuente: Subsecretaría de Puertos y Vías Navegables de la Nación

Agricultural production is Chaco's main export sector. In 2017, the province's exports summed up US$ 327 million, of which US$ 217 million are agricultural products. Cereals originated in Chaco (mainly corn) contributed in US$ 157 million

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to the national economy, while the oilseed complex (mainly soybeans) generated US$ 60 million. Santiago del Estero The primary sector is Santiago del Estero's economic motor, as the province's economy is based on the cultivation and processing of cotton, the textile industry, the cultivation of oilseed (mainly soybean) and cereals (corn), the raising of goat and cattle, and forestry. Moreover, tourism constitutes a very dynamic sector in the province's economy, especially in the city of Termas de Río Hondo (known for its thermal baths and for hosting FIM Grand Prix motorcycle racing). Since 2015, Santiago del Estero is the main cotton producer in Argentina –overtaking Chaco- as it originates 41% of the total. Furthermore, Santiago del Estero is the fourth province in terms of corn planted area, and third in terms of goat raising. The province's goat stock represents 12.9% of the national total.

Grain production in Santiago del Estero province by department (tons)
2016/17 crop

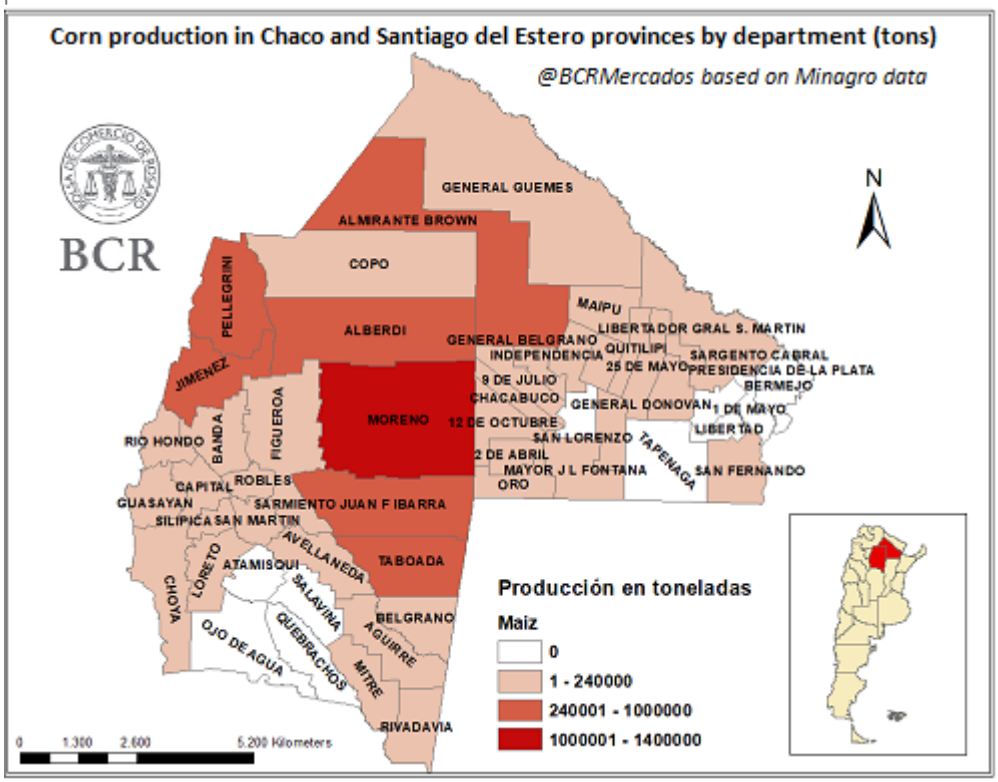
Department	Corn	Soybean	Sorghum	Sunflower	TOTAL	Share (%)
Moreno	1.396.720	832.212	8.250	33.318	2.270.500	26,73%
Gral. Taboada	511.360	741.156	15.543	151.443	1.419.502	16,71%
Alberdi	618.240	265.512	10.200	14.500	908.452	10,70%
Belgrano	179.400	374.329	5.760	137.916	697.405	8,21%
Jiménez	395.250	210.000	38.475	53.613	697.338	8,21%
Juan F. Ibarra	341.030	270.690	4.160	26.730	642.610	7,57%
Pellegrini	391.000	122.500	21.600	29.336	564.436	6,65%
Rivadavia	123.200	74.460	23.100	51.069	271.829	3,20%
Aguirre	114.540	49.464	10.325	15.157	189.486	2,23%
Mitre	79.050	52.500	19.200	4.606	155.356	1,83%
Río Hondo	70.400	35.000	16.200	14.649	136.249	1,60%
Guasayán	35.200	15.000	20.250	2.296	72.746	0,86%
Choya	30.800	16.800	15.120		62.720	0,74%
Copo	27.200	25.947	8.004		61.151	0,72%
Silípica	25.925	12.250	14.175	3.537	55.887	0,66%
Banda	28.050	12.000	11.340	1.755	53.145	0,63%
Capital	24.800	12.250	14.175	1.560	52.785	0,62%
Robles	24.400	10.500	14.175	3.537	52.612	0,62%
Loreto	19.500	6.000	12.150		37.650	0,44%
Avellaneda	12.160	11.492	4.108		27.760	0,33%
San Martin	10.200	7.000	10.125		27.325	0,32%
Figueroa	11.200	2.800	4.800		18.800	0,22%
Sarmiento	14.280		3.255		17.535	0,21%
Total Santiago del Estero	**4.483.905**	**3.159.862**	**304.490**	**545.022**	**8.493.279**	
National total	**49.475.895**	**54.971.626**	**2.526.931**	**18.557.532**	**125.531.984**	
National share (%)	**9,06%**	**5,75%**	**12,05%**	**2,94%**	**6,77%**	

Fuente: @BCRmercados en base a Ministerio de Agroindustria

Santiago del Estero produced in 2016/17 crop approximately 8.5 MT of corn, soybeans, wheat and sorghum, which represent 6.8% of the total national production of the grains mentioned. Coarse- grained cereals are the province's most relevant crops. Corn almost reached the 4.5 MT that represented 9.1% of the national total, as for sorghum, in spite of its characteristically low volume of production; Santiago de Estero's 305 thousand tons harvest in 2016/17 crop represents the greatest contribution, 12.1%, in a national level. Regarding small grain cereals, wheat production was of 545 thousand tons, about 3% of the national total. Soybean harvest in Santiago del Estero, the second most important in the province, was of 3.16 MT, 5.7% of Argentina's production. This output marked a new record for the province, surpassing the 2.95 MT reached in the 2009/10 crop. Meanwhile, soybean cultivated area in the province is approximately 872 thousand hectares (4.8% of the national total) and is concentrated in its eastern area. Santiago del Estero's oilseed production is transported by barges to Rosario Hub's crushing plants or to its ports to be exported as bean. Furthermore, there is Viluco SA., a soybean processing plant oriented to biodiesel production that is located in southwestern Santiago in the city of Frías. As the plant is distant from the province's core productive area, its supplies come from the provinces of Salta and Jujuy by train. There

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are 12 major biodiesel plants in Argentina, of which Viluco SA. is the only one that is not located in Santa Fe province. The plant has an annual crushing capacity of 1 MT and it can produce 200 thousand tons of biodiesel. Santiago del Estero's corn cultivated area is approximately 684,500 hectares, 10.5% of the national total. Between the 2006/07 and 2016/17 crops, the area increased by 469%, as there has also been an improvement in terms of yields in spite of the remarkable weather variations. Most of the agricultural activity in Santiago del Estero takes place in the eastern department of Moreno that borders with Chaco's 12 de Octubre department. Moreno is the province's main producer of corn and soybean. In 2016/17 crop, considering also the wheat and sorghum modest output, Moreno originated 2.27 MT of grains, 26.7% of the provincial total.



In second place, there is Gral. Taboada department that originates 1.42 MT of grains, 16.7% of the total volume. The department stands out for being the main wheat producer -150 thousand tons- providing 28% of the province's total. In the third place, there is Alberdi department with over a 900 thousand tons production, 10.7% of the total. In 2017, Santiago del Estero originated US$ 754 million exports, of which US$ 519 million correspond to cereals (mostly corn) and USS 118 million to oilseeds (soybean). Santiago del Estero is the largest cotton producer in Argentina. Cotton is traditional crop in the province, and is cultivated under both techniques: irrigation and dry farming. In 2015, Santiago del Estero's production reached the 326,120 tons, surpassing Chaco's production. The province's average national share during the 2010-2014 period was around 20% and 30%. In the 2016/17 crop, cotton production reached 330 thousand tons, surpassing the 136 thousand tons harvested in Chaco. Over the last decade, there were important production variations that responded to both climatic factors and variations in international prices. The cotton-textile industry is one of the most developed economic activities in the province. In 2017, 115,300 hectares were assigned to cotton cultivation in Santiago del Estero. According to a report from the Ministry of Finance, most of cotton cultivated area is located in eastern Santiago del Estero. Therefore, Moreno , Juan F. Ibarra and Gral. Taboada departments represent 44% of the province's cropland. The central region - Robles , Banda , Capital and Figueroa departments- represents 34% of the planted area. Yields in this region are higher than the province average due to the irrigation technique used by farmers in this area. Cotton ginning plants that

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process more than half Santiago del Estero's production are located in Banda , Gral. Taboada , Robles and Moreno departments. The remaining cotton production is processed in ginning plants located in Chaco and Santa Fe provinces. The later stages of the processing are mostly carried out outside the province.

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