2.7. Manioc

The manioc (Manihot sculenta) is a tuber very consumed in Paraguay, especially in rural areas where it is important part of the diet. Data of the DGEEC indicate that the consumption per-cápita in the metropolitan area is 172,2 daily grams, being the biggest consumption in rural areas 506,5 grams per-cápita.

The most important areas in manioc production are located in the departments of Caaguazú, Caazapá, Itapúa and Alto Paraná, these departments produced in the year 2001 approximately 1.614.500 tons, that is, 59% of the total national production, *Table E-1 of the Annex E.*

The plantation of manioc is carried out mainly in the months of July to October, however, production exists practically during the whole year, *Table E-2, Annex E.*

2.7.1. Channels of commercialization

The main agents involved in the commercialization of manioc are the national producers, wholesalers, retailers and consumers. The commercialization flow charts presented in Figures 19 and 20 shows the commercialization market according to the main involved agents at national level. The study estimated that in the commercialization process a global loss of 10% on the total supply exists (283.763 tons).

The estimate methodology used for the construction of the commercialization flow charts in volume and value is presented:

Table 65-A: Methodology to estimate manioc commercialization volume– National supply. Year 2002

Oferta	*Volumen (Tn)*	*Metodología de estimación*	*Fuente*
Producción Nacional Disponible	2.837.427	1. Promedio de los últimos años (1996-2001), de la producción nacional (3.152.697 tn) 2. Se estima una pérdida por cosecha de 10%. (315.270 tn) 3. Producción Nacional Disponible (1-2) = 2.837.427 tn	DCEA
Importación Registrada	0		DGA
Importación No Registrada	206	**(A) Estimación de volumen ingresado al país, de origen brasilero, no registrado:** 4. Volumen comercializado en CEASA-PR (Foz de Yguazú), año 2002 (224 tn), se estima un 80% que ingresa al país = 179 tn 5. Estimación de ingreso desde otros mercados de Foz de Iguazú. Se estima un 15% del volumen ingresado desde CEASA (179 x 15%) = 27 tn 6. Volumen Total estimado de ingreso desde Brasil (5 + 6) = 206 tn 7. Ingreso registrado del producto al país (Base de datos de Sistema SOFÍA), de origen brasilero = 0 tn	Registros de CEASA-PR (Central de Curitiba) y estimación dada por Directivos de CEASA-PR (Foz de Yguazú) y entrevistas con mayoristas de DAMA.
		8. Volumen de ingreso de origen brasilero No Registrado: (7 - 8) = 206 tn	DGA
		(B) Estimación de volumen ingresado al país, de origen argentino, no registrado: 9. Se consideran las proporciones de ingreso de mandioca de origen extranjero en DAMA, Brasil (0%) y Argentina (0%) como iguales a las proporciones de ingreso al Paraguay desde Argentina y Brasil. 10. Estimación del volumen total ingresado al Paraguay, en base al cálculo de lo ingresado desde el Brasil (206 x 100/100) = 206 tn 11. Ingreso registrado del producto al país (Base de datos de Sistema SOFÍA), de origen argentino (0 tn).	
Total oferta	**2.837.633**		

Table 65-B: Methodology to estimate volumes of manioc marketed by wholesalers. Year 2002

Mayoristas	*Volumen (Tn)*	*Metodología de estimación*	**Fuente**
DAMA	171.000	1. Los 42 mayoristas identificados fueron clasificados en grupos, según el volumen promedio anual que comercializan. Grupo / Numero / Prom/año / Total I / (1) / 1.500 / 1.500 II / (15) / 5.500 / 82.500 III / (26) / 3.346 / 87.000 2. Volumen Total comercializado en DAMA (GI +GII + GIII) = 171.000 tn	Entrevistas a Mayoristas de DAMA Observación directa en DAMA
Fuera de DAMA (Gran Asunción)	2.574	3. Promedio de venta anual x 3 mayoristas individualizados 858 x 3 = 2.574 tn **Observación**: Los mayoristas de San Lorenzo no comercializan este rubro.	Entrevistas a mayoristas ubicados fuera de DAMA
Ciudad del Este	18.000	4. Promedio de venta anual x 3 mayoristas: 6.000 x 3 = 18.000 tn	Entrevistas a mayoristas de Ciudad del Este
Encarnación	7.200	5. Promedio de venta anual x 10 mayoristas: 720 x 10 = 7.200 tn	Entrevistas a mayoristas de Encarnación
Coronel Oviedo	6.200	6. Promedio de venta anual x 3 mayoristas: 2067 x 3 = 6.200 tn	Entrevistas a mayoristas de Coronel Oviedo
Total mayoristas	**204.974**		

Table 65-C: Methodology to estimate volume of manioc marketed by retailers. Year 2002

Minoristas	*Volumen (tn)*	*Metodología de estimación*	*Fuente*
Supermercado (A) Directo de oferta	45.010	(A) 1. Se estimó un 5% sobre el volumen total de ingreso extranjero (206 x 5%) =10 tn 2. Se estima un volumen de compra directa de productores: 45.000 tn 3. Total de compra directa (1+2) = 45.010 tn	Entrevistas a Gerente de Supermercados
(B) A través de mayoristas	94.246	(B) 1. Mayoristas DAMA: Se estimó un porcentaje promedio de venta a supermercados por mayoristas para los grupos II y III, en base al volumen total comercializado en DAMA. Para el Grupo I se determinó según lo manifestado por cada mayorista:	Entrevistas con Mayoristas

	Volumen venta a Supermercado (tn)	Porcentaje Promedio (%)	Total (Tn)
GI Mayorista 1	1500	80	1.200
Mayorista 2	0	30	0
GII	82.500	70	57.750
GIII	87.000	30	26.100
Total	171.000		85.050

2. Mayoristas No-DAMA: Se estimó en base al porcentaje promedio de venta a supermercados por mayoristas del Gran Asunción ubicados fuera de DAMA
2.574 x 92% = 2.368 tn

3. Estimación del porcentaje promedio de venta a supermercados por mayoristas de Otras Localidades.
Ciudad del Este = 0 tn
Encarnación: 7.200 x 69% = 4.968 tn
Cnel.Oviedo: 6.200 x 30% = 1.860 tn

Fuente: Entrevista a Gerentes de supermercados; Entrevista a técnico del MAG

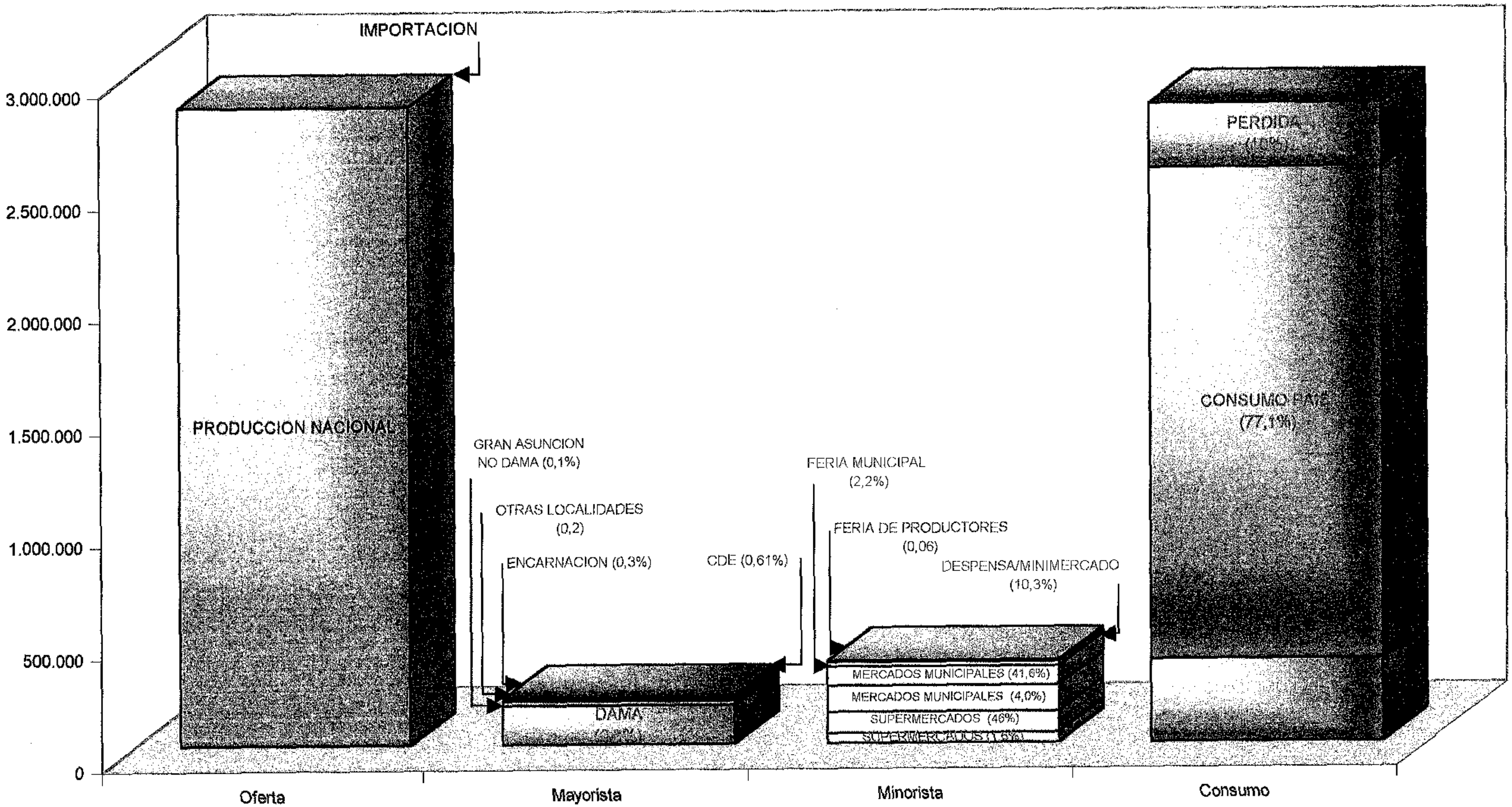
Cuadro 65-C: (Continuation)

Otros minoristas		Del volumen total comercializado por mayoristas se resta las ventas a supermercados: 204.974 – 94.246 = 110.728 tn	Entrevistas a vendedores de Mercados Municipal[es]
		Este volumen se distribuye proporcionalmente en base a preferencia por lugar de compra según la encuesta a consumidores: Mercado Municipal (77 %); Despensa/Minimercado (19%) y Feria Municipal (4%).	Encuesta a consumidores
▪ Mercado Municipal			
(C) A través de mayoristas	85.261	(C) 110.728 x 77% = 85.261 tn	
(D) Directo de oferta	115.000	(D) Volumen estimado según entrevistas a vendedores de los Mercados Municipales.	
▪ Despensa / Minimercado	21.038	110.728 x 19% = 21.038 tn	Encuesta a consumidores
▪ Feria Municipal	4.429	110.728 x 4% = 4.429	Encuesta a consumidores
▪ Feria de Productores	1.680	Sumatoria de volumen comercializado por las Ferias de Productores,	determinado en base datos proveídos por feriantes e informant[es] calificados
Total minoristas	**366.664**		

Table 65-D: Methodology to estimate manioc consumption volume. Year 2002

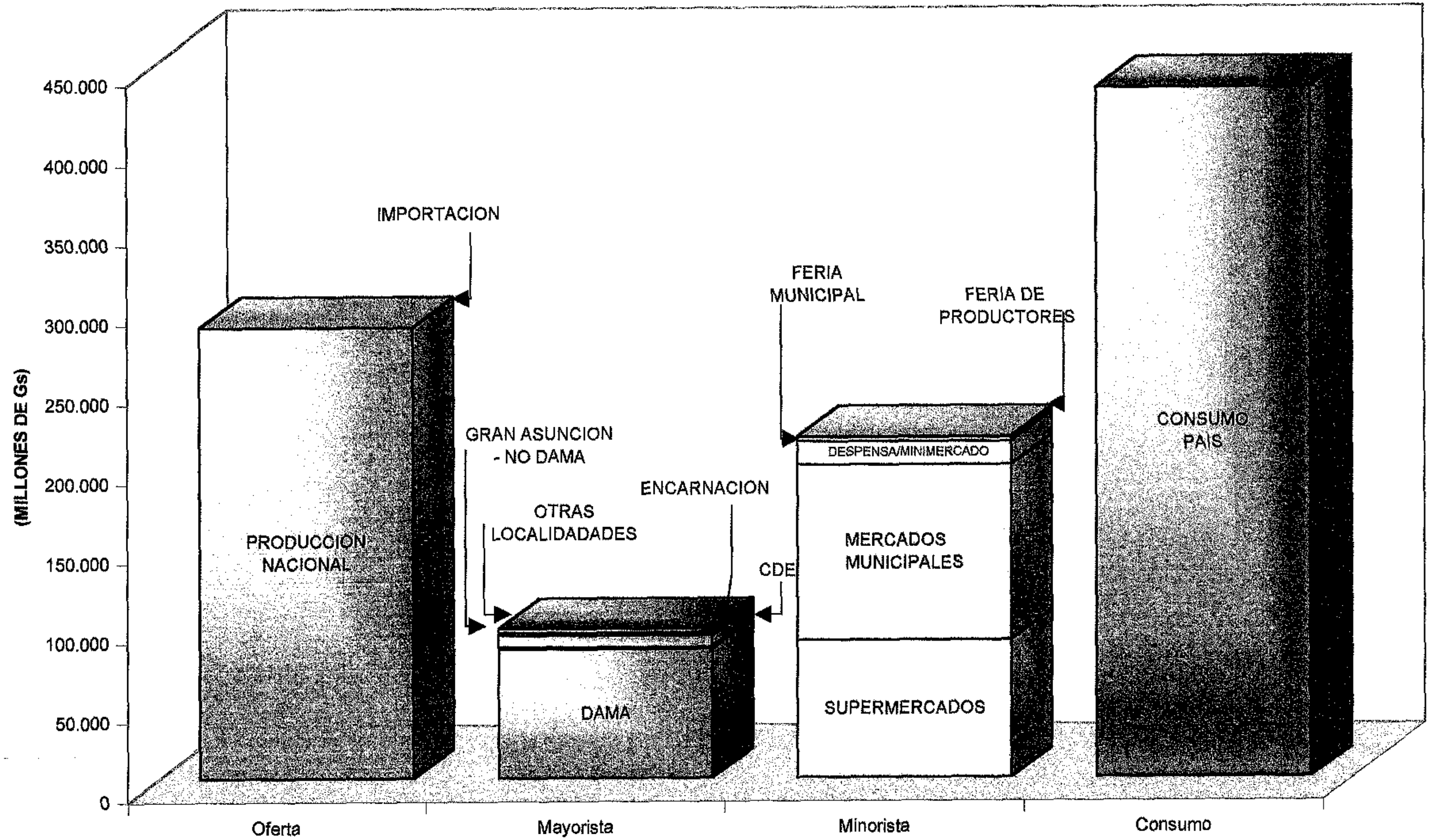
Consumidores	*Volumen (Tn)*	*Metodología de estimación*	*Fuente*
Consumo país	2.553.870	1. Se determina el volumen total comercializado por los minoristas: 366.664 Tn 2. Se estima un nivel de consumo resultante de la diferencia entre la oferta total y el volumen de la sumatoria de lo comercializado por minoristas, las exportaciones y las pérdidas en la comercialización: Consumo: 2.837.633 – (366.664 + 0 + 283.763) = 2.187.206 Tn 3. Volumen total de Consumo país (1 + 2) = 2.553.870 Tn	
Exportación	0	El Banco Central del Paraguay no registra exportación: 0 Tn	BCP
Pérdida	283.763	Se estima una pérdida del 10% de la oferta total por manipuleo en el proceso de comercialización: (2.837.633 x 10%) = 283.763 Tn	
Total	**2.837.633**		

Figures 19: Flow chart of manioc commercialization in Paraguay (Volume in tons). Year 2002



Ref. Las letras y porcentajes dentro del gráfico tienen el mismo color de las columnas de valores de donde proviene cada segmento.

Figure 20: Flow chart of manioc commercialization in Paraguay (in millions of Guaraníes). Year 2002



The supply of manioc in Paraguay is represented by the available national production and for a small volume of foreign origin. The available annual national production reaches an average of 2.837.000 tons, *Table E-3, Annex E.* The manioc of foreign origin totals 206 tons entered from Brazil, this entrance volume was not registered officially, *Table 66.*

Table 66. Estimate of manioc supply by origin in Paraguay. Year 2002

Origin	*Volume (Tons)*	*Percentage (%)*
National Production Available	2.837.427	99,99
Imports	0	0,00
Not Registered entrances	206	0,30
Total	***2.837.633***	***100,00***

Source: Elaborated on data of DGA, CEASA (Brazil) DDV/MAG.

The national production of manioc is distributed by producers to wholesalers located in or outside DAMA, to wholesalers of the municipal markets of interior towns, to consumers in the municipal markets, directly on farm and a small volume (137 tons) in the form of manioc-popí is exported to Brazil and Argentina, *Figure 19.*

The national supply of manioc is mainly marketed in DAMA through individual producers that transport their production and a low volume is marketed through producers associated to CECOPROA, *Table 67.*

Table 67. Volume of national manioc marketed in DAMA, by Association, Year 2002

Association	*Marketed volume (Tons)*
NIKKEI	0
CECOPROA	32.000
CEPACOOP	0
Total	***32.000***

Source: Elaborated based on interviews to managers of the associations.

Table 68 show the volume of manioc channeled by wholesalers according to location area. It stands out the accumulation of manioc supply by wholesalers located in DAMA.

Table 68. Volume of manioc channeled by wholesalers, according to location area. Year 2002

Location Zone	*Volume (Tons)*	*Percentage (%)*
DAMA	171.000	83,43
GRAN ASUNCIÓN (EXCLUDED DAMA)	2.574	1,26
OTHER CITIES OF THE COUNTRY		
Ciudad del Este	18000	
Encarnación	7.200	
Coronel Oviedo	6.200	
Sub total OTHER CITIES OF THE COUNTRY	31.400	15,32
Total	***204.974***	***100,00***

Source: Elaborated based on interviews to wholesalers located in DAMA, Great Asunción, Ciudad del Este, Encarnación and Colonel Oviedo.

Manioc total supply is channeled only (6%) through wholesalers who distribute the product to supermarkets and other retailers, *Figure 19*. Supermarkets sale approximately 46% of the total volume traded by the wholesalers. The volume remaining is sold by wholesalers to other retailers located in DAMA, municipal fairs, groceries and mainly to municipal markets, *Table 69.*

Table 69. Volume of manioc distribution from wholesalers to retailers. Year 2002

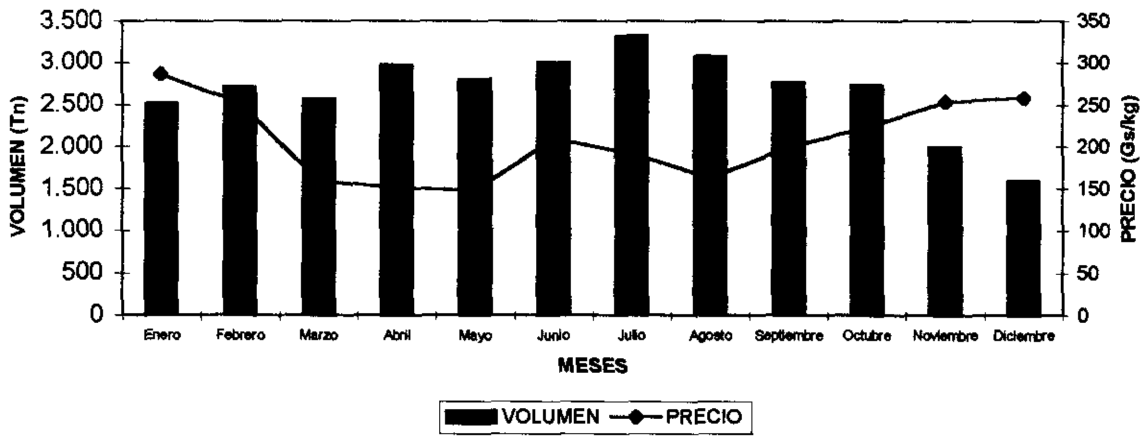
Retailers	*Volume (Tons)*	*Percentage (%)*
SUPERMARKETS	94.246	45,98
OTHER RETAILERS		
Municipales Markets	85.261	
Despensas/Minimercados	21.038	
Municipal Fairs	4429	
Sub Total OTHER RETAILERS	110.728	54,02
Total	***204.974***	***100,00***

Source: Elaborated based on interviews to supplying wholesalers of supermarkets, feriantes other retailers.

2.7.2. Prices and seasonality

The volume of manioc production presents few variations during the whole year. Nevertheless, small entrance volume increments are observed in the months of July and August causing prices to decrease , *Figures 21.*

Figure 21: Volume and monthly price of manioc. 2002



The values used in the precedent graph correspond to CECOPROA volumes data from 2002 marketed among the months of July to August of 2002. *Table E-6, Annex E.*

2.7.3. Value of commercialization according to origin and channel

2.7.3.1. Value of the commercialization by origin

The total value of commercialization of the manioc of national production and foreigner were estimated in 283.825 millions of Guaranies, value that corresponds almost in its entirety to the national product, *Figure 20 and Table 70.* The prices used for the estimates are indicated in *Table 71.*

Table 70. Estimate of manioc commercialization value by origin. Year 2002

Origin	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
National	2.837.427	100	283.743	99,97
Foreign	206	400	82	0,03
Total	***2.837.633***		***283.825***	***100,00***

Source: Based on data of the Direccion General de Aduanas, CEASA (Brazil) and of the DDV/MAG.

Table 71: Prices established for manioc commercialization. March 2003

Origin	Price (Gs/Kg)	*Observations*
National	100	It corresponds to on farm price, according to producer interviews
Foreign	400	It corresponds to purchase price based on data provided by wholesalers importers .
WHOLESALERS		
DAMA	475	Estimate based on interviews with wholesalers of DAMA.
Gran Asunción	475	Estimate based on interviews with wholesalers located outside DAMA.
Ciudad del Este	400	Estimate based on interviews with wholesalers of Ciudad del Este Municipal Markets.
Encarnación	250	Estimate based on interviews with wholesalers of Encarnación Municipal Market.
Coronel Oviedo	400	Sale price provided by technicians and wholesalers of the area.
RETAILERS		
Supermarkets	620	Estimate based on sale prices average of Great Asunción and Encarnacion's main supermarkets.
Municipal Markets	550	Estimate on sale prices average of San Lorenzo and Encarnación. Municipal Markets
Despensas/Minimercados	700	Estimate based on sale prices average in Despensas and Minimercados of San Lorenzo and Encarnación.
Municipal Fairs	575	Estimate based on sale prices average in Asunción and Encarnación Municipal Fairs.
Farmers Fairs	300	Estimate based on sale prices average in Farmers Fairs of Ciudad del Este and Encarnación.

2.7.3.2. Value of commercialization according to wholesalers

In relation to wholesalers' sales by location, DAMA continues being the main place where they are carried out, 86,48% of the total marketed value of manioc was carried out through wholesalers located in DAMA. It is of highlighting that the wholesalers markets located in other towns like Ciudad del Este, Gran Asunción and Coronel Oviedo traded for a total value that doesn't reach 13%, *Table 72*.

Table 72. Estimate of manioc sales by wholesalers according to location area. Year 2002.

Zone	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millones de Gs)*	*Percentage (%)*
DAMA	171.000	475	81.225	86,48
GRAN ASUNCION	2.574	475	1.223	1,30
OTHER CITIES OF THE COUNTRY				
Ciudad del Este	18.000	400	7.200	7,67
Encarnación	7.200	250	1.800	1,92
Coronel Oviedo	6.200	400	2.480	2,64
Sub Total OTHER CITIES OF THE COUNTRY	31.400	475	11.480	12,22
Total	*204.974*		*93.928*	*100,00*

Source: Based on interviews with wholesalers of the different study areas.

2.7.3.3. Value of commercialization according to retailers

Sales carried out by retailers to consumers were estimated in a total of valued of 214.261 millions of Guarani, corresponding 40,30% to manioc sold in supermarkets, valued in approximately 86.339 millions of Guaraníes.

The sales estimates carried out for other retailers highlight that through municipal markets reached a value of 110.144 millions Guaraníes, value that represents around 51,41% sold by this channel, *Table 73.*

Table 73. Estimate of manioc sales by retailers. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
SUPERMARKETS	139.256	620	86.339	40,30
OTHER RETAILERS				
Municipales Markets	200.261	550	110.144	51,41
Despensas/Minimerc.	21.038	700	14.727	6,87
Municipales Fairs	4.429	575	2.547	1,19
Fairs of Producers	1.680	300	504	0,24
Sub Total OTHER RETAILERS	227.408		127.922	59,70
Total	**366.664**		**214.261**	**100,00**

Source: Based on prices collected in the purchase places.

2.7.3.4. Value of commercialization according to final consumption destination

The value of the purchases of the consumers through all the commercialization channels reached the figure of 432.981 millions of Guarani calculably, coming from the sales to the consumers (214.260 millions of Guarani) more the one mounts corresponding to the estimate of the sale of 2.187.206 tons valorized with the price received by the producer (100 Gs/Kg), *Table 74.*

Table 74. Estimated of manioc commercialization value according to final consumption destination. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millones de Gs)*
Country Consumption (through retailers	366.664	584,35*	214.260
Country Consumption (on farm)	2.187.206	100,00	218.721

** Correspond to average prices weighted by retailers sales volume (see Table 73).*

2.7.4. Margins of commercialization of a representative channel

The commercialization margins according to supply origin indicates that the difference among the price paid by the consumer and the price average received by the producer on farm is 520 Gs/Kg representing to total margin of commercialization of 84%, *Table 75.*

Table 75. Total margin of commercialization of manioc. 2002

Prices y margins	*Value (Gs/Kg)*	*Margin (Gs/Kg)(%)*
On farm price	100	
Wholesarlers selling price	475	
Retailers selling price	620	520 (84%)

Source: Estimate based on data provided by wholesalers, retailers producers.

2.8. Bean

The bean (Vigna unguiculata) is a traditional and typical produce of Paraguay. Data of the DGEEC indicate that bean per-cápita consumption in the metropolitan area is 5,4 grams daily, and 14,2 grams in the rural area. In the country the main consumed varieties belong to the group San Francisco and Colorado (Pyta'i).

The most important areas in bean production are located in the departments of Caazapá, Itapúa and Canindeyú. These departments produced approximately 13.955 tons in the year 2001, volume that represent 52% of the total national production, *Table E-1, Annex E.*

The sow of the bean is carried out mainly among the months of August to February of the system of traditional cultivation, the supply of the national product begins in the month of October and extend until May; however, most of the supply concentrates on the months of January to April, *Table E-2, Annex E.*

2.8.1. Channels of commercialization

The main agents involved in the commercialization of the bean constitute the national producers, wholesalers, retailers and consumers. The commercialization flow charts presented in *Figures 22 and 23* illustrate the national market of commercialization of the bean, according to the main agents involved. The study estimates that in the commercialization process a global loss of 10% (4.099 tons) on the total offer exists.

The methodology to estimate volumes and values used for the construction of the commercialization flow charts is presented next:

Table 76-A: Methodology to estimate bean commercialization volume– National supply. Year 2002

Oferta	*Volumen (Tn)*	*Metodología de estimación*	*Fuente*
Producción Nacional Disponible	40.991	1. Promedio de los últimos años (1996-2001), de la producción nacional (48.225 Tn) 2. Se estima una pérdida por cosecha de 15%. (7.234 Tn) 3. Producción Nacional Disponible (1-2)= 40.991 Tn	DCEA
Importación Registrada	0		DGA
Importación No Registrada	0	No se dispone de evidencias de ingresos no registrados	
Total oferta	**40.991**		

Table 76-B: Methodology to estimate volumes of bean marketed by wholesalers. Year 2002

Mayoristas	*Volumen (Tn)*	*Metodología de estimación*	**Fuente**
DAMA	776	1. Los 14 mayoristas identificados fueron clasificados en grupos, según el volumen promedio anual que comercializan. Grupo Numero Prom/año Total I (1) 249,0 249 *II (3) 50,0 150* III (10) 37,7 377 2. Volumen Total comercializado en DAMA (GI +GII + GIII) = 766Tn	Entrevistas a Mayoristas de DAMA Observación directa en DAMA
Fuera de DAMA (Gran Asunción)	850	3. Promedio de venta anual x 4 mayoristas individualizados 212,5 x 4 = 850 Tn	Entrevistas a mayoristas ubicados fuera de DAMA Mayoristas de San Lorenzo
Ciudad del Este	300	4. Promedio de venta anual x 3 mayoristas: 100 x 3 = 300 Tn	Entrevistas a mayoristas de Ciudad del Este
Encarnación	350	5. Promedio de venta anual x 10 mayoristas: 35 x 10 = 350 Tn	Entrevistas a mayoristas de Encarnación
Coronel Oviedo	15	6. Promedio de venta anual x 3 mayoristas: 5 x 3 = 15 Tn	Entrevistas a mayoristas de Coronel Oviedo
Otros	450	7. Promedio de venta anual x 10 mayoristas: 45 x 10 = 450 Tn	Entrevistas a informantes calificados (comerciantes)
Total mayoristas	**2.741**		

Table 76-C: Methodology to estimate volume of bean marketed by retailers. Year 2002

Minoristas	Volumen (Tn)	Metodología de estimación	Fuente
Supermercado	50		
(A) Directo de oferta		(A) 1. Se estima un volumen de compra directa de productores: 50 Tn	Entrevistas a Gerentes de Supermercados
(B) A través de mayoristas	1.061	(B)1. Mayoristas DAMA: Se estimó un porcentaje promedio de venta a supermercados por mayoristas para el grupo II, en base al volumen total comercializado en DAMA. Para el Grupo I se determinó según lo manifestado por el mayorista:	Entrevistas con Mayoristas

	Volumen venta a Super	Porcentaje Promedio (%)	Total (Tn)
GI	2.49	38,75	96,50
GII	150	30,00	45,00
Total			141,50

2. Mayoristas No-DAMA: Se estimó en base al porcentaje promedio de venta supermercados por los 4 mayoristas del Gran Asunción ubicados fuera de DAMA: 850 x 60% = 510 Tn

3. Estimación del porcentaje promedio de venta a supermercados por mayoristas de Otras Localidades.

Ciudad del Este: 300 x 10% = 30,0 Tn

Encarnación: 350 x 30% = 105 ,0 Tn

Cnel.Oviedo: 15 x 30% = 4,5 Tn

Otros : 450 x 60 % = 270,0 Tn

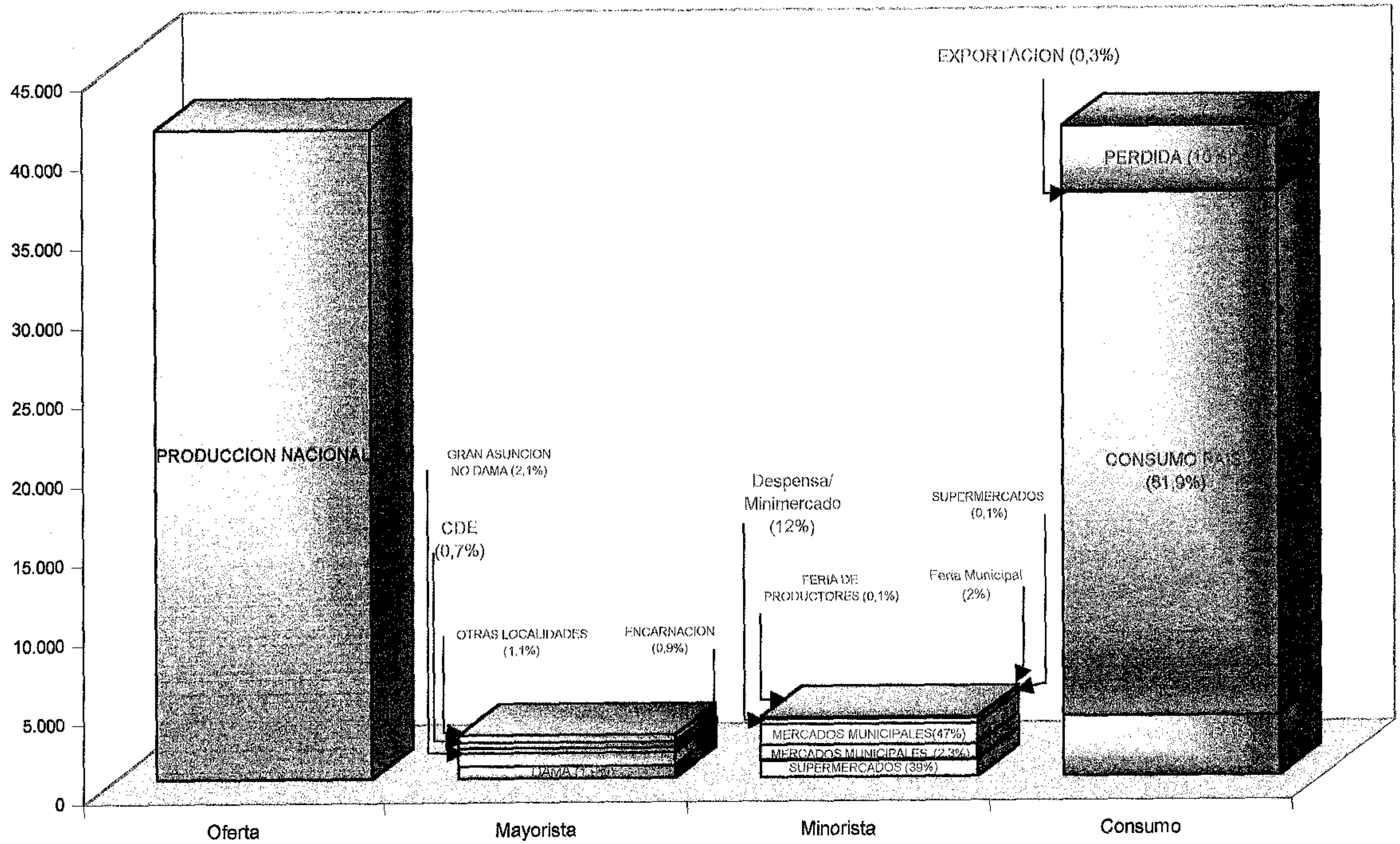
Cuadro 76-C: (Continuation)

Otros minoristas		Del volumen total comercializado por mayoristas se resta las ventas a supermercados: 2.741 – 1.061 = 1.680 Tn	Entrevistas a vendedores de Mercados Municipales
		Este volumen se distribuye proporcionalmente en base a preferencia por lugar de compra según la encuesta a consumidores: Mercado Municipal (77 %); Despensa/Minimercado (19%) y Feria Municipal (4%).	Encuesta a consumidores
▪ Mercado Municipal			
(C) A través de mayoristas	1.294	(C) 1.680 x 77% = 1.294 Tn	
(D) Directo de oferta	950	(D) Volumen estimado según entrevistas a vendedores de los Mercados Municipales.	
▪ Despensa / Minimercado	319	1.680 x 19% = 319 Tn	Encuesta a consumidores
▪ Feria Municipal	67	1680 x 4% = 67 Tn	Encuesta a consumidores
▪ Feria de Productores	50	Sumatoria de volumen comercializado por las Ferias de Productores, determinado en base datos proveídos por feriantes e informantes calificados	
Total minoristas	**3.791**		

Table 76-D: Methodology to estimate bean consumption volume. Year 2002

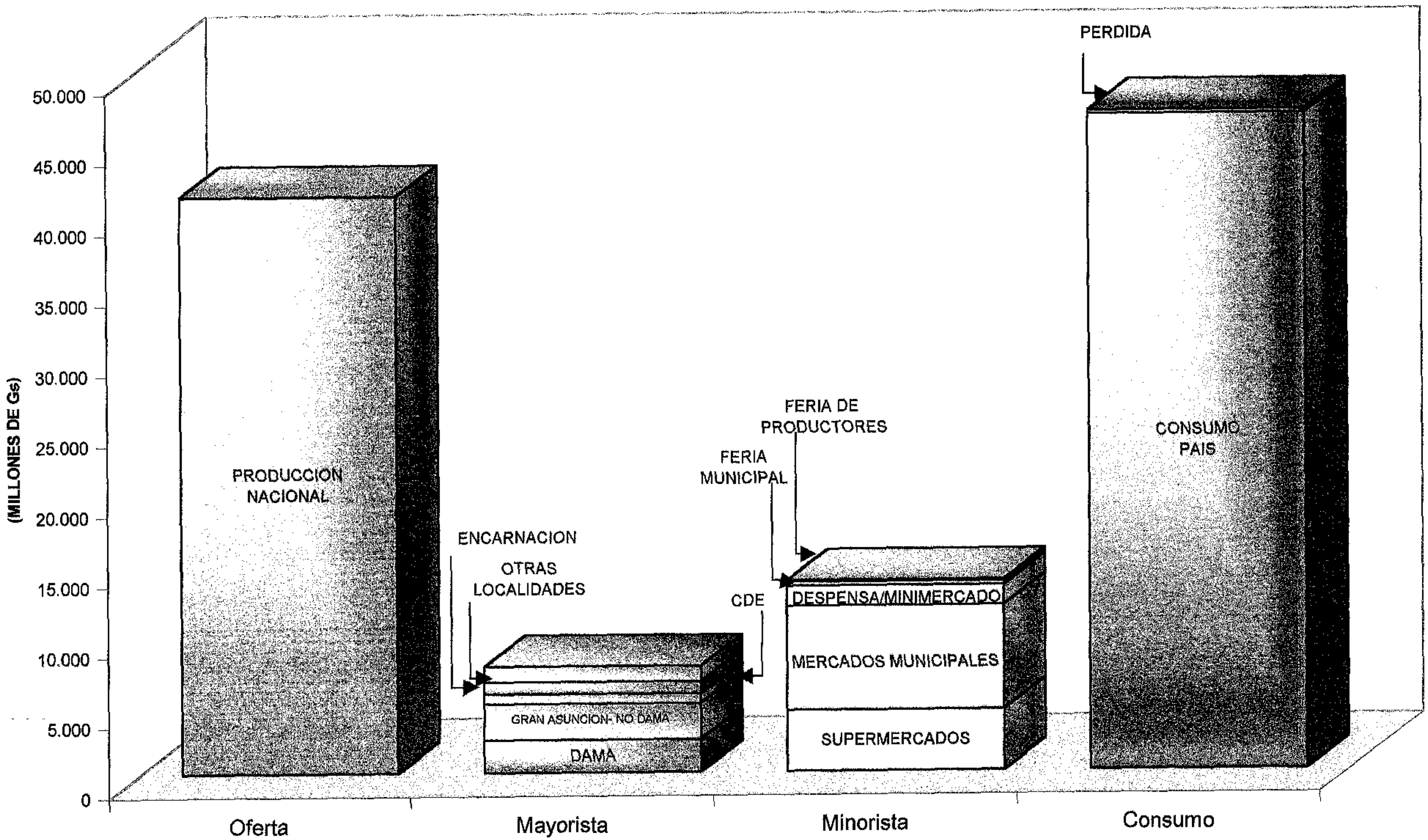
Consumidores	*Volumen (Tn)*	*Metodología de estimación*	*Fuente*
Consumo país	36.787	1. Se determina el volumen total comercializado por los minoristas: 3.791 Tn 2. Se estima un nivel de consumo resultante de la diferencia entre la oferta total y el volumen de la sumatoria de lo comercializado por minoristas, las exportaciones y las pérdidas en la comercialización: Consumo: 40.991 – (3.791 + 105 + 4.099) = 32.996 Tn 3.Volumen total de Consumo país (1 + 2) = 36.787 Tn	
Exportación	105	Es el volumen de exportación registrado por el Banco Central del Paraguay: 105 Tn **Observación:** El estudio no detectó exportación no registrada.	BCP
Pérdida	4.099	Se estima una pérdida del 10% de la oferta total por manipuleo en el proceso de comercialización: (40.991 x 10%) = 4.099 Tn	
Total	**40.991**		

Figure 22: Flow chart of bean commercialization in Paraguay (Volume in tons). Year 2002



Ref. Las letras y porcentajes dentro del gráfico tienen el mismo color de las columnas de valores de donde proviene cada segmento.

Figure 23: Flow chart of bean commercialization in Paraguay (in millions of Guaraníes). Year 2002



The supply of bean in Paraguay is represented exclusively by the available national production, that on average reaches around 41.000 tons, *Table E-3, Annex E. Table 77* shows the estimate bean supply, standing out that it is of national origin. Data of foreign bean entrance don't exist.

Table 77. Estimate of bean supply by origin in Paraguay. Year 2002

Origin	*Volume (Tons)*	*Percentage (%)*
Nacional available production	40.991	100,00
Imports	SD	--
Not Registered entrances	SD	--
Total	***40.991***	***100,00***

Source: Elaborated on data of DGA, CEASA (Brazil) DDV/MAG.

The bean is distributed by producers to local gatherers who take charge of the transport and sale to wholesalers located in or outside DAMA, to wholesalers of the municipal markets of towns of the interior, to consumers in the municipal markets, or directly on farm. Interestingly in 2002, a small volume (105 tons) it was exported to Portugal, Spain and Brazil, *Figure 22*. The national bean supply in DAMA is marketed by producers associated to organizations like NIKKEI, CEPACOOP, CECOPROA and FUNDECA, among others, *Table 78.*

Table 78. Volume of national bean marketed in DAMA, by Association, Year 2002

Association	*Marketed volume (Tons)*
NIKKEI	2,15
CECOPROA	71,12
CEPACOOP	2,15
FUNDECA	360
Total	*435,42*

Source: Elaborated based on interviews to managers of the associations.

Table 79 shows the volume of bean acquired by wholesalers according to the location area.

Table 79. Volume of bean channeled by wholesalers, according to location area. Year 2002

Location Zone	*Volume (Tons)*	*Percentage (%)*
DAMA	776	30,54
GRAN ASUNCIÓN (EXCLUDED DAMA)	850	33,45
OTHER CITIES OF THE COUNTRY		
Ciudad del Este	300	
Encarnación	350	
Coronel Oviedo	15	
Otros*	250	
Sub total OTHER CITIES OF THE COUNTRY	915	36,01
Total	*2.541*	100,00

*Source: Elaborated based on interviews to wholesalers located in DAMA, Great Asunción, Ciudad del Este, Encarnación and Colonel Oviedo. * Other = Estimative volume of other gatherer (based on interviews with key informants).*

Wholesalers channeled 6,7% of the total offer of bean, they distribute the product to supermarkets and other retailers, *Figure 22*. It is important to point out the importance of supermarkets as commercialization agents, they captured 38,71% of the total volume marketed by the wholesalers, and, the remaining volume was sold to other retailers located in DAMA, municipal fairs, despensas and mainly to municipal markets, *Table 80.*

Table 80. Volume of distribution of bean from wholesalers to retailers. Year 2002

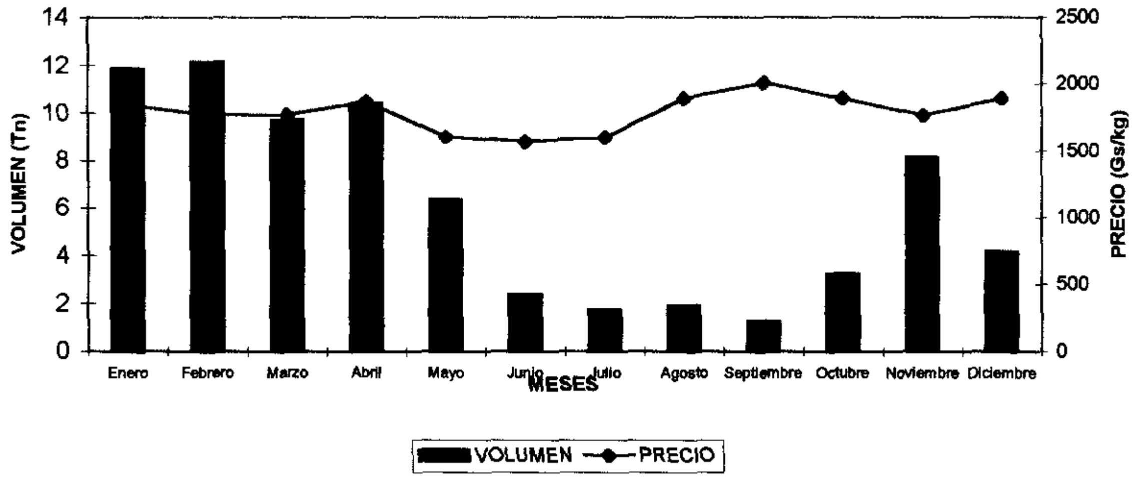
Retailers	*Volume (Tons)*	*Percentage (%)*
SUPERMARKETS	1.061	38,71
OTHER RETAILERS		
Municipal Markets	1.294	
Despensas/Minimercados	319	
Municipales Fairs	67	
Sub Total OTHER RETAILERS	1.680	61,29
Total	*2.741*	*100,00*

Source: Elaborated based on interviews to supplying wholesalers of supermarkets, feriantes other retailers.

2.8.2. Prices and seasonality

The bean is marketed during the whole year, however it register important entrance volumes to the market starting from November until April. In spite of this seasonal pattern, the prices don't present a marked variation as is observed in *Figure 24.*

Figure 24: Volume and monthly price of bean. 2002



The data of the precedent figure correspond to sales carried out in CECOPROA and CEPACOOP during 2002. These organizations, between the months of January and April, register 60% of the total trade of this produce, *Table E-6, Annex E.*

2.8.3. Value of the commercialization according to origin and channel

2.8.3.1. Value of the commercialization by origin

The value of commercialization of the local produced bean was estimated in 40.991 millions of Guaraníes, *Figure 23 and Table 81.* For the estimate of the commercialization values the prices used is presented:

Table 81. Estimate of bean commercialization value by origin. Year 2002

Origin	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
National	40.991	1.000	40.991	100,00
Foreigner	SD	SD	--	--
Total	***40.991***		***40.991***	***100,00***

Source: Dear based on data of the Direccion General de Aduanas, CEASA (Brazil) and of the DDV/MAG.

In the *Table 82* the sources to estimate bean prices is presented:

Table 82: Prices established for bean commercialization. March 2003

Origin	*Price (Gs/Kg)*	*Observations*
National	1.000	It corresponds to on farm price, according to producer interviews
WHOLESALERS		
DAMA	3.000	Estimate based on interviews with wholesalers of DAMA.
Gran Asunción	3.000	Estimate based on interviews with wholesalers located outside DAMA.
Ciudad del Este	2.300	Estimate based on interviews with wholesalers of Ciudad del Este Municipal Markets.
Encarnación	2.500	Estimate based on interviews with wholesalers of Encarnación Municipal Market.
Coronel Oviedo	2.500	Sale price provided by technicians and wholesalers of the area
RETAILERS		
Supermarkets	3.900	Estimate based on sale prices average of Great Asunción and Encarnacion's main supermarkets.
Municipal Markets	3.300	Estimate on sale prices average of San Lorenzo and Encarnación. Municipal Markets
Despensas/Minimercados	4.500	Estimate based on sale prices average in Despensas and Minimercados of San Lorenzo and Encarnación.
Municipal Fairs	4.000	Estimate based on sale prices average in Asunción and Encarnación Municipal Fairs.
Farmers Fairs	2.000	Estimate based on sale prices average in Farmers Fairs of Ciudad del Este and Encarnación.

2.8.3.2. Value of commercialization according to wholesalers

In relation to wholesalers' sale by location, in DAMA sales reached 30,79% of the total value marketed in the country. Also, it stands out that wholesalers ' markets located in other towns like Ciudad del Este, Gran Asunción and Coronel Oviedo market for around 22,22% of total the valued marketed in the country, *Table 83.*

Table 83. Estimate of bean sales by wholesalers according to location area. Year 2002.

Zona	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
DAMA	776	3.000	2.328	30,79
GRAN ASUNCION	850	3.000	2.550	33,73
OTHER CITIES OF THE COUNTRY				
Ciudad del Este	300	2.300	690	9,13
Encarnación	350	2.500	875	11,57
Coronel Oviedo	15	2.500	38	0,50
Otras	450	2.400	1.080	14,28
Sub Total OTHER CITIES OF THE COUNTRY	1.115			
Total	*2.741*		*7.561*	*100,00*

Source: Based on interviews with wholesalers of the different study areas.

2.8.3.3. Value of commercialization according to retailers

Sales carried out by retailers to consumers were estimated in 13.542 millions Guaraníes, 32% corresponding to bean sales carried out in supermarkets, and valued in approximately 4.333 millions of Guaraníes.

The sales estimate also indicate that sales carried out by other retailers is small, except that the marketed through the municipal markets and despensas that represents 96% of the value marketed by this channel, see *Table 84.*

Table 84. Estimate of bean sales by retailers. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
SUPERMARKETS	1.111	3.900	4.333	32,00
OTHER RETAILERS				
Municipales Markets	2.244	3.300	7.405	54,68
Despensas/Minimerc.	319	4.500	1.436	10,60
Municipales Fairs	67	4.000	268	1,98
Fairs of Producers	50	2.000	100	0,74
Sub Total OTHER RETAILERS	2.680			
Total	*3.791*		13.542	*100*

Source: Based on prices collected in the purchase places.

2.8.3.4. Value of commercialization according to final consumption destination

The value of the purchases through all the commercialization channels by consumers reached 46.538 millions of Guaraníes coming from the sales to consumers estimated in (13.542 millions of Guaraníes) and the value corresponding to sales of 32.996 tons valued at (1.000 Gs/Kg), that is the price received by producers, *Table 85.*

Table 85. Estimated bean commercialization value according to final consumption destination. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millones de Gs)*
Country Consumption (through retailers)	3.791	3.572,14*	13.542
Country Consumption (on farm)	32.996	1.000,00	32.996
Exports	105	2.417,00	254

** Correspond to average prices weighted by retailers sales volume (see Table 84).*

2.8.4. Margins of commercialization of a representative channel

The commercialization margin, according to the origin of the supply, indicates that the difference among the price paid by the consumer and the price average received by the producer on property is 2.900 Gs/Kg, representing 74% of total margin of commercialization, *Table 86.*

Table 86. Total margin of commercialization of bean. 2002

Prices and margins	*Value (Gs/Kg)*	*Margin (Gs/Kg)(%)*
On farm price	1.000	
Wholesalers price	3.000	
Retailers price	3.900	2.900 (74%)

Source: Estimate based on data provided by wholesalers, retailers producers.

2.9. Orange

The orange (Citrus sinensis) is the fruit more consumed in fresh in the country. The consumption per-cápita is 53 daily grams in the metropolitan area, according to data of the DGEEC.

The orange production most important areas are located in the departments of Itapúa, San Pedro, Caaguazú and Cordillera, that together produced in the year 2001 an approximate volume of 122.617 tons, representing 61% of the total national production, *Table E-1, Annex E.*

The orange plantations can be carried out in our country in the months of April, May and June. The supply of the national product begins in March and extends until December, nevertheless the biggest supply concentrates on the months of July to December, *Table E-2 Annex E.*

2.9.1. Channels of commercialization

The main agents involved in the commercialization of the orange constitute the national producers, wholesalers, retailers and the consumers. The commercialization flow charts presented in *Figures 25 and 26* illustrates the commercialization market, according to the main involved agents at national level. The study estimated that in the process of commercialization of this fruit a global loss of 10% on the total offer exists (19.557 tons).

The methodology used for the construction of the commercialization flow charts in volume and value is presented:

Table 87-A: Methodology to estimate orange commercialization volumes – National supply. Year 2002

Oferta	*Volumen (Tn)*	**Metodología de estimación**	*Fuente*
Producción Nacional Disponible	151.048	1. Promedio de los últimos años (1996-2001), de la producción nacional (201.397 Tn) 2. Se estima una pérdida por cosecha de 25%. (50.349 Tn) 3. Producción Nacional Disponible (1-2) = 151.048 Tn	▪ DCEA
Importación Registrada	37.104	4. Datos sistematizados en base a registros de Aduanas (Sistema SOFIA) = 37.104 Tn	DGA
Importación No Registrada	7.423	**(A) Estimación de volumen ingresado al país, de origen brasilero, no registrado:** 5. Volumen comercializado en CEASA-PR (Foz de Yguazú), año 2002 (5.458 Tn), se estima un 80% que ingresa al país = 4.367 Tn 6. Estimación de ingreso desde otros mercados de Foz de Iguazú. Se estima un 60,7% del volumen ingresado desde CEASA (4.367 x 60,7%) = 2.650 Tn 7. Volumen Total estimado de ingreso desde Brasil (5 + 6) = 7.017 Tn	Registros de CEASA-PR (Central de Curitiba) y estimación dada por Directivos de CEASA-PR (Foz de Yguazú) y entrevistas a mayoristas de DAMA
		8. Ingreso registrado al país (Base de datos de Sistema SOFÍA), de origen brasilero = 1.144 Tn 9. Volumen de ingreso de origen brasilero No Registrado (7 - 8) = 5.873 Tn	DGA
		(B) Estimación de volumen ingresado al país, de origen argentino, no registrado: 10. Se consideran las proporciones de ingreso de naranja de origen extranjero en DAMA: Brasil (15,759%) y Argentina (84,241%) como iguales a las proporciones de ingreso al Paraguay desde Argentina y Brasil. 11. Estimación del volumen total ingresado al Paraguay, en base al cálculo de lo ingresado desde el Brasil (7.017 x 100/15,759) = 44.526 Tn 12. Ingreso registrado del producto al país (Base de datos de Sistema SOFÍA), de origen argentino (35.830 Tn). 13. Ingreso registrado al país (Base de datos de Sistema SOFÍA), de otros países (130 Tn) 14. Volumen total estimado de ingreso desde Argentina (11- (7+13) = 37.380Tn 15. Volumen no registrado desde la Argentina (14-12) = 1.550 Tn **(C) Volumen Total de Ingreso No Registrado (9 + 15) = 7.423 Tn**	
Total oferta	**195.575**		

Table 87-B: Methodology to estimate volume of orange marketed by wholesalers. Year 2002

Mayoristas	*Volumen (Tn)*	*Metodología de estimación*	*Fuente*
DAMA	41.430	1. Los mayoristas identificados fueron clasificados en grupos, según el volumen promedio anual que comercializan. Grupo Numero Prom/año Total I (2) 1.354 2.708 II (20) 269 5.380 III (30) 1.111,4 33.342 2. Volumen Total comercializado en DAMA (GI +GII + GIII) = 41.430 Tn	Entrevistas a Mayoristas de DAMA Observación directa en DAMA
Fuera de DAMA (Gran Asunción)	553	3. Promedio de venta anual x 3 mayoristas individualizados 184.3 x 3 = 553 Tn **Observación**: Los mayoristas de San Lorenzo no comercializan este rubro.	Entrevistas a mayoristas ubicados fuera de DAMA
Ciudad del Este	356	4. Promedio de venta anual x 3 mayoristas: 118.6 x 3 = 356 Tn	Entrevistas a mayoristas de Ciudad del Este
Encarnación	420	5. Promedio de venta anual x 10 mayoristas: 42 x 10 = 420 Tn	Entrevistas a mayoristas de Encarnación
Coronel Oviedo	233	6. Promedio de venta anual x 3 mayoristas: 77.6 x 3 = 233 Tn	Entrevistas a mayoristas de Coronel Oviedo
Total mayoristas	**42.992**		

Table 87-C: Methodology to estimate volume of orange marketed by retailers. Year 2002

Minoristas	*Volumen (Tn)*	*Metodología de estimación*	*Fuente*
Supermercado	67.226		Entrevistas a Gerentes de Supermercados y de de la Empresa KIMEX
(A) Directo de oferta		(A) 1. Se estimó un 5% sobre el volumen total de ingreso extranjero (44.526 x 5%) = 2.226 tn 2. Volumen proveniente de KIMEX* = 34.000 tn 3. Se estima un volumen de compra directa de productores = 31.000 tn 4. Total de compra directa (1+2+ 3) = 67.226 tn	
(B) A través de mayoristas	15.829	(B) 1. Mayoristas DAMA: Se estimó un porcentaje promedio de venta a supermercados por mayoristas para los grupos II y III, en base al volumen total comercializado en DAMA. Para el Grupo I se determinó según lo manifestado por cada mayorista:	Entrevistas con Mayoristas

	Volumen venta a Super	Porcentaje Promedio (%)	Total (Tn)
GI Mayorista 1	750	80	600
Mayorista 2	1.958	30	587
GII	5.380	70	3.766
GIII	33.342	30	10.002
Total	41.430		14.955

		2. Mayoristas No-DAMA: Se estimó en base al porcentaje promedio de venta a supermercados por mayoristas del Gran Asunción ubicados fuera de DAMA 553 x 92,95% = 514 Tn	
		3. Estimación del porcentaje promedio de venta a supermercados por mayoristas de Otras Localidades.	
		Ciudad del Este = 0 tn	
		Encarnación: 420 x 69% = 290 tn	Entrevista a Gerentes de supermercados
		Cnel. Oviedo: 233 x 30% = 70 tn	Entrevista a técnico del MAG

* Empresa agroindustrial ubicada en el distrito de Carlos Antonio López, departamento de Itapúa.

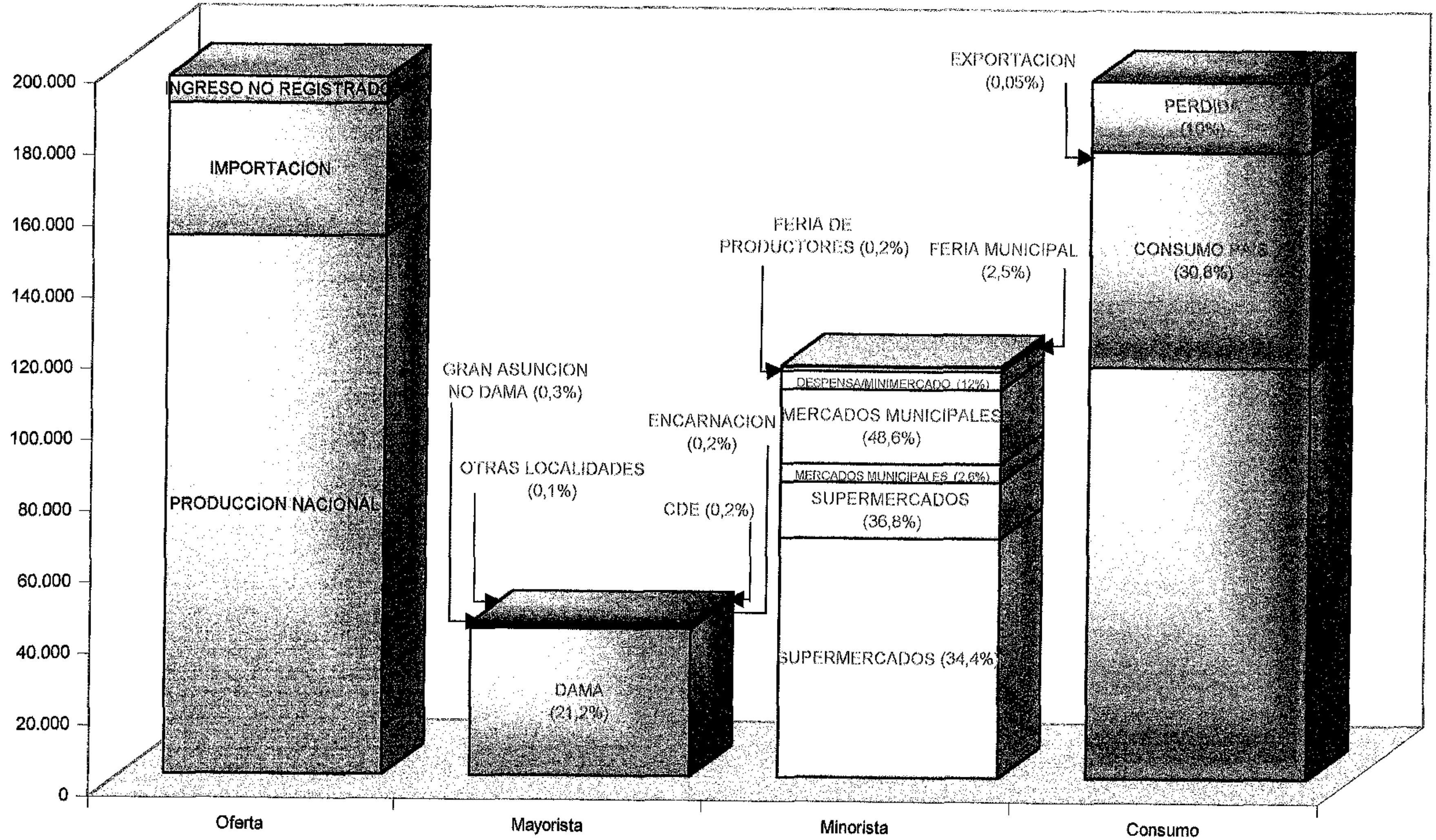
Table 87-C: (Continuation)

Otros minoristas		Del volumen total comercializado por mayoristas se resta las ventas a supermercados: 42.992 – 15.829 = 27.163 Tn	Entrevistas a vendedores de Mercados Municipales
		Este volumen se distribuye proporcionalmente en base a preferencia por lugar de compra según la encuesta a consumidores: Mercado Municipal (77 %); Despensa/Minimercado (19%) y Feria Municipal (4%).	Encuesta a consumidores
▪ Mercado Municipal			
(C) A través de mayoristas	20.915	(C) 27.163 x 77% = 20.915 Tn	
(D) Directo de oferta	5.000	(D) Volumen estimado según entrevistas a vendedores de los Mercados Municipales.	
▪ Despensa / Minimercado	5.161	27.163 x 19% = 5.161 Tn	Encuesta a consumidores
▪ Feria Municipal	1.087	Del volumen total comercializado por mayoristas se deduce las ventas a supermercados y el volumen resultante se distribuye proporcionalmente en base a preferencia por lugar de compra: 27.163 x 4% = 1.087 Tn	Encuesta a consumidores
▪ Feria de Productores	405	Sumatoria de volumen comercializado por las Ferias de Productores, determinado en base datos proveídos por feriantes e informantes calificados	
Total minoristas	**115.623**		

Table 87-D: Methodology to estimate orange consumption volume. Year 2002

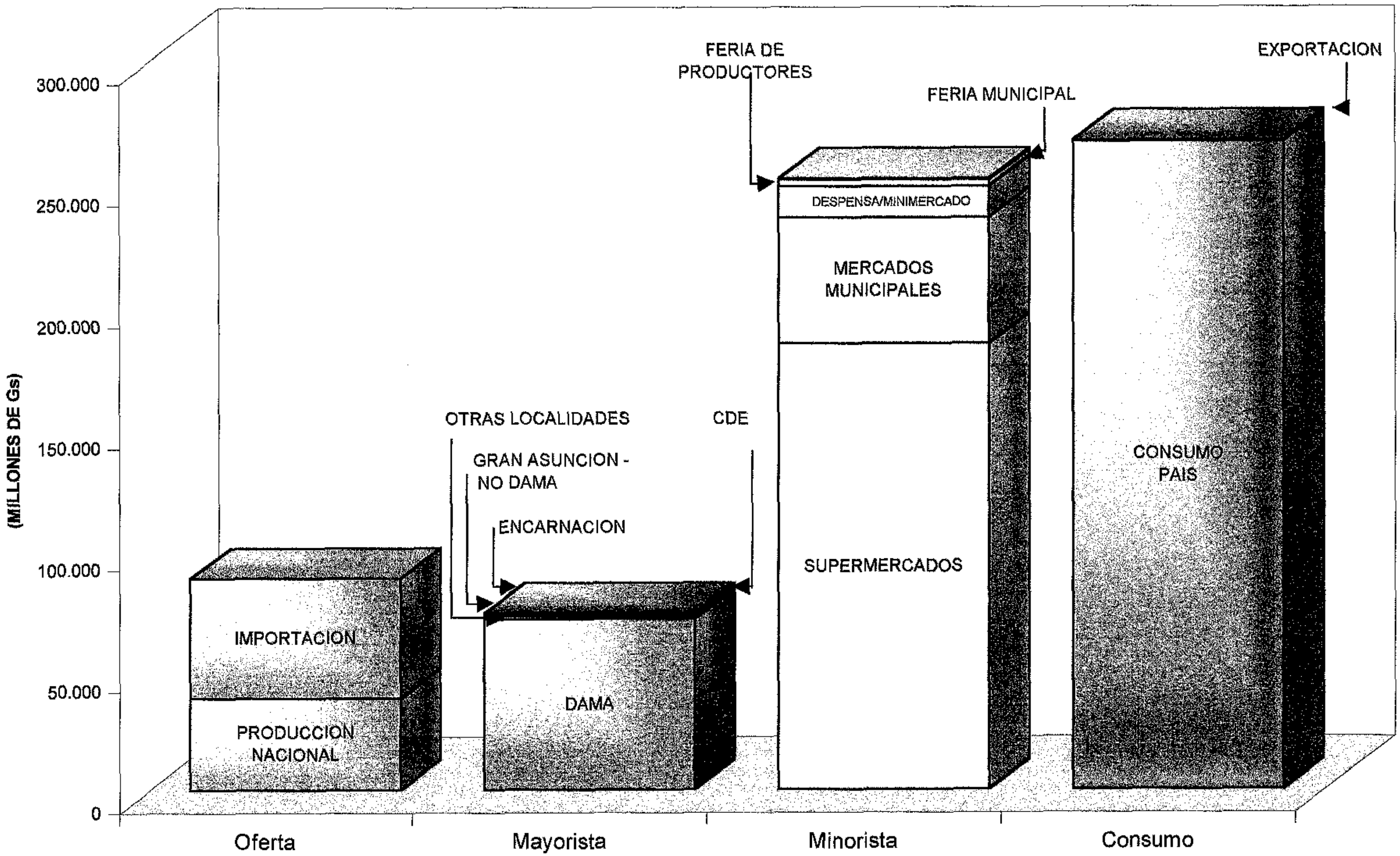
Consumidores	***Volumen (tn)***	***Metodología de estimación***	***Fuente***
Consumo país	175.926	1. Se determina el volumen total comercializado por los minoristas: 115.623 tn 2. Se estima un nivel de consumo resultante de la diferencia entre la oferta total y el volumen de la sumatoria de lo comercializado por minoristas, las exportaciones y las pérdidas en la comercialización: Consumo: 195.575 – (115.623 + 91 + 19.558) = 60.303 tn 3. Volumen total de Consumo país (1 + 2) = 175.926 tn	
Exportación	91	Es el volumen de exportación registrado por el Banco Central del Paraguay: 91 tn **Observación:** El estudio no detectó exportación no registrada.	▪ BCP
Pérdida	19.558	Se estima una pérdida del 10% de la oferta total por manipuleo en el proceso de comercialización: (195.575 x 10%) = 19.558 tn	
Total	**195.575**		

Figure 25: Flow chart of orange commercialization in Paraguay (Volume in tons). Year 2002



Ref. Las letras y porcentajes dentro del gráfico tienen el mismo color de las columnas de valores de donde proviene cada segmento.

Figure 26: Flow chart of orange commercialization in Paraguay (in millions of Guaraníes). Year 2002



The orange supply in Paraguay is represented by the available national production and for orange of foreign origin. the available annual national production reaches on the average around 151.048 tons, *Table E-3, Annex E.*

The other sector that contributes to orange supply constitutes product of foreign origin that entered a total of 44.526 tons, this sector constitute the imports and orange entrances not registered, *Table 88.*

Table 88. Estimate of orange supply by origin in Paraguay. Year 2002

Origin	*Volume (Tons)*	*Percentage (%)*
National Production Available	151.048	77,23
Imports	37.104	18,79
Not Registered entrances	7.423	3,80
Total	*195.575*	*100,00*

Source: Elaborated on data of DGA, CEASA (Brazil) DDV/MAG.

Data registered by the Dirección General de Aduanas indicate that in the year 2002 entered to the country a total volume of 37.104 tons of orange, 1.144 tons entered from Brazil and from the Argentina, contrarily to movements of previous years, in the 2002 entered a superior volume reaching a total of 35.830 tons, *Table E-4, Annex E.*

It is important to highlight that of the total volume of foreign orange marketed, an estimate of 17% do not corresponds to entrance volumes registered officially, *Table E-5, Annex E.*

The orange distribution is different according to its origin. For instance, the national production is distributed by producers to wholesalers located in or outside DAMA, to wholesalers located at the municipal markets of interior towns, to consumers in municipal markets, sell directly on farm, and, a small volume (91 tons) is exported to Germany and Spain, *Figure 25.* The national orange supply in DAMA is marketed by producers associated to organizations like NIKKEI and CEPACOOP, *Table 89.*

Table 89. Volume of national orange marketed in DAMA, by Association, Year 2002

Association	*Marketed volume (Tons)*
NIKKEI	30,73
CEPACOOP	3,73
Total	*34,46*

Source: Elaborated based on interviews to managers of the associations.

In the analysis of orange commercialization it is important to highlight the presence of KIMEX (FRUTIKA) as an enterprise that produce and trade citric. FRUTIKA has 1.000 hectares of citric in production and other 1.000 hectares that will be in production in 3 years. KIMEX sells 80% of its orange production (24 tons) in fresh and the rest to the industry.

On the other hand, the foreign orange that enters to the country is channeled in its biggest proportion by wholesalers and some by retailers (supermarkets). Supermarkets acquire the product in origin, specifically from CEASA and other markets of Foz of Yguazú (Brazil), Supply Markets of Posadas and of Clorinda (Argentina).

Table 90 shows the channeled orange volume for wholesalers according to the location area. It stands out the gathering of orange supply through wholesalers located in DAMA.

Table 90. Volume of orange channeled by wholesalers, according to location area. Year 2002

Location Zone	*Volume (Tons)*	*Percentage (%)*
DAMA	41.430	96,37
GRAN ASUNCIÓN (EXCLUDED DAMA)	553	1,29
OTHER CITIES OF THE COUNTRY		
Ciudad del Este	356	
Encarnación	420	
Coronel Oviedo	233	
Sub total OTHER CITIES OF THE COUNTRY	1.009	2,35
Total	***42.992***	***100,00***

Source: Elaborated based on interviews to wholesalers located in DAMA, Great Asunción, Ciudad del Este, Encarnación and Colonel Oviedo.

The total supply of orange is channeled mainly by wholesalers, these distribute the product to supermarkets and other retailers, *Figure 25*. Currently, it is of highlighting the importance of supermarkets since they capture approximately 37% of the volume marketed by the wholesalers. The other half is sold to other retailers located in DAMA, municipal fairs, despensas and mainly in the municipal markets, *Table 91*.

Table 91. Volume of orange distribution from wholesalers to retailers. Year 2002

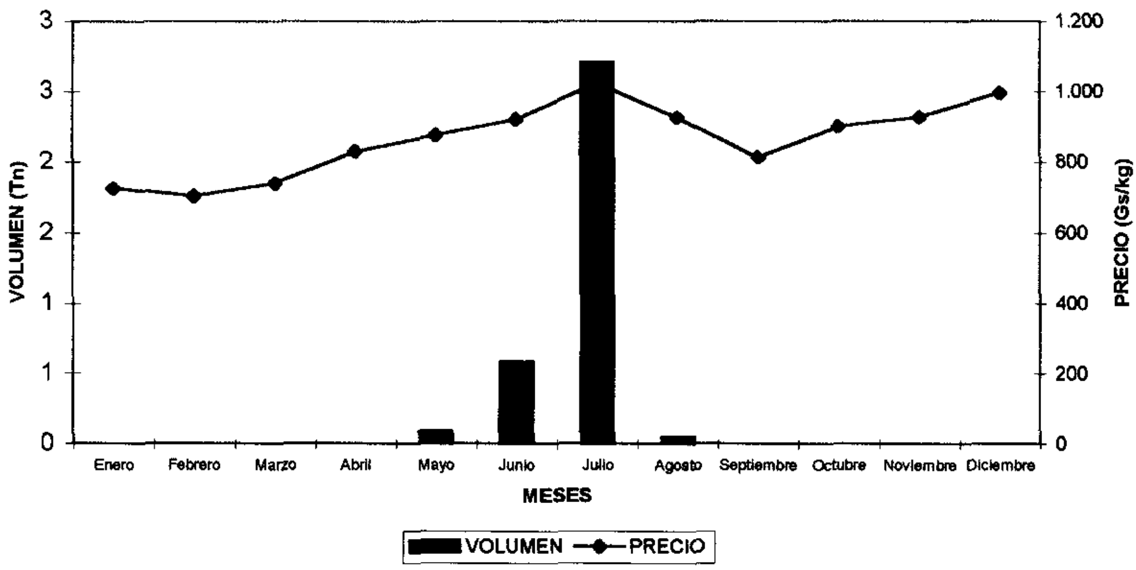
Retailers	*Volume (Tons)*	*Percentage (%)*
SUPERMARKETS	15.829	36,82
OTHER RETAILERS		
Municipales Markets	20.915	
Despensas/Minimercados	5.161	
Municipales Fairs	1.087	
Sub Total OTHER RETAILERS	27.163	63,18
Total	***42.992***	***100,00***

Source: Elaborated based on interviews to supplying wholesalers of supermarkets, feriantes and other retailers.

2.9.2. Prices and seasonality

The analysis of the orange monthly prices, according to 2002 data from CEPACOOP, allows to identify price fluctuations related to supply seasonality. This way, from January to June low monthly volumes are marketed and prices show sustained increments that reach a maximum in the month of July, *Figure 27.*

Figure 27 : Volume monthly price of orange.



Data of the precedent graph denotes that in the year 2002, 91,5% of the volume marketed by CEPACCOP was carried out during the months of June to July, *Table E-6, Annex E.*

On the other hand, it is necessary to mention that orange prices that govern most of the year are determined by foreign orange prices acquired directly by big and medium wholesalers in the markets of Foz of Yguazú (Brazil), Clorinda and Posadas (Argentina), mainly.

2.9.3. Value of the commercialization according to origin and channel

2.9.3.1. Value of the commercialization by to origin

The total commercialization value of national and foreigner entered orange was estimated in 87.186 millions Guaraníes, *Figure 26 and Table 92.* The biggest value in the commercialization comes from the marketing of foreign orange that has a higher price average than national orange, as can be observed next:

Table 92. Estimate of orange commercialization value by origin. Year 2002

Origin	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millones de Gs)*	*Percentage (%)*
National	151.048	250	37.762	43,31
Foreign	44.526	1.110	49.424	56,69
Total	***195.574***		***87.186***	***100,00***

Source: Estimate based on data of the Dirección General de Aduanas, CEASA (Brazil) and of the DDV/MAG.

In the following Table the sources of orange prices estimates are presented:

Table 93: Prices established for orange commercialization. March 2003

Origin	*Price (Gs/Kg)*	*Observations*
National	250	It corresponds to on farm price, according to interview to producers
Foreign	1.110	It corresponds to price based on data provided for wholesalers importers.
WHOLESALERS		
DAMA	1.700	Estimate based on interviews with wholesalers of DAMA.
Gran Asunción	1.700	Estimate based on interviews with wholesalers located outside of DAMA.
Ciudad del Este	1.650	Estimate based on interviews with wholesalers of the Municipal Market of Ciudad del Este.
Encarnación	1.300	Estimate based on interviews with wholesalers of the Municipal Market of Encarnacion
Coronel Oviedo	1.500	Sale price provided by technicians and wholesalers of the area.
RETAILERS		
Supermarkets	2.210	Estimate based on sale prices of Great Asunción's main supermarkets and Encarnación.
Municipal Markets	2.000	Estimate based on sale prices of Municipal markets of San Lorenzo and Encarnación.
Despensas/Minimercados	2.500	Estimate based on sale prices in Despensas and Minimercados of San Lorenzo and Encarnación.
Municipal Fairs	2.500	Estimate based on sale prices in Asunción's Municipal Fairs and Encarnación.
Farmers Fairs	1.000	Estimate based on sale prices in the Producers Fairs of Encarnación and Ciudad del Este.

2.9.3.2. Value of commercialization according to wholesalers

In relation to wholesalers' sale by location area, DAMA continues being the main place where orange trade is carried out considering that 96,67% of the total marketed value was traded through wholesalers located in DAMA. It is of highlighting that the markets wholesalers located in other towns like Ciudad del Este, Gran Asunción and Coronel Oviedo trade for a total value of only 2%, *Table 94.*

Table 94. Estimate orange sales by wholesalers according to location area. Year 2002.

Zone	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
DAMA	41.430	1.700	70.431	96,67
GRAN ASUNCION	553	1.700	940	1,29
OTHER CITIES OF THE COUNTRY				
Ciudad del Este	356	1.650	587	0,81
Encarnación	420	1.300	546	0,75
Coronel Oviedo	233	1.500	350	0,48
Sub Total OTHER CITIES OF THE COUNTRY	1.009		1.483	2,04
Total	*42.992*		*72.854*	*100,00*

Source: Based on interviews with wholesalers of the different study areas.

2.9.3.3. Value of commercialization according to retailers

Sales carried out by retailers to consumers reached a total estimated in 251.409 millions Guaraníes, 73% corresponds to orange sales carried out in the supermarkets, valued in approximately 183.554 millions of Guaraníes.

The estimates made by the study also indicate that sales carried out by other retailers are minor. Is stands out that among the other retailers sales carried out in the municipal markets and groceries represent 95,3% of the total marketed by this channel, *Table 95.*

Table 95. Estimate of orange sales by retailers. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millones de Gs)*	*Percentage (%)*
SUPERMARKETS	83.056	2.210	183.554	73,01
OTHER RETAILERS				
Municipales Markets	25.915	2.000	51.830	20,62
Despensas/Minimerc.	5.161	2.500	12.903	5,13
Municipales Fairs	1087	2.500	2.718	1,08
Fairs of Producers	405	1.000	405	0,16
Sub Total OTHER RETAILERS	32.568		67.855	26,99
Total	*115.624*		*251.409*	*100,00*

Source: Based on prices collected in the purchase places.

2.9.3.4. Value of commercialization according to final consumption destination

On the other hand, the value of consumers' purchases through all the commercialization channels reached approximately 266.485 millions of Guaraníes, coming from sales to consumers (251.409 millions Guarani of) and from sales of 60.302 tons of orange valorized at the producer price (250 Gs/Kg).

Finally, the exports were valued using the annual price average and total volume provided by BCP, *Table 96.*

Table 96. Estimated orange commercialization value according to final consumption destination. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millones de Gs)*
Country Consumption (through retailers)	115.624	2.174,37*	251.409
Country Consumption (on farm)	60.302	250,00	15.076
Exports	91**	5.670,00	514

** Correspond to average prices weighted by retailers sales volume (see table 95).*

2.9.4. Margins of commercialization of a representative channel

The commercialization margins according to the origin of the supply indicate that the difference among the price paid by the consumer and the price average received by producers on farm is 1.960 Gs/Kg, representing a total margin of commercialization of 89%, *Table 97.*

Table 97. Total margin of commercialization of orange. 2002

Prices and margins	*Value (Gs/Kg)*	*Margin (Gs/Kg)(%)*
On farm price	250	
Wholesalers price	1.700	
Retailers price	2.210	1.960 (89%)

Source: Estimate based on data provided by wholesalers, retailers producers.

2.10. Pineapple

The pineapple (Pineapples comosus L.) is a fruit of great acceptance in the country for consumption in fresh. The consumption per-cápita is of 12,6 daily grams in the metropolitan area, according to data of the DGEEC. The main varieties marketed in the country belong to the group Abacaxi, Cayena Lisa and Perola.

The pineapple production most important areas are located in the departments of Concepción, San Pedro, Cordillera and Guairá, that together produced in the year 2001 approximately 36.285 tons, representing 80% of the total national production, *Table E-1, Annex E.*

The plantation of pineapple dog be carried out mainly in the months of February to May, depending on the type of used seed. The supply of the national product begins in October and extends until May, nevertheless the supply concentrates on the months of November, December and January, Table *E-2, Annex E.*

2.10.1. Channels of commercialization

The main agents involved in the commercialization of the pineapple constitute the national producers, wholesalers, retailers and the consumers. The commercialization flow charts presented in *Figure 28 and 29* illustrates the commercialization market, according to the main involved agents, at national level. The study estimated that in the commercialization process of this fruit a global loss of 15% on the total supply exists (5.455 tons).

The methodology used for the construction of the commercialization flow charts in volume and value is presented:

Table 98-A: Methodology to estimate pineapple commercialization volume– National supply. Year 2002

Oferta	*Volumen (Ton)*	**Metodología de estimación**	*Fuente*
Producción Nacional Disponible	28.577	1. Promedio de los últimos años (1996-2001), de la producción nacional (38.103 Tn) 2. Se estima una pérdida por cosecha de 25%. (9.526 Tn) 3. Producción Nacional Disponible (1-2) = 28.577 Tn	▪ DCEA
Importación Registrada	2.443	4. Datos sistematizados en base a registros de Aduanas (Sistema SOFIA) = 2.443 Tn	▪ DGA
Importación No Registrada	5.348	**(A) Estimación de volumen ingresado al país, de origen brasilero, no registrado:** 5. Volumen comercializado en CEASA-PR (Foz de Yguazú), año 2002 (4.901 Tn), se estima un 80% que ingresa al país = 3.921 Tn 6. Estimación de ingreso desde otros mercados de Foz de Iguazú. Se estima un 40,8% del volumen ingresado desde CEASA (3.921 x 40,8%) = 1.600 Tn 7. Volumen Total estimado de ingreso desde Brasil (5 + 6) = 5.521 Tn	Registros de CEASA-PR (Central de Curitiba) y estimación dada por Directivos de CEASA-PR (Foz de Yguazú) y entrevistas a mayoristas de DAMA
		8. Ingreso registrado del producto al país (Base de datos de Sistema SOFÍA), de origen brasilero = 1.222 Tn 9. Volumen de ingreso de origen brasilero No Registrado (7 - 8) = 4.299 Tn	DGA
		(B) Estimación de volumen ingresado al país, de origen argentino, no registrado: 10. Se consideran las proporciones de ingreso de piña de origen extranjero en DAMA: Brasil (70,855%) y Argentina (29,145%) como iguales a las proporciones de ingreso al Paraguay desde Argentina y Brasil. 11. Estimación del volumen total ingresado al Paraguay, en base al cálculo de lo ingresado desde el Brasil (5.521 x 100/70,855) = 7.792 Tn 12. Ingreso registrado del producto al país (Base de datos de Sistema SOFÍA), de origen argentino (1.222 Tn). 13. Volumen total estimado de ingreso desde Argentina (11- 7) = 2.271 Tn 14. Volumen no registrado desde la Argentina (13-12) = 1.049 Tn **(C) Volumen Total de Ingreso No Registrado (9 + 14) = 5.348 Tn**	
Total oferta	**36.368**		

Table 98-B: Methodology to estimate volume of pineapple marketed by wholesalers. Year 2002

Mayoristas	*Volumen (Ton)*	*Metodología de estimación*	*Fuente*
DAMA	14.914	1. Los mayoristas identificados fueron clasificados en grupos, según el volumen que promedio anual que comercializan. Grupo Numero Prom/año Total I (2) 361 722 II (6) 952 5.712 III (20) 424 8.480 2. Volumen Total comercializado en DAMA (GI +GII + GIII) = 14.914 Tn	Entrevistas a Mayoristas de DAMA Observación directa en DAMA
Fuera de DAMA (Gran Asunción)	251	3. Promedio de venta anual x 3 mayoristas individualizados 83,7 x 3 = 251 Tn **Observación**: Los mayoristas de San Lorenzo no comercializan este rubro.	Entrevistas a mayoristas ubicados fuera de DAMA Mayoristas de San Lorenzo
Ciudad del Este	3.465	4. Promedio de venta anual x 3 mayoristas: 1155 x 3 = 3.465 Tn	Entrevistas a mayoristas de Ciudad del Este
Encarnación	672	5. Promedio de venta anual x 10 mayoristas: 67,2 x 10 = 672 Tn	Entrevistas a mayoristas de Encarnación
Coronel Oviedo	72	6. Promedio de venta anual x 3 mayoristas: 24 x 3 = 72 Tn	Entrevistas a mayoristas de Coronel Oviedo
Total mayoristas	**19.374**		

Table 98-C: Methodology to estimate volume of pineapple marketed by retailers. Year 2002

Minoristas	*Volumen (Ton)*	*Metodología de estimación*	*Fuente*
Supermercado (A) Directo de oferta	1.390	(A) 1. Se estimó un 5% sobre el volumen total de ingreso extranjero (7.792 x 0,05) = 390 Tn 2. Se estima un volumen de compra directa de productores: 1.000 Tn 3. Total de compra directa (1+2) = 1.390 Tn	Entrevistas a Gerentes de Supermercados
(B) A través de mayoristas	7.627	(B) 1. Mayoristas DAMA: Se estimó un porcentaje promedio de venta a supermercados por mayoristas para los grupos II y III, en base al volumen total comercializado en DAMA. Para el Grupo I se determinó según lo manifestado por cada mayorista:	Entrevistas con Mayoristas

	Volumen venta a Super	Porcentaje Promedio (%)	Total (Tn)
GI Mayorista 1	300	0,80	240
Mayorista 2	424	0,30	127
GII	5.711	0,70	3.998
GIII	8.479	0,30	2.544
Total	14.914		6.909

2. Mayoristas No-DAMA: Se estimó en base al porcentaje promedio de venta a supermercados por mayoristas del Gran Asunción ubicados fuera de DAMA 251 x 92,43% = 232 Tn	
3. Estimación del porcentaje promedio de venta a supermercados por mayoristas de Otras Localidades. Ciudad del Este = 0 tn Encarnación: 672 x 69% = 464 Tn Cnel.Oviedo: 72 x 30% = 22 Tn	Entrevista a Gerentes de supermercados Entrevista a técnico del MAG

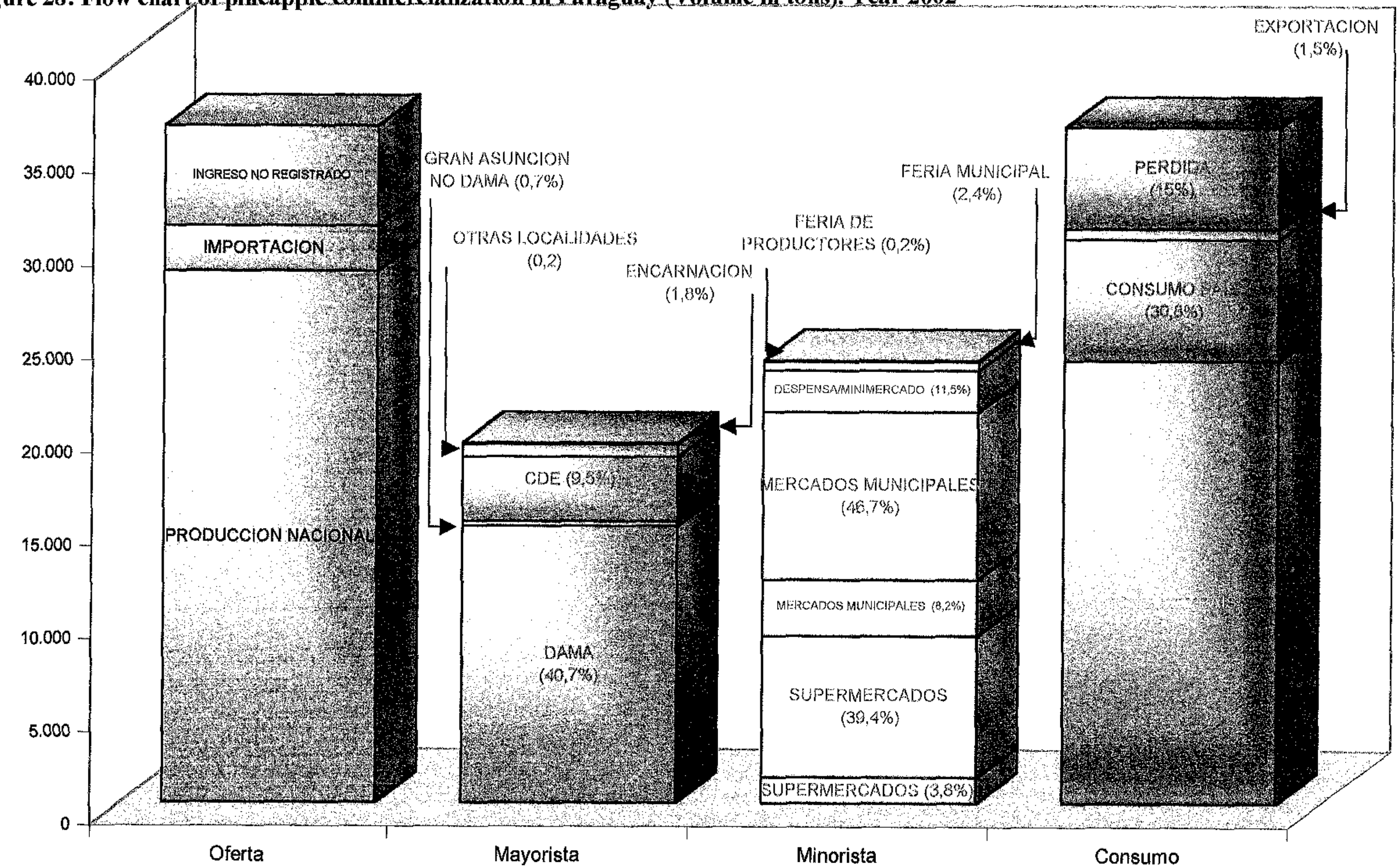
Table 98-C: (Continuation)

Otros minoristas		Del volumen total comercializado por mayoristas se resta las ventas a supermercados: 19.374 – 7.627 = 11.747 Tn	Entrevistas a vendedores de Mercados Municipales
		Este volumen se distribuye proporcionalmente en base a preferencia por lugar de compra según la encuesta a consumidores: Mercado Municipal (77 %); Despensa/Minimercado (19%) y Feria Municipal (4%).	Encuesta a consumidores
▪ Mercado Municipal			
(C) A través de mayoristas	9.045	(C) 11.747 x 77% = 9.045 Tn	
(D) Directo de oferta	3.000	(D) Volumen estimado según entrevistas a vendedores de los Mercados Municipales.	
▪ Despensa / Minimercado	2.232	11.747 x 19% = 2232 Tn	Encuesta a consumidores
▪ Feria Municipal	470	11.747 x 4% = 470 Tn	Encuesta a consumidores
▪ Feria de Productores	70	Sumatoria de volumen comercializado por las Ferias de Productores, determinado en base datos proveídos por feriantes e informantes calificados	
Total minoristas	**23.834**		

Table 98-D: Methodology to estimate pineapple consumption volume. Year 2002

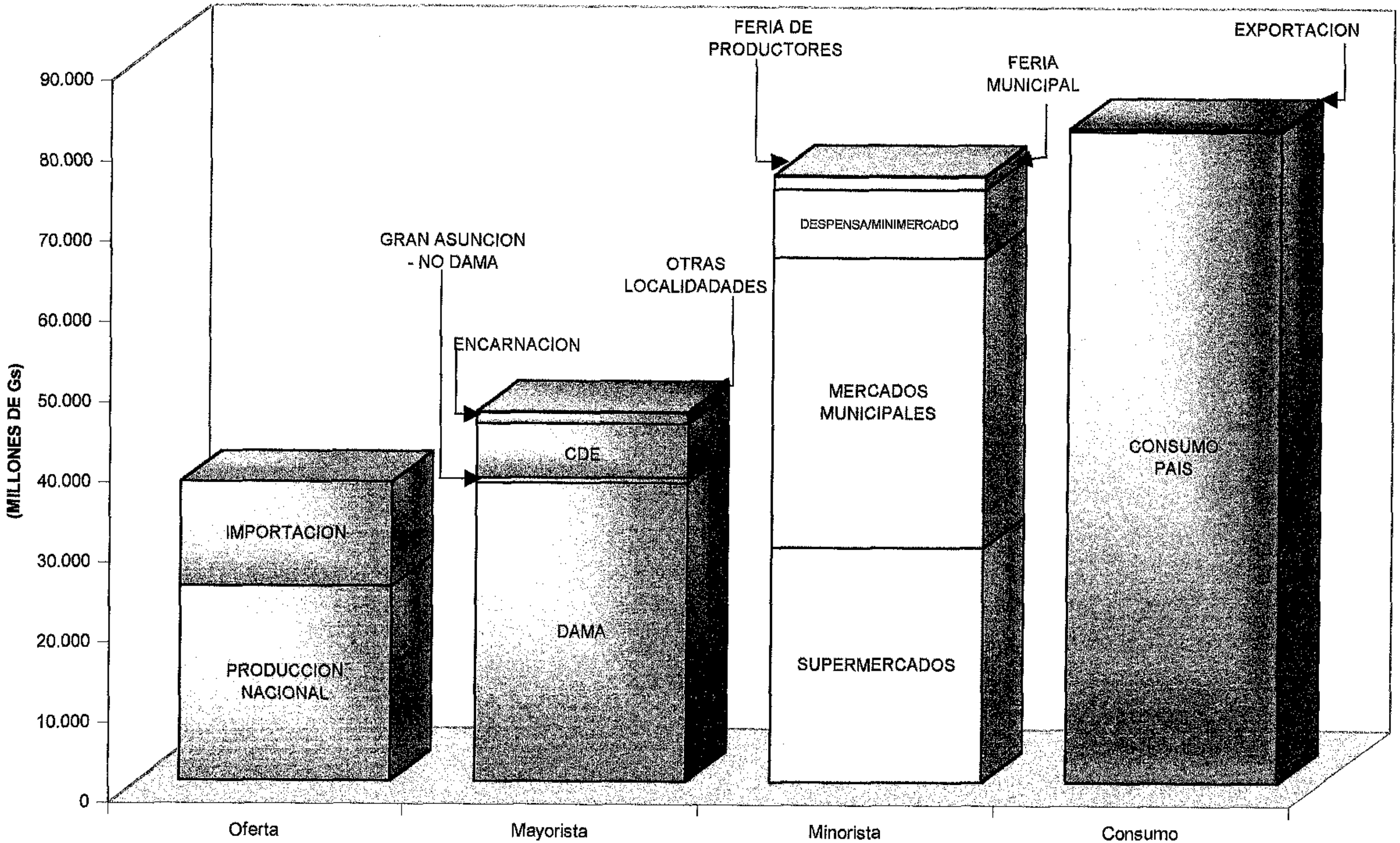
Consumidores	*Volumen (Ton)*	**Metodología de estimación**	*Fuente*
Consumo país	30.375	1. Se determina el volumen total comercializado por los minoristas: 23.834 Tn 2. Se estima un nivel de consumo resultante de la diferencia entre la oferta total y el volumen de la sumatoria de lo comercializado por minoristas, las exportaciones y las pérdidas en la comercialización: Consumo: 36.369 – (23.834 + 539 + 5.455) = 6.541 Tn 3.Volumen total de Consumo país (1 + 2) = 30.375 Tn	
Exportación	539	Es el volumen de exportación registrado por el Banco Central del Paraguay: 539 Tn **Observación:** El estudio no detectó exportación no registrada.	▪ BCP
Pérdida	5.455	Se estima una pérdida del 15% de la oferta total por manipuleo en el proceso de comercialización: (36.369 x 15%) = 5.455 Tn	▪
Total	**36.369**		

Figure 28: Flow chart of pineapple commercialization in Paraguay (Volume in tons). Year 2002



Ref. Las letras y porcentajes dentro del gráfico tienen el mismo color de las columnas de valores de donde proviene cada segmento.

Figure 29: Flow chart of pineapple commercialization in Paraguay (in millions of Guaraníes). Year 2002



The pineapple supply in the Paraguay is represented by the available national production and for pineapple of foreign origin. The available annual national production reaches on the average around 28.600 tons, *Table E-3, Annex E.*

The other sector that contributes to pineapple supply constitutes product of foreign origin that in the year 2002 entered a total of 7.792 tons to the country. This sector constitute the imports and pineapple entrances not registered, *Table 99.*

Table 99. Estimate of pineapple supply by origin in Paraguay. Year 2002

Origin	*Volume (Toneladas)*	*Percentage (%)*
National Production Available	28.577	78,58
Imports	2.443	6,72
Not Registered entrances	5.348	14,70
Total	*36.368*	*100,00*

Source: Elaborated on data of DGA, CEASA (Brazil) DDVMAG.

Data registered by the Dirección General de Aduanas indicate that in the year 2002 entered to the country a total volume of approximately 2.400 tons of pineapple, mainly from Brazil and Argentina, *Table E-4, Annex E.*

It is important to highlight that of the total volume of foreign pineapple marketed, an estimate of 68% do not correspond to entrance volumes registered officially, *Table E-5, Annex E.*

The pineapple distribution is different according to its origin. For instance, the national production is distributed by producers to wholesalers located in or outside DAMA, to wholesalers located at the municipal markets of interior towns, to consumers in the municipal markets, it is sell directly by producers on farm and a small volume (539 tons) is exported to Uruguay and Argentina, *Figure 28.*

The national pineapple is marketed in DAMA by producers associated to organizations like NIKKEI, CEPACOOP and CECOPROA, *Table 100.*

Table 100. Volume of national pineapple marketed in DAMA by Association, Year 2002

Association	*Volume (Tons)*
NIKKEI	202,86
CECOPROA	772,30
CEPACOOP	32,09
Total	*1.007,25*

Source: Elaborated based on interviews to managers of the associations.

On the other hand, the foreign pineapple that enter to the country is channels in its biggest proportion by wholesalers and some by retailers (supermarkets). Supermarkets acquire the product in origin, specifically from CEASA and other markets of Foz of Yguazú (Brazil); of Supply Market of Posadas and of Clorinda (Argentina).

The *Table 101* shows volume of pineapple channeled by wholesalers according to location area. It is of highlighting the gathering of pineapple supply through wholesalers located in DAMA.

Table 101. Volume of pineapple channeled by wholesalers, according to location area. Year 2002

Location Zone	*Volume (Tons)*	*Percentage (%)*
DAMA	14.914	76,98
GRAN ASUNCIÓN (EXCLUDED DAMA)	251	1,30
OTHER CITIES OF THE COUNTRY		
Ciudad del Este	3.465	
Encarnación	672	
Coronel Oviedo	72	
Sub total OTHER CITIES OF THE COUNTRY	4.209	21,72
Total	*19.374*	*100,00*

Source: Elaborated based on interviews to wholesalers located in DAMA, Great Asunción, Ciudad del Este, Encarnación Colonel Oviedo.

Fifty three percent of the total supply of pineapple is channeled through wholesalers, these distribute the product to supermarkets and other retailers, Figure 28. Currently, stands out the importance of the supermarkets absorbing 39% of all the volume marketed by wholesalers. The remaining volume (61%) is sold to other retailers located in DAMA, municipal fairs, despensas and mainly in the municipal markets, *Table 102.*

Table 102. Volume of pineapple distribution from wholesalers to retailers. Year 2002

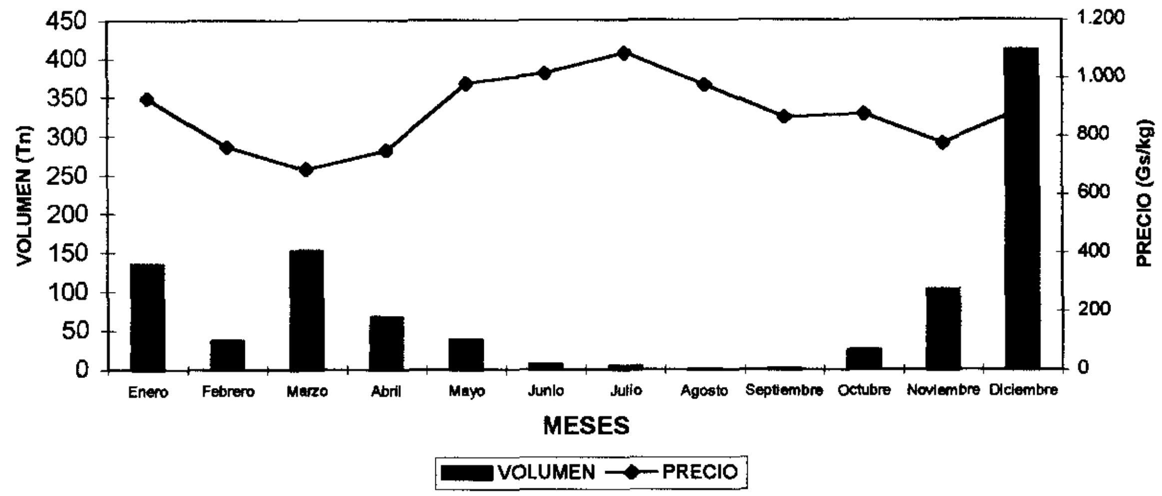
Retailers	*Volume (Tons)*	*Percentage (%)*
SUPERMARKETS	7.627	39,37
OTHER RETAILERS		
Municipal Markets	9.045	
Despensas/Minimercados	2.232	
Municipal Fairs	470	
Sub Total OTHER RETAILERS	11.747	60,63
Total	*19.374*	*100,00*

Source: Elaborated based on interviews to supplying wholesalers of supermarkets, feriantes other retailers.

2.10.2. Prices and seasonality

The analysis of the pineapple monthly prices, according to data from CECOPROA and CEPACOOP year 2002, allows to identify price fluctuations related to supply seasonality. This way, during the months of May to September low monthly volumes are marketed, and prices are higher during May to August, *Figure 30.*

Figure 30 : Volume monthly price of pineapple. 2002



The volume marketed during the months of November to January reached 67% of the total annual marketed, coincident with depression in the price levels, *Table E-6, Annex E.*

2.10.3. Value of commercialization according to origin and channel

2.10.3.1. Value of commercialization by origin

The total commercialization value of the of national and foreigner entered pineapple was estimated in 37.303 millions of Guaraníes, *Figure 29 and Table 103.* It is of highlighting that the biggest value in the commercialization come from the national product since the national produce traded is superior than the foreigner, however, regarding prices the foreign produce is higher than the national, like it can be observed next:

Table 103. Estimate of pineapple commercialization value by origin. Year 2002

Origin	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
National	28.577	850	24.290	65,12
Foreing	7.792	1.670	13.011	34,88
Total	***36.369***		***37.301***	***100,00***

Source: Dear based on data of the Dirección General de Aduanas, CEASA (Brazil) and of the DDV/MAG.

It is presented in the following table the sources of pineapple prices estimates:

Table 104: Prices established for pineapple commercialization. March 2003

Origin	*Price (Gs/Kg)*	*Observations*
National	850	It corresponds to on farm price, according to producer interviews
Foreign	1.670	It corresponds to purchase price based on data provided by wholesalers importers.
WHOLESALERS		
DAMA	2.500	Estimate based on interviews with wholesalers of DAMA.
Gran Asunción	2.500	Estimate based on interviews with wholesalers located outside DAMA.
Ciudad del Este	1.950	Estimate based on interviews with wholesalers of Ciudad del Este Municipal Markets.
Encarnación	2.000	Estimate based on interviews with wholesalers of Encarnación Municipal Market.
Coronel Oviedo	2.000	Sale price provided by technicians and wholesalers of the area.
MINORISTAS		
Supermarkets	3.250	Estimate based on sale prices average of Great Asunción and Encarnacion's main supermarkets.
Municipal Markets	3.000	Estimate on sale prices average of San Lorenzo and Encarnación. Municipal Markets
Despensas/Minimercados	3.800	Estimate based on sale prices average in Despensas and Minimercados of San Lorenzo and Encarnación.
Municipal Fairs	3.500	Estimate based on sale prices average in Asunción and Encarnación Municipal Fairs.
Farmers Fairs	1.500	Estimate based on sale prices average in Farmers Fairs of Ciudad del Este and Encarnación.

2.10.3.2. Value of commercialization according to wholesalers

In relation to wholesalers' sale by location area, DAMA continues being the main place where pineapple trade is carried out considering that 80,78% of the total value marketed was traded through wholesalers located in DAMA. It is of highlighting that the markets wholesalers located in other towns like Ciudad del Este, Gran Asunción and Coronel Oviedo market for a total value that doesn't exceed 18%, 105.

Table 105. Estimate of pineapple sales by wholesalers according to location area. Year 2002.

Zone	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
DAMA	14.914	2.500	37.285	80,78
GRAN ASUNCIÓN	251	2.500	628	1,36
OTHER CITIES OF THE COUNTRY				
Ciudad del Este	3465	1.950	6.757	14,64
Encarnación	672	2.000	1.344	2,91
Coronel Oviedo	72	2.000	144	0,31
Sub Total OTHER CITIES OF THE COUNTRY	4.209		8.245	17,86
Total	***19.374***		***46.157***	***100,00***

Source: Based on interviews with wholesalers of the different study areas.

2.10. 3.3. Value of commercialization according to retailers

Sales carried out by retailers to consumers reached a total estimated in 75.672 millions of Guaraníes, 38,73% corresponds to pineapple sales carried out in the supermarkets, valued in approximately 29.305 millions of Guaraníes.

The estimates made by the study also indicate that sales carried out by other retailers are important standing out the proportion marketed through the municipal markets that reached an approximate value of 36.135 millions of Guaraníes representing 78% of the total marketed by this channel, *Table 106.*

Table 106. Estimate of pineapple sales by retailers. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*	*Percentage (%)*
SUPERMARKETS	9.017	3.250	29.305	38,73
OTHER RETAILERS				
Municipal Markets	12.045	3.000	36.135	47,75
Despensas/Minimerc.	2.232	3.800	8.482	11,21
Municipal Fairs	470	3.500	1.645	2,17
Fairs of Producers	70	1.500	105	0,14
Sub Total OTHER RETAILERS	14.817		46.367	61,27
Total	***23.834***		***75.672***	***100,00***

Source: Based on prices collected in the purchase places.

2.10.3.4. Value of commercialization according to final consumption destination

The value of consumers' purchases through all the commercialization channels reached approximately 81.232 millions of Guaraníes, coming from sales to consumers (75.672 millions of Guaraníes) and from sales of 6.541 tons valorized at the producer price (850 Gs/Kg).

Finally, the exports were valued using the annual price average and a total volume provided by BCP, *Table 107.*

Table 107. Estimated pinneaple commercialization value according to final consumption destination. Year 2002

Retailers	*Volume (Tons)*	*Price (Gs/Kg)*	*Value (Millions of Gs)*
Country Consumption (through retailers)	23.834	3.174,96*	75.672
Country Consumption (on farm)	6.541	850,00	5.560
Exports	539	656,00	354

** Correspond to average prices weighted by retailers sales volume (see table 106).*

2.10.4. Margins of commercialization of a representative channel

The commercialization margins according to supply origin indicate that the difference among the price paid by the consumer and the price average received by the producer on farm is 2.400 Gs/Kg, representing a total margin of commercialization of 74%, *Table 108.*

Table 108. Total margin of commercialization of pineapple. 2002

Concept	*Value (Gs/Kg)*	*Margin (Gs/Kg)(%)*
On farm price	850	
Wholesalers selling price	2.500	
Retailers selling price	3.250	2.400 (74%)

Source: Estimate based on data provided by wholesalers, retailers producers.