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How competitive is Argentina's beef production?

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How competitive is Argentina's beef production?

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Summary

Argentina is an important producer of quality beef. Beef is produced in extensive grazing systems at low productivity levels and low final weights. Sporadic outbreaks of foot and mouth disease still create problems in the northern parts of the country. There has never been a reported BSE-case in Argentina. The costs of producing one kg of beef in Argentina are just 25 % of production costs in Germany.

At approximately 60 kilograms per capita and year, Argentina has the highest beef consumption in the world. Export shares vary between 10–15 % of production. The most important export type of meat is fresh and chilled meat. Main export destinations are the EU (mainly Germany), the U.S. and, with increasing importance, North Africa and the Far East. Argentina has a market share of approximately 20 % in the market for high-value beef in Germany.

Favourable natural and climatic conditions, large and well structured farms, and low land prices create favourable conditions for beef production in Argentina. For export purposes there are modern slaughtering plants meeting EU-standards. On the other hand, a number of mainly 'self-made' problems exist including political instability, corruption, high interest rates and the absence of an active foreign marketing.

The potential of increasing beef production and/or net exports appear to be less than frequently assumed. Competition with other land uses, possible increases in the domestic beef prices, orientation toward traditional production systems, the reputation for 'natural' beef and a lack of capital set the limits. It is, however, likely that further liberalisation will create further price pressure on the German high-value beef market.

Keywords: Beef production, competitiveness, Argentina

Zusammenfassung

Wie wettbewerbsfähig ist Argentiniens Rindfleischproduktion?

Argentinien ist ein wichtiger Produzent von Qualitätsrindfleisch. Die Rindfleischproduktion erfolgt in einem extensiven Weidesystem, das durch niedrige Produktivitäten und Endgewichte gekennzeichnet ist. Gelegentliche Ausbrüche der Maul- und Klauenseuche schaffen insbesondere im Norden des Landes noch Probleme. Es ist bisher kein BSE-Fall in Argentinien bekannt geworden. Die Produktionskosten je kg Rindfleisch liegen in Argentinien bei lediglich 25 % der Produktionskosten in Deutschland.

Mit etwa 60 kg pro Kopf und Jahr hat Argentinien den höchsten Rindfleischverbrauch der Welt. Die Exportanteile liegen zwischen 10 und 15 % der Produktion. Das wichtigste Exportprodukt ist frisches, gekühltes Fleisch. Hauptexportmärkte sind die EU (mit Deutschland als wichtigstem Zielland), die USA und mit wachsender Bedeutung Nordafrika und der Ferne Osten. Der Marktanteil von Rindfleisch aus Argentinien beträgt etwa 20 % im Hochpreissegment für Rindfleisch in Deutschland.

Günstige natürliche und klimatische Bedingungen, große und gut strukturierte Betriebe sowie niedrige Bodenpreise schaffen günstige Rahmenbedingungen für die Rindfleischproduktion. Für den Export stehen moderne Schlachthöfe mit EU-Standard zur Verfügung. Auf der anderen Seite existiert eine Reihe hauptsächlich „hausgemachter“ Probleme wie politische Unstabilität, Korruption, hohe Realzinsen und fehlendes Exportmarketing.

Die Möglichkeit zur Steigerung der Rindfleischproduktion bzw. der Nettoexporte erscheint auch unter stärker liberalisierten Handelsbedingungen geringer als of vermutet wird. Wettbewerb mit anderen Landnutzungen, mögliche Preissteigerungen der heimischen Rindfleischpreise, das Image „natürlich“ erzeugten Rindfleischs, die traditionelle Ausrichtung des Sektors und Kapitalmangel setzen die Grenzen. Dennoch ist zu erwarten, dass eine zunehmende Liberalisierung zu einem steigenden Preisdruck auf dem deutschen Markt für Qualitätsrindfleisch führen wird.

Schlüsselwörter: Rindfleischproduktion, Wettbewerbsfähigkeit, Argentinien

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1 Introduction

Argentina has been famous for its high quality beef for decades, originating from a pasture-based, low-input production system. Germany has been a major importer of Argentinian beef for many years. The prospects for South American, and particularly Argentina's and Brazil's beef production, are generally considered to be positive. FAO (2003) projections on Latin American beef production are based on 1997/99 and predict an increase of 39 % by 2015 and 72 % by 2030. Rosegrant et al. (2003), from IFPRI, project a 44 % increase for Latin America until 2020 based on 2003 production and FAPRI (2003) projects a 16 % increase in Argentina's beef production until 2012. From a German perspective, this paper will examine:
- which position Argentina holds in beef production today,
- which factors determine its international competitiveness, and
- whether and to what extent the country will be able to realise its potential in the context of further liberalisation of trade policies.

2 Present situation and development

2.1 Enormous differences between Argentina and Germany

Table 1 provides an overview of beef production in Argentina and Germany. The Humid Pampa (Pampa Húmeda) where the majority of Argentina's agricultural production takes place, is three times as large as the Ger-

Table 1:
Main indicators of beef production in Argentina and Germany

	Argentina	**Germany**
Total agricultural land (mio ha)	55 *	17
Cattle inventory (mio. head) **	52	14,5
Annual beef production (Mio. t) **	2,688	1,351
Ranking in world beef production **	5	10
Share of beef cows in total cows	90 %	14 %
Export share in production (t)	10-13 %	35 %
Import share in production (t)	1 %	21 %
Per-capita consumption 2002 (kg)	61	10

* Humid Pampa only; ** Average of the years 2000-2002
Sources: FAOSTAT, SAGPyA, ZMP

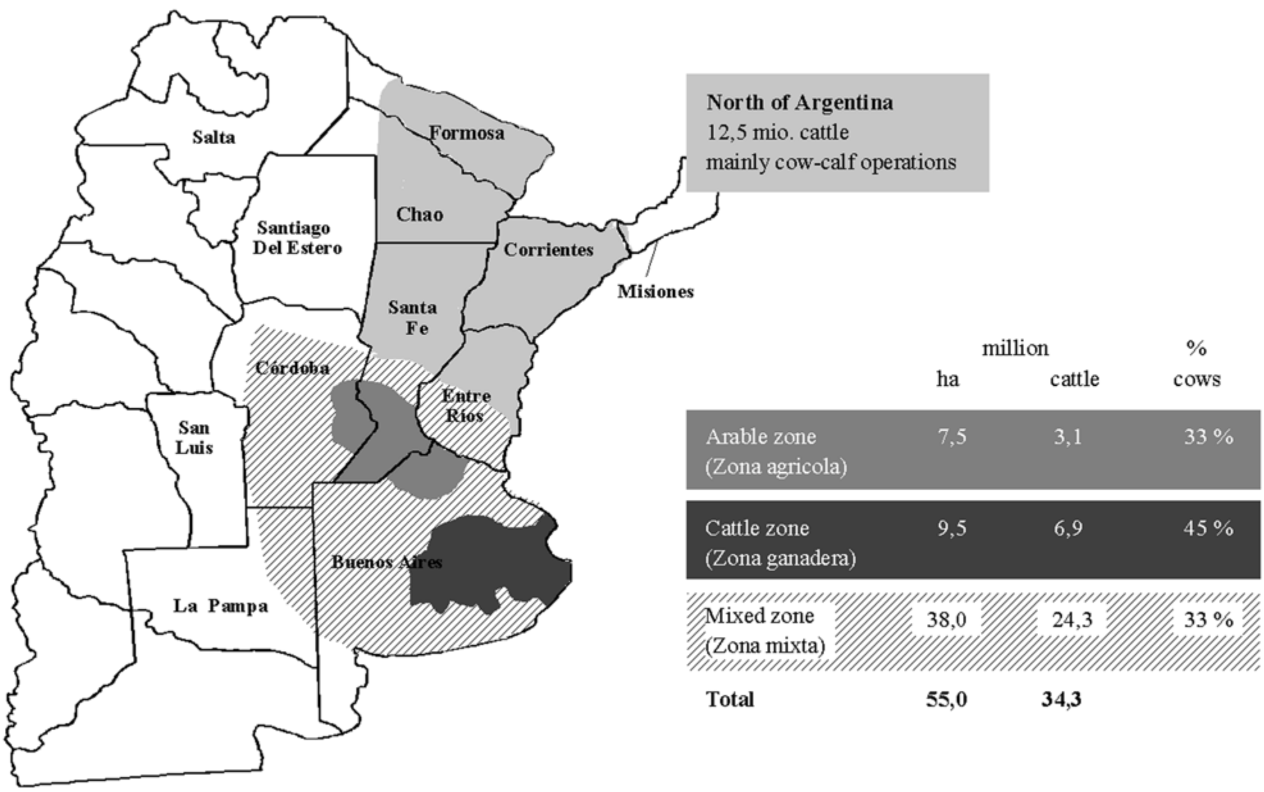

Fig. 1:
Spatial distribution of beef production in Argentina
Source: SAGPyA (2004a)

man agricultural area. Argentina produces approximately twice the volume of beef of Germany. However, production dropped from approx. 3 million tons carcass weight in 1990 to 2.6 million tons in 2003. Argentina is a typical "beef-country" where almost all beef has its origin in the beef cow-calf herd. In contrast, Germany is a typical "dairy-country" where most of the slaughter cattle originates from the dairy herd. Another main difference between the countries is the level of beef consumption, reaching approx. 60 kg per capita in Argentina and only 10 kg in Germany. The strong domestic market is one of the reasons for Argentina's relatively low export share in production.

2.2 Spatial distribution of beef production

Figure 1 shows the three main production regions in the Argentina Humid Pampa which can be distinguished into:
- the arable region (corn belt of Argentina) in the north of Buenos Aires, east of Córdoba and south of Santa Fe,
- the cattle region in the centre and some coastal areas of Buenos Aires with mainly permanent grassland that are often subject to flooding (Rio Salado),
- the mixed region with a mixture of arable and livestock production in most of the Humid Pampa,
- the north of Argentina (Santa Fe, Entre Rios, Chaco, Formosa) with mainly cow-calf production and a total of 12.5 mil. cattle.

2.3 Land use and its development

During the past 30 years the relative importance of beef production in Argentina decreased. Figs. 2 and 3 illustrate the acreage used for cattle and crop production and the inventory of cattle by production region, respectively. The following conclusions can be drawn from the figures:
- the total acreage basically remained constant,
- the crop acreage went up,
- the cattle acreage went down,
- the total cattle inventory decreased,
- the main decrease took place in the crop and the mixed region,
- the inventory in the cattle region remained basically the same.

A possible explanation for the decrease of beef production might be the relative superiority of crop production vs. beef production. Further details on this issue will be discussed in Chapter 3.

2.4 Production system

Beef production in Argentina is characterised by low-input year-round grazing systems. Barns do not exist. The stocking rate is low at levels of 500 kg live weight per ha and less. Hereford and Angus and their crosses are the prevailing breeds. To a lesser extent Holstein calves from the dairy herd and crosses with zebuine breeds, mainly from the Northern provinces, are used. Table 2 gives an overview on main productive indicators of beef production.

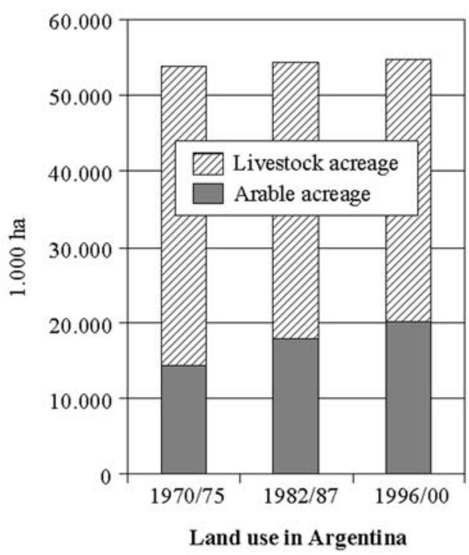

Fig. 2:
Land use in Argentina by acreage used for crop and cattle production 1970/75 – 1996/00 (1.000 ha)
Source: SAGPyA (2004a)

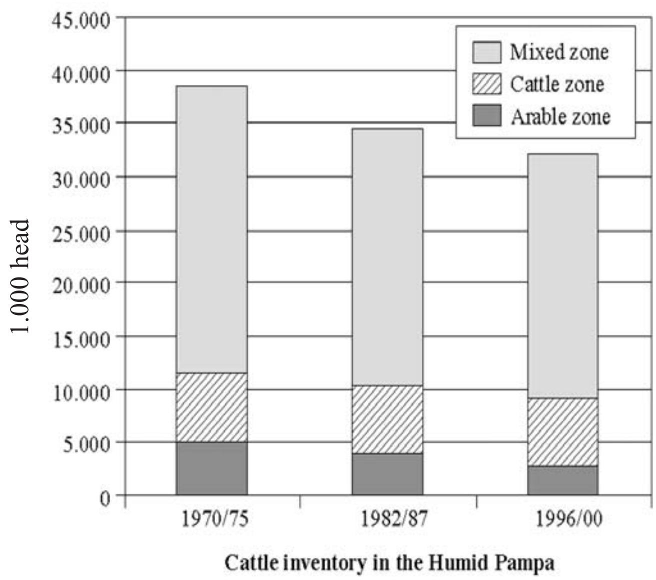

Fig. 3:
Cattle inventories by production regions 1970/75 – 1996/00
(1.000 head)
Source: SAGPyA (2004a)

Table 2:
Main productive indicators of steer production in Argentina

Weight at start of finishing	130 – 180	kg LW
Final weights for steers	380 – 450	kg LW
Age at start of finishing	210 – 260	days
Duration of finishing period	300 – 500	days
Age at end of finishing period	575 – 759	days
Daily weight gain	500 – 650	g/day
Dressing percentage*	57 – 59	%
Number of weaned calves per 100 cows and year	75 – 80	head

* Carcass weight divided by live weight in percent

Sources: IFCN Beef Report 2003; Margenes Agropecuarios (various editions)

2.5 Profitability in international comparison

Figure 4 shows the total cost and returns of beef production in selected countries for the year 2002. The cost of beef production in Argentina was only around 25 % of the EU-countries in the comparison. Where the Argentinian farms realise an entrepreneurs profit (i.e., increase their net worth), the EU-farms are only profitable with the presence of direct payments. It should be noted that 2002 was a special year due to the massive devaluation of the Argentinian Peso which changed from 0,89 Peso/EUR in 2001 (with a fixed rate of 1:1 to the US$) to 2,97 Peso/EUR in the average of 2002 and to 3,39 Peso/EUR in 2003 (Oanda, 2004). The total cost relation between Germany and Argentina in 2001 was 2:1 and 4:1 in 2002. This shows that the exchange rate is an important factor for competitiveness but the difference in production costs between Germany and Argentina is in any case remarkable.

2.6 Origin and slaughter of cattle

The following maps show the main regions of origin and slaughter of cattle. Important production regions are the
- south of Córdoba,
- centre of Santa Fé (often from dairy herds),
- west and centere of Buenos Aires.

As the map on the spatial distribution of slaughter indicates, there is a clear regional differentiation between production and slaughtering. The latter is mainly concentrated in the greater Buenos Aires area where 45 % of all slaughtering takes place (ONCCA, 2000). The divergence of production and slaughter facilities results in some cases in large transport distances for live cattle.

2.7 Market channels and slaughter industry

The total slaughter was 11.6 mil. head in 2001, 11.5 mil. head in 2002 and 12.3 mil. head in 2003 (SAGPyA, 2004). Fig. 7 shows the main market channels and their development in the last 12 years. The following conclusions can be drawn:
- The majority – with an upward trend – of the slaughter cattle go directly from the farms to the slaughterhouses. Intermediate traders are frequently used for the handling and transport of the animals.

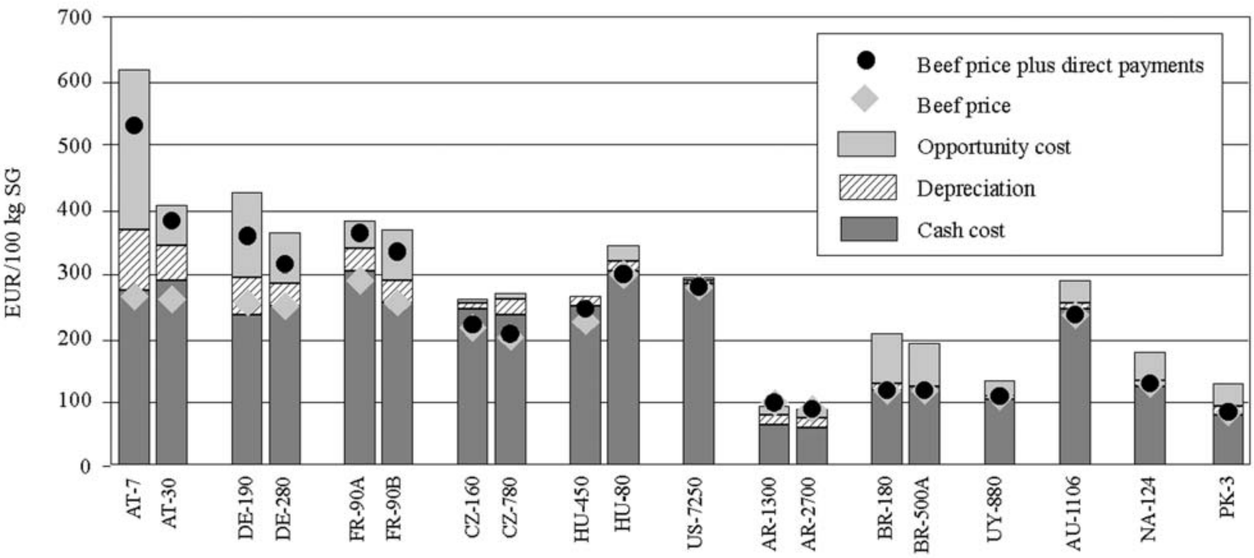

Fig. 4:
Total costs, returns and profitability of beef production in 2002 (EUR/100 kg carcass weight)
Source: IFCN Beef Report 2003

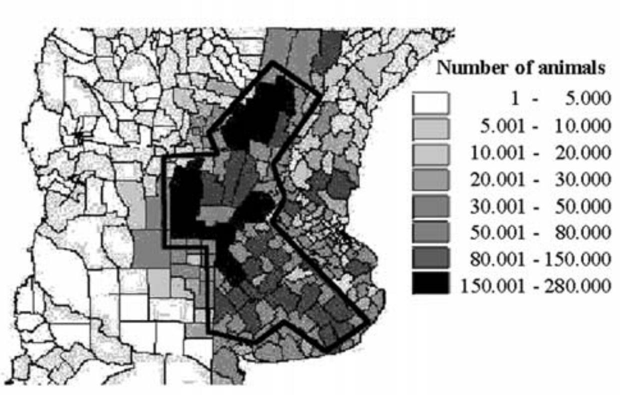

Fig. 5:
Spatial distribution of the cattle herd 2000
Source: ONCCA (2000)

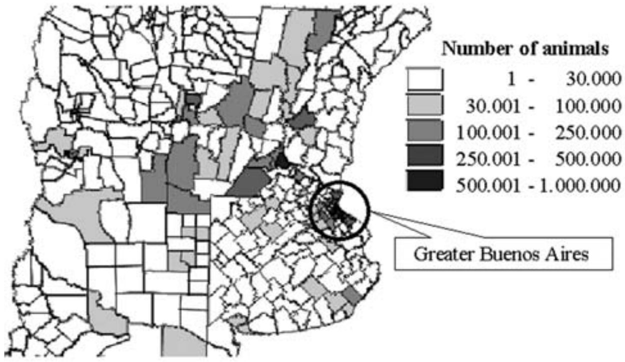

Fig. 6:
Spatial distribution of cattle slaughter 2000
Source: ONCCA (2000)

- Small, local auctions and the purchase by intermediate traders show a downward trend.
- In contrast, the two huge livestock markets – clearly dominated by the Liniers Market in Buenos Aires and a particularity in South America – seem to be able to maintain their market share of roughly 18 %. Additionally, the Liniers Market serves a price determining function for Argentina. Cattle prices by categories and traders are available on the market's internet site on a daily basis.
- Finally, there seems to be a persistent share of about 10 % of non-SENASA-inspected slaughters that can be considered off-the-books (unrecorded) slaughtering to avoid tax payments.

In 2002/03, the total number of slaughterhouses in Argentina was approx. 220, of which 160 were accredited by the national animal health authority (SENASA)[3] and 48 authorised for export to the EU with EU-accreditation. Out of the total slaughters, only 3 % took place in small butcher shops, mainly in rural areas. 70 % of the slaughter took place with the cattle owned/purchased by the slaughter company whereas 27 % were contracted slaughter, mainly on behalf of the big supermarkets (Iriarte, 2003).

2.8 FMD and BSE status

With regard to foot and mouth disease (FMD), for the first time ever, Argentina achieved the status "free of FMD without vaccination" in May 2001. However, the country lost this status in March 2002 after country-wide outbreaks of FMD. The consequence was the loss of all export markets for fresh beef. After implementation of a country-wide vaccination programme, Argentina achieved the status "free of FMD with vaccination" in February 2002. Today, all Argentinian cattle are vaccinated against FMD. Export markets re-opened gradually from March 2002 onwards.

3 SENASA = Servicio Nacional de Sanidad y Calidad Agroalimentaria

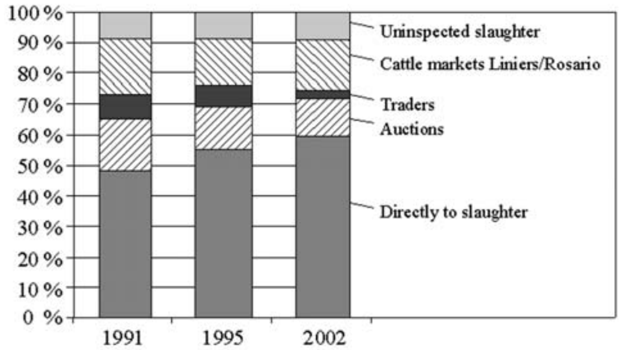

Fig. 7:
Beef marketing channels and their development from 1991 to 2002
Source: Iriarte (2003)

The last reported FMD-case was reported in August 2003 in the northwestern province of Salta and affected 40 pigs. As a consequence, the northern regions were prohibited from exporting any meat at all.

With regard to BSE (mad cow disease), there has never been a BSE-case reported in Argentina. The probability of BSE is "extremely unlikely" according to OIE and "very unlikely" according to EU-DG-SANCO (2002). Main reasons are the low-input, grass-based production system, the ban of animal protein in feeding in 1996 (though this has never been practised in Argentina) and the fact that after the Falkland war 1982 there has not been any further agricultural trade with Great Britain until 1990. There is no regular BSE-testing in Argentina but tests are performed on fallen animals.

2.9 Export composition and destinations

Fig. 8 shows the total beef production and the export share in production for the last 15 years. It illustrates that
- there was a decreasing trend in production,
- there was a considerable drop in exports in 2001 due to the FMD and BSE crises,

- the export share in total production fluctuates between 10 and 15 % over the entire period.

Argentina's export composition and its development in the last nine years are shown in Figure 9. There was a general downward trend both in volumes and particularly in export values. This trend was clearly triggered by the BSE and FMD crises in 2000 and 2001 when exports dropped sharply. With the exception of 2001, fresh meat has been the most important type of meat exported, with a share of between 40 and 50 % in both volumes and values. The so-called Hilton-quota represents approximately 10 % of all cuts, but almost 30 % of the export value.

Figure 10 displays the main export destinations by volume and value. It shows that the U.S., Germany, Hong Kong, Russia, Algeria, U.S.A. and Chile were main destinations in 2003 when measured in volumes. When it comes to export values, Germany was clearly the most important export destination, followed by the U.S., the U.K., the Netherlands, Italy and Chile. The four EU-countries together accounted for 47 % of total export value. The most important type of beef shipped to the EU is the Hilton-quota, allowing a total of 28.000 t of high-value cuts to enter the EU-market. It should be noted that apart from Germany and the U.S., which have been important trading partners for a long time, some of the countries have gained importance recently (mainly Hong Kong and Algeria) and others – not shown here – are of minor importance now.

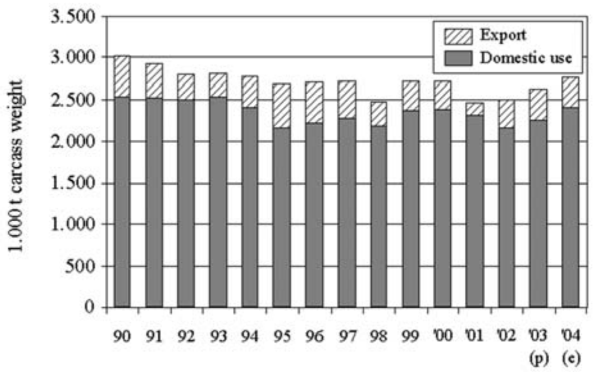

Fig. 8:
Beef production and exports 1990 – 2004 (1.000 t SG)
2003: provisional, 2004: estimated
Sources: SAGPyA (2004b); ONCCA (various editions); USDA (2003)

2.10 Hilton-Quota

Hilton-Quota is the common name of a preferential import quantity of high-quality beef (EU-COM, 1997). The quota is allocated to selected countries and is subject to a reduced tariff-rate of 20 % (normal tariff-rate 90 %). The total quota-volume is 58.000 t annually of which Argentina has 28.000 t. Germany receives approx 20.000 t from this quantity. The Hilton-cuts from Argentina consist of seven cuts (Entrecôte, Topside, Silverside, Thick flank, Striploin, Tenderloin and Rump) which have a share of 6-8 % of the cattle carcass weight (see Fig. 11). The three latter cuts represent 75-90 % of the total quantity exported to Germany. The regulations for the production of Hilton-beef in Argentina are:

- Exclusively pasture-grazed animals without supplementary feeding.
- Age at slaughter 22-24 months.

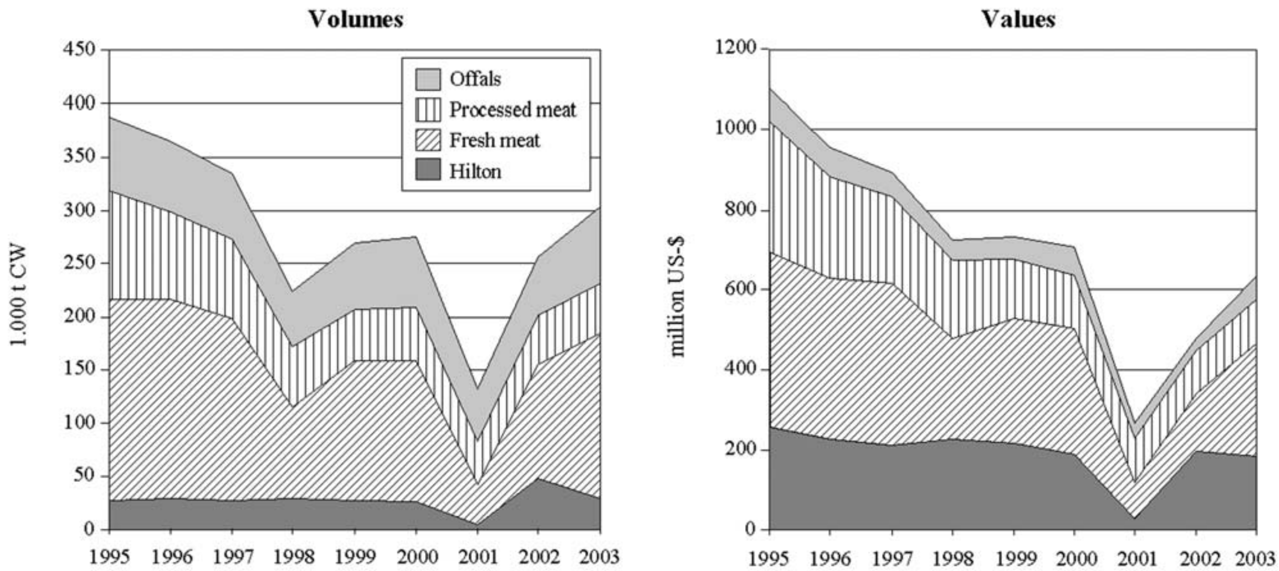

Fig. 9:
Beef export composition by volumes and values 1995 – 2003
Sources: SAGPyA (2004b); ONCCA (various editions)

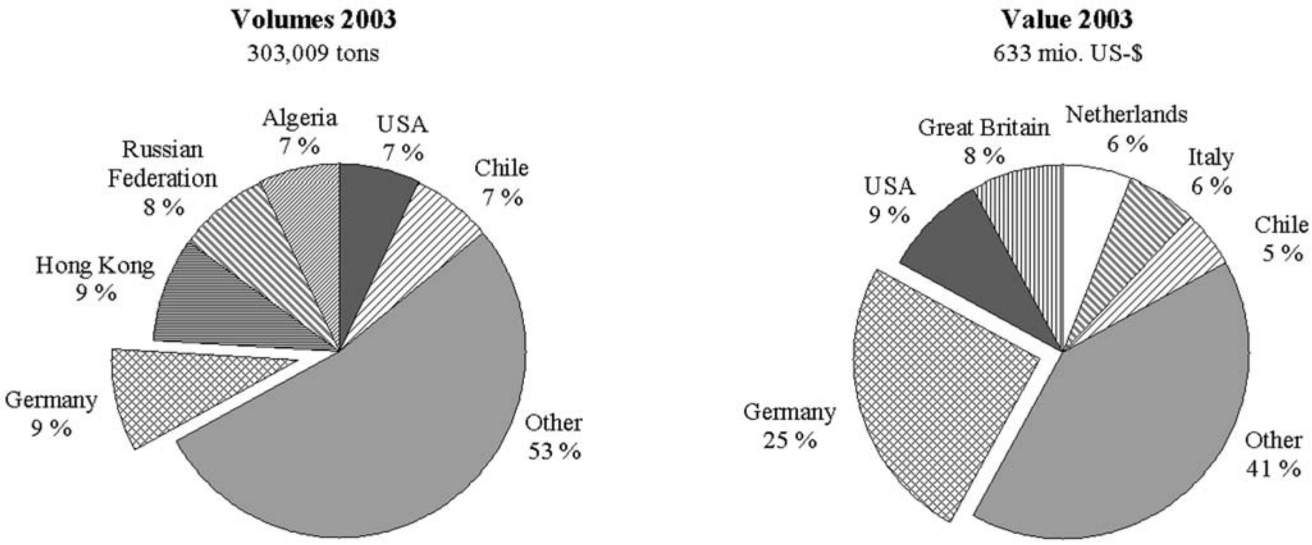

Fig. 10:
Beef export destinations by volumes and values 2003
Sources: SAGPyA (2004b); ONCCA (various editions)

- Maximum live weight at slaughter 460 kg
- Since August 2003 ear-tagging compulsory for all animals.
- Slaughter in EU-approved and EU-inspected slaughter plants.

Referring the percentage share of the Hilton cuts (six to eight percent of the carcass weight) to the German production of approx. 1.4 mil. t per year, results in a quantity of Hilton-cuts in German slaughter of between 80.000-110.000 t per year. Contrasting this amount with the annual import volume of Argentina results in a market share of 19-25 % for Argentina in this market segment. Thus, Argentina has held an important part of the German high-value beef market segment for some time.

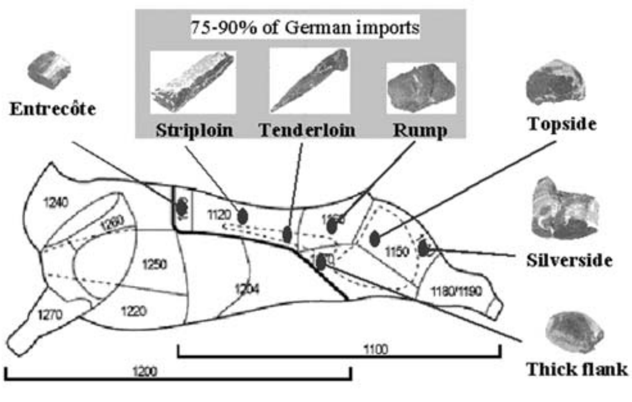

Fig. 11:
Composition of Hilton-cuts exported to Germany
Sources: Own illustration based on CMA (2002)

2.11 Factors determining the competitiveness

Comparing Argentina with other countries, particularly with Germany, the following factors create advantages for Argentina:

- Favourable climatic and natural conditions for grass-based beef-finishing systems.
- Large and well-structured farms.
- Low land prices (cropland approx. 1.500 EUR/ha, grassland approx. 400 EUR/ha).
- Very low cost of production, low grain prices.
- The domestic market prefers different cuts than the export market (complementary).
- Modern slaughter plants with EU-standards.
- Access to important export markets is established, albeit at a low level.
- Excellent meat quality (maturing during shipping).

However there are also a number of disadvantages:

- Very high real interest rates.
- Political instability and corruption are still existent.
- Competition with alternative land use is increasing (mainly crop production).
- Full access to markets with high purchase power not available yet (EU, U.S., Japan).
- There is practically no active/aggressive marketing (institution) for Argentinian beef.[4]
- Droughts and floods have been more frequent in the past decades.

[4] The Argentine Beef Promotion Institute (Instituto de Promoción de la Carne Vacuna Argentina) has been founded in 2002 but not yielded results yet.

3 Future potential

Taking the previous analysis of the status quo into account, the question arises of whether and to which extent Argentina will be able to expand its beef production and/or its net exports in a more and more liberalised agricultural trade environment.

3.1 Substitution of domestic use by exports

The expansion of exports at the expense of domestic use would certainly be the easiest and quickest option. This appears to be realistic to a certain extent, however, it would result in increasing domestic beef prices as a result of a tightening domestic supply and higher levels of export prices. With a per capita consumption of 60 kg p.a., the beef price has always been a political issue in Argentina. It can therefore be expected that – like in the past – the Argentinian government would introduce or increase export levies in order to bring down the export volumes (and to create a source of foreign currency).[5]

3.2 Competition with crop and dairy production

As mentioned above in Chapter 2, the acreage as well as the livestock dedicated to beef production have dropped in favour of crop production over the past 30 years. At present there is no indication that in mid- to long-term price relations between beef and other commodities will change in will favour of beef production. As Figure 12 shows, the average gross margin development has basically been unfavourable for beef production in the last 10 years. This means that at least on locations where crop (or dairy) farming is possible, beef production is not the most profitable option. It appears that the biggest competitor of Argentinian beef production is the crop production in the country.

3.3 Improvement of productivity

There are two main issues to be mentioned: the calving percentage in the cow-calf herd and the daily weight gains and final weights in beef finishing. The reasons for the presently low levels are manifold but not new. Improving productivity has always been beneficial. Consequently it can be doubted that further liberalisation would lead to higher productivity. Moreover, it would probably take some years to realise productivity increases.

3.4 Increase of beef production to areas outside the Humid Pampa

This issue is closely linked to the improvement in productivity. When talking about beef production outside the Humid Pampa, the most important region is the north east of Argentina (NEA) shown in Figure 1 which can be characterised as follows (see also SAGPyA, 2004a):

- Presently the NEA has an inventory of 12.5 mil. cattle, mainly used for producing calves.[6]
- There are still problems with sporadic outbreaks of foot and mouth disease, preventing the region from entering into international markets.

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5 A similar strategy could also be observed in 1973 when the UK joined the EU and Argentina lost its main export market for beef (half carcasses). There was no governmental support to replace the exports to the UK by other destinations, mainly to keep domestic beef prices low.

6 The average extraction rate (annual share of slaughtered cattle in inventory) in the NEA is only 10 % compared with an average of more than 26 % (see Iriarte, 2003).

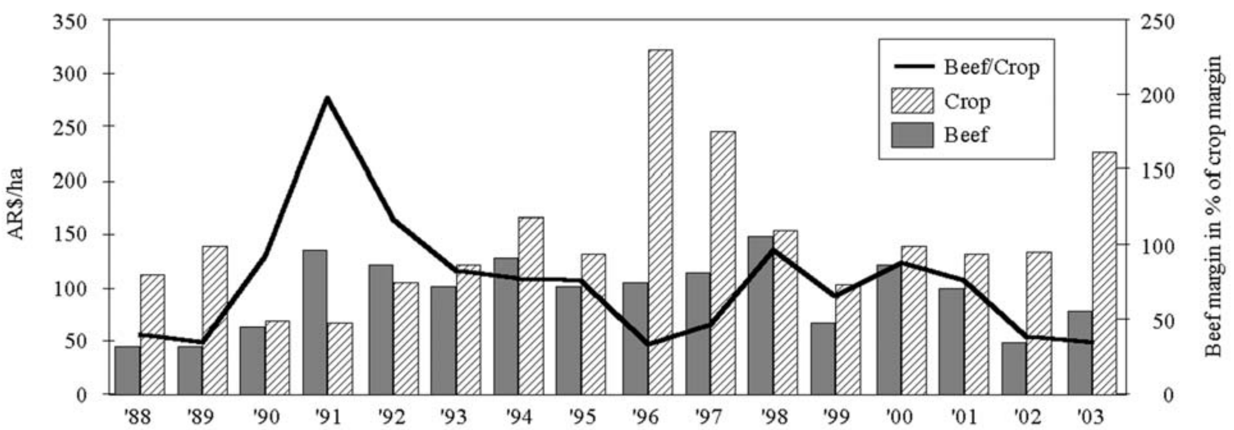

Fig. 12:
Development and ratio between gross margins of crop and beef production 1988-2003 (US$/ha)
Note: Prices are in current US$ from July of each year.
Crop gross margins are weighted averages of corn, soybean, wheat and sunflower margins.
Sources: Margenes Agropecuarios 2/2004

- The low productivity levels of cattle and forage production provide a good basis for future increases.
- The location in the north of Argentina provides good market access for live animals to Brazil. Increased live exports to Brazil would however reduce calf availability in Argentina.

If the cattle numbers in the Humid Pampa remain at the same level or decrease further at the same productivity level, any increase in production has to come from the extra-pampa regions. This could be done by increasing the animal numbers and/or productivity levels. The increase of animal numbers could be realised at a rate of approx. 3 % per year, but at the expense of beef production during the transition period. The extraction rate of the cattle herd could be raised by improving the calving percentages. Beef production could be raised by increasing the final weights. In both cases, the comments made in the previous point again become valid. In any case, higher cattle numbers or final weights would require more forage, thus higher forage productivity. As a consequence, a shift towards significantly higher beef production from the NEA seems to be unlikely short- to mid-term.

3.5 Intensification of beef production

Despite the availability of cheap feed grains (corn, sorghum, soybeans), their use in beef production is rather limited to some supplementary feeding in the last 90 days of finishing (and limited to the domestic market). The price-relation between feed grains and beef has been more favourable in the past than today, nevertheless there has never been a significant or sustainable intensification of beef production. A lack of market access and opportunity cost of zero for marginal grassland might be reasons. Further reasons appear to be:

- Lack of capital for implementation of U.S.-style feedlots. Real interest rates of 10-20 % make national investment impossible and prevailing political instability and corruption scare away foreign investors.
- The type (and the image) of beef would change from a grass- to a grain-beef type of meat. The consequences for the sale of Argentinian meat are very difficult to estimate. It can, however, be expected that Argentina would lose Germany as the most important market if the consumer perception of Argentinian beef changed from "naturally grown on grass" towards "large-scale feedlot".
- Tradition and the gaucho-image play an important role in Argentina's beef production and cannot easily be changed.

3.6 Conversion to organic beef production

This would be a strategy to add value to the product via higher beef prices. Technically, a conversion from conventional to organic beef farming could be done rather easily as the differences between the systems are minor. Given market access and a willingness-to-pay from the consumer side, it appears to be possible that a huge supermarket or discounter chain (for example in Germany) could demand and sell organic beef from Argentina at relatively low prices. On the other hand, on most of the locations of the arable and the mixed zone in the Humid Pampa, the use of GMO-crops is wide-spread and still increasing. The share of GMOs in soybean production is now 98 % and in corn production 60 % (Fröse, 2003). In these regions organic farming is very difficult in accordance with the regulations. Alternative locations would be the cattle zone with permanent grassland – but subject to regular and more and more severe floods – and regions outside the Humid Pampa. This is where some organic farms can already be found. It is however questionable whether the forage basis in these locations allows a finishing of cattle with the quality required. Moreover, the above-mentioned pressure on domestic markets speaks against a significant increase of organic production and export.

4 Conclusions

Argentina's beef production is strong in terms of the volumes produced and traded, quality and cost of production. However, even with more liberal trade conditions, an increase of beef production appears to be only gradually possible. Competition with other land uses, possible price increases in the domestic beef price with increasing exports, orientation toward traditional production systems, the reputation for natural beef and lack of capital for intensification set the limits for substantial expansion of exports and/or beef production. Thus, it looks as if the potential of Argentina's beef production is lower than frequently assumed. It is, however, likely that further liberalisation will create further price pressure on the German high-value beef market because the market segment is rather small in terms of volumes and Argentina already has a relatively high share of approx. 25 % in this segment. This means that any changes in volumes will have a relatively strong impact on prices.

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