Can Kazakhstan be a successful player in the world beef market?

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Abstract. The idea is to model the beef industry in Kazakhstan taking ideas from other three major exporters – Canada, Argentina, Australia. This paper investigates beef production and marketing systems in the three mentioned countries and provides comments on a strategy for Kazakhstan to within the context of its culture and history of production, comments on the Government of Kazakhstan strategy for development of beef production and marketing industry in Kazakhstan.
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Introduction

The Government of Kazakhstan (GOK) is attempting to increase the productivity of the agricultural sector in the nation. There are abundant resources to be devoted to agriculture, many of which are not now in gainful production. The reasons for the new emphasis on agriculture are a concerned with improving the livelihoods of those now working in agriculture, reducing imported food and feed stuffs and becoming a major exporter of certain products. The beef industry is one of the agricultural enterprises selected as a target for GOK policies to increase production and productivity in the agricultural sector. In part this is due to the vast expanses of land for forage in Kazakhstan, much like the extensive land in other major exporting countries-Canada, Argentina and Australia.

The paper will concentrate on three GOK policy areas that we feel are critical to the development of a more productive beef industry. This analysis will come after a review to produce comparable statistics on the three "reference" countries and a comparison of these statistics to those for the Kazakhstan's beef production and marketing systems in the beef industry. The aggregate comparisons will relate to beef production and productivity, beef consumption and exports and possible feeding rations for beef. After examining these statistics we will turn to three of the important GOK policies that are under way to improve beef production and marketing. These are a GOK policy to change the livestock genetics, a land tax designed to bring into production large areas of land now idle and the implementation of beef a grading system similar to those used in Canadian, Argentina and Australia.

The conclusions of this analysis will be of interest to the GOK and the private sector agents involved in beef production and marketing. In a sense the current beef sector is starting from a short history that began just after the withdrawal of the nation from the USSR. After Kazakhstan's exit from the USSR in 1991, these facilities became bankrupt and were no longer involved the production and distribution system for beef. What grew up in the place of the USSR system was a number of small household and private farmers producing beef for both milk and for meat and a small large farm sector producing beef for meat. Now there are few slaughter houses mostly near large cities, and much of the slaughter is carried out at the farm level with little attention to the condition of the animals slaughtered or quality of the meat produced.

As well be clear, the use of cattle for both beef and milk production means that the animals are not efficient in terms of comparison to costs and potential exports in the three reference exporting countries. Thus, to be competitive in international markets, the Kazakhs will find it necessary to change the stock of the beef herd, adopt policies that make land more available for beef production and develop and implement grading and phino-sanitary systems that meet world market standards [3,4,12].

Main part

Inter country comparison of beef production and consumption/exports

The share of beef to the structure of total meat production (sheep meat, horse meat and poultry meat, the major alternatives) in Kazakhstan was more above 40%. After the withdrawal from USSR, this consumption level has been reduced due to the number of cattle, which was instable during the years 1990 - 1994. In 1995, there were approximately 7 million head of cattle in the national herd and by the

year 2000 only about 4 million remained. This is explained by the hardship in the country and the breakdown of the Soviet system for stock raising and meat processing, and exemplifies the major change in the food system during these years. However, since 2000 there has been a tendency for increases in the national cattle herd. The herd size has increased from 5.5 million in 2005 and more than 6 million in 2010.

The composition of herd was in the transition years also far from perfect in terms of beef production. In 1995 the share of dairy cows to the total cattle herd was 41.9%, while the share of beef cattle was only 4% [12]. And, in more recent periods the national heard structure has slowly deteriorated even more in terms of beef production. In 2010, the share of beef cows was down to less than 1%.

The issue of the dairy/beef production system has in part kept the live average slaughtering weight at a low level. During 1995 to 2010 period the slaughtering weight varied from 278 to 319 kg. In 2010, this indicator of slaughter weight was at 299 kg. Therefore, the same instability in beef production is observed as the trend in cattle numbers. In 1995 the official slaughter was 550 thousand tons followed be a significant reduction until the year 2000 to 300 thousand tons and increasing in 2010 to 410 thousand tons.

Comparing beef industry of Kazakhstan with Argentina, Canada and Australia, the main advantage of these big exporters is a sustainable development of the industry and absence of a variety of negative impacts of changes in agricultural policy due to changes in political regimes impacting beef production in Kazakhstan. These countries had a stable numbers of beef cattle with minor changes in the periods considered. Canada had about 13 million head, Argentina more than 50 million head and Australia close to 28 million head. And. the structure of their beef industry is completely different than that of Kazakhstan. These counties have about 40% of beef cows and 5% of dairy cows in the cattle herd, quite the opposite of the situation in Kazakhstan (Table 1) [6, 12, 13].

These advantages in genetics composition of the cattle heard and productivity have led to high live average weights for slaughter, in Canada – more than 600 kg, in Argentina – more than 400 kg, and in Australia – 500 kg. These weights have been as well stable over recent years (Table 2) [1, 4].

Beef production in these three reference countries is at a level which has resulted in significant exports and a stable domestic consumption per capita.

Table 1. Composition of livestock, beef and dairy for the three competing countries with Kazakhstan

Years	Kazakhstan			Canada			Argentina			Australia		
	Total stock	Dairy cows	Beef cows	Total stock	Dair cows	Beef cows	Total stock	Dairy cows	Beef cows	Total stock	Dairy cows	Beef cows
1995	6860	2874 41.9%	172 2.5%	12709	1245 9.8%	4252 33.5%	54207	2350 4.3%	21700 40.0%	25736	1822 7.1%	11215 43.6%
2000	4106.6	1959.6 47.7%	55.4 1.3%	13201	1103 8.4%	4452 33.7%	50332	2470 4.9%	18900 37.6%	27588	2171 7.9%	12670 45.9%
2005	5457.4	2381.2 43.6%	61.4 1.1%	14925	1041 7.0%	5284 35.4%	53767	2100 3.9%	21000 39.0%	27465	2041 7.4%	12570 45.8%
2010	6175.4	2695.7 43.6%	55.6 0.9%	12670	966 7.6%	4226 33.4%	49057	2100 4.3%	18300 37.3%	27906	1553 5.6%	12000 43.0%

[11]

Canada produced 1273 thousand ton in 2010 and consumed about 30 kg per capita a the years reported in Table 2, Argentina produced 2620 thousand ton and consumed 58kg per capita, and Australia 2129 thousand ton and consumed 36 kg per capita, respectively (Table 2) [1, 3].

Table 2. Beef production in tons and average live weight carcasses for slaughtering Kazakhstan, Canada, Argentina and Australia.

Years	Kazakhstan		Canada		Argentina		Australia	
	Beef, thsd tons	weight, kg	Beef, thsd tons	weight, kg	Beef, thsd tons	weight, kg	Beef, thsd tons	weight, kg
1995	548.2	278	928.0	590	2600.0	423	1717.0	434
2000	306.3	319	1263.0	658	2880.0	436	1988.0	460
2005	348.3	305	1470.0	668	3200.0	438	2090.0	494
2010	406.8	299	1273.0	680	2620.0	440	2129.0	515

[11]

These volumes of beef production put Australia, Argentina and Canada in a leading position in world export markets. In 2010, Australia exported 1364 thousand ton, Argentina 655 thousand ton and Canada 480 thousand ton (Table 3).

Table 3. National beef consumption per capita a year and beef exports in 2010, Kazakhstan, Canada, Argentina and Australia

Kazakhstan		Canada		Argentina		Australia	
consumption, kg	export, Thsd. tons	consumption, kg	export, Thsd. tons	consumption, kg	export, Thsd. tons	consumption, kg	export, Thsd. tons
26.0	0.1	29.2	480.0	58.0	655.0	36.0	1364.0

[11]

Beef Feeding Rates

Beef feeding for cattle that consume large amounts of hay and pasture are rather stable. The differences relate to the relative prices of pasture and hay related to the price of concentrates. In Kazakhstan concentrates are in relatively short supply, meaning that concentrates occupy a lower percentage of the rations. Argentina of the three comparison countries is most like Kazakhstan in terms of relative prices of pasture and hay and concentrates.

The typical ration over the production period for beef is pasture and hay until the cattle are near market weight and then confined or semi confined feeding involving use of concentrates over the last period before marketing. The differences between the comparison countries in terms of the period in which concentrates are fed reflected in the market weights.

Canada and Australia have the higher market weights and likely feed their cattle longer periods before marketing, reflecting the relative prices in these two countries compared to Argentina and Kazakhstan.

One must be careful with these types of general issues because the relative prices of concentrates to pasture and hay, depends on the internal infrastructure for transportation and storage. Canada and Australia have highly developed infrastructure for transporting and storing concentrates, and internal policies that support their use as feed. Argentina has a less developed infrastructure for transportation and storage and policies that support the export of concentrates, soybeans, corn and barley, and this lower market weights and smaller numbers of days of feeding concentrates before marketing [2].

Thus Argentina may be the country to examine specifically in terms of a model for Kazakhstan. Both have large pasture and hay areas, high prices of concentrates for various reasons, in part related to transport and infrastructure, and will likely feed a higher proportion of pasture and hay relative to concentrates, resulting in lower market weights for the calves marketed during their second year of life.

GOK program to affect genetic composition of the beef heard

GOK has embarked on a program to grow the export potential of its beef industry. The main aims of the program are to increase the number of commercial beef cattle in the national herd and improve the possibility of exports. The program implies expanding output and creating a new chain: farm – feedlot – processing plant – export market. Chilled beef is considered to be a product for export and the large Russian cities are viewed as the main market for Kazakhstan meat [8, 10, 13].

The expectation is that these policies will increase the number of beef cattle in the heard up to 61% by 2020 and bringing beef export potential to 60 thousand tons in 2016 and 180 thousand tons in 2020.

Development and support of small and medium farmers in beef industry will be supported by increasing quality beef breeding stock by a total 300 thousand head over the first five years.

GOK financial support for implementation of this beef cattle program will be accomplished in the following ways:

- lending to agricultural beef cattle producers through JSC KazAgro,
- lending to beef processing plants through commercial financial institutions and JSC KazAgro,

- provision of state support for intermediary markets and infrastructure through loans from JSC KazAgro,
- Provision of state subsidies of the Ministry of Agriculture.

With the adoption of the Program the amount of state support has increased in times (Diagram 1).

Diagram 1. Government spending on stock raising *mln.$*
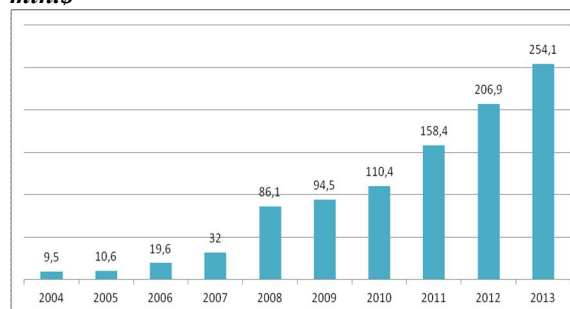
The Agency of the Republic of Kazakhstan for statistics

The amount of public expenditures for animal husbandry in 2014 will increase by 35 %.

Land taxation and increasedu of idle lands for forage

Kazakhstan uses only 35% of existing pastures and hay fields, or about 63 million ha out of 182 millions. And the structure of land using is also complicated by the alternative beef production approaches. The major producers of beef in Kazakhstan are private householders (85% of beef produced) use only 0.1% of the pasture and hay land. And, the owners of pastures and hayfields (breeding farms and peasant farms) divide the rest or 99% between themselves, providing only 15% of beef produced (Table 4) [7].

Currently, the government is attempting to expand the amount and use land by increasing the tax for non-used land. Many places are not being used, and in future years the tax payment for these non-used land will increase by 2 to 3 times. Government has already started taking back into the ownership of state the non-used land that is becoming available because of the intended tax increases.

The best advantage of Kazakhstan is vast expanses of land. And at least 80% of pastures and hayfields could be used for development the beef industry in country. Kazakhstan should make grazing the main feed source for animals by using pastures and hayfields, the way that has succeeded in Argentina [9].

Table 4. Pasture land and hayfields in Kazakhstan and structure of beef production, selected years

Years	Total Land Used (thsd ha)	Users, ha			Beef Production thsd. tons	Contributions to Beef Production		
		Farms	Peasant Farms	Private Households		Farms	Peasant Farms	Private Households
2006	55 824.3	26 960.1 (48.3%)	28 837.4 (51.7%)	26.8 (0.0%)	366.5	11.2 (3.1%)	28.3 (7.7%)	327.0 (89.2%)
2007	57 701.3	26 928.0 (46.7%)	30 713.4 (53.2%)	59.9 (0.1%)	385.9	11.9 (3.1%)	31.7 (8.2%)	342.3 (88.7%)
2008	59 386.5	26 905.0 (45.3%)	32 425.1 (54.6%)	56.4 (0.1%)	400.1	14.0 (3.5%)	35.9 (9.0%)	350.2 (87.5%)
2009	61 644.1	26 984.0 (43.8%)	34 601.9 (56.1%)	58.2 (0.1%)	396.1	14.1 (3.6%)	42.6 (10.7%)	339.4 (85.7%)
2010	63 074.6	26 959.1 (42.7%)	36 083.2 (57.2%)	32.3 (0.1%)	406.8	16.2 (4.0%)	46.0 (11%)	344.6 (85.0%)

The Agency of the Republic of Kazakhstan for statistics

The focus on increasing beef production is a good accession for Kazakhstan to consider optimizing land use. Changing the pattern of land use can be a major part of efforts to increase beef production and accessing the world market. Pastures and hayfields provide low cost feed for beef production and can assure higher quality of meat.

GOK is going to spend 142 million USD for watering 8.0 million ha of pasture in 2013-2020 years.

Development of an internationally accepted grading system

Different systems for beef grading are in place in Canada, Australia and Argentina. But these systems are based on similar principles, which allow for different qualities of beef. For example, there are 13 beef grades in the Canadian system.

Only qualified graders are permitted to grade a beef carcass in Canada. Each grader must successfully complete a comprehensive training program approved by the CBGA, followed by a written and a practical examination. Once certified, graders are regularly audited by CBGA officials through the National Grade Monitoring Program administered by the CFIA. These ongoing audits ensure that grading is performed in a manner which is consistent and accurately reflects Canada's national requirements for high quality beef.

A beef carcass may be graded only after it has been inspected and received the meat inspection stamp, indicating that the beef satisfies all food safety requirements. Each requirement for quality attributes must be met to assure that qualify standards for the Canadian A, AA, AAA and Prime grades, and deficiency in terms of standards cannot be offset by other traits. Quality and yield grades can only be assigned to carcasses by a certified CBGA grader.

Canada's quality grades for beef from young animal carcasses are Canada A, Canada AA, Canada AAA and Canada Prime. To assign these grades, a detailed assessment of the carcass is made by a certified grader following chilling for a minimum of 12 hours. Attributes evaluated for grading include maturity, meat color, fat color, carcass muscling, fat coverage and texture, meat texture and marbling level.

Beef in Argentina is not graded by fat content, but by age and gender first, then by fat cover.

This could be related to the Argentine population's preference for very tender, young beef or to the feeding standard for beef. Fat cover is not measured, but visually inspected. There is no minimum or maximum standard however intramuscular fat is viewed as unfavorable. Fat cover on forage finished beef can have a distinct yellow color.

Argentina's beef grading system has two levels of classification, with the primary objective being to provide incentives for quality, especially tenderness. The classification system categorizes each animal as cow, heifer, or steer; then establishes an additional grade of 1 to 5. This system was designed by large retailers (who provide a market for 17 to 20% of beef consumed) adds structure and financial incentive for higher quality animals. However, 80% of the domestically beef consumed in Argentina is purchased by local butcher shops where buyers have little interest in the classification system.

Meat Standards Australia (MSA) is the culmination of many years of research, testing the on-farm, processing, carcasses, breeds, ageing and cooking effects to determine their individual and collective effect on eating quality. The MSA system began as an industry program, which began in 1996 following detailed consumer research investigating the decline in beef consumption. The key problems identified in MSA research were a reduced level of cut and cooking knowledge among consumers and the degree of quality variation in the beef available. The MSA grade is established by calculating both the direct and interactive effects of all the factors tested and proven to vary eating quality. MSA gives attention to the major principles of grading as in the Canadian grading system. These are maturity, marbling, hump height, meat color and etc.

Grading and food safety systems are as indicated, similar in Australia and Argentina. For reasons of brevity we will not reproduce them here, but the traits examined for Canadian grades are generally the same as in Canada. For a good reference the UN FAO has standards for food safety and grades of beef and other meats.

Conclusion

As a result of research we represent the following issues which will be useful to model Kazakhstan beef industry.

1. GOK policy in land using is to take back a non-used land from its owner to State ownership. Land tax is not expensive, and plan is to significantly increase the tax for owner who doesn't use the land. But they shouldn't forget that the main aim is to make this land used. So, GOK has to motivate the land owner to use his land, otherwise taking back is not stimulating farmer to use the land. It is necessary to

launch a program, which will make useful vast expanses of Kazakhstan. Because 142 million USD for 8 years (2013-2020) are not enough to achieve a big change in pasture using.

2. During the developing beef export potential GOK has to create a grading system for meat. Because without proving the quality of good Kazakhstan won`t get a real chance to become a serious exporter in world beef market. At USSR period worked grading system, but today it lost. And it is important problem that has to be solved in the coming years. It is necessary to consider an old system and today`s new systems in the world and it`s high time to develop Kazakhstan system of beef grading.

3. It remained 3 years to finish the first stage of GOK Program of developing beef export potential. And indicators are slightly behind comparing with the plan. It is necessary to spend more money to creating feedlots and slaughter houses, and genetic improvement. The structure of herd is changing slowly. It may cause the risks of failure in reaching the level of 180 thousand tons for export in 2020 as it planned in Program.

4. GOK needs to pay more attention to the enlargement of farms by creating collective farms with developing specific mechanisms of their functioning. At the initial stage it will require the government intervention from both a financial and a legal side. It has to be created staffs of farms (by the state) and adjusted the relationship between the members of farms (creation Law).

5. Large price dispersion for beef exists in Kazakhstan. And except natural conditions there is other important factor influencing on difference of price in regions – poor domestic road network. Variation of prices in Kazakhstan in terms of regions reaches 50%. GOK has to improve the road network, including distant regions, cities, villages and etc. Subsequently it a unique opportunity to conduct a comprehensive development of the entire agro-industrial complex, that affect both the cost and supply chains for beef. Also better transport facilities would increase the catchment area of abattoirs and stimulate more intensive use of feedlots and best-practice processing plants [5].

In order to build a competitive to world market beef industry it has to be considered all issues above. And GOK should pay attention for them equally, because the industry has to develop in a complex way.

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In conclusion of this article we would love to sum up that every possible effort is applied by GOK.

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