Czech University of Life Sciences Prague

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MASTER THESIS

Value chain of beef meat in the Central Region of Mongolia

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Declaration

I declare that I worked on my Master Thesis Value Chain of Beef Meat in the Central Region of Mongolia by myself and that I used only primary data based on my research and secondary data based on literature resources listed in the references.

16th of April 2013, Prague

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Acknowledgement

Abstract

Extensive livestock breeding is very important in Mongolia's economy as well as in its culture. Meat is a very strategic food for Mongolians and the development of the country is partly dependant on the meat sector. Big cattle such as beef represent 7% of the country's livestock and a comprehension of the beef meat value chain can therefore contribute to an improvement of the quality of life and development in Mongolia. The value chain approach enables an analysis of characteristics and key factors of competitiveness of the value chain.

In this study the beef meat value chain of the Central Region of Mongolia is analysed. Methodological triangulation was used as a research strategy of this thesis. The beef meat value chain analysis consists of the flow of beef meat, added value and the enabling business environment. The business environment is analysed through the following meat price state interventions: commodity exchange, reserve meat and meat export prohibition. In this thesis another issue, meat price instability factors, is analysed. These meat price instability factors are considered as a consequence of constraints of the beef meat chain. The beef meat value chain has a strong development capacity which it does not yet fulfil because of specified constraints represented by meat price factors some of which are changeable, others unchangeable. The findings of this study point out that the business environment of the beef meat value chain is not stable. One of the reasons is that the Mongolian government's meat price regulations do not support the development of the beef meat sector. This is reinforced by the lack of the public-private dialogue throughout the chain.

Key words: Value chain, Mongolia, beef meat, meat price, flow of meat, added value, state interventions

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Abbreviations

ADB   Asian Development Bank

AHLM   Mongolia Animal Health and Livestock Marketing Project implemented by European Union

FAO   Food and Agricultural Organisation

FAOSTAT   Food and Agricultural Organisation statistical database

GDP   Gross domestic product

Kg   kilogram

MNT   Mongolian Tögrög, currency in Mongolia

MOFALI   Ministry of Food, Agriculture and Light Industry of Mongolia

NSO   National Statistical Office of Mongolia

UB   Ulaanbaatar, capital of Mongolia

WB   World Bank

1. Introduction

Livestock has a very important role for many poor people in developing countries around the world. Thus improving livestock systems can be an instrument for many people in the developing world to escape from poverty (Randolf et al., 2007). In developing countries livestock breeding by small farmers is a significant element of the agriculture economy (McDermott et al., 1999). Value chain approaches are important to describe the complexity of networks, relationships, and inducements which exist in the livestock system (Rich et al., 2011). Increasing productivity and efficiency of agriculture value chains leads to successful rural economies of developing countries and consequently to the augmentation of the incomes of their own rural populations (Weber and Labaste, 2010). In Mongolian agriculture especially livestock production plays a key role not only in the economy but also in society. Livestock is an essential part of the Mongolian culture which has been bound with a nomadic life style for centuries. Meat is very strategic food for Mongolians. Thus the Mongolian population is very sensitive to the meat price fluctuation. The meat production is seasonal due to the fact that the meat price fluctuates. Especially in spring 2012 the meat price was very high.

The first chapter of this thesis concerns necessary background information relating to the value chain approach as well as the current situation of the beef meat value chain in Mongolia such as the importance of agriculture and the livestock sector in Mongolia, an examination of the domestic meat market, meat export and the meat supply chain in Mongolia. Objectives of this thesis are defined in the next chapter. The main objectives of this study are to analyse the beef meat value chain in the Central Region and to analyse meat price instability factors in Mongolia. The methodological part describes the study area where primary data collection was conducted, the timeframe of the research, research design, primary data collection and primary data analysis. The results part of the thesis contains processed qualitative and quantitative data which are sorted into four main parts with the regards to specified objectives such as the flow of beef meat, added value, meat price instability factors in Mongolia and an enabling environment analysis which includes institutions with an influence on the value chain of beef, illegal meat export and state meat price interventions analysis.

In the discussion part of this study the results of this and other existing studies were compared. On this topic only few studies exist thus the perceptions of the key players concerning issues were compared with the results. The last chapter is the conclusion which focuses on the findings of the beef meat value chain analysis in the Central Region of Mongolia and the meat price instability factors in Mongolia.

2. Background

2.1 Value chain approach

A value chain is a supply chain composed of a range of players from input suppliers, to producers, to processors, to exporters and consumers. It contains the full range of activities needed to bring a product from its conception to its removal (Kula *et al.*, 2006). The term 'value chain' deals with the reality that value is added to tentative products through a mixture with other resources such as tools, man power, knowledge etc. The value of the product augments as the product goes through numerous phases in the value chain (Herr and Muzira, 2009). "The concept of the value chain was introduced by Michael Porter in the 1980s as a means to understand the links between producers and consumers, as well as the steps between them. The model is now used by many enterprises, whatever their position in a chain, as a strategic planning tool to improve their competitive advantage" (Luz and Kuepers, 2010). Any country risks to be trapped into producing low-skill, low-value products and services without reaching a key value-added share in international trade (Weber and Labaste, 2010).

The value chain approach explains business-to-business relationships that connect the links of the chain. It helps to understand which instruments can increase efficiency and which possibilities exist to increase productivity and add value in a business. Furthermore, this approach provides a point of reference for the positive development in supporting services and business environment (Weber and Labaste, 2010). The value chain outlines how to analyse characteristics and key factors of competitiveness to which small farmers can contribute. This approach provides basic knowledge which is required for the design and implementation of proper development programs and policies. These activities would help the small farmers to participate on the market (GTZ, 2007). Thus they could benefit from the globalization of the market. The value approach does not only concern growth but also aspects of justice in the moderation of the agriculture and food systems (Weber and Labaste, 2010).

2.1.1 Value chain analysis

It is necessary in the value chain research and analysis to understand essential transactions throughout the chain such as causes of bottlenecks in the chain, characteristics of relationships

between businesses in the chain and other relevant market players, the role of specific market functions and formal and informal rules governing the value chain and identification of inducements and capacities of market players (Herr and Muzira, 2009). A bottleneck is a constraint and this expression is regularly used in the supply chain. A bottleneck describes a situation when the downstream operation does not have sufficient capacity to accept the upstream load (Hsiao *et al.*, 2010). Development and upgrading strategy are dependent on value chain analysis. In value chain analyses an evaluation of factors which affect value chain performance and concrete constraints is included (Kula *et al.*, 2006).

The value chain approach demands an understanding of the market system in its entirety. It means understanding the firms operating throughout the chain, markets providing services to the industry and the business environment. A complete analysis of the industry is required because the essential constraints to competitiveness may be anywhere in the market system or in the environment (Campbell, 2008). As the value chain is integrated, it makes the chain vulnerable to the constraints at any level in the enabling environments (Weber and Labaste, 2010). A mixture of qualitative and quantitative methods is used to conduct value chain analysis. The primary data such as surveys, focus group work and semi-structured interviews are included. The primary data and secondary data provide useful information about the linkages and structure of the value chain. This is essential for the identification of many principal constraints and policy issues which need to be exposed (Rich *et al.*, 2011).

Mapping of the flow of goods and services along the chain is an important tool for firms in the channel to learn which other players are important for their own success (Kaplinsky and Morris, 2000). A map of the value chain is guideline throughout the whole chain. Maps may be horizontal or vertical. The mapping provides a good overview and knowledge about specific functions, activities or relations among actors (Arbon *et al.*, 2012).

2.1.2 Value chain development

In value chains five drivers of change which can influence the development of the chain can be identified – see figure n.2.1. For a concept of this thesis is the most relevant business environment factor.

Figure 2.1: Five drivers of change for value chain development
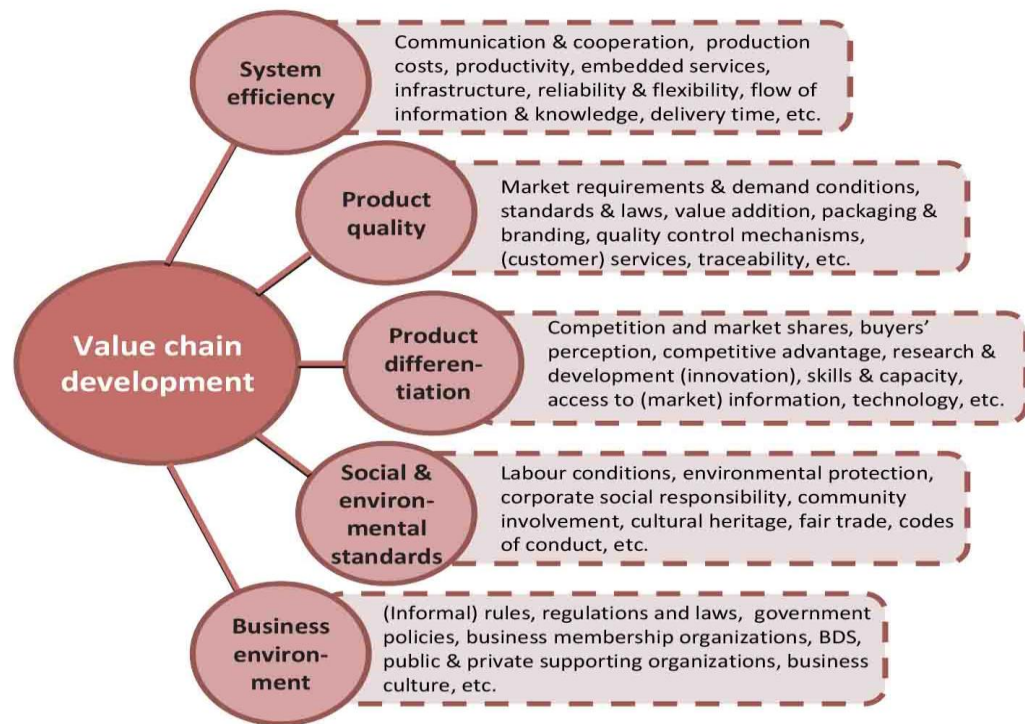
Source: Herr and Muzira, 2009

2.1.3 Business environment

Value chains are not isolated. They are surrounded by a social, economic, political and cultural environment. This environment determines the nature and success of business transactions throughout the chain (Herr and Muzira, 2009). The chain is enclosed in a business enabling environment which can be on a global, national and/or local level. The business environment where the value chain operates is very important. The reason why the business environment should be included into an analysis is an identification of interventions which can improve the performance of the whole chain. The business environment is characterized by government regulations, international standards and trade regulations (Weber and Labaste, 2010). In the analysis the national system of improvements, which is a network of institutions supporting economic actors, is very important. Governments should provide regulations and support to the competitive performance of internal actors. These actions need to be included in the value chain analysis as well (Kaplinsky and Morris, 2000). The constraints can limit the business growth via: increasing costs, decreasing competitiveness, decreasing products and service quality, increasing business and investments risk, decreasing foreign and domestic

investment and constraining business willingness to pursue long-term strategies (Weber and Labaste, 2010).

Value chain analysis is not limited by the level of the internal players in the chain (Kaplinsky and Morris, 2000). Different market players of the system are directly engaged in business transactions or they are part of supporting organizations such as government institutions and NGOs – see figure n.2.2. For these players it is important to know the functions of the market system to enable them to develop upgrading strategies which would eliminate core causes of competitive constraints (Herr and Muzira, 2009).

Figure 2.2: Value chains as part of market system framework
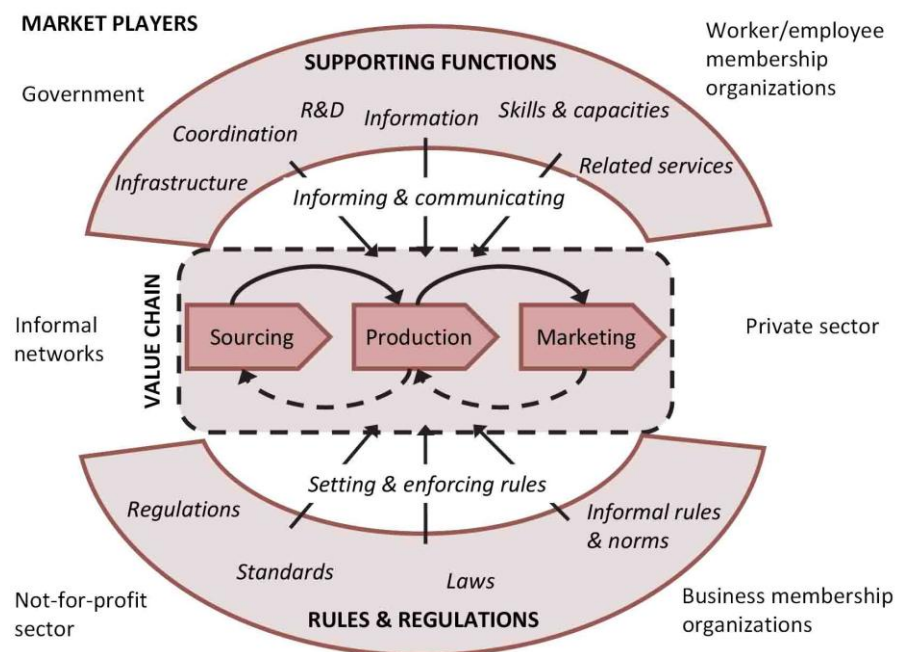
Source: Herr and Muzira, 2009

In value chains it is essential to recognize the importance and complexity of macro and micro level conditions which influence the value chains (Herr and Muzira, 2009). According to Kaplinsky and Morris (2000) macroeconomic situation has an important role in upgrading a productive sector. They provided a stable and realistic currency as an example. If the currency is not stable, consequently the abilities may not be used to improve the sector. In a productive sector realistic policies encouraging investment and corporate and property laws are needed. Achieving a sustained income growth is the result of policy interventions supported by social

and political backgrounds which profit from a sustained and stable environment (Kaplinsky and Morris, 2000).

2.1.3.1 Reform in the value chain

The government is often the essential player which can change regulatory issues. Furthermore, governments have the responsibility to improve and regulate the environment (Weber and Labaste, 2010). Successful reforms facilitate relationships and create initiatives that drive behavior of businesses and governments. This reform builds trust and promotes transparency. Further accruing benefits are ensured (Kleinberg and Campbell, 2008). Upgrading and making strategic choices is mostly dependent on long-term development (Weber and Labaste, 2010). Particular reforms should be part of a superior strategy of a sustainable reform process. This strategy should be coherent and should reinforce the competitiveness of a whole sector or the economy (Kleinberg and Campbell, 2008).

It is principal not to provide one-off ad hoc solutions that do not facilitate the process of addressing additional or successive constraints. Business enabling environment initiatives should set dialogue, advocacy and trust. In enabling business environments it is necessary that policy constraints on the basis of a quick incentive are removed and that broader reform processes are engaged (Kleinberg and Campbell, 2008).

2.1.3.2 Public-private dialogue

The development of the market system leads to value chain development. Thanks to that the right environment is created in which business can be done. Market system development is achieved via social dialogue. Thanks to dialogue all principal public players and private market players participate in formulating solutions for constraints in the chain (Herr and Muzira, 2009). The dialogue between the private and public sectors aids the value chain communication concerning its opportunities and challenges inside the enabling environment. Via communication the public sector can understand the impacts of its own decisions, capacities and actions. In this way the public sector could align with needs of private sector (Weber and Labaste, 2010).

2.2 Agricultural sector in Mongolia

Mongolia is a country with a rapid growing economy. In 2011 the GDP growth was 68% more than in 2008 – see figure n.2.3. Agriculture sector plays an important role in the Mongolian economy because it provides 13% of the contribution of nominal GDP (NSO, 2011).

Figure 2.3: Nominal gross domestic product 2008-2011[1]

Source of data: NSO, 2011
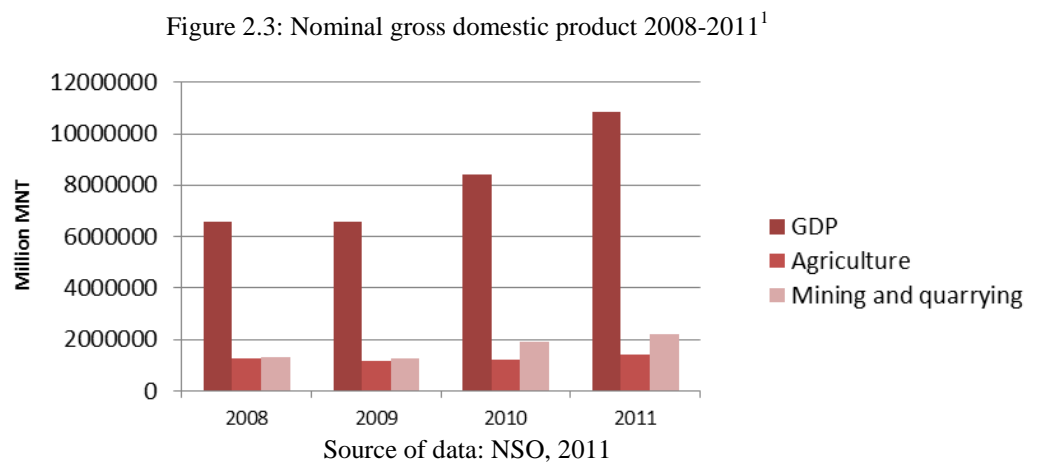
Nevertheless, its contribution has been declining in the overall state economy as shown in the figure n.2.4. In 2010 agriculture was 14% of GDP which is 1% more than in one years later. On the other hand share of mining and quarrying is growing (NSO, 2011). This trend is likely to continue especially as mining and quarrying revenues increase in coming years (World Bank, 2008).

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[1] 1,357.6 MNT= 1US$ in 2012 (World Bank, 2013)

Figure 2.4: Share of agriculture sector in GDP in 2010 and 2011

2010
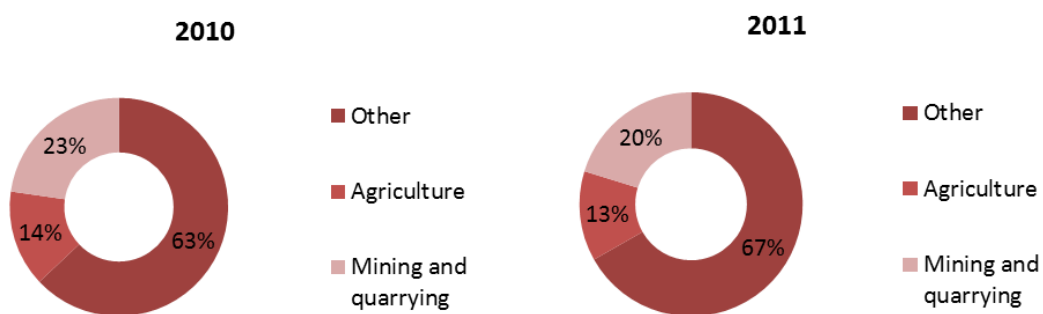
2011

Source of data: NSO, 2011

Mongolia covers 1564120 km2 and most of the country is agriculture area which occupies majority of the whole land – see figure n.2.5 (FAOSTAT, 2012a).

Figure 2.5: Land resources
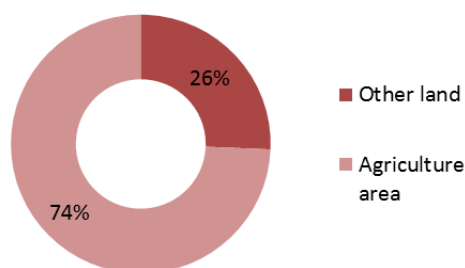
Source of data: FAOSTAT, 2012a

Mongolian population reaches approximately 2, 84mil. inhabitants and annual growth rate is 1,55 % while annual growth of agriculture population has decreased by 1,59% between 2007 and 2012 – see figure n.2.6.

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Figure 2.6: Agricultural population
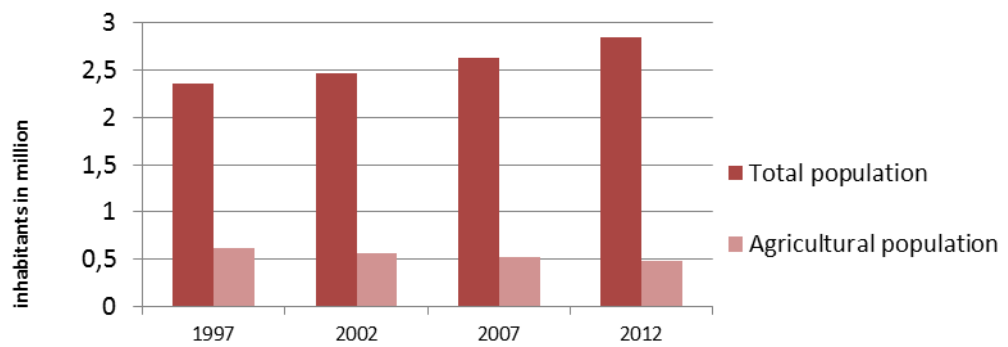
Thus the agriculture labor force has decreasing trend as well. Nowadays agricultural sector employs 16,81% of total country's labor force and it is about 3% less that in 2007 – see figure n.2.7.

Figure 2.7: Labour force in agriculture
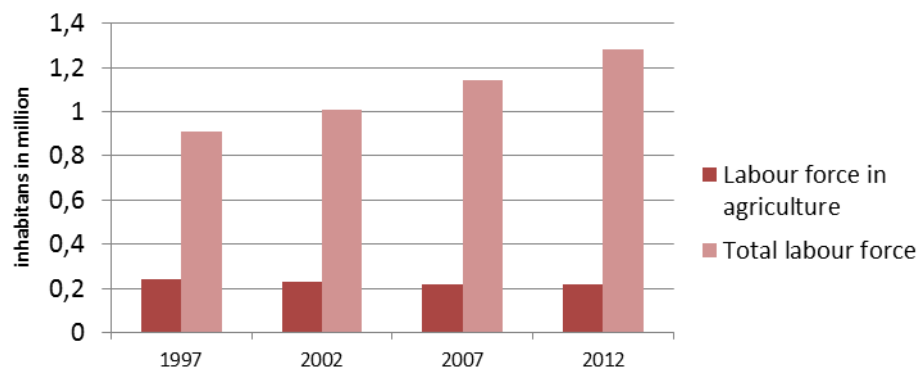
The importance of agricultural sector is decreasing overall economic angle however at the same moment the supply of food items for urban areas is getting more and more significant thanks to urbanization. This trend is followed by rising prices and limited supplies which become highly politicized (ADB, 2005). In 2012 share of the urban population reached more over than 63% of all Mongolian population figure n. 2.8.This trend is provoked by a strong migration to the Central Region from rural areas.

Figure 2.8: Rural and urban population
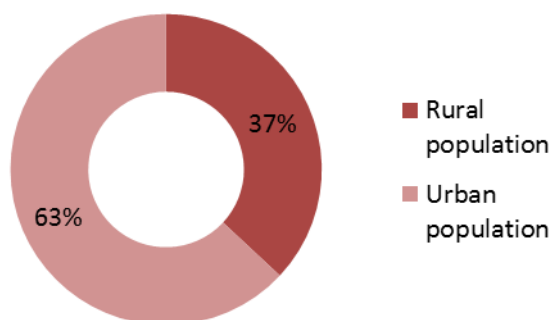
Source of data: FAOSTAT, 2013

2.3 Livestock situation in Mongolia

2.3.1 Importance of livestock sub-sector

Livestock has been the core of Mongolian culture and agriculture for centuries and it is still a very important component of the state economy nowadays (World Bank, 2008). Moreover the development of the country is strongly dependent on pastoralism (Tumurtogtokh, 2011). In other words Mongolian livestock a renewable resource which is the state major economic pillar and thus it is the basis for the sustainable development in Mongolia (Enhk-Amgalan, 2011). The comparative advantage of agriculture in Mongolia relies on extensive livestock husbandry. Extensive pastures provide livestock breeding which is low cost, energy efficient and producing clean organic products (ADB, 2005).

The livestock subsector is key for Mongolia even though its importance is decreasing as people migrate from pastorial areas into towns. Almost one-third of the state GDP and 21% of its export income is the livestock production. Gross livestock output represented 73, 3% of the gross agricultural output in 2011 which is little bit less than previous years – see figure n. 2.9.

Figure 2.9: Gross livestock output
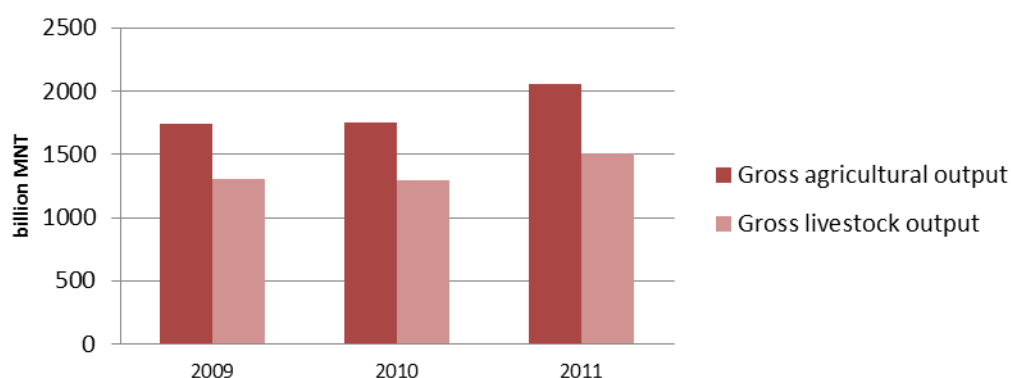
Source of data: Burmaa, 2011

It can be found that the whole country, society and state production system is dependent on the livestock. About 40% of the Mongolian population is employed in the livestock raising. Making living by the nomadic livestock breeding is a very sophisticated and developed system which is perfectly adapted to a severe environment which is in Mongolia (FAO, 2011).

2.3.2 Herd structure

The structure of herds varies as geographic regions differ. Camel herds prevail in the Gobi region and cows in the forest-steppe region. Sheep predominate mostly in open steppes and goats in Altai mountains and Gobi region (World Bank, 2005). In Mongolia the herd structure is dominated by sheep which represent approximately 44% herds. Small livestock such as sheep and goats represent a total 86,6%. Big cattle such as beef represent 7% figure n.2.10.

Figure 2.10: Herd structure in 2010
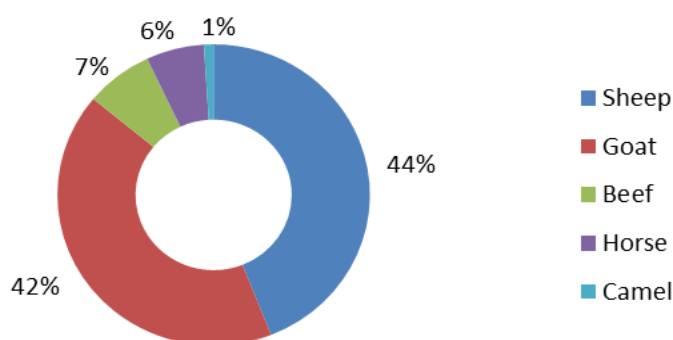
Source of data: Damdinsuren *et al*. 2011

2.3.3 Livestock number

The characteristics of the national herd such as size and the share of animal species is an important issue in Mongolia. Over-stocking of livestock leads to degradation of natural resources which can result in livestock losses because caused by the reduction of the animal's productivity and by increasing their mortality (World Bank, 2008).

The livestock population was constant from the 1960s to the late 1980s. After the breakdown of the collective system the privatization of livestock herds followed and in the 1990s the number of livestock was rapidly increasing – see figure n.2.11.The main reason is the change in the herd structure in which cattle, horses and mainly goats are of much higher number. Another reason can be the migrations from rural to urban areas particularly to Ulaanbaatar (World Bank, 2008). The increasing number of goats is a direct response to the high cashmere price in the 1990s which is still high nowadays. This trend is considered as alarming because goats have destructive grazing habits (ADB, 2005).

Figure 2.11: Number of livestock 1918-2011
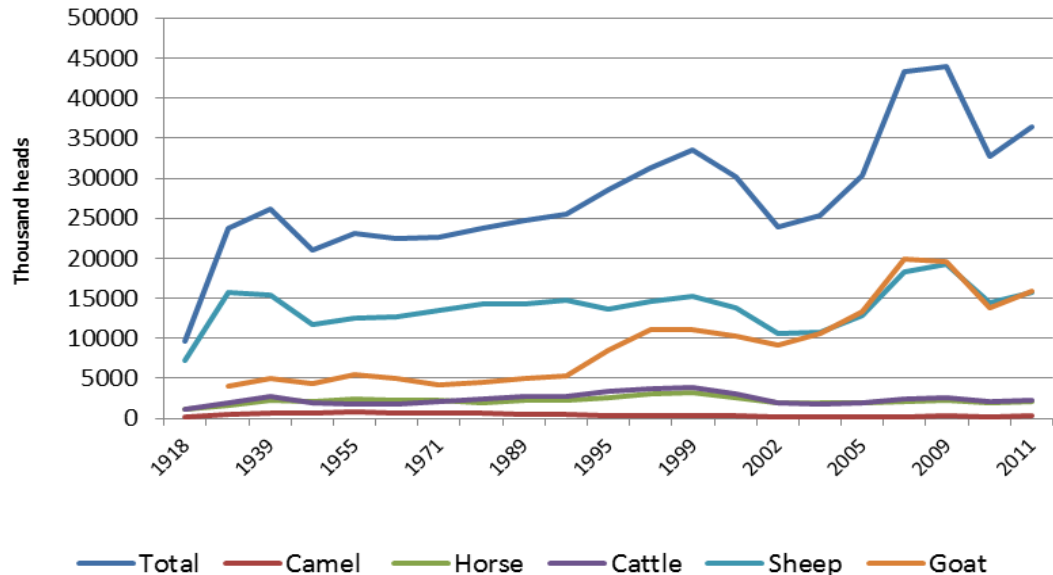
Source of data: Burmaa, 2011

The number of livestock almost doubled from 1988 to 2009. In 2009 the number reached around 44 million. Since 1990 the numbers have been rapidly fluctuating with a positive trend.

The reason for this decline was rough weather conditions – in winter *dzuuds* and in summer strong droughts. As the rural population is financially dependent on livestock breeding, these fluctuations create direct impacts on their livelihoods (FAO, 2011a). The impact of *dzuuds* from 1999 to 2002 decimated the livestock number which declined to 23,9 million in 2002 (ADB, 2005). The winter 2009/2010 was the most severe in nearly five decades which Mongolia faced. More than 7,8 million heads of livestock perished due to extreme cold and a lack of fodder. The deficit of fodder continued the following summer, caused by prolonged drought (FAO, 2011b). In figure n.2.12.we can observe the losses of adult animals which reached the highest level in 2010 when the environmental conditions were the harshest. As we can see the highest number of effective animals is represented by goats and sheep. Thus the impact of the severe conditions was essentially mortal for small livestock. Big livestock was affected as well but not in such huge numbers (Burmaa, 2011).

Figure 2.12: Losses of adult animals
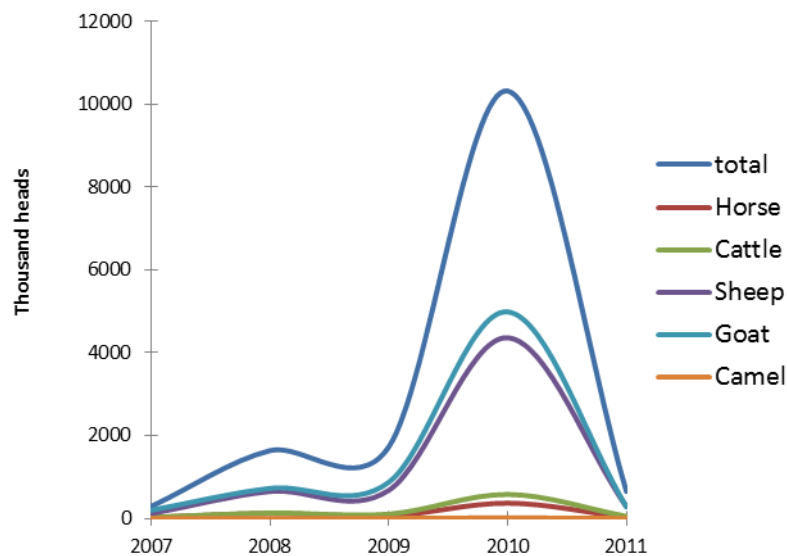
Source of data: Burmaa, 2011

As the rural population is financial dependant on livestock breeding, these fluctuations create direct impacts on their liveheods (FAO, 2011a).

2.3.4 Mongolian cattle beef breeds

In Mongolia the beef industry is mainly based on small local breeds of cattle (AHLM, 2004). The number of cattle reached 2,34 million heads in Mongolia in 2011 and cattle represent 6,44% of total livestock – see figure n.2.13.(Burmaa, 2011). The cattle number consists about 25% of yaks and yak-cow hybrids. The majority of breeds are local Mongolian cattle, yak, khainag, Dornod and Selenge. Khainag is a hybrid of a Mongolian cattle breed and a yak which is strong and has excellent proportions of the body (MOFALI, 2012).

Figure 2.13: Number of cattle 1918-2011
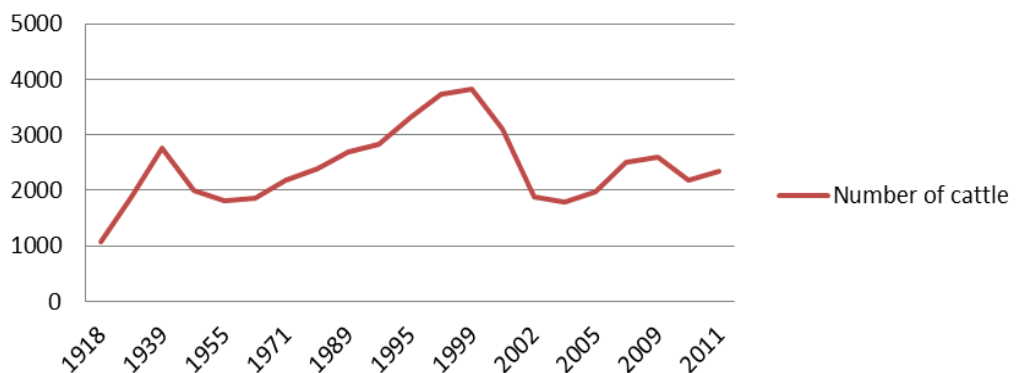
Source of data: Burmaa, 2011

In many areas the local breed was mixed with exotic blood such as Alatau, Simenthal and White-faced Kazakh. Nevertheless in severe areas pure Mongolian breeds dominate. These breeds have poor production but they are resistant to the extreme climate. In higher areas cattle-yak hybrids are kept. These hybrids are common and preferred. Between 1950 and 1994 the number of yak and khainag dropped from one third to one fifth. In the Gobi area cattle are badly adapted to local weather conditions therefore are expensive to breed (AHLM, 2004). Most of the cattle are bred in steppe zones and in forest steppe zones – see figure n.2.14.

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Figure 2.14: Distribution of cattle by region
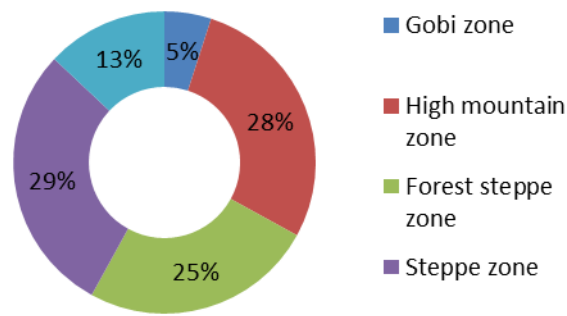
Source of data: MOFALI, 2012

2.4 Domestic meat market in Mongolia

2.4.1 Meat production

In Mongolia meat is a very important livestock product and of the 5 most produced commodities in Mongolia 4 are meat products – see figure n.2.15.

Figure 2.15: Most produced commodities in Mongolia
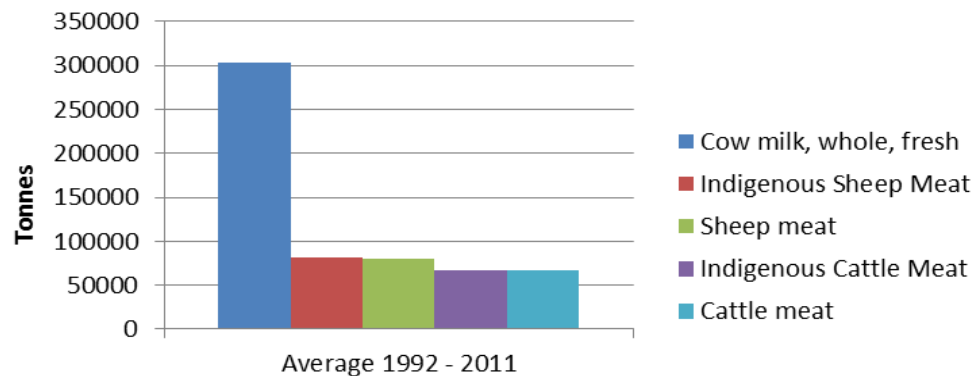
Source: FAOSTAT, 2012b

The meat industry is based on sheep, goat, cattle and horse breeding in Mongolia. Poultry breeding and fishery are not so developed in the country. Pig breeding is mostly for sausage processing (MOFALI, 2011). In 2011 about 209,7 thousand tons of meat were produced in Mongolia which is less than in 2009 before the severe winter 2009/10 – see figure n.2.16.

Figure 2.16: Production of meat in Mongolia 1992-2011
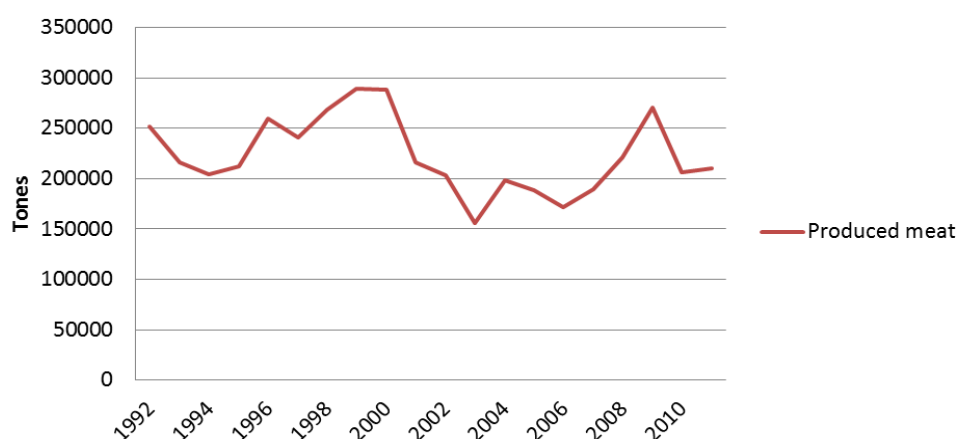
2.4.1.1 Beef meat production

In 2011 beef production reached 53, 6 thousand tons in Mongolia– see figure n.2.17. The production curve of beef meat is relatively constant from 2003. After the privatization in the beginning of the 90s the production of cattle meat was increasing and reached the highest point in 2000. Afterwards the trend reversed because of the following severe winter conditions which caused a high mortality rate among cattle.

Figure 2.17: Production of beef meat 1992-2011
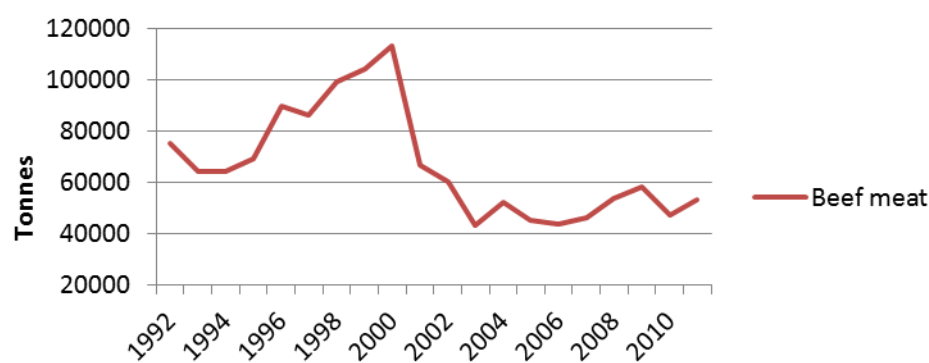
2.4.2 Meat market

Mongolian meat production is driven by the domestic market because the Mongolian population consumes about 85%-95% of the annual meat production in the country. The domestic meat market is a low price market in comparison with international markets (Gelder, 2010). Meat is the key in the Mongolian diet and it is stated as a strategic product in the country (MOFALI, 2011). The average daily boneless meat consumption is about 230g, which amounts to about 84kg annually (Damdinsuren *et al.*, 2011). Mongolia belongs to the countries with the highest consumption of meat per capita in the world (Gelder, 2010). Food supply of meat in Mongolia from 1992 to 2009 is shown in a figure n.2.18.

Figure 2.18: Food supply of meat 1992-2009
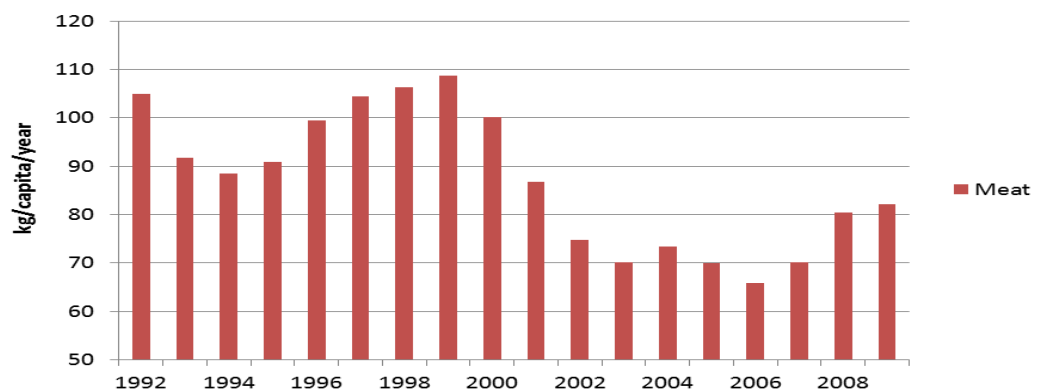
Source of data: FAOSTAT, 2012b

Traditionally the consumption of meat is seasonal in Mongolia and depends highly on the climate conditions of a concrete year (MOFALI, 2011).The demand of meat was slowly but constantly increasing between 2008 and 2010. The production of meat is highly dependent on climate conditions the severe winter of 2009/10, for example, caused a dramatic decline in productivity. In 2010 meat production did not satisfy the demand and it caused a meat deficit on the market – see figure n.2.19.

Figure 2.19: Mongolian meat demand and productivity

Mongolians prepare meat in the traditional way, by boiling and steaming. This cooking style does not demand any qualification of meat according to tenderness, colour, age, sex, fat marbling etc. Mongolian domestic consumers seek the lowest priced meat (Gelder, 2010).

2.4.2.1 Beef meat market

Cattle meat is consumed all over Mongolia except in the Gobi where cattle are not adapted to the weather conditions (AHLM, 2004). In 2009 the food supply of beef represented about 33% of the total meat supply in Mongolia -see figure n. 2.20

Figure 2.20: Food supply of beef 1992-2009
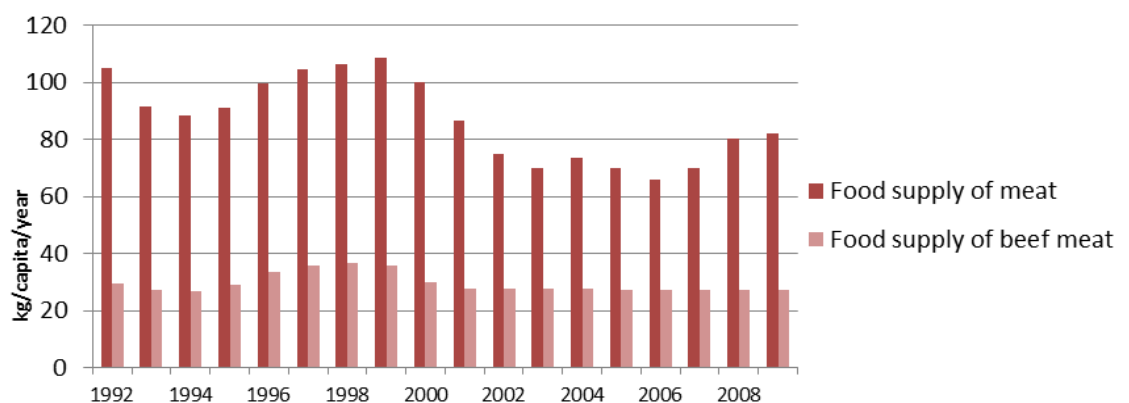
2.4.3 Meat price in Mongolia

In Mongolia livestock outputs show seasonal price fluctuations during the year. The main reason of price fluctuations may be the livestock production cycle which is highly affected by biological processes and weather conditions. It is important to know the patterns of seasonal price fluctuations because afterwards good marketing decisions can be made (AHLM, 2011). All over the country the amount of meat produced increases in the middle of summer and reaches a production peak from October to November. In this period pre-winter slaughtering is done. The consequence of this trend is a variability of meat prices throughout a year. The highest price of meat is in June and after that it starts decreasing from July to October (AHLM, 2011). This seasonal trend can be observed in the figure n.2.21. and n.2.22.

Figure 2.21, 2.22: Retail beef and mutton prices (MNT/kg) Ulaanbaatar
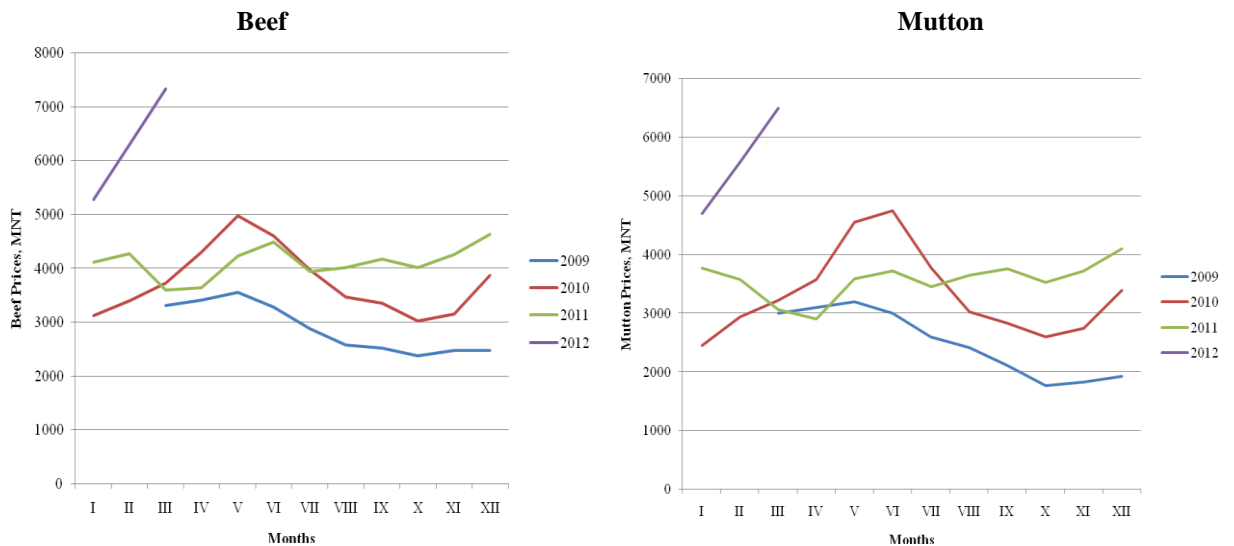
Source: Leach and Bat- Erdene

The prices of beef and mutton meat were relatively alike as we can see in figure n. 2.21. and n. 2.22. The annual price of meat was increasing a little bit every year but there were not any significant changes throughout 2009-2011. The meat price trend of beef and mutton radically changed during January to March 2012. Other livestock products such as milk or cattle hide did

not have the similar sudden price boost (Leach and Bat- Erdene, 2012). In Mongolia information on meat prices is spread in the "Herders Market Guide" every Thursday morning on National Radio. This broadcast is one of AHLM[2] project which is a collection and a distribution of data on prices of meat since 2009 (Leach and Bat- Erdene, 2012). It is preferable for the Mongolian government that meat prices stay as low as possible especially in the spring period because it enables all Mongolian people to buy enough meat (Gelder, 2010).

Countless reasons may exist which cause the meat price fluctuations. The development of meat prices may be influenced by the following factors (Leach and Bat- Erdene, 2012):

  – fuel price rises, thus transportation expenses increased as well
  – impacts which is associated with the sale of Reserve Meat
  – impact of short term country exports

Herders have other sources of income (Boldbaatar, 2012):
  – wool price payment
  – monthly allowance of 21.000 MNT
  – monthly student stipendium of 70.000 MNT
  – fulfilment of election promises in 2012, every citizen got 1 million MNT

From October 2012 the Central Bank of Mongolia and the Government of Mongolia started a program "Primary Products Price Stabilization". Meat price stabilization and the meat reserve program is financially supported by The Central Bank of Mongolia; nevertheless it is in the pre-selection stage (English News Mongolia, 2012.)

2.4.3.1 Beef meat price

The evolution of the beef meat price was strongly inconstant as we can see in the figure n. 2.23. An especially radical change is observed in winter 2011/2012 when the price of beef meat reached its maximum. In April of that year the price was nearly 300% more than in the same

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[2] EU-Mongolia Animal Health and Livestock Marketing Project, this project focuses on the Livestock sector and has 3 components: 1) policy 2) animal health 3) marketing (EU, 2013)

month five years ago. In comparison with the same month of the previous year the price augmented more than 100%.

Figure 2.23: Boneless beef average price 2007-2012

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
2007	2331	2541	2666	2846	2905	3272	3146	3136	3043	2826	2703	2782
2008	3035	3264	3835	4292	4757	4972	4811	4613	4294	3876	3694	3625
2009	3592	3571	3862	3957	4395	4483	3953	3767	3503	3273	3391	3338
2010	3638	4341	4525	5157	6011	6112	5420	4794	4483	4182	4110	4660
2011	5379	5454	5041	4844	5150	5270	5450	5365	5263	5250	5278	5444
2012	6077	7401	8725	8666								

Month

Source of data: Boldbaatar, 2012

2.5 Meat export in Mongolia

Mongolian meat is exported to Russia which is a long term traditional meat trade partner. Smaller export markets of meat or live animals are some countries in the Middle East, China, Japan and South Korea. Nowadays in Mongolia meat export does not have a high monetary value in economy (Gelder, 2010). The majority of meat which is exported is goat or horsemeat (MOFALI, 2011). The amount of exported meat from 1985-2009 is shown in the figure n.2.24. In 2011 the amount of exported meat reached 22, 8 thousand tons (Burmaa, 2011).

24

Figure 2.24: Export of meat in Mongolia 1985-2009
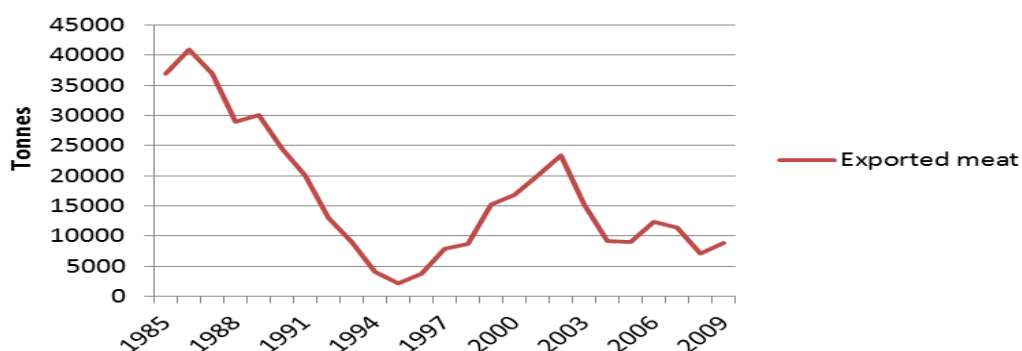
Source of data: FAOSTAT, 2012b

Types of meat which are exported from Mongolia mostly have a characteristic destination market - see table n.2.1. 98%-99% of meat which was exported from Mongolia to Russia was in frozen carcass form. This meat is sold for very low prices in comparison with internationally traded meat (Gelder, 2010). Exported beef or horsemeat is destined for processing factories in Russia (AHLM, 2012). Japanese and Korean markets import canned meat from Mongolia, boneless horse meat, pet food and intestines. Meat is exported (except to Russia) through port Tianjin in China where it is transported to the target markets. The problem is that the costs are very high in China (Gelder, 2010).

Table 2.1: Type of meat in export markets

Export market	Type of fresh and frozen meat
Russia	horse, beef
Arab countries	mutton, lamb
China	mutton, goat
Japan	horse

Source of data: Everett, 2005

The majority of meat is consumed in the domestic market thus very small amount of meat is accessible for export. In 2012 all meat exports were forbidden by the Mongolian government until July 2012 because of high meat prices followed by low meat production (AHLM, 2012).

2.5.1 Beef meat export

The largest importer of beef is Russian. 97-98% of beef exported is exported as carcass to Russia and Kazakhstan (MOFALI, 2012). The amount of exported beef was decreasing from the beginning of the privatization period and reached its minimum of that decade which were only 2200 tonnes in 1995 – see figure n.2.25. Afterwards the trend started changing. In 2008 and 2009 in Mongolia there was almost no export (only 661 tonnes and 763 tonnes respectively).

Figure 2.25: Export of beef meat in Mongolia 1985-2009

Source of data: FAOSTAT, 2012b
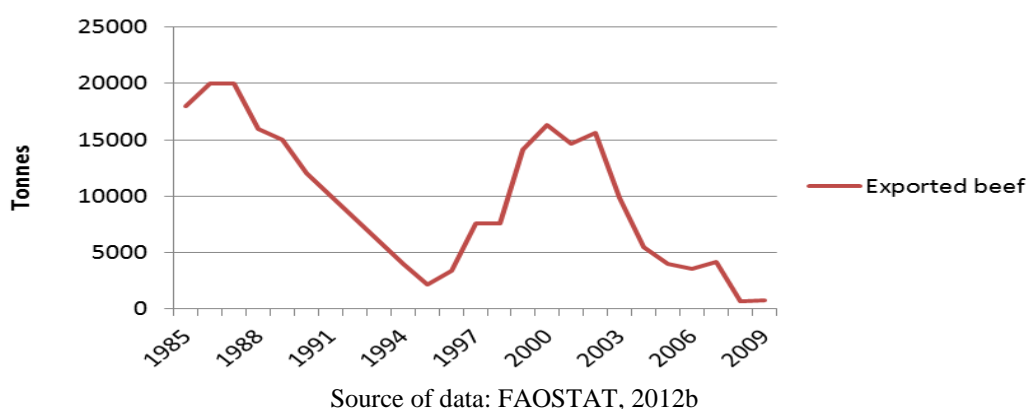
2.6 Meat supply chain in Mongolia

2.6.1 Flow of meat in Mongolia

Herders breed animals which sell alive to the changers/traders. The ownership of the animals may move from previous trader to another trader. The carcass is taken to exchange markets where is sold to wholesaler or directly to retailers. Wholesalers sell to retailers and the meat from them is purchased by consumers (Gelder, 2010). In a figure n 2.26.below the flow of meat in Mongolia is described.
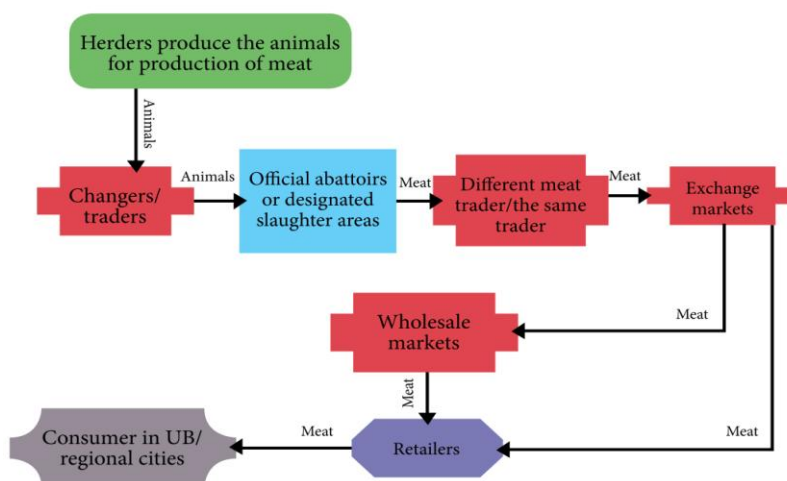
Source of data: Gelder, 2010 (modified by author)

In a figure n 2.27 meat flow in the capital- Ulaanbaatar is shown. The second schema above explains meat supply chain in countryside in Mongolia.

Figure 2.27: Meat and edible selling channels in UB and the countryside
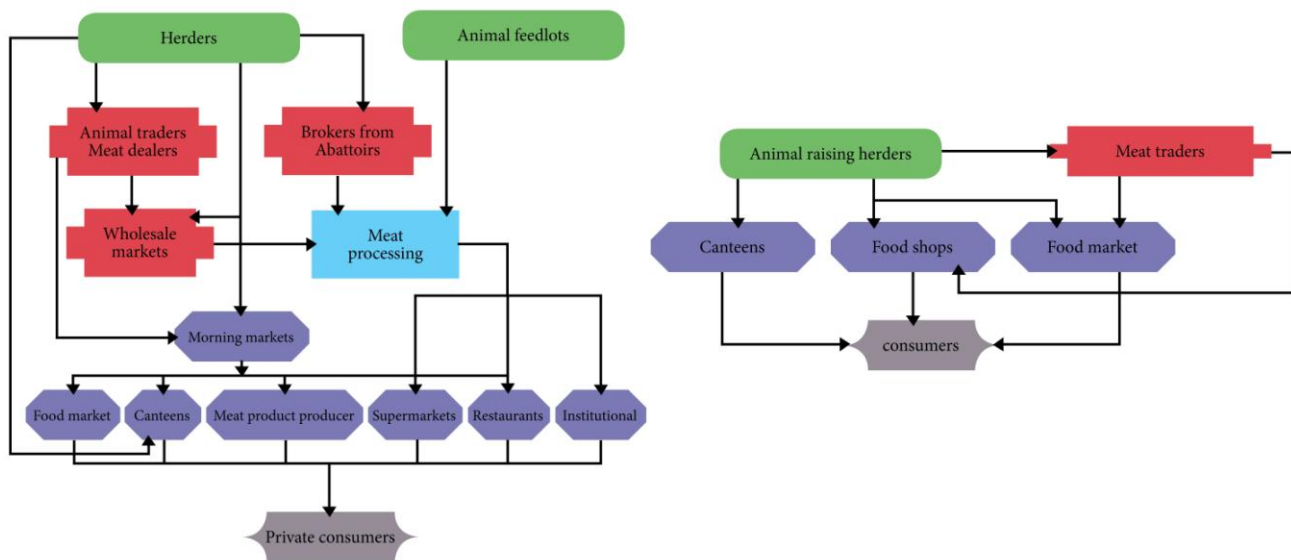
Source of data: World Bank, 2005 (modified by author)

2.6.2 Herders

Herders are the principal meat suppliers in the meat supply channels. Herders can be classified into four groups according to owned numbers of livestock-see table n. 2.2.

Table 2.2: Herders typology

Number of livestock	Characteristics	% of household in total
<50	Part-time herders, poor households including workers, civil servants, pensioners	44%
101-200	Poor households employed by others, they are not able to satisfy own households demands	43%
201-500	Households whose income equals expenditures	10,9%
>501	Rich households, business type, income is able to cover total expenditures plus to extend production	1,6%

Source of data: World Bank, 2005

2.6.3 Traders/Changers

There are three different categories of meat traders: animal dealers, meat sellers and herders –see table 2.3. In UB there are approximately 560 meat traders and 4000 in the whole of Mongolia. The majority of traders are from UB or *aimag* capitals and they come to buy animals from herders. Some herders go to sell meat to UB on their own. Meat changers who work in morning wholesale markets can be classified into three groups.

Table .2.3: Meat changers working in the morning markets

Group	Profession:	Activities	Types of suppliers
1.	Animal dealer and meat traders	collect and purchase alive animals/meat in countryside	herders
2.	Meat trader	work in UB and sell meat between wholesale markets and morning markets.	57% meat from herders 43% meat from other meat traders
3.	Meat seller	buy meat from morning meat market traders they are from: meat processing companies, supermarkets, canteens, restaurants,	preparing meat by themselves Meat traders from morning markets Herders, relatives

Source of data: World Bank, 2005

3. Objectives

The main aim of this thesis is to analyse (i) the beef meat value chain in Central Mongolia. This includes analysing the beef meat flow, beef meat added value and business enabling environment via state interventions to the meat prices. The second aim is to analyse (ii) constraints of the beef meat value chain in Mongolia based on an analysis of meat price instability factors.

4. Methodology

4.1 Study area

The study area in which the research was conducted is the Central Region in Mongolia: the *aimag* of Tov and the capital Ulaanbaatar. Mongolia is divided into 21 provinces, so called *aimags* which in turn are divided into districts known as *sums*. The capital is an independent municipality and is thus not a part of the Tov province. The capital of Tov province is Zuunmod. The data collection was conducted in four *sums* in Tov*: Bornuur, Bayanchandmani, Zuunmod, Sümber and in the capital city Ulaanbaatar – see figure n.4.1.

Figure 4.1: Location of data collection in Tov aimag and Ulaanbaatar
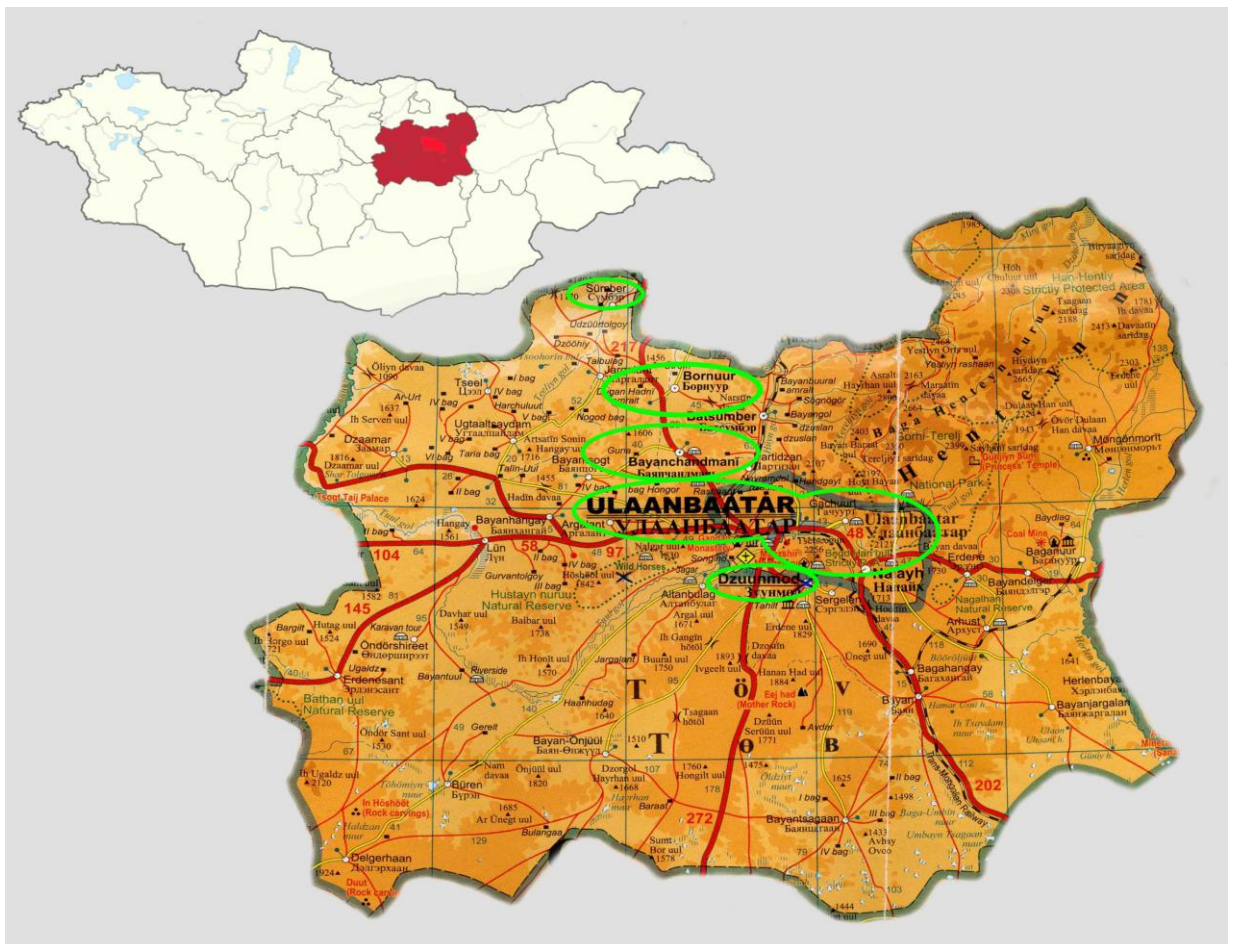
As Young and Tavares (2004) explain, the most centralized areas where marketing decisions relating to markets supplied and decisions on entering new foreign markets were located were primarily financial centres. Thus to analyze the beef meat value chain in Mongolia it is necessary to understand the system of the key places of the meat sector which is the capital city - Ulaanbaatar. As Mongolia is a centralized country, the area of research was chosen in and around Ulaanbaatar where crucial meat markets and meat businesses are concentrated. The capital is surrounded by the *aimag* Tov which is a frontier of key meat markets and countryside. It means that all beef meat sellers and buyers from the whole Mongolia cross this area to get to the main markets. Therefore in this *aimag* beef meat channels can be considered as representing the rest of the Mongolian countryside beef meat channels. Furthermore these channels are influenced by beef value chain actors from the capital such as wholesalers and traders. Another factor of the value chain is the relatively developed infrastructure. Main roads leading to Ulaanbaatar and short distances enable herders and other actors to sell or buy meat directly without need for a mediator in main meat markets. For reasons mentioned above Tov and Ulaanbaatar are ideal for data collection which could be considered as a model representing the whole value chain of beef meat in Mongolia.

4.2 Timeframe

The following table n. 4.1.briefly describes a time framework of the master thesis research, data collection and elaboration of data.

Table 4.1: Timeframe

January-June 2012	Theoretical research of the issue and preparation of primary data collection
7th of August- 26th September 2012	Primary data collection and beginning of analysis of data in Mongolia
October- April 2013	Processing of primary data and secondary data Finalization of master thesis

4.3 Research design

A case study was selected as a main research design for this thesis. Tellis (2007), in his article *Introduction to case study,* explains that case studies can include qualitative and quantitative data. Furthermore he describes that multi-perspective analysis is applied. In other words researchers consider actors individually, in groups and their interactions between them. As a research strategy of the thesis methodological triangulation was selected. Triangulation refers to approaching a concept from various perspectives. Thanks to that it allows to identify the correct construct with more assurance (Heath, 2001). In the thesis three different methods were applied to gather primary data which were supported by the author's observation- see table n.4.2.

Table 4.2: Applied methods

	Primary data collection method	Type of research method
1	Semi structured interview with internal actors the beef meat value chain	Qualitative
2	Interview and semi structured interview with key external actors of the beef meat value chain	Qualitative
3	Structured interview with internal actors of the beef meat value chain	Quantitative

4.4 Data sources

4.4.1 Primary data collection

4.4.1.1 Qualitative data collection

The beef meat value chain is surrounded by the enabling environment. It is very important in the value chain approach to analyse the business environment of the chain and interactions within it. The participants of the qualitative research were sampled in two main groups which are internal and external actors of the beef value chain in Mongolia– see figure n.4.2. The external actors are considered as key players for the chain. The qualitative research was based on interviews and semi structured interviews. The numbers in a figure n.4.2. indicate the number of

internal and external respondents. The category and number of interviewed actors varies according to discussed issues.

Figure 4.2: Qualitative data respondent samples
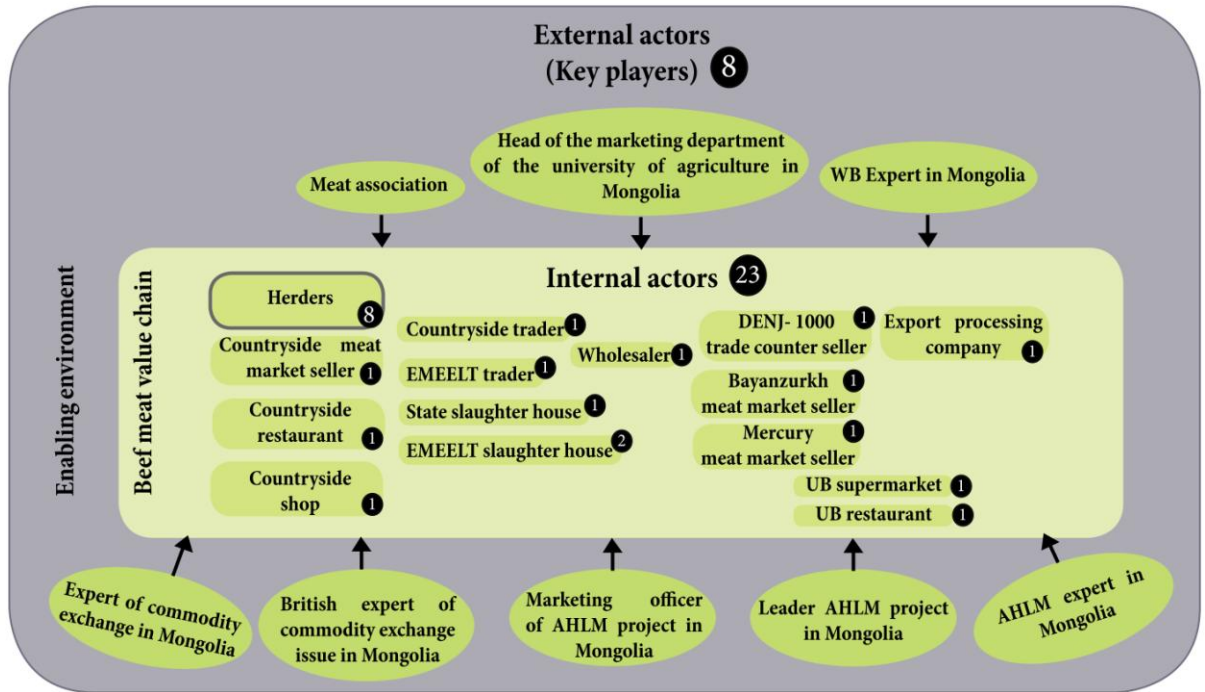
4.4.1.1.1 Sample size of the qualitative research

The sample size of the qualitative research was mainly dependent on the willingness to cooperate and availability of the actors and of course the time framework of the data collection. The total sample size of internal actors of the beef meat value chain was 23 and of external actors it was 8 – see figure n.4.2. above

4.4.1.1.2 Qualitative data collection: internal actors

The internal interviewees were selected relating to their different roles in the beef meat channel. Respondents were chosen to serve as a representative sample of different target groups in the beef meat sector. Gained knowledge about different internal roles throughout the chain enables a deep comprehension of the beef meat value chain. The selection of interviewees was fully dependent on the role of the respondent. Internal actors who practice daily job were

addressed at their work such as in the meat markets, main slaughter areas and shops. As herders do not regroup at one particular place, it was necessary to address them at their homes. Herders were addressed in stratified way in the countryside. An objective was to have a representative sample of herders in the Central Region in Mongolia. Thus herders were contacted with regard to the following conditions: nomadic life/no nomadic life isolated in countryside/in *sum* centre or near mean roads, low number of cattle/higher number of cattle, extensive husbandry/semi-intensive, type of client purchasing beef from herder and cooperative memberships. Individual herders were randomly addressed or the snowball method was implicated. Reaching traders to be interviewed was very complicated. Because their profession is very mobile it is very hard to find them in the countryside or in UB. They are often very busy therefore they do not have time to spend on interviews. For the reasons mentioned above the snowball method was utilized to contact them. Most interview requests were refused by traders. Contacting a representative of the export processing house was realized via one of the key players. The rest of internal actors were addressed on the basis of important places where the meat business takes place such as meat markets and slaughter areas. And the snowball method was used as well to get to know these places.

Internal actor semi-structured interviews

Semi-structured interviews were based on 14 principal research issues. In every issue there were leading questions which varied depending on the respondent's profession. Questions were consulted during pilot testing with Stefan Rosenow an expert of the AHLM team. All interviews with internal actors were held in Mongolian language and simultaneously translated by a Mongolian translator into the Czech language. The semi structured interviews were written in Czech. The average duration of one interview was approximately four hours.

4.4.1.1.3 Qualitative data collection: external actors

The external interviewees were selected according to their various roles and the main researched issues in the theoretical context of the beef meat value chain enabling environment. Furthermore external players were distinguished into two target groups. The first one are external actors directly involved in issues concerning the beef meat sector in Mongolia such as a representative of the Meat Association, an expert of the newly established commodity exchange and the head of the marketing department at the University of Agriculture in Mongolia. The

second distinguished target group were actors acting as experts on issues concerning the beef meat value chain. Gained knowledge about different issues concerning the beef meat sector permitted a deep comprehension of enabling environment of the value chain of beef meat. Mostly the snowball method was implemented. First of all interviews with different experts of the AHLM project team in Mongolia were conducted. Afterwards interviewees provided helpful information and contacts of other external players. Thanks to this mediation the majority of other external actors' interviews took place.

External actor interviews and semi-structured interviews

Three semi-interviews of the same structure were conducted. Six main departments concerning beef meet sector research issues were distinguished. The rest of the interviews were instructed and the interview questions varied with regard to the external actor and interviewed topics. Six interviews with external actors were held in English language and noted in English as well. The rest of the interviews were held in Mongolian and simultaneously translated into the Czech language. The average duration of the external actors' interviews was approximately two hours.

4.4.1.2 Quantitative data collection

The objective of the quantitative research was to gather quantitative data enabling beef meat flow analysis and added value analysis on beef meat in the Central Mongolia. Quantitative research is based on interviews supported by prepared structured questionnaires for five different target groups of internal actors. An analysis of these groups shows five different levels of beef meat added value and the flow of the meat. This model was based on the knowledge concerning meat flow gained from qualitative interviews which were supported by a World Bank expert in Mongolia. The main meat flow goes from producers to the main wholesale market Denj-1000 in Ulaanbaatar. Other meat markets in Ulaanbaatar were chosen according to their size. The numbers- see in figure n.4.3. indicate the number of beef sellers present at each market.

Figure 4.3: Interviewed herders and sellers from different meat markets in UB
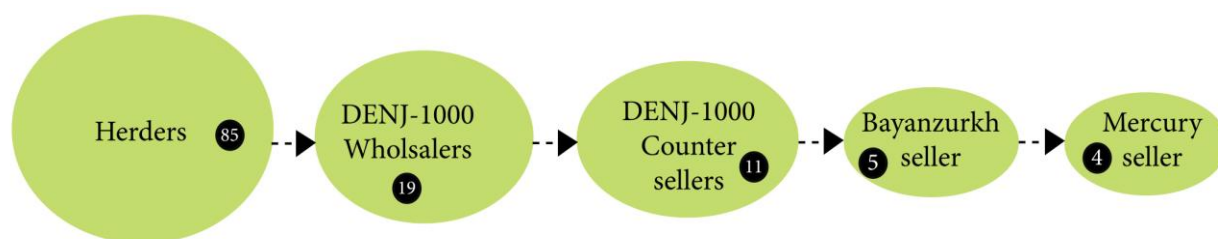
4.4.1.2.1 Sample size

The sample size of the quantitative research was mainly dependent on the willingness to cooperate and of course the time framework of the data collection. Many potential interviewees refused to answer financial questions. The total quantitative data sample size was 122 internal actors and the number of target groups are shown in a figure n.4.3.above The share of respondents out of the total number of chosen groups is shown in the table n.4.3

Table 4.3: Share of respondents out of the total number

Place	Interviewed group	Total number	% of interviewed actors
Tov	Herder households	13914	0,6%
Denj-1000 meat wholesale market	wholesalers	38	50%
Denj-1000 trade counter meat market	beef meat sellers	80	14%
Bayanzurkh meat market	beef meat sellers	13	39%
Mercury meat market	beef meat sellers	7	57%

Structured interview

Interviews based on a structured and open questions were implemented in this quantitative research. Four main issues were asked from all the respondents such as location, sale/purchase beef meat price per kilo, purchase/sale beef meat form (with or without bones) and type of clientele. Structured interviews with herders contain different questions relating to the number of cattle and form of sale of beef meat. In this case the form of the meat means live cattle or beef meat with bones. It was necessary to pose a question concerning the weight of sold live animals

with which the beef meat added value was calculated. The question concerning beef meat/live animal prices contains three different periods throughout the year.

4.4.2 Primary data analysis

4.4.2.1 Qualitative data analysis

It was necessary to transcribe the qualitative data into electronic form. The rest of the data was already written in electronic form during the interview. All external actor interviews were directly written in electronic form except for one with the expert of the commodity exchange which was registered and later on transcribed. Consequently preliminary exploratory analysis of qualitative data and connections to the research questions were made. The main method used was based on qualitative content analyses. Direct references to the interviewed respondents were applied throughout the text in order to bring better focus and grounded argumentation for conclusion and discussion.

The main qualitative research question was to analyse the beef meat value chain. The concrete analysed issues throughout the chain were the flow of beef meat, factors of meat price fluctuation and the enabling environment of the beef meat value chain. It is necessary to understand the analysis of the beef meat flow not only because of the system of meat supply but also because of the system of the beef meat business in the Central Region of Mongolia The interaction among the actors is another important factor. The beef meat price fluctuation responds to the stability of the beef meat value chain. Thus it was necessary to analyse the factors of the meat price fluctuation and the results are considered as constraints of the beef meat value chain. An enabling environment of the beef sector was analysed through the analyses of institutions with an influence on the value chain of beef, illegal export and state meat price interventions. All qualitative research analysis was based on the perception of the actors and on gathering information which enabled an explanation of the system of many individual issues. Final findings were interpreted with support of different and sometimes conflicting perceptions by internal and external actors and schemas explaining the systems which serve to analyse the beef meat value chain were established.

4.4.2.2 Quantitative data analysis

Firstly quantitative data were transcribed into the Microsoft Office Excel program. Secondly, they were categorized, coded and organized to be ready for processing and analysis. The processing was done in StatSoft Statistica 10.0 software. Basic descriptive statistics of the sample together with frequency analyses and frequency tables were executed. The results are represented by graphs. The main quantitative research questions were about the flow of beef meat and added value.

4.4.2.2.1 Added value calculation

Purchase of beef meat price and beef meat sale price data were gained from four different meat markets in Ulaanbaatar. Differences between these two prices were considered as value which is added on beef meat by actors from the selected meat markets. As the beef meat price fluctuates respondents give a range of different prices. For each interviewee an average of the given price range was used. Beef meat value added by herders had to be calculated from live animals. The exchange rate at the time of the primary data collection was 1,357.6 MNT= 1US$ in 2012 (World Bank, 2013). This exchange rate will be used as a reference throughout this thesis.

Calculation of beef meat with bones sale price from a live head of cattle

Herders do not only sell beef meat with bones per kg but also live cattle for meat production. It was necessary to calculate the sale price of beef meat with bones from live head of cattle to calculate the value which herders add to meat when they slaughter it on their own. The weight of sold animals is known from the quantitative research. The meat dressing of the Mongolian cattle breeds was determined at 40% by the qualitative research findings.

Financial analysis enabling added value calculation was conducted – see figure n 4.4. An important fact in Mongolia is that a head of cattle sold by herders is not only for the beef meat production but the head of animals, organs and hide are also used. The price of slaughter service was also involved in this analysis.

Figure 4.4: Financial analysis
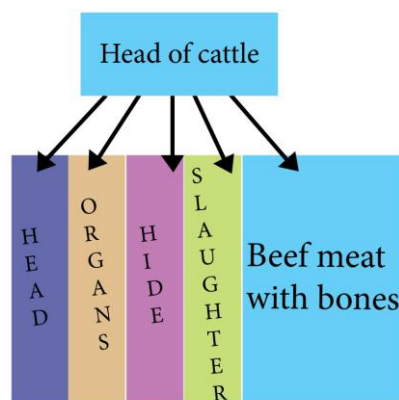
The price per head depends on the size of animals and the price range is 5000 -10 000 MNT per head. The cattle sold by herders were distinguished into four meat dressing categories. Thus the head price was distinguished into four price levels with regard to the meat dressing of individual head of cattle table n.4.4.

Table 4.4: Beef head price of the sold animal

	Beef meat dressing (kg)	Price per piece (MNT)
Beef head	100-120	5000
	121-150	6666
	151-170	8332
	171-200	10 000

Organs from one head of animal such as heart, kidney, lungs, liver and intestines are sold as a whole unit table n. Beef hide longer that 2 meters (measured from the neck to the tail) costs from 35 000 MNT to 45 000 MNT. The price varies depending on the hide quality. Hide shorter than 2 meters cost 18 000 MNT. In this calculation a price average of beef hide longer that 2 meters is implemented because it is not possible to gain information on how long individual hides were table n. The slaughter service costs 15 000MNT.

Table 4.5: Financial analyses elements

	Price of product/service (MNT)	
Beef organs	50 000	X
Beef hide	40 000	Y
Slaughter service	15 000	Z

With the results of table n following formula was implemented on the beef meat with bones price calculation:

$$\textbf{Beef meat with bones} = \frac{\text{Head of cattle sale price} - (\text{head price} + X + Y + Z)}{\text{Meat dressing}} \ \text{MNT/kg}$$

The previous prices of the cattle products are wholesale prices. They are based on an interview with a large scale herder who sells products in the biggest Mongolian meat wholesale market Denj-1000. The introduced product prices are from November to December 2012 when meat without bones cost 5500MNT/kg wholesale. This beef meat price had not changed strongly in comparison with the collected quantitative data. Thus it is supposed that the prices of products had not changed much either throughout the chosen period and it is possible to implement them in the calculation.

4.4.2.3 Advantages and limitations of the primary data

An advantage is that respondents were willing to cooperate and they provided many facts and perceptions openly to the interviewer. As a reason for this is fact that the interviewer was not directly involved in the beef meat sector and did not represent any state or international institution/authority in Mongolia. Furthermore respondents may have been pleased because of the shown interest towards their professions by the interviewer and so were willing to share openly about the discussed issues.

Furthermore the language barrier can be considered as a limitation as translations were necessary. Added value calculations were fully dependent on the respondents' answers. Two concrete limitations were observed concerning this issue. Firstly, herders do not note the amount of money for which they sell their cattle. Thus they may not remember exactly the live cattle sale price or the meat sale price they charged a longer time ago. Secondly, sellers from meat markets may not want to confess real purchase and beef meat sale prices in front of their business rivals.

5. Results

5.1 Flow chain of beef meat in the Central Region

The schema in figure n.5.1., describes the flow of beef meat from the countryside in the *aimag* of Tov to the capital of Ulaanbaatar and in stages via meat markets to the final consumers, companies and restaurants. In this description of beef meat flow there are numbers which indicate places which were considered important to explain by the author. Each number represents a subchapter of the following part of this thesis. Secondly, in the schema not only the flow of beef meat is described but it is shown who supplies whom in the countryside and where this takes place via colours representing each actor. Moreover the form of traded beef meat is indicated next to each arrow in the countryside. Furthermore, in the capital, the system is a little bit different in comparison with the country side. The form is only beef meat because all cattle which enter into the town are already slaughtered. Thus it is not necessary to show the form in the town description. In the capital the colourful arrows represent the supply direction of the beef meat. In other words, where and to whom beef meat is sold. The triangles in the Denj-1000 meat market indicate services provided there.

Figure 5.1: Flow of beef meat in the Central Region of Mongolia
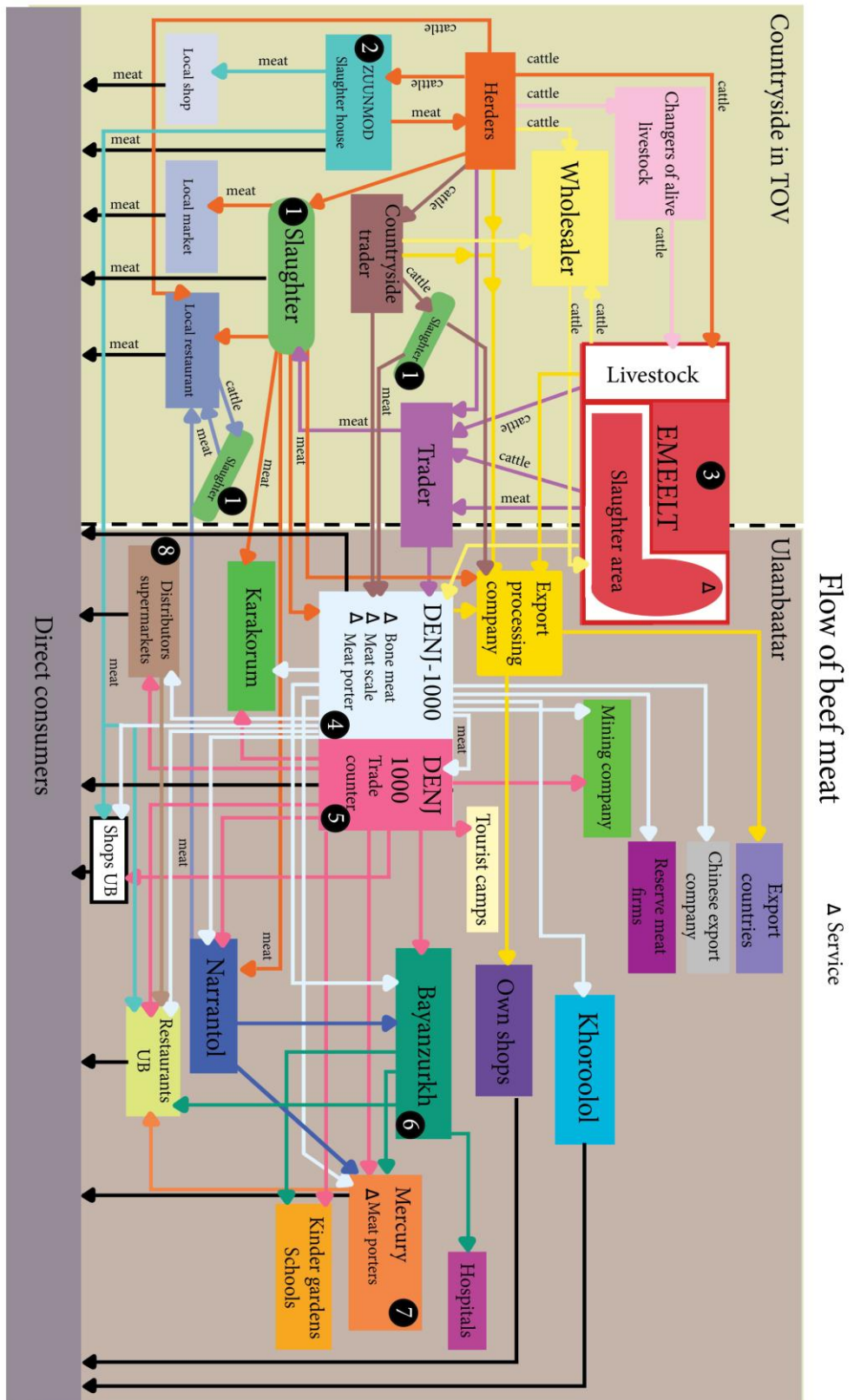
Slaughtering "on the grass" / Mongolian traditional way (1)

In Mongolia slaughtering usually takes place in the traditional way. Animals are slaughtered during cooler periods of the day behind the herders' homes (often traditional 'Ger') when the weather is hot. The throat of the animal or the spinal cord is cut. Meat is portioned according to Mongolian traditions which means on hide of the animal (herder: *"All is done according to the Mongolian tradition"*). The Mongolian tradition says that not one drop of blood must fall out on the soil which is holy. The same night/early in the morning the meat is transported to the market.

State slaughter house (2)

This state slaughter house with modern equipment is in the countryside nearby the district town of Zuunmod. In contrast with the Emeelt area not only a slaughter service is provided here. Livestock is mostly purchased by the slaughter house, animals slaughtered and the meat is sold or processed by the slaughter house.

Emeelt (3)

According to the author's observations at the frontier with the capital there is a slaughter area which is called Emeelt. It is a village with many slaughter houses. This area is very close to key meat markets in the country thus the majority of animals are slaughtered here (owner of a slaughter house: *"Herders and traders from all over Mongolia herd their livestock to be slaughtered here"*). The number of traders of meat is decreasing because meat which is transported longer distances has a dry surface and looks old (herder: *"Nobody wants to buy this kind of meat"*). This is the reason why traders herd livestock to the slaughtering areas in UB and have them slaughtered there. The fee for the slaughtering service is 15 000MNT per head of cattle. Almost every slaughter house has enclosures where the livestock is kept until it is sold. This service is provided for free by the slaughter house (wholesaler: *"Herders don't pay for the space in enclosures"*). On the other hand feeding and watering has to be paid if traders keep their animals there for a longer time.

Herders or livestock changers gather their herded /transported animals which are consequently stabled in enclosures. Afterwards other traders or wholesalers come and choose livestock which they wish to buy. They pay for chosen heads to the owners who are herders or live animal changers (wholesaler: *"I have to wait for the herders to appear to pay them for*

animals" and trader: *"If some owner leaves a mobile phone number I call him to say that I am interested in his animals"*). The chosen livestock is slaughtered in the same slaughter house where the enclosure is.

The Wholesale meat market Denj-1000/ Khuchit Shonkhor (4)

This meat market is well known among herders for offering good/the best prices because there are many wholesalers and traders. (trader: *"This is the biggest meat market with the best selling prices"*). The meat business takes place mostly from 7-8 am and meat is usually sold out within an hour. Meat is sold directly off the herder's van. In the market there are a few paid services provided such as the weighing of meat, meat porters and the boning of meat. The wholesalers are mediators of meat sales. In the early morning meat is bought by wholesalers in the market. Further in the market there is a row of parked lorries/cars where the meat trade takes place (wholesaler: *"I walk through rows of cars and buy up meat of good quality"*). Later on in the morning wholesalers sell the purchased meat as well as meat of cattle from the countryside or the slaughter area. The author could see that wholesalers sell meat in small stores/containers or on car hulls. There are 38 trade containers of wholesalers.

Denj-1000 trade counter meat market (5)

There are approximately 170 specialized meat counters. Nearly 80 trade counters have beef meat.

Bayanzurkh meat market (6)

There are about 13 specialized meat counters with beef meat.

Mercury meat market (7)

There 7 beef meat trade counters. This market is situated in the centre of UB and the richer clientele buys meet here.

Chain of supermarkets (8)

The butcher section is not part of the supermarket. It is a separate business. The owner of this section hires the counter from the store and a percentage of meat sales is paid to the supermarket.

5.1.1 Beef meat flow from herders in the Central Region

The majority of the interviewed herders sell beef meat or livestock aimed for beef meat production to changers or traders from Ulaanbaatar. The second biggest part of the beef meat flow from herders goes directly to the meat wholesale markets in the capital. It means that herders sell their beef meat directly in UB meat wholesale markets without need for a mediator. In 10% of observed cases herders sell their meat or livestock to the local changers. The low number of local trader meat sale mediation may be caused by UB proximity because the role of local changers is mostly taken over by UB changers and traders. The least meat or livestock is traded with traders who come from the town of Darhan in the north of the country – see figure n.5.2.

Figure 5.2: Beef meat flow from herders
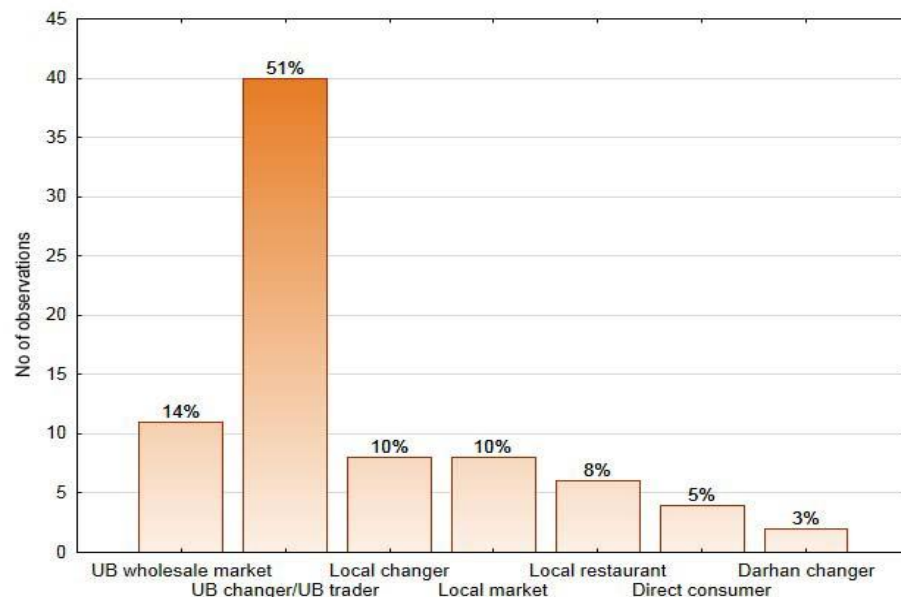
In the figure n.5.3. it is observed that the majority of interviewed herders from towns sell beef meat or livestock aimed for beef meat production to UB changers/ traders. In the countryside, this way of meat sale is the most common as well. Herders from towns sell their meat at local markets which is not so usual for herders from the countryside who more often sell meat or livestock directly in the UB meat wholesale markets and via mediation by local changers.
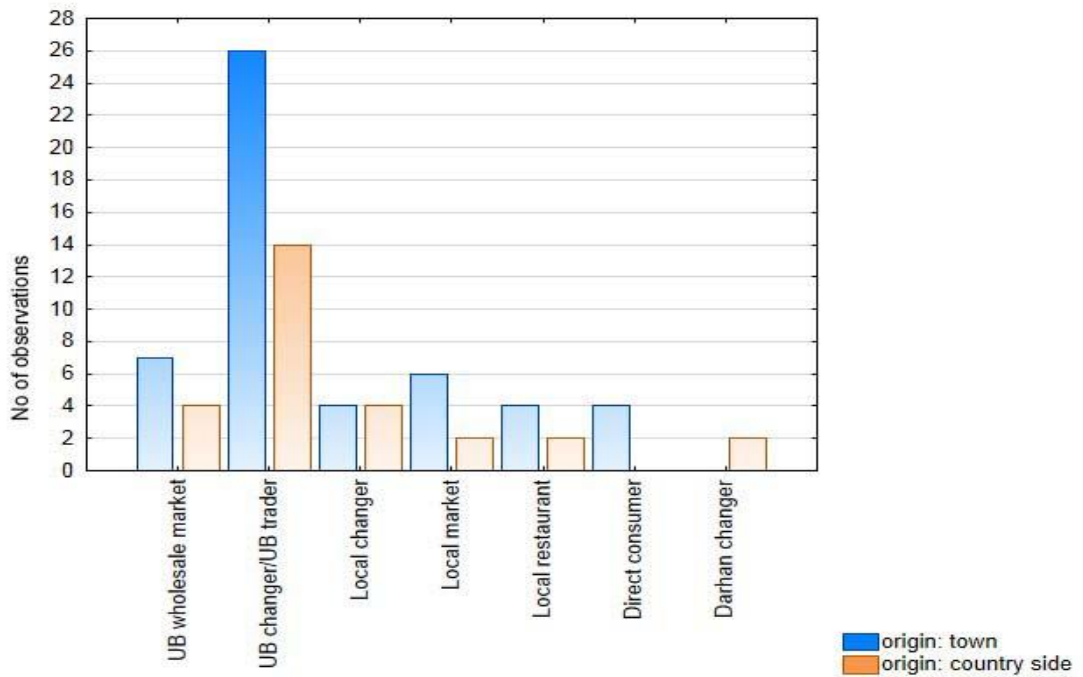
5.2 Added value on beef meat in the Central Region in Mongolia

The value added on beef meat in the Central Region was analysed at five levels in the beef meat value chain such as herders, Denj-1000 wholesalers, Denj-1000 trade counter sellers, Bayanzurkh sellers and Mercury sellers.

5.2.1 Herders

Herders directly sell beef meat or live cattle aimed for meat. The majority of interviewed herders sell live animals aimed for beef meat production. 34% of herders slaughter cattle on their own and sell beef meat- see figure n.5.4.

Figure 5.4: Form of beef meat sold by herders in percentage
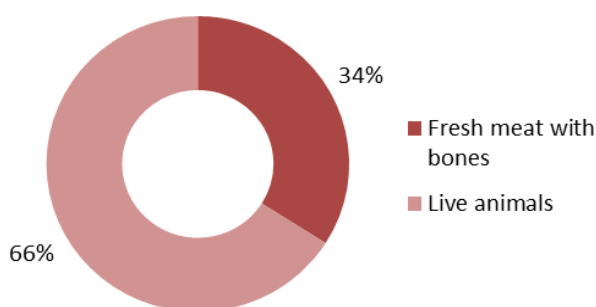
In figure n.5.5. beef price levels are analysed. The lower price levels represent herders' live animal revenues. The beef meat price with bones calculated from live animals represents the amount of revenue per kg of beef meat which herders earned on selling a live head of cattle. The higher price level represents herders slaughtering cattle on their own. The beef meat price reached the highest point in the period June-September 2012. On the other hand the price of beef meat calculated from a live animal reached the peak from January to May 2012.

Figure 5.5: Herders' revenue of beef meat in MNT per kg
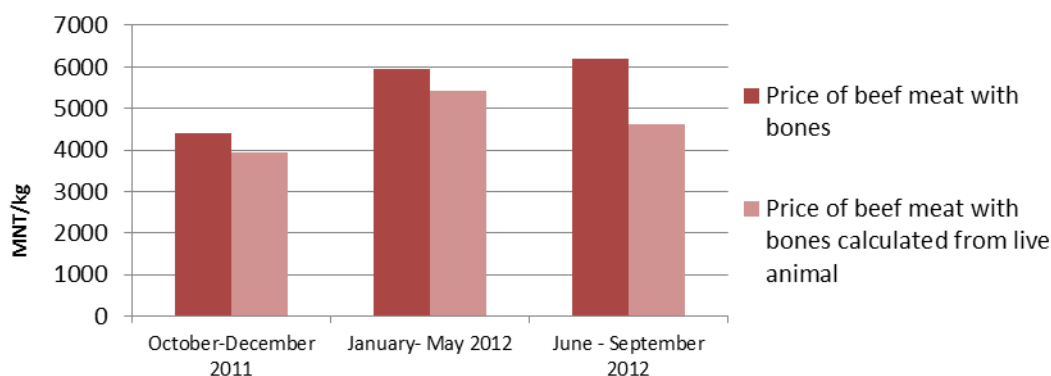
As it is observed in figure n.5.6., the beef meat price with bones of animals slaughtered by the herders was increasing each trimester of the shown period. Even though the highest meat market prices of the year are usually from January to May, in June-September 2012 the beef meat was sold by herders for more. It seems that herders were profiting from the high beef market prices in this period when they were selling beef meat directly.

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Herders add value on beef meat when they slaughter animals on their own and they sell meat instead of just selling live cattle. In figure n.5.6. values added on beef meat by herders are analysed. It is observed that herders added approximately 500 MNT/kg on fresh beef meat with bones in the first two first trimesters by slaughtering. In the last trimester about 1600MNT/kg was added on fresh beef meat with bones by slaughtering.

Figure 5.6: Herders beef meat added value in MNT per kg
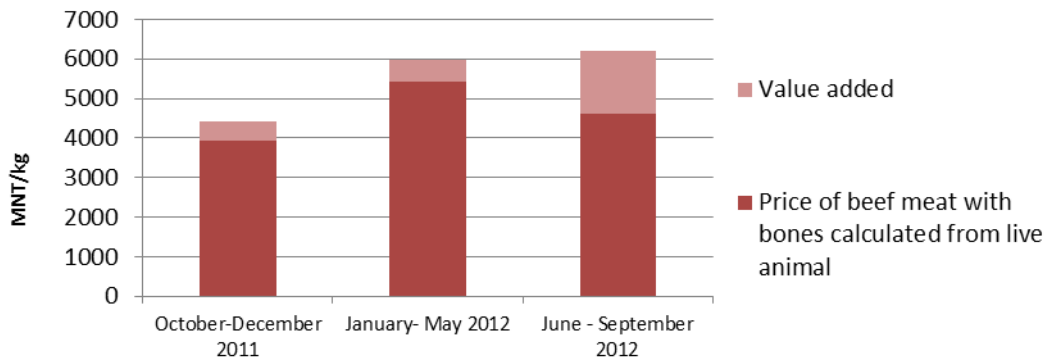
In the first two trimesters of the shown period in figure n.5.7. shown below herders added approximately 10% of value on beef meat by slaughtering. A significant change is observed in the last trimester June-September when the share of the beef meat added value by slaughtering reached over 20% of the fresh beef meat with bones price. Thus the beef meat directly sold by herders reached a higher price than in the previous period.

Figure 5.7: Herders beef meat added value in percentage
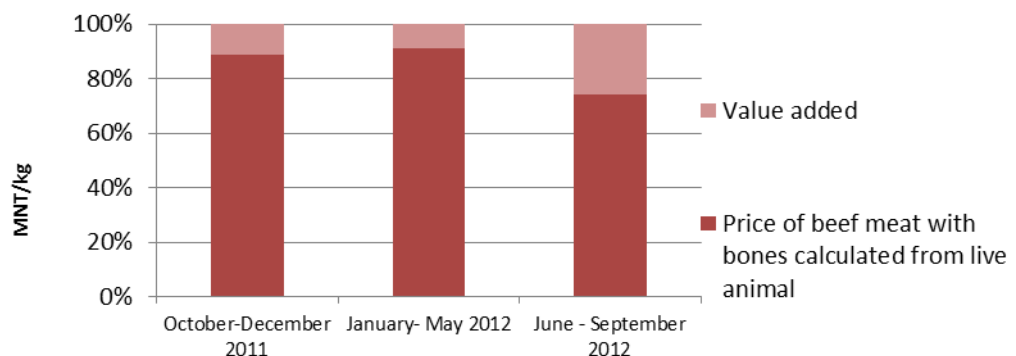
5.2.2 Denj-1000 wholesale meat market

In the meat wholesale market Denj-1000 the usual seasonal trend of the beef meat purchase/sale price is observed. In other words the peak of the beef meat price was in the trimester January-May 2012 and the following trimester the price decreased – see figure n.5.8.

Figure 5.8: Denj-1000 wholesale meat market beef meat added value in MNT per kg
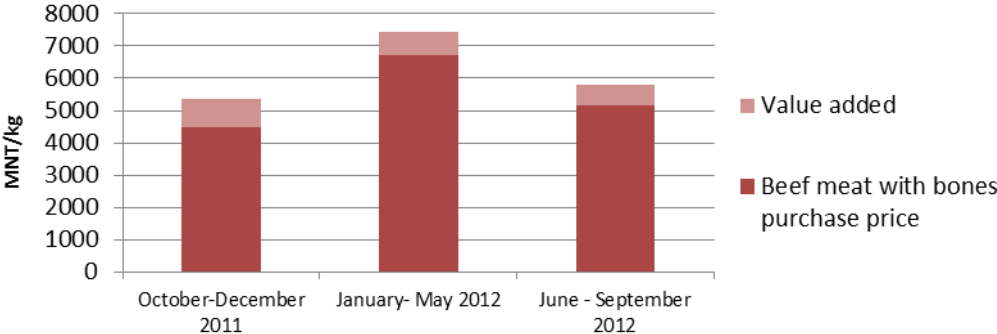
The share of value which is added by wholesalers, which corresponds to the difference between purchase and sale price, was the highest from October to December 2011. The two following trimesters the added value reached about 10% - see figure n.5.9.

Figure 5.9: Denj-1000 wholesale meat market beef meat added value in percentage
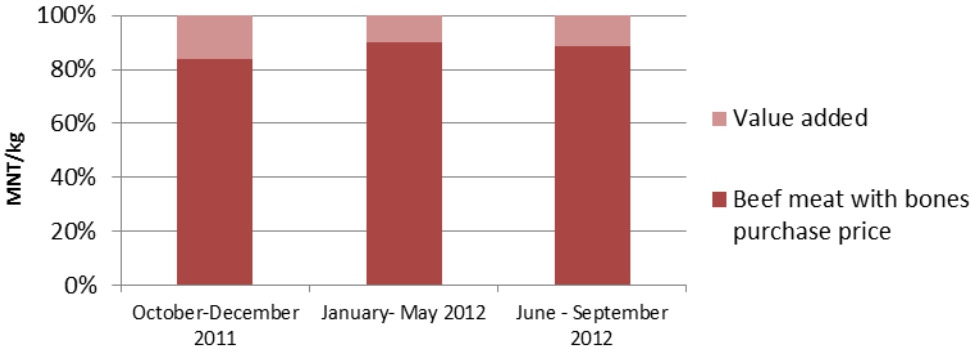
5.2.3 Denj-1000 trade counter meat market

In the meat market Denj-1000 where beef meat is sold at counters the beef meat price trend was seasonally fluctuating as at the previous wholesale market throughout the shown trimesters see figure n.5.10.

Figure 5.10: Denj-1000 trade counter meat market beef meat added value in MNT per kg
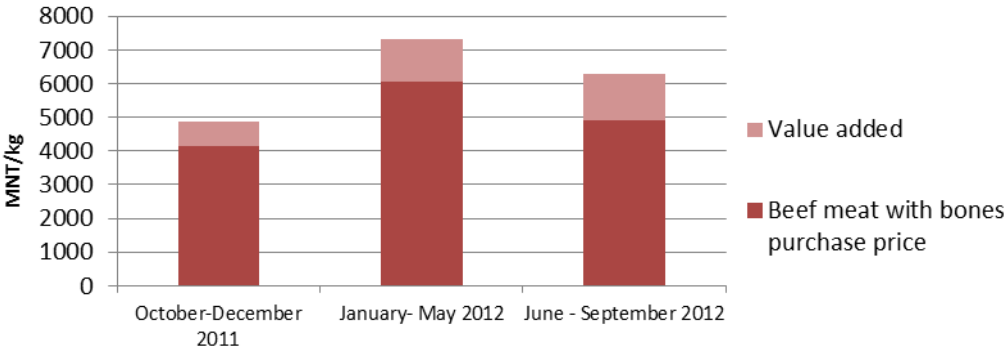
In this market sellers add value on meat as they portion big pieces of beef carcass into small ones. In this market added value was slowly increasing every trimester and reached over 20% from June to September 2012 – see figure n.5.11.

Figure 5.11: Denj-1000 trade counter meat market beef meat added value in percentage
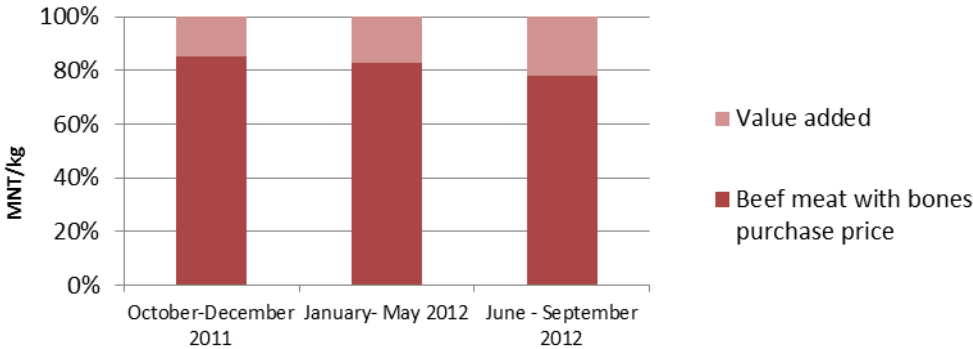
5.2.4 Bayanzurkh meat market

The purchase and sale price of beef were the highest from January to May 2012 and the fluctuation of the prices is similar to the previous markets - see figure n.5.12.

Figure 5.12: Bayanzurkh meat market beef meat added value in MNT per kg
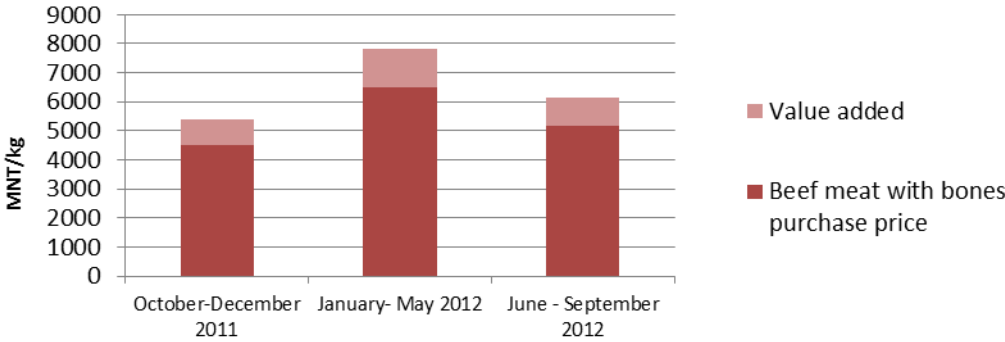
As sellers divide the meat into parts, the added value augments. The value which was added by sellers on beef meat was 16%, 17% and in the last shown trimester 15%.- see figure n.5.13.

Figure 5.13: Bayanzurkh meat market beef meat added value in percentage
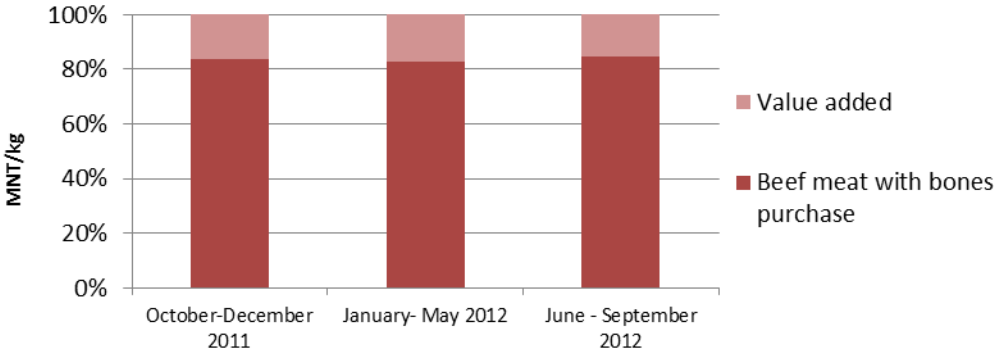
5.2.5 Mercury meat market

In the Mercury meat market the beef sale price reached its highest point which was 9517 MNT/kg in the January-May 2012 period. Nevertheless, the following period the beef price almost held the same price level - 9350 MNT/kg- see figure n.5.14.

Figure 5.14: Mercury meat market beef meat added value in MNT per kg
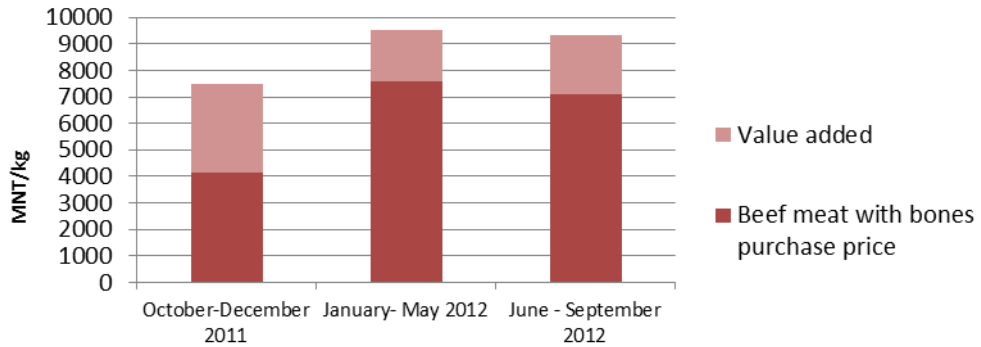
In this market the value is added on meat by boning beef. Thus the final price is per kg of meat without bones. From October to December 2011 approximately 55% of the original value was added on the beef meat price - see figure n.5.15. In the last shown trimester the value added was a little bit higher that in the previous one. Thus it seems that in this market sellers try to profit from the preceding high prices of beef meat and sell meat for almost the same price.

Figure 5.15: Mercury meat market beef meat added value in percentage
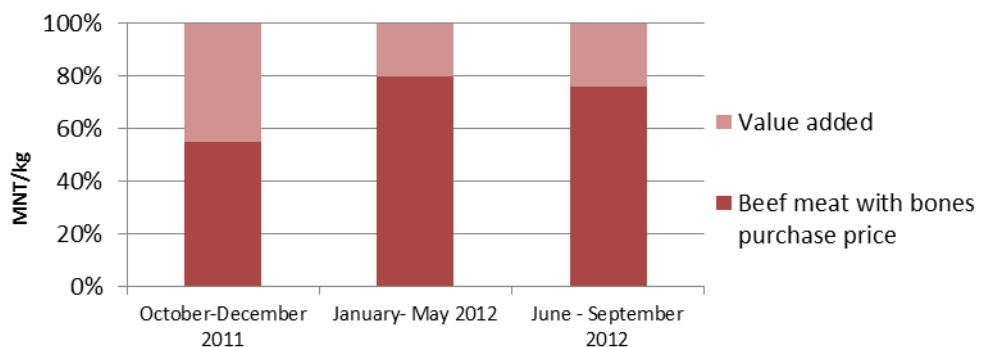
5.3 Meat price instability factors

In Mongolia the meat price is not stable. There are many factors which negatively influence the meat price and raise the price level. The factors are distinguished into two main groups: factors directly influencing the meat price and factors influencing the supply of meat which consequently naturally influences the meat price. In the figure n.5.16. all factors listed by internal and external actors are shown.

Figure 5.16: Meat price instability factors
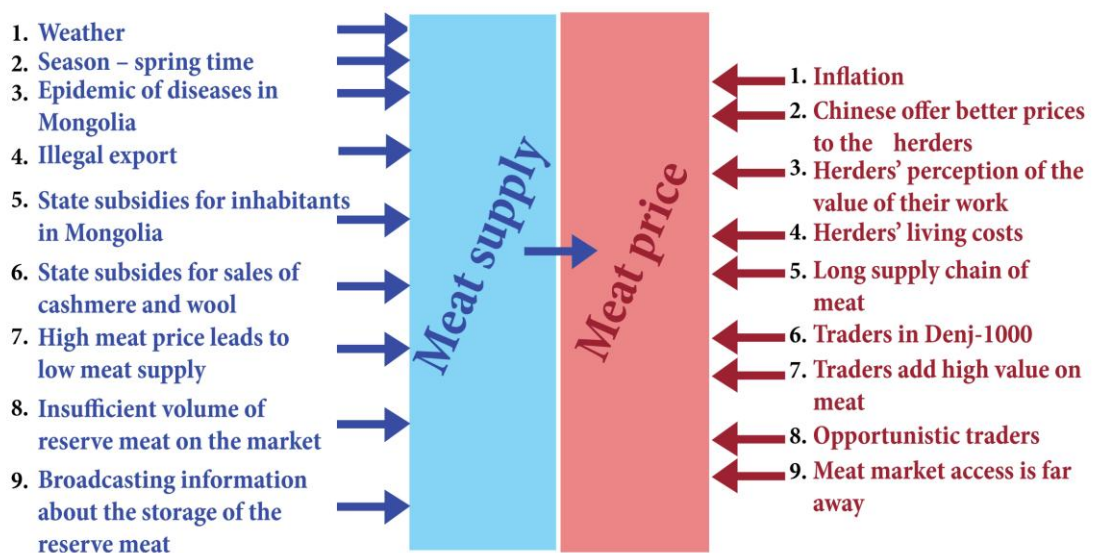
5.3.1 Direct influence on high meat price

Chinese offer better prices to the herders

The Chinese offer higher purchasing prices than other traders (trader: *"The Chinese augmented the purchasing price and consequently herders didn't want to sell livestock for less"*). The meat price may be higher in China. Thus the Chinese can buy more expensive meat in Mongolia. Herders augmented prices and they do not barter any more (wholesaler: *"Buy it or let it be"*). The majority of slaughter houses in Emeelt belong to the Chinese and that they are

able to buy a whole herd of 1000 animals. It is not known how many animals the Chinese have and they pay people to herd their animals.

The Chinese buy warehouses where they store meat reserves which they export or sell in spring. One Chinese man has his own slaughter house here and there are three Chinese warehouses in the vicinity. Mongolian traders work for the Chinese (trader: *"They offer traders 2 million if they work for them"* and meat seller: *"Chinese have their own people for buying"*). Traders purchase meat for them.

Herders' perception of the value of their work

Herders estimate that the high price for which they sell corresponds to the amount of work they have put in. Thus the present meat price responds to the herders' perception of their own work.

Long supply chain of meat

In the meat chain there are too many players and due to that fact the final price is higher (herder: *"If in the chain are not so many mediators, we will get the higher purchase price"*).

Inflation

The inflation is on all products and thus high meat price is a normal evolution in the country. People talk more about meat because it is an important food for Mongolians.

Meat market access

Herders from distant regions cannot financially afford to transport their own animals to the principal meat markets in Ulaanbaatar. Thus big traders buy up animals in huge numbers from the herders and it is worth it for them to transport them to and sell them in Ulaanbaatar. Consequently the supply chain is longer and the final price of meat is higher.

Traders in Denj-1000

All over the country meat prices are driven by a few big traders who determine prices together. This group is a cartel of about 8 members. This group of traders cooperates with other herders in the countryside where they have influence. This chain of cooperating traders decides about the meat price.

Traders add high value to meat

The traders add high value to the meat (herder: *"We have lots of work with animals and the traders want to buy it for low price. They want all the profit without any work."*).

Opportunistic traders

Traders had been buying up cheap meat in autumn and after they sold it for a high price in spring. All traders wanted to do the same and in spring they sold their meat for higher and higher prices. They considered it a challenge to sell their meat for the highest price possible.

Living costs

– **Price of petrol**

As the petrol price had augmented, the price of meat increased as well. Herders spend their money on buying petrol which is to one of their biggest expenses. Thus they sell their cattle for higher prices.

– **Food costs**

Herders do not want to sell their livestock for a lower price because their food expenditures such as flour, sugar and rice are getting more expensive.

5.3.2 Indirect influence on high meat price, low supply of meat

Illegal export

High meat prices were provoked by insufficient supply of meat on the domestic market due to strong illegal export to China. On the domestic market there is little meat due to the huge volume of purchase by the Chinese and due to that there was not enough meat on the market.

Season – spring time

Every spring the meat price is high because of insufficient meat supply, especially supply of beef.

Epidemic of diseases in Mongolia

In eastern regions there was Foot-and-Mouth Disease and consequently these areas were isolated. Nothing was transported from there thus the meat market was not enough supplied which provoked an increase of meat prices.

State subsidies for inhabitants of Mongolia

Due to state subsidies herders have enough money and consequently they were not forced to slaughter or sell their animals (herder: *"Herders did not need any cash and they didn't want to slaughter"*). Herders' children studying at universities get state subventions. The amount of subsidy last year was 500 000 MNT per student and that during a period of three months students got 70 000 MNT per month. In Mongolia each inhabitant got 21 000 MNT/month.

State subsidies for sales of cashmere and wool

The meat price was high because there was not enough meat on the market. This was caused by herders who did not want to sell/slaughter their livestock because they had got enough money from the subsidies on the sales of cashmere and wool.

Weather

The meat supply is dependent on the weather of the precise year. After severe winters herders do not want to sell their livestock because they want to raise herd numbers.

Insufficient volume of reserve meat on the market

The government policy had not been good because there was not enough reserve meat on the market.

Broadcasting information about the storage of the reserve meat

Information about the price and the rest of reserve meat volume used to be broadcasted. Consequently it was easy to speculate with sales of meat.

High meat price leads to low meat supply

High meat prices influence business behaviour of herders who do not sell any more meat (slaughter house: *"The supply of meat is low and demand is increasing and since the price is even higher herders sell only few pieces and they have enough cash from it. Thus they don't need to slaughter anymore"*).

5.4 Enabling environment analyses

5.4.1 Institutions with an influence on the value chain of beef

5.4.1.1 Meat association

The Meat Association was founded in 1999. The Meat Associations is a union of 70 members including sausage and smoked meat producers and other meat processing companies such as slaughterhouses. Nowadays in Mongolia there are 140 smaller sausage and smoked meat producers and 50 processing houses. Meat Association objectives are to establish norms, to standardize hygienic conditions and to export meat.

5.4.1.1.1 Membership

Members are mostly big processing enterprises and their number is low. Smaller slaughterhouses and representatives from countryside slaughterhouses are not members. Members meet monthly and membership conditions are an activity in the meat processing sector and the payment of a membership fee. After a membership application it is necessary to pay the annual membership fee of 250 000MNT. Members do not compete with each other because sales of meat are divided into spheres of activity by regions. Furthermore all members compete for participation in the supply of reserve meat.

Advantages of the Meat Association membership perceived by respondents
– mediations of sales
– most of purchasers are processing houses which are members of the Meat Association
– good information provided
– collective determination a strategy concerning meat price with the goal of stabilization

5.4.1.1.2 The Meat association's main goals

The following are the goals listed by the Meat Association respondent which the Meat Association wants to negotiate with the government.

– **Low interest rate of loans** financially supported by government for industrial processing houses.

- **State subsidies:** Production of industrially processed meat is more costly than hand processed meat. Thanks to state subsidies industrially processed meat would have a more competitive sale market price and the demand for this meat would increase.
- **Subsidies for herders:** Application of the cashmere selling system on meat. It means that herders would sell meat to the processing houses and they would get subsidies for selling to this place and not to a changer or somewhere else.
- **Tax allowance of processing houses:** The state financial support and subsidies are not a long term solution. On the other hand the situation in the meat sector needs changes and they can be made thanks to financial supports. Processing houses need some financial capital to be competitive. Furthermore, subsidies for herders would motivate herders to supply processing houses and they would get used to selling their product only in this way later on. These changes in the meat sector would be an advantage for consumers as well. They would buy meat which comes from hygienically sound conditions and which is transported and stored according to hygienic standards.

5.4.1.2 The Food association

The Food Association is a union of food producers. Reunions of members are organized once or twice per year and seasonal issues are discussed. A condition of membership is to be a food producer and to pay a membership fee. Issues discussed at reunions are the same as those discussed in the Meat Association's conventions.

5.4.1.3 Mongolian National Chamber of Commerce and Industry

In the meat department in the chamber there are over 20 members. The annual membership fee is 250 000 MNT and at meetings topics like possibilities of meat export are discussed. The activities of the chamber are focused on the search of meat purchasers - mainly mining companies and on negations with the state concerning meat export.

5.4.2 Illegal meat export

Illegal meat export is a known issue pronounced by many respondents in the value chain of beef.

5.4.2.1 External players´ perception

In Mongolia there is illegal meat export to China. The Chinese buy up meat in huge volumes on the Mongolian market and afterwards export it illegally to China. In Mongolia there have been scandals concerning this illegal export such as smuggling meat abroad to China (respondent of the state Agriculture University: *"Some scandals have been about the Chinese trying to smuggle meat"* and *"Rumors about mining companies smuggling meat"*). The inhabitants of Inner China consume Mongolian meat (respondent of state Agriculture University: *"Mongolians in Inner China say that all consumed meat which they eat comes from Mongolia"*). After more controls on the boarders illegal export decreased a little bit (respondent of the state Agriculture University: *"When it started being controlled, they slowly started stopping it"*).

5.4.2.2 Internal players´ perception

The Chinese store meat and export it illegally afterwards. The Chinese buy up meat already in summer. In spring the Chinese opportunistically sell the rest of stored meat which was not illegally exported. A good customs check is necessary to decrease the illegal export. The Chinese are interested in Mongolian meat because it has good characteristics. According to the interviewed wholesaler 50% of all meat export is illegal and 20% of meat from all slaughter houses of that area goes to China.

The respondent with whom the following interview was done is a meat changer. This interviewee works and lives at the main designed slaughter area through which most of meat flows to UB. The illegal export is known but nothing is done about it because the state is indifferent and there is corruption (trader: *"State officers are indifferent or corrupted"* and wholesaler: *"Scandals are based only on small players who are caught in the act"*). It is very rare that the illegal export to China is discovered (trader: *"Discovered cases are just the tip of the iceberg"*). In local warehouses, which were built two years ago, the Chinese have frozen meat. This meat is exported in winter to China. Illegally exported meat is hidden under coal and in containers on trains. The exported meat is without bones in small packages.

5.4.3 State meat price interventions

5.4.3.1 Commodity exchange and cooperatives

5.4.3.1.1 The commodity exchange system in Mongolia

In Mongolia a cashmere commodity exchange is newly established on which the planned meat commodity exchange is supposed to be modelled. There would be one cooperative in each sum where herders would gather their products – see figure n. 5.17.In one cooperative there would be at least 120 members. These members would elect one representative who would sell products at spot in the commodity exchange. Spot-trading is an auction type of trading. The spot would be a hall in the commodity exchange which would be in a suburb of UB. In every *aimag* there would be 2-3 broker companies which would arrange transactions between a cooperative and a buyer. These companies would sell or buy commodity contracts. Purchasers of products would be for example processing companies which are at the same moment exporting companies. A commodity exchange would make prices lower. In the countryside there are five models of cooperatives (two in Olgii, one in Dornod, two in Zavkhan). These cooperatives would serve as an example of a cooperative which would be followed in other parts of Mongolia. Every cooperative would have a very qualified warehouse according to standards from 2011. These warehouses would serve as storage for crops and wool.

Figure 5.17: Commodity Exchange system in Mongolia
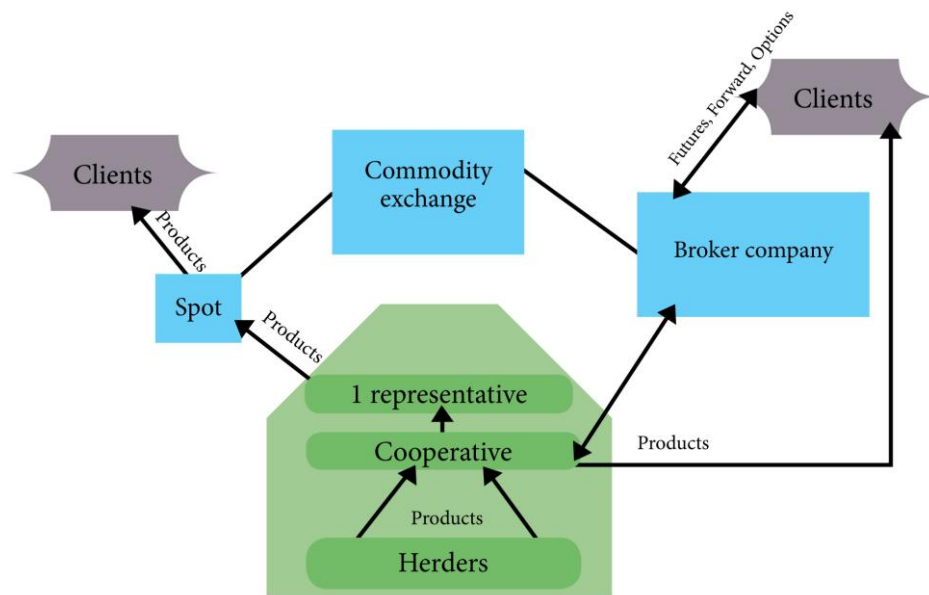
The supply chain of products for the commodity exchange would be certified along the whole channel. Only selected certified private firms could transport, store, sell etc. products for the commodity exchange. In the beginning, during short periods, even firms without certification could operate along the channel. They would have time to adapt to the necessary requirements before getting certification. Consequently at the commodity exchange only safe products of known origin and of better quality would be sold (respondent of the University of Agriculture: *"When the commodity exchange starts operating it will not be possible that meat of unknown origin and without hygienic control will be sold there"*). Step by step more and more firms would get certification. In 2011 a new law about the commodity exchange came out.

The Meat Association would like to participate in organizing how the commodity exchange would work. The Meat Association vision of the commodity exchange is not based on a central unique commodity exchange but on district commodity exchanges. (Meat Association representative: *"If one day a trade of cattle is declared, herders would come with live cattle and live cattle would be auctioned. The central commodity exchange would provide information about sales and where and what is traded in different districts at that moment."*) On TV an advertisement had been launched which attracted herders to join the cooperatives. In June the department of commodity exchange at the ministry was closed.

5.4.3.1.2 System of cooperatives connected with the commodity exchange

The system of the wool commodity exchange is that every herder must sell only to the companies which are registered at the commodity exchange. In the whole Mongolia there are only 30-40 registered companies. If the herder sells wool to somebody else, he does not get the state subsidies which are of 2000 MNT/kg. Herders can choose to whom they sell amongst the registered companies. Companies compete with prices. The livestock products are gathered by herders at cooperatives in district towns and subsequently all of the products are sold to the processing houses in UB. The state promised subsidies to support cooperatives.

The operation of trading wool and meat is a different issue and thus the trading of meat will differ from the experience gathered from trading of wool (trader:*"..as opposed to wool meat gets spoilt very quickly and it is food which must be processed rapidly.."*)

5.4.3.1.3 Cooperative foundation

The establishment of cooperatives was initiated by the state. The herders started joining the cooperatives already and some of cooperatives started to build functional cooperative buildings-table n.5.1.

Table 5.1: Cooperative foundation- interview based evidence

Internal actor	Interview-based evidence
Herder Bornuur,	"Our cooperative has 300 members and started in April 2012".
Herder Bornuur,	"We participate with other farmers and herders in the construction of a dairy processing house which is going to be the property of our cooperative."
Herder Sümber	" The district cooperative of 100-120 members started in July 2012"
Herder Sümber	"The cooperatives of wool have already been founded."

5.4.3.1.4 The sale price of products

The amount of money which herders get for their products at the cooperatives is perceived differently, − see table n. 5.2. Furthermore the profits of cooperatives will be divided among members or used for herders in need in winter as well as spring.

Table 5.2: Sale price of products at cooperatives- interview based evidence

Internal actor	Interview-based evidence
Herder Bornuur	"Product prices offered by the cooperative are a little bit lower but at the same moment I save money on the transport."
Herder Sümber	"The price which is offered by the cooperative is a market price."
Herder Sümber	"The prices are not fixed and it is possible to negotiate the price."

5.4.3.1.5 Advantages of cooperatives perceived by herders

Facilitating transport of products

All the three interviewees considered the system of new cooperatives as positive because of easier transport of products. Herders claimed that main markets are in the capital thus it is far away and the transport is costly. There will be a market where they can sell their products in every district town. The products will be transported for shorter distances, thus the trade of products will become easier (herder: *"I think that cooperatives are a good idea because the sale is closer and less laborious"*)

Shorter supply chain

The commodity exchange system will make the supply chain shorter, more direct and without traders. The meat changers are seen as negative agents in the chain because they add high value to meat (herder: *"If changers do not participate, meat would not be so expensive"*) and they do not pay herders well (herder: *"Without changers herders will get more money for their meat.."*).

5.4.3.1.6 Impact on trader profession

Traders are aware that due to the establishment of the commodity exchange their profession will become extinct (trader: *"if it goes like with wool trade, only a few big processing companies will get the rights for processing"*). Their profession will not be needed any more. (trader:*"...when meat and hides are sold through the commodity exchange, our livelihood is destroyed"*).

5.4.3.1.7 External and internal players of the meat value chain

<u>Meat traded in the commodity exchange</u>

External and internal actors do not have exact information when the meat will be traded throughout the commodity exchange. Nobody even knows that the principal decision making institution, which was the department of the commodity exchange at ministry, had been closed in June. Some of the interview responses are rather conflicting and well indicate general misunderstanding-see table n.5.3.

Table 5.3: Meat trading period- interview based evidence

External/internal players	Interview-based evidence
Commodity exchange expert Mongolia	"Experts working for this department left or got fired."
Meat Association representative	"It will take at least three years for the commodity exchange to start working"
Wholesaler	"I do not know when the meat trade starts"
Herder	"Meat is not traded yet but cooperatives will start trading meat next year. "

<u>Commodity exchange regulated by the government</u>

The commodity exchange is generally believed to be an instrument of Mongolian government to regulate meat prices and to take a control over agriculture products in Mongolia – see table n.5.4. External and internal players consider this institution as too much controlled and regulated by the state.

Table 5.4: Commodity exchange regulated by the government-interview based evidence

External/internal players	Interview-based evidence
Professor of the University of Agriculture	"If commodity exchange works well, the meat price will be stable" "There will be a control office at the commodity exchange which will control the enterprises on district level if they dictate prices"
British expert on commodity exchange issue in Mongolia	"…"Commodity Market" is Government driven" "The government wants to take more control of their agricultural products especially those that are important exports which really means cashmere."
Wholesaler	"The government wants to support the processing of primary products in Mongolia and avoid the export of primary commodities which would be processed abroad. "
Meat processing company	"When the commodity exchange starts operating with meat, the processing company will be forced to buy meat via this institution."

5.4.3.1.8 External players of the meat value chain

Perception of the commodity exchange by external players

The perception of the meat commodity exchange by external players varies – see table n.5.5. Some of them think that the establishment of the commodity exchange will be a solution for the current situation in the meat sector. Further it is considered as a useful tool from which the society will profit as well. Two other interviewed experts consider the commodity exchange to be an unrealistic state policy.

Table 5.5: Perception of the commodity exchange by external players-interview based evidence

External players	Interview-based evidence
Meat Association representative	"If meat is traded, it is just good"
Professor of the University of Agriculture	"The commodity exchange will be a solution of the currently insufficient meat supply from herders to consumers" "The Commodity exchange has sense because herders will sell for higher price and consumers will get products of better quality and cheaper ones"
Expert of commodity exchange in Mongolia	"The commodity exchange which Mongolian Government wants to have is not real and it cannot work."
British expert on commodity exchange issue in Mongolia	"…private sector/ free market ideas are being used for a state backed policy involving more control in an effort to achieve different policy objectives."

Insufficient information sharing concerning the commodity exchange

Scarcity of the communication and information exchange creates confusion among the external players – see table n.5.6. Furthermore external players do not know about government plans even though they are officially involved in them and they should be well informed.

Table 5.6: Insufficient information sharing-interview based evidence

External actors	Interview-based evidence
Meat Association representative	"The group of young boys from MOFALI may fumble and the association does not know what they are doing." "We are not in touch with them, thus we cannot explain you"
Expert of commodity exchange in Mongolia	"I have no idea how the commodity exchange can be implemented on the trade with meat"
British expert on commodity exchange issue in Mongolia	"So we are left confused wondering what exactly the purpose of commodity markets is in Mongolian style. What do they want to achieve and how will it work?"

5.4.3.1.9 Internal players of the meat value chain

Herders' perception of commodity exchange/cooperatives

Four herders think positively about the commodity exchange. The system of the cooperatives is understood differently by herders. Furthermore the system is compared with the socialistic period and similarities or differences with this period are seen by herders. The majority of herders do not know how cooperatives will operate exactly because it is a new matter. Another perception is that cooperatives are only a mean to sell products and there is no interest concerning the system issue- table n. 5.7.

Table 5.7: Herders perception of the commodity exchange/cooperatives-interview based evidence

Positive perception	"The time will show how it will work, but already now it looks promising." "I think that cooperatives are a good idea" "I want to support this new cooperative"
Perception concerning the cooperative system	"The commodity exchange will be very similar to the system which existed in the socialist period. Every cooperative from one district supplied an arranged numbers of animals to abattoirs in UB." "During socialistic time everything was dictated and now we can choose if we join in." "Cooperatives are newly established, so we don't know how it will work."
Indifference concerning the issue	"I am not interested in anything more about cooperative system. I just want to sell my products."

Perception of the commodity exchange by other internal actors

The commodity exchange as a tool to improve the meat sector is considered differently by the internal actors. Some of them have the opinion that it is useful while others do not share this opinion- see table n. 5.8.

Table 5.8: Perception of the commodity exchange-interview based evidence

Internal actors	Interview-based evidence
Wholesaler	"It may help the Mongolian economy, but we lose our profession"
Meat processing company	"To buy meat is no problem but the transport of all animals on this scale poses a huge problem. Animals will pass through the pastures of other herders and they will graze there, this is not a solution."

5.4.3.2 Reserve meat

Frozen meat is prepared and stored for the period when an insufficient volume of meat is on the market. Reserve meat was firstly intended for poorer social classes who do not have enough food in spring. In 2012 in UB 20%-30% of the meat market was the reserve meat. The meat reserve system started three years ago.

5.4.3.2.1 Reserve meat system influences prices

The reserve meat period is usually from March to July. But last year the state exceptionally had to intervene earlier because prices of meat were very high, thus the reserve meat was sold starting from February. The government regulates prices of meat via the reserve meat system. In spring meat prices are high due to a lack of meat after the winter period. Thus the government intervenes and regulates meat prices. The state announces an open competition of faithful meat delivery for processing houses. Reserve meat is sold for the price which is determined by the state. At the same moment the volume of meat is subsidized by the state. Due to this there is a huge volume of subsidized meat sold for the state regulated price on the market. Thus this volume of meat influences meat market prices (which are not state subsidized). Consequently the prices will be balanced all over Mongolia and will stay stable after winter.

5.4.3.2.2 Reserve meat public competition

Firstly the government approves the volume of reserve meat and the amount of subsidies per kg of meat – see figure n.5.18. Every year the volume of reserve meat is different. The government cooperates on the both issues with the executive board of the Meat Association which has nine members (Meat Association representative: *"The government follows our recommendations concerning reserve meat".*)

Figure 5.18: Reserve meat schema

Recommendations ❶ Meat Association
Selection of firms ❺
Applications
❹
Meat
Firms candidates
Application
Government:
Volume + Subsidies
❷
Municipalities
16000 Tonnes
UB
12000 Tonnes
Districts in Mongolia
4000 Tonnes
❸
❻
❼
Firms
❽
Stored meat
Reserve meat
❾
Local shops
❶❶
Subsidies
Reserve meat
❿
consumers

❶ Communication with government
❷ Decision making about volume and subsidies of reserve meat
❸ Passing approved decision
❹ Applications of candidates
❺ Selection of firms
❻ Splitting up of tonnes
❼ Purchase of meat
❽ Storage of meat
❾ Distribution of reserve meat
❿ Selling meat of state regulated price
⓫ Distribution of state subsidies

Secondly, this approved information is passed to the municipalities in the country where they declare the public competition for processing firms. Every firm sends an application to their local municipality and to the Meat Association. Afterwards firms are chosen under conditions such as capacity, own storage, own freezers minimal capacity of 20 tons. Conditions are demanded of the industrial processing houses such as an industrial saw, trained employees etc. The firms must fulfil the conditions and no matter how many firms apply but it seems that the firms are traditionally the same (Meat Association representative: *"Most firms are the same for last years"*). The nine members of the executive board of the Meat Association store reserve meat. When reserve meat enterprises are selected the local municipality splits up the contracts of reserve meat volumes among them (Meat Association representative: *"12.000 tons of reserve meat for UB and 4.000 tons for the rest of Mongolia"*). There are many firms which want to store and distribute the reserve meat in UB (Slaughter house: *"Many firms want to do it, thus there is a huge rivalry at the selection contest"*). On the other hand out of UB there is the

opposite situation. (State slaughter house: *"In most districts there are no firms which can do it, thus one firm applies and gets it"* and *"We were the only firm which applied for this district"*).

Amount of state subsidies on the reserve meat

The state subsidies are distributed in July. The investments to purchase reserve meat must be paid by reserve meat firms. Thus they are annually indebted to a bank. Subsidies may seem to be different for different firms/districts. State subsidies in 2012 were 800MNT per kg of reserve meat or only 500MNT/kg. Not only state subsidies on the reserve meat exist but as well subsidies from municipalities (state slaughter house: *"We get state subsidies per kg of meat plus we may get subsidies from a state administration, last year we got 50 million for 20 tons of meat"*). The Meat Association wants some changes in the system of reserve meat such as a fund of meat (Meat Association representative: *"The idea is that firms would get advance payment to be able to buy reserve meat in autumn..."*)

5.4.3.2.3 System of the reserve meat distribution

Storage and distribution firms

In autumn the selected firms buy the arranged volume of meat which is on the contract with the state (slaughter house: *"Last year I was purchasing animals from October to December"*). In the capital there are 21 firms. Animals are bought from the traders or directly from the herders, slaughtered and stored in freezers during winter. The volume of beef in the reserve meat is 10% (state slaughter house: *"There are 2 tonnes of beef out of 20 tonnes of meat"*). Not all meat is sold and distributed to the local shops at the same moment (slaughter house: *"1,5-2 tonnes were launched each week out of 20 tonnes."*). The volume is decided locally by the town mayor and the boss of the slaughterhouse who supplies the reserve meat. The Meat Association wants changes in distribution. It would become more controlled system (Meat Association representative: *"Processing companies would only store the reserve meat and another mediator, the town for example would distribute the reserve meat"*).

Local shops

In January the meat starts being distributed to the local shops and only one shop can sell the reserve meat in the vicinity (shop outside of UB: *"Around here it is just me who sells the reserve meat"*). The frequency of supplies of reserve meat may be different for example twice

per week or daily and reserve meat is sold very quickly (shop outside of UB: *"There was a queue of people and the meat was sold in two hours"*).

<u>Obligatory reserve meat distribution</u>

Local shops for meat reserve sales are selected by the state. They cannot refuse sales of the reserve meat- see table n.5.9. The state forces local shops to sell reserve meat even though it is not profitable for the chosen shops. It is not profitable because they cannot add any extra price on the reserve meat and shops must pay on their own expenditures concerning reserve meat distribution. They do not have any profits apart from small rewards.

Table 5.9: Unprofitable and obligatory reserve meat distribution- interview based evidence

Selected reserve meat shops	Interview-based evidence
Supermarket UB	"When the municipality decides that we must sell the reserve meat we must do it"
Shop out of UB	"In the beginning they gave some money for selling the meat but last year we didn't get anything"
Shop out of UB	"They didn't pay me electricity consumption."

5.4.3.2.4 Reserve meat price

<u>Reserve meat prices adjustment</u>

Every year the reserve meat prices are specified by the government which cooperates with the Meat Association and with the municipalities (Meat Association representative: *"Last year was the year before elections thus MOFALI and the municipality arranged that the meat price would be the same as the previous year."*). Usually the meat reserve price should be approximately 1000-1500MNT/kg less than the meat market price. The local municipality and the meat reserve distributor specify prices which will be the same during all reserve meat period. This calculation is based on the expenditures on purchasing meat in autumn and on the price in neighbouring districts. Reserve meat prices are different from district to district. The reserve meat was much cheaper last spring that the normal meat sold in shops.

Low reserve meat price in 2012

Last spring the reserve meat was very cheap. Possible reasons are shown in a table n.5.10. The price difference between the reserve meat price and market price was too large. The attractive price provoked a big demand for the reserve meat and consequently this meat was very quickly sold out (shop outside of UB: *"The whole family went to the queue to buy the reserve meat"*). The reserve meat purchase limit was specified for people (state slaughter house: *"One person could buy 3kg/day"*). The previous year there had been enough reserve meat on the market (slaughter house: *"Before it didn't happen, meat was all day in the shops."*).

Table 5.10: Reasons of low reserve meat price- interview based evidence

External/Internal actors	Interview-based evidence
Slaughter house	"Last year was election year thus the government wanted to be popular with people thus they wanted to keep price very low in spring"
Meat Association representative	They determined the price from last year which was twice weaker that on the market."

5.4.3.2.5 Perception of the reserve meat among respondents

Reserve meat perceived as risky business

The business of the reserve meat is very risky for selected reserve meat firms- see table n.5.11. Everything depends on the purchase price of animals in autumn and for how much the reserve meat is sold in spring which is regulated by the state. Some of the firms distributing meat try to keep their reserve meat business still profitable thus they delivered smaller volume of reserve meat or they behave in opportunist way. Even though the reserve meat business is perceived as risky by firms, they want to apply the following year to store and distribute reserve meat. They want to demand even higher volumes of reserve meat for which they will be responsible (slaughter house: *"This year I want to have bigger volume than last year, but I think that unfortunately I will win just the same volume as usual."*)

Table 5.11: Perception of reserve meat as risky business-interview based evidence

Reserve meat distribution firms	Interview-based evidence
State slaughter house	"If I don't buy well livestock and it is expensive, it can be a financial loss."
Slaughter house	"I try to buy livestock as cheaply as possible to make the reserve meat profitable."
State slaughter house	"In autumn we restock more meat that is the volume determined by the state. When meat price is high again in later spring we sell it and we earn money like that..."
Slaughter house	"I know that some people distributing meat declare officially bigger volume of reserve meat that they actually supplied."

External players' perception of reserve meat utility

The opinions concerning the utility of reserve meat differ. But according to the majority of respondents the reserve meat does not influence meat market prices. Reserve meat may help poor people to get cheap meat. It seems that the government ignored the results of international organization surveys which disprove the utility of the reserve meat- see table n.5.12.

Table 5.12: Utility of reserve meat perceived by external players-interview based evidence

External actors	Interview-based evidence
Meat Association representative	" It helped to stabilize meat prices." "The idea is good, but last year the price difference was too large."
Professor of the University of Agriculture	"Only 15% of meat on the market was reserve meat, thus it didn't help and the price went up and down however it wanted." "In 2008 the World Bank did a reserve meat survey and their result was zero influence on meat price."

Internal players' perception of reserve meat utility

State meat price intervention and the reserve meat system controlled by the state is criticized – see table n.5.13. One interviewed considers reserve meat as a useful tool. Nevertheless the majority of internal actors share the opinion that the reserve meat does not much influence the meat market prices. The stabilization of meat prices must be reached

economically to be functional. Most consumers prefer to buy fresh meat thus frozen reserve meat is not so demanded and it may only help very poor people.

Table 5.13: Utility of reserve meat perceived by internal actors-interview based evidence

Internal actors	Interview-based evidence
State slaughter house	"If the reserve meat of low price had been more, the market meat price would have been lower."
Slaughter house	"…meat prices augment, but it may slow down the rapid increase of prices"
Processing company	"It must be left to the free market power. The market regulates its own prices."
Supermarket in UB	"It even does not have any influence on the customers who do shopping here because if they want to buy fresh meat, they just buy it."
Trader	"…anyhow people like buying fresh meat instead of frozen one" and "it may help to poorer people but the majority of people prefer to buy fresh meat."
Herder	"It is brain washing, it doesn't make any sense. It must be supported economically to be functional."

5.4.3.3 Meat export prohibition

Export was stopped from March to July 2012. The meat export had been stopped by the government in Mongolia and the reason was to decrease meat prices on the domestic market. Meat was not exported thus the exported volume of meat stayed on the domestic market (Meat Association representative: *"Chinese could not export from Mongolia. Therefore they sold it in spring and meat stayed on the Mongolian market."*).

5.4.3.3.1 External players' perception of utility meat export prohibition

External players do not consider meat export prohibition as completely useful tool to stabilize prices. The opinion which is remarkable is that even though the Meat Association is not sure about utility of this state intervention the government's decision concerning the meat export prohibition is fully supported by this institution and exporting companies- see table n.5.14. Furthermore a low numbers of Mongolian exporting companies were affected by this decision

(Meat Association representative: *"Legal meat export is mainly from November to January thus a minimal number of export companies were touched by this prohibition"*).

Table 5.14: External players' perception of utility meat export prohibition-interview based evidence

External actors	Interview-based evidence
Meat Association representative	"I am not sure if it was useful to stop exporting meat."
Professor of the University of Agriculture	"The prohibition did not influence anything"

5.4.3.3.2 Internal players' perception of utility meat export prohibition

According to the internal actors this government policy is not efficient- see table n. 5.15. The economic motivation of internal players in the chain is necessary to stabilize meat supply on the domestic market. Some remarkable information is that some exporting companies were not involved in the Meat export prohibition and they could export (slaughter house: *"Bigger companies which already have contracts abroad can export"*). The end of the export prohibition of meat is not known.

Table 5.15: Internal players' perception of utility meat export prohibition-interview based evidence

Internal actors	Interview-based evidence
Export processing company	"It is wrong. It is incompetent to forbid exporting and doing business." "Economic motivation is necessary to augment meat supply on the market."
Slaughter house	"Stopping export does not make any sense."

6. Discussion

In this thesis the analysis of the beef meat flow in the Central Region enables deep comprehension of the beef meat value chain system and of beef meat business interactions throughout the whole value chain from the countryside to the capital. In general, the beef meat flow is in accordance with the meat flow in Mongolia which is described by Gelder (2010). The World Bank (2005) document describing meat flow in the countryside and Ulaanbaatar supports the findings in this thesis concerning beef meat flow.

Internal and external factors influencing the meat prices were considered in this study as constraints of the beef meat value chain. Variable factors increasing the meat price were also analysed by other experts researching this issue. Leach and Bat-Erdene (2012) consider that the high meat price may be caused by factors such as fuel price rises, impacts associated with the sale of reserve meat and short term exports. Boldbaatar (2012) thinks that the factor inducing the high meat price was the fact that herders have different sources of income which are mainly state subsidies. In this thesis two of the analysed factors were state subsidies. In the case of cashmere the government supports the growth of the cashmere value chain to the detriment of the meat value chain. The government should take into account the impacts of its own policy to enable an improvement of the business environment.

The government policy is very important for the beef meat value chain and the government should provide a good business environment to the beef meat sector which the findings in this study could not confirm. The interviewed marketing officer of the AHLM project considered the three main constraints limiting the development of the meat sector business environment. The first is correct data. It is necessary to control how the data collection concerning numbers of livestock, meat prices and livestock identification is conducted in Mongolia. If the correct data is not available, the current situation is unknown and the government cannot implement good state policy. The second factor is the stable, long-term policy based on correct data and appropriate research. Thanks to that credibility and comprehension of the state policy could be achieved. Consequently investments into the domestic market would take place and profits would be gained. It is necessary for the development of the beef meat value chain in Mongolia that the private sector is interested. The government's role is to support the private sector and not to

improve it on its own. The last factor is a risky extensive husbandry system which is very vulnerable concerning the severe climatic conditions in Mongolia.

The negative perception of the Chinese by the external and internal actors is shared. Even two of the state meat price interventions may be focused on issues concerning Chinese activities in Mongolia. The reason for the export prohibition may have been illegal meat export to China. Illegal export of meat to China is an often discussed issue throughout the meat chain but no official studies concerning this issue are known. Furthermore, as one of the respondents (a commodity expert based in Mongolia) mentioned, the establishment of the commodity exchange is based on more state control of agriculture products especially cashmere which would be processed in Mongolia instead of being cheaply bought up by Chinese and processed in China. The Chinese are considered to be responsible for high meat prices in the spring of 2012. Throughout the beef meat value chain the Chinese are made responsible for many negative issues by the actors. This negative environment reduces the beef meat value chain performance. Therefore the government should make an official statement concerning the Chinese activities and the following consequences. The statement should confirm or disprove the arguments relating to the Chinese and in either way implement a policy which would stabilize the meat sector. At present the government does not give any official statement concerning the issue and moreover state regulations focusing on Chinese activities may put the development of the beef meat sector and the state credibility in danger.

It necessary that all actors of the chain participate in the events throughout the beef meat value chain. The Meat Association is an association which should be an engine of the communication between the government and the needs of the actors. The members of this association represent only exporting/processing companies and big slaughterhouses. There are not any representatives of herders, traders or small slaughter houses. According to the findings in this thesis negotiation with the government favours the members of this association. As the marketing officer of the AHLM project mentioned the Mongolian government shouldn't give anyone more advantages than others to keep a competitive environment throughout the value chain.

7. Conclusion

The beef meat value chain in the Central Region has a strong development capacity which is not yet fulfilled.

The flow of beef meat is highly centralized in Mongolia. It goes from the countryside to the capital where the main meat markets are. The meat supply from the countryside to the main meat markets can be mediated by many internal actors or it can be done directly by herders. Meat traders play an important role in beef meat supply. Most live cattle are slaughtered in the Emeelt slaughter area which is close to the capital to supply its meat markets with fresh meat. In Ulaanbaatar the biggest wholesale meat market is Denj-1000, where the most important beef meat business is done.

Value is added on beef meat by slaughtering animals, portioning and boning meat. The beef meat price fluctuates throughout the year and the amount of the added value varies according to the seasons as well as from one meat market to another. Wholesalers from Denj-1000 are considered by the actors throughout the chain as a negative element which increases meat prices and profits by adding high value on beef meat. Nevertheless according to the added value analyses in this study, wholesalers added the same or even lower value on sold beef meat than other target groups.

In this study great attention was drawn to the factors raising the meat price via which constraints of competitiveness of the beef meat value chain in Mongolia were found. Analysed constraints are distinguished into two groups: changeable or unchangeable. Unchangeable constraints of the beef meat value chain are already determined by the geographic location of the country such as weather or the short production period. Changeable constraints can be eliminated and consequently the performance of the beef meat value chain will improve. Constraints can be removed by suitable long term state strategies concerning state subsidies and meat price regulations, food safety, meat market access and illegal export. Another identified constraint is bad internal relationships among actors throughout the chain such as the negative perception of traders by other actors. Traders are important beef meat business mediators between producers and consumers in the sector. Thus prejudices towards these actors lead to mistrust and refusal of cooperation and consequently diminish the performance of the chain as a whole.

In Mongolia the enabling business environment is not favourable to the beef meat value chain. This fact is proved throughout the analyses of the state meat price interventions in this study such as the establishment of the commodity exchange, the reserve meat system and the meat export prohibition. These government meat price regulations do not support the development of the beef meat sector and do even not stabilize meat prices. Moreover they enable a few groups of internal actors to benefit from the system in charge of the majority of the internal actors of the beef meat chain. Thus due to that fact the high meat price crisis may even be intensified. State reforms concerning meat prices such as the establishment of commodity exchange favour selected groups and seriously endanger the government credibility as perceived by actors. Throughout the chain there is no public-private dialogue and the communication stagnates in all directions. The lack of communication and information sharing from the public sector side in Mongolia does not permit comprehension of the impacts of its own decision making. Consequently the public sector cannot effectively respond to the needs of the private sector and it is not possible to accomplish the development of the beef meat value chain.

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