

## Mongolia's Cashmere Industrial Cluster Development

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### Abstract

Mongolia is one of the big countries of the world's cashmere that vast in territory, rich in resources, economic development has the big potential. If transforms resources as the economic superiority of this sector, it is can lead to the development of the entire national economy. The aim of the study is to review the cashmere sector of Mongolia with the purpose of identifying the major constraints of development of the sector, thereby to suggest policy recommendations for the industry cluster development of the sector. Cashmere industry and its supply chain potential have been studied in the case of Ulaanbator region. Although analysis of recent reforms has provided opportunities for liberalization and modernization of cashmere and wool production and marketing system in Mongolia.

**Key words:** Mongolian cashmere industry; Industrial cluster; Model of cluster

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### INTRODUCTION

Mongolia's economy is mainly relied on animal husbandry, cashmere and natural fiber manufacturing and mining industry. Animal husbandry is a traditional industry in Mongolia, but also the basis of its national

economy and Mongolian light industry derives most of its raw materials from livestock. Mongolia's agriculture accounts for 21% of total GDP. Livestock contribute 80% of total agricultural output value and accounts for 10% of all export income.

Mongolia produces about 6,000 tons of cashmere per year, about 28% of the world market. On average 250 grams of cashmere can be combed from one goat. 9-10 m of fiber is spun with 1 gram of pure cashmere. Cashmere thread diameter of Mongolian goat is 13.0-16.5 microns; average length is 38-45 mm. Cashmere from Mongolian goats is warmer than other countries' cashmere because of Mongolia's harsh climate. Cashmere products are very light, soft and delicate. It is special and its qualities ensure that it is warm and keeps its shape and it is always available in the market. 19.6 million goats are kept and bred in Mongolia (Mongolian Wool & Cashmere Association's, 2016).

Mongolian cashmere in the world market has a certain reputation, with the integration of the world economy and setting of market economy in Mongolia, there must be a wide space for the development of Mongolian cashmere industry but also to confront great the challenge. Cashmere products in the textile sector, a relatively new branch of the history of the development are not long. However, the threshold of Mongolia into the cashmere industry is very low, so there will be a large number of small companies involved into the cashmere processing, which also led to competitors within the industry increasing the quality of the product had poor arrhythmia condition. And now how to make Mongolian cashmere industry to succeed in better development, how to make a more healthy development of the Mongolian cashmere companies has become a problem.

Under the current conditions, creation and development of cashmere industrial cluster are one of the main mechanisms of the increase of competitiveness of Mongolian national economy.

## 1. LITERATURE REVIEW

Basic idea of industrial cluster due to its unusual regional economic competitiveness, there are more and more concerns of industry cluster as a regional economic phenomenon. A simple definition of a cluster is “the geographical concentration of industries which gain advantages through co-location” (Bosworth & Broun, 1996). A broader definition is the “geographic concentrations of inter-connected companies and institutions in a particular field” (Porter, 1998). Clusters can be an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs, such as components, machinery, and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies or common inputs. Many clusters include governmental and other institutions, such as universities, standard-setting agencies, think tanks, vocational training providers, and trade associations that provide specialized training, education, information, research and technical support (Porter, 1998).

An industry cluster is:

A geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue that share specialized infrastructure, labour markets and services, and that are faced with common opportunities and threats. (Rosenfeld, 1997)

Strengthen the importance of technology transfer and of geographic concentration, assuming a regional perspective to identify clusters (Feser & Bergman, 2000).

“Nation Competition Advantage”, written by Michael Potter in 2002, discusses the primary motivation for the formation of industrial cluster by constructing “the Diamond Model” from the perspective of enterprise competition strategies. “The Diamond Model” mainly includes five factors, which are production environment and demand, the performance of related and supporting industry, enterprise strategies, industry structures and competitors in the same industry.

Agro-based cluster initiatives are starting to be seen as a key approach to help advance the agricultural sector of many countries. The promotion or inducement of such clusters has various advantages relative to other approaches. In particular, cluster approaches recognize that all the actors in the agricultural value chain are often more innovative and successful when they interact with supporting institutions and other actors in the supply chain. By promoting vertical and horizontal links between local agricultural enterprises, as well as supporting relationships between them and facilitating organizations (e.g. local governments, research institutes and universities), cluster policies promote the diffusion of

innovation, as well as the use and generation of important local externalities (Galvez-Nogales, 2010).

By dividing a production process into incremental stages, a large lump-sum investment can be transformed into many small steps (Schmitz, 1995). Based on a case study on cashmere sweater cluster, Ruan and Zhang (2009) empirically show that clustering enables many farmers with entrepreneurial talents to move into industrial production by lowering capital entry barriers. Furthermore, as an integrated production is split up among many firms in a narrow geographic area, these firms have to interact repeatedly on a regular basis. Over time, firms build up trust with their customers and suppliers within the cluster, which in turn lowers transaction costs of extending and receiving trade credit among firms, easing their burden of financing for working capital. Huang et al (2008) and Ruan and Zhang (2009) provide supporting evidence that trade credit is indeed prevalent in footwear and cashmere clusters in China.

From a conceptual standpoint, the creation of “value networks” represents the most effective means by which to break this cycle, while concurrently raising prospects for longterm competitiveness within the agricultural sector. In this context, a value network is the aggregation of:

- Vertical relationships among suppliers of raw materials and production inputs, agricultural producers, processors and exporters, branded buyers and retailers;
- Horizontal relationships among producers, which take the form of growers’ cooperatives or various types of smallholder business consortia;
- Support relationships between producers and facilitating organizations (e.g. local governments, business service providers, research institutes, universities and non-government service organizations) that reinforce the quality, efficiency and sustainability aspects of the chain (ITC, 2006b).

## 2. THE CURRENT DEVELOPMENT SITUATION AND EXISTING PROBLEMS OF MONGOLIA’S CASHMERE INDUSTRY

### 2.1 The Impact of Cashmere Industry on the Economy of the Mongolia

After 70 years as a centrally planned economy, Mongolia has undergone a difficult transition towards a free market system since 1990. With the help of active government promotion, the country’s industrial sector grew steadily for several decades, expanding from 7% of the national income in 1940 to 35% by 2014, as agriculture’s share of total production declined from 79% to 27%.

Despite these changes, animal husbandry has remained a dominant sector of the economy, with live animals and animal products accounting for a major share of

exports, and livestock providing much of the raw material processed in the country's industrial sector.

In many developing countries, the greatest potential for sustainable growth lies in the agricultural sector. Yet ironically, it is this sector where poverty is most widespread and found in its worst forms. Small-scale farmers, and the rural communities in which they live, are imprisoned within a "cycle of equilibrium" of low margins, resulting in low risk-taking ability and low investment, which leads to low productivity, low market orientation and low value addition which, in turn, nets low margins (ITC, 2006a).

In past 20 years in China Qinghe County cashmere industry cluster has become the backbone of the local economy and it has a perfect market system, known as 'the world's cashmere look at China, look at Qinghe Cashmere' reputation. This industry cluster is to bring the rich production and marketing chain more complete, more advanced processing technology and production lines, and more high-end products. In addition, Qinghe County, breaking the traditional reliance on natural resources, regional development model, by entrepreneurial local farmers and government officials embarked on a bold exploration relies on the market to allocate resources and industrial development.

In order to take advantage of cashmere production, Mongolia should be more concentrate on developing strategy to support industrial clustering and long term competitiveness of Mongolian cashmere products. Thus, Mongolia is able to become one of the leading manufacturers of cashmere products in the world.

## **2.2 Measures Taken by the Government to Enhance the Competitiveness of the Cashmere Industry**

In recent years, government has taken some actions such as soft loan with purpose of promoting cashmere industry. However, result of those actions was insufficient. The government of Mongolia had made the decision to provide soft loan starting from 15.08.2013 until 01.12.2017 so as to support a technical update of manufacturers. There are only few of manufacturers benefitted from soft loan which was funded by financial source from Chinggis bond. It has also been decided by the government in March 2013 to provide soft loan to increase turnover of national manufacturers. Most of cashmere products were exported before national manufactures could actually benefit from this loan. In reality, national manufacturers are willing to soft loans, however their capacity is not able to meet high requirements of commercial banks in Mongolia.

Even though companies such as the Gobi is doing technological innovation with a loan of several billion dollars, yet it's difficult for them to keep operating and expand its business activities under pressure of 15%-20% interest rate loan. Therefore, these companies had made some statements about the urgent need of support from

the state. The government took some actions so as to promote cashmere business. For instance, in 2011 states have spent 100 billion dollars to promote development of cashmere industry. As a result, cashmere production has increased by 30% in the following two years. However, it was concluded that one time action of the government is not able to ensure sustainable development of production of seasonal and agriculture products (Yondonsambuu, 2013).

The question of why Chinese manufacturers are making profit with expensive raw material while Mongolian manufacturers are not making much profit for cheaper raw material can be raised. Mongolian cashmere manufactures are making a proposal to the government to get a loan with a low interest rate for storing raw material.

In China, In the financial system, the government improve the financial support, to increase the strength of corporate loans and loan facilities, in the capital subsidies, tax cuts and government tax rebate as long as the discount, the company can basically meet the requirements in technology research and development, the Government has organized Hongye company personnel and other technical training cashmere, cashmere company and the outside world and to encourage technical cooperation and exchange, to promote enterprise development, access to the talent, the Government is actively developing talent to introduce, develop and retain policies to attract more talent, providing intellectual support.

So, what kinds of measures should be taken by government in order to promote this industry?

It can be anticipated in Mongolia that there will be decrease in supply of raw materials. Chinese government is implementing policy to decrease number of its goats to reduce its impact on desertification. This can eventually lead to strong competition between Mongolian national manufacturers. Hence, it can suggest that government loan with interest rate of 6%-7% per year can be provided to national manufacturers.

## **2.3 The Problems of the Cashmere Industry: Causes and Ways to Overcome by Using the Cluster Management Model**

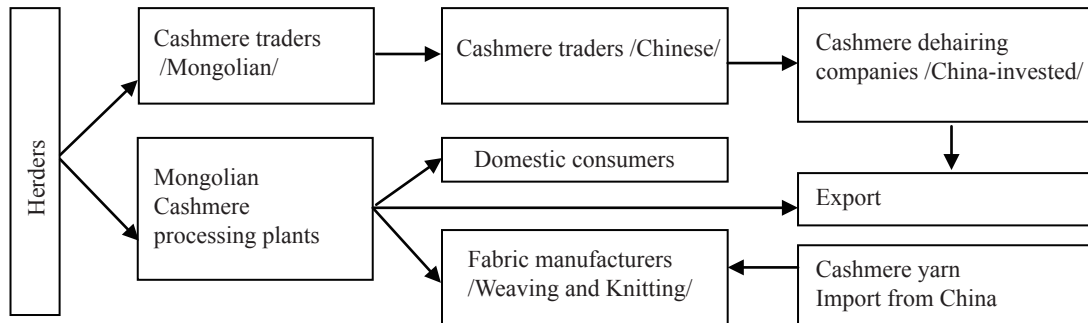
### **2.3.1 The Supply Chain Structure of the Mongolian Cashmere Industry**

Examination of the value-added chain for cashmere highlights the difficulties of the industry: There is severe excess capacity in all segments of the chain with the exception of spinning (with 77% capacity utilization); most cashmere are exported with only low value added (raw or dehaired/tops cashmere), and product quality, as reflected in price, is highly uneven (Donald et al., 2005).

There are a few options that herders in Mongolia have for selling their raw cashmere. Herders can sell their products to the Chinese traders, to Mongolian traders, or directly to Mongolian processing plants. Mongolian

herders would rather sell to Mongolians rather than to China, but many can not, because the Chinese traders pay more for raw cashmere than Mongolian traders and processors do and they pay in cash. Many of the buyers are unable to get cash because the cost of borrowing is extremely high, therefore the Mongolian buyers can only

exchange goods for raw cashmere. The processing plants in Mongolia are going under because they do not have enough goods to run at capacity due to Mongolian herders selling their cashmere to China. Other Mongolian herders take their cashmere to the Chinese border themselves, or sell to those who do (Warner, 2000).



**Figure 1**  
**The Value Added Supply Chain Structure of the Mongolian Cashmere Industry**

Currently this supply chain is dominating in Mongolian cashmere industry. 60%-70% of Mongolian cashmere is exported to China through this supply chain. The supply chain itself doesn't benefit Mongolian side. Furthermore, small sized factories of weaving and spinning cashmere thread were built in Chinese side with the purpose of processing imported cashmere. Small portion of cashmeres is processed through the supply chain of herders-National manufacturers-Consumers-Export. Industrial clustering of Mongolian cashmere products can be built based on this supply chain. It also can be suggested that small factories need to use spinning thread of domestic factories. Mongolian wool processing supply chain is similar to its cashmere supply chains. Small portion of wool is used to produce carpet and while the rest of them are exported to China. This supply chain should be replaced by herders-national factories-consumers-export chain similar to the one mentioned above. It has been revealed by price research that most of small factories are producing lower value added cashmere products for export. Building of industrial clustering of cashmere products will enhance production of value added cashmere products and increase profit of cashmere industry (Tserendamba et al, 2013).

### 2.3.2 The Role of the Cashmere Industry in Desertification

According to U.N. Development Program estimates, 90% of Mongolia is fragile, dry land, which is under increasing threat from desertification. Part of the reason for this is thought to be global warming, but in Mongolia's case another significant factor is the rise of the global cashmere industry. The large population of cashmere goats is a problem because goats destroy grasslands and soil much more than any other traditional Mongolian livestock, such as sheep, cattle, horses and camels. Goats are much more voracious eaters and

consume the root of the grass thereby stopping it from growing altogether.

As a long-term economic enterprise, mining is paradoxical for Mongolia's future development. It threatens to upset Mongolia's unique biodiversity, cultural heritage and traditional economic structure based on livestock herding (Combellick-Bidney, 2012; Sternberg, 2012; Upton, 2012).

From the perspective of Mongolia's long-term sustainability, both herding and mining compete over access to key natural resources such as land and water. In a changing climate, these resources are going to be further stressed; in the absence of a robust response mechanism, this may lead to greater conflicts between Mongolia's two primary economic enterprises.

One of the means of implementation of the Policy that are highly important in relation to the co-existence of mining and traditional livelihoods in a changing climate is to Increase the processing of agricultural raw materials, including animal skin, wool and cashmere to 60 and 80 percent by 2020 and 2030 respectively through promotion of sustainable agriculture development and development of green-tech, export-oriented manufacturing industry cluster (Sharma, 2014).

Considering grazing capacity, it's suggested that the number of goats in Mongolia should be limited to up to 10 million. It's reasonable to reduce number of goats to improve grazing capacity, despite increasing demand of cashmere in both national and international market. It's anticipated that decrease in the number of goats tend to cause a decrease up to 1-2 times in cashmere production. This might affect amount of cashmere supply but cashmere products of national manufacturers will not be effected. At the same time, it has also been assumed that decrease in the number of goats will cause reduction in amount of unprocessed and combed cashmere. Based



on standard calculation of agriculture production, 2.7-3 thousand ton cashmere will be produced with 10 million goats. This will lead to 50% of the increase in national manufacturers' production (Tserendamba et al, 2013).

### 2.3.3 The Problems of the Firms in the Cashmere Processing Sector

The firms in the cashmere processing sector point to two problems: The high cost of funds to buy raw cashmere and the price competition of traders (called changers) who buy raw cashmere in Mongolia. At prices that Mongolian processors say they cannot match and make profits, and smuggle it to China. In addition to these problems, labor costs in Mongolia are somewhat higher than in Inner Mongolia in China and productivity is somewhat lower. In general, but with notable exceptions, labor and management skills are low and machinery is not well maintained and hence product quality is low and falling. This quality problem has been heightened by the falling average quality of Mongolian raw cashmere (as measured by micron diameter) (Tserendamba et al., 2013).

### 2.3.4 Cashmere Market in Disarray

Many firms in the processing sector have ceased to operate or have downsized their operations over the past eight years, yet processors still operate on average at less than 50% capacity (USAID, 2005).

The value added chain for cashmere in Mongolia has five major stages: raw/greasy cashmere, scouring/dehairing, dyeing/spinning, knitting or weaving. Most cashmere is exported with the least value added possible: raw/greasy cashmere. The next largest export is dehaired cashmere, again with low value added. In recent years, a substantial quantity of cashmere yarn has been exported. Production of yarns was also used as an input to further processing into knitted and woven textiles. A substantial percentage of the dehaired cashmere that is exported was spun into yarn in China and then imported back into Mongolia to be used for knitting and weaving (USAID, 2005).

The domestic price war cashmere market cycle of ten years, makes this industry is far from being healthy norms and healthy and orderly development. More than low-level redundant construction, processing, excess capacity in 20 years, Mongolia's cashmere industry there is a some of low-level duplicated construction, the rapid expansion of processing capacity, the industry gradually increased the competition among the market of order. According to statistics, up to domestic cashmere processing more than 80 enterprises /Table 1/, dehaired carding capacity exceeded 4,100tn /Table 2/, is the Mongolia's cashmere production 3 times; cashmere processing capacity per year by 2983 million pieces of cashmere sweaters every year mainly to the actual processing of cashmere products about 900 million.

## 3. CASHMERE INDUSTRY CLUSTER: DEFINITION, COMPOSITION

The formation of a coordinating body within the cluster phenomenon is optional, but in terms of national continuity of economic policy, it should be noted that this step is important not only for territorial development, but also for the business people themselves, because one of the most important functions of the body-providing dialogue between stakeholders, educational and research centers, investors and entrepreneurs in related industries (Kostruykova et al., 2011).

### 3.1 Mongolian Cashmere Industrial Cluster Definition

Most of Mongolian cashmere processing factories are placed in Ulaanbaatar and Erdenet city. Small numbers of cashmere washing factories are operating in local areas. Those cashmere washing factories are only washing small amount of cashmere due to lack of its turnover. Their productions are limited by cashmere washing, felt, and some felt products which don't require technological work.

Planning of national and regional clustering has been developed not only to build production based on industrial clustering but also to enhance cooperation among national wool and cashmere manufacturers.

Participants of cashmere industrial clustering will cooperate with mutual understanding. Research that has been conducted regarding supply of provincial wool and cashmere and location of those manufacturers has shown that national level cashmere clustering can be built in city of Ulaanbaatar and Erdenet. It has also been shown that regional industrial clustering can be built in Zavkhan, Bayankhongor, Umnugobi, and Sukhbaatar provinces of Mongolia. Manufacturers that will play important role in building clustering were named based on the result of research. Manufacturers such as Gobi /annual capacity of 1,200 ton cashmere washing and 700 thousand pieces of knitted goods/, Buyan LLC /annual capacity of 1,000 ton cashmere washing, 500 thousand pieces of knitted goods/, Eermel share holding company /annual capacity of 1,000 ton cashmere washing and 300 thousand knitted goods/, Goyo LLC /annual capacity of 500 ton cashmere and 250 thousand pieces of knitted goods/, Ulaanbaatar carpet h /annual capacity of 2000 ton cashmere washing, 100 ton wool spinning/, Mongol Nekhmel share holding company /annual capacity of 1,000 ton wool washing, 30 ton wool spinning/ are able operate either by itself or build joint company in national level clustering. National level cashmere manufacturers will be able to prepare its raw material from Eastern, Western, Central and Northern region of Mongolia.

There are no particular contract signed between wool processors in soums/small administration unit in Mongolia/ and cashmere manufacturers. Cooperation

between clustering participants is weak. Amount of processed wool is different each year which cause unstable production every year. It's also substantial to standardize wool shearing and sorting process. These issues can be solved by building regional cashmere clustering in western Mongolia.

### 3.2 Advantages and Prospects of Cluster Business

The implementation of cluster policy promotes growth business competitiveness through the implementation of effective interaction potential members of the cluster associated with their geographically closest location, including increased access to innovation, technology, know-how, specialized services and qualified personnel, as well as reducing transaction costs, ensuring the creation of preconditions for the implementation of joint cooperation projects and productive competition.

The above mentioned cluster will bring a number of advantages to Mongolia including:

- Reducing of production costs by scale combining;
- Increasing specialization of enterprises-members of cluster that will improve the quality of products and services;
- Improving the use of existing resources, scaling up innovations;
- Complementing of products which are produced by cluster's enterprises-participants;
- The possibility of combining the financial capacity of companies to provide guarantees to banks to obtain credit;
- Reducing the cost of funds for information security;
- Increasing productivity and employment of region;
- Optimal using of the employment potential;
- The best motivation of managers;
- Increasing of the competitive advantage of the entire region and cluster's enterprises-participants;
- The performing of centralized management activities;
- Minimizing risks and costs when entering the new market;
- The introducing new equipment and technology due to their flexibility;
- Improving relations between the state and civil society organizations;
- Disinterest of SMEs to associate in large production systems;
- Little experience of clusters in Mongolia and its regions.

### 3.3 To Solve Those Problems We Offer

- To consolidate the definition of cashmere industry development cluster's model at the legislative level. There is an urgent need of organizing training and seminars regarding clustering with participation of companies and organizations that have interest in clustering.

- To increase the skills of cashmere industry employees;

- To study global experience of cashmere clusters. Feasibility study of some specific clustering /China Qinghe Cashmere cluster/ should be conducted.

- To develop a program for the development of cashmere industry clusters. Cooperation with Asian Development Bank has been fruitful, thus it is vital to maintain efficient cooperation with Asian Development bank in fields of industrial and service clustering.

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## CONCLUSION

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In Mongolia cooperation between state and private sector is not efficient. There's no particular cooperation mechanism built between state and private sector. Furthermore, due to lack of economic and financial capacity these companies are not able to supply products in international level. Thus, nowadays Mongolia is in urgent need of improving its competitiveness, renewing its economic structure, conducting innovation policy and enhancing collaboration between state and private sector. So, Mongolia's Government should improve the financial support, to increase the strength of corporate loans and loan facilities, in the capital subsidies, tax cuts and government tax rebate as long as the discount, the company can basically meet the requirements in technology research and development. Hence, it can suggest that government loan with interest rate of 6%-7% per year can be provided to national manufacturers can store raw material.

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## APPENDIX

**Table 1**  
**Current Situation of Cashmere Sector 2015 (Mongolian Wool & Cashmere Association's, 2016)**

Factory of manufactured goods	15
Elementary factory	23
Knitting factory	46/Small-150/
Capacity for spinning factory	1400tn

**Table 2**  
**Capacity Building of Cashmere Sector 2015 (Mongolian Wool & Cashmere Association's, 2016)**

Washing /tn/	Combing /tn/	Spinning /tn/	Knitting /unit/	Weaving /m <sup>2</sup> /
7,350	4,110	1,400	2.893.0	1.617.0