

Report No. 26240-MOG

**From Goats to Coats:
Institutional Reform in Mongolia's Cashmere Sector**

December 19, 2003

**Poverty Reduction and Economic Management Unit
East Asia and Pacific Region**



The World Bank

CURRENCY EQUIVALENTS

(as of end January 2002)

Currency unit = Togrog (Tg)

US\$1 = Tg 1100

FISCAL YEAR

January 1 – December 31

WEIGHTS AND MEASURES

Metric System

ABBREVIATION AND ACRONYMS

ADB	- Asian Development Bank
CMEA	- Council for Mutual Economic Assistance
FDI	- Foreign Direct Investment
FSU	- Former Soviet Union
GDP	- Gross Domestic Product
GTZ	- Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
IDA	- International Development Association
NBFIs	- Non-Bank Financial Institutions
NCSM	- National Center for Standardization Metrology
NSO	- National Statistical Office
R & D	- Research and Development
SCM	- Supply Chain Management
SCMIC	- Schneider Cashmere Market Indicators
SFU	- Sheep Forage Unit
UNDP	- United Nations Development Organization
USAID	- United States Agency for International Development
WTO	- World Trade Organization

Regional Vice President:	Jemal-ud-din Kassum, EAPVP
Country Director:	Ian C. Porter, EACTF
Sector Director:	Homi Kharas, EASPR
Sector Manager:	Tamar Manuelyan Atinc, EASPR
Task Team Leader:	Vera Songwe, EASPR

Table of Contents

Executive Summary	i
Chapter 1. Boom, Bust and Future Prospects	1
The transition from command to market.....	1
The 1991-96 cashmere boom.....	1
The downturn in the cashmere industry, 1997-2002.....	3
Household incomes and cashmere production.....	4
Future prospects.....	7
Chapter 2. Dynamics of Cashmere Supply	8
Cashmere supply, 1990-2000: Transition to a market-oriented system.....	8
Access to raw material, infrastructure and environment.....	9
Infrastructure concerns.....	10
Environmental impact and property right.....	12
Cashmere supply and livelihoods	18
Reform options.....	20
Chapter 3. Standardization and Quality Control	23
Quality developments in cashmere sector.....	23
Reform options: Grading and standards.....	26
Chapter 4. Dynamics of Cashmere Demand and the Processing Industry	34
Overview of processing industry	34
Government policy stance.....	37
Impact of tax on earnings.....	38
Increasing competitiveness of Mongolian cashmere sector.....	43
Chapter 5. Cashmere Marketing and Distribution Channels.....	47
Procurement and distribution systems: From command to markets	47
Current marketing channels	49
Constraints to intra-industry integration and policy options.....	53
Luxury good marketing and foreign direct investment.....	58
Increasing communication flows between herders and processors.....	58
Chapter 6. Engineering Public Policy Choices to Strengthen Cashmere Industry and Reduce Poverty.....	60
Introduction.....	60
Public sector policy choices to mitigate market failures and market imperfections in cashmere sector	63
Conclusion	65

List of Boxes

Box 2-1: Goat Habit	12
Box 2-2: Pastoralism and Intensification	14
Box 2-3: Assessment of Land and Land Management in Mongolia	17
Box 3-1: Cashmere's Five Quality Factors	23
Box 3-2: Importance of Grading and Standardization	27
Box 3-3: Experience from the Australian Wool Corporation: Normative Classification	28
Box 4-1: Cashmere Production Steps	36
Box 5-1: Vertical and Horizontal Integration in Chinese Manufacturing	57
Box 6-1: Cashmere Policy Formulating and Advisory Institutions in Mongolia*	62

List of Figures

Figure 1-1: Boom and Bust in the Mongolia's Cashmere Industry, 1993-2002	1
Figure 1-2: Annual Growth of GDP and Agricultural Sector, 1990-2001	2
Figure 1-3: Real Growth of GDP, Livestock and Crop Production, 1996-2001	2
Figure 1-4: Exports of five main commodities in 1993-2002	3
Figure 1-5: Direction of Trade in 1992-2002 in percent of Export	3
Figure 1-6: Openness of Mongolian Economy, 1990-2002	3
Figure 1-7: Togrog REER Index, 1991-2000 Six-month moving average	2
Figure 1-8: Household categories	4
Figure 1-9: Share of household groups in total by number of livestock owned	5
Figure 1-10: Trends in demand for luxury fine fibers, 1996-2000	7
Figure 2-1: Increased preference for goats	8
Figure 2-2: Number of Goats by Region, 1990-2002	8
Figure 2-3: Mongolia Pasture Capacity Thresholds	13
Figure 2-4: Simulation of cashmere production with and without Dzud in US\$ million	19
Figure 2-5: Simulation of cashmere production with and without Dzud per household in US\$	19
Figure 2-6: Simulation of cashmere production with and without Dzud in tons	19
Figure 2-7: Simulation of cashmere production with and without Dzud per household in kg	19
Figure 3-1: International Dehaired Cashmere Prices 1970-2002 (All prices quoted in Jan)	25
Figure 3-2: Income from quality improvement of raw cashmere in total cashmere export	25
Figure 3-3: Income increase from quality improvement by household with livestock	25
Figure 3-4: Share of quality breeds in Mongolia's goatherd	29
Figure 3-5: Percentage of breeding female goats in total goatherd	29
Figure 4-1: Import trend of fine animal hair (not combed)-in tons, 1996-2000	34
Figure 4-2: The effect of the export ban and tax on compositions of cashmere exports, 1993-2001	38
Figure 4-3: Share of total export taxes in Revenue and GDP	40
Figure 4-4: Share of cashmere export taxes in Revenue and GDP	40
Figure 4-5: Nominal export tax burden on herders in percent	41
Figure 4-6: Taxes and Fees Across Supply Chain	42
Figure 5-1: Main Marketing Channels and Agents for Cashmere Products	48
Figure 5-2: Export Restrictions Benefited Traders/Dehairers	55
Figure 5-3: Share of top 5 importers of fine animal hair in world import	56
Figure 5-4: Value Chain-Mongolian Cashmere	57
Figure 5-5: Increasing vertical integration among firms	58
Figure 5-6: Distances from cashmere-producing regions to UB market	59

List of Tables

Table 1-1: Cashmere's Role in Mongolia's Economy	1
Table 1-2: Cashmere export trends	3
Table 1-3: Survival of goat offspring following Dzud	3
Table 1-4: Livestock by main types, 1989-2001	4
Table 1-5: Share of households groups in cashmere production and average income	5
Table 1-6: Sources of livelihood by well-being category: soum center /I	6
Table 1-7: Sources of livelihood by well-being category: rural communities /I	6
Table 2-1: Fodder Production Systems and Evolution of Fodder Supply, 1990-2002	10
Table 2-2: Livestock watering facilities, 1990-2000	11
Table 2-3: Mongolia Pasture Capacity, 1995-2001	13
Table 2-4: Some Existing Conversion Rates (Sheep per species)	15
Table 2-5: Distribution of Income from Cashmere, 1999-2002	18
Table 2-6: Market exit of households with livestock, 1999-2002 (In 000's)	18
Table 3-1: Share of household groups in total by goat herd	30

Table 3-2: Average goat herd and income from cashmere by household groups, 2002	31
Table 4-1. Main cashmere importers, 1996-2001	34
Table 4-2: Estimated Capacity Utilization of Mongolian Firms in 2000	36
Table 4-3: Estimated Impact of Cashmere Export Tax on Export Earnings	39
Table 4-4: Computed Raw Cashmere Domestic and Border Price Trend, 1996-2001 (In US\$)	39
Table 4-5: Estimated Impact of Cashmere Export Tax on Herders Income	39
Table 4-6: Cashmere smuggled, 1995-2001	40
Table 4-7: Dehaired cashmere yield ratios per kg of raw cashmere-Gobi	42
Table 4-8: Cashmere processing jobs, 1995-2000	45
Table 5-1: Current Structure of Cooperatives in Mongolia	50
Table 6-1: Government Policy Impact on Cashmere Production	60

Annexes

Annex 1. Policy Matrix for Cashmere Industry of Mongolia	
Annex 2. Goat Population Growth Simulation	
Annex 3. Economic Impact of Export Control on Cashmere – Partial Equilibrium Analysis	
Annex 4. Grouping of Households by Herd Size Owned	
Annex 5. Income from Cashmere Sales per Household with Livestock by Household Groups, 1998-2002 – in US\$ - Gobi Price	
Annex 6. Main Exporters of Fine Animal Hair, not carded or not combed	
Annex 7. Main Importers of Fine Animal Hair, not carded or not combed	
Annex 8. Exports of Cashmere Products – Mongolia, 1993-2002	

References

ACKNOWLEDGEMENTS

A World Bank team led by Vera Songwe and comprised of Bold Magvan prepared this report.

Messrs/Mme, Garry Pursell, Kathie Krumm, David Dryer, Ralph Van Gelder, John Napoleoni, Robin Mearns, and Giovanna Dore provided valuable comments inputs and background reports for the report. Contributions to these reports were received from Dick Filmer, and John Cameron. The team would like to acknowledge substantive contributions and insights from the USAID, Gobi Initiative project and The Competitiveness Initiative (TCI) ACDI/VOCA, Mongolian Herders Association, Mongol Amical, Gobi and Buyan for providing data for analytical work, National Statistical Office, Ministry of Finance and Economy, Mr.G.Zandanshatar, Ms. B.Chimedtseren, Professor Yo.Zagdsuren, Mr. Ronnie Lamb, Mr. B.Yondonjamts, and Dr. Bakei, Ministry of Industry and Trade, National Center for Standardization Metrology NCSM, GTZ and Mongolian Cooperatives. Joost Polak provided editorial support, and Nancy Mensah provided administrative and logistical support.

The peer reviewers for the report are Messrs/Mme Michelle Morgan, (Chief of Party The Competitiveness initiative, Mongolia); Maria E. Fernandez-Jimenez, (Assistant Professor, Colorado State University), Wendy Tackacs, (Assistant Professor, University of Maryland), and Ronald J. Kopicki, (Lead Private Sector Development Specialist)

This report was produced in a fully participatory manner with the Mongolian Authorities. The team gratefully acknowledges the Government's assistance particularly staff in the Ministry of Finance and Economy, Ministry of Industry and Trade, and Ministry of Food and Agriculture.

The report was prepared under the overall guidance of Messrs./Mme. Homi Kharas (Chief Economist and Sector Director, EASPR), Ian Porter (Country Director, EACSM), and Tamar Manuelyan Atinc (Sector Manager, EASPR).

EXECUTIVE SUMMARY

1. Cashmere is Mongolia's third largest official export, after copper and gold, and provides income to over a third of its 2.4 million people. The cashmere industry is the economy's single largest employer—providing jobs for over 16 percent of the work force and accounting for over 6.3 percent of GDP over 1993-2002. It is a principal source of livelihood for Mongolia's poor. Developing an efficient and competitive cashmere industry that exploits strategic linkages between and across the industry to add value, reduce costs, and increase incomes will be one of the main measures of Mongolia's successful transition from a command to a market economy.
2. Mongolia is the world's second largest producer of raw cashmere—producing over 25 percent of world supply—after neighboring China, which produces more than 60 percent. Almost all-Mongolian cashmere is exported, and cashmere exports of US\$45.2 million accounted for over 8.6 percent of official exports in 2002. These figures considerably understate the importance of the industry to the Mongolian economy, as over 38 percent of the raw cashmere produced in 2002—worth about \$16.8 million—was smuggled to China.
3. Over 43 percent of Mongolian households, 243,234 in 2002 depend on livestock herding for some part of their incomes, most of them on goat herding. The economic downturn associated with the breakup of CMEA in 1991 greatly increased unemployment in Mongolia, and many of the new unemployed turned to traditional goat herding as one of the few sectors that allowed easy entry and seemed to promise high returns. While the cashmere industry provided an invaluable safety net for Mongolians during the early years of the transition, its poor performance in recent years is taxing scarce public resources, depressing growth, and worsening the livelihoods of a large share of the population.
4. The Mongolian cashmere industry has experienced a series of booms and busts over the last decade. Unsatisfactory public sector policies contributed to this result. External factors such as the unfavorable economic environment of the early 1990s, the East Asia crisis, and weather conditions have also affected its performance. Over 1993-96 cashmere exports doubled from US\$33.5 million to US\$71.2 million, as cashmere's share in exports increased from 9.2 to 16.8 percent. Cashmere exports weakened in 1997 and 1998, recovered briefly in 1999-2000, and faltered again in 2002 to US\$45.2 million, below their 1996 levels. Cashmere's share in exports fell from 16.8 to 8.6 percent over 1996-2002.
5. The industry suffers from five principal shortcomings: supply distortions; decreasing cashmere quality, demand imperfections, inadequate marketing and distribution systems, and poor public and private institutional capacity to guide industrial policy development. The lack of an efficient public sector to provide public goods, inadequate strategic business development policies, and unregulated and outdated production patterns have stifled competition and prevented the industry from reaching its potential. Mongolia's cashmere industry has moved only marginally up the value-added chain beyond primary production, leaving it especially vulnerable to changes in market demand.
6. Over 1991-96 Mongolia's firm focus on restoring macroeconomic stabilization and implementing structural reforms provided a strong impetus for growth in the cashmere industry. The devaluation of the togrog in 1992-1993 increased Mongolia's competitiveness, as evidenced by the establishment and deepening of new trading relationships with Asia, Europe, and North America. Exports to non-CMEA countries increased from 10 percent of exports to over 70 percent. The favorable world economic environment in the early 1990s raised demand for luxury commodities such as cashmere—prices soared by over 186 percent in real terms—further facilitating Mongolia's entry into the world market.
7. The average annual income from cashmere of a member of household with livestock doubled from US\$16 to US\$32 over 1991-96. Massive state privatization of collective farms and livestock changed and improved production patterns. Removal of price controls and improvements in the business environment attracted foreign direct investment into processing and increased upstream employment. This combination of demand and supply factors increased cashmere's share in the economy and raised both herder and processor incomes.

8. While policies at the macro level were important in meeting the government's objectives of fostering growth, employment, and poverty reduction, complementary policies to support internal market development were overlooked. Insufficient attention was paid to the institutional framework required to build an internally competitive economy.

9. By 1997 the industry began to stall and demand turned sharply downward with the East Asian financial crisis. Three consecutive harsh winters over 1999-2002 further depressed growth. These factors exacerbated inefficiencies in cashmere production and distribution systems, market distortions, and inadequate public policy choices.

10. The downturn in cashmere production led to an increase in the number of poor households. While annual cashmere supply nearly doubled from 1,500 to 2700 tons over 1993-2002 and the goat population increased from 6.1 million to 9.1 million, the failure to address policy issues adequately has undermined the industry's long-term sustainability. The harsh weather in 1999-2002 decreased the goat population by over 1.9 million (17.2 percent) and led to a 16.1 percent decrease in production. Some 69.1 percent of household with livestock were poor in 2002, up from 58.5 percent in 1999; this does not include herders those who dropped out of herding and have become extremely poor.

Constraints

11. The number of goats has increased disproportionately to production costs threatening environmental sustainability. The supply of cashmere is influenced by a set of critical inputs markets that remain unregulated—land and water—and markets, such as those for fodder and insurance, whose emergence has been slowed by inadequate public sector actions. Increasing herd sizes and the unregulated use of critical inputs such as land have led to overgrazing, near saturation of land-use capacity, and soil erosion that threatens the overall sustainability of the industry and the environment. Lack of regulation of water well use and poor public sector maintenance have decreased productivity and left herders searching long distances for water facilities. The combination of these market inefficiencies and an absence of risk mitigation strategies have accentuated the impact of the harsh weather experienced over the last three years.

12. Mongolia's current legal and administrative mechanisms for regulating grazing land are poorly understood by central and local governments that also frequently lack the capacity to implement the laws. The 1995 Land Law gave local governments broad authority to regulate grazing. With clarification of their legal mandates and capacity-building interventions, local governments, perhaps in partnership with local herding associations, would be capable of regulating pasture use.

13. In many parts of the country, pastureland utilization is closely linked to the availability of water wells. However, much of this important infrastructure is non-operational, due largely to lack of maintenance. Pastures that were supported by the water system are underutilized and herders who relied on these lands have moved to areas with easily accessible water. Watering facilities continue to be a free good in most areas. Consequently, herders do not invest in upgrading or maintenance of these facilities. The scarcity of water wells and the increased pressure put on existing wells, coupled with scarce local government resources for maintenance has led to the increasing demand by local governments to impose user fees on the use of rehabilitated wells. Overgrazing of pastureland is sometimes made possible by the presence of wells. There is sufficient evidence to suggest that building new wells and even rehabilitating some old ones has contributed to rangeland destruction by providing large number of animals' access into areas that were previously reserved as winter pastures.

14. Setting aside the impact of the export tax on raw cashmere on herder incomes, herders pay fewer taxes than anyone else in Mongolia. A livestock head tax was put in place in 2002 because herders do not pay income tax generally, as they do not declare any income, but it has proven very difficult to collect this tax. As a result herders bear a much smaller tax burden than most Mongolians who live in cities. Furthermore, herders benefit from special tax exemptions for having children, an exemption not extended to other Mongolians. In other countries fees for water and grazing rights, or of land ownership and property taxes, far exceed what Mongolian herders are charged for the free and unregulated use of resources.

15. Mongolian cashmere fiber has been steadily thickening. This drift to coarser fiber diameters has meant that a larger percentage of Mongolian cashmere cannot be used for high-priced garment manufacture. This is the single most important factor impeding the development of the industry. Quality cashmere commands a 30 to 40 percent price premium in international markets, and the coarsening of Mongolian cashmere cost herders about US\$16 million in 2001—a 20 percent drop in income for the average household with livestock. Historically Mongolian herds have produced some of the best cashmere, but the quality mix of Mongolian cashmere has fallen over the last decade as herders focused on quantity rather than quality. Mongolia's ability to penetrate the luxury knitted and woven goods industry will depend completely on its ability to produce a consistently high quality product.

16. Government protective policies have stifled growth in cashmere processing. Government policies since 1994 aimed at building a domestic cashmere processing industry by first banning, and then taxing exports of raw cashmere after 1997 distorted demand and encouraged smuggling. The flat tax of Tg4,000/kg has had a negative impact on herder households and exports particularly in depressed years when it can reach 35 percent the value of cashmere. The tax has not increased value added activity; in 1997 when the tax was introduced exports of garments was 18 percent, it has averaged about 17 between 1998 and 2002. Overall the tax has depressed cashmere exports, as increases in garment industry exports could not offset decrease in raw material exports.

17. In addition the export tax is unenforceable and costly to the government. The administrative costs of applying the tax to those who choose to declare raw cashmere for legal export are high and revenue from the tax in 2001 were less than 0.01 percent of government revenue. The tax is an attempt to help processors, located largely in Ulaanbaatar, acquire raw cashmere at a price below the world market price. In effect, it transfers income from herders—the poorest and most vulnerable members of Mongolian society—to processing firms. On average over 1996-2001, the export tax accounted for a net resource transfer from herders to processors and traders of up to US\$72 million.

18. The government's continued involvement through ownership of processing infrastructure has also been detrimental to the industry. Government ownership of key processing infrastructure may underlie its need to introduce policies biased in favor of processors. National cashmere policies are largely the product of an evolving political economy that has tended to skew policies in favor of processors and paid little attention to the creation of an enabling environment focused on Mongolia's comparative advantage.

19. Mongolian processing firms are losing their competitiveness. Overall yield rates have not improved, labor costs are high, and unreliable energy supply, lack of technical skills, non-tax administrative barriers, and high transshipment costs levied by the Chinese continue to undermine their competitiveness.

20. Eighty percent of all raw cashmere is traded at the farm gate and the lack of enforceable contractual arrangements continues to impede the development of attempts by agents within the industry to integrate vertically. The breakdown of the mandatory production-procurement system as the command economy collapsed has led to an unorganized market in which sellers lack the information needed to win fair prices or make basic decisions on long- and short-term herd sizes, or production and distribution techniques. There is only one major cashmere market in Mongolia—the *Tsaiz* market in the capital, Ulaanbaatar—and it is 600 to 1,000 km from most regional production centers. Thus, most herders are obliged to sell their cashmere either to traders at the farm gate or at informal provincial marketplaces at discounts of 10 to 45 percent from capital city prices, leaving traders with large margins over the herders. Poor rural herders—over 67.5 percent of household with livestock—are most harmed under these arrangements.

21. Most methods of cashmere marketing in Mongolia today are costly and time consuming. The absence of adequate legal and institutional market-supporting and enhancing arrangements, particularly the lack of transparent and enforceable contracting rules, has made cooperation and the development of strategic alliances between market agents difficult. The benefits of economies of scale cannot be exploited under existing structures. Mongolian processing companies that have tried to enter into direct marketing or vertical relationships with herders have been unsuccessful. There are no enforcement mechanisms, and the mobility of herders and the small size of herds make it difficult to police such arrangements.

22. The livestock sector continues to be perceived as a safety net tool and public policy has mirrored this perception. The ability of the state to provide and support the market institutions required to support an efficient and competitive cashmere industry has been compromised. Public institutions have not addressed issues of market imperfections or failures adequately and overall public policy has not encouraged the creation and development of the private sector institutions needed to ensure survival of the industry. In addition, existing safety net policies do not fully protect agents in the sector.

23. Market failures and imperfections have impeded the development of a fully competitive Mongolian cashmere industry and led to substantial production inefficiencies. While cashmere served as an important buffer and safety net at the beginning of the transition period, these failures have substantially diminished its role in the transition from a command to a market economy. They have contributed to increased poverty, increased vulnerability, inequitable distribution of income, inefficient use of public resources, destruction of the environment, and have depressed the overall growth performance of the economy.

Prospects

24. Despite all these shortcomings there are many reasons to be optimistic about the cashmere industry's future. Mongolia has strong comparative advantages in cashmere production. Cashmere demand is bound to increase with improved world economic conditions. Mongolia has almost 10 million cashmere goats, about 25 percent of the world stock. Its climate and terrain are extremely well suited for goat production, and its herders have a long tradition and reputation for high quality cashmere production. At the same time its major competitor, China, has started to impose limits on the growth of its goatherds.

25. The best way of improving the livelihoods of the herders in Mongolia and reducing poverty will be by increasing the price margin obtained by herders compared to international prices. Current market distortions capture most of the profits and herders remain at a disadvantage in the sector. The challenge is to transform cashmere into a highly productive and efficient industry capable of competing in the world economy. This will depend on the public sector creating an incentive system that encourages private agents to maximize production and develop distribution systems that minimize market distortions and facilitate efficient trade arrangements. This will require substantial effort to encourage information sharing, coordination, and collaboration among agents involved in the industry. The success of this strategy will also depend on the efficiency with which the herders, processors, and government act to improve overall industry conditions, attract foreign investment, and share the benefits and risks of increased collaboration, improved coordination among economic agents, and beneficial horizontal and vertical integration.

26. This paper examines the structure, conduct, and organization of Mongolia's cashmere industry and discusses the strategic supply chain linkages needed to improve its production, marketing, and competitiveness. The paper will look at how agents along the cashmere industry supply chain can generate collective efficiencies and gain competitive advantages by deepening collaboration. It will also examine how public policy affects industry and firm decisions on cashmere production and marketing systems, and the incomes of herders and rural communities. It suggests a set of actions and policies for the private and public sectors—including the donor community—to facilitate cashmere's transition to a truly competitive industry. The paper will highlight existing initiatives to improve market coordination and generate cost savings, and propose areas for expansion.

27. The difficulties of organizing effective marketing systems in an economy in the midst of transition cannot be underestimated. Mongolia, and most other transition economies, is managing a broad change process that requires increased coordination among public and private institutions, clear statements of strategic direction, and, most importantly, tangible and measurable results.

28. This paper points to measurable benefits from improving the policy and market environment for cashmere. It examines the entire chain from raw cashmere production to exports of cashmere products—all the links involved in managing the production and flow of products, services, and information from the herder through to the end consumer of cashmere. The main focus will be to identify key areas where

collaborative change can be instrumental in improving industry revenue, reducing costs, and efficiently allocating resources.

Recommendations

29. Mongolia has the potential to increase its high quality cashmere supply sustainably over the next decade. Supply improvement opportunities should constitute a fundamental growth and poverty-reducing component of the government's development strategy. Developing a strategy that addresses the institutional and market design complexities generating inefficiencies in the supply process remains the primary challenge to the industry. These include improving the laws governing ownership and use of critical producer inputs such as land and water.

30. Mongolia's current legal and administrative mechanisms for controlling grazing land are weak and unlikely to be able to resolve existing problems. The best solution would be to have secure land rights for herders. However in a predominantly nomadic environment land privatization is a very challenging concept. Alternatives to this include the design and adoption of market-driven land user fees and land taxes. One approach to overstocking that could be quickly implemented would be to revise the head tax on livestock, or replace it with an ad-valorem tax based on revised Sheep Forage Unit (SFU) conversion ratios or other unbiased methodology. Such a tax could contribute to the optimization of herd sizes and composition as market trends and demand for livestock commodities evolve. Improving land utilization laws or revising the head tax would oblige herders to pool resources and employ more efficient grazing techniques.

31. While the supply of wells and bores has traditionally been a public sector function, there is increasing evidence that public-private partnerships in this area are emerging and need to be encouraged. Bores and water wells are constitutionally the responsibility of local government administrators. However, experience with private contributions for maintenance and use of wells under the Gobi Initiative indicates that herders are willing to pay if exclusive use is guaranteed. Other regions would benefit from this experience and support from the government and donor agencies in setting up such public-private initiatives. A national system of this kind would create incentives for improved grazing and livestock management methods.

32. User fees for watering facilities would provide revenue to local governments and improve facilities for herders and could be used to deepen emerging public-private partnerships in well rehabilitation, and technical training for maintenance. The increasing demand for wells and a willingness to pay for these services will lead to the creation of new jobs for engineers, contractors, and other related services. Until a full survey of all water points has been carried out and a fee system introduced, opening new bores may allow herders to increase livestock to unsustainable levels again. This should be guarded against.

33. Livestock herding is not without risks. Poor weather conditions are the biggest risk facing the cashmere industry. The current organizational structure and conduct of the industry exposes both the government and a large proportion of the population to production risks that could be reduced. For example, supplementary feeding can reduce the risk of deaths. Imposing fees on land use could also lead to the development of a sustainable fodder market. The competitive provision of fodder by the private sector would lead to the development of new markets and alternative employment opportunities. Increased collaboration, information sharing, and coordination among herders would improve and encourage better risk management practices and lead to quicker and faster herd replenishment after incidents such as the last three harsh winters.

34. The nomadic lifestyle of Mongolian herders, the difficulties associated with gathering adequate information on herd management techniques, and the lack of sufficient skills and information to determine appropriate premiums for insurance programs have made developing insurance systems in Mongolia very difficult. However recent pilots aimed at providing index-based livestock insurance provide a good start to the introduction of market-based techniques for addressing risks. The livestock insurance program is a public-private initiative supported by the World Bank that consists of developing a risk index, on the basis of

which private insurance companies would offer insurance to livestock owners to cover risks arising from drought or other weather-related events.

Quality recommendations

35. Herd improvement programs are vital to improve quality. While a promising start has been made this needs to be extended to more regional centers. This will require considerably more funds and a much larger program than is currently envisaged. There needs to be a supply of quality bucks available for herders to purchase.

36. There is plenty of genetic material in Mongolia for the industry to use as a selection base, probably without bringing in bucks from abroad. Mongolia already has a good genetic doe supply. About 47 percent of the Mongolian goatherd is made up of female breeding goats, of which 20 to 25 percent are high quality. This is considered by most experts as satisfactory for improving the overall herd quality without resorting to imports.

37. The development of herder-managed breeding programs is crucial for the survival of such an initiative. There needs to be a supply of quality bucks available for herders to purchase. This could be a private initiative, or undertaken jointly by the private sector and university research centers with donor support.

38. Cashmere quality is a complex amalgam of environment and animal genetics. The way to improve the quality of Mongolian cashmere is through herd selection, superior genetics, and rewarding quality improvement. This will require increased collaboration between public and private sector to fund herd improvement programs and create incentives that reward quality improvement investments by herders. Improvements in the legal and regulatory framework could encourage the establishment of innovative joint venture agreements and R & D partnerships. Provision of services such as testing and grading services should be encouraged. Grading will allow for product differentiation and will allow herders and processors to determine the optimal mix of quality and price for production and sale.

39. Any herd improvement program needs to be accompanied with a culling program; while most small herders need to be trained on proper culling techniques, large farmers already practice culling. One reason for the deterioration of cashmere quality is the increase in the average age of cashmere goats. If processors start to differentiate thicker fibers produced by older goats and the finer softer fiber needed for luxury cashmere the market will automatically segment it. Other policies are being discussed in Mongolia to improve cashmere fiber, including taxing goats older than three to four years. However these interventionist policies will be very difficult to police and may generate perverse market conditions.

Demand and competitiveness

40. The demand for luxury goods such as cashmere remains high and industries in the luxury goods apparel sector continue to be very profitable. Mongolia's proximity to China's rapidly growing cashmere-processing industry gives it a ready market for its product with limited transportation costs. China's entry into the WTO could increase demand for Mongolian cashmere. As China gains greater access to new markets for finished products there will be an increasing demand for cashmere inputs. Mongolia is well placed to take advantage of this surge in demand, if trade policy distortions are reduced. Government intervention to address problems of market failure through trade policy decisions and international trade organizations such as WTO, and overall rural and regional development policies will be critical to accelerating growth in the industry.

41. The export ban and tax affected the quality of cashmere supplied, as processors discouraged product differentiation by offering the same low prices for all grades of cashmere. While in the short run this practice was profitable, it led to a drop in quality and affected producer margins.

42. Improving the access of Mongolian traders and processors to the world market is a major challenge for the cashmere industry. The domestic processing industry has been growing in recent years. However access to supply remains a problem, and has been impeded by frequent government interventions in pricing decisions. Improvements in the legal and regulatory environment that encourage the establishment of strategic alliances between domestic processors and herders, or foreign markets and the Mongolian industry, would improve profitability and give these processors some certainty on supplies of raw material. Removing the export tax and privatizing publicly owned processing industries would substantially improve industry performance and diminish public sector intervention in demand and processing decisions.

43. To improve competitiveness in cashmere manufacturing four core issues need to be considered by the government and other stakeholders to initiate restructuring. These include improvements in quality, technology, skills and market access. Improved access to market information is needed by the whole cashmere industry (not just herders) on fabric trends, technologies, seasonal styles and colors, and above all on the companies that contract for cashmere goods production and their requirements. The industry needs a better understanding of quality control processes and systems to improve dehairing and the use of spinning equipment to improve yarn quality. There is also little capacity for finishing garments, and processors must outsource garment finishing to other countries, where they lose control over quality.

Vertical integration and supply chain linkages

44. Luxury goods customers expect—and are willing to pay for—consistent high quality. The success of all luxury good industries depends on their ability to consistently produce high quality goods. The cashmere industry in Mongolia must make this its prime objective if it is to grow. Consequently, it is important for all actors along the production chain to ensure that quality is preserved. Improving the quality of the national herd would substantially increase the quality of Mongolian cashmere. Extensive quality improvement programs are expensive and time consuming. They also require a united cooperative approach. Public and donor support is needed to assist in program development. In addition, the development of private quality testing and grading services should be encouraged to increase information on quality available to processors.

45. A prerequisite for improved business integration is improved knowledge of business processes and needs at each stage of the production process by all agents in the industry. Participants at pilot marketing day events and auctions agreed that the benefit of these events was enhanced communication between herders and processors. Participants were more interested in knowledge transfer and transparency in business dealings than sales. Participating herders and producers believe that over time these relationships will improve market responsiveness and allow for longer planning horizons with less perceived risk. Intangible benefits were also evident, particularly among producer groups. These included an increased understanding of downstream processes, greater involvement and control over marketing related activities, and an enhanced sense of teamwork.

46. While vertical integration may solve the problems of larger herders and processors, direct and indirect marketing of cashmere is bound to continue. Improvements in storage and transportation facilities will be particularly important for herders and traders. Availability of storage facilities during the trading season can help match production flows with consumption patterns over time and provide sellers and buyers with the opportunity to hedge. It can also reduce transportation costs. While the need for storage has been minimal under past distribution and marketing patterns, the development of horizontal herder cooperatives and marketing locations would lead to increasing demand for storage facilities.

47. In addition, there is a need to develop a functional supply service that gives herders access to warehousing, weighing, and grading facilities, leasing services, and organized transportation facilities. Improvements in the legal and regulatory framework will be critical for developing such business services.

48. Despite these difficulties, evidence of emerging strategic alliances between herders provides a starting point. The legal and regulatory environment in Mongolia needs to be further developed for vertical or horizontal arrangements to work effectively. There are no vertically integrated cashmere firms in

Mongolia, and it is not clear whether Mongolian foreign investment rules would permit this type of investment. Mongolia also needs to clarify legislation pertaining to foreign ownership of herds.

49. Developing strategic alliances between agents in the cashmere industry will be challenging. The nomadic nature of livestock herding makes it difficult for herders to enter into formal marketing or equipment-sharing agreements. Such formal relationships require a lot of trust and strong social cohesion. Credible enforcement mechanisms to ensure that contractual obligations are honored also need to be in place, and there needs to be a system that rewards cooperation and organization to create incentives for herders to either enter into horizontal or vertical agreements.

50. Agricultural marketing contracts could cover the sale of products, buying or financing contracts could provide herder cooperatives with capital investment for producing cashmere. The most critical aspect of most contract negotiations will be the price of the final commodity. The best method is to have prices written into contracts that will be adhered to by both parties regardless of fluctuations in market prices. This transfers the risks of trading from herders to producers. Another method is for prices to be set within a fixed range based on market prices. Spot sales and forward contracts give herders an assured market for their products, and advance knowledge of prices permits herders to better plan production cycles, although they have less opportunity for windfall profits.

51. Under the current system the only way of establishing contractual links between market agents is probably through the banking system, which through its local branch network could retain better information on borrowers. Bank loans normally involve a continuing relationship between the borrower and its bank, thus banks have strong incentive to monitor the borrower to make sure that the borrower is behaving reasonably. Importantly, banks are allowed to foreclose on property of borrower/guarantor if loan payments are delinquent. Banks could, therefore, play the role of the middleman in the rural areas by extending credit to cashmere traders and herders. However, Mongolia needs to substantially improve its legal and judicial systems to strengthen the enforcement of contracts and to provide a safe environment for the operations of financial intermediaries.

Public policies, institutions, and safety nets

52. There are over 25 public and private agencies in Mongolia regulating and facilitating the cashmere trade. Building the stock of human resources, and consolidating and augmenting the administrative and analytical capacity of these institutions could lead to improved collaboration and increased capacity for policy analysis. Strengthening trade policy analysis units and building capacity in institutions that provide business development services will be essential ingredients in encouraging successful supply chain linkages across the cashmere industry.

53. The government and donor institutions have recognized that trade policies in the cashmere industry have an important poverty reducing and stabilization component. To exploit the growth potential of the cashmere industry the government will need to develop more consistent and market-oriented strategies that create opportunities for efficient market development. While there are some public, private, and donor initiatives to improve industry performance, these initiatives remain uncoordinated. Strategic links among public policies, donor programs, and private initiatives are needed. Reviewing and revising the government cashmere program to address these issues—and clarifying the government's objectives—will be vital in developing a comprehensive strategy. Some progress is being made in the 2003 budget to improve government policies and strategies.

54. To benefit from positive external market conditions, Mongolia will need to improve domestic efficiency of the processing sector and remove tax and non-tax distortions that affect trade. The policy implications for Mongolia involve ensuring that there are no artificial impediments to trade with China, production costs are not negatively affected by policy, and state intervention in the processing sector does not distort competition. In addition the government will need to ensure a favorable environment for foreign direct investment in cashmere, including downstream investment in the production of raw cashmere.

55. Government should provide the public goods—infrastructure, herder education, animal health services, extension, and research and development—that government's everywhere recognize as requiring state investment. But government has no business being in the cashmere business itself: owning, subsidizing, or protecting firms that process cashmere or produce finished products can only mean wasting resources to underpin wasteful inefficiency.

56. The development of regional market centers and improvements in infrastructure could significantly increase the incomes of rural herders. This could also increase strategic collaboration between small household with livestock, and scale efficiencies in the distribution system. Horizontal herder integration through private cooperatives could reduce the costs of transportation, and vertical integration between herders and processors could lead to a sharing of transport costs between agents, improve income security for herders, and reduce supply uncertainty for processors.

57. At both the herder and the processor levels, the government must allow a shakeout in which inefficient producers—a group likely to include many small peri-urban herders—exits the industry. Attempting to maintain small, cash-poor, subsistence herders in their present activity is not a sensible goal. A more rational solution is to target some households, and assist them in finding other income generating opportunities. Despite the difficulty of finding jobs, there are many demands that go un-serviced in the rural economy. A long-term solution for raising rural incomes is to promote a reliable non-farm sector capable of supporting a professional herding sector. A more efficient and profitable cashmere industry will, over even the medium term, spur economic growth that will create new jobs in such areas as fodder production and development of supporting infrastructure. But in the short term, livestock will continue to be an important social safety net for households in transition from full-time herding to other occupations.

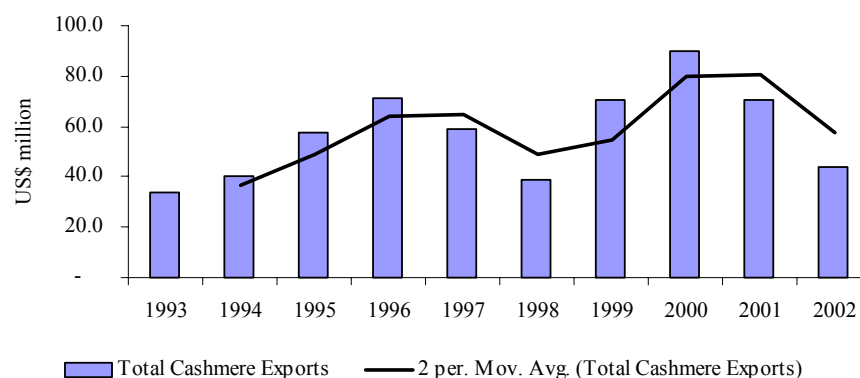
58. The potential welfare and developmental consequences of improvements in cashmere production and marketing are substantial and could provide important externalities for other livestock areas, including increases in employment, stronger safety nets, lower urban migration, equitable rural development, expanding exports, and higher income levels. Trade facilitation improvements could substantially improve the livelihoods of over half of the population.

CHAPTER 1. BOOM, BUST AND FUTURE PROSPECTS

1.1 Over the last decade the cashmere industry has experienced a series of booms and busts that have affected overall GDP growth and herder incomes. Over 1993-96 the value of cashmere exports doubled from US\$33.5 million to US\$71.2 million as cashmere's share in exports rose from 9.2 to 16.8 percent. Cashmere exports weakened over 1997-98, recovered over 1999-2000, and have since faltered, falling to US\$45.2 million—8.6 percent of exports—in 2002.

1.2 Mongolia is the world's second largest producer of cashmere, with about 25 percent of total cashmere output. The world's largest producer is China, which accounts for over 60 percent of raw cashmere. In 2001 cashmere production was down in virtually all cashmere producing countries. In Mongolia and China, production was down as a result of the severe 2000-01 winter, while political difficulties in South Asian (Pakistan, Iran, Afghanistan) countries reduced production for some smaller suppliers.

Figure 1-1: Boom and Bust in the Mongolia's Cashmere Industry, 1993-2002
(Cashmere exports)



Source: NSO, 2003 and staff estimates.

1.3 Mongolia's cashmere industry is attempting to recover from three consecutive devastating winters, droughts, and a recent fall in world prices. There have been longer-term declines in market infrastructure, the quality of Mongolian cashmere, and the policy environment that make the industry more susceptible to decreases in international demand. An understanding of the evolution of the Mongolian economy over the last decade provides a useful starting point for discussing prospects of the cashmere industry and policy options facing the government.

THE TRANSITION FROM COMMAND TO MARKET

1.4 During its membership in the Soviet bloc until 1990, Mongolia's international trade was concentrated in areas in which it had comparative advantages in production. During the 1980s total trade (exports plus imports) made up 60 to 90 percent of GDP,¹ and was almost totally confined to the USSR and the other Soviet bloc countries. In 1985, 87 percent of recorded Mongolian imports were from the USSR, 12 percent from other Soviet bloc countries, and only 1 percent from the rest of the world, with 0.4 percent from China and none from the United States. Of its recorded exports, 76 percent went to the Soviet Union, 20

¹ World Bank, 1997, Statistical Annex tables.

percent to other Soviet bloc countries, and only 4 percent to the rest of the world, including 0.4 percent to China. While most of this was barter trade with notional import and export prices, and import prices for capital equipment were often inflated, imports consistently exceeded exports by very large margins.

1.5 Over 1981-90, the trade deficit averaged 30 percent of GDP and was financed by grants and transfers from the Soviet Union. As in the rest of the Soviet world, international trade was part of general planning systems that focused on physical availability and quantities. Under this system, Mongolian exports were almost entirely based on its mineral and livestock resources, including copper, fluorspar, timber, meat, wool and cashmere, and a number of derived processed products. Imports covered almost all the country's requirements for machinery and equipment, fuel, transport vehicles, inputs for infrastructure, manufacturing and service industries, and consumer goods.

1.6 Domestic industries either processed Mongolian raw materials for export or were established to cater to a limited range of local demands, but with little attention to costs in other Soviet bloc countries, and none at all to the foreclosed possibilities of importing from, or exporting to, countries outside the bloc. The cashmere industry was one of the few that traded directly with Western companies.

1.7 The collapse of the CMEA² and the decline and abrupt cessation in 1990 of the large transfers from the Soviet Union that had sustained Mongolia's current account deficits for many years accentuated the difficulties, also faced in many other transition economies, of moving from centrally planned and government-dominated systems to open decentralized market economies.

1.8 For Mongolia's international trade, these difficulties included the collapse of many if not all of its trading relationships with Russia, the FSU countries, and Eastern Europe. There was a sudden recognition of the inherent inability of the dominant state enterprise system to operate efficiently and productively in an open competitive environment. Between 1989 and 1993 the economy imploded, with real GDP declining by over 20 percent. There were declines of about one third in industrial production and the service sectors, and exports fell 50 percent and imports about 80 percent.

1.9 The only sectors to show some modest expansion were agriculture and herding, as people in rural towns left low-productivity occupations and turned to herding for subsistence and cash. Around 1993-94, the economy finally began to stabilize at much lower levels of production, real incomes, and trade. Much of this turnaround was fueled by the livestock sector. Until 1994, Mongolia's GDP shrank at an average annual rate of more than 5 percent. It has since grown at an average annual rate of 3.5 percent between 1994 and 2001, while living standards as measured by GDP per capita, remained 15 percent below 1990 levels.

Figure 1-2: Annual Growth of GDP and Agricultural Sector, 1990-2001

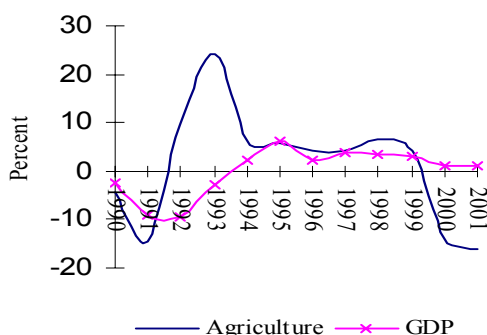
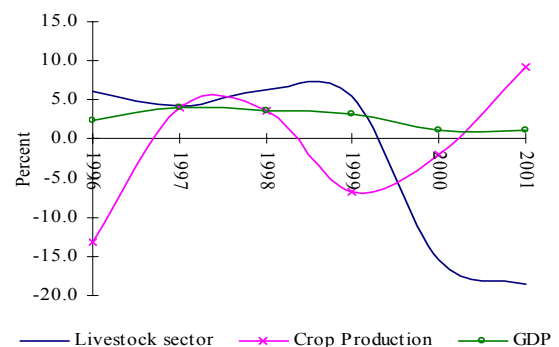


Figure 1-3: Real Growth of GDP, Livestock and Crop Production, 1996-2001



Source: Mongolian authorities, IMF and staff estimates.

² Mongolia was a member of the CMEA from 1962 until its collapse in 1991. Its membership in this Soviet bloc trading system provided markets for its exports, sources for its imports, technology, financing for bilateral turnkey projects, and Soviet grant and low-interest financing for its trade deficit.

1.10 The economic recovery in 1994 was driven by increasing exports of copper to new markets, such as Switzerland and the United States. Over 1993-95 the world price of copper increased by over 35 percent. Mongolia's copper dependency remains high, although since the latter half of 1990 there have been significant changes in the composition of its main export commodities. In 1993, the total volume of exports was US\$365.8 million, of which copper concentrate accounted for 42.4 percent. By 2000 copper represented only 29.9 percent of exports. In 2002 this declined further to 26.8 percent or equivalent to US\$140 million.

Figure 1-4: Exports of five main commodities in 1993-2002

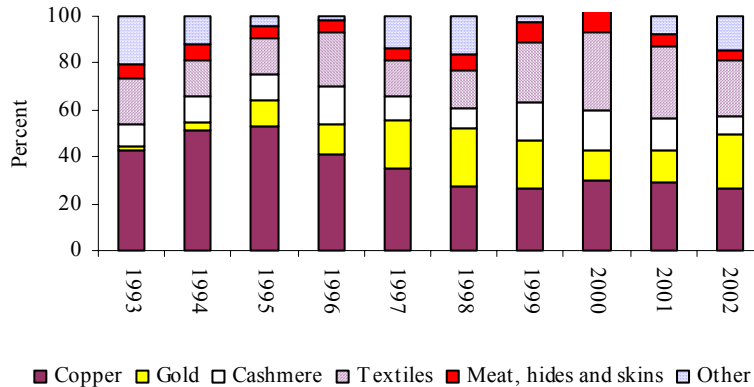


Figure 1-5: Direction of Trade in 1992-2002 in percent of Export

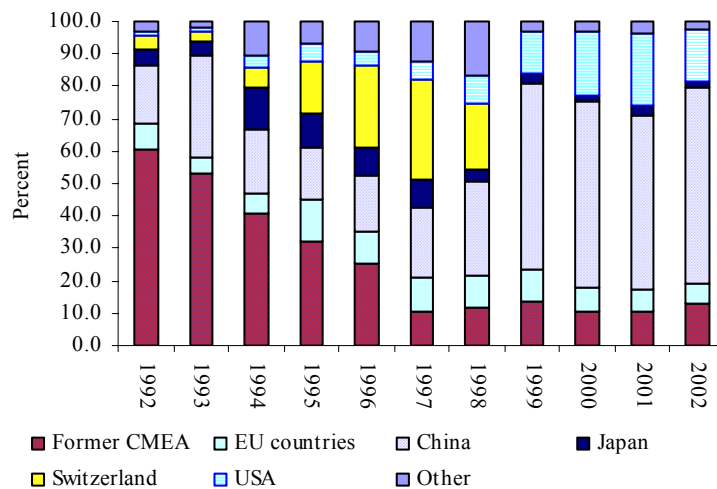
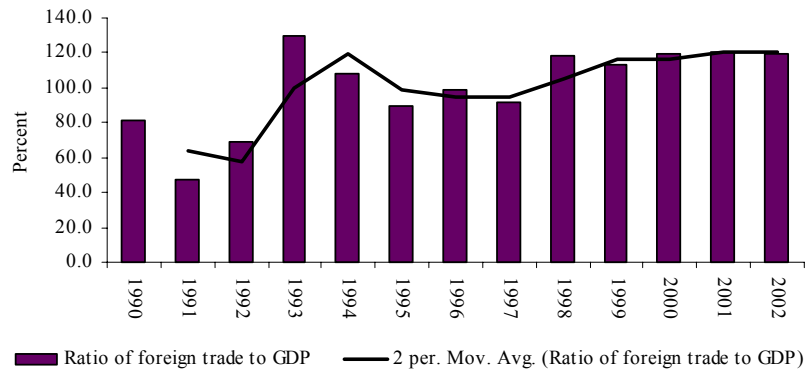


Figure 1-6: Openness of Mongolian Economy, 1990-2002



Source: NSO, 2003 and staff estimates.

THE 1991-96 CASHMERE BOOM

Successful macro structural policies and favorable external conditions

1.11 The boom in Mongolia's cashmere industry over 1991-96 stemmed from a number of factors. The government's commitment to macro stability and the accompanying structural policies undertaken in the early years of the transition served as the main vehicle for agricultural growth during the early years of the transition. Macro-structural policy initiatives that complemented macro policies provided productivity improvements that generated renewed growth in the economy.

Table 1-1: Cashmere's Role in Mongolia's Economy

Indicator	Unit	1998	1999	2000	2001	2002
Agriculture as a share of GDP	Percent	39.9	40.3	34.2	28.4	27.7
Livestock sector as a share of GDP	Percent	36.1	36.8	30.8	24.8	24.1
Agricultural labor as a share of total labor	Percent	49.7	49.5	48.6	48.3	44.9
Goat herd as a share of total livestock	Percent	33.6	32.9	34.0	36.8	38.2
Cashmere production as a share of GDP	Percent	3.8	5.8	12.1	8.0	6.6
Cashmere products exports ^a	Tons	1 870	3 467	2 556	2 347	1 664
Cashmere exports ^b	US\$ million	38.7	70.3	90.1	70.7	45.2
Value of raw cashmere produced in domestic prices-Gobi	US\$ million	35.9	52.5	111.7	78.0	68.3
Cashmere exports as a share of total exports	Percent	8.4	15.5	16.8	13.5	8.6
Cashmere exports as a share of agricultural exports ^c	Percent	41.6	53.7	53.8	39.1	30.3
Agricultural exports as a share of total exports ^d	Percent	17.3	24.7	26.5	24.5	24.5
Total production of cashmere - actual	Tons	3,019.4	3,195.4	3,003.1	2,811.4	2,680.2
Total cashmere production/capita	Kg	1.25	1.35	1.25	1.15	1.08
Cashmere export revenue/capita	US\$	16.1	29.6	37.4	29.0	17.7
Share of cashmere export revenue/capita in GDP/capita	Percent	4.0	7.7	9.4	6.9	3.9
Total cashmere production/household with livestock	Kg	11.0	11.8	11.2	11.0	11.0
Revenue from raw cashmere/household with livestock	US\$	130	195	416	303	281
Share of revenue from raw cashmere/households with livestock in GDP/capita	Percent	32.4	50.7	104.2	71.8	61.9
Livestock/capita	Head	13.6	14.1	12.6	10.7	9.7
Livestock/household with livestock	Head	119.6	124.4	112.5	101.6	98.2
Goats/household with livestock	Head	40.2	40.9	38.2	37.4	37.6
Goats/capita	Head	4.5	4.6	4.2	3.9	3.7
Note:						
Population	000's	2413.1	2373.7	2407.4	2442.5	2475.4
GDP per capita	US\$	405.7	383.9	398.7	421.9	453.5
Households with livestock	000's	275	270	269	257	243

a. Semi-processed and finished cashmere products converted to raw cashmere.

b. Official exports, value of the smuggled cashmere is not included.

c. Total cashmere export and agricultural export, excluding finished cashmere products (tops and garments).

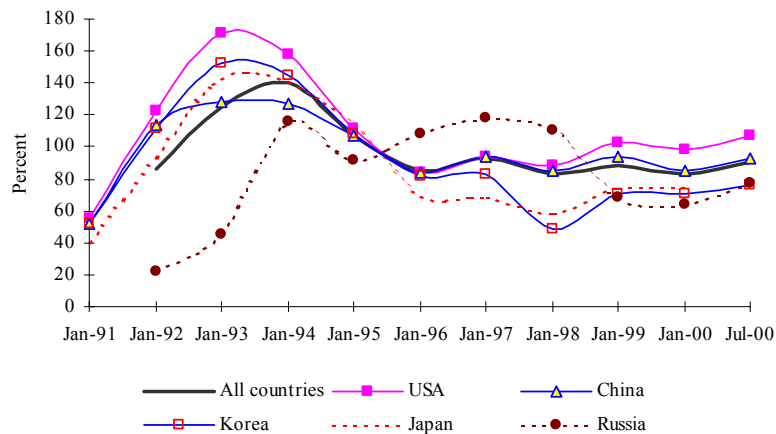
Source: NSO, 2003, IMF and staff estimates.

1.12 Mongolia's 1993 liberalization of tolgro exchange rate to meet other macroeconomic challenges increased its competitiveness, while the collapse of the CMEA and trade with new partners created new markets for Mongolian cashmere. The privatization of livestock to herders and entry of employees from privatized state-owned enterprises into the industry sharply increased production. Cashmere supply soared from 1,400 to 2,500 tons over 1991-96. Combined with the adoption of a liberal trade regime, the devaluation provided Mongolia with the competitive edge required to gain market share in non-FSU countries, particularly the United States and Europe. A floating exchange rate was established in 1993 and the foreign exchange rate retention system was abolished in the same year.

The massive devaluation of the togrog in the early 1990s served Mongolia well

1.13 Mongolia overshot the real devaluation needed to manage developments in the current account in the early years of the transition. Consequently between 1991 and 1994, the devalued real exchange rate rationed imports and gave a very strong stimulus to exports. As exports picked up and aid flows increased, the real exchange rate steadily strengthened until it reached a steady state equilibrium range in 1996.

Figure 1-7: Togrog REER Index, 1991-2000 Six-month moving average
(Increases represent depreciation)



Source: IMF, 2000

1.14 Although on average Real Effective Exchange Rate (REER) have been stable since 1997, aspects of bilateral real exchange rates with individual countries are worth noting. The real togrog/dollar exchange rate steadily increased (i.e., the togrog was devalued), by about a quarter over June 1996-December 1997. This made Mongolian firms more competitive with US firms, and increased the real togrog value of Mongolia's dollar-denominated copper concentrate, gold and cashmere exports. At the same time it increased the real togrog cost of Mongolia's petroleum and petroleum product imports. With Japan, a similar trend is evident in the real togrog/yen exchange rate, but with devaluation starting later, about end-1998.

1.15 Inflation declined to 183 percent in 1993 from 321 percent in 1992 mainly as a consequence of financial policies. In addition, price controls and mandatory state orders (through which public enterprises such as the Gobi cashmere company had been able to engage in monopolistic pricing policies) were removed. The initial liberalization measures aimed at encouraging private production, particularly for internationally traded goods such as cashmere. The reforms were largely successful, and private production picked up between 1991 and 1996. The 1991 Foreign Investment law was revised and strengthened in 1993 to improve conditions for foreign investment.

De-monopolization and privatization of the government herds increased supply

1.16 The privatization program was launched in 1991, and over 194 state farms and 325 agricultural cooperatives were privatized by 1994. Agricultural assets and most of the country's livestock were offered to herdsman through a voucher privatization program. This, together with the low cost of entry, resulted in an expansion of herds and an increase in the number of households reliant on raw cashmere production. Goat numbers increased from 5.2 million in 1991 to over 9.1 in 1996. Cashmere exports surged with favorable international prices from \$US 33.5 in 1993 to US\$71.2 in 1996.

1.17 New markets substantially cushioned the massive drop in trade between Mongolia and its former CMEA partners. Mongolia's entry into new markets was facilitated by the fact that its main exports prior to 1990 were primary commodities and minerals that were relatively simple to market and for which demand was high.

Table 1-2: Cashmere export trends

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cashmere exports -US\$ million	33.5	40.0	57.2	71.2	59.0	38.7	70.3	90.1	70.7	45.2
Total exports - US\$ million	365.8	367.0	485.6	423.4	568.5	462.3	454.2	535.8	523.2	524.0
Share of cashmere in total exports (%)	9.2	10.9	11.8	16.8	10.4	8.4	15.5	16.8	13.5	8.6
Growth of cashmere exports (%)	-	19.4	43.2	24.3	(17.0)	(34.4)	81.5	28.1	(21.4)	(36.0)
Growth of total exports (%)	2.8	0.3	32.3	(12.8)	34.3	(18.7)	(1.8)	18.0	(2.4)	0.2

Source: NSO, 2003 and staff estimates.

THE DOWNTURN IN THE CASHMERE INDUSTRY, 1997-2002

1.18 The downturn in cashmere sector began in 1997. A number of internal and external factors are associated with the fall in productivity and income generated by cashmere. These include the East Asian crisis, which led to a drop in world demand, and poor weather conditions. These external shocks compounded the existing problems in the cashmere industry such as the breakdown in production, procurement, marketing and distribution systems, and poor public sector policies.

1.19 The East Asian crisis resulted in an appreciation of over 10 percent of the togrog REER with its main trading partners between 1997 and 1998. This decreased the competitiveness of Mongolian exports, particularly cashmere. The crisis also led to a drop in demand for cashmere from major trading partners such as Japan and Italy. Harsh winters – *Dzud*³ – from 1999 through 2002 also had a major effect on Mongolian cashmere production. The number of goats has been on the decline since 1999 and the growth in production of cashmere has declined since. Goat herd declined by 17.2 percent from 11 million in 1999 to 9.1 million in 2002. Overall livestock numbers (including cattle, horses, etc.) fell 28.8 percent over 1999-2002.

1.20 The harsh winter conditions cut animal offspring survival rates and production. The typical offspring survival rate is between 85 percent and 95 percent in good years. In 2000 the survival rate dropped to about 80 percent and in 2001 and only began to recover in 2002 but has yet to reach 1998 levels. The offspring survival rate determines the supply of cashmere in future periods. Table 1.3 provides details of offspring survival rates for 1998-2002.

Table 1-3: Survival of goat offspring following *Dzud*

	1998	1999	2000	2001	2002
Number of Offspring '000	3768.8	3906.2	3327.9	3392.5	2707.9
Offspring Survivals	3277.9	3374.4	2668.9	2527.4	2339.6
Percentage of Survivals	87%	86.4%	80.2%	74.5%	86.4%

Source: NSO, 2003 and staff estimates.

³ *Dzud*- A generic term denoting late autumn winter or early spring weather conditions which prevent livestock from obtaining sufficient forage from open grazing. *Dzuds* are manifested in different ways, such as deep snow or a layer of ice covering pastures. Source: Participatory Living Standards Assessment 2001. NSO-World Bank.

HOUSEHOLD INCOMES AND CASHMERE PRODUCTION

1.21 During the economic transition, in the absence of alternative livelihood opportunities, many people turned to livestock production to support their families. There are two categories of households who own livestock. The first category is the herder households (professional herders) whose main income comes from herding activities. The second category, households with livestock, includes all households engaged in some livestock rearing or sum of herder households (professional herders) and semi-nomadic peri-urban households with small herds. The number of herder households⁴ more than doubled from 75,000 households in 1990 (17 percent of the total households in Mongolia) to 176 households in 2002 (31 percent of the total households in Mongolia), while the number of households with livestock declined from 289.7 thousand in 1993 (57 percent of the total households) to 243.3 thousand in 2002 (43 percent of the total households).

Differences between newer and older herders in terms of their livelihood orientation, levels of wealth, and skill and experience in herding have had profound implications for livestock rearing and overall income distribution. In general, newcomers to herding were less skilled and experienced in livestock production, tended to move less frequently and to remain closer to settlements, roads, and other points of market access.

1.22 Total livestock numbers also increased significantly, from an estimated 25 million head in 1990 to 30 million head by the end of 2000. The most significant increase took place from 1993 to 1999, when livestock numbers reached over 33 million head before falling to 23.9 million in 2002. The average size of goat herd per household with livestock increased between 1990 and 2002 from about 20 goats per family to about 38.

Figure 1-8: Household categories

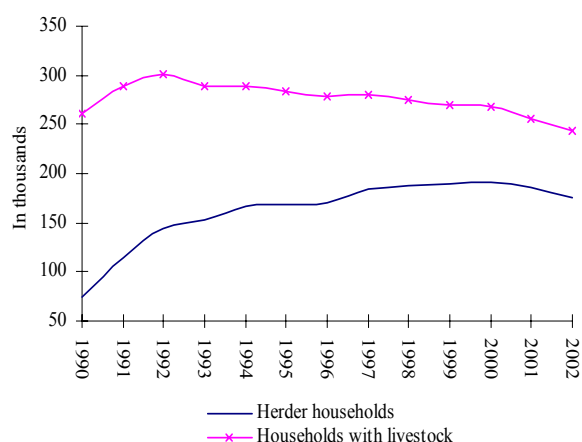


Table 1-4: Livestock by main types, 1989-2001

In millions of head															Average of 1990-1996	Average of 1997-2002
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002			
Goats	5.1	5.2	5.6	6.1	7.2	8.5	9.1	10.3	11.1	11.0	10.3	9.6	9.1	6.7	10.2	
Camel	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	
Horse	2.3	2.3	2.2	2.2	2.4	2.6	2.8	2.9	3.1	3.2	2.7	2.2	2.0	2.4	2.7	
Cattle	2.8	2.8	2.8	2.7	3.0	3.3	3.5	3.6	3.7	3.8	3.1	2.1	1.9	3.0	3.0	
Sheep	15.1	14.7	14.7	13.8	13.8	13.7	13.6	14.2	14.7	15.2	13.9	11.9	10.6	14.2	13.4	
Total	25.9	25.5	25.7	25.2	26.8	28.6	29.3	31.3	32.9	33.6	30.2	26.1	23.9	26.7	29.7	
Percent in total															Average of 1990-1996	Average of 1997-2002
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002			
Goats	20	21	22	24	27	30	31	33	34	33	34	37	38	25	35	
Camel	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	
Horse	9	9	9	9	9	9	9	9	9	9	9	8	8	9	9	
Cattle	11	11	11	11	11	12	12	12	11	11	10	8	8	11	10	
Sheep	58	58	57	55	51	48	46	45	45	45	46	46	45	53	45	
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	

Source: NSO, 2003 and staff estimates.

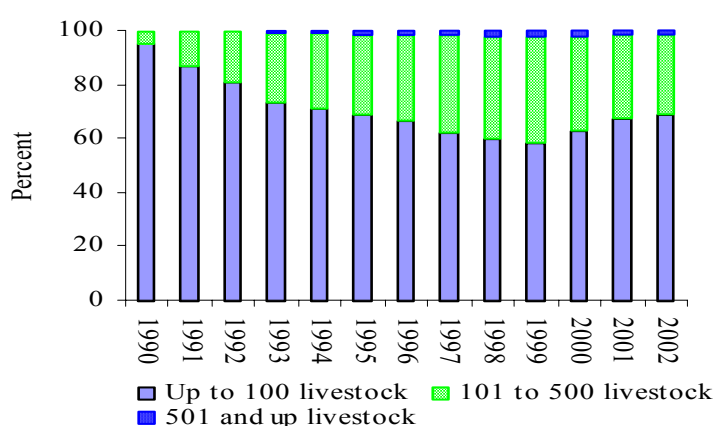
⁴ Households with livestock are the sum of herder households (professional herders) and semi-nomadic peri-urban households with small herds, less than 100.

There are three groups of cashmere goat herders in Mongolia

1.23 Until 1990 ownership of private livestock was restricted to 50 to 75 head; all other livestock was publicly owned. In 1991, the privatisation of livestock fully transferred all ownership to households. The privatisation under a voucher system⁵ was largely equitable and provided important assets for starting private herds.

1.24 The voucher distribution system though equitable was not economically optimal as it created incentives for production but herd sizes were sup-optimal. Overtime there was an increasing concentration to yield an economically sustainable herd size, but this process was interrupted in 1999 by external shocks, as the number of households with more than 100 herds began to decrease again. (Figure 1.9). Moreover, about 27 thousand households, 10 percent of the total households with livestock in 1999, were driven out of the sector by 2002.

Figure 1-9: Share of household groups in total by number of livestock owned



Source: NSO, 2003 and staff estimates.

Table 1-5: Share of households groups in cashmere production and average income

Animals/Household (all animals including goats)	Share of households in %		Share of household groups in cashmere production in %		Average income in US\$ per herder household	
	2001	2002	2001	2002	2001	2002
Up to 100 heads of livestock	67.5	69.1	28.1	30.7	126	125
101 to 500 heads of livestock	30.9	29.3	62.5	60.1	612	575
501 and up heads of livestock	1.6	1.6	9.4	9.2	1,770	1,647
Households with livestock	100	100	100	100	303	281

Source: NSO, 2003 and staff estimates.

1.25 Herd size is the major distinguishing factor between Mongolia's three groups of households with livestock. The bulk of households with livestock (168,000, or 70 percent, in 2002) own 100 or fewer head of livestock per household, of which on average 16 are goats, and are poor. The second group (71,000, or 29 percent), considered middle class by Mongolian income standards, own 100 to 500 livestock per household, of which on average 76 are goats. The third, 3,800 wealthy herder families (2 percent), had more than 500 livestock per household of which about 217 were goats. The average gross income from cashmere sales per households with livestock in each of three groups was US\$125, US\$575 and US\$1647, accordingly in 2002.

1.26 The very large impoverished first group consists of herding families that were in poverty following the transition and moved into cashmere production because of the lack of alternative income opportunities.

⁵ Every Mongolian citizen received vouchers worth Tg 10,000 for the purchase of state assets, particularly livestock and small businesses. Only members of state-owned cooperatives, about 40 percent of the population, could use vouchers to purchase livestock.

Most were rural non-farm agricultural workers, industrial, or peri-urban workers unemployed after the collapse of the CMEA and the closing of unsustainable industries after 1993. This group generally did not benefit from the voucher schemes, as their start-up capital from vouchers vanished with the closing of state-owned industrial enterprises. This group saw cashmere production one of the few available ways to earn income. Their small herds are grazed on nearby common areas. These households are generally "inexperienced, having been forced from urban areas into herding following the breakdown of the socialist system."⁶ They produced over 30 percent of Mongolian cashmere in 2002. The small herders do not employ traditional grazing techniques of moving every two to three months in search of better pasture, and their intensive and stationary herd management is a major source of land degradation. The 2001 Participatory Living Standards Assessment (PLSA), table 1.6, indicate that within this group of peri-urban herders cashmere production accounts for about 10 percent of income for the poor.

Table 1-6: Sources of livelihood by well-being category: *soum* center /1

	Livelihood sources (% of total)												
	Pension & allowance	Cashmere	Wool	Hides and skin	Dairy	Meat (reserve)	Livestock sales	Agriculture	Trade	Tourism	Microenterprise	Salary	Total
Wealthy	14	1				4	3			39		39	100
With means	15	5	1		4	3	1	18	17		15	21	100
Poor	50	10	1			5		1			21	12	100

Memo: 1/ Based on a sample of 28 households, not including the very poor. Numbers indicate percentage of household livelihood needs met from a particular source

Source: Mongolia - Participatory Living Standards Assessment. National Statistical Office of Mongolia, the World Bank, 2001

1.27 The second group make up the bulk of cashmere producers. They produced over 60 percent of Mongolian cashmere. Most of these herders live in the rural areas, previously worked in state-owned cooperatives, have more herding experience and used vouchers to purchase livestock. They depend almost entirely on livestock herding for income. These herders are not poor, but are vulnerable to bad weather and changes in demand conditions.

1.28 The wealthy herders produce over 9 percent of Mongolian cashmere. These households are considered rich and are generally not at risk. Both the second and third category of herders are nomadic and can afford the cost of moving to three or more different camps per year, have access to winter shelters by tradition or kinship, and have longer experience in selecting and occupying rangeland in distant areas. The bulks of cashmere producers have small herds, and find it difficult to establish stable trading relations with processors. Collaborative arrangements between these herders could substantially improve their incomes. For all these groups' improvements in cashmere marketing and distribution, improved access to market information and the availability of risk-sharing arrangements would provide important income-smoothing advantages.

Table 1-7: Sources of livelihood by well-being category: rural communities /1

	Livelihood sources (% of total)												
	Pension & allowance	Cashmere	Wool	Hides and skin	Dairy	Meat (reserve)	Livestock sales	Agriculture	Trade	Tourism	Microenterprise	Salary	Total
Wealthy	8	56	11	5	4	4	3	10					100
With means	11	47	4	3	2	11	3	11		1	1	6	100
Poor	49	20	2	2	1	3	3	5			1	14	100

Memo: 1/ Based on a sample of 28 households, not including the very poor. Numbers indicate percentage of household livelihood needs met from a particular source

Source: Mongolia - Participatory Living Standards Assessment. National Statistical Office of Mongolia, the World Bank, 2001

1.29 Cashmere provides over 56 percent of the income of wealthy rural households and over 47 percent for households with means. Generally these two categories of rural households depend on livestock for over

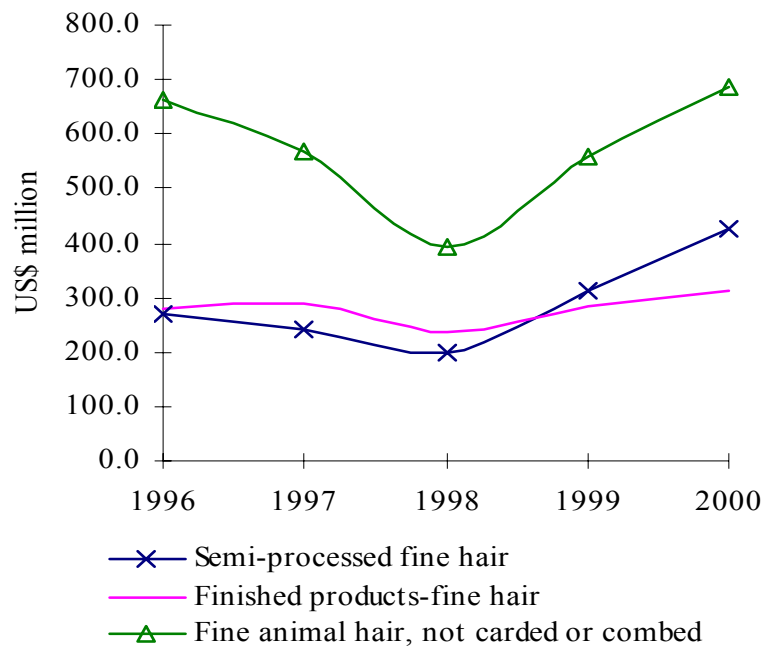
⁶ Participatory Living Standard Assessment, 2001

90 percent of their income. Poor rural households depend on cashmere for about 20 percent of their income and about 40 percent of their income depends on livestock herding in general. (Table 1.7)

FUTURE PROSPECTS

1.30 The cashmere sector in Mongolia contributes directly to growth and the livelihood of a third of the population. Renewed growth in the cashmere industry will, through increased demand, offer alternative employment for the poor. In addition, new jobs in the non-farm sector will emerge across the economy as the growing cashmere industry develops a services sector around it.

Figure 1-10: Trends in demand for luxury fine fibers, 1996-2000



Source: World Bank Trade Data Base, 2003

1.31 Mongolia has the potential to supply economically and environmentally optimal levels of cashmere if institutional incentives and market enforcing institutions are put in place. World demand for cashmere appears to be relatively income elastic. Mongolia could increase herder incomes by increasing supply of superior quality cashmere. Supply improvement opportunities could be substantially enhanced if the independent production nodes and agents involved in cashmere production were to work collaboratively to exploit the advantages of improved coordination and ensure incentives for efficient production. In many markets businesses seeking a competitive edge are participating in cooperative supply chain arrangements and forming strategic alliances to benefit from scale economies and specialization. Mongolia's many small herders could benefit from increased collaboration, and information and risk sharing.

1.32 Increased collaboration among herders, increased sharing of critical information such as weather forecasts, and accessibility to cost-effective veterinary services—through collaborative procurement methods for example—could reduce the impact of the both external and internal factors affecting the supply of cashmere and improve the quality of marketing services. Substantial growth in the cashmere industry and its export earnings can be a key to stimulating demand and reducing poverty in Mongolia. No other export activity-has the potential to provide cash income to the poorest families.

CHAPTER 2. DYNAMICS OF CASHMERE SUPPLY

2.1 While there have been year-to-year fluctuations in Mongolia's cashmere supply, the long-term production trend has been unambiguously upward, with annual production over the last decade increasing threefold. Cashmere could remain a main source of income for the poor and a principal source of foreign exchange if policies and practices that improve supply conditions and generate demand for cashmere are put in place to raise the industry's competitiveness.

2.2 To provide continuous and sustainable supply improvement opportunities the organizational structure governing the provision of, and access to, key input factors for cashmere production needs to be reassessed and effective market-driven relations established between the agents in the supply chain. In Mongolia the development of an effective and efficient supply chain has been handicapped primarily by the lack of regulation of the use of critical inputs in the production process and lack of an organized set of market agents. The land, fodder and water—input markets remain substantially underdeveloped or missing. Free access to basic inputs has distorted supply trends as most herders do not pay/ are generally not taxed for production.

CASHMERE SUPPLY, 1990-2000: TRANSITION TO A MARKET-ORIENTED SYSTEM

2.3 Prior to the transition, supply was set to meet predetermined targets for cashmere and other livestock produced by collectives for domestic and external markets. The transfer of herd ownership in Mongolia from state to private hands has been a politically complex process that has broadly succeeded. The most important elements of this transition have been the privatization of livestock herds, the individualization of herding practices, and the absence of comprehensive government land reform policies.

2.4 The supply of cashmere is primarily determined by the size of the goat population. Over 1993-1998, the boom years, the number of goats rose from 6.1 million to over 11.1 million (82 percent). The share of goats as a percent of the total livestock population increased from 24 percent to 34 percent over the same period. However, goat numbers dropped by 17 percent over 1999-2002 due to poor weather conditions.

Figure 2-1: Increased preference for goats
Share of total livestock by main types

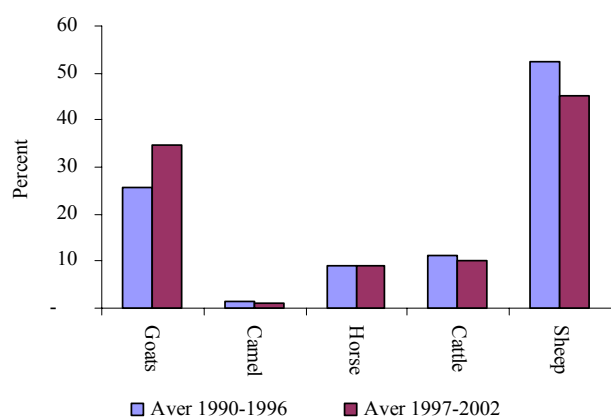
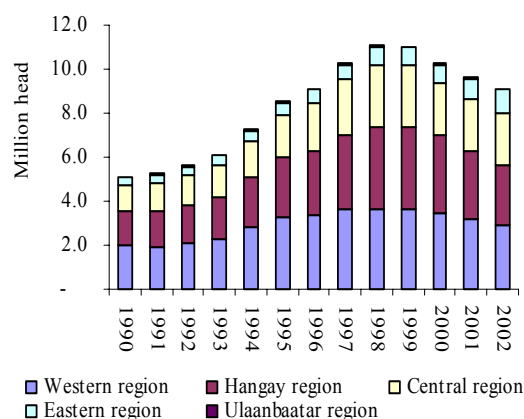


Figure 2-2: Number of Goats by Region, 1990-2002
The Western and Hangay Region experienced the highest growth in goat herds



Source: NSO, 2003 and staff estimates.

ACCESS TO RAW MATERIAL, INFRASTRUCTURE AND ENVIRONMENT

2.5 Many factors affect the supply/production of raw cashmere in Mongolia, including the supply of cashmere goats, costs of production, availability of infrastructure, market composition and, in particular, the weather. The main policy issues affecting the supply of cashmere include improvements in overall infrastructure, improved grazing habits, including pasture management, and improved risk management techniques.

The privatization of livestock was not accompanied by regulation of input markets

2.6 While collective farms were privatized and private ownership of livestock allowed during the transition, no regulations were put in place to govern the use of inputs needed to ensure that the livestock sector was organized and structured following market economy principles. The primary input in the production of cashmere is grazing and pastureland. In Mongolia this continues to be a public good, and private ownership is prohibited under the Constitution and the 2002 Land Laws.⁷ The traditional approach has been for private herds to use public lands, with herders having traditional rights to certain areas at certain times of the year.

Fodder supply

2.7 Many Mongolian experts on livestock production, as well as many herders, consider that gathering and storing wild hay is an essential activity in preparing for the winter season, particularly in the Khangai and similar regions in central and northern Mongolia. However, the availability of hay varies regionally and, according to herders in some areas, has declined over time with increasing degradation of pastures. In other areas, such as the Gobi, there has never been sufficient high-quality forage to enable hay making, with the exception of some desert marshlands. In these areas herders sometimes make a home-made concentrate feed to supplement winter grazing.

2.8 Similarly, the rights to hay-cutting areas are variable, and even when informal rights of individuals or groups are recognized, they may not be respected or enforced. Herders in some areas have resorted to hiring guards to prevent others from grazing or cutting hay in their customary areas. It is not clear whether hay-cutting was a common practice prior to the collective era. Defining and enforcing rights to customary hay-cutting areas is a recommended intervention.

2.9 It is not clear whether a hay market would be viable, since it costs a good deal to transport and many herders do not have the resources to pay for it. Perhaps localized markets could be developed. Alternatively, other types of concentrated feed with higher energy and/or protein values might be appropriate supplements to the typical winter diet on wild pasture. Herders might only need to purchase a small amount of such feeds to improve animal condition or help survive brief periods when wild grass forage is rendered inaccessible by *dzud*. The feasibility of developing products and markets for concentrated feed/feed supplements might be investigated. In either case, the implications of free or below-cost distribution of feed should be carefully examined. The implications of market-value transactions should also be considered, however, if there is the potential for purchased feed to encourage herders to overstock natural pastures. In the Mongolian context, the most appropriate use of such feeds is as true supplements that enable a herd to survive a temporary deficit in forage quality or quantity. "Maintenance feeding" of purchased forage would not be cost effective and would likely lead to unsustainable stocking levels during the remainder of the year.

2.10 While herd sizes were on the rise over 1993-98, Mongolia's fodder industry effectively collapsed as the highly subsidized state-supported industry shut down and herders refused to pay or were unable to pay market prices to the private fodder suppliers who replaced it. Instead, herders collected hay from public lands, free of charge. This free access to inputs led to the collapse of the emerging fodder market. Over time

⁷ 2002 Law on Land Usage and Law on Land Ownership prescribe privatization of 1 percent of total landmass for housing and small farming purposes to households.

available land for wild hay has substantially reduced due to land erosion droughts, steppe fires, steppe mice and locusts. In much of the central, south and western areas of Mongolia, lands are no longer productive enough to harvest sufficient hay. In 1990, 117,800 hectares of fodder land was cultivated; by 2000 this had dropped to less than 800 hectares. In addition in recent years with the poor weather and increased donor and public sector subsidization of fodder it has become economically impossible to supply fodder on a commercial basis.

Table 2-1: Fodder Production Systems and Evolution of Fodder Supply, 1990-2002

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Sawn Areas Under Fodder Crops (000 hectares)	118	80	53	26	11	6	4	5	5	2	1	2	3
Harvest of Fodder Crops (000 tons)	527	213	138	112	29	19	19	14	15	5	4	3	4
Hay Harvest (000 tons)	866	886	669	698	672	744	655	668	667	715	689	831	767

Source: NSO, 2003

2.11 The policy implications of the 2000-02 poor seasons need to be handled carefully. The problems of the severe droughts and harsh winters were exacerbated by the failure of herders to prepare adequately for bad weather. Attempts by aid agencies to intervene by providing short-term stopgap measures may send the wrong signals to herders and discourage investment in disaster prevention, fodder, pasture management, and risk mitigation instruments. Some examples of poorly targeted interventions include the supply of fodder at below market prices to herders, particularly during winters. This practice, if not arrested, will continue to undermine efforts to build a sustainable private sector fodder industry. Improvements in the structure, conduct and organization of the cashmere industry should provide alternative sources of income to small herders or allow for non-distortionary safety net policies to be enacted that do not endanger the development and sustainability of a viable fodder market.

2.12 The legal arrangements for land use and fodder production in Mongolia remain unspecified. It would certainly be helpful to have such rights clarified and secured, if not formalized. As noted earlier, pasture is not subject to private ownership, and such a system would be counterproductive in most areas of Mongolia since the sustainability of management practices depends on flexibility, mobility and reciprocal relations among adjoining households, communities and administrative units. Individual private property rights in pasture would make such strategies nearly impossible to implement. In some regions, hay-cutting areas are de facto individual or common property. There is a long history in Mongolia, going back to the pre-revolutionary era, of local and regional government setting aside areas as reserve pastures, and regulating pastoral land-use patterns⁸. In some instances local Governments appear to have authority to designate areas for fodder production and forcibly keep herders away from it, for the duration of the growth period, for example in Khuvsgul *aimag* (province) in 2001. While this may provide temporary solutions, in the long run the public sector should not be responsible for controlling production or supply of inputs but could regulate land usage.

INFRASTRUCTURE CONCERNS

The supporting infrastructure for cashmere is deteriorating

2.13 In many parts of the country, pastureland utilization is closely linked to the availability of water. There are three main types of water points: deep bores that penetrate to artesian water below 35 meters, “camel” bores 5 to 35 meters, and shallow hand-dug wells. In the 1970s the government invested heavily in wells, bores, and motorized pumps to open up previously underutilized grazing land—mostly in areas of better pasture—by providing reliable water supply. This increased carrying capacity significantly. However, much of this important infrastructure is now non-operational, due largely to lack of maintenance. Pastures that were supported by the water system are underutilized and herders who relied on these lands have moved to areas with easily accessible water.

⁸Fernandez-Gimenez 1999 “Sustaining the Steppes: A Geographical History of Pastoral Land Use in Mongolia,” *The Geographical Review*

Table 2-2: Livestock watering facilities, 1990-2000

In 000's of units			
	1990	1995	2000
Total	41.6	34.6	30.9
with engineering construction	24.6	14.6	8.2
simple mine well	17	20	22.7
Located in pasture	38.3	26.3	21.7
Unused	1.1	6.2	5.8
Tank for livestock	4.1	1.9	1.0
Capacity 000 (Cub. Meter)	39.4	27.7	14.9

Source: NSO, 2001

2.14 Over 1990-2000 there was a 67 percent decline in the number of operative engineering bores (motorized water wells), offset by a 33 percent increase in simple wells, which are limited in their capacity and effectiveness. Over 1990-97 government maintenance of wells was effectively zero. In 1998 the government undertook a limited rehabilitation program. In 1998 and 1999, 500 bores and wells were rehabilitated at a cost of about US\$2,000 each, and, the government has received assistance from Japan to rehabilitate wells in the Gobi area. The Gobi Initiative, a USAID funded project, also includes a limited program for rehabilitating watering facilities, and the World Bank Sustainable Livelihoods project is doing some work in this area.

Rehabilitating wells and engineering bores is crucial to increased productivity and could generate rural employment

2.15 Water facility rehabilitation must be made a priority for sustainable cashmere production and if pasture utilization is to be improved. Watering facilities continue to be a free good in most areas. Consequently, herders do not invest in upgrading or maintenance of these facilities. The scarcity of water wells and the increased pressure put on existing wells, coupled with scarce local government resources for maintenance has led to the increasing demand by *aimags* and *soums* governments to impose user fees on the use of local rehabilitated wells. In some areas some commercial practices have been instituted for use of water facilities such as leasing exist but the use of most public water sources remains unregulated. User rights vary with different types of water sources. Natural lakes, rivers and springs are de jure open access resources although small springs may be de facto common property of small groups. Similarly, hand dug wells may "belong" to the family that excavated them, or, if in existence for a long time, may be the common property of a "neighborhood group." Motorized wells are usually allocated by contract to a well user, who pays a fee and in turn allows access to other individuals for a share of the maintenance costs.

2.16 Well and engineering bore rehabilitations have revealed another missing market. Local machinery and equipment repair facilities that existed in some urban centers prior to the transition have disappeared and there is a need to regenerate them. In the short run, public and donor support will be needed to strengthen the capacity of local engineers. This will require vocational schools that specialize in training engineers and contractors. Well rehabilitation programs could have achieved much more if equipment, materials, and skills were present in country. This activity can be expected to be ongoing, as rehabilitation of wells will imply increased maintenance and repair as the stock of bores and wells increases. This will reduce costs and increase productivity and create new jobs for the rural population.

2.17 Overgrazing of pastureland is sometimes made possible by the presence of wells. There is sufficient evidence to suggest that building new wells and even rehabilitating some old ones has contributed to rangeland destruction by making possible the access of large numbers of animals into areas that were normally reserved as winter pastures. Winter pastures do not need wells, because animals can obtain water from snow. However many of these winter pastures are denuded and no longer provide winter forage because they can be grazed in summer due to the presence of wells. Since animals could get water in winter pastures, they were grazed in summer, then all animals in the area starved all winter and dug up the roots of the grass in both summer and winter pastures. This aggravates animal deaths in winter and accentuates the consequences of *dzud* related disasters. Many of these wells should never have been built, and possibly some of them should not be rehabilitated without very careful study of the pasture carrying capacity and seasonal

usage patterns. This call for revision in planning on the rehabilitation of wells because the natural accessibility of water seasonally somewhat forces herders to rationalize grazing patterns, and the areas without wells are often serve as an emergency fodder reserve areas.

2.18 While the supply of wells and bores has traditionally been a public sector function, there is increasing evidence that public-private partnerships in this area are emerging and need to be encouraged. Bores and water wells are constitutionally the responsibility of local government administrators. However, experience with private contributions for the maintenance and use of wells under the Gobi Initiative indicates that herders are willing to pay if exclusive use is guaranteed. Other regions would benefit from this experience and support from the government and donor agencies in setting up such public-private initiatives. A national system of this kind would create incentives for improved grazing and livestock management methods.

2.19 User fees for watering facilities would provide revenue to local governments and improve facilities for herders and could be used to deepen emerging public-private partnerships in well rehabilitation, and technical training for maintenance. The increasing demand for wells and a willingness to pay for these services will lead to the creation of new jobs for engineers, contractors and other related services. Until a full survey of all water points has been carried out and a fee system introduced, opening new bores may allow herders to increase livestock to unsustainable levels again. This should be guarded against.

ENVIRONMENTAL IMPACT AND PROPERTY RIGHT

2.20 Distorted or unbalanced growth –signaled by especially rapid accumulation of physical capital, slow accumulation of human capital and the depletion of environmental resources - increases the volatility of growth disproportionately hurting the poor⁹. The unregulated use of a public good for private gain is an indication of the inefficiency of the livestock sector and evidence of the unfinished transition agenda in Mongolia, which is hindering sustained growth. Overgrazing problems have been evident for many years in some areas and increasing livestock numbers in areas close to cities is exacerbating the problem and increasing costs to both the poor (health costs to the poor) and the state. Overgrazing leads to increases in respiratory diseases from dust and lowers productivity, as herders have to travel greater distances to tend their stock.

2.21 The absence of ownership and the relatively free and unlimited access to pastureland at the beginning of transition facilitated the increase in herd size and cashmere supply. Goats are the easiest livestock to tend, as they can survive on minimal and tough vegetation, but are the least resistant in cold climates. However, this vegetation is also very important to the maintenance of soil structure and the rapid increase in goat numbers has led to a substantial deterioration of the soil and threatens the nomadic lifestyle of Mongolians.

2.22 There is growing tension between environmental protection and income generation through cashmere herding. Increasing herd sizes over time appears to have stretched the economic carrying capacity (basically maximum sustained yield—the number of animals that can be sustained over the long term without damaging the productive potential of the land) of Mongolia's pasture land. In spite of being a geographically large country with vast pasturelands, the carrying capacity of the Mongolian steppe is limited. There is some evidence that the current size of the national herd is near the limit, having possibly exceeded those limits between 1997 and 2000 if 62.5 Sheep forage units are used as the cut off point.

Box 2-1: Goat Habit

The different species grazed in Mongolia are complementary in that each has a different food preference and style of eating, allowing a mixed herd to gain the maximum benefit from any area of grassland. Of the livestock species, goats are the most nimble and can feed in places inaccessible to other animals. Goats, however, also eat the widest range of food, thus endangering limited-range rock plants. Goats with their sharp hooves also cut through the cryptobiotic crust of fungi and other lower plants that holds together the exposed soil susceptible to wind erosion. It has been suggested that the larger numbers of goats present might have aggravated the recent severe spring dust storms across the Gobi region.

Source: World Bank, Mongolia: Environment Monitor. 2002

⁹ World Bank, Quality of Growth, 2000. Washington DC

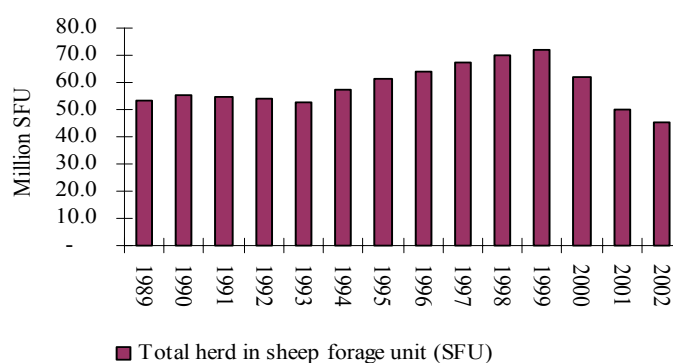
2.23 It has been estimated that approximately 45.6 million tons of plant material is produced by the 121 million hectares (ha) of grassland existing in Mongolia. Of this amount, half is required to maintain the pasture species. Therefore, there is about 22.8 million tons of potential feed for grazing animals. It is estimated that one sheep consumes 1 kg of forage per day; thus, one Sheep Forage Unit (SFU)¹⁰ requires 365 kg per year. The figures used of 1 kg forage per day for sheep is a generally accepted “rule of thumb” figure, often used by non-biologists, however there is some debate about the right conversion levels. Improvement in conversion methodology may well indicate that Mongolia’s ecological system is more threatened than previously assumed. Mongolia on average can potentially support the equivalent of 62.5 million SFU per year. Therefore, even a modest increase in the size of the herd may exceed the carrying capacity of the grasslands and, in turn, precipitate a spiral of ecological degradation that could be devastating. While there continues to be debate among the intellectual community on the exact methodology for calculating land use capacity and livestock equivalency ratios, there is however is consensus around the notion that Mongolia’s carrying capacity is nearing or has surpassed its limits¹¹.

Table 2-3: Mongolia Pasture Capacity, 1995-2001

In SFU million	1995	1996	1997	1998	1999	2000	2001
Goats	7.7	8.2	9.2	10.0	9.9	9.2	8.6
Camel	1.8	1.8	1.8	1.8	1.8	1.6	1.4
Horse	18.5	19.4	20.3	21.4	22.1	18.6	15.3
Cattle	19.9	20.9	21.7	22.4	22.9	18.6	12.4
Sheep	13.7	13.6	14.2	14.7	15.2	13.9	11.9
Total herd in SFU	61.7	63.8	67.1	70.2	72.0	61.9	49.8
Total pasture capacity (as of 1994)	62.5	62.5	62.5	62.5	62.5	62.5	62.5

Source: Ricardo F. Neupert, 1996.

Figure 2-3: Mongolia Pasture Capacity Thresholds



Source: Ricardo F. Neupert, and staff estimates.

2.24 The limits to the growth of the herd imposed by natural pastures can be expanded by a process of intensification. This process has taken place in Mongolia, although on a very limited scale. There are major constraints to a process of agricultural intensification conducive to sedentarization of animal breeding in the country. The most important one is the severe continental climate: very low winter temperatures, a short growing season and erratic and low rainfall. High levels of technological inputs have been required to

¹⁰ The size of different species of livestock are converted into a common unit, the sheep forage units (SFUs). It is based on the food requirements of the different species relative to sheep (a horse corresponds to 7 sheep, a goat to 0.9 sheep, a cow to 6 sheep, and a camel to 5 sheep. (Ricardo F. Neupert, 1996). The standard approach to estimating intake is to multiply body weight by 2% to obtain daily intake requirements (Holoček 2001). Based on the reported ewe weights, daily intake would be 0.86-1.23 kg/day when the sheep is in peak condition and 23-35% less during winter and early spring. According to the Mongolian literature, a mature ewe weighs 42.9-61.5 kg and loses 23-35% of its body weight during winter (M. Tumurjab, 1989).

¹¹ US equivalents vary. Holoček states them as: cow=1, sheep=.15, goat=.10, horse=1.8. Vallentine gives: cow=1, sheep=.2, goat=.17, horse=1.25. So obviously, there are disagreements in the literature here as well. And these numbers don't take into account if the animal is a lactating female, a bull vs. yearling steer etc.

overcome these problems, making the unit production cost very high. Taking into consideration the economic crisis that Mongolia is experiencing, further intensification in the agricultural sector currently will be feasible but very challenging. In addition, the resilience of some areas of the Mongolian steppe ecosystem seem to be particularly narrow. The mountain steppe and steppe regions are quite resilient, although the desert-steppe areas appear to be less resilient. But even relatively resilient systems can be pushed over a threshold of change from which they cannot easily recover. It would be exceedingly difficult to increase the size of the herd without endangering the stability of the ecology, and a sedentary livestock economy would probably require an extremely complicated and expensive environmental management system to prevent environmental degradation.

Box 2-2. Pastoralism and Intensification

Recognition of the limits and constraints on traditional pastoralism leads to two opposing solutions. One view, articulated in the environmental journal *Ambio* (Steen 1994), recommends abandoning pastoralism altogether and encouraging former herders to plant forage crops, cereals, and fodder to raise livestock in sedentary settings and to encourage former herders to plant forage crops, cereals, and fodder to raise livestock in sedentary settings and to integrate into an industrialized, market-based economy. An opposing view emphasizes restoring or protecting traditional pastoralism through recognition of legal rights to water and pasture resources, rights of way for herders to travel through cultivated lands during migration periods, rights to unhindered passage across international borders, recognition of pastoralist knowledge of water, pasture, and herd management, an end of propaganda to sedentarize, the right to fair prices and water, and, finally, the right to run their own local affairs (Baxter 1993, Charnley 1996, Hjort af Ornas 1990, Horowitz 1986).

Source: Elliot Fratkin, Pastoralism: Governance and Development Issues. Annual Review of Anthropology, Vol. 26 (1997), 235-261.

2.25 In long term it would be important to study the benefits of intensification in the more populated areas of the country (Tov, Bulgan, Khuvsgul, Selenge) which though controversial could facilitate reform in the industry if appropriately managed. However, several drawbacks to intensification exist and intensification remains a highly debated issue in Mongolia. Intensification in livestock production cannot be legislated, and there are many pre-requisites for a move to successful intensification. Intensification it will only come about at a pace consistent with improvements in market access/infrastructure. Those areas of the country in which it makes economic sense are currently very limited, and restricted to the central region and places close to transport corridors. Intensification of livestock production in Mongolia will come about primarily through investment in supplementary feed, and investment in capital assets including livestock shelters and water supply. Veterinary services are also important but have surprisingly little impact on productivity increases (control of parasites may strongly affect raw cashmere quality however).

2.26 None of the above approaches to intensification is inconsistent with a nomadic (i.e. mobile) livestock production system. On the contrary, livestock mobility in a highly climatically variable environment is the key to risk management and resilience in output quantity and quality.

2.27 A primary drawback of intensification is that it precludes mobility as a response to risk, and necessitates a far higher level of supplementary infrastructure including water, fodder, heating etc than would otherwise be the case. Capital investment substitutes for mobility. Such a strategy increases rather than reduces risk for those producers unable to invest on the scale required. In addition, labor is a critical constraint in Mongolian livestock production, while grazing land is an abundant resource and one of Mongolia's greatest sources of comparative advantage in extensive livestock production. It requires careful husbandry for livestock production to be sustainable, however, and again in the case of Mongolia it is often suggested that livestock mobility is critical to achieving this objective.

2.28 The Mongolian livestock economy appeared to have reached a point of non-sustainable stocking rates based on 1996 conversion units in 1996-Figure 2-3 above. The rates remained unsustainable from 1996

– 1999. With the 2000-2001 *dzud* and significant loss of livestock the stocking rates dropped to the lowest levels in the last 10 years. Renewed rapid population growth within an agricultural system based on extensive animal farming could have devastating environmental consequences which could produce even more severe droughts in the future. There is a tension between increases in supply and increase in quality, which needs to be managed effectively; the next chapter discusses this extensively. Furthermore the challenge for Mongolia will be to find an adequate balance between environmentally sustainable number of livestock and income distribution within the herding populations.

2.29 The government's efforts should be directed toward overall improvement of the legal and regulatory framework for sustainable pastureland management. To implement sustainable pasture management policies the government may need to revise the current conversion rates of different species of animals to common unit (*bod* and/or *bog*) based on new methodologies and additional scientific information available about Mongolia's ecological system methodologies.

2.30 Mongolia's current legal and administrative mechanisms for regulating grazing land are poorly understood by governments who in addition lack the capacity to implement the laws. The 1995 Land Law gave broad authority to local governments (*bag*, *soum* and *aimag*) to regulate grazing. With clarification of their legal mandates and capacity-building interventions, local government, perhaps in partnership with local herding associations, would be capable of regulating pasture use. In a predominantly nomadic environment land privatization is a very challenging concept. The best solution would be to have secure land rights for herders. It is important to realize that clarification of rights to pasture is not equivalent to privatization. There are many ways in which land use could be "rationalized" and rights to different pastoral resources more clearly defined, without resorting to privatization. Alternatives to this include the design and adoption of market-driven land user fees and or land use taxes, preferably in coordination with co-management or other locally devised regulatory approaches.

2.31 One approach to overstocking that could be quickly implemented would be to revise the head tax on livestock. Currently the tax is based on a per head tax for sheep (*bog*), and all other species (*bog* and/or *bod*) are converted to sheep equivalents-*bog*. This implies some underlying differentiation of tax. More work is needed to understand the incentives generated by this system. Currently all herding inputs are free but the cost of production including environmental externalities and value of livestock by category differs significantly. The government may wish to consider an ad-valorem tax based on market value of each livestock category using clear transparent and market derived classification systems.

Table 2-4: Some Existing Conversion Rates (Sheep per species)

	Conversion rate for tax by Government	Conversion rate-based on fodder unit by R. F. Neupert	Conversion rate-based on fodder unit by H. Ykhanbai	Estimated conversion rate based on market price of live animal
Sheep	1	1	1	1
Goat	1.5	0.9	0.9	0.7
Cattle	5	6	6	5.6
Horses	5	7	6	3.2
Camel	5	5	5	5.5

Source: NSO, GOM, 2002 and staff estimates.

2.32 The livestock tax per sheep unit equivalent ranges between Tg50 and Tg100 (5 cents and 10 cents per sheep) depending on region (see Figure 4.2). Herders are generally not liable for income tax, and their property tax is minimal, levied on the *ger*¹² and its furnishings and possibly on other consumer durables, such as motorbikes and vehicles. A herder with 1000 sheep might therefore pay from Tg50,000 to Tg 100,000 (approximately US\$50 to 100) in tax on his animals. He does not pay for land, pasture, water, all free goods which belong to the state. This is a much smaller tax burden than is born by most Mongolians who live in cities. Furthermore, herders benefit from special tax exemptions according to the number of children they have, an exemption not extended to other Mongolians.

¹² Mongolian traditional felt tent

2.33 Herders, pay fewer taxes than anyone else in Mongolia. The livestock head tax was put in place because herders do not pay income tax, generally because they do not declare any income. It has also proven very difficult to collect the head tax. In other countries, the cost of water and grazing rights, or of land ownership and property taxes, would far exceed what Mongolian herders are charged for the free and unregulated use of resources. It is also telling that the areas in Mongolia with the maximum animal head tax of Tg100 are all central and not suitable for animal husbandry: Ulaanbaatar, Darkhan, Selenge, and Orkhon. Most *aimags* with large animal numbers are using the minimum tax of Tg50 per sheep unit. A goat is equal to 1.5 sheep units. All areas that experience *dzud* have been exempted from the animal tax altogether since 2000.

2.34 Improvements in land utilization laws or the revision of a livestock specific head tax would oblige herders to rationalize stocks, pool resources, and employ more efficient grazing techniques, such continuous application of traditional rotation systems combined with improved pasture management. Imposing fees on land use would also lead to the development of a sustainable fodder market. The competitive provision of fodder by the private sector would lead to the development of new markets and alternative employment opportunities. Overgrazing and loss of pasture productivity was recognized prior to the 1990s, and attempts had been made to limit the problem by controlling the movement of herders and providing supplementary fodder. These controls relied on the authority of collective farm directors and local governments to allocate pasture (i.e. forage resources) and, ration fodder.

Box 2-3: Assessment of Land and Land Management in Mongolia

Legal Framework. Like other former socialist countries in economic transition, Mongolia is reforming the policy environment for land management. The government has passed two pieces of legislation in 2002 as part of broader sector reform¹³; the New Land Law¹⁴ and the Land Privatization Law¹⁵. A complimentary Act, the Land Fee Law (a law essentially supporting the practical application of the Privatization Law), however, was stalled in Parliament. The new legislation provides for a number of important improvements in the institutional framework:

- Definition of possession rights: the New Land Law abandons short term possession rights that were previously applied extensively to Ger areas (suburbs) and only retains long term possession rights (up to 60 years with a possible one time extension of up to 40 years). This provides a legal basis for better security of tenure in Ger areas and is therefore expected to contribute positively to upgrading of such areas.
- Allowing for transfer of possession rights: the new legal framework recognizes the right of possession holders to transfer possession of property to third parties; this should vitalize the existing informal market and enable a transition to a formal real estate market. However, the right of transfer is constrained by the need for permission from the relevant authorities. Conditions for approval are not yet well established (e.g, in regulations) or published in a transparent fashion.
- Creation of a unified land administration authority: the new legal framework consolidates at the national level dispersed and overlapping responsibilities for land registry, land cadastre maintenance and land administration under one central authority. However, no timeline or specific structure has been provided for coming into effect of this new organizational structure.
- Devolution from the municipal to the district (“*Duureg*”) level of issuance of permission rights and delegation of land management powers to the sub district (“*Khoroo*”) level: the new legal framework streamlines the application process, however the detailed functions to be performed at the *Khoroo* level and the process of land allocation are not sufficiently specified.

The new legal framework introduces measured reforms towards improving security of tenure and for formalizing transfer of possession rights, however constrained by burdensome permission requirements. There are also past legislations that need to be reviewed and refined to reflect the new legal provisions.

Institutional capacity to implement reforms. Generally, all organizations entrusted with responsibilities for land management lack proper capacity to implement the reforms, especially operationalizing the concept of possession transfer. Responsibilities of individual levels in the administration are not demarcated clearly and several overlaps exist between their mandates. This makes it difficult to target capacity building efforts and carries the risks that, given limited resources, such efforts will be spread too thin and hence remain ineffective.

Land registration, fees and immovable property tax. Several problem areas persist in land management policy and administration even under the new legal framework, including a need for a review of taxes and fees and a rationalization of property taxation, the need to review existing barriers to registration of property and for shaping a more active policy for transforming the informal real estate market.

Rural Land ownership: Under the land law pasture land will not be privatized, however certain farmlands will be privatized. The land law does not affect professional herders but affects urban and peri-urban herding households, they will earn the ability to own their land.

Source: Urban Land Management Needs Assessment: Ulaanbaatar, Mongolia: Second Ulanbaatar Services Improvement Project (UBSIP II). By Yarissa Lyngdoh Sommer, 2003

¹³ The Law on Immoveable Property was passed in 1997.

¹⁴ 2002 Land Law is a revised version of the 1995 Land Law.

¹⁵ Law on Land Privatization will come into effect in May 2003

CASHMERE SUPPLY AND LIVELIHOODS

Recent harsh weather has accentuated poor natural resource management issues

2.35 The poor 2000-2001 season meant that the stock of goats was reduced by over 1.5 million animals. The potential production of raw cashmere that was lost amounted to more than 130 tons, valued at about Tg5 billion (approximately US\$5 million) in 1999 prices. *Dzud* in 2001 reduced the goat herd by an additional million head. While 2002 has been less severe than the last two, cashmere production continues to decrease and can be expected to remain low. While birth rates can recover, there are relatively fewer breeding females.

Table 2-5: Distribution of Income from Cashmere, 1999-2002

Cashmere earnings/year	Share of households - 1999 Pre Dzud in %	Share of households - 2000 Dzud in %	Share of households - 2001 Dzud in %	Share of households – 2002 in %
US\$0- US\$100	60.1	35.8	26.7	30.0
US\$101-500	37.7	61.8	36.5	57.5
US\$501 and up	2.21	2.45	36.76	12.50
All households	100.0	100.0	100.0	100.0

Source: NSO, 2003 and staff estimates.

2.36 While the *dzud* adversely affected agricultural production throughout 2000 and 2002, its effect on goat herders was temporarily offset by the rising cost of raw cashmere. In 1999, prior to the *dzud*, the *Tsaiz* market weighted price for cashmere was Tg18,900/kg. In 2000, the first year of the *dzud*, prices had more than doubled to Tg 41,200.¹⁶ In 2001 began to drop and by 2002 had reached – Tg 22,000/kg. The share of households whose income was less than US\$100 decreased from 60 percent in 1999 to 30 percent in 2002 while the share of households with above 501 dollars increased from 2.2 percent to 12.5 percent in 2002. (See table 2.3.).

2.37 While the impact of the *dzud* was mitigated by rising cashmere prices as supply dropped, by 2002 it was increasingly clear that the *dzud* had left many families more vulnerable. In 1999, there were 270,000 households involved in livestock herding however by 2002 over 20, 000 households had exited the market.

Table 2-6: Market exit of households with livestock, 1999-2002 (In 000's)

	1999	2000	2001	2002
Households with livestock	270	269	257	243
Population of households with livestock	1,350	1,344	1,283	1,252

Source: NSO, 2003 and staff estimates.

2.38 Generally families with less than 100 herds bore the full brunt of the 2000 *Dzud*. Table 2-4. indicates that over 27, 000 households- about 10 percent of all households with livestock -lost all of their stock by 2002. With an average family size of 4-5 people this implies a significant drop in the assets of over 100,000 individuals. Overall production of cashmere remains low as the numbers of 1- and 2-year-old goats in the herd was reduced following the *dzud*.

2.39 An important factor that has affected households with livestock incomes in recent years has been a lack of adequate risk management practices. In the command economy era, risk management was a responsibility of the state. After the collapse of the command economy many herders did not realize that it was imperative for them to continue to manage risks. During the successive severe winters of 1999-2002 many herders experienced avoidable stock losses largely because of inadequate fodder reserves and knowledge about general risk minimization practices.

¹⁶ The Cashmere trading season peaks between May and August. Tg 41,200/kg one of the highest prices registered in the main cashmere -Tsaiz – market in June 2000. Average price in 2000 was about Tg 37, 000/kg

2.40 The *dzud* also highlighted the need for proper input markets for herders. Some of the poorest herders were the most adversely affected because they did not have access to supplementary fodder and their herds were located in some of the most overgrazed areas. It is important that sustainable risk management policies be put into place to avoid such mistakes in the future.

2.41 Mongolian official statistics do not cover the amount of raw cashmere produced. However there are detailed and reliable official statistics on the goat herd. These statistics include the number of goats (as at December); the number of breeding females; total offspring and offspring survivals. It is possible to use these official statistics, together with other information, to estimate an implied volume of raw cashmere that is produced.

Figure 2-4: Simulation of cashmere production with and without *Dzud* in US\$ million

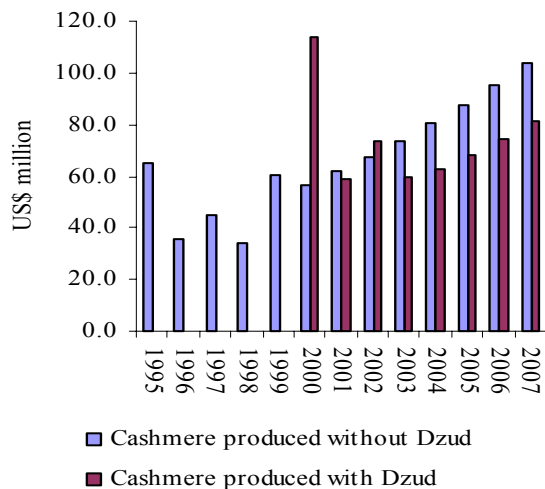


Figure 2-5: Simulation of cashmere production with and without *Dzud* per household in US\$

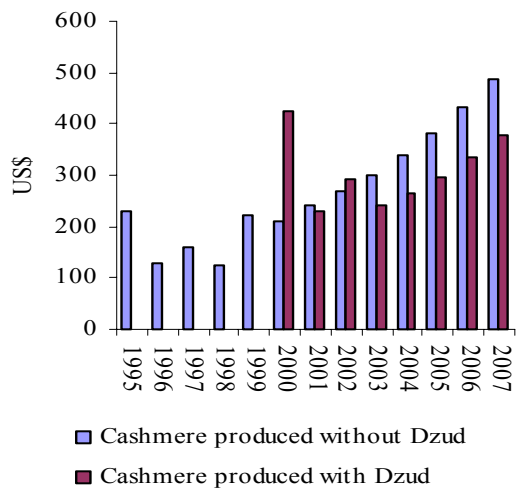


Figure 2-6: Simulation of cashmere production with and without *Dzud* in tons

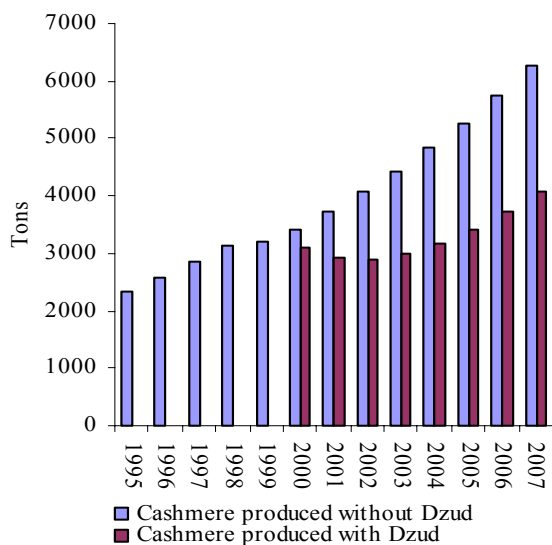
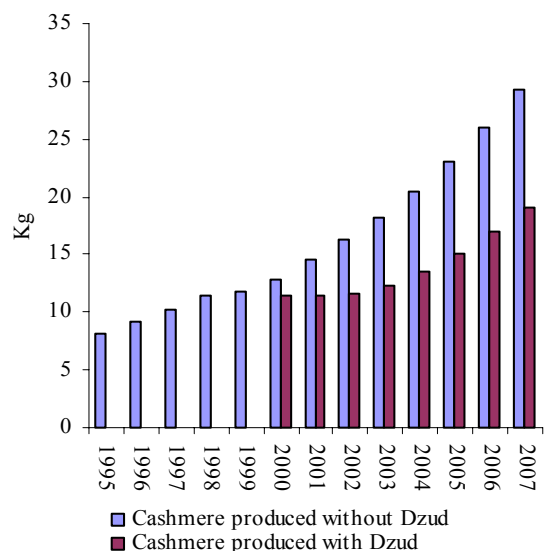


Figure 2-7: Simulation of cashmere production with and without *Dzud* per household in kg



Source: GOM and staff estimates.

2.42 To calculate the impact of the *dzud* on herder income and overall production of cashmere a population growth simulation model¹⁷ is used to estimate expected cashmere production without the *dzud*. The projections for 2003 and above were obtained by assuming a return to normal seasonal conditions and applying normal survival probabilities to the previous year cohorts. Beyond 2003 it is assumed that the ratio of offspring to breeding females and the ratio of breeding females to goats would be the same as for the pre *Dzud* conditions in 1999. It was assumed that cohort survival probabilities are the same as those observed over the period 1996-1998. Prices for 2000 to 2007 are calculated using average prices for 1993-1999. It can be seen that the projections for the future are affected by the *Dzud* in 1999- 2002 as a result of the reduced stock. The reduced stock has two effects: firstly it reduces the output of raw cashmere because there are less stock available for combing; and, secondly, the reduced stock means less offspring. Figure 2.4 – 2.7 present the overall impact of the *dzud* on cashmere production in tons and values for the whole economy and for each herder households. Population projections are made based on moving average estimates of households with livestock.

2.43 The reduced stock also meant lower supply of raw cashmere and higher market prices in short-run. In 2000 when prices were high as a result of a shortage in supply of raw cashmere the total cashmere production was valued at US\$113 million, twice of 1999 value. The income from cashmere per household with livestock who have survived the *dzud* nearly doubled from US\$223 in 1999 to US\$423 in 2000. Nevertheless, from 2001 prices dropped to the pre-*dzud* level and income from cashmere per household with livestock fall to US\$317. Assuming that the prices will remain on average level of last 10 years it has been estimated that the income from cashmere per household with livestock will decline on average by 18 percent annually as a result of *dzud* impact on their herd size over the next 5 years.

Hoof and mouth disease: another source of vulnerability

2.44 Another source of vulnerability to herder incomes in recently (2001) has been the outbreak of 2001 hoof and mouth disease in Mongolia. Hoof and Mouth Disease (HMD) is a highly infectious virus disease affecting all cloven-hoofed species (cattle, pigs, sheep, goats, deer etc.). HMD is a disease that causes severe suffering and loss of condition in affected livestock; mortality in young stock can be high. Similarly threatening future production of cashmere. In 2001 a total of 463 animals died or were slaughtered to contain the HMD outbreak in Mongolia, which affected 3 herding *aimags* provinces (*Sukhbaatar*, *Khentii* and *Dornod*). Quarantine measures were introduced in the affected areas. Increased use of veterinary services will alleviate effects of HMD on herder household incomes. While the loss of 463 animals may appear minimal the overall effects on trade is severe. In 2001 for example, with the outbreak of HMD in Mongolia China and Russia banned export of all animal products causing substantial losses in income of herders and processors.

REFORM OPTIONS

Lack of insurance has increased vulnerability of herders to weather shocks, reduced incomes, and undermined re-stocking initiatives

2.45 The best insurance a herder can have is the body condition of the animals as they go into the winter. However additional market insurance can assist in minimizing risks. Only about 0.3 percent of livestock in Mongolia was insured in 2001.¹⁸ Replacement of stock lost during the three consecutive droughts and harsh winters has been hampered by the lack of functioning insurance markets and the unwillingness of herders to insure livestock. If current trends of poor herd protection and excessive reliance on public or external aid for restocking are not arrested, the supply of cashmere in the medium term will fall substantially. The overall loss in income from the previous *dzud* is estimated at about Tg 270 billion (24 percent of GDP) by the end of 2001. The cost to the government of providing subsidized fodder, and other disaster relief services is estimated at about Tg 12 billion in 2001. A well developed insurance market for livestock would have reduced these costs substantially for the government and protected the livelihoods of the herders.

¹⁷ See Annex 1 for detailed explanation of the model and assumptions made.

¹⁸ Mongol Daatgal - insurance company.

The emergence of a market based insurance market would reduce government liabilities and stabilize herder incomes streams

2.46 According to the Mongolian Constitution, “livestock is a national wealth and is to be protected by the state.”¹⁹ This basic assumption that livestock management is the function of the state has distorted production decisions in the sector. Herders have an implicit guarantee from the state, which covers livestock loss in bad years irrespective of soundness and viability of herding practices employed by the herders.

2.47 The recent harsh weathers, in 1999-2002 have proved very costly to the government and there has been a growing realization of the need to employ market instruments to absorb the costs of the *dzuds* to the poor and the state in general. The nomadic lifestyle of Mongolian herders, the difficulties associated with gathering adequate information on herd management techniques by new herding households, and the lack of sufficient skills and information to determine appropriate premiums for insurance programs have made developing adequate insurance systems in Mongolia very difficult.

2.48 Recent pilots aimed at providing index-based livestock insurance provide a good start to the introduction of market-based techniques for addressing risks. The livestock insurance program is a voluntary public-private initiative supported by the World Bank and other donors including USAID that consists of developing a risk index, on the basis of which private insurance companies would offer insurance to livestock owners to cover risks arising from the drought, or other weather-related events. The index, based on objective third-party verifiable indicators such as weather data, livestock mortality rates, and indices of range vegetation conditions would differentiate relative risk at a generally acceptable and pre-determined level (most likely the *aimags*) based on historical data.

2.49 Indemnities under the scheme would be triggered once the index exceeded a given threshold. Insurance cover would be for productive activities including: the replacement value of livestock; the value of goods or services to support risk preparedness or enhance livestock productivity, such as hay and fodder production or purchase, acquisition of veterinary drugs and services, construction of livestock shelters, and breeding services, and the value of goods and services to allow policy holders to engage in alternative or supplementary livelihood strategies.

2.50 Payments to participating insurance companies, for claims paid to policy holders against covered risks and for such productive activities, would be made when the aggregate amount of those claims exceeds the agreed level of liability, as specified in a stop-loss agreement between the government and the insurance companies. The project would also finance training workshops for participating insurance companies and public officials, and a nationwide information campaign to publicize the scheme and attract policy holders.

2.51 The scheme would be launched during the second phase of the World Bank’s 2002 Sustainable Livelihood Project, and would be expected to become profitable by its end. The role of government during the startup phase of the scheme (project years 2 to 4), would be to assume liability beyond the level agreed with participating insurance companies by undertaking to finance the stop-loss payments from the proceeds of the IDA credit. This stop-loss provision would take the place of international reinsurance, which would be unlikely to be attracted until commercial viability of the scheme could be demonstrated. Under the second phase of the program, the index-based insurance scheme would be expected to operate in a financially and institutionally sustainable manner, without the need for government to offer a stop-loss provision. Insurance companies offering index-based livestock insurance would then be expected to seek international reinsurance.²⁰

Resource pooling and supply chain linkages to optimize cashmere production

2.52 Strategic partnerships in the primary cashmere production process—goat herding—have barely developed in Mongolia. Incentives to pool resources and produce more efficiently have been undermined by

¹⁹ Constitution of Mongolia, Article 5.5.

²⁰ World Bank financed Sustainable Livelihood Project

the constant and persistent provision of primary input commodities by the public sector as free goods. The cruel impact of the recent bad weather conditions on Mongolia's economy, and the poor in particular, has highlighted the limitations of the present market structure. There is an increasing need for the livestock sector to complete the transition to a market economy and rationalize the use of scarce resources.

2.53 Finally, while insurance will not increase the supply of cashmere in the short run, it will ensure that herds can be quickly restored after weather disasters, reducing income volatility for herders without placing undue stress on public resources.

Donor and public support for *dzud* relief needs to ensure that market development is not undermined

2.54 It is recommended that agricultural support services be provided to assist herders in making judgments about livestock stocking rates (not simply confined to goats), the need for reserve feed stocks, and training in herd management. However, care must be taken that such schemes be developed and implemented with ample local participation by herders, who may well resent being "trained" to do something that many have been doing most of their lives.

CHAPTER 3. STANDARDIZATION AND QUALITY CONTROL

3.1 Mongolian goats have historically produced some of the best quality cashmere fiber as Mongolia's dry cold climate and large range area make it ideal for cashmere. Cashmere quality is determined by its micron diameter (thickness of each fiber), color, length, crimp, yield, and freedom from contamination. Leading international cashmere processors place an upper limit on mean fiber diameter of 19 microns and prefer a fiber of 17.5 microns or less for woven items, or 16.5 microns or less for knits; the best cashmere has a diameter of less than 16.5 microns, and a length of about 43 mm. The price differential between fine and average dehaired cashmere could reach over 30 percent.

QUALITY DEVELOPMENTS IN CASHMERE SECTOR

3.2 The quality of Mongolian cashmere has declined significantly over the last 15 years, mainly due to inadequate animal management practices adopted by herders in response to changing market demand conditions, as well as changes in government policies. Poor animal management practices include crossbreeding, lack of breeding management, poor herd composition management and discontinuance of systematic culling. Poor animal management and breeding practices have also become more prevalent with new entrants into herding and animal husbandry, who most often lack the skills to raise quality herds and produce good cashmere. Government policies that have affected cashmere quality include an export ban, followed by an export tax, discontinuance of state supported veterinary and extension services, and the encouragement of herders and local government officials to increase animal numbers without regard to quality and productivity.

Box 3-1: Cashmere's Five Quality Factors

Five quality factors determine the value of cashmere: fineness, color, length, crimp, yield, and contamination.

- **Fineness** refers to a fiber's diameter, measured in microns, or 1/1000th of a millimeter; finer cashmere produces softer cloth. Generally speaking, Mongolian pure breed cashmere has historically had a diameter between 14 and 16 microns, while Chinese has historically been between 15 and 16. Fiber with a diameter exceeding 19 microns is not cashmere, but cashgora, and is a product of crossbreeding. As fiber fineness is a determinant of value, cashmere is categorized into normal, coarse, and cashgora grades.
- **Color:** Lighter shades are more versatile and can be used for dark and pastel colored garments, while darker shades can only be used for dark garments, and are worth less. However, more than 50 percent of the cashmere sold each year is black or another dark shade. Approximately 60 percent of Mongolia's cashmere supply is brown, about 15 percent is red, about 10 percent is gray, about 10 percent is light gray, and only about 5 percent is white. Chinese cashmere is predominantly white.
- **Length:** Longer fibers can be spun into finer and stronger yarn. Mongolian cashmere is the longest fiber available on the world market. It can be processed into de-haired types that average 42 to 46 millimeters in length. Average lengths for Chinese cashmere are typically no greater than 38 millimeters.
- **Crimp:** The degree of curliness of the cashmere fiber. Fibers with more crimp spin into tighter yarns, less prone to pilling or fuzziness and more durable. Smooth fibers without crimp tend to unravel, and these are found more commonly in crossbreeds and in very coarse cashmere. Mongolian cashmere has good crimp.
- **Yield** refers to the percentage of down in proportion to the total weight in a given quantity of raw cashmere. If 100 kgs of raw, or greasy, cashmere produces 50 kgs of de-haired cashmere, its yield would be 50 percent. Yield is a function of the amount of coarse hair, grease, dirt, and other impurities present in the raw fleece. The average yield for Ulaanbaatar processing companies is 45 to 50 percent.
- **Contamination** refers to the amount of dust, dandruff, vegetable matter and other foreign contaminants found in the cashmere. The cleaning and dehairing machinery removes most contaminants.

Government intervention in early years

3.3 One of the biggest set backs to Mongolian cashmere quality occurred in the late 1970s when the government began a campaign to increase the quantity of cashmere and meat production to satisfy external demand. As a result of the Afghan war, Afghanistan was no longer a supplier of raw cashmere on the international market, and as part of the war effort the Russian Army required large quantities of wool for overcoats and, concurrently, increased supplies of meat for Russian soldiers. On the advice of Russian advisors, Russian Don Goats (an Angoran cross breed) were crossbred with Mongolian Gobi goats. Russian Don goats are large meaty animals but the fiber they produce is coarser (normally called cashgora). Meat and cashmere production effectively increased, however the crossbred goats produced significantly coarser fiber than Mongolian purebreds. This meant that an increasingly larger percentage of Mongolian cashmere could no longer be used for high quality garment manufacture. Fortunately, the prevalence of crossbreeds was largely limited to easily accessible areas of Mongolia that received government breeding services and were close to transportation axes, allowing the state to easily collect raw materials. As a result, by the time Mongolia achieved independence and privatized its herds, much of the country still retained significant populations of native Mongolian goats.

3.4 The export ban imposed in 1994 created market distortions, and further encouraged a disregard for quality. Mongolian processors stopped offering price premiums for quality, paying only for quantity. Herders responded appropriately, by increasing production as much as possible, generally by retaining more males and older animals in their herds without culling. While the ban lasted for only 2 ½ years, the damage to herd composition was substantial.

3.5 Rapidly falling incomes in the early 1990s obliged herders to prioritize present income streams—by producing as much cashmere as quickly as possible—rather than protecting future income streams by producing less but higher quality cashmere. This has meant rapidly expanding goat numbers and little, if any, culling of herds. Since 1991 there has been an annual increase in fiber thickness to about 17.9 microns. Unless herd composition is improved by eliminating crossbred animals and older males, and animal selection practices are improved, Mongolia could face a real decline in cashmere quality that becomes bred-in to the general goat population.

3.6 Herders have increased their goat numbers by retaining animals that previously would have been culled. The average age of goatherds has thus increased, and herders are combing all animals in the herd for cashmere regardless of their fiber quality. More goats that would otherwise have been slaughtered have been retained to produce raw cashmere. Older goats produce lower quality cashmere, and a higher proportion of male animals in the population also lowers quality.

3.7 Lesser use of veterinary services has had a widespread negative impact on fiber quality. Subsequent to the privatization of veterinary services in early 1990's has exposed animals to diseases and led to contaminated fibers.

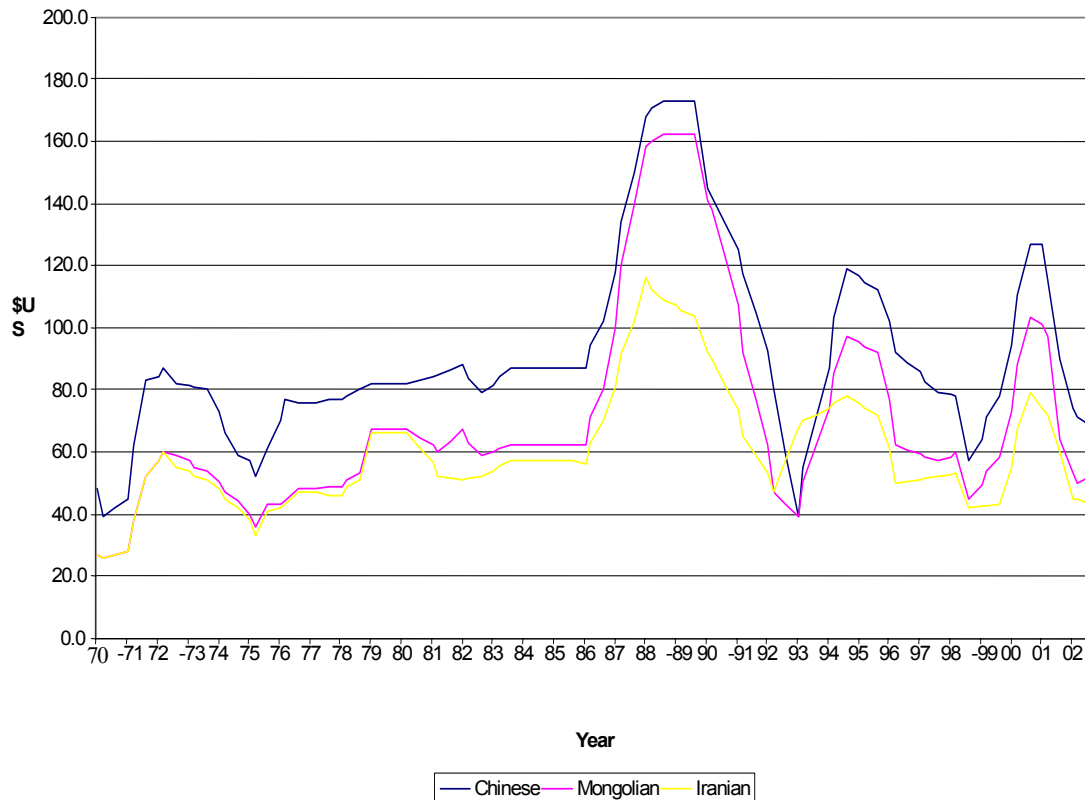
3.8 An absence of information for herders on grades and prices, veterinary and other herd improvement information and services, and a lack of grading and testing facilities have contributed to the drop in quality. Most of all, processors and traders have tended to exploit lack of information on the part of herders to purchase the entire production of a household at an average price.

3.9 Lack of price differentials between high quality cashmere and other grades has also undermined the incentives for herders to invest in herd quality improvements. Herders are likely to respond quickly to price incentives for quality products. Restoring and improving the quality of Mongolian cashmere is critical to increasing the value of Mongolian cashmere and the incomes of herders. An important component of any strategy to improve cashmere quality will involve price incentives for quality production.

Impact of quality decline on incomes

3.10 The decline in the quality of Mongolian cashmere is shown in international comparative prices. In March 2002 the Schneider composite price/kg for dehaired cashmere was US\$71 for Chinese production and US\$50 for Mongolian whereas difference with respect to Chinese prices in 1994 was close to zero. Figure 3.1 presents trends in prices for dehaired cashmere over time. The impact of quality on the price of cashmere and the incomes of herders and processors is considerable. Increases in quality of Mongolian cashmere would have substantial revenue implications for the economy as a whole as exports would rise and employments increase. From a policy perspective, improving yields in the livestock sector overall must be a basic component of the government's objective of increasing the standard of living of the rural population, and fostering growth.

Figure 3-1: International Dehaired Cashmere Prices 1970-2002 (All prices quoted in Jan)

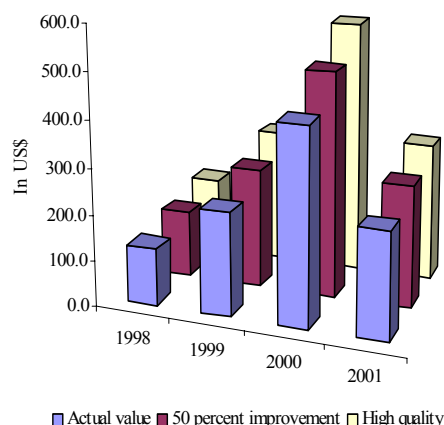
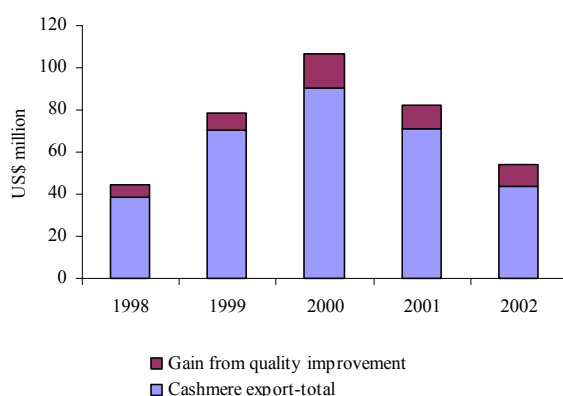


Source: Schneider Cashmere Price List 2002

3.11 The loss to Mongolia in 2001 from the drop in the quality of its cashmere and the drop in raw material prices internationally is estimated at over 0.7 percent of GDP (US\$7.9 million). In 2000 when prices were high the total export income lost was twice this amount at US\$ 14 million. In the same Chinese markets, top of the range Chinese cashmere currently sells for about 30 to 40 percent more than Mongolian cashmere. Assuming that the main cause of price differences between Mongolian cashmere and Chinese cashmere are transaction costs and quality differences, we calculate the net gain of a 50 percent quality improvement on Mongolian fiber. Such an improvement in the quality of Mongolian cashmere would have increased average incomes for households with livestock from 220 to 263.4 in 2001. Figure 3.2 presents overall losses from poor quality cashmere to Mongolia over the last four years. Based on August 2002 prices in Chinese markets, there is a potential to increase prices for Mongolian dehaired cashmere by more than 50 percent with improved quality over the next 6 to 10 years.

Figure 3-2: Income from quality improvement of raw cashmere in total cashmere export

Figure 3-3: Income increase from quality improvement by household with livestock



Source: NSO, 2003 and staff estimates.

3.12 The lower the quality of the cashmere, the larger the price fluctuations and overall reductions in herder income. The market for lower quality cashmere is unstable than that for higher quality products. Cashmere prices fell in 2001 with those for lower grades falling most. This is because in a depressed market, buyers who previously purchased lower quality material can now buy better quality cashmere at lower prices and the lower quality cashmere is displaced. Similarly, in a recovery unsold stocks of higher-grade cashmere will be the first to be utilized before there is a price increase for poorer product.

Restoring quality after the *dzud*

3.13 The *dzuds* over 1999-2001 reduced the share of breeding female goats by over 3 percent. While this disaster reduced the amount of cashmere produced. Mongolia can take advantage of the *dzud* disasters to renew goat quality with an improved breed.

3.14 A policy of upgrading the quality of the cashmere breed as the stock of goats is restored to pre-*dzud* levels would substantially improve the resource potential of the industry. A response to the *dzud* crisis therefore should be twofold, and consist of getting small and unsustainable herding populations into alternative non-farm employment sectors – implicitly not restocking herds of small herders - and assisting larger herders in developing risk management practices and improving herd quality.

3.15 The current situation may also provide an opportunity to support herders wishing to improve the genetics of their stocks with superior quality males. Restocking measures should be market based to encourage the growth of private suppliers; herders should be required to pay market prices for new stock rather than be provided with stock at no charge or concessional prices.

REFORM OPTIONS: GRADING AND STANDARDS

3.16 Product standards have increasingly been used as a technical barrier to trade in recent years²¹. To increase penetration into the world market Mongolia must regulate and align the quality and standards of its cashmere with international processor and consumer needs. This will also help in protecting its reputation and market share. Grades that signal product characteristics and quality based on commonly acceptable measures, and the standards by which they are measured are essential to the efficient operation of a competitive market that handles generic commodities, especially in a luxury goods industry. Grades provide the language essential for commodity information about value and encourage price competition in the market.

²¹ World Bank, 2000, Global Economic Prospects and Developing Countries 2000. Washington DC.

3.17 Mongolia's National Center for Standardization Metrology (NCSM) undertakes cashmere testing and issues quality certificates that have been compulsory for cashmere exporters since 1996. NCSM uses three commercial cashmere processors to test the quality of fiber destined for export. The government recently developed and introduced a cashmere classification and grading system that expands the definition of cashmere to include thicker fibers. Attempts such as these to redefine fiber into cashmere could be counterproductive if not adequately implemented, they could provide the wrong product information to the herders—and are unlikely to attract international buyers. Any piece of paper that must accompany an export shipment has the potential to turn into a *de facto* export license.

3.18 In most cases, buyers have their own internal standards that they provide to the supplier, and they are not interested in what the Mongolian grade equivalent is. One reason is that they are buying dehaired cashmere, and the Mongolian grades do not contain any parameters relevant to dehaired: Coarse hair content, grease, etc. International manufacturers do not agree with each other on how grading is done; they all have their own standards. In addition, since Mongolian cashmere is often re-sold, the re-seller applies their own grading system to it, further confusing the issue.

Box 3-2: Importance of Grading and Standardization

Uniformity of terminology and measurement are important characteristics essential for establishing relative values among various forms or qualities of the product. In the case of cashmere micron and color quality standardization serves four basic purposes:

- It permits buying and selling products by description rather than by inspecting each lot
- It facilitates the marketing function by permitting commingling of cashmere from different locations from many sources into a few categories.
- It describes characteristics of cashmere so that buyers and sellers can estimate value for use in marketing and processing.
- It provides tools the market can use to communicate preferences and generate incentives to improve quality.
- Creates variety and diversification

The main advantages of introducing a grading system are

- To define uniform quality and accepted descriptive terms to facilitate trade, which makes buying, selling, and diversification of target markets easy.
- To offer end users the best possible information from which to determine end product yield and quality
- Grading may encourage vertical integration of producers with buyers once suppliers establish track records for a particular quality level.
- Creates variety and diversification

3.19 The government of Mongolia has recently created a material specification for cashmere. The specification, developed by the Ministry of Agriculture and Industry and described in the Cashmere Sub Program, defines cashmere as any goat fiber with a micron count less than or equal to 19. The production of high quality greasy cashmere must be the basis of the Mongolian cashmere industry. Quality needs to start with herders. The secret to achieving quality improvement is to offer price incentives for quality product and then to provide herders with the knowledge and means to improve herd quality. If herders are given the knowledge about how to improve quality and are then paid a premium for quality they are likely to respond rapidly.

3.20 The government is interfering in commercial activities that should be resolved between vendors and purchasers. Instead of attempting to duplicate expensive testing facilities that are already available in Mongolia, NCSM could use its resources to improve information communication.

3.21 There are no internationally recognized specifications for cashmere. The Cashmere and Camel Hair Manufacturers Institute (CCMI) could not get its members to agree, thus creating a split between factions of suppliers, Australia, Central Asia, Mongolia, China, and others. The role of the government should be to ensure that herders have access to information and to create conditions such that private testing and grading facilities arise to determine the quality of local cashmere. Mongolia

has to set competitive standards, and consistently deliver cashmere that matches those standards; attempts at misclassification will only result in decreased prices for Mongolian cashmere. Processors who purchase Mongolian cashmere will factor in re-testing cost at best and quality processors may be deterred from purchasing Mongolian cashmere.

3.22 The government's concern with testing is in part an attempt to address the symptoms of the quality problem without addressing its causes. The quality issue will only be solved when herders have incentives to produce quality cashmere and are provided with the support services, including access to superior genetic stock, to do this. Once there are incentives to improve quality, programs can be introduced to assist herders. It is necessary for the herders and processors to agree on internationally acceptable definitions of the characteristics of Mongolian fiber, and to issue a competitive and credible classification system. Only then can government provide support for herders to build herds that have a significant proportion of goats that meet relevant specifications and standards.

Box 3-3: Experience from the Australian Wool Corporation: Normative Classification

The Australian government in the late 70's and early 80's classified sheep carcasses into two grades. Lean sheep carcasses were called inferior grade, "C" grade, compared with carcasses covered with 5 mm selvage fat, which were "A" grade. The Europeans like the latter, but the Arab states liked the former. As a result when the Arab states attempted to purchase lean Australian sheep carcasses and found that they were classified as inferior, they did not want to purchase products classified as inferior, so went elsewhere. This occurred until the Australian government realized that they were losing market share as a result of the poor classification system. The industry has since developed objective grading systems, which provide clear transparent product specifications and do not give quality connotations.

3.23 All reputable and experienced processors know the specifications and characteristics of what is good and what is poor manufacturing fiber. There are obvious fiber characteristics which can be easily listed, including length, crimp, fiber tip conformation, diameter, color, variation of diameter, elasticity of fiber, chemical and molecular structure. Within each of these characteristics there could be variations such as with color, type and degree of pigmentation, and so on. However most processors would intuitively know what characteristics would affect the product specifications they want to achieve.

3.24 The advantage of developing and providing herders with guidelines on market characteristics and specifications is that it avoids normative grading of cashmere fiber by government or regulatory agencies into good and bad categories as this may result in very damaging consequences. It is necessary to avoid the Australian wool and meat industry problems of trying to define what is "good" quality and what is "bad" quality. In some circumstances a bad quality fiber for one use may be a good quality fiber for another use. The issue is to develop objective standards so as purchasers can have confidence that what they are buying on description is what they are actually getting and is what they want.

3.25 A second line of action that should receive support is for the establishment of Sorting/Grading and Auction centers for cashmere at the regional level. This will assist in establishing a premium for quality, there is a proposal for this under the UNDP Enterprise Restructuring Project, and focusing on simply providing a place where traders, processors and herders can meet and offer raw cashmere for sale. Most importantly, it needs to be made clear that these auctions would not involve any compulsion of herders to participate, and would not involve a third party purchasing the product and then auctioning to traders and processors.

3.26 The Mongolian FiberMark Society, an NGO set up with the assistance of USAID's Competitiveness Initiative project to improve the branding and quality of Mongolian Cashmere, is also seeking funding to establish such market centers on the model of the Cashmere Trade Fair event held in *Zavkhan aimag* in 2002, and organized by TCI with the collaboration of cashmere processors. The Mongolian FiberMark Society's strategy has been to create and promote an industry certification

logo that when attached to a garment, will provide assurances to consumers that the product is genuine Mongolian cashmere and not a cheap counterfeit.

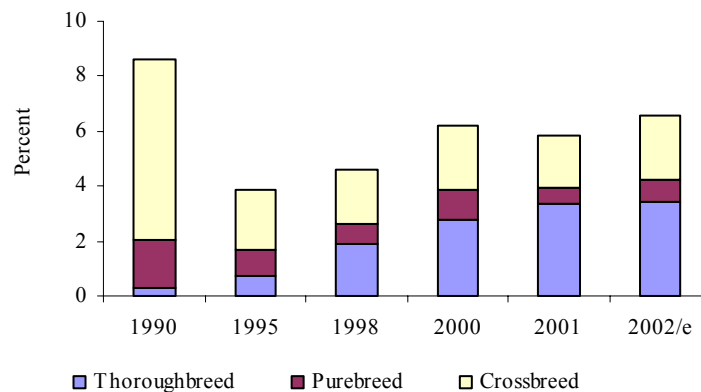
3.27 The Gobi processing company has records of fiber testing that date back many years. These would be invaluable in quantifying the quality problem. There should be annual testing of characteristics of a representative sample of raw cashmere to measure progress against quality objectives.

Herd improvement programs and strategic alliances

3.28 Herd improvement programs are vital to improve quality. While a promising start has been made this needs to be extended to more regional centers. This will require considerably more funds and a much larger program than is currently envisaged. There needs to be a supply of quality bucks available for herders to purchase.

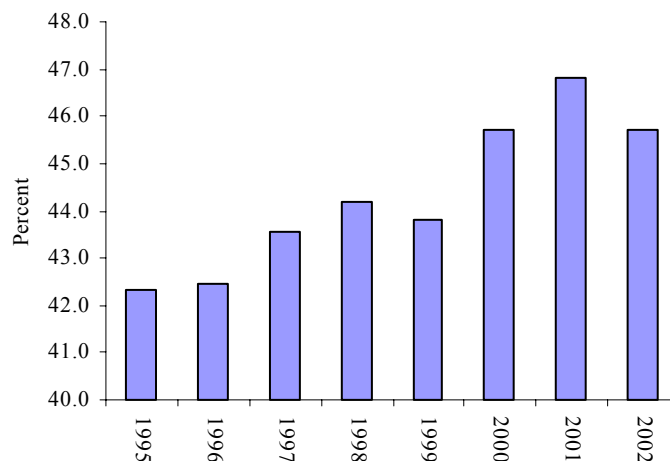
Figure 3-4: Share of quality breeds in Mongolia's goatherd

Only 7% of the herd meets quality standards



Source: NSO, 2003

Figure 3-5: Percentage of breeding female goats in total goatherd



Source: NSO, 2003

3.29 From a genetic improvement point of view, about 70 percent to 80 percent of the genetic change per generation comes from improvements in quality bucks. In Mongolia there is a need for sustained quality buck improvement and proliferation programs. There is plenty of genetic material in Mongolia for the industry to use as a selection base, in order to identify the superior genotypes,

probably without bringing in bucks from abroad. Mongolia already has a good genetic doe supply. About 47 percent of the total goat herd in Mongolia is made up of female breeding goats, of which 20-25 percent are high quality breed. This is considered by most experts as satisfactory for improving the overall herd quality composition without need to resorting to imports.

3.30 The issue will be to decide what criteria are used to determine which bucks will be selected. In animal genetics it is a maxim that the more criteria you select for at any one time, the slower the rate of improvement will be in any one criteria. There is plenty of genetic selection example to follow in this one and the Mongolians have some experience in this area which could be further developed.

3.31 Herd improvement programs are an essential component of any cashmere industry development program. The Mongolian Government Policy on Food and Agriculture envisages selection and breeding of the productive breeds of goats such as *Ulgiin Ulaan*, *Durvuljingiin buural*, *Altain ulaan* and *Mountain brown* pedigrees in the Western region, of *Erchmiin* black and *Zalaa jinstiin* white breeds in the *Khangai* region and *Bayandelger* and *Galshariin* red pedigrees in the Eastern region.

3.32 There have also been a few cashmere quality improvement programs managed by donors such as the ACDI/VOCA program supported by USAID, and three government programs. Under the ACDI/VOCA program quality goat bucks were purchased to establish a stock for breeding farms in *Bayankhongor*, one of Mongolia's main cashmere producing centers. The first progeny from these breeding farms were used to supply 13 breeding corporative in 5 *aimags*. The program will not address the urgent need for improved stock across the entire industry, as it is limited to four *aimags*, *Sukhbaatar*, *Khentii*, *Zavkhan*, and *KhUvsugul*.

3.33 While existing attempts to improve breeding stock are a promising start more needs to be done to extend the concept across Mongolia. The development of herder managed breeding programs is crucial for the survival of such an initiative. At the initial stages this will require considerably more funds and a much larger program than currently envisaged. There needs to be a supply of quality bucks available for herders to purchase. This could be a private initiative, or undertaken jointly by the private sector, and university research centers with donor support.

Developing Sustained Herder Managed breeding programs –Public –private partnerships and cooperatives

3.34 The cost of developing and sustaining national herd improvement programs in Mongolia is high. To adopt any herd improvement programs all agents in the sector will need to work in close partnership to ensure global success of the program. From the herder perspective for example, there is a need for increased cooperation for herd improvement programs to become economically viable.

Table 3-1: Share of household groups in total by goat herd

	1998	1999	2000	2001	2002
With less than 50 goat	84.60	83.61	63.24	67.47	69.09
With less than 100 goat	84.60	83.61	85.50	87.50	88.02
With less than 200 goat	97.79	99.56	99.64	99.72	99.73

Source: NSO, 2003 and staff estimates.

3.35 Currently, national statistics show that less than 0.5 percent of all households with livestock have more than 200 goats. In addition while the total Mongolian herd has a satisfactory number of good quality bucks these bucks are very dispersed within the percent of the total households. There are over 180, 000 herding sites (*Suuri*) in Mongolia. For herd improvement programs to be efficient and effective it will be necessary to merge some of the herds. A good quality buck costs between Tg 35, 000- Tg 45, 000. For households with less than 50 goats (70 percent of households with livestock) this means spending over a quarter of their income on herd improvement. Most herders will not be willing to undertake the investment. Therefore it would be less efficient to apply the herd

improvement programs for individual households only. It would be much efficient if the herders would cooperate with each other to bring together high quality goats in order to speed up the quality improvement of goat herd while reducing total costs for individual herders.

Table 3-2: Average goat herd and income from cashmere by household groups, 2002

Household groups by herd size	Goats in heads	Income from cashmere per household in US\$	Share of households in total in percent
Up to 10	1	8	13.6
11 to 30	8	63	17.6
31 to 50	17	132	14.9
51 to 100	31	235	23.0
101 to 200	58	437	18.9
201 to 500	109	826	10.4
501 to 999	197	1,498	1.30
1000 to 1499	293	2,226	0.25
1500 to 2000	506	3,841	0.015
2001 and over	452	3,434	0.010
Average	37	280.8	100

Source: NSO, 2003 and staff estimates.

3.36 Research and development programs are critical in the development of many agricultural products. Financial resources for research on the quality and optimal herding techniques for Mongolia will not and cannot be produced optimally by the private sector without support from the public sector. In developing countries the public and private sectors conduct most agricultural research and development jointly. Given the considerable resource constraints on the public sector, it is justifiable to question government expenditure on research and development in the cashmere industry. However these should be weighed against costs of providing social safety nets.

3.37 To reduce search costs on herders in partnership with the private sector associations the government could assist in the development of a database similar to that found in Australia or New Zealand where high quality bucks and female goats are classified by the type, breeding age costs, and core characteristics. This database could be made available to the public for a fee.

3.38 Any herd improvement program would need to be accompanied with a culling program; while most small herders need to be trained on proper culling techniques large farmers already practice culling. One of the reasons for the deterioration of cashmere quality as discussed above is the increase in the average age of cashmere goats. If processors start to differentiate thicker fibers produced by older goats and the finer softer fiber needed for luxury cashmere the market will automatically segment itself. Other policies are being discussed in Mongolia to improve cashmere fiber which include taxing goats older than three-four years old. However these interventionist policies will be very difficult to police and may generate perverse market conditions.

3.39 Herders do not raise goats for food so culling will not endanger survival of household. Goat meat has a very low fat content and is not preferred as a food source. People with subsistence herds raise sheep for food, and herders with even few animals are still raising goats for the cash income from cashmere, even if they only produce a few kilos a year. Nevertheless, herders with few animals have no possibility of herd improvement for commercial purposes. Only by cooperative action and specialization within a larger group will scientific breeding programs show any influence on improving this stock.

Maintaining genetic diversity

3.40 There is a risk that as genetic improvement is achieved genetic diversity might decrease, which could create a risk of epidemic losses of livestock to disease. Genetic diversity could decrease

to dangerous levels if all superior males used for herd improvement were sourced from a limited gene pool. There will need to be careful management of the herd-upgrading program to ensure that this will not occur. The way to do this is to have multiple herds of superior goats and encourage breeders to develop superior herds that can be introduced into the general population²².

3.41 Herder education should be an important component of the herd improvement program. Herders need to understand the advantages of improved genetic material and the need for herd selection. Herders need education in breeding, supplementary feeding, and veterinary services. The largest single obstacle to increased use of veterinary services is a lack of awareness of the potential gains they offer. Expanding these agricultural support services would make a far greater contribution to cashmere quality improvement than attempts to expand NCSM.

Improving the color mix of Mongolian cashmere

3.42 In addition to improving the quality of its fiber, Mongolia needs to encourage single color herds while retaining the color range of its genetic stock over the medium term. Mongolians have a wide range of colors in their herds, which causes cross contamination of colors when cashmere is harvested and packaged. This increases costs for processors. Color variations in single lots of cashmere make process control more difficult when this cashmere is sold to manufacturers who will be dyeing the cashmere. In this instance, more uniform coloring in each bale is desirable. Some color variations are valuable and certain colors command premiums from manufacturers who produce finished goods in natural colors, and in many markets manufacturers prefer natural browns and grays, such as in the Japanese market. For these markets, where the manufacturer is seeking texture and color highlights, color variations can be highly sought after.

3.43 Generally processors are willing to pay more for white cashmere fiber, as it can be dyed to pastel colors and it is possible to produce white garments from it. The costs of dyeing white cashmere are also lower. Increasing the percentage of true white herds in Mongolia would increase the competitiveness of the industry as a whole, but some herders will be unable to raise white goats because their smaller body size and ability to withstand cold is less than that of colored Mongolian breeds. Given the availability of genetic stock and strong demand for unique natural colors in certain markets, diversification of production should be maintained to offer a wider range of products while reducing color variations within single herds producing cashmere in colors that are normally dyed.

From market fragmentation to market segmentation and product differentiation

3.44 With nearly 250,000 households with livestock, effective collaboration could be extremely difficult to achieve without some elements of similarity and economic interest among herders. Quality differentiation through grading will provide natural market segmentation and diversify production patterns and markets for herders. Producers of different qualities and colors of cashmere could target different markets, increasing opportunities for market entry. The challenge is to increase quality to compete in existing markets and diversify to enter new markets.

3.45 Grading will lead to discounting and quality premiums, which will encourage herders to specialize in particular grades of cashmere based on their resources and technical capabilities. An effective internal grading and quality standardization scheme should create the tools for the market to establish quality improvements incentives.

3.46 Private sector and research institutes, could assist in quality improvements initiatives. As a result of a joint private sector-donor initiative the Mongolian Cashmere mark has already been established by the Mongolian FiberMark Society, and it is being launched in June. The mark will appear on garments in Fall 2003. It is not a prerequisite to improve average Mongolian cashmere quality first: the mark can only be applied to cashmere that meets the specifications of the FiberMark

²² New Scientist Magazine 2001, (REF)

organization. Even if this is only 5 percent of the production, it begins to establish recognition that Mongolia can and does produce some good quality cashmere, and it provides incentive for manufacturers to get their hands “selectively” on the good quality cashmere, laying the groundwork for the payment of premiums.

3.47 Increased product grading and testing will facilitate herder clustering into quality batches. The extensive market fragmentation of the industry combined with the lack of information on quality limits the incentive for collaborative agreements in the industry. Increased information on the quality of herder product will provide an impetus for more clustering. Market segmentation will facilitate the development of collaborative synergies among herders producing similar quality cashmere as their individual objectives become more closely linked.

3.48 Vertical integration spreads risks across a wider set of agents and allows for more comprehensive planning. Herders could also benefit from cash advances from processors and easier access to credit to smooth incomes.

Mongolia’s WTO negotiations with China

3.49 China has an unofficial export ban on cashmere bucks. While Mongolia appears to have sufficient bucks to improve overall quality lifting the export ban on Chinese bucks may reduce the overall price of good quality bucks available to the herders, particularly white bucks that are scarce in Mongolia today. Revising this ban should be a feature of China–Mongolia bilateral trade negotiation under the WTO. China stands to benefit from long-term increased reliable supply of good quality raw and dehaired cashmere, particularly as there is a move to limit Chinese production of cashmere until the 2006 Olympics. Currently the Chinese cashmere goat population is about three times the size of Mongolia’s and Chinese goats could be readily adaptable to Mongolian conditions. In addition, they produce many more males than are required in the Chinese market. It is estimated that the Chinese produce about 1 million superior male goats a year (total births are probably about 12 million a year), far in excess of domestic requirements.

CHAPTER 4. DYNAMICS OF CASHMERE DEMAND AND THE PROCESSING INDUSTRY

OVERVIEW OF PROCESSING INDUSTRY

4.1 Cashmere is about a US\$1 billion annual industry. Demand for luxury goods is growing worldwide and is well balanced globally despite some down years (1997-98). The main factors contributing to increased demand for luxury goods are favorable demographics and rising income levels—baby boomers between 36 and 56 represent the largest population group in the developed world and have the largest buying power—and consumer trends and the success of many luxury goods companies in capitalizing on their brand values. Consumer quality and brand awareness has increased in recent years, so consumers buy better more expensive quality goods. Relative to the size of their economies, demand is strongest in Asia. Japanese consumers buy 30 to 40 percent of all luxury goods worldwide.

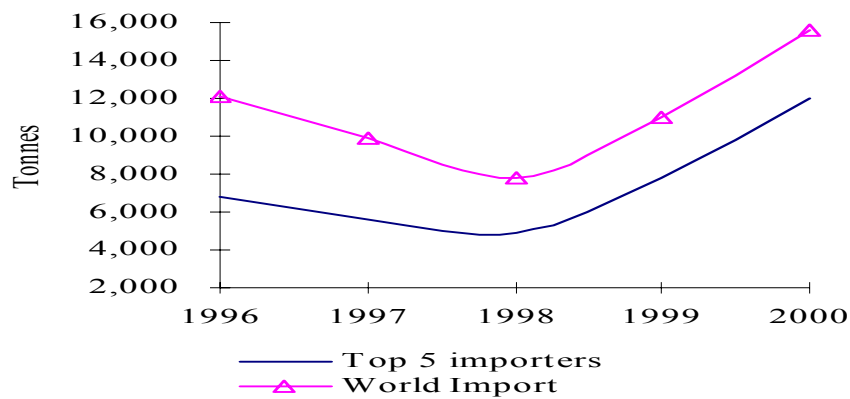
4.2 World demand for finished cashmere goods, which are regarded as luxury items, is highly income elastic. Evidence from cashmere goods marketing reports suggests that the industry generally recovers much faster than other traditional goods sectors from economic downturns because the buying power of luxury goods consumers tends to recover quickly.

Table 4-1. Main cashmere importers, 1996-2001
(Percent of market)

No.	1996		1997		1998		1999		2000		2001	
1	ITA	31	ITA	33.2	ITA	39.9	ITA	39.1	ITA	36.27	ITA	39.49
2	GBR	19.2	GBR	14.8	GBR	13.7	GBR	19	CHN	20.42	GBR	20.92
3	JPN	8.3	FRA	9.5	FRA	8.4	CHN	7.2	GBR	17.81	DEU	6.24
4	USA	6.8	USA	9.3	DEU	7.8	ZAF	6.1	DEU	5.34	UKR	5.1
5	KOR	4.8	KOR	6.8	USA	5.1	DEU	5.8	UKR	3.27	CHN	4.6
6	DEU	4.5	DEU	5.1	BLX	3.6	FRA	3.8	ZAF	2.72	FRA	3.8
7	CHN	4.1	CHN	4.1	CHN	2.9	USA	3.6	FRA	2.2	BEL	3.02
8	FRA	3.5	JPN	3.5	KOR	2.6	BEL	3	USA	1.88	CHE	2.87
9	HKG	3.1	BLX	2.4	CHE	2.3	JPN	1.6	BEL	1.62	USA	2.38
10	IND	2.6	HKG	1.4	ZAF	2	CHE	1.3	HKG	1.01	ZAF	1.63
11	CHE	2.4	ARG	1.3	JPN	1.6	HKG	1.1	JPN	0.78	IND	1.2
12	ZAF	1.2	IND	1.3	HKG	1.5	KOR	0.8	ESP	0.65	JPN	0.94
13	BLX	1.1	ZAF	1.2	ESP	1.2	NLD	0.7	MNG	0.58	HKG	0.91
14	ARG	1.1	CHE	1.2	ARG	0.9	ARG	0.6	IND	0.52	ARG	0.69
15	NLD	0.9	ESP	0.6	IND	0.8	IND	0.6	ARG	0.52	MEX	0.65
16	Others	5.4	Others	4.3	Others	5.7	Others	5.7	Others	4.41	Others	5.56
	Total	100		100		100		100		100		100

Source: World Bank Trade Data Base, 2003.

Figure 4-1: Import trend of fine animal hair (not combed)-in tons, 1996-2000



Source: World Bank Trade Data Base, 2003

4.1 The demand for raw cashmere will continue to grow and Mongolia is well placed to take advantage of its favorable position as the world's second largest raw cashmere producer to increase the quality and quantity of cashmere production. Together Mongolia and China supply 80 percent of all raw cashmere. Increasing the depth of vertical integration between final retail luxury shop brands and herders will provide Mongolian herders and processors with new opportunities to increase productivity and incomes.

4.2 China is the world's largest supplier and processor of raw cashmere. Two large companies in China, King Deer and Erdos, process about 20 percent of the world's raw cashmere. In recent years, the performance of these two companies has largely determined the price of raw cashmere. These companies are fully integrated and have ready access to raw materials and downstream production facilities, and have subsidiaries that specialize in processing tasks such as trading, scouring, dehairing, spinning, and machinery repair.

4.3 Developments in world clothing markets, including the phasing out of MFA arrangements and Chinese accession to the WTO will significantly affect the overall structure of world cashmere semi-processed and processed goods industry including the structure of Mongolia's cashmere processing industry. WTO accession has provided Chinese cashmere producers with increased access to previously restricted markets, and its finished goods exports to developed countries are likely to expand considerably. China's entry into the WTO has seen a surge in European luxury firms moving parts of their production processes to China.

4.4 China's demand for raw cashmere is likely to increase. There is an increasing likelihood that demand for world cashmere will outpace China's capacity to supply raw and finished cashmere goods. At the same time, environmental problems have curtailed China's cashmere production. Chinese policies leading up to the Olympics appear to try to contain the surge of cashmere production and goat herding. The combination of increased demand for cashmere by Chinese processors and reduction in national supply could raise demand for Mongolian cashmere.

4.5 Mongolia can take advantage of this by attracting foreign manufacturing firms already in China into Mongolia and by supplying luxury good brand name firms in China with high quality raw and dehaired cashmere fiber. One thing that should be taken into consideration here is that in order to attract manufacturers in the short run, it would have to be possible to import raw materials into Mongolia from China, since processors in Mongolia would want to access large quantities of fine white cashmere. At the moment, the quantity of fine Mongolian cashmere is too limited. Improvements in Mongolia's market could lead to FDI increase in Mongolia and growth of the final goods sector.

4.6 To benefit from these positive external market conditions, Mongolia will need to improve domestic efficiency of the processing sector including by removing distortions that affect trade. The policy implications for Mongolia involve ensuring that there are no artificial impediments to trade with China, production costs are not negatively affected by policy, and state intervention in the

processing sector does not distort competition. In addition the Government will need to ensure that a favorable environment for foreign direct investment in the sector exists including downstream investment in the production of raw cashmere.

The structure of the Mongolian processing industry

4.7 Mongolia supplies the world market with raw, semi-processed, and finished cashmere. Over 1996-2002 on average Mongolia's official exports of cashmere consisted of 13 percent of raw cashmere, 71 percent as semi-processed, and 16 percent as final goods. Comparison of estimated production figures, export statistics, and purchases reported by cashmere companies suggests, however, that a large percentage of Mongolian production is unofficially exported mainly as raw cashmere. This effects the fact that Mongolia's cashmere processing industry has not grown in step with world demand, particularly at the final goods stage.

4.8 Before the transition there were two state-owned final goods processing facilities in Mongolia, the *Gobi* and Cashmere Experimental factories. The latter was privatized to *Buyan* in 1993, and *Gobi* is slated for full privatization by the end of 2004. All cashmere collected was channeled to these two factories by state trading companies. Unprocessed cashmere was exported to the West by the state trading company, Mongol Impex, the only company allowed to trade internationally in cashmere.

4.9 Since the transition, the number of cashmere processing and dehairing companies has risen. The 1991 and 1993 Foreign Investment Laws, removal of price controls, and Mongolia's privatization program expanded the industry. The foreign investment law provides for an income tax holiday of 50 to 100 percent of total income for 3 to 5 years depending on the sector, share of export in total output, and terms of negotiation. The number of cashmere processors also increased dramatically because of the government's ban on export of raw cashmere which prompted many companies to invest here. Many of these investors had considerable losses after the ban was lifted, subsequently closed shop or stopped cashmere processing.

4.10 Currently there are more than 80 semi-processing and final processing firms in Mongolia, but only two firms produce final goods—similar to the pre-transition period. The increase in the number of wholly private small cashmere processing firms in Mongolia in the last five years indicates that for cost-efficient firms with adequate capacity and access to raw cashmere, cashmere processing remains a profitable business—or that the new firms get tax breaks that make it attractive to invest in Mongolia. Domestic processors are operating below capacity.

4.11 The Mongolian processing industry has sufficient installed capacity to produce large quantities of high quality semi-processed and finished cashmere. In 2000, the capacity utilization of all plants in Mongolia was 50 percent for scouring and 57 percent for dehairing. The main reason for the high capacity of the firms was poor business calculation as many firms increased processing capacity in the mid 1990's hoping

Box 4-1: Cashmere Production Steps

There are five steps to cashmere production: collection, sorting and scouring, dehairing, spinning, and weaving or knitting. The export ban applies to cashmere in Step 1 and 2. Prior to dehairing all cashmere is considered raw/greasy cashmere.

Collection: Cashmere fibers are collected by either combing or shearing the animal during the spring molting season.

Sorting, scouring: Hand sorting for coarse hair takes place. After sorting, the fiber is washed to remove dirt, grease and any vegetable matter gathered in the collection process.

Dehairing: The scoured material is then dehaired. This step removes vegetable matter, dandruff and the coarse outer guard hair. At the end of this process, the cashmere is ready spinning into yarns for **weaving** or **knitting** the fourth and fifth steps.

Table 4-2: Estimated Capacity Utilization of Mongolian Firms in 2000

	Scouring	Dehairing
Processing capacity	6700 tons	3800 tons
Production	3300 tons	1550 tons
Excess capacity in percent	50	43

supply would increase while prices stayed low. In the absence of sufficient quantities of raw cashmere to attain higher levels of capacity utilization, these firms have high unit costs that constrain their competitiveness.

Constraints to Mongolia processing industry

4.12 Four factors have affected the evolution, structure, and conduct of the processing industry in the last decade and could hinder Mongolia's ability to benefit from favorable world market demand conditions. These include government trade policy, falling cashmere quality, continued state presence in the sector and expensive and poor infrastructure. While the state totally abandoned the downstream primary cashmere industry, the public sector has maintained a heavy influence in cashmere processing through its ownership of Gobi and joint venture partnerships in Mongol-Amical.

GOVERNMENT POLICY STANCE

4.13 Claiming a need to "protect domestic industry from external competition and increase domestic value added" the government introduced in 1994 an export ban on raw and washed cashmere. The ban encouraged many foreign processors to locate processing facilities in Mongolia, and resulted in the establishment of many dehairing plants. Some of these investors produced quality products, but the ban also encouraged small firms to partially dehair cashmere so that the product could be exported. This added to the cost of the raw product but did nothing to improve it, as the cashmere had to be dehaired again by purchasers.

4.14 Government intervention in the agricultural sectors in many developing countries has increased market imperfections and undermined the need for processors to develop effective strategic links with suppliers. This is largely true in Mongolia. The most fundamental requirement for the market to yield an efficient outcome is that there be many buyers and sellers, so that price setting is a function of the demand and supply of all agents in the market and is not influenced by the activity of individual agents. Market pricing imperfections that affect direct trade and pricing of cashmere are of particular importance, as they have the single most direct impact on the incomes of herders—and on the overall economic growth and competitiveness of the economy. Pricing policies aimed at ensuring competitive markets are fundamental to the successful development of the cashmere industry.

4.15 Many countries have introduced export bans on raw materials in hopes that increasing the processing capacity of local industries will create manufacturing jobs and earn foreign exchange as exports rise. However, when exports are restricted—usually through taxes—or banned, the domestic price of a commodity falls affecting incomes of raw material suppliers. On the demand side this encourages inefficient processing industries that may be value reducing, in that they consume primary commodities and other inputs that have greater value than the processed export. Overall export restrictions except in rare cases where the country has market power over the good usually lead to an increased inefficiency and destroy industry competitiveness in the long run. This has been the case in Mongolia. Mongolia is a price taker in the cashmere market therefore the tax is unlikely to have had an impact on world prices while it is likely to have resulted in reduced incentives for herders.

4.16 The raw cashmere export ban in the case of Mongolia created a monopsony initially – few buyers and many sellers. However, changing international demand conditions, increasing entry into the Mongolian market and smuggling reduced the overall effect of the trade restrictions over time.

Easing of trade policy has not gone far enough, as the export ban was replaced with an export tax

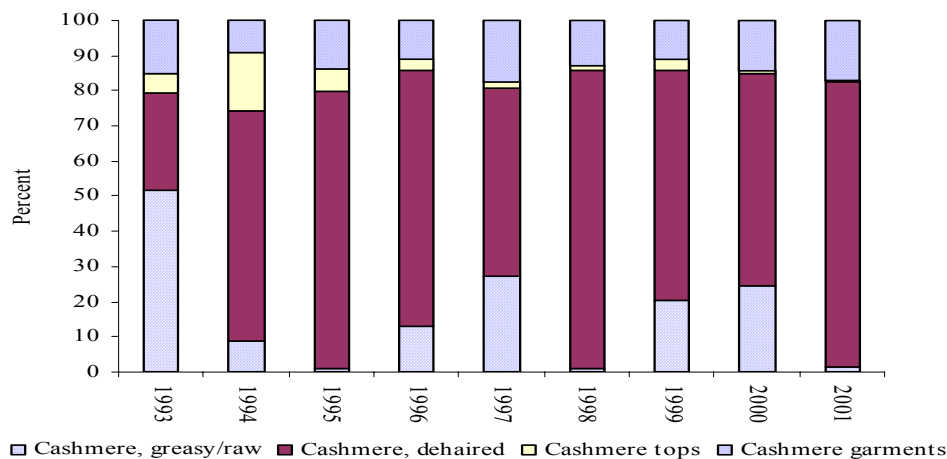
4.17 Between 1990 and 1993, while raw cashmere production was liberalized, exports of raw cashmere were subject to export licensing and other trade restrictions. In 1994 an export ban on raw cashmere was introduced. The ban was lifted in 1996, and later replaced by an export tax of Tg4,000 (about US\$5) per kg of raw cashmere in 1997. This tax remains in effect, although collection efficiency is low because these policies inhibited official exports and encouraged unofficial exports in the form of smuggling. While some firms established processing facilities to access raw material legitimately and to produce quality products, a number of foreign firms established primary

processing facilities in Mongolia just to circumvent the export restrictions. To compound the problem, initially processors discouraged product differentiation by offering the same low prices for different grades of raw cashmere, which depressed the quality of cashmere.

4.18 Overall the effects of the export ban between 1994-1996 and then the tax from 1997 to present have not met objectives of government, which was to encourage greater processing. Exports of raw cashmere dropped and exports of semi-processed goods increased alongside entry into the semi-processing sector. The final goods manufacturing industry did not grow over time with the export ban or tax. The tax did not fulfill government expectations of increasing the production of high value added products in the sector. The value added component from raw greasy cashmere to dehaired cashmere is marginal.

4.19 The tax however, has affected firm income, overall export earnings, government revenue, quality of cashmere, and herders incomes in varying ways as discussed below. On average, the distributional impact of the tax has been largely skewed in favor of processors and dehairers, and less so for herders and government revenue.

Figure 4-2: The effect of the export ban and tax on compositions of cashmere exports, 1993-2001



Source: NSO, 2002

IMPACT OF TAX ON EARNINGS

4.20 The export tax has not led to significant increases in the value of exports. The net effect of the export tax on total exports between 1996 and 1999 was negative US\$87.5 million. The drop in raw cashmere exports was higher than the increase in final goods exports. With rising cashmere prices in 2000–2001 the net loss has dropped. Overall Mongolian herders lost about US\$ 77 million in export earnings between 1996 and 2001 as a result of price differentials-domestic prices lower than border prices, while exports of finished products increased by only about US\$ 5 million. The export tax has not encouraged final goods production in Mongolia.

4.21 Overtime, however, the increase in dehaired cashmere exports moderated export earning losses. Dehairing firms benefited from the export ban then tax. There was an increase in dehaired exports, which compensated for the loss in raw cashmere exports and offset the overall impact. Dehaired cashmere exports increased from US\$26 million in 1994 to US\$46 million in 1999. Following the *dzud* however there is a net loss in exports.

Table 4-3: Estimated Impact of Cashmere Export Tax on Export Earnings

	In US\$ million			
	1996	1997	1998	1999
Change in total export earnings	(49.7)	(8.8)	(26.2)	(2.7)
Decline in raw cashmere export	54.3	9.9	29.1	3.3
Due to fall in production	52.0	9.5	27.8	3.0
Due to diversion to domestic processing	2.3	0.3	1.4	0.2
Increase in garments export earnings	4.6	1.1	2.9	0.6

Source: Staff estimates.

4.22 The export restrictions kept domestic raw cashmere prices low in comparison to international border prices. The price differentials between domestic prices and international prices were highest when the ban was in effect. The removal of the ban and an introduction of a tax led to an increasing equalization of the border prices with the domestic prices. In 2000 drop in world supply combined with high international demand led to unprecedented increases in the price of cashmere and domestic prices rose faster than international prices.²³

Table 4-4: Computed Raw Cashmere Domestic and Border Price Trend, 1996-2001 (In US\$)

	1996	1997	1998	1999	2000	2001
Policy	export ban	export tax	export tax	export tax	export tax	export tax
External conditions	Drop in demand	East Asia Crisis -Drop in demand	East Asia Crisis -Drop in demand	Demand recovers	High demand low supply - Dzud	High demand
Domestic price	6.2	8.6	6.6	9.2	20.8	15.5
Border price	12.1	10.9	10.6	10.1	17.0	9.7
Price differentials	5.90	2.31	3.92	0.88	(3.73)	(5.84)

Source: NSO, 2002 and staff estimates.

Impact of the export tax on dehairing and final goods processing firms

4.23 The export ban and the tax were meant to protect domestic processing firms and provide them with larger volumes of cashmere at cheaper prices. These export restrictions met their objectives somewhat in early 1996-99, as domestic prices remained lower than world prices. However by 2000 high international demand coupled with increased smuggling closed the gap between domestic and export prices. Over 1996-1999, the export tax accounted for a net resource transfer from herders to processors and traders of up to US\$109 million dollars (US\$ 27 million annually) of which gains to garment industry was US\$5.8 million. The total net efficiency loss amounted to US\$ 20 million for the economy over the same period. (Table 4.5.)

Table 4-5: Estimated Impact of Cashmere Export Tax on Herders Income

	In US\$ million				
	1996	1997	1998	1999	Total effect 1996-1999
Total loss to herders	65.8	16.1	40.1	5.7	127.7
Net efficiency loss in raw cashmere production	12.7	1.0	5.2	0.1	19

²³ Domestic prices are defined as farm gate prices for raw cashmere provided by Gobi Cashmere company, international prices are defined as border prices for raw cashmere and cashmere garments based on data from the Mongolian National Statistical Office. The unit value of raw cashmere "package" in domestic/international market in the model is derived by multiplying the domestic/border price per kilogram of raw cashmere by quantity of raw cashmere required to produce one unit of garment. The quantity of raw cashmere needed to produce one unit of garment, package, could be interpreted as a conversion rate of raw cashmere into finished cashmere good or garment. This conversion allows comparison between domestic and border prices for both raw cashmere and cashmere final goods within a single model. The quality of cashmere is identical so there are no adjustments for quality differentiation. The resulting domestic and international prices used to calculate impact of export tax on herders, processors and total export revenues are shown in table below. See details in Annex 2.

Transfer to traders/dehairers	49.7	14.2	32.9	5.2	102
Transfer to processing industry	3.4	0.8	2.0	0.4	6.6
Gain to garment industry	2.8	0.8	1.8	0.4	5.8
Efficiency loss in garments export earnings	0.6	0.0	0.3	0.0	0.9
Total net efficiency loss	13.3	1.0	5.4	0.1	19.8
Income loss per household with livestock- in US\$	236.4	57.4	145.7	21.0	460.5

Source: Staff estimates.

4.24 The dehairing sector benefited more from the export restrictions. While between 1996 and 1999 US\$5.7 was transferred from herders to final goods processors US\$102 was transferred to the dehairing firms. This could in part explain the reason why there is significant entry into the semi-processing sector without equivalent increases in the final goods sector, beyond the costs of investments. The export tax was meant to increase value-added activity for domestic processors, however over time value added in the cashmere sector has not improved. Processors have not moved up the value chain significantly. Processors continue to export large quantities of dehaired cashmere while increases in final goods exports have been slower.

Fiscal impact of export tax –smuggling

4.25 Government revenue from the cashmere export tax in 2000 as a share of GDP was 0.3 percent or US\$2.6 million. In 2001 it dropped even further as a share of GDP to 0.003 percent or US\$ 0.029 million. The export tax is unenforceable and costly to the government. It has distorted the incentives needed to create productive strategic supply chain alliances and led to increases in governance issues at the border and customs office, border control, increased expenses for processors who have to partially dehair prior to exporting to circumvent the tax. The administrative costs of applying the tax to those who choose to declare raw cashmere for legal export are high.

Figure 4-3: Share of total export taxes in Revenue and GDP

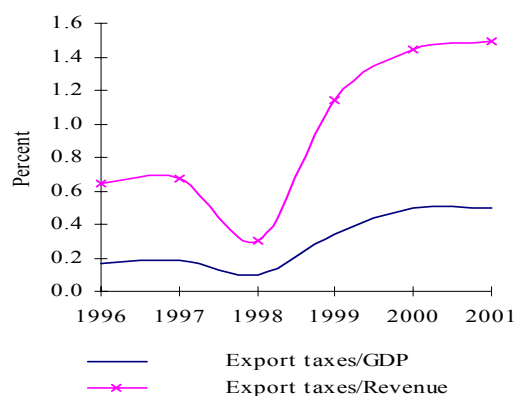
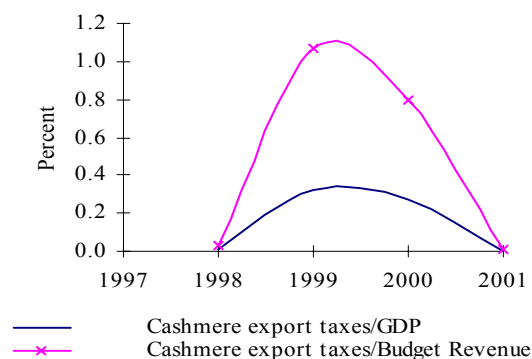


Figure 4-4: Share of cashmere export taxes in Revenue and GDP



Source: GOM, 2002

Trade restrictions encouraged smuggling

4.26 It has been estimated that about 469 tons of raw cashmere – 17 percent of the total raw cashmere production – valued at US\$ 8.5 million was smuggled through the border in 2001 as a result of the export tax. The government lost about US\$1.8 million in tax revenue from cashmere export as a result of smuggling and poor tax administration. By the end of the 1998 season traders were able to smuggle cashmere in large quantities to China as world demand picked up. It is estimated that over 25 percent of all raw cashmere produced in Mongolia is smuggled.

Table 4-6: Cashmere smuggled, 1995-2001

	1995	1996	1998	2000	2001	2002
Cashmere, greasy/raw – smuggled in tons	1013	470	1150	447	469	1017
Cashmere, greasy/raw – smuggled in US\$ million	5.2	10.2	21.7	13.6	8.5	16.8

Share of raw cashmere smuggled in total produced by volume (%)	44	18	38	15	17	38
--	----	----	----	----	----	----

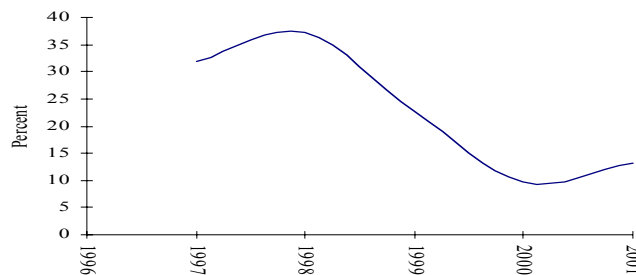
Source: Staff estimates.

4.27 The tax has been counterproductive for both government and processors but more so for processors. The tax reduced availability of raw cashmere for processing within Mongolia as smuggling and border corruption increased. In the long run, while processors benefited from the tax in the early years as demand for cashmere increased and smuggling grew, processors lost their monopsony power. As Table 4.4. indicates, by 2000 domestic prices increased faster than border prices due to shortage in supply. By 2001 domestic price for raw cashmere was higher than border price by over US\$5.

Impact of export tax on herders

4.28 In 1997 when it was introduced the export tax was an effective 35 percent tax on exports of raw cashmere, by 1998 with falling cashmere prices the tax burden increased to 40 percent. The lower the price of cashmere the higher the impact of the Tg 4000 per kg export tax on raw cashmere to herders. Cashmere prices have been increasing annually since 1998 so the impact of the export tax on herder incomes has been decreasing. By 2001 raw cashmere price had more than doubled from about US\$ 12 per kg in 1998 to US\$ 27 reducing the rate of the tax to 13 percent.

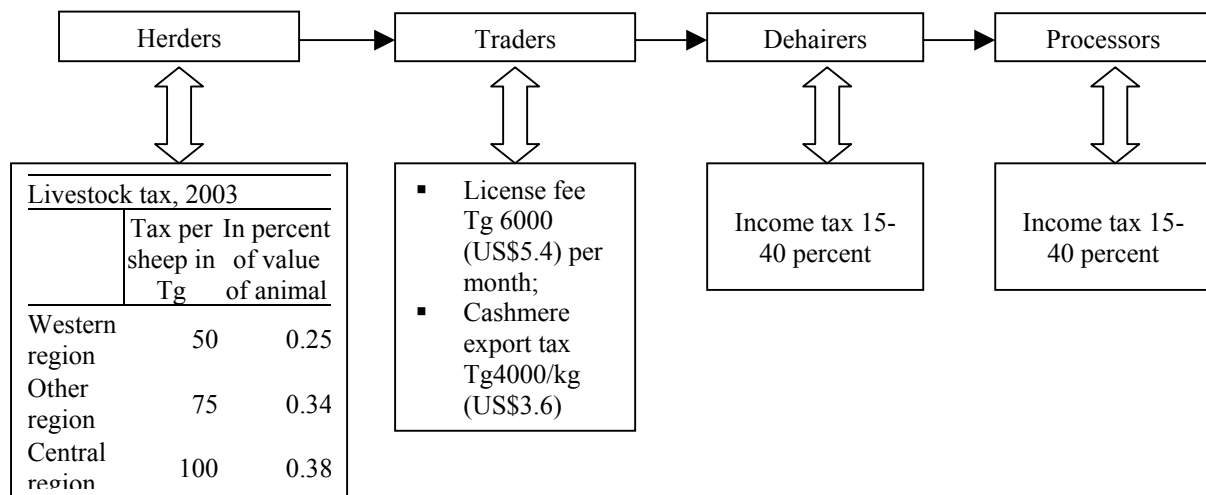
Figure 4-5: Nominal export tax burden on herders in percent



Source: GOM, 2002 and staff estimates.

4.29 With export taxes on raw cashmere at over 13 percent, goat herders would appear to be more heavily taxed than the average person in Mongolia²⁴. The personal income tax in Mongolia introduced in 1997 has rates varying from 10 percent to 40 percent, with low to middle income taxpayers with incomes less than US\$ 2.2 thousand paying 10 percent. There is also a presumptive income tax on livestock. The tax base for this tax is the number of (standardized) cattle registered in December that precedes the fiscal year. The property tax rate is 0.6 percent of the value of property. Based on these figures the cashmere export tax if effective would be highly regressive. However, although the export tax on cashmere has a statutory rate of 13 percent equivalent in 2001, increased smuggling across the Chinese border has likely attenuated the impact of the export tax on prices received by the herder, resulting in a lower effective tax rate. It is important to note, however, that the failure of the tax administration to collect the tax does not imply that prices to the herder are unaffected to the extent that illegal payments have to be made to smuggle the raw cashmere across the border.

²⁴ See Chapter 2 for more discussions of herder taxes.

Figure 4-6: Taxes and Fees Across Supply Chain

Source: NSO, GOM, 2003 and staff estimates.

4.30 Over time, domestic and border price differentials have reduced and loss to herders has dropped. Moreover, the domestic market prices for raw cashmere was higher than its border prices in 2000-2001. As a result the loss to herder households has fallen significantly from over US\$57.4 in 1997 to US\$ 21 in 1999, signaling the weakness of this trade policy instrument on overall economy. However, should prices drop to historic levels herders will continue to lose income.²⁵

Impact of export tax on quality

4.31 The export ban and tax also affected the quality of cashmere supplied. With the ban processors discouraged product differentiation by offering the same low prices for different grades of cashmere. This practice helped depress quality of cashmere. While in the short run this practice was profitable, over time this has led to a drop in quality and affected producer costs.

4.32 Processing costs for poor quality cashmere are greater. Approximately 50 percent of the weight of raw cashmere is lost in the early stages of the production process, reducing the quantity of cashmere available for dehaired exports or final goods processing. This due to the removal of coarse guard hairs, dirt and grease. Improvements in the transformation of raw cashmere to processed cashmere can marginally increase the quantity of semi-processed and final processed cashmere in Mongolia. While Mongolian final goods processors have made significant investments in weaving and knitting equipment they have not improved the lower end processing capacity. These high loss rates between raw and dehaired cashmere affect Mongolian dehairing firms' capacity to be competitive at the international level. As raw cashmere prices increased in 2000 and 2001 many Mongolian dehairing firms, for example, were forced to shut down, as they could not break even.

Table 4-7: Dehaired cashmere yield ratios per kg of raw cashmere-Gobi

	1998	1999	2000	2001	2002
Yield	0.493	0.496	0.459	0.490	0.494

4.33 The yields from sorting, scouring and dehairing depend on a set of factors that include the quality of the raw cashmere purchased and the quality of processing technology. Between 1996 and 2000, Gobi's yields, for example, increased annually, indicating improvements in technology but also

²⁵ Price comparisons in text are based on Gobi price calculations except otherwise stated. Use of Buyan prices tends to increase loss to herders and gains to processors as Buyan raw cashmere prices are generally lower.

some improvements in the quality of cashmere purchased. However after the 2000 *dzud*, there appears to have been a drop in the quality of cashmere available as yield drops compared to previous years.

4.34 Dehairing firms' profit margins are the most hit by the drop in quality of cashmere. The profit margin for dehairing firms is very small compared to final goods processing firms. Decreasing quality of cashmere compounded with increasing prices of raw cashmere as was the case in 2000 and 2001 has produced damaging consequences for dehairing firms whose profit margins were so severely squeezed that number of important dehairing firms in Mongolia shut down during this period.

Public sector ownership impedes effective trade linkages in the sector

4.35 Public ownership of processing firms may underlie the need to resort to protectionist measures such as export bans and export taxes in an attempt to improve profitability of state owned processing plants. In 2001 the government subsidized cashmere purchases "*Thanks to the Government support Gobi co. purchased 726 tons of raw cashmere in 2001 which is more than double of the amount it could buy in last two years, 300-350 tons. The Gobi co. spent about US\$ 15 million for raw cashmere procurement.*"²⁶ by the state-owned trading company Gobi to the detriment of other processing firms. Government subsidies for state-owned enterprises damage other processors, who face higher prices for their raw material as inefficient government companies are provided with preferential access to supplies. The net effect is to reduce the overall competitiveness of the industry in international markets.

4.36 Any attempt to reform market structure must have, as a key component, the withdrawal of direct government involvement in processing. Gobi Cashmere is the largest processor in Mongolia. Public involvement in Gobi is one of the factors that has influenced the bias of public policy away from herders in favor of processors. Over the years there have been regular statements that Gobi is to be privatized, but they have always been cancelled or postponed. These delays impose considerable costs on the Mongolian economy.

4.37 The most recent attempt to privatize Gobi was in July 2001. Initially there was interest from a number of sources, including Chinese interests. However, no binding bids were submitted under the terms of the tender. In October 2001, it was announced that a group of Austrian and US companies had entered into negotiation with the State Property Committee to try and work out a share purchase agreement. The prospective buyer dropped out of negotiations in January 2002 when some Members of Parliament issued public statements that Gobi, one of the country's prized assets, was worth at a minimum between US\$30-40 million and should not be sold for less. Independent valuations of the company had put Gobi's fair market price at a lower value. The Government in its poverty strategy paper in 2003 has reiterated its desire to privatize Gobi.

INCREASING COMPETITIVENESS OF MONGOLIAN CASHMERE SECTOR

Cashmere processing is competitive in Mongolia if investment decisions are optimal and there is access to quality raw cashmere

4.38 Removal of distortionary taxes—including the export taxes— would reduce smuggling and increase the supply of raw cashmere to the domestic processing capacity. Improvements in customs practices such as valuation methods for processed cashmere are needed. Customs officials now arbitrarily determine the price of dehaired cashmere for exports, usually using the highest export price quoted on the market for a given shipment. This practice goes against the World Customs Organization guidelines on valuations. Valuations are a particular problem with a volatile product such as cashmere and these problems are increased when dealing with contracts that may be entered into in one season for delivery during the next. This is a technical issue on which there are clear international guidelines.

4.39 Processors in Mongolia will have to begin paying price differentials for quality. The drop in quality also resulting from collusive pricing behaviour of the processors while beneficial in the early years of the tax to both dehairers and processors is now the single most severe constraint to the

²⁶ Press release from the "MONTSAME" the Government News Agency on July 17, 2002

manufacturing sector, particularly the dehaired sector where profit margins are very tight and marginal increases in the price of raw cashmere or decreases in the quality often lead to huge profit losses for the industry. Incentives to improve quality need to be devised. The easiest will be to introduce price differentials for different qualities of cashmere. Processors and dehairers must be willing to pay premium prices for the good and discount the bad quality cashmere or they cannot expect herders to deliver good cashmere or to improve the quality of their stock.

4.40 Under the Competitiveness Initiative some work has begun to convince processors of the necessity of paying price differentials to herders to obtain better quality raw materials. Likewise, the Gobi Initiative has also begun training programs for herders on product differentiation and how to obtain price premiums of higher quality cashmere. Some processors have begun posting their price differential policies so that herders can clearly see what the price differences will be for a number of variables including fiber diameter, cleanliness, good handling and packaging. This initiative needs to be widespread across Mongolia.

4.41 While government's occasional intervention to assist the partially state owned Gobi company may not substantially distort prices it does nonetheless affect the overall health of the Mongolian cashmere industry and the ability of all firms in the sector to be profitable. Providing subsidies to Gobi sends a negative signal to other potential firms trying to enter the final goods market. Privatization of Gobi could be a way of attracting credible foreign investors into the sector.

Other non-tax issues affecting Mongolian competitiveness

Labor cost

4.42 Dehairing costs are significantly lower in China US\$2 to US\$3 per kilogram of finished product in China, versus an average of US\$6 to US\$8 per kilogram in Mongolia. Processing cost from raw to one kilogram of finished product is US\$8 to \$12 in China, whereas its averaging around \$24 in Mongolia. Without raw materials costs, it cost Cashmerefine's factory in China half as much to produce a kilogram of finished sweaters. The reason is that labor costs were much lower in China where processors can employ workers for US\$20 a month in the procurement season, and they are under no obligation to keep them on the payroll if they do not need them for a few weeks or months. They can always find qualified replacement workers. In Mongolia, the qualified labor (knitters, sorters) is harder to find, labor laws are much stricter about overtime and wages are higher.

Improving industry infrastructure

4.43 The Government needs to address generic cost issues to increase competitiveness of manufacturing sector. The Government is working to eliminate subsidies on public utility services such as electricity, heat, water to cover the costs of delivering the services. However, most companies report that the costs are less a factor than the unreliability of the services. The first thing would be to ensure that electricity is not cut off too often, because the companies incur huge costs when they have to run double shifts and overtime to catch up on production lost when the power goes off and they get behind schedule for a delivery. Same with water supply, which is important for cashmere companies.

Negotiating better transshipment agreements

4.44 Generic cost issues also include the high cost of transportation, which could partially be addressed by concluding a transport/transit agreement with China. As it is, delivery of a container to Tianjin is much more expensive for a Mongolian company than for a Chinese company, because Mongolian exports must be carried by the state transportation company in China, which charges more for foreign goods than internal transportation.

4.45 Another strategy for reducing transport costs internally would be to support an initial analysis for the feasibility of transport hubs throughout Mongolia where consolidation could take place, and where transports (trucks, trailers) could get better information on where they are needed, who has freight to carry, etc. The current tendency is for trucks to congregate in markets and wait for customers. Costs of transport could be reduced if trucks did not run one way empty, and if they could find out where the next nearest customer was without returning all the way to UB. Also, almost all trucks charge the same per ton kilometer, but the fuel consumption of trucks varies considerably.

Providing carriers with this info could lead to switching to more fuel-efficient trucks for each given load capacity and reduce transport costs. There are cost effective ways of doing this without creating new institutions, but by employing existing ones such as the telephone/post offices for relaying information.

Enhancing regulatory environment

4.46 Costs of doing business in general will be reduced if the authorities reduce the number of certifications, tests and other documentation required to export goods. Most of these do not affect the ability of the company to service the client well, and are just government-imposed steps. Government could assist the processors to become internationally competitive by eliminating impediments that are not faced by their international competitors, such as duties on imported inputs, including capital equipment, required by cashmere factories.

Increasing employment in processing

4.47 Increasing the productivity of Mongolian processing firms will lead to increased demand for labor. The cashmere processing industry in Mongolia employs over 2,800 people. Average wages for blue-collar workers range between \$80 and \$100 per month. These are widely regarded as competitive wages and the demand for employment exceeds jobs. The lack of demand for skilled textile workers in Mongolia has led in recent years to substantial migration of female workers to neighboring countries to work in wool and cashmere factories. There is potential to triple processing industry employment capacity to more than 9,000 jobs if all established processing factories were to operate at full capacity.

Table 4-8: Cashmere processing jobs, 1995-2000

Year	1995	1996	1997	1998	1999	2000
Number of employed	1,912	2,135	2,431	2,417	2,580	2,848
Growth rate (%)		11.7	13.9	-0.6	6.7	10.4

Source: GOM, 2001

Conclusion

4.48 To improve competitiveness of the cashmere manufacturing sector four core issues need to be considered by the government and other stakeholders to initiate restructuring of the industry. These include improvements in quality, technology, skills and market access.

1) Access

- Improved access to market information for the whole cashmere industry (not just herders) on fabric trends, technologies, seasonal styles and colors, and above all on the companies that contract for cashmere goods production and their requirements.

2) Quality

- Better understanding of quality control processes and systems.

3) Technology

- Improved adjustment of dehairing processes to reduce coarse hair content.
- Improved technology or better usage of existing spinning equipment to improve yarn quality.
- Introduction of finishing technology. Much of the quality of a garment is due to the finishing technique, and most processors here do not have it. They outsource and have garments finished in other countries where they loose control over quality. Some companies just depend on their own internal (and poor quality) finishing units.

4) Skills

- Introduction of weaving technology and capabilities, since woven fabric is a much more suitable use for 60 percent of Mongolian cashmere than knitting is. Knitting just happens to be easy

entry, and easy to learn, but Mongolia could really compete in woven with the quality of raw material it has.

- Training of knitwear designers: design of knitwear is not just fashion design; the designer needs to know how to adapt the design for knitting and piecing. Currently, there are maybe two or three real knitwear designers in Mongolia; there is no training available within Mongolia for knitwear design. The last generations of knitwear designers were trained in Eastern Europe (Russia, Hungary) and have largely been lost to industry through retirement or immigration.

CHAPTER 5. CASHMERE MARKETING AND DISTRIBUTION CHANNELS

5.1 Policies to stimulate growth in Mongolia's cashmere industry must be directed toward improving marketing channels and access along the supply chain. Marketing channels are the agencies or institutions through which cashmere products flow from herders to the next stages in the processing chain. Efficient marketing channels get products from herders to processors at least cost. Agents in these marketing channels need to solve problems of time, form, and location. They need storage, processing, and transportation capabilities. Efficient and effective marketing channels require physical infrastructure and agents for selling product, and information that lets participants know the opportunity costs of alternative channels.

5.2 Cashmere marketing in Mongolia is evolving into complex relationships between herders, traders, processors, and domestic and international suppliers. The export surge in the 1990s tested the limits of Mongolian supply capabilities as producers, processors, and the government struggled to find ways to respond to the new market environment that replaced the state procurement system. The absence of established markets and the supply coordination challenges posed by weak institutional arrangements at this level of the supply chain seriously affect the cashmere industry's productivity.

5.3 Improving market coordination and the institutional environment, particularly at the rural level, and improving the capacity of herders to move goods from the farm gate to markets are key requirements for increasing productivity. Internal market fundamentals need to be improved even before a pro-poverty alleviating version of the phase one supply chain can be launched. The agenda for creating more open and competitive transactions and more competitive price setting institutions entails a critical re-examination of the basis on which internal markets operate in Mongolia. Some efforts are already underway to improve supply chain logistics in the cashmere industry in Mongolia, but more is needed. The most promising initiatives are the development of herder cooperatives and attempts by government to improve herder access to markets by creating wholesale networks.

5.4 Developing efficient market supply chain links is particularly important in the cashmere industry. There is increasing evidence that luxury goods companies are moving toward greater market integration to protect brand names and ensure quality. For Mongolia to secure and expand its export markets for raw or processed cashmere its firms and herders will need to develop new strategic alliances with larger processing and distribution firms. China's entry into the WTO has led to a rapid rise in joint venture agreements between luxury European cashmere processing and retail firms and Chinese firms. With the proper regulatory environment Mongolia could take advantage of the proximity and development of the Chinese market to forge new alliances.

PROCUREMENT AND DISTRIBUTION SYSTEMS: FROM COMMAND TO MARKETS

5.5 Under the socialist system, the government at the beginning of each season approved an annual plan for cashmere production, distribution, and use. This included plans for production, procurement, distribution, and processing of livestock products from each *aimag*. The price of cashmere was irrelevant to these plans, as they were entirely based on quantity targets that were decided in advance. Government bodies in each cashmere-producing *aimag* were required to develop implementation plans to meet the agreed national production level.

5.6 The state trade and procurement agencies in each *aimag* were required to contract with collective farms, state farms, processors, and transporters to meet these quotas. State procurement and trading companies for agriculture, food industry, trade, and procurement acted as intermediaries between the state and the *aimags*, coordinating and controlling production and procurement activities. There was generally no consideration of the price of cashmere. Once quantities for production were set, the cooperatives were obligated to meet these targets.

5.7 Until 1991 private exports of livestock and agricultural raw materials, including cashmere, were permitted only after delivery quotas to state enterprises were fulfilled. By early 1992 all forms of state control over national and international trade and distribution of raw cashmere had been abolished. Centralized procurement of most agriculture and livestock-based commodities was abolished by 1994. The remaining controls on marketing and distributing meat and live animals were lifted in 1994.

5.8 Under the command economy model the productive role of cashmere herders ended at the farm gate. No marketing was needed, as production was set to meet government-defined targets. The vacuum created by the dissolution of state collection and procurement agencies has yet to be filled. Farmers are now faced with the formidable challenge of marketing their products. The collapse of CMEA ushered in a new cashmere industry structure that placed much greater demands on herders and households to make judgments about quantity and quality, and where and when to sell.

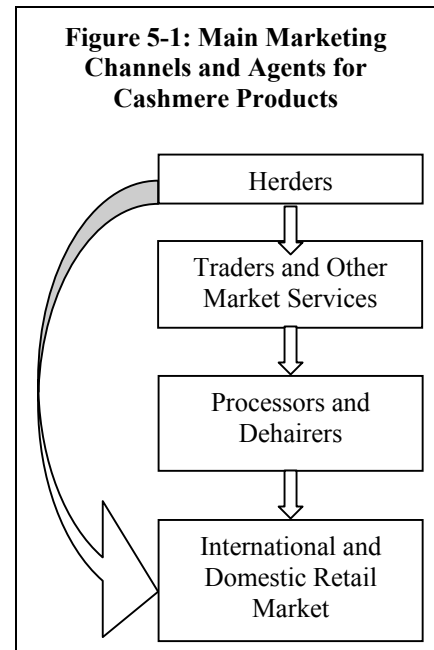
5.9 Mongolian herders and processors are still trying to grasp the new concepts of ownership and profit maximization and the market has gradually become more sophisticated with the entry of arbitrage traders. While the current market system is not perfect, it is a considerable improvement on its predecessors. The challenge is to improve the system by ensuring that participants have as much access to markets, timely information and critical inputs as possible.

Low supply and high demand early in the transition facilitated marketing and masked problems

5.10 Initial high demand for cashmere and low herder incomes led to satisfactory price levels for herders, which involved relatively low search, marketing, transportation and storage costs. Between 1993 and 1996 it was a sellers market, and most herders were able to find outlets for their cashmere. The decline in world demand for cashmere after 1996, however, accentuated problems in production and distribution systems as Mongolia began losing market share. As the market for cashmere dropped over 1997-99, the importance of improving marketing channels to guide herder decision making has become critical.

5.11 There are three main marketing channels for cashmere and other livestock products:

- Indirect marketing through traders;
- Indirect Marketing through cooperatives; and
- Direct marketing to processors including through contract agreements.



CURRENT MARKETING CHANNELS

Indirect marketing through traders or middlemen

5.12 The most common way of selling raw cashmere is through indirect marketing. Herders sell their products to traders or market intermediaries who then sell either to processors or international operators in local markets or the *Tsaiz* market in Ulaanbaatar. Some processors employ their own buying agents and operate warehouses and buying centers in the countryside where they buy directly from herders and agents. Generally, Mongolian herders operate as individuals in the market—often on a barter basis—and this has undermined their ability to influence market outcomes.

5.13 Prior to 1990 cashmere was produced to meet state quotas, and herders had little knowledge of its value as an international commodity. Most employees of the former state procurement farms agencies became cashmere traders in the mid-1990s. There are over 100,000 cashmere traders in Mongolia, almost all Mongolian nationals. Traders are required to pay license fees of Tg6,000 a month.

5.14 One of the contentious issues in marketing rural products in Mongolia is the role of traders. It is estimated that over 70 percent of all cashmere traded in Mongolia is sold at the farm gate to traders, making it impossible for herders to have access to competing offers at the farm gate.

5.15 Most herders sell cashmere to unlicensed traders, who are not established in central market trading places and have little direct access to cashmere companies. Traders must have licenses to operate a fixed buying/selling point in the central marketplaces. Generally this is a container or small building. However, any trader or individual has free and open access to enter these markets and conduct any type of transaction with the licensed traders or others inside, and unlicensed traders resell to “fixed place” traders, who then resell to companies.

5.16 Some industry stakeholders complain that trade agents take advantage of herders’ lack of capacity to market their own output and procure their own inputs. However, a large part of agent margins are used to cover costs of funds for providing services and financing. In effect, agents, many of whom borrow from banks, are acting as agents for banks because they effectively on-lend to herders in the form of advances or barter goods.

5.17 Indirect marketing through traders increases uncertainty and severely limits herder chances of smoothing income streams, as they have little knowledge of market demand trends. Currently, there are few herders in Mongolia who do not have access to Market Watch radio, which broadcasts commodity prices in all major markets (every *aimag* and border points, plus *Tsaiz*) on a weekly basis. However, even price differentials of Tg2000/kg, which is significant, are not perceived as sufficient incentive to travel 200 or 300 kilometers to sell in other markets. Herders expect quite drastic price differentials if they are going to leave home for 3 to 5 days and incur additional expenses transporting goods to market day locations with no certainty of concluding sales.

5.18 Indirect marketing between traders and herders or traders and processors is not without risks to traders. Most local processing companies are not prompt with payments, and herders increasingly do not allow buyers to be selective during the procurement process—they prefer to sell their cashmere as one lot rather than have it separated into grades, risking rejection of some cashmere which is difficult to resell, even if the price is higher for the bulk of the lot. Herders are increasingly realizing that their poor quality cashmere is a handicap at sales time, and are reluctant to allow inspections. Some traders respond by buying unsorted cashmere and offering lower prices to hedge against poor quality.

5.19 There is a general sense among Mongolian traders that local processing firms take advantage of export licenses and other institutional barriers to exploit both traders and herders. Foreign raw cashmere purchasing firms appear to be more accommodating to Mongolian traders and

are willing to pay more for cashmere. As a result, most traders sell the best quality cashmere to foreign firms and only sell to Mongolian processors late in the cashmere season when prices drop and the quality of fiber in the market is lower.

Marketing through cooperatives

5.20 The other emerging form of indirect marketing in Mongolia is through cooperatives. Since the transition, Mongolians have been reluctant to form or join cooperatives after the negative experience of the centrally planned economy where herders who were part of state collectives lost some of their herds. High cashmere prices in the mid-1990s also discouraged attempts at starting cooperatives, as most herders felt they had access to good prices.

5.21 However as the price of, and demand for, cashmere dropped in the late 1990s and competition from China increased there was increasing awareness among herders of the need to protect prices from falling and improve their bargaining power. This contributed to the development of new agricultural cooperatives. In Mongolia today there are seven main cooperative groups, with over 150,000 members (Table 5.1), and many more smaller informal cooperative groups.

5.22 The formal cooperatives provide a wide array of services to herders. These include husbandry services, financing, training procurement, storage, marketing and distribution. Some cooperatives provide pooled veterinary services and cashmere upgrading and quality improvement opportunities. More effort could be made by government and donors to support such herder initiatives and build more efficient and formal cooperative systems.

Table 5-1: Current Structure of Cooperatives in Mongolia

Main Cooperative Groups	Number of Regional Branches/Unions	Number of Primary Cooperatives	Members
National Association of Mongolian Agricultural Cooperators (NAMAC)	17	124	92,573
Central Union of Mongolian Consumer Cooperatives (CUMCC)	20	183	28,342
Union of Mongolian Production and Service Cooperatives (UMPSC)	20	441	13,439
Central Union of Mongolian Industrial Cooperatives (CUMIC)	22	565	12,357
Mongolian Association of Private Herder's Cooperatives (MAPHC)	6	57	6,773
Mongolian National Federation of the Savings & Credit Cooperatives (MNFSCU)		7	332
National Confederation of Credit Unions of Mongolia (NACCUM)		23	407

Source: Mongolia Cooperative Training and Information Center, GTZ, 2002

5.23 Cooperative remains small and many herders continue to be suspicious of larger cooperative associations. Lack of credible organizational charters and weak transparency continue to undermine potential benefits from cooperatives. Cooperative membership continues to be undermined by short-term herder objectives. Herders have withdrawn from arrangements when better prices were offered at market locations that appeared expensive for the group, but attractive to a single herder.

5.24 The advantages of belonging to a cooperative include increasing and securing income through better prices and larger volume of production, and improving productivity by reducing production risks and through diversification. Other indirect benefits of cooperatives include improving market competition by increasing bargaining power of herders, creating employment in cooperative enterprises, local markets, and increasing the effectiveness of production systems through training programs.

5.25 Cooperatives are helping monetize rural transactions. There are over 80 non-bank financial institutions in Mongolia today. It is expected that improvements in the regulatory environment supported largely by ADB, USAID, and other donors will improve overall access to credit for rural herders. Cooperatives could also provide a smooth transition to a market economy for rural herders accustomed to state control, help develop financial intermediation in local areas and increase access to capital for rural farmers. It is estimated that less than 15 percent of cash money outside banks circulates in rural areas. This has fostered barter trade as the predominant form of business transaction and substantially slowed the transition to a market economy.

5.26 A majority of herders own 100 to 200 head of livestock, of which a third are goats. These small cashmere producers may not be able to enter into vertically integrated agreements with processors. Joining in cooperatives could allow them to benefit from marketing efficiencies and stronger bargaining power. Substantial savings and improvements in quality would be realized if herders pooled resources to procure veterinary services. For most of the year herders are spread out across vast distances. However, herders need to be educated to understand that such strategic alliances and community management are beneficial and cost effective, and they need to be willing to pay for them. Individual herders may ignore or find the cost of some services too costly to procure. The formation of cooperatives may increase demand for such services and lower delivery costs.

5.27 The main impediment to the development of efficient cooperatives in Mongolia is a lack of managerial capacity. Mongolia has a good law on cooperatives, and increasing training programs for cooperatives would substantially improve their organization and function. A cooperative training program supported by GTZ is providing some assistance in this area but more is needed to improve governance and financial management in the cooperatives.

Direct marketing to processors

5.28 Herders can also market directly to processors by herders. This marketing channel takes on a number of forms. Herders sell cashmere directly to the factory—the most common direct trade method—at the farm gate, or at pre-determined market locations.

5.29 During the May–July peak cashmere trading season many herders travel long distances to Ulaanbaatar to sell cashmere to processors. Processors, therefore, are in a good bargaining—often monopsony—position and usually end up purchasing cashmere cheaply. While this strategy appears irrational from the herder perspective there are two main reasons for it. First, herders continue to trust that state-owned companies will purchase cashmere at “fair” prices. Government statements prior to the trading season on price announcements or price quotes contribute to this belief. Secondly, while most traders offer consumer goods in exchange for cashmere bought at the farm gate, processors mostly pay in cash, which herders increasingly desire. Direct trading to processing firms can be very costly to herders, who often have to travel 3 to 5 days to get to processing firms, then wait for processors to sort cashmere bales and pay them.

5.30 Direct marketing where processing firms buy from the farm gate: Some processing firms have representative offices in *aimags* who are responsible for purchasing cashmere from herders during the season. Mongolian processing companies have tried to develop contractual relations with herders but have met with little success due to weak legal enforcement environment.

Trading places-market locations

5.31 The third marketing option is for herders and processor to exchange cashmere at predetermined market locations. The largest cashmere market in Mongolia is the *Tsaiz* market in UB and the second largest is in *Zamyn Uud*, a border post with China.

5.32 Increasingly there is a wide price differentiation in the market places and herders and processors are able to compare and bargain over quality. Prices offered at these market locations vary substantially. The presence of traders at these markets also helps to balance the number of buyers and

sellers in the market, creating better competitive conditions for herders particularly when cashmere demand is higher than supply.

5.33 To foster such market experiences, some initiatives to improve cashmere marketing have recently been tested in Mongolia. The Gobi Initiative and Competitiveness Initiative programs, both funded by the US Agency for International Development (USAID), organized open market days at locations away from Ulaanbaatar in *Dalanzadgad* and *Govi Altai*. The United Nations Development Program also organized an auction.

Market day experience

5.34 The Gobi Initiative encourages herders to work as groups or cooperatives to increase their negotiating power, reduce input costs, and exchange breeding animals and other inputs. One goal of the Initiative was to encourage herder groups to establish supplier relationships with processors, which could help them access credit. Some of the groups that have been formed with support from the Gobi Initiative appear to be looking for things other than the highest price. Access to credit from a bank or processor—secured by a supply contract—so that they can invest in breeding stock and supplemental feed is more important to them. While there is a case for the Gobi Initiative approach, others see this as a return to the old collective system. They fear that group decisions will be extremely conservative and believe it would be preferable for herders to make individual decisions.

5.35 Gobi/Competitive Initiative market days were meant to facilitate meetings between cashmere processors and herders. They were set up as events at which herders would get their cashmere sorted and graded and have an opportunity to negotiate with more than one processing company. They were not designed as auctions because it was felt that an auction system was premature, as neither herders nor buyers understood the concept, and buyers had already announced that they would not buy at an auction.

5.36 It was also felt that face-to-face contact would give the herders a better chance to build relationships with potential clients than auctions in which bidders compete only on price. Initially, the market day plans envisaged that herders armed with cashmere quality certificates would negotiate their own sales with buyers.

5.37 At the first market event in *Dalanzadgad*, it quickly became evident that the herders were waiting for the buyers to “announce the price.” Because buyers have not been paying significant premiums for quality or discounts for bad cashmere over the years, herders were under the impression that there would be only one price for cashmere—and each herder was determined not to discuss sales with a buyer until this price was announced. By the end of the second day of waiting, some herders negotiated their own sales with buyers. Shortly afterwards, most other herders sold their cashmere, and premiums were paid for different qualities of cashmere. Overall the market days provided a good start for understanding the behavior of the herders and processors.

Cashmere auctions

5.38 The concept of auctions is very new in Mongolia, and at the UNDP-organized auctions herders proved reluctant to accept final prices. In essence, they treated the auctioneer’s call as a base reference price from which to begin negotiations, and most sales ended up taking place through direct negotiation. Buyers had been reluctant to attend an auction in the first place, and even when they did bid they treated the call price very much the same way the herders did—as a starting price for negotiation.

5.39 Auctions—if accepted in Mongolia—could have the advantages of giving buyers and sellers access to open transactions so they can judge quality and prices. They are also a rapid and efficient method of transferring ownership. The disadvantages include difficulty in evaluating the

quality of cashmere on the spot, as there is little opportunity to inspect before sales. There is also a danger of collusion, as buyers could get together and fix prices.

5.40 Both attempts at improving marketing channels in Mongolia focused on enhancing direct marketing methods, with an emphasis on bypassing market intermediaries who realize much of the margins on cashmere trade. The market days provided herders and processors a chance to meet and negotiate prices. The main advantage of this system is that herders have direct contact with processors, and this can provide market intelligence for the herders. A second major advantage of the Market Days was that herders were able to observe the grading process undertaken by company sorters, and to ask questions about their cashmere quality. Herders were thus able to learn more about what constitutes quality cashmere and have a better understanding of how a price is reached during negotiations by discussing quality factors.

Government-facilitated wholesale network marketing

5.41 Building on the experience of the USAID market days and the UNDP auctions the government decided to assist in improving rural herder market access by establishing a wholesale network system in three pilot *aimags*, *Khentii*, *Bayankhongor*, and *Dundgovi*. The government launched a bidding process among potential wholesalers for the use of government warehouses as market facilities. One market day organizer was selected for each *aimag*, and was responsible for organizing auctions at which herders and processors pay to participate in buying and selling raw materials. The wholesalers are required to provide the rural markets with other basic primary goods necessities not found in the rural areas.

5.42 The assessment of the wholesale trade network system has been mixed. The prices of primary commodity products sold to herders by the wholesalers remains high. The monopoly situation of the wholesalers undermines effective competition. The cashmere auction system continues to lead to collusion among processors. The timing of market days depends solely on wholesalers—and, as cashmere prices vary significantly over the buying season, timing can be very critical in determining the prices received by the herders.

5.43 Alternatives to the current arrangement could include government providing the venue for the market days but letting buyers and sellers have free entry, with sellers paying to lease stands and buyers paying a tax on sales. The government could lease management and maintenance of the market to a private firm.

CONSTRAINTS TO INTRA-INDUSTRY INTEGRATION AND POLICY OPTIONS

5.44 All methods of cashmere distribution discussed above are sub-optimal, mainly because of the lack of adequate legal and institutional market supporting and enhancing arrangements, particularly the lack of transparent and enforceable contracting rules. Mongolian processing companies that have tried to enter into direct marketing or vertical relationships with herders have been unsuccessful. There are no enforcement mechanisms, and the mobility of herders and the small size of herds per household make it difficult to police such arrangements. Processors will need to enter into contracts with many households to obtain desired amounts of cashmere needed – making it cost inefficient. Companies have to file complaints in courts if a contract is renegeed on, and this process can drag out for more than three years until firms generally abandon complaints.

5.45 The absence of institutional mechanisms for establishing contracts between herders, traders, and processors has made coordination and collaboration between agents along the supply chain very difficult. This problem has been further compounded by a lack of market information available to herders and the contentious relationship between processors and traders.

5.46 Under the current system the only way of establishing contractual links between market agents is probably through the banking system, which through its local branch network could retain

better information on borrowers. Bank loans normally involve a continuing relationship between the borrower and its bank, thus banks have strong incentive to monitor the borrower to make sure that the borrower is behaving reasonably. Importantly, banks are allowed to foreclose on property of borrower/guarantor if loan payments are delinquent. Banks could, therefore, play the role of the middleman in the rural areas by extending credit to cashmere traders and herders. However, Mongolia needs to substantially improve its legal and judicial systems to strengthen the enforcement of contracts and to provide a safe environment for the operations of financial intermediaries.

Problems of getting credit in rural areas

5.47 Access to financial services in rural areas remains difficult, while there is at least one financial institution in every *soum* -the Agricultural Bank has maintained its branches in *soum* centers. The Post Bank has branches in all *aimag* centers – lending rates are prohibitive. The main reason for high interest rates are absence of titling system, poor collateral (pastureland is not privately owned therefore local *soum* and *aimag* governors distribute the right for pastureland use), difficulty to cease the property, absence of adequate property registry system, lack of credit records, weak regulatory and judicial systems and presence of different covariant risks such as weather conditions.

5.48 This situation continues to hinder the willingness of financial intermediaries to lend and to lower high interest rates for loans. To improve access a number of actions will be required: improving the legal and regulatory framework is essential for titling system, law on property rights and seizure. In addition, alternative providers of financial services, including local credit and savings institutions, microfinance banks should be encouraged. Financial intermediation in rural areas also has to be complemented by insurance services to reduce different covariant risks such as adverse weather conditions, droughts, *dzuds* and other natural disasters.

Weak legal and judicial system

5.49 The legal and judicial system for credit remains fragile, with power shifted toward borrowers, which became major soil for moral hazard, erosion of public discipline, and flourishing of non-repayment culture. The application of the new financial laws and regulations and their interpretation by the courts encountered considerable struggle, largely because of poor institutional capacity and corruption.

5.50 Mongolia seeks to strengthen the legal basis for secured transactions, and legal acts to enhance the use of property as collateral are being drafted.²⁷ Progress in strengthening the financial service provision in the rural areas was undermined as the new Civil Code has weakened the 2001 amendment made to its previous version, which authorized lenders to foreclose on non-performing loans without prior court decisions. The amendment of January 2001 sought to discipline contract enforcement and speed up delinquent loan collections through forced foreclosure by commercial banks and substantially improved the position of the lenders against defaulting borrowers. The new civil code over-turned this. The position of creditors weakened once again with blurry provisions of the 2002 Civil Code, particularly Article 175 that requires court ruling prior to foreclosure and sale of collaterals by creditors. As a result, banks and enterprises are seriously hampered by difficulties in such areas as contract enforcement (including loan collection), secure transactions, and the failure of bankruptcy procedure.

Clear and enforceable contracts are a prerequisite for improved cashmere industry integration

5.51 Whilst challenging, evidence of emerging strategic alliances between herders provides a starting point. Some efforts at equipment and skill sharing through joint grazing seem to be underway in Mongolia, and in some regions herders are working together to maintain wells. Well maintenance

²⁷ Mongolia adopted new Civil Code effective from September 1, 2002, that sought to strengthen the legal basis for secured transactions.

depends on working with communities to get them to accept ownership responsibilities such as maintenance, regulation of usage, and fee collection. With the rise in herd numbers, the demand for wells is pressing. Models of public-private partnerships could be encouraged or private cooperative initiatives developed with user fees to finance well maintenance. Property rights laws will need to be clarified, however.

5.52 The legal and regulatory environment in Mongolia needs to be further developed for vertical or horizontal arrangements to work effectively. There are no vertically integrated cashmere firms in Mongolia, and it is not clear whether Mongolian foreign investment rules would permit this type of investment. Mongolia also needs to clarify legislation pertaining to foreign ownership of herds.

5.53 Developing strategic alliances between agents in the cashmere industry will be challenging. The nomadic nature of livestock herding makes it difficult for herders to enter into formal marketing or equipment-sharing agreements. Such formal relationships require a lot of trust and strong social cohesion. Credible enforcement mechanisms to ensure that contractual obligations are honored also need to be in place, and there needs to be a system that rewards cooperation and organization to create incentives for herders to either enter into horizontal or vertical agreements.

5.54 Agricultural marketing contracts could cover the sale of products, buying or financing contracts could provide herders with capital investment for producing cashmere. The most critical aspect of most contract negotiations will be the price of the final commodity. The best method is to have prices written into contracts that will be adhered to by both parties regardless of fluctuations in market prices. This transfers the risks of trading from herders to producers. Another method is for prices to be set within a fixed range based on market prices. Spot sales and forward contracts give herders an assured market for their products, and advance knowledge of prices permits herders to better plan production cycles, although they have less opportunity for windfall profits.

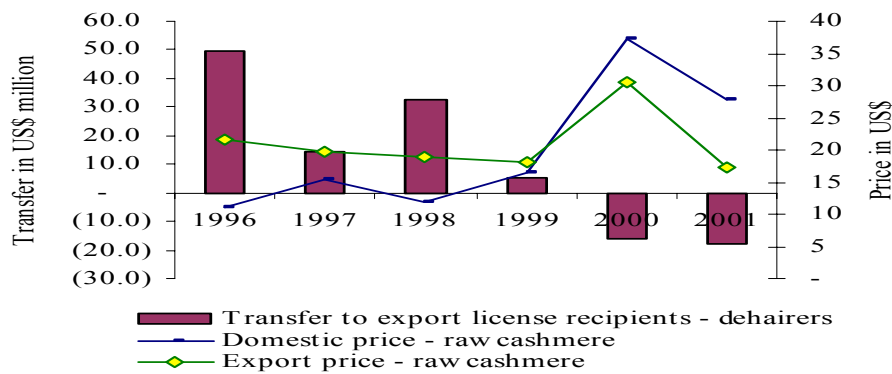
5.55 Empirical observations from FSU countries suggest that FDI in upstream and downstream industries in transition economies has provided a solution to contracting problems and has facilitated access to inputs for both farmers and processing firms through private contract enforcement mechanisms induced by innovative vertical arrangements.²⁸ FDI-induced vertical integration can take many forms but the most common include conditions for product delivery and payments and input support programs for farmers. These programs typically include pre-financing of inputs, investment in processing machinery, and technological support or technology adoption and management. Creating the legal and regulatory environment for FDI in the cashmere industry should remain an essential component of the government's agenda. FDI also provides large benefits to foreign firms that want to control the quality of the product chain, such as luxury goods producers.

An unstable policy environment further impedes competitive marketing arrangements

5.56 The export tax and other policies that distort prices have contributed to the absence of vertically integrated arrangements in the cashmere industry. Processors have had no incentive to form strategic links with downstream agents as government policies continue to fluctuate and generally favor processing firms. On the other hand, as traders become more sophisticated and obtain more information on international demand and supply conditions, they have developed new ways of smuggling cashmere to Chinese processors who offer higher prices.

Figure 5-2: Export Restrictions Benefited Traders/Dehairers

²⁸ Gow, H and Swinen J., Impact of Foreign Direct Investment on Agricultural and Agro-Industry in Transition Economies. Second EU Accession Workshop, Warsaw. 1999



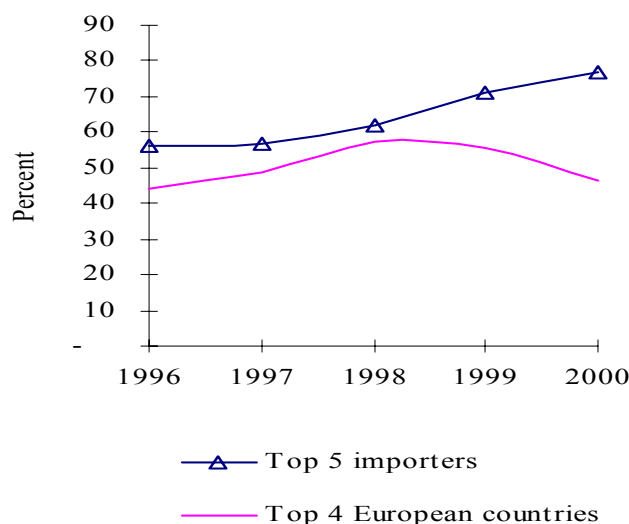
	1996	1997	1998	1999	2000	2001
Transfer to traders/dehairers in US\$ million	49.7	14.2	32.9	5.2	(15.8)	(17.8)
Domestic price - raw cashmere in US\$	11	15	12	16	37	28
Export price - raw cashmere in US\$	22	20	19	18	31	17

Source: Staff estimates.

Improving cashmere marketing through collaborative vertical supply chain alliances

5.57 Successful Supply Chain Management (SCM) systems in market economies often rely on business relationships built on mutual trust, contract enforcement, and long-term business commitment. SCM is the integration of business processes from original suppliers to end-users and provides products, services, and information that add value to customers along the chain. SCM is concerned with the needs of all stakeholders, including the objectives of independent businesses associated with the production of a commodity. Typically this is discussed in the context of private business enterprises, assuming that the public goods markets are efficient and public policy directions are conducive to private sector development. In Mongolia this is not the case: inappropriate public intervention in the cashmere industry has led to substantial distortions in the industry's development. Consequently, the discussion of SCM addresses the impact of public actions on the growth and competitiveness of the industry and provides recommendation to improve outcomes.

Figure 5-3: Share of top 5 importers of fine animal hair in world import



Source: World Bank Trade Data Base, 2003

5.58 The cashmere sector like most luxury goods industries is becoming increasingly concentrated. While in 1996 the top five importers of raw cashmere accounted for only 55 percent of the market by 2000 their shares increased to over 75 percent with Italy and Great Britain accounting

for over 60 percent of the market. Cashmere manufacturing is going through a series of mergers and acquisitions as the industry consolidates even further due to China's entry into the WTO.

Box 5-1: Vertical and Horizontal Integration in Chinese Manufacturing

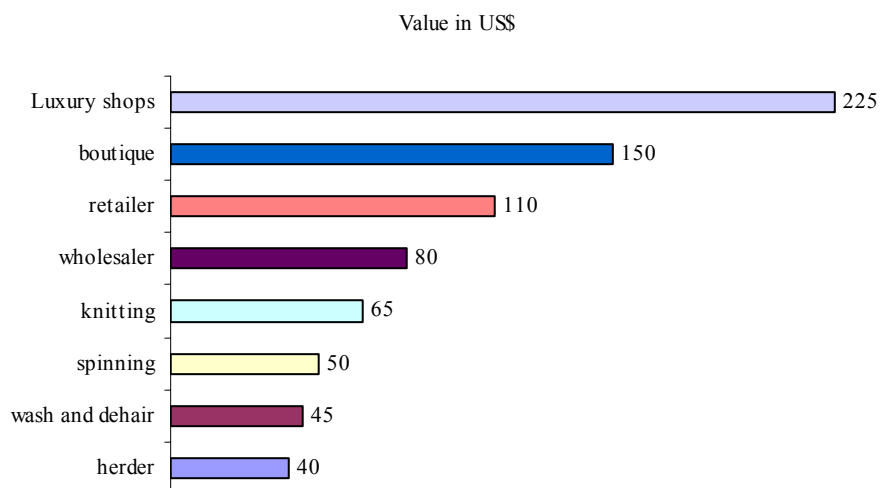
China's cashmere industry is becoming increasingly vertically integrated. Dawson International, the world leader in high quality cashmere clothing, is a good example of how companies operating in China's Inner Mongolia have restructured their operations. Dawson has integrated its operations from raw cashmere through to finished products, and reduced uncertainties in the supply of raw cashmere by entering into direct contracts with suppliers across a wide geographical spread of Inner Mongolia. It has introduced new mixes of cashmere/silk yarn, and is working with leading designers.

The high-end Italian company, Manrico, which is 24 percent owned by Prada and provides cashmere products for Prada, Louis Vuitton, and Ralph Lauren is the first European company in China to put in place a complete vertical pipeline from goat breeding to finished products. The project is being implemented through a \$265 million joint venture with the Chinese company Erdos including an initial investment of \$45 million for goat breeding.

The Italian textile firm Fratelli Piacenza is in talks with a China-based apparel maker regarding a joint venture operation in China. The company produces exclusive fabrics in wool and cashmere for the likes of Brioni, Canali, Corneliani, Escada, Fusco, Genny and Hugo Boss. In 1993 the company made its first foray onto Chinese soil establishing the Piacenza China branch. It is expected that the terms of the China joint venture will be finalized before the end of 2002.

Source: WETFA 2002

Figure 5-4: Value Chain-Mongolian Cashmere
Estimated value added per kilogram of raw cashmere for each component of the value system



Source: Mongol Amical, 2002

5.59 In Mongolia these conditions have been eroded or have yet to develop. Attempts to restore collaborative structures are often seen as a return to the command economy. Developing interdependent production and marketing systems that improve market efficiency is a challenge in Mongolia, but the benefits of such a shift overwhelmingly outweigh the costs, particularly for the poor.

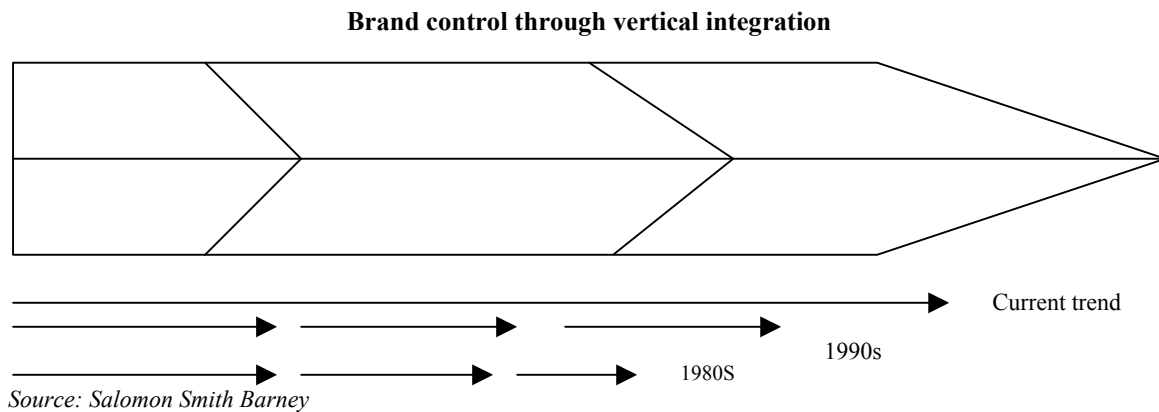
5.60 Improving the legal and regulatory environment for contracting would facilitate vertical integration, which could be potentially beneficial to both herders and processors. By establishing common goals and developing meaningful business relationships and processes with which to pursue those goals, they could generate collective efficiencies and gain competitive advantage.

LUXURY GOOD MARKETING AND FOREIGN DIRECT INVESTMENT

Branding is the most valuable asset in the luxury goods industry

5.61 The most important characteristics of strong luxury goods brands are consistency, clarity, and leadership. Luxury goods consumers are very selective in what they buy, but are ready to pay for quality. To control and protect their brand names, luxury good companies often prefer to own large segments of the value chain, from raw material processing through production, distribution and marketing. Figure 5.4 shows the increasing trend in vertical integration in the luxury goods industry.

Figure 5-5: Increasing vertical integration among firms



5.63 Lack of know-how in the production and processing of raw materials excludes many developing country exporters from access to the luxury goods value chain. FDI could provide much of the capital, and managerial and technical skills needed to restructure and modernize the cashmere industry. Increasing FDI can act as a catalyst for improvements across the value chain through horizontal and vertical spillovers. There is a need to examine the operation of the foreign investment approval processes in Mongolia. The problem is not with foreign investment laws, but with the way they are administered.

INCREASING COMMUNICATION FLOWS BETWEEN HERDERS AND PROCESSORS

5.64 A prerequisite for improved business integration is proximity of agents and improved knowledge of business processes and needs at each stage of the production process by all agents in the industry. Participants at both the marketing day events and the auctions agreed that the benefit of these events was enhanced communication between herders and processors. Participants were more interested in knowledge transfer and transparency in business dealings than sales. Participating herders and producers believe that over time these relationships will improve market responsiveness and allow for longer planning horizons with less perceived risk. Intangible benefits were also evident, particularly among producer groups. These included an increased understanding of downstream processes, greater involvement and control over marketing related activities, and an enhanced sense of teamwork.

Not all processors and herders will be able to integrate vertically

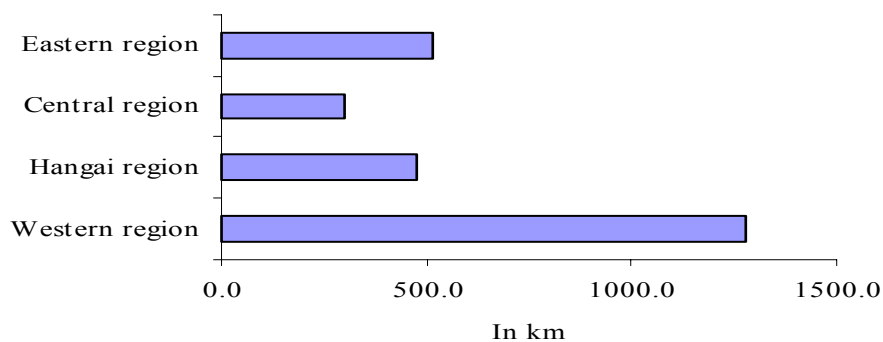
5.65 While vertical integration may solve the problems of larger herders and processors, direct and indirect marketing of cashmere is bound to continue. Improvements in storage and transportation facilities will be particularly important for herders and traders. Availability of storage facilities during the trading season can help match production flows with consumption patterns over time and provide sellers and buyers with the opportunity to hedge. It can also reduce transportation costs. While the need for storage has been minimal under past distribution and marketing patterns, the development of

horizontal herder cooperatives and marketing locations would lead to increasing demand for storage facilities.

5.66 Two recent developments in the domestic cashmere industry point to the need for storage facilities. First, the significant drop in world cashmere prices in 2001 and increased speculation that there would be high prices in 2002 led herders in Mongolia to stock up on raw cashmere with the hope of commanding higher prices in 2002.²⁹ Traditionally due to poor stocking facilities, stocked cashmere decreased in quality over time and consequently fetched lower prices. Well-organized storage facilities provide herders with better outlets for safekeeping their cashmere, and the availability of adequate storage facilities also ensures that the quality of cashmere is maintained during storage.

5.67 Direct marketing will persist and for firms who want to continue doing business this way the government should focus on improving the market infrastructure and services needed to improve access to markets such as roads, provide warehouse facilities, leasing services, and other marketing services needed to improve efficiency in the supply chain.

Figure 5-6: Distances from cashmere-producing regions to UB market



Source: NSO

5.68 Transportation facilities from rural areas to urban markets are poor. This increases transport costs for herders who travel long distances to sell cashmere. Poor transport conditions also force herders to delay the sale of their cashmere until they can travel to the larger markets in Ulaanbaatar. The price of gasoline and poor state of the roads on both side of the border creates an affective export barrier. The price of cashmere in Mongolia spikes upwards when the secondary boarder crossing of *Gashuun-suhait* and *Burgastai* periodically open for business.

Potential efficiencies from increased integration; economies of scale

5.69 Horizontal or vertical integration could reduce transportation costs incurred in distributing and marketing cashmere. Horizontal herder integration through the development of private cooperatives could reduce individual costs of transportation. Vertical integration between herders and processors could lead to a sharing of transportation costs between agents; improve income security for herders and ease supply uncertainty on the part of processors.

²⁹ Massive stocking of cashmere by Mongolian and Chinese herders in 2001 led to flooding of market in 2002 and prices were lower than expected.

CHAPTER 6. ENGINEERING PUBLIC POLICY CHOICES TO STRENGTHEN CASHMERE INDUSTRY AND REDUCE POVERTY

INTRODUCTION

Public policy choices can be a catalyst for developing adequate and sustainable institutions

6.1 Many institutions that support markets around the world are publicly provided. The ability of the state to provide and support these institutions is fundamental to the development of vibrant and broad based markets.³⁰ Public policies should focus on improving the efficiency of public institutions and reducing policy distortions, and adopting measures that will make private production and the market system function more effectively.

6.2 In general governments should intervene in the provision of commodities only if market failures or imperfections exist. In many countries government agricultural sector interventions have increased, rather than reduced, market imperfections. The designers of Mongolia's cashmere policies should be careful not to perpetuate this trend.

6.3 While Mongolian policies at the macro level have been important in meeting the government's objectives of fostering growth, employment, and poverty reduction, complementary policies to support internal market development have been largely overlooked. At the micro-structural level the government has not been very effective in adopting and implementing policies to support growth in the cashmere industry. National cashmere policies have been the product of an evolving political economy that pays little attention to the creation of an enabling environment for the development of efficient competitive markets. As in many other transition economies, Mongolia is still grappling with the challenges of a small open economy, new political processes, pressures from growing interest groups, and external market volatility.

Table 6-1: Government Policy Impact on Cashmere Production

Income increase from cashmere per household with livestock (US\$), 1998-2001

	With actual price	Without tax	With quality improvement	Without tax and with quality improvement	Without dzud	Without dzud and with quality improvement
1998	0	49	18	74	0	23
1999	0	44	34	84	0	34
2000	0	42	64	112	-212	-181
2001	0	40	33	79	21	58
Average	0	44	37	87	-48	-17

Source: NSO, 2002 and staff estimates.

6.4 The government trade policy in the face of export tax on raw cashmere and its prior involvement in cashmere goat improvement processes resulted in income loss for herder households. It has been estimated that an average household with livestock lost annually about US\$44 from lower price of raw cashmere as a result of export tax, and US\$37 from deteriorating quality of cashmere over the 1998-2001. The combined effect of export tax and deteriorating quality was annual income loss of US\$87 per household.

³⁰Building Institutions for Markets. WDR, 2001.

6.5 Government policies over the last decade in the cashmere sector influenced the structure and conduct of cashmere industry as a result undermined its performance. Too many herders entered the market without having optimal stocks and access to free inputs biased the composition of the sector and protected exit. On the other hand Government ownership of the processing end compromised entry while availability of subsidies to processors and protective regime undermined competitiveness. The failure of public institutions to function effectively has led markets to operate less than inefficiently in Mongolia, which has resulted in widespread poverty, increased vulnerability and inequitable distribution of income, destruction of the environment, and depressed growth performance. The Mongolian cashmere industry faces a number of market failures and imperfections that have impeded development of a fully competitive cashmere industry and led to substantial production inefficiencies.

Market imperfections

6.6 Market imperfections can develop in a number of ways. An imbalance between the number of primary sellers and buyers can create an oligopoly situation that narrows distribution channels. Policies to protect domestic industries or increase value added in the domestic processing industry can distort prices. Both of these have happened in Mongolia. On the production, or supply, side imperfections include price and yield risks, imperfect information, and imperfections in the market for inputs, particularly that for land and capital. Taxes and fees for important inputs—land and pasturage, livestock ownership, and imported components for the cashmere processing industry—are often non-existent, or too low to reflect their values.

6.7 As in many other economies in transition, private markets are emerging very slowly in Mongolia. To improve the cashmere industry the government needs to identify these markets, disseminate information on their existence, analyze their imperfections, and design and adopt policies to overcome those imperfections. The most fundamental requirement for the cashmere market to yield an efficient outcome is that there be many competing buyers and sellers, so that prices are endogenously determined by all agents in the market and are not influenced by the activity of individual agents. Market pricing imperfections that affect direct trade and pricing of cashmere are of particular importance, as they have the single most direct impact on the incomes of herders and the overall economic growth and competitiveness of the economy.

Market failures and missing markets

6.8 The most important source of market failure in the production, marketing and distribution of cashmere is a lack of public market support institutions, most of which broke down after the demise of the CMEA. While not all these institutions need to be replaced by public sector institutions a substantial share do. The set of public goods needed to facilitate cashmere marketing and improve supply chain linkages include: infrastructure upgrading, research and development facilities, herder education, improvements in communication facilities, and market facilities. A modernized legal environment is needed to support development of private finance and insurance, land, fodder, and water supply markets. The government should also support development of intermediary production and distribution services such as warehousing, grading, veterinary services, transportation, and other business development services.

6.9 Missing markets are another form of market failure in which public sector intervention can be beneficial for trade. Where no private sector yet exists to replace public sector pre-market institutions, involvement of a public agency or public-private agency may yield important benefits. Policy distortions—or lack of capital for initial investments—are often the prime suspect in missing

commodity markets. In either case public-private joint ventures could support establishment of these markets, which would become completely private as more agents enter the market.³¹

6.10 The analysis of the cashmere supply chain in previous chapters identified a number of missing markets. These include fodder production, livestock insurance, water supply, and distribution services such as warehousing, grading, and veterinary services.

6.11 There are over 20 public and private sector institutions in Mongolia today dealing with cashmere production and policy (Box 6.1). Public sector institutions have yet to fully relinquish their pre-1990 roles as market agents to become market facilitators. An important step in the developing a consistent and efficient cashmere sector would be to ensure full coordination between government agencies on cashmere policies. Overall government agency activity should concentrate on providing an environment that fosters private initiative in the industry.

Box 6-1: Cashmere Policy Formulating and Advisory Institutions in Mongolia*

Ministries with direct responsibility for cashmere policy:

- Ministry of Industry and Commerce
- Ministry of Food and Agriculture

Ministries that deal with specific cashmere industry issues:

- Ministry of Finance and Economics (tax issues and customs)
- Ministry of Foreign Affairs (relations with China, WTO matters)

Central Government agencies that deal with specific cashmere issues:

- Foreign Investment and Foreign Trade Agency (foreign ownership and investment, registration of businesses)
- State Property Committee (Gobi privatization)
- National Center for Standardization and Metrology (developed cashmere standards)
- Industry and Trade State Inspectorate
- State Agricultural Inspection Service
- State Directorate of Taxation
- State Directorate of Customs

Regional Governors' Offices:

- All major cashmere producing *aimags* have organizations to deal with cashmere issues.

Private Mongolian-operated institutions with government links

- Mongolian National Agricultural University (testing of cashmere etc)
- National Association of Mongolian Agricultural Cooperatives
- The Superior White, Red, and Black Cashmere Goat Association of Mongolia
- Mongolian Private Veterinarians Association
- Mongolian Association of Private Herders
- Cashmere Producers Association
- Mongolian Wool and Cashmere Association
- Federation of Mongolian Industries
- Association of Hides and Skins Processors
- Mongolian Employers Federation
- Mongolian Chamber of Commerce and Industry

Note: Some of these organizations are not operational; list excludes foreign-funded agencies carrying out projects related to the industry.

³¹ It is important, however, to establish that the private sector market is really missing before public sector intervention. If an incipient private market exists government action could prevent its development and lead to added distortions, rather than providing a remedy for the problem.

PUBLIC SECTOR POLICY CHOICES TO MITIGATE MARKET FAILURES AND MARKET IMPERFECTIONS IN CASHMERE SECTOR

6.12 The government's focus now should be on facilitating the emergence of a competitive private market for cashmere production, processing, finishing, and marketing. An important part of this will be disciplining itself to be firm in exiting from socialist habits of supporting and subsidizing inefficient production processes. Competition's invisible hand must be allowed to replace the *dirigiste* hand of socialist planning.

6.13 This does not mean that government can have no role in the cashmere industry. It can, and should, provide the public goods—infrastructure (including markets), herder education, animal health services, extension, and research and development—that government's everywhere recognize as requiring state investment. But government has no business being in the cashmere business itself: owning, subsidizing, or protecting firms that process cashmere or produce finished products can only mean wasting resources to underpin wasteful inefficiency.

6.14 At both the herder and the processor levels, the government must allow a shakeout in which inefficient producers—a group likely to include many small peri-urban herders—exit the industry. A more efficient and profitable cashmere industry will, over even the medium term, spur economic growth that will create new jobs in such areas as fodder production and infrastructure—particularly water—development and maintenance.

6.15 Government could serve the public good by undertaking a census of the national goatherd by region, breed, and quality, followed by nationwide programs to develop nucleus herds of quality goats. Such programs should have to be carefully structured to avoid subsidies—or, at a minimum—recoup them to make the breeding program financially self-sustaining. The Mongolian Livestock Research Institute, the Agriculture University and the *aimag* level veterinary and animal breeding professional units it hoped would play an important role in this field.

6.16 Another important initiative would be to build the legal framework needed to support market structures, such as auctions, market days, contract enforcement provisions, and insurance programs. Here, again, the government should be cautious not to move beyond a framework that facilitates private agents making decisions in their own commercial interests.

6.17 The government also envisions programs to improve cashmere product manufacturing. These should, however, be limited to projects funded by external technical assistance and should focus largely on university and other training courses to avoid subsidizing commercial firms. Proposals to evaluate the quality of manufacturing plants and set standards for cashmere products—including a quality trademark—would also waste scarce resources on issues better left to the marketplace particularly if the governance structures are not in place to ensure transparency.

6.18 The government must be firm in maintaining its position that cashmere processing and the production of finished goods are private endeavors that it has neither the resources nor the expertise to participate in. Increased government involvement in production through loans to manufacturers should be strenuously avoided, as should any subsidies that go beyond excusing import duties, or bailouts of unprofitable firms. The government should also avoid subsidizing domestic processing and production firms—at the expense of herders—by limiting raw cashmere exports through tax, tariff, or non-tariff measures.

Putting market value on inputs costs will drive poor herders out of the market

6.19 New solutions are needed to assist the poorest herder households. Many of these households own small herds of 50 to 100 animals in close proximity to *soum* and *aimag* centers. Cashmere production among these households is largely possible because prices for key inputs such as water, forage, and veterinary services are largely free. To make these herders commercially viable

would require intensive training and forming cooperative partnerships to optimize production levels. Even if it was desired to continue subsidies for some social goal, this would send the wrong market signal to inefficient herders who have little chance of becoming commercially viable, do the most damage to pastures, and lack the skills and kinship ties to become productive and efficient.

6.20 Herders with few animals have no possibility of improving their herds to commercially viable levels. Only by cooperative action and specialization within a larger group can scientific breeding programs show any influence on improving their stock. The consolidation of small herds into cooperatively managed larger herds and a concomitant exit of many herders from involvement in agriculture should be an important government focus.

Small herders and non-farm sector policies

6.21 A long-term solution for raising rural incomes has to move away from encouraging more people to go into herding. The maximum number of herders on a sustainable basis—without moving to intensive husbandry and feeding—has already been exceeded. Donor efforts at this point should focus on job creation in traditional industries other than herding, or in the non-farm sector activities generated by a growing competitive cashmere sector.

6.22 Attempting to maintain small, cash-poor, subsistence herders in their present activity is not a sensible goal. A more rational solution is to target some households, and assist them in finding other income generating opportunities. Despite the difficulty of finding jobs, there are many demands that go un-serviced in the rural economy. A long-term solution for raising rural incomes is to promote a reliable non-farm sector capable of supporting a professional herding sector.

Rural non-farm labor can alleviate inequality and poverty

6.23 The non-farm sector includes all economic activities in rural areas except crop production, livestock, and hunting. Arguments for paying attention to the non-farm sector generally center around promoting a more equitable distribution of income through the sector's potential to absorb a growing rural labor force, slow rural-urban migration, and contribute to national income growth. Non-farm income can reduce aggregate income inequality and provide at least partial economic security for certain subgroups of the population who are unable to participate in the agricultural labor market. But if the bulk of non-farm income goes to the more prosperous segments of society there is a strong presumption that it increases inequality—though this need not mean that the poor do not benefit at all. Non-farm sector activities associated with cashmere industry could include cashmere combing, sorting and weighing, veterinary services, insurance, leasing, transportation, fodder preparation, well construction and maintenance, fence building and moving, marketing facilities, research and development as well as healthcare, education, and communication.

6.24 Evidence on the benefits of increased agricultural productivity from non-farm labor is mixed.³² In some cases the poor get a higher percentage of their incomes from non-farm activities, suggesting an equalizing influence and poverty-reducing role as the non-farm service industry develops to support a growing farm sector. Within the rural areas the effect may also be to raise inequality.³³ Generally, the impact of non-farm activities appears to correlate with rural education levels. The better educated are more likely to secure employment in high-income non-farm fields (insurance, veterinary service), while the non-educated tend to remain poor or continue performing low-income jobs, such as weighing and sorting cashmere. Most poor Mongolian herders have little education and the government will have to develop and target education programs to meet the emerging service needs of the rural economy.

³² Reardon, T., Berdegue, J., Escobar, G., 2001. Rural Non-farm Employment and Incomes in Latin America: Overview and Policy Implications. World Development Press.

³³ A poverty study in Vietnam indicates, for example, finds the lowest levels of poverty in households whose income stems solely from non-farm employment. (Van de Walle, D, V, 2000. Is the Emerging Non-farm Market Economy the Route Out of Poverty in Vietnam ? mimeo, Policy Research Department).

6.25 The development of an effective and competitive cashmere industry is essential to increasing the efficiency of agricultural production in Mongolia. However, without efficient upstream and downstream off-farm activities Mongolian cashmere will never be truly competitive, as transaction costs will remain high—and rural incomes low.

Strengthening international trade relations

6.26 The international trading system has underpinned the integration of developing countries into the world economy. The system embodied in the WTO mediates international trade relations so that trade can take place in a stable and predictable rules-based environment with instruments to settle disputes.

6.27 The export ban on raw cashmere was questioned during the WTO accession process and dropped in October 1996.³⁴ It was replaced by an export tax that it was agreed would not exceed 30 percent ad valorem, and which would be phased out within 10 years of Mongolia's WTO accession: by January 2007. WTO rules say nothing about export taxes, unless they are applied to materials sold at low prices to local firms as inputs for export products. Such export taxes on raw materials are considered equivalent to export subsidies to processing firms, and if competitors in importing countries establish that their business has been injured as a consequence of this competition, these subsidies can be countervailed by special tariffs.

6.28 Because Mongolia's exports are so small this kind of reaction in importing countries is extremely unlikely at this stage. However, a strong case can be made that the export taxes do not serve Mongolia's own economic interests and should be abolished. Similar considerations would apply to the export taxes on unprocessed camels wool and forest products.

Joining the Cairns Club

6.29 Mongolia could also take advantage of existing trade associations such as the Cairns Group to further negotiate its trade position on cashmere with China, the rest of the EU nations, and the US. Mongolia could investigate the possibility of joining the Cairns Group of 18 WTO members interested in agricultural issues—and account for one third of the world's agricultural exports. Membership could give a small country such as Mongolia much greater leverage on agricultural issues, a coherent WTO agenda, and support from like-minded members.

6.30 On a bilateral level, Mongolia needs to examine its phyto-sanitary practices closely and ensure they are in compliance with international standards and particularly that they meet Chinese minimum standards. During Doha discussions Mongolia should also clarify China's position on the export of live goats to Mongolia.

6.31 The role of quality certification for imports in Mongolia remains unclear. To improve the quality of cashmere the government will need to address this issue by clarifying the role of the National Center for Standardization and Metrology to ensure that its certification processes are rule-bound rather than discretionary.

CONCLUSION

6.32 Public policies in the cashmere sector have an important poverty and stabilization component. Strong public and private sector institutions are required to support the development of a competitive market-oriented cashmere sector. Deepening the strategic alliances between the public and private sector and, most importantly, creating an environment for the development of strategic linkages within the industry could lead to substantial increases in productivity and incomes for herders and processors alike. The positive externalities associated with improvements in the cashmere

³⁴ WTO, Note by the Secretariat. *Technical Note on the Accession Process*. WT/ACC/7. 10 March 1997, para 71.

trade policy environment—increases in employment, stronger safety nets, reduced urban migration, expanding exports and higher income levels—make the sector particularly important from a policy perspective.

6.33 Effective government regulation of market dynamics could substantially impact the distribution of wealth in the cashmere industry, Mongolia's largest non-monopoly industry. Mongolia's cashmere industry is structured like most agricultural markets in the developing world. The primary producers are mostly rural based, are small to medium herders, while processing and manufacturing industry is dominated by comparatively few processors with substantial political influence on the policy process. The development of an effective competitive market structure in this industry could set the stage for improvements in trade facilitation in other emerging and re-emerging industries, such as meat, hides and skin, and textiles. Consequently the impact of trade facilitation improvements in cashmere—if properly targeted could substantially improve the livelihood of over half of the population.

Annex 1. POLICY MATRIX FOR CASHMERE INDUSTRY OF MONGOLIA

Problem	Action	Objective
HERDING		
Land Use		
Pastures are a free common good and have become degraded from overgrazing and poor legal and administrative mechanisms for regulating grazing land.	<ul style="list-style-type: none"> ▪ Revise the laws governing use of pastureland, develop consistent and sustainable pastureland management policies. ▪ Systematically monitor land conditions, precipitation and stocking densities as the basis for management and regulatory decisions regarding pastureland use. ▪ Develop regional map of pasture capacity potentials. 	Reduce overgrazing in depleted areas and improve pasture utilization.
	<ul style="list-style-type: none"> ▪ Revise the current conversion rates of different species of animals to common unit based on internationally accepted methodologies that take into account the proportional fodder and water consumption of each species weighted by their specific grazing characteristics and destructiveness. ▪ Consider converting the head tax on livestock to an ad-valorem tax based on the revised conversion rates and/or consider rangeland usage fees based on grazing area. 	Ensure that the taxation system as it applies to the cashmere industry is fair and equitable and that there is a level playing field for competitors in the industry, both herders and processors. Reduce the incentive to evade taxes.
Water Supply		
Poor supply of water hampers efficient use of pasture land.	<ul style="list-style-type: none"> ▪ Provide equipment and encourage local communities to rehabilitate wells and build new wells and engineered sources of water. ▪ Introduce user fees for watering. ▪ Deepen emerging public-private partnerships in well rehabilitation, and technical training for maintenance. 	Improve reliable water supply.
Well rehabilitation methods have been ad hoc, increasing pasture deterioration, including grazing of herd year around in winter pastures.	<ul style="list-style-type: none"> ▪ Conduct full survey of all water points. ▪ Revise well rehabilitation planning methods. 	Protect winter pastures from increased degradation.
Fodder Market		
Government and donor agency intervention discourages the development of fodder markets.	<ul style="list-style-type: none"> ▪ Government and international donors halt intervening in fodder market and help develop markets for supplementary feeding through winter. ▪ Create environment for sustainable private sector participation in fodder supply 	Encourage development of private fodder industry to reduce the risk of livestock deaths during harsh winters and droughts. Decrease government subsidies to herders.
Market Risk Management		
No market risk mitigation strategies available to herders.	<ul style="list-style-type: none"> ▪ Develop and adopt a comprehensive risk management policy emphasizing collaboration, information sharing, and coordination among herders. ▪ Educate herders on preparations for severe winters, arrangements for supplemental feeding of pregnant does and offspring in severe winter times. ▪ Provide proper legal and regulatory environment to develop insurance industry encouraging financially efficient and faster herd replenishment after natural disasters. 	Reduce vulnerability of herders to risk.

Problem	Action	Objective
Herder Incomes		
Mongolian cashmere quality is deteriorating and commands lower prices for herders.	<ul style="list-style-type: none"> ▪ Processors pay for quality differentials. ▪ Measurement tools needed. 	Improve income stream of herders.
Color/quality mix in bales reduces value.	<ul style="list-style-type: none"> ▪ Encourage herders to sort cashmere bales prior to sale. 	
Herd Improvement		
There are no established specifications for Mongolian goats. More information dissemination is needed for herders.	<ul style="list-style-type: none"> ▪ Government undertake a census of the national goat herd by region, breed, and quality. ▪ Government initiate nationwide programs to develop nucleus herds of quality goats. ▪ Establish a database on the origin, specifications, and productivity of the Mongolian goats, and make information available to herders. ▪ Provide herders with information on availability of genetic material that could help them move toward producing finer cashmere. 	Improve quality and international competitiveness of raw cashmere production.
There are insufficient quality bucks available for herd improvement, particularly white cashmere.	<ul style="list-style-type: none"> ▪ Facilitate expansion of the availability of quality bucks for herd improvement. ▪ Pilot test impact on cashmere quality of imports of white bucks from China. 	Propagate quality breeding stock to herders.
Small herd sizes make herd improvement expensive and slow.	<ul style="list-style-type: none"> ▪ Encourage larger herd sizes. ▪ Encourage cooperatives. 	Provide benchmarks for the herd improvement program and improve the quality of raw cashmere produced.
Herders do not adopt good herd management practices, such as culling and timely use of veterinary services.	<ul style="list-style-type: none"> ▪ Provide extension services to educate herders about the value of veterinary services, herd improvement, price differentials for various characteristics of cashmere, herd management, auctions work and alternative income sources if they are not making sufficient income as herdsman. 	Protect investments, improve competitiveness, and avoid supply side instability in the raw cashmere market.
Lack of horizontal integration or cooperation among herders.	<ul style="list-style-type: none"> ▪ Provide training, workshops, and seminars on establishing herder cooperatives and broaden areas covered by existing projects. 	Facilitate development of cooperatives.
Safety net policy for herders		
The maximum number of herders on a sustainable basis has already been exceeded. The consolidation of small herders into cooperatives and putting market value on inputs costs will lead to exit of many households from involvement in herding.	<ul style="list-style-type: none"> ▪ Promote cooperative actions and specialization within a larger group of herders. ▪ Encourage development of non-farm sector. ▪ Provide direct assistance for poorest herders to move to alternative activities in the non-farm sectors and urban centers. 	A long-term solution for raising rural incomes has to move away from encouraging more people to go into herding . Remove unviable herders from the cashmere industry and help them find alternative employment.
PROCESSING		
Producers are not fully aware of the importance of providing good quality	<ul style="list-style-type: none"> ▪ Encourage premiums for quality and improved grading of cashmere. ▪ Establish transparent grading system. 	Encourage product differentiation and ensure that suppliers get best possible

Problem	Action	Objective
cashmere on a consistent basis.	<ul style="list-style-type: none"> ▪ Encourage international processing and manufacturing community that buys Mongolian cashmere to help Mongolia develop a grading and specification system that would help Mongolian cashmere become more competitive. 	prices.
The cashmere export tax damaged quality of cashmere and transferred incomes from herders to dehairers.	<ul style="list-style-type: none"> ▪ Abolish export tax. 	Remove the policy bias toward processors. Give processors greater flexibility in the management of their operations. Improve the overall efficiency of the cashmere industry.
There is no certified testing agency to verify specification of cashmere.	<ul style="list-style-type: none"> ▪ Evaluate proposals for pre-testing cashmere within the context of a cost/benefit study. Testing facilities to be available on demand for a full fee that covers costs. This service could be provided by Gobi. ▪ Encourage the development of a private sector cashmere testing agency in Mongolia. Standards of testing would need to be ensured by an independent person/authority. 	Establish if there is a demand for pre-testing cashmere. Provide processors with information on the quality of cashmere at point of sale.
Manufacturing firms have limited skills in finished goods production.	<ul style="list-style-type: none"> ▪ Improve access to market information for the whole cashmere industry (not just herders) on fabric trends, technologies, seasonal styles and colors, and above all on the companies that contract for cashmere goods production and their requirements. ▪ Introduce program to train knitwear designers in collaboration with the private sector and vocational training institutes. ▪ Abolish export tax. ▪ Improve dehairing processes to reduce coarse hair content. ▪ Improve technology and use of existing spinning equipment to improve yarn quality. ▪ Introduce weaving technology and capabilities, as woven fabric is a much more suitable use for 60 percent of Mongolian cashmere than knitting. 	Improve the efficiency of further processing and provide greater stability of supply of raw cashmere supplies for domestic processors.
Domestic processors must pay an import tax on inputs they require to produce goods for export.	<ul style="list-style-type: none"> ▪ Eliminate duties on imported inputs, including capital equipment, required by cashmere factories. 	Assist processors to become internationally competitive by eliminating impediments not faced by their international competitors.
The foreign investment law is unclear regarding whether or not foreign investment in herds is permitted.	<ul style="list-style-type: none"> ▪ Ensure that foreign investment rules operate in a transparent and non-discriminatory way. ▪ Clarify foreign investment law regarding foreign investment in herds to facilitate integration of the industry. ▪ Promote vertical integration of cashmere producers and processors within the framework of new Supply Chain Management strategy, particularly through strengthening contractual frameworks 	Remove barriers to closer integration of the industry.

Problem	Action	Objective
MARKETING		
Regional marketing systems for raw cashmere are underdeveloped, hindering involvement of potential participants.	<ul style="list-style-type: none"> ▪ Expand regional marketing system for raw cashmere with participation open to all buyers and sellers. ▪ Facilitate construction/operation of storages and warehouses. ▪ Promote emergence of leasing services in private sector. ▪ Build legal framework needed to support market structures, such as auctions, market days, contract enforcement provisions. 	Improve knowledge of market for buyers and suppliers, and promote their cooperation. Reduce transport costs for suppliers. Ensure that suppliers get best possible prices. Raise market efficiency. Enable suppliers to make decisions about the trade-offs between quality and quantity with full knowledge of the market.
Information on market conditions and outlook is limited and sometimes unreliable.	<ul style="list-style-type: none"> ▪ Facilitate wider reporting on market conditions and prices. ▪ Implement better data collection mechanisms for information on market conditions and prices. 	Promote better knowledge of market conditions and prices among suppliers and enhance their bargaining position. Ensure that market information is more reliable.
Poor communications and transport infrastructure impedes market integration.	<ul style="list-style-type: none"> ▪ Improve maintenance of rural roads and bridges and communication so that there is greater integration between markets and price differentials for similar products are reduced. 	Reduce transport costs for herders. Facilitate the operation of markets. Ensure that suppliers receive maximum price.
EXPORTS		
Valuations of cashmere for export are not compliant with international specifications.	<ul style="list-style-type: none"> ▪ Develop consistent specification system on export goods. 	Remove impediments to international trade.
Export tax on raw cashmere has encouraged smuggling.	<ul style="list-style-type: none"> ▪ Eliminate export tax on raw cashmere exports. 	Eliminate distortionary policies, such as export tax, hindering livelihood of herder families. Remove the policy bias towards processors. Assist herders to obtain higher returns.
There is a widespread lack of awareness regarding international market trends and how it affects the Mongolian market.	<ul style="list-style-type: none"> ▪ Increase circulation of information regarding market prices, conditions and outlook through means of mass media. ▪ International price movements should be obtained on a regular basis from the Schneider Group (http://www.gschneider.com/marketindexes/index.html) The company produces a series of Schneider Cashmere Market Indicators. There are separate indicators for China (SCMIC), Mongolia (SCMIM), and Iran (SCMII). 	Improve access and distribution of information about foreign markets.
Mongolia is not enjoying all of the potential benefits from its membership in the World Trade Organization.	<ul style="list-style-type: none"> ▪ Request TA for Mongolian WTO activities, particularly on key agricultural negotiations. ▪ Seek membership of the Cairns Club. 	Assist Mongolia to make maximum benefit from its WTO Membership. Improve Mongolian negotiating position on international trade matters.

Problem	Action	Objective
China maintains an informal de facto ban on the export of live goats. China's phyto-sanitary rules governing the export of raw cashmere to China are not clear.	<ul style="list-style-type: none"><li data-bbox="678 188 1597 244">▪ Investigate China's informal ban on the export of live goats, and phyto-sanitary rules that have been used to delay Mongolian exports.	Remove impediments to trade and improve the efficiency of commerce.

Annex 2: GOAT POPULATION GROWTH SIMULATION

1. Mongolian official statistics do not cover the amount of raw cashmere produced. However there are detailed and reliable official statistics on the goat herd. These statistics include the number of goats (as at December); the number of breeding females; total offspring and offspring survivals. It is possible to use these official statistics, together with other information, to estimate an implied volume of raw cashmere that is produced.

2. The first step is to calculate the number of goats available in April- June for combing. If $HDEC_t$ is defined as the herd size in December in period t and OS_t is the offspring born and survived in year t , then the implied deaths ($DEATH_t$) in year t can be obtained from the demographic identity that links the net increase in the population as births less deaths.

$$HDEC_t - HDEC_{t-1} = OS_t - DEATH_t \quad (1)$$

3. The herd available for combing is the herd as reported in the previous December plus new offspring³⁵, less the deaths from the previous December to combing time. If it is assumed that 85% of the total yearly deaths occur between the commencement of the year and combing time, then the herd available for combing in year t ($HCOMB_t$) is

$$HCOMB_t = HDEC_{t-1} + OS_t - .85(DEATH_t) \quad (2)$$

substituting (1) into (2),

$$HCOMB_t = HDEC_{t-1} + OS_t - .85(HDEC_{t-1} - HDEC_t + OS_t) \quad (3)$$

This is the equation used to estimate the number of goats available for combing in any given year.

4. It is necessary to be able to classify the estimate of the number of goats available for combing into separate ages as yield, that is the amount of raw cashmere provided by a single goat that is combed, varies with age. This is done by tracking age cohorts through time.³⁶ If $H_{a,t}$ is the number of goats available for combing aged “ a ” years in year t , and $p_{a,t}$ is the probability of a goat aged “ a ” in year t having survived the previous year, then

$$H_{a,t} = p_{a,t} \cdot H_{a-1,t-1} \quad (\text{for all } a \geq 1) \quad (4)$$

5. The survival probability vector (that is p_a) for each year was initially derived from estimates from Mongolian cashmere goat experts. Their estimates were then calibrated using the requirement that

$$HCOMB_t = OS_t + \sum_a p_{a,t} \cdot H_{a-1,t-1} \quad (\text{for all } a \geq 1) \quad (5)$$

6. The number of goats available for combing, classified by age, can then be used to estimate the amount of raw cashmere produced. A vector, yield, is the number of grams of raw cashmere obtained from an “ a ” year old goat. The yield estimates can be applied to the numbers in each age cohort using the equation:

³⁵ Note that we have made the simplifying assumption that all births occur in the time between the beginning of the year and combing time.

³⁶ When using a recursive relationship such as used here, it is necessary to have a base year from which to work. The earlier the base year the less influence base year estimates will have on recent years. This is because births and deaths in the intervening years will become relatively more important. The base year used for this study is 1991 so that base year estimates have minimal influence on the analysis of Dzud years

$$\text{Raw cashmere in year } t = \text{yield}_{0\text{OS}_t} + \sum_a \text{yield}_{a\text{.H}_{a,t}} + \text{yield from skins}^{37} \quad (6)$$

7. This model was developed and estimated in the first quarter of 2001. The projections for 2002 and 2003 were obtained by assuming a return to normal seasonal conditions and applying normal survival probabilities to the previous year cohorts. For these two years it was assumed that the ratio of offspring to breeding females and the ratio of breeding females to goats would be the same as for the pre *Dzud* conditions in 1999. It was assumed that cohort survival probabilities were the same as those observed over the period 1996-1998. It can be seen that the projections for 2002 and 2003 are affected by the *Dzud* in 2000- 2001 as a result of the reduced stock. The reduced stock has two effects: firstly it reduces the output of raw cashmere because there are less stock available for combing; and, secondly, the reduced stock means less offspring.

8. The model described above was implemented and detailed statistics relating to the period 1992- 2003 were generated. This incorporated the *Dzud*- 2000-2001 and post *Dzud* figures. This is termed the “with the *Dzud* Simulation” model

9. Based on the model it was possible to run this same model on the assumption that there were normal seasons over the period 2000-2004 so that the effect of the *Dzud* in 2000-2001 could be evaluated. This is termed the “Without the *Dzud* Simulation”. In this simulation the actual figures for 2000 and 2001 were taken out and recalculated assuming the breeding females to adult goats ratio for 1999 and the 0 year old to breeding females ratio for 1999 applied in 2000-2001. The annual cohort survival probabilities for 2000 and 2001 were replaced by the average cohort survival vector for the period 1996-1998. The table below shows actual (with *Dzud*) and hypothetical (without *Dzud*) values for ratios of offspring to breeding females and breeding females to adult goats.

10. The two simulations are shown in an XL spread sheet that has been provided. The figures in blue down to Row 85 show the “with *Dzud*” simulation and the Rows from 88 down show the “without *Dzud*”

KEY RATIOS THAT DIFFER IN WITH AND WITHOUT *DZUD* SIMULATIONS

		1997	1998	1999	2000	2001
Ratio of Offspring to Breeding Females	With the <i>Dzud</i>	.701	.670	.698	.565	.393
	Without the <i>Dzud</i>	.701	.670	.698	.698	.698
Ratio of Breeding Females to Adult Goats	With the <i>Dzud</i>	.602	.600	.592	.547	.507
	Without the <i>Dzud</i>	.602	.600	.592	.592	.592

Notes: In addition to the ratios shown in this Table the “Without *Dzud*” Simulation replaced actual cohort survival probabilities for the years 2000 and 2001 with the average cohort survival probability vector derived from 1996-1998

³⁷ Yield from skins is estimated as 25% of the implied deaths that occurred in the year times an estimated yield of 200 grams per skin combed. The amount of raw cashmere sourced from skins is small. It is usually 3-4 % but can rise slightly in a *Dzud* year when there are more deaths and hence a greater availability of skins.

Annex 3. ECONOMIC IMPACT OF EXPORT CONTROL ON CASHMERE – PARTIAL EQUILIBRIUM ANALYSIS

1. Export controls on raw cashmere continue to transfer resources from the herders to cashmere processors in Mongolia. Over 1996-1999 about US\$5 million has been transferred from herders to processors, and nearly US\$102 million to traders/dehairers as a result of the export tax. In 1997 and 1998, years when the price of cashmere was low, the effective rate of the export tax was on average about 35 percent. The main argument behind the imposition of the export ban and subsequent export tax was to protect domestic industries, by providing processors with sufficient raw cashmeres to process the cashmere domestically. (Table 1)

2. The export tax has not increased the value added of the domestic processing industry but has served to protect the processing industries by lowering costs of inputs. A simple partial equilibrium trade model and data from Mongolian firms and customs shows that the magnitude of the transfer from herders to processors is substantial and the cost to the government of enforcing the tax outweigh the benefits of the tax. (Table 2)

The model³⁸:

3. Raw cashmere inputs, I, is used in the production of final cashmere goods, F. We assume that Mongolia is a small open economy that does not control the price of raw or finished cashmere in international markets. For simplicity we assume that one unit of input, “package”, is required to produce one unit of output, cashmere garment. In a perfectly competitive industry processors should be willing to process more units of inputs into outputs the higher the value added in processing per unit. It is assumed that the demand for the final good within Mongolia is nil, thus all cashmere garments are exported. The Mongolia raw cashmere producers (herders) are perfectly competitive and the quantity of raw cashmere supplied depends on its price.

4. Domestic prices are defined as farm gate prices for raw cashmere provided by Gobi Cashmere company, international prices are defined as border prices for raw cashmere and cashmere garments based on data from the Mongolian National Statistical Office. The unit value of raw cashmere “package” in domestic/international market in the model is derived by multiplying the domestic/border price per kilogram of raw cashmere by quantity of raw cashmere required to produce one unit of garment. The quantity of raw cashmere needed to produce one unit of garment, package, could be interpreted as a conversion rate of raw cashmere into finished cashmere good or garment. This conversion allows comparison between domestic and border prices for both raw cashmere and cashmere final goods within a single model. The quality of cashmere is identical so there are no adjustments for quality differentiation. The resulting domestic and international prices used to calculate impact of export tax on herders, processors and total export revenues are shown in table below.

5. The gains, losses, and net costs were estimated assuming varying degrees of responsiveness of both raw material and final good production to changes in prices. The calculations presented use combinations of elasticity of 0.5 for raw cashmere and 1 garment production.

$$Q_F^S = S (P_F - P_I) \quad (1)$$

Where Q_F^S is the quantity of the final product supplied, P_F is the price of the final good and P_I is the price of the raw cashmere input and $P_F - P_I$ is the value added per unit.

6. Assume that the demand for the final good within Mongolia depends on the price

³⁸ The Economic Impact of Export Controls. An Application to Mongolian Cashmere and Romanian Wood Products. WB PRWP, 1994, *Wendy E. Takacs*

$$Q_F^D = D(P_F) \quad (2)$$

Net exports of the finished products will be the difference between the quantity supplied and the quantity demanded

$$X_F = Q_F^S - Q_F^D \quad (3)$$

The Mongolia raw cashmere industry is perfectly competitive and the quantity of raw cashmere supplied depends on its price:

$$Q_I^S = S_I(P_I) \quad (4)$$

We make the simplifying assumption that all raw cashmere sold in the domestic market is used as input in the final goods processing industry. This assumption, along with the definition of the units of inputs, implies that:

$$Q_I^D = Q_F^S \quad (5)$$

Exports of raw cashmere will be the difference between the quantity supplied and the quantity demanded as inputs by the domestic industry

$$X_I = Q_I^S - Q_I^D = S_I(P_I) - Q_I^D(P_F - P_I) \quad (6)$$

7. The equilibrium in this model under free trade is shown in Figure 1. With no trade restrictions, the domestic prices of both the final good and the raw cashmere are equal to their prevailing market prices. The supply curve of processing as a function of the value added is shown in the upper panel of Figure 1 by the curve $S(v)$. The height of the curve is the value added per unit of final good produced, V . The processing industry's supply curve of the final p-product under free trade S_F^* , would lie above $S(v)$ by the raw cashmere input costs per unit P_I^W .

8. The upper panel of Figure 1 shows the market equilibrium for the final product under free trade. If the world market price of the final good were P_F^W , the world market price of the input were P_I^W , and there were no trade restrictions the quantity demanded would be D_F^* , the quantity supplied by the processing industry would be Q_F^* and $Q_F^* - D_F^* (= X_F^*)$ would be exported.

9. The market for cashmere under the free trade situation would be as shown in the lower panel of Figure 1. The units along the horizontal axis measure the quantity of packages of inputs where each package represents the inputs needed for one unit of output. The price measured along the vertical axis is likewise the price per package of inputs. The domestic raw cashmeres industry supply curve is shown by S_I . If the price of raw cashmere in the world market were P_I^W , the domestic raw cashmeres industry would produce as output Q_I^* . At this price of raw cashmere, the domestic final goods processing industry supply curve would be S_F^* , the output of the final goods will be Q_F^* , and the demand for the raw cashmeres on the part of the domestic industry would be D_I^* . The quantity exported would be $X_I^* (= Q_I^* - D_I^*)$. Export earnings from final goods exports would be $P_F^W X_F^*$ and export earnings for raw cashmeres exports would be $P_I^W X_I^*$.

10. In the case of Mongolia this perfect competition free trade situation has been distorted with the imposition of the export tax, which restricts exports of raw cashmere. The domestic price of raw cashmere no longer equals the world price, as exports have been restricted. The domestic price of raw cashmere (equation 6) is now the price at which the differences between the quantity of raw cashmere supplied and the quantity demanded equal the maximum amount exported.

11. Given that the quantity demanded depends on the output of the processing industry, and given that the position of the processing industry supply curve depends on the price of raw cashmere, the new equilibrium would be determined jointly in both markets.

12. As the raw cashmere input price falls due to the export restrictions imposed through the tax, input costs of the processing firms fall and the processing industry supply curve shifts downward, or to the right. At a constant final product price, output of the final product increases as raw cashmere demand increases. Figure 2 illustrates the new equilibrium after the imposition of the export ban/tax.

The price of the input will settle at P_I^D where the quantity demanded (equal to the final good supplied at the world market price P_F^W and input price P_I^D plus X_I^D) equals the quantity of input supplied along S_I . The decline in the equilibrium price of raw cashmere will reduce raw cashmere production from Q_I^* to Q_I^D . In the final goods market output increases from Q_F^* to Q_F^D .

13. The raw cashmere export restriction hurts herders, cashmere farmers and discourages raw cashmere production and exports, but increases the profits of the semi-processors/dehairers, as well as production and exports of the final good.

14. The gains to the processing industry and the losses to the raw cashmere producers, as well as the net efficiency losses from the restriction are identified and estimated. The loss in profits for herders or the producer surplus equals the area "adg" in the lower panel of Figure 2. The height of the raw cashmere supply curve shows the marginal cost of producing each extra unit. When price falls to P_I^D revenues decrease by area "adrsge" but costs decrease by "gdrs," so net income declines by area "adg."

15. Part of the loss (area "abfe" = "hijl") consists of a transfer from herders to processors in the form of higher profits due to lower input costs. Another part (area "bcgf") represents a transfer from herders to export license recipients/traders (dehairing companies and/or smugglers) who are able to buy the raw cashmere from the herders at reduced prices P_I^D and sell it abroad at higher prices of P_I^W or more. The remainder (area "cdg") is an efficiency loss because the extra units of raw cashmere $Q_I^* - Q_I^D$, which would have been exported to earn P_I^W in the absence of the export restriction, would only have cost an amount equal to the height of the supply curve to produce. With the export restriction these extra units of the raw cashmere will not be produced and sold abroad for more than the cost of producing them. Area "cdg" represents a net efficiency loss to the country.

16. These transfers and efficiency losses can in principle be measured. The loss to the producers of the raw cashmere equals area "adg".

$$\begin{aligned}
\text{Area } adge &= dP_I Q_I + \frac{1}{2} dQ_I dP_I \\
&= dP_I Q_I + \frac{1}{2} \epsilon_I^S \frac{Q_I}{P_I} dP_I dP_I \\
&= dP_I Q_I \left(1 + \frac{1}{2} \epsilon_I^S \frac{dP_I}{P_I} \right) \\
&= V_I \frac{dP_I}{P_I} \left(1 + \frac{1}{2} \epsilon_I^S \frac{dP_I}{P_I} \right) \\
&= \pi V_I + \frac{1}{2} \pi^2 \epsilon_I^S V_I
\end{aligned} \tag{7}$$

where $\epsilon_I^S = (dQ_I/dP_I)(P_I/Q_I)$ is the elasticity of supply of the raw material, $V_I = P_I Q_I$ is the value of raw material production, $dP_I = (P_I^W - P_I^D)$, $dQ_I = (Q_I^* - Q_I)$, and $\pi = dP_I/P_I$. The efficiency loss area “cdg” will be equal to the last term of equation (7).

17. The part of the loss to raw cashmere producers that is transferred to export license recipients is area “bcgf”.

$$\begin{aligned}
\text{Area } bcfg &= dP_I X_I \\
&= \pi V_I^X
\end{aligned} \tag{8}$$

where V_I^X is the value of raw material exports.

18. On the producer side the processing industry gains area “hikl”. The industry marginal cost curve shifts downward from S_F^* to S_F' which reduces the cost per unit of each unit of cashmere garments previously produced, thereby increasing profits by area “hnkl”. From the point of view of the country, however the increase in domestic processing of the raw cashmeres creates an efficiency loss equal to area “min” because the artificially low raw cashmere price encourages the processing industry to expand output beyond the point where the world market price equals the true cost of producing the goods, including the opportunity cost of producing the goods. Since S_F^* is parallel to S_F' but lies below it by $(P_I^W - P_I^D)$, area “min” = area “ijk”. This part of the transfer from the raw cashmere producers to the processing firm is not a gain to the processing industry, but simply loss due to higher processing costs.

19. The gain to the processing industry is :

$$\begin{aligned}
\text{Area } hiki &= Q_F dP_I \cdot \frac{1}{2} dQ_F dP_I \\
&= P_I Q_F d \frac{P_I}{P_I} - \frac{1}{2} \epsilon_F^S \frac{P_F Q_F}{V} \frac{P_I}{P_F} P_I \frac{dP_I}{P_I} \frac{dP_I}{P_I} \\
&= \phi V_F \pi - \frac{1}{2} \epsilon_F^S V_F \pi^2 \frac{\phi^2}{1-\phi}
\end{aligned} \tag{9}$$

where v is the value-added per unit of final product, $\epsilon_F^S = (dQ_F^S/dv)(v/Q_F^S)$ is the elasticity of supply of processing with respect to the value-added per unit, $dQ_F = (Q_F^I - Q_F^*)$, $\phi = P_I/P_F$ is the ratio of raw cashmere cost to the price of the final product, and $V_F = P_F Q_F$ is the value of final good produced.

20. Note that with the final product price unchanged, $dv = -dP_I$. The efficiency loss due to higher-cost domestic processing (area “ijk”) equals the second term in equation 9. If data on prices and quantities of inputs and outputs are available, the second step in equation 9 can be used for

calculations, but the last step is more suitable when the only information available is from an input/output table for the economy.

21. The welfare impact and net efficiency losses are the appropriate criteria for judging the beneficial or detrimental effects of the export restrictions. But so much emphasis has been placed on using raw cashmere export controls to encourage higher-value-added exports and therefore export earnings that we investigate in detail the impact of the raw cashmere export controls on total export revenue. Foreign exchange earnings from final goods exports increase by $P_F^W(Q_F' - Q_F^*)$. Raw cashmere exports fall from X_I^* to X_I' , and export earnings fall by $P_I^W(X_I^* - X_I')$. Export earnings from exports of final goods increase, but earnings from raw cashmere exports decrease because the quantity exported decrease by the amount diverted to the domestic industry, $D_I' - D_I^* (= Q_F' - Q_F^*)$, plus the decrease in production $Q_I^* - Q_I'$ due to the lower raw cashmere price. The net impact of the raw cashmere export restriction on total export earnings is ambiguous.

22. The change in total export earnings due to the export control on raw cashmere would be the difference between the increase in the value of final good exports and the decrease in the value of raw cashmere exports. Given that $X_I = Q_I^S - Q_I^D$ and $dQ_I^D = dQ_F^S$, the change the value of raw cashmere exports would be:

$$\begin{aligned} d[P_I^W X_I] &= P_I^W [dQ_I^S - dQ_I^D] \\ &= P_I^W \left[\epsilon_I^S Q_I \frac{dP_I}{P_I} - \epsilon_F^S \frac{P_F Q_F}{V} \frac{P_I}{P_F} dv \right] \\ &= P_I^W \left[\epsilon_I^S Q_I \frac{dP_I}{P_I} + \epsilon_F^S V_F \frac{1}{P_F} \frac{\phi}{1-\phi} \frac{dP_I}{P_I} \right] \\ &= (1+\pi) \epsilon_I^S V_I \pi + \epsilon_F^S V_F \frac{\phi^2}{1-\phi} (1+\pi) \pi \end{aligned} \quad (10)$$

The first term captures the decline in raw cashmere exports due to the fall in production; the second captures the decline in exports due to the diversion to domestic processing.

23. Holding domestic demand for the final good constant, and allowing for free exportation of the processed good at an unchanged world market price, the export restriction on raw cashmeres would increase exports of the final good. The magnitude of the increase in processed good export earnings would be:

$$\begin{aligned} P_F^W dX_F &= P_F^W \epsilon_F^S \frac{Q_F}{V} dP_I \\ &= P_F^W Q_F \epsilon_F^S \frac{P_I}{V} \frac{dP_I}{P_I} \\ &= V_F \epsilon_F^S \frac{\phi}{1-\phi} \pi \end{aligned} \quad (11)$$

24. Therefore total export earnings would change by:

$$\begin{aligned} dV^X &= V_F \epsilon_F^S \frac{\phi}{1-\phi} \pi - [(1+\pi) \epsilon_I^S V_I \pi + \epsilon_F^S V_F \frac{\phi^2}{1-\phi} (1+\pi) \pi] \\ &= V_F \epsilon_F^S \frac{\phi}{1-\phi} \pi [1 - (1+\pi) \phi] - \pi (1+\pi) \epsilon_I^S V_I \end{aligned} \quad (12)$$

Total export earnings will increase if equation (12) is positive but decrease if it is negative.

25. The raw cashmere export control is more likely to increase export earnings the greater the value added in processing (the smaller is ϕ), the greater the elasticity of supply of the processing

industry, and the smaller the elasticity of supply of the raw cashmere, and the larger the processing industry relative to raw cashmere production.

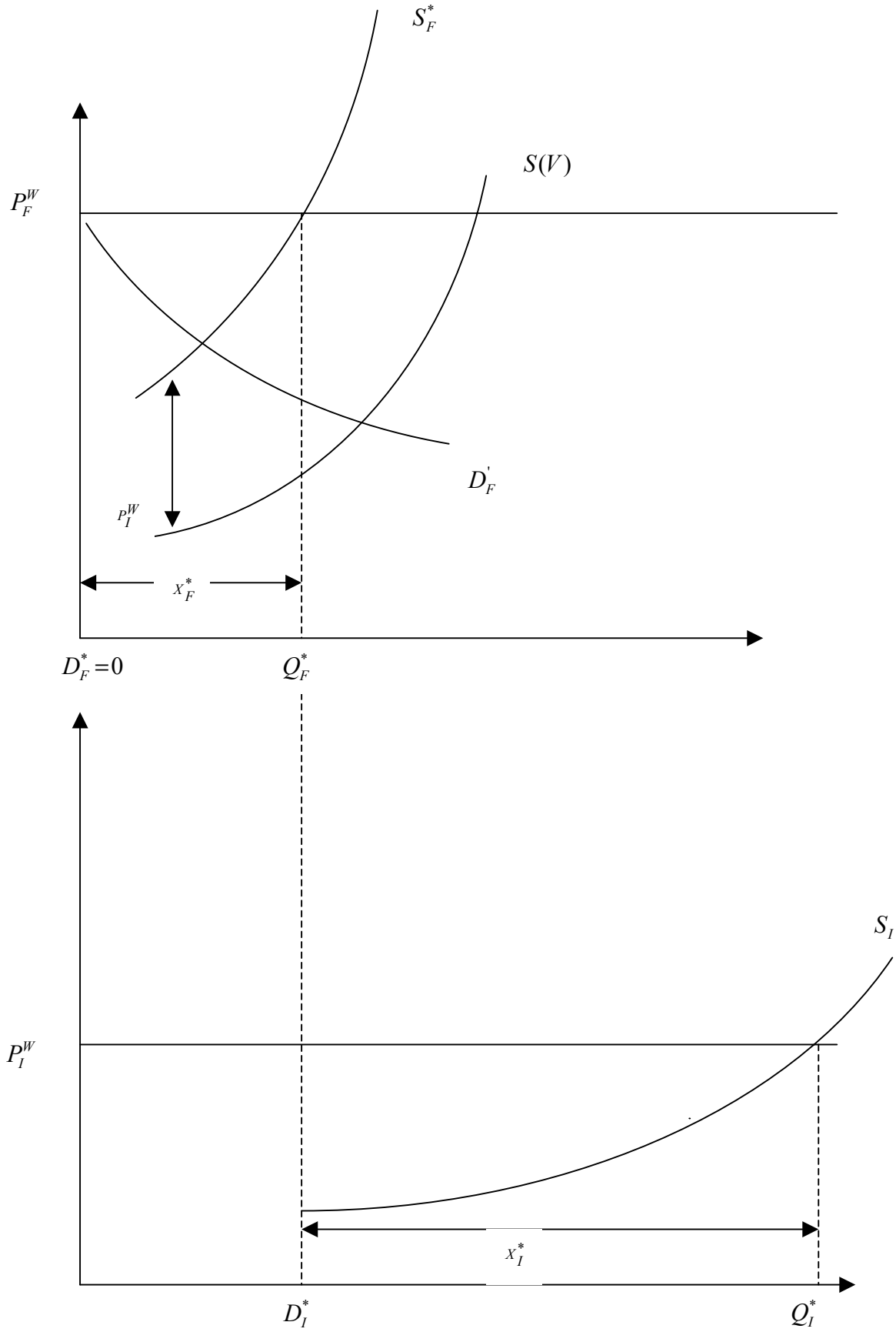
Table 1. Estimated Impact of Mongolian Cashmere Export Tax on Herders Income
In US\$ million

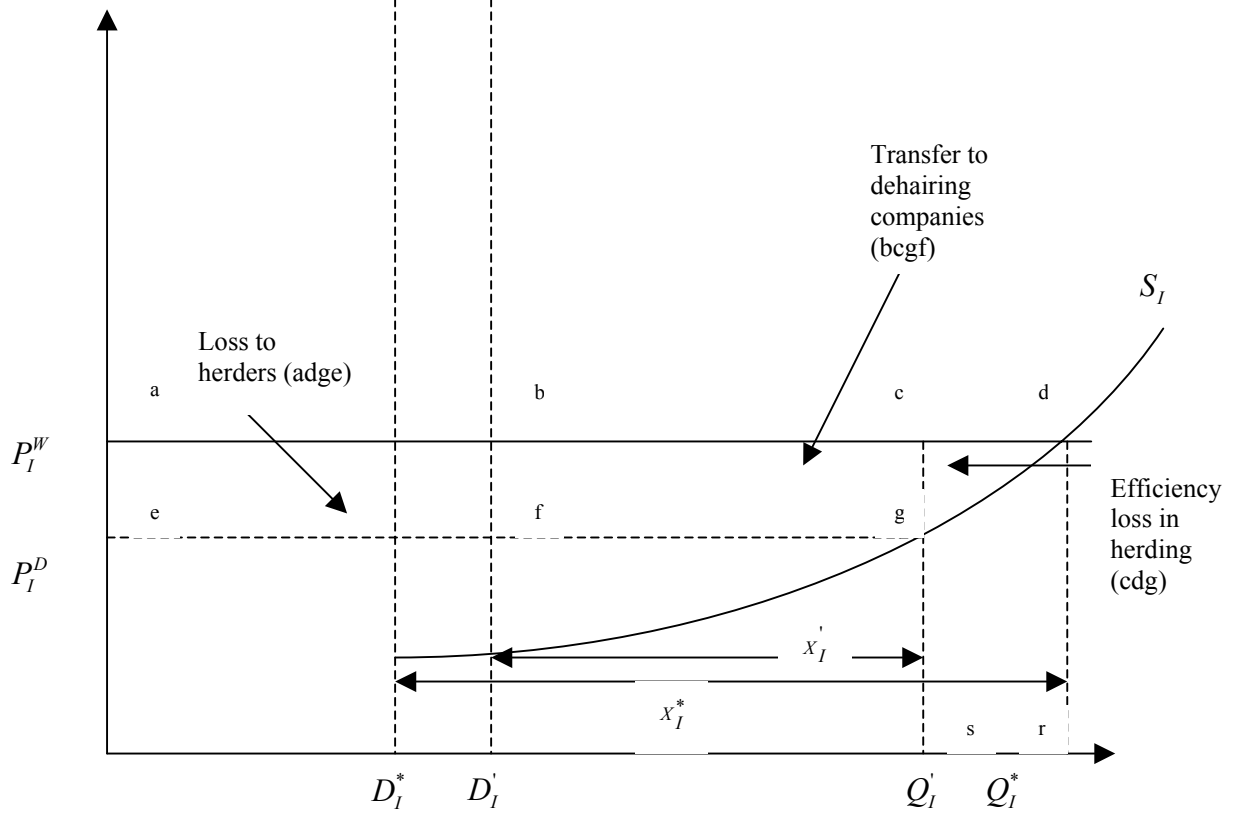
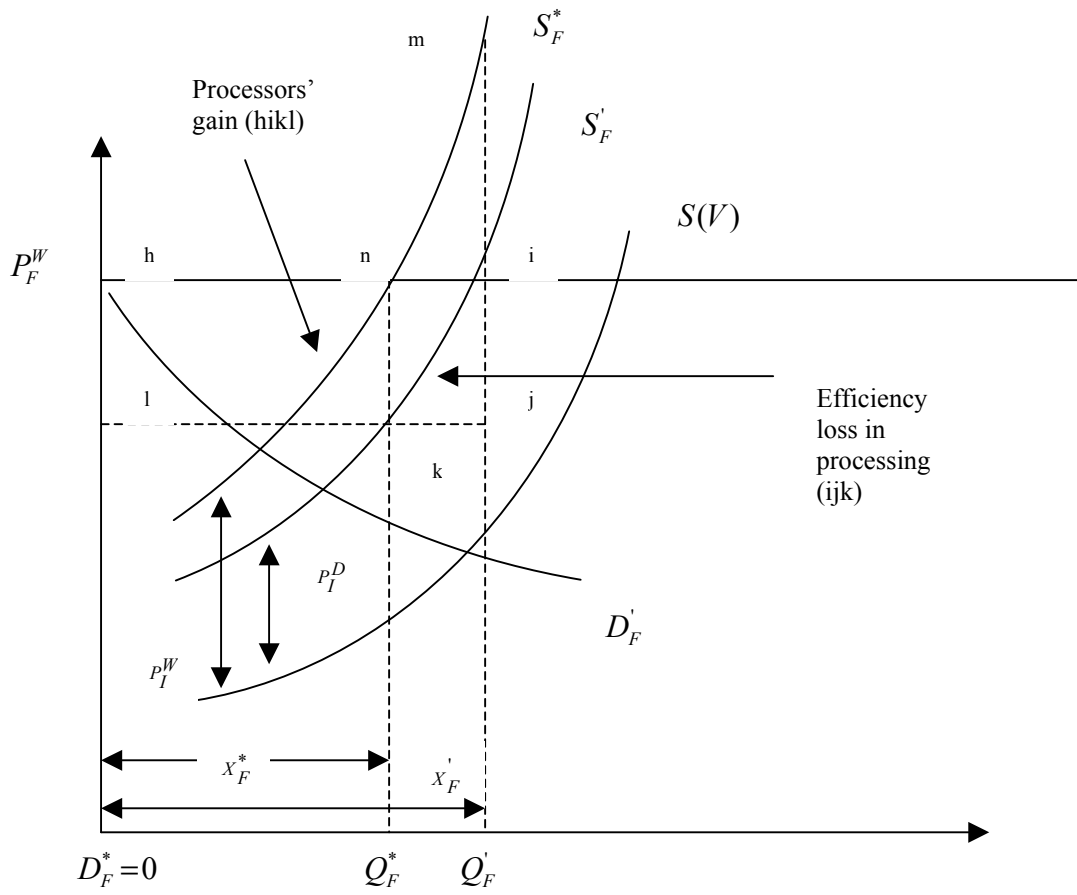
Variables	1996	1997	1998	1999	2000	2001
Loss in herders' profit or loss in producer surplus (Area adge)	65.8	16.1	40.1	5.7	(16.1)	(17.3)
Net efficiency loss in cashmere production (Area cdg)	12.7	1.0	5.2	0.1	0.8	1.8
Transfer to export license recipients - dehairers (Area bcgf)	49.7	14.2	32.9	5.2	(15.8)	(17.8)
Transfer to processing industry (Area abfe)	3.4	0.8	2.0	0.4	(1.1)	(1.3)
Gain to garment industry (Area hikl)	2.8	0.8	1.8	0.4	(1.2)	(1.4)
Efficiency loss in garments export earnings (Area ijk)	0.6	0.0	0.3	0.0	0.1	0.1
Total efficiency loss	13.3	1.0	5.4	0.1	0.9	1.9
Income loss/gain per household with livestock- in US\$	236.4	57.4	145.7	21.0	-60.0	-67.4

Table 2. Impact of Mongolian Cashmere Export Tax on Export Earnings
In US\$ million

	1996	1997	1998	1999	2000	2001
Change in total export earnings	(49.7)	(8.8)	(26.2)	(2.7)	5.6	4.5
Decline in raw cashmere export	54.3	9.9	29.1	3.3	(7.9)	(6.2)
Due to fall in production	52.0	9.5	27.8	3.0	(6.9)	(6.0)
Due to diversion to domestic processing	2.3	0.3	1.4	0.2	(0.9)	(0.3)
Increase in garments export earnings	4.6	1.1	2.9	0.6	(2.3)	(1.8)

Figure 1. Raw cashmere and final goods markets: free trade





Annex 4. GROUPING OF HOUSEHOLDS BY HERD SIZE OWNED

Herd/Household	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Up to 10	48,355	46,772	43,694	39,778	35,530	31,668	28,669	31,361	33797	33,183
11 to 30	56,996	53,766	50,580	47,080	41,009	36,837	35,970	40,436	43082	42,796
31 to 50	43,725	42,007	40,200	37,462	34,784	33,733	31,874	35,041	36030	36,165
51 to 100	63,368	62,947	61,082	61,464	63,774	62,941	61,347	63,096	60195	55,905
101 to 200	51,388	53,160	53,564	55,383	65,282	67,466	67,840	59,821	51383	46,051
201 to 500	24,578	28,249	31,393	32,983	34,539	36,275	37,635	33,408	27949	25,313
501 to 999	1,272	2,123	3,095	3,678	4,137	5,112	5,438	4,591	3406	3,160
1000 to 1499	47	137	280	445	531	860	1,061	893	639	601
1500 to 2000		4	17	32	54	62	75	48	38	36
2001 and over		3	8	10	14	33	41	37	31	24
Households with livestock	289,729	289,168	283,913	278,315	279,654	274,987	269,950	268,732	256,550	243,234

Source: NSO, 2003

**Annex 5. INCOME FROM CASHMERE SALES PER HOUSEHOLD WITH LIVESTOCK BY
HOUSEHOLD GROUPS, 1998-2002 – IN US\$ - Gobi price**

Herd/Household	1998		1999		2000		2001		2002	
	Households	Income per household in US\$	Households	Income per household in US\$	Households	Income per household in US\$	Households	Income per household in US\$	Households	Income per household in US\$
Up to 10	31,668	2.9	28,669	4.2	31,361	11.6	33,797	9.6	33,183	11.0
11 to 30	36,837	19.5	35,970	27.5	40,436	65.9	43,082	58.5	42,796	62.7
31 to 50	33,733	42.7	31,874	65.2	35,041	149.0	36,030	127.5	36,165	132.2
51 to 100	62,941	85.3	61,347	124.7	63,096	283.8	60,195	239.5	55,905	235.4
101 to 200	67,466	165.2	67,840	238.6	59,821	563.3	51,383	463.0	46,051	436.7
201 to 500	36,275	348.5	37,635	491.1	33,408	1,147.6	27,949	885.7	25,313	826.0
501 to 999	5,112	669.3	5,438	971.1	4,591	2,206.5	3,406	1,604.3	3,160	1,498.3
1000 to 1499	860	1,064.7	1,061	1,446.2	893	3,282.5	639	2,427.7	601	2,226.3
1500 to 2000	62	1,408.8	75	1,760.1	48	4,538.1	38	3,653.5	36	3,841.2
2001 and over	33	1,420.5	41	2,284.3	37	5,185.3	31	4,163.5	24	3,434.3
Total	274,987	130.5	269,950	194.7	268,732	415.5	256,550	302.8	243,234	280.8

Source: NSO, 2003 and staff estimates.

Annex 6. MAIN EXPORTERS OF FINE ANIMAL HAIR, NOT CARDED OR NOT COMBED

In percent

No.	1996		1997		1998		1999		2000		2001	
1	CHN	61.3	CHN	60.79	CHN	59.43	CHN	61.5	CHN	58.0	CHN	64.1
2	MNG	8.4	MNG	8.57	MNG	7.32	MNG	6.5	GBR	7.4	MNG	7.7
3	GBR	5.5	GBR	4.50	GBR	6.34	GBR	6.3	MNG	6.3	GBR	5.6
4	DEU	3.3	DEU	3.66	DEU	3.62	IRN	3.4	AFG	5.2	BEL	4.6
5	BLX	3.2	IRN	3.26	IRN	2.89	DEU	3.1	IRN	5.1	DEU	3.9
6	AFG	2.9	AFG	3.05	AFG	2.87	USA	2.7	DEU	3.7	IRN	2.8
7	IRN	2.6	BLX	2.24	ZAF	2.69	ZAF	2.4	BEL	2.5	ZAF	2.2
8	ZAF	2.1	ZAF	2.12	ESP	2.05	HKG	2.3	ZAF	2.4	ITA	1.9
9	HKG	2.0	HKG	1.90	USA	1.79	AFG	2.3	USA	2.3	AFG	1.2
10	USA	1.8	ESP	1.78	BLX	1.63	BEL	1.7	ITA	1.1	USA	0.9
11	ESP	1.2	USA	1.45	HKG	1.59	ITA	1.0	AUS	0.7	TUR	0.8
12	ITA	0.7	PER	0.73	ITA	1.13	ESP	1.0	HKG	0.7	AUS	0.5
13	NLD	0.6	FRA	0.68	RUS	1.00	AUS	0.7	ESP	0.6	PER	0.5
14	AUS	0.5	ITA	0.60	CHE	0.68	RUS	0.7	PER	0.5	ESP	0.4
15	FRA	0.4	CHE	0.52	PER	0.60	LVA	0.6	NLD	0.5	ARG	0.4
16	ARG	0.4	AUS	0.47	NZL	0.54	NLD	0.6	UNS	0.4	KAZ	0.3
17	PER	0.4	URY	0.36	NLD	0.53	PER	0.5	CHE	0.4	UNS	0.3
18	UNS	0.3	NZL	0.33	ARG	0.50	CHE	0.4	ARG	0.3	NLD	0.3
19	NZL	0.3	NLD	0.33	FRA	0.49	UNS	0.4	KAZ	0.3	CHE	0.3
20	CHE	0.3	TUR	0.32	AUS	0.42	ARG	0.3	TUR	0.3	PRT	0.3
21	TUR	0.2	UNS	0.30	PRT	0.28	FRA	0.3	PRT	0.3	HKG	0.2
22	RUS	0.2	ARG	0.28	LVA	0.25	PRT	0.2	LTU	0.1	MEX	0.1
23	CHL	0.2	KAZ	0.20	KAZ	0.20	KAZ	0.2	FRA	0.1	HUN	0.1
24	PRT	0.1	PRT	0.16	HUN	0.20	TUR	0.2	NZL	0.1	CYM	0.1
25	KOR	0.1	HUN	0.14	TUR	0.20	NZL	0.2	URY	0.1	NZL	0.1
Total	WLD	99.146	WLD	98.769	WLD	99.203	WLD	99.406	WLD	99.382	WLD	99.410

Source: World Bank Trade Data Base, 2003.

Annex 7. MAIN IMPORTERS OF FINE ANIMAL HAIR, NOT CARDED OR NOT COMBED

In percent

No.	1996		1997		1998		1999		2000		2001	
1	ITA	31.0	ITA	33.2	ITA	39.9	ITA	39.1	ITA	36.27	ITA	39.49
2	GBR	19.2	GBR	14.8	GBR	13.7	GBR	19.0	CHN	20.42	GBR	20.92
3	JPN	8.3	FRA	9.5	FRA	8.4	CHN	7.2	GBR	17.81	DEU	6.24
4	USA	6.8	USA	9.3	DEU	7.8	ZAF	6.1	DEU	5.34	UKR	5.10
5	KOR	4.8	KOR	6.8	USA	5.1	DEU	5.8	UKR	3.27	CHN	4.60
6	DEU	4.5	DEU	5.1	BLX	3.6	FRA	3.8	ZAF	2.72	FRA	3.80
7	CHN	4.1	CHN	4.1	CHN	2.9	USA	3.6	FRA	2.20	BEL	3.02
8	FRA	3.5	JPN	3.5	KOR	2.6	BEL	3.0	USA	1.88	CHE	2.87
9	HKG	3.1	BLX	2.4	CHE	2.3	JPN	1.6	BEL	1.62	USA	2.38
10	IND	2.6	HKG	1.4	ZAF	2.0	CHE	1.3	HKG	1.01	ZAF	1.63
11	CHE	2.4	ARG	1.3	JPN	1.6	HKG	1.1	JPN	0.78	IND	1.20
12	ZAF	1.2	IND	1.3	HKG	1.5	KOR	0.8	ESP	0.65	JPN	0.94
13	BLX	1.1	ZAF	1.2	ESP	1.2	NLD	0.7	MNG	0.58	HKG	0.91
14	ARG	1.1	CHE	1.2	ARG	0.9	ARG	0.6	IND	0.52	ARG	0.69
15	NLD	0.9	ESP	0.6	IND	0.8	IND	0.6	ARG	0.52	MEX	0.65
16	ESP	0.8	NLD	0.5	LTU	0.7	ESP	0.6	MEX	0.36	ESP	0.61
17	LTU	0.8	LTU	0.5	AUT	0.6	MEX	0.5	CHE	0.33	AUT	0.42
18	TUR	0.4	BRA	0.4	BRA	0.5	AUT	0.5	LTU	0.33	PRT	0.41
19	AUT	0.4	TWN	0.3	PRT	0.4	BRA	0.4	CZE	0.29	BRA	0.41
20	BRA	0.3	AUT	0.3	NLD	0.4	TWN	0.4	MUS	0.28	KOR	0.41
21	PRT	0.3	MAC	0.2	MUS	0.4	LTU	0.3	AUT	0.28	NLD	0.37
22	NPL	0.2	UKR	0.2	CAN	0.3	AUS	0.3	IRN	0.28	LTU	0.37
23	NZL	0.2	COL	0.2	MNG	0.3	CZE	0.3	PER	0.22	TWN	0.34
24	COL	0.2	PRT	0.2	NPL	0.3	NPL	0.3	PRT	0.22	MAC	0.24
25	TWN	0.1	IRL	0.1	COL	0.2	PER	0.2	RUS	0.21	PAK	0.16
Total	WLD	98.314	WLD	98.515	WLD	98.510	WLD	98.279	WLD	98.390	WLD	98.191

Source: World Bank Trade Data Base, 2003.

Annex 8. MONGOLIA: EXPORTS OF CASHMERE PRODUCTS, 1993-2002

In US\$ millions

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cashmere, greasy/raw	17.3	3.5	0.4	9.3	16.2	0.3	14.4	21.9	0.6	1.0
Cashmere, raw (tons)	1,217.0	240.8	78.8	431.4	824.6	16.2	799.5	717.2	32.0	60.0
Cashmere, raw (US\$/kg)	14.2	14.5	5.1	21.6	19.6	18.9	18.0	30.5	18.1	16.5
Cashmere, dehaired	9.2	26.1	45.2	51.8	31.6	33.0	45.9	54.5	54.9	30.5
Cashmere, dehaired (tons)	250.7	341.0	507.3	720.9	590.4	849.8	1,168.	770.2	998.9	632.3
Cashmere, dehaired (US\$/kg)	36.7	76.5	89.1	71.9	53.5	38.8	39.3	70.8	55.0	48.3
Cashmere tops	1.9	6.8	3.8	2.2	0.9	0.5	2.2	0.6	2.0	0.9
Volume (tons)	38.2	71.6	34.0	28.3	12.5	9.6	41.5	7.1	24.3	15.4
Unit value (US\$/kg)	49.7	94.9	112.7	77.7	71.9	48.4	52.4	89.9	83.2	59.1
Cashmere garments	5.1	3.6	7.8	7.8	10.4	5.0	7.8	13.0	13.2	12.8
Volume ('000 pieces)	120.9	99.0	215.8	215.8	275.0	152.2	314.5	428.5	364.7	483.6
Unit value (US\$/pieces)	42.2	36.4	36.2	36.2	37.8	32.8	24.8	30.4	36.2	26.4
Total Cashmere Exports	33.5	40.0	57.2	71.2	59.0	38.7	70.3	90.1	70.7	45.2
Total Exports	365.8	367.0	485.6	423.4	568.5	462.3	454.2	535.8	523.2	524.0

Source: NSO, 2003

References:

- Academy of Sciences of the Mongolian People's Republic (1991). *Information Mongolia* (Oxford: Pergamon Press).
- ADB (Asian Development Bank) (1992). *Mongolia, A Centrally Planned Economy in Transition* (Hong Kong: Oxford University Press).
- Amin, Ash and Frank Wilkinson. "Learning, Proximity and Industrial Performance: an Introduction." *Cambridge Journal of Economics*, March 1999, 23 (2): 121-126.
- Anonymous, "Why Big is still beautiful," *The Economist*, April 3rd 1999, pp. 53-54
- Audretsch, David B. "Agglomeration and the Location of Innovative Activity." *Oxford Review of Economic Policy*, Summer 1998 14(2): 18-29.
- Bank of Mongolia reports, 2002
- Bawden, C. (1968). *The Modern History of Mongolia* (London: Weidenfeld and Nicolson).
- Baxter PTW. 1991. *When the Grass is Gone: Development Intervention in African Arid Lands*. Uppsala: Scand. Ins. Afr. Stud.
- Baxter PTW. 1993. The 'new' east African pastoralism: an overview. In *Conflict and the Decline of Pastoralism in the Horn of Africa*, ed. J. Markakis, pp. 143-62. London: Macmillan
- Baxter PTW. 1994. Pastoralist are people: Why development for pastoralists, not the development of pastoralism? *Rur. Ext. Bull. (Univ. Sussex)* 4:3-8
- Baxter PTW. Hogg R, eds. 1990. *Property, Poverty, and People: Changing Rights in Property and Problems of Pastoral Development*. Manchester, UK: Univ. Manchester
- Boserup, E. (1965). *Conditions of Agricultural Growth* (London: Allen and Unwin).
- _____ (1981). *Population and Technology* (Oxford: Blackwell).
- Cassen R. (1994). "Population and development: old debates, new conclusions". In: R. Cassen and contributors, *Population and Development: Old Debates, New Conclusions* (New Brunswick: Transaction Publishers), pp. 1-26
- Charnley S. 1996. Pastoralism and the demise of communal property in Tanzania. *Cult. Surv. Q.* 20 (1): 41-44
- Cooper, L. and N. Gelezhamtsin (1993). "Liberalization of the Mongolian pastoral economy and its impact within the household - a case study of Arkhangai and Dornogovi provinces", Research Report No. 8, Brighton, Institute of Development Studies, University of Sussex.
- Dahl, G. (1981). "Production in pastoral societies". In: *The Future of Pastoral Peoples, Proceedings of a Conference held in Nairobi, Kenya, 4-8 August 1980* (Ottawa: International Development Research Center), pp. 200-209.
- _____ and A. Hjort (1976). "Having herds: pastoral herd growth and household economy", *Stockholm Studies in Social Anthropology* 9 (Stockholm: University of Stockholm, Department of Social Anthropology).
- Economic Entity and Organization and Income Tax Law of Mongolia*. In force from May 1, 1997 (Translated from the Mongolian).
- Edstrom, J. (1993). "The reform of livestock marketing in post-Communist Mongolia: problems for a food secure and equitable market development", *Nomadic Peoples* 33:137-152.
- Ehrlich, P. and A. Ehrlich (1990). *The Population Explosion* (New York: Simon and Shuster).
- Family Planning Perspectives* 20:18-22.
- Fernandez-Gimenez 1999 "Sustaining the Steppes: A Geographical History of Pastoral Land Use in Mongolia," *The Geographical Review*
- FIAS report on the promotion of foreign investment in Mongolia. FIAS, 1999, pp 12-13.
- Fratkin, Elliot, *Pastoralism: Governance and Development Issues*. *Annual Review of Anthropology*, Vol. 26 (1997), 235-261.

- Garry Pursell "Some Aspects of the Liberalization of South Asian Agricultural Policies: How Can the WTO Help?" Ch 3 of Blarel, Benoit, Garry Pursell, and Alberto Valdes. 1999.
- Goldstein, M. and C. Beall (1994). *The Changing World of Mongolia's Nomads* (Hong Kong: The Guidebook Company).
- Gow, H and Swinen J., *Impact of Foreign Direct Investment on Agricultural and Agro-Industry in Transition Economies*. Second EU Accession Workshop, Warsaw, Poland. 1999
- Hahm, H. (1993). "The development of the private sector in a small economy in transition: the case of Mongolia", World Bank Discussion Papers, China and Mongolia Department (Washington, DC: World Bank).
- Harper, C. (1994). "An assessment of vulnerable groups in Mongolia", World Bank Discussion Paper 229 (Washington, DC: World Bank).
- Hazanov, A. (1978). "Characteristic features of nomadic communities in the Eurasian Steppes". In: W. Weissleder (ed.) *The Nomadic Alternative* (The Hague: Mouton Publishers), pp. 119-126.
- Hjort af Ornas A. 1990. Pastoral and environmental security in East Africa. *Disasters* 14: 114-22
- Honhold, N. (1995). *Livestock Population and Productivity and the Human Population of Mongolia, 1930 to 1994* (Ulaanbaatar: European Union (Project ALA/MNG/9209), Ministry of Food and Agriculture).
- Honhold, N. (1995). *Livestock Population and Productivity and the Human Population of Mongolia, 1930 to 1994* (Ulaanbaatar: European Union (Project ALA/MNG/9209), Ministry of Food and Agriculture).
- Horowitz, MM. 1979. *The sociology of Pastoralism and African Livestock Project*. AID Prog. Eval. Discuss. Pap. 6 Washington, DC: USAID
- Horowitz, MM. 1981. "Research priorities in pastoral studies". In: *The Future of Pastoral Peoples, Proceedings of a Conference held in Nairobi, Kenya, 4-8 August 1980* (Ottawa: International Development Research Centre), pp. 61-88.
- Horowitz, MM. 1986. Ideology, policy and praxis in pastoral livestock development. In *the Anthropology of Rural development in West Africa*, ed. MM Horowitz, T Painter, pp. 251-72. Boulder : Westview
- Horowitz, MM. Jowka F. 1992 *Pastoral Women and Change in Africa, the Middle East and Central Asia*. New York: Inst. Dev. Anthropol., IDA Work. Pap. 91
- Horowitz, MM. Little PD. 1987. African pastoralism and poverty: some implications for drought and famine. See Glantz 1987, pp. 59-82
- IMF statistics, 2001-2002
- Implications of the Uruguay Round Agreement for South Asia: The Case of Agriculture. Allied Publishers for the World Bank.
- Information on STEs is in the accession working party report (WT/ACC/MNG/9) and in WT/ACC/MNG/6 and G/STR/N/4/MNG.
- Kaser, M. (1991). "Economic developments". In: S. Akiner (ed.) *Mongolia Today* (London: Kegan Paul International).
- Lanjouw, J., Lanjouw, Pl., 1995. *Rural non-farm employment: a survey*. Policy Research Working Paper No. 1463, The World Bank
- Lanjouw Jean O., Peter Lanjouwa, *The rural non-farm sector: issues and evidence from developing countries*
- Lawson, Clive. "Towards a Competence Theory of the Region." *Cambridge Journal of Economics*, March 1999, 23 (2): 151-166.
- Layton Croft, *Cashmere Quality, Chinese Quantity: Different Values for Different Folks*; 1999
- Leeds, A. (1965). "Reindeer herding and Chukchi social organization". In: A. Leeds and P. Vayda (eds.) *Man, Culture, and Animals* (Washington, DC: American Association for the Advancement of Science), pp. 87-128.
- Lefebure, C. (1979). "Introduction: the specificity of nomadic pastoral societies". In: *L'Equipe Ecologie et Anthropologie des Sociétés Pastorales* (ed.) *Pastoral Production and Society* (Cambridge: Cambridge University Press), pp. 1-14.
- Malecki, E. J. "Flexibility and Industrial Districts (Guest Editorial)," *January 1995*, 27 (1): 11-14.

- Maskell, Peter and Anders Malmberg. "Localised Learning and Industrial Competitiveness." *Cambridge Journal of Economics*, March 1999, 23 (2): 151-166. *Cambridge Journal of Economics*, March 1999, 23 (2): 151-166.
- McCann, Philip. "Rethinking the Economics of Location and Agglomeration." *Urban Studies*, 1995, 32 (2): 563-577.
- McNicoll, G. (1989). "Social organization and ecological stability under demographic stress". In: G. McNicoll and M. Cain (eds.), *Rural Development and Population*, supplement to Vol. 15 *Population and Development Review*, pp. 147-167.
- Mearns, R. (1993). "Pastoral institutions, land tenure and land policy reform in post-socialist Mongolia", Research Report No. 3, Brighton, Institute of Development Studies, University of Sussex.
- _____ (1996). "Community, collective action and common grazing: the case of post-socialist Mongolia", *The Journal of Development Studies* 32:297-339.
- Milne, E., J. Leimone, F. Rozwadoski and P. Sukachevin (1991). *The Mongolian People's Republic: Toward a Market Economy* (Washington, DC: International Monetary Fund).
- Ministry of Finance and Economy of Mongolia
- Mongolia Cooperative Training and Information Center, GTZ, 2002
- Mongolian Chamber of Commerce. www.mongolchamber.mn
- Mongolian Constitution Article 5.5.
- Mongolian National Center for Standardization and Metrology (MNCSM)
- National Statistical Office of Mongolia, 1996-2002
- NSO-World Bank. *Participatory Living Standard Assessment*, 2001
- Neupert, R. (1994). "Fertility decline in Mongolia: trends, policies and explanations", *International New Scientist Magazine* 2001, (REF)
- Neupert, R. (1996). *Population and the Pastoral Economy in Mongolia*, *Asia-Pacific Population Journal*, Vol. 11, No. 4, December 1996, pp. 27-46
- _____ and S. Goldstein (1994). "Urbanization and population redistribution in Mongolia", *Occasional Paper No. 122*, Honolulu, East-West Center.
- Nooteboom, Bart. "Innovation, Learning and Industrial Organization." *Cambridge Journal of Economics*, March 1999, 23 (2): 1127-150.
- PALD (Policy Alternatives for Livestock Development in Mongolia) (1993). "Options for the reform of grazing land tenure in Mongolia", *Policy Option Paper No. 1*, Brighton, Institute of Development Studies, University of Sussex.
- Panayotou, T. (1994). "The population, environment, and development nexus". In: R. Cassen and contributors, *Population and Development: Old Debates, New Conclusions* (New Brunswick: Transaction Publishers), pp. 149-180.
- Pingali, P. (1989). "Institutional and environmental constraints to agricultural intensification". In: G. McNicoll and M. Cain (eds.), *Rural Development and Population*, supplement to Vol. 15 *Population and Development Review*, pp. 147-167.
- Porter, Michael E. "Clusters and the New Economics of Competition." *Harvard Business Review*, November-December 1998: 77-90.
- Porter, Michael E. "The Adam Smith Address: Location, Clusters, and the "New" Microeconomics of Competition." *Business Economics*, January 1998, 33 (1): 7-13.
- Potkanski, T. (1993). "Decollectivisation of the Mongolian pastoral economy (1991-92): some economic and social consequences", *Nomadic Peoples* 33:123-135.
- _____ and S. Szykiewics (1993). "The social context of liberalization of the Mongolian pastoral economy", *Research Report No. 4*, Brighton, Institute of Development Studies, University of Sussex.

- Reardon, T., Berdegue, J., Escobar, G., 20001. Rural nonfarm employment and incomes in Latin America: overview and policy implications. World Dev. Press.
- Ricardo F. Neupert, Population and the Pastoral Economy in Mongolia. *Asia-Pacific Population Journal*, Vol. 11, No.4, December 1996
- Robinson, W. and W. Schutjer (1984). "Agricultural development and demographic change: a generalization of the Boserup model", *Economic Development and Cultural Change* 32:342-361.
- Salomon Smith Barney. Brand control through vertical integration.
- Sanders, A. (1991). *Mongolia: Politics, Economics and Society* (London: Frances Printer).
- Schneider Cashmere Price List 2002
- Simon, J. (1990). *Population Matters: People, Resources, Environment, and Immigration* (New Brunswick: Transaction Publishers).
- State Statistical Office (1991). *National Economy of the MPR for 70 Years, 1921-1991*, Ulaanbaatar.
- _____ (1994a). *Population of Mongolia*, Ulaanbaatar.
- _____ (1994b). *Mongolian Economy and Society in 1993*, Ulaanbaatar.
- Steen E. 1994. Drylands of the Third World: potential for future development. *Ambio* 23 (7): 458-60
- Stenning, D. (1959). *Savannah Nomads: A Study of the WoDaaBe Pastoral Fulani of Western Bornu Province, Northern Region, Nigeria* (London: Oxford University Press).
- Takacs E. Wendy (1994), *The Economic Impact of Export Controls. An Application to Mongolian Cashmere and Romanian Wood Products*. WB PRWP.
- Templer, G., J. Swift and P. Payne (1993). "The changing significance of risk in the Mongolian pastoral economy", *Nomadic Peoples* 33:105-122.
- The Cairns Group web site <http://www.cairnsgroup.org/proposals/index.html>
- The Economist, various issues on mergers and acquisitions, 2000.
- Thebaud, B. (1995). "Human demography and animal demography in pastoral societies of the Sahel: toward a better understanding of the pastoral economy". In: A. Mafeje and S. Radwan (eds.), *Economic and Demographic Change in Africa* (Oxford: Clarendon Press), pp. 36-46.
- Tumurjab M., 1989 *Pasturable Livestock in the MPR*
- UNIDO (United Nations Industrial Development Organization) (1993). *Mongolia: Restructuring for a Market Economy* (Vienna: UNIDO).
- Van de Walle, D.V., 2000. *Is the Emerging Non-Farm Market Economy the Route Out of Poverty in Vietnam?* Mimeo, Policy Research Department, The World Bank, October.
- van Gelder, R.A., 1999, *Mechanisms Interfering in Market Chains of the Mongolian Livestock Industries*, invited paper in preparation for International Symposium on "Nomads and the Use of Pastures Today", Ulaanbaatar, Mongolia, Dec, 14-15 1999.
- van Gelder, R.A., 2000, "Livestock Products Marketing: Sector Analysis" for UNOPS, MON/98/132, Enterprise Restructuring Project, REPORT TO UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP/UNOPS), Ulaanbaatar., Mongolia.
- van Gelder, R.A. & van Gelder, A.A., 2000, "Lessons Learnt from the Dzud 1999-2000 in Mongolia and Sustainable Rangeland Management". REPORT TO UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP/AusAID)
- van Gelder, R.A. and Shombodon, D., 2001, *Arkhangai and Khovsgol Poverty Alleviation Project*, IFAD loan No.412-MN, "Notes on Grazing Management and the Pastoral Situation in Mongolia"
- Warden, R. and A. Savada (1991). *Mongolia: Country Study* (Washington, DC: U.S. Department of the Army).
- WDR, 2001 –Building Institutions for markets.
- WETFA 2002, *Vertical And Horizontal Integration in the Textile Industry*.
- World Bank, 1997, *Statistical Annex tables*

- World Bank, 2000, Global Economic prospects and Developing Countries 2000. Washington DC.
- World Bank, 2002, Mongolia: Environment Monitor.
- World Bank, Quality of Growth, 2000. Washington DC
- World Bank, Sustainable Livelihood Project Mongolia, 1998
- World Bank, Trade Data Base, 2003.
- WT/ACC/7. 10 March 1997, Para 71.
- WT/ACC/MNG/9, 27 June 1996. Report of the Working Party on the Accession of Mongolia.
- WT/ACC/7 10 March 1999, and WT/ACC/7/Rev2 1 November 2000. Technical Note on the Accession Process.
- WTO Working Party report. Paras 22 and 23.
- WTO, Note by the Secretariat. Technical Note on the Accession Process.
- Yarissa Lyngdoh Sommer. Urban Land Management Needs Assessment: Ulaanbaatar. Mongolia: Second Ulaanbaatar Services Improvement Project (UBSIP II). 2003
- Ykhanbai H. Case study on pastureland resources accounting in Mongolia. Mongolia, MNE. 1999
- Zagsuren Yo., N. Altankhuyag, B. Mandah, Some Important Outlines and Data in the Research Work on the New Technology for Selective Reproduction of Highbreed Goats. University of Agriculture, Institute of Livestock Husbandry, Ulaanbaatar 2003