

CO-BENEFITS OF GRASSLAND REGENERATION OF ABANDONED WHEAT AREAS FOR CARBON SEQUESTRATION, LIVESTOCK PRODUCTIVITY, BIOLOGICAL CONSERVATION, AND SOCIO-ECONOMIC DEVELOPMENT

NARRATIVE SUMMARY

Carbon sequestration of grassland and abandoned farmlands in Kazakhstan has a potential to offset the global increase in atmospheric CO₂ levels due to fossil fuel emissions. The analysis of different land use management options suitable for this region of the world will provide a set of management options for improving the natural resources and economic conditions that people rely on. The proposed research will evaluate and model how changes in the seasonal grazing mobility of livestock in the Kostanai steppe region of northwest Kazakhstan affect carbon sequestration, vegetation composition, and rangeland productivity. New field studies will indicate how carbon credit revenues can be invested to promote re-adoption of seasonally mobile grazing systems. This re-adoption is likely to lead to sustainable rangeland use, reduction of household poverty, and conservation of biodiversity. The result will be investment guidelines for local authorities and livestock-keeping households, to meet these aims within this type of steppe ecosystem.

Kostanai oblast is situated to the east of the Ural Mountains and extends 800 km from north to south and 400 km from west to east. Most of the Kostanai Oblast is in the zone of risky agriculture with unstable climatic conditions, droughts, winter cooling, and agricultural use of solonetz, stony soils and soils of light mechanical composition, along

with appropriate soils. Many of the rich stipa grass steppe ecosystems have been ploughed and only a few remain.

In 1991, the cultivated area was approximately 278, 000 ha. The state farms had 48,000 heads of cattle and more than 175,000 heads of sheep. During the past 10 years, agricultural land use and production have declined dramatically. The amount of arable land estimated in 2000 was less than half what was estimated in 1991, with approximately 120,000 ha of cultivated lands. The number of cattle in 2000 was approximately 15,000 and the sheep decreased to approximately 11,000 head. The majority of animals (over 90%) are now private property.

Preliminary results of climate and vegetation dynamics for the region indicate high correspondence of the vegetation with rainfall pattern, both seasonally and between years. The remote sensing data for the region confirms this relationship with the 20 year (1981 to 2001) AVHRR dynamics of maximum greenness each year and the annual integrated. The seasonal dynamics were evaluated with the 14-day greenness AVHRR data for the region.

RESEARCH

The proposed research will evaluate and model how changes in the seasonal grazing

sequestration, vegetation composition, and rangeland productivity. New field studies will indicate how carbon credit revenues can be invested to promote re-adoption of seasonally mobile grazing systems. This re-adoption is likely to lead to sustainable rangeland use, reduction of household poverty, and conservation of biodiversity. The result will be investment guidelines for local authorities and livestock-keeping households, to meet these aims within this type of steppe ecosystem.

Assessment of the potential beneficial impacts of carbon revenue transfer to livestock-keeping households and the regional ecosystem in Kostenai Oblast, through reviews and field studies at three levels:

At the household level:

i) Documentation of the current sedentary grazing system. This will include an estimation of whether households will continue to practice sedentary grazing or return to seasonally mobile livestock grazing, under different economic scenarios.

ii) Evaluation of the type and amount of household investment required for changing rangeland use to re-adoption of more mobile grazing patterns.

iii) Assessment of poverty reduction potential from increased economic returns of livestock to rural households, through household and state investment in improved grazing management, marketing facilities and livestock technical inputs.

Progress. This research effort is still being developed and the spring 2003 field work will finalize the report of this effort.

At the regional ecosystem level:

i) Modeling the impacts of future, more mobile, grazing systems on vegetation communities (regeneration versus degradation – how does this affect carbon sequestration?)

ii) Estimation of future biodiversity conservation through modelling past and current vegetation patterns, grazing systems, cropping systems and livestock populations.

Progress. Preliminary analysis of regional dynamics of net primary productivity, soil carbon, and forage availability is completed. Site level simulations and land use management scenarios will be developed in February 2003 and field verification of soil and vegetation levels for the study site will be conducted in the summer 2003.

At the regional government level:

i) Enquiry into regional official priorities for land and biodiversity conservation and their willingness to invest future carbon revenues into this effort.

ii) Assessing the potential for increasing rangeland sustainable use by state investment into appropriate facilities for encouraging seasonal livestock grazing.

Progress. This effort is still being developed and the spring fieldwork will initiate discussions with local and regional government officials. Further discussions may be included later in the summer.

POLICY

Developing a list of governmental decision makers to be interviewed during the spring 2003.

OUTREACH

In the process of identifying key contacts related to policy analysis and use stakeholders for land use management changes.

DEVELOPMENTAL IMPACT

i) The results of the project will provide land use management options for various croplands and rangeland regions of the Kazakhstan and surrounding countries.

ii) The land use management options are designed to lead to a sustainable soil carbon level and economic sustainability for the different ecosystems being studied.

iii) Will develop market for various forage seed markets

iv) Will provide the host country with a potential carbon trading mechanism

v) This project will be linked to other World Bank and USAID project investigating carbon sequestration, regional global change studies on sustainability, and with regional studies of pastoral rangeland studies.

OTHER CONTRIBUTIONS

i) Will provide a flexible land use management strategy to improve long-term economic markets for carbon stabilization and conservation for the region.

ii) Will evaluate the feasibility of adoption strategies of alternative land use management to improve soil fertility, soil carbon levels and overall land productivity.

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FEASIBILITY OF MARKET DEVELOPMENT AND SUPPORT SERVICES FOR LIVESTOCK PRODUCTS IN KAZAKSTAN AND KYRGYZSTAN

NARRATIVE SUMMARY

Kazakstan and Kyrgyzstan, in common with the other Central Asian republics, had highly developed livestock industries which produced wool, other animal fibers and pelts, as well as meat. Following the disintegration of the Soviet Union, these industries, and the USSR market on which they were based, largely collapsed. The wool and fiber industries are now experiencing a revival. The region has a comparative advantage in producing livestock on an extensive basis. Rangelands cover more than 60% of the agricultural area, managed by herders with traditional skills. There is a genetic fund of indigenous and crossbred animals of economic value, and a depth of national research skills inherited from the Soviet period.

Regionally, wool production has remained steady since the year 2000 yet the prices remain low. Most wool and fibers go to the other Newly Independent States though China has become increasingly important to the trade. Household data from previous studies and our studies suggest that wool, cashmere, and camel hair are sold without the benefit of separation into coarse and fine wool and that of other fibers. This is due to the single low prices that persist for the products.

The “Feasibility of Market Development and Support Services for Livestock Products in Kazakstan and Kyrgyzstan” study examines how the livestock resources can be better exploited to meet new commercial demand as well as increase economic returns to

producers. Focusing on a few high value products – fine wool and goat cashmere – the study investigates the information and technology transfers needed to improve marketability.

RESEARCH

Problem Statement. This project addresses the problem of developing markets for fine wool and cashmere that can: increase profitability for producers and the commercial sector, meet industrial quality standards, capture niche markets for high-value projects in competition with similar products on the world market, and develop the comparative advantages of unique animal genetic resources and the natural rangeland.

Recent assessments of the market for livestock products in Kazakstan and Kyrgyzstan have identified the greatest potential in fine sheep wool and goat cashmere, with camel hair and pelts to a lesser degree. Some of the wool processing factories that fell into disuse post-1991 have recently been rehabilitated. And in the last few years demand for fine/semi-fine wool – the most commercially valuable kind – has increased in both Kazakstan and Kyrgyzstan. Unfortunately, there are few pure fine wool sheep left, since in the economic crisis of the early reform period most remaining Merinos were crossed with the indigenous fat-rumped meat breeds. The largest factories are not able

to obtain sufficient domestic supplies of fine and semi-fine wool. In 2000 these factories operated at between 10 and 35% capacity. In addition, processing factories are prepared to pay higher prices to producers for cleaned and sorted wool thus training farmers to sort wool by different grades would improve their ability to market their livestock products.

In approaching the market feasibility problem we plan to:

1) analyze the potential to improve marketing of high value livestock products to national processing facilities and international buyers. The potential is being assessed from the perspective of producers, traders, domestic processors, and researchers. We plan to identify existing constraints to improved marketing. The analysis will specify the type of assistance required from national agencies and the private sector to assist in overcoming these constraints. This is developmentally relevant, as the results of this project, though

modest in scale, will propose measures for assisting producers, researchers, and the commercial sector to realize greater value from wools and fibers through the market. These measures could be implemented through government and donor-assisted projects in the future.

2) assess the feasibility of establishing support services for marketing livestock products and examining shortcomings in the current marketing system. We also are reviewing the impact of support services provided to the livestock sector in similar ecological conditions. Recommendations will be made to governments and the private sector on the priorities for allocating resources to develop livestock marketing support services and outline the financial investment and training needed to implement the recommended services.

We are accomplishing the above goals by collecting data from four study areas in



Figure 1 - Fine woolled white Merino crossbred sheep in Almaty Oblast's mountain pastures

Kazakstan and Kyrgyzstan. Data has been and is being collected from sample households and traders in each study area and from processors and officials in the principal commercial centers of Almaty, Kazakstan and Bishkek, capital of Kyrgyzstan. National researchers in the project are collecting these data in their respective countries, with technical assistance from the consultant and the PI. Reviews of livestock support services provided in Mongolia and China will be undertaken by C. Kerven

We have not modified the problem model since initiating this research. The timing of some of the activities, however, have been modified to accommodate research and travel schedules. Instead of having the data and research entered into a database and analyzed by December 2002 we will commence with that process in February 2003.

Progress.

Activity 1: Data on the current producer marketing patterns of live animals, fibers, and skins will be analyzed from an existing sample survey of 40 livestock-producing households in Kazakstan (DARCA 2001) and from a new survey of 30 such households in Kyrgyzstan.

The DARCA data are currently in a database. They will be analyzed in February 2003 when Kazak scientists Dr. Nurlan Malmakov and Mr. Aidos Smailov travel to Fort Collins for training and data analysis. We decided to increase the number of household surveys in Kyrgyzstan (from 30 to 40) to

be more comparable to the Kazak data. The Kyrgyz surveys are being conducted by Dr. Abdugani of the Livestock Research Institute, Goat Breeding Department, and will be complete by the end of December 2002. Dr. Abdugani is a colleague of Dr. Almeev, a co-PI on this project. Though Dr. Abdugani was not initially part of the project, his knowledge and expertise will allow for excellent data collection. The Krygyz data will also be processed and analyzed in February 2003 at CSU.

Fieldwork initially commenced early in the year 2002 when Carol Kerven traveled to the region and established working relationships with our Kazak scientific collaborators (funded by leveraged funds). Galvin and Kerven traveled to Kazakstan in August 2002 and carried out in-depth interviews of herders and their families in villages and homesteads to access household production strategies and marketing of wool, cashmere, and camel hair. Kerven later traveled to Kyrgyzstan to coordinate the interviews and data collection. Tables 1, 2, and 3 show summary household data on livestock product prices from various villages in Kazakstan. These data will be made much more complete following the analysis of the household surveys conducted by our national colleagues.

Table 1 - Prices of livestock products in Aidali village area

	2001	2002
Cashmere	200-400 T	50-60 T/kg
Merino mixed sheep wool		70 T/kg
Kazak sheep wool		30 T/kg
Camel hair - fine		100 T/kg
Camel hair - course		60 T/kg
1 Ewe		10,000 T
1 Lamb		5-6,000 T
Sheep meat		350 T

Table 2 - Cashmere and wool prices in Topar village area

	2001	2002
Cashmere	500 T/kg	50 KZT/kg 200-500 T/kg*
Coarse-grained wool		10-50 T/kg
Sheep Pelts		200 T
Goat Pelts		200 T

*sold to local trader who did not sell it due to low prices

Activity 2: Data on marketing, processing, and demand for livestock products will be obtained from an informal survey of up to ten livestock traders and processors in each country. These will be selected according to varying scales of operation and different types of livestock products handled.

The national collaborators (Dr. Serik Aryngaziev, Kazakstan and Professor Almeev, Kryrgyzstan) have been collecting data on wool production at the regional level, export of wool, cashmere sales of goat and camel hair, trading, and processors. These data will be available in early 2003. Below are some data (Tables 4, 5) collected at the regional and national levels on wool production and export in Kazakstan. Table 6 shows prices of livestock products in the Almaty markets.

Table 3 - Prices of livestock products in Shiem village area

	2001	2002
Sheep Wool	100 T/kg	80 T/kg
Goat Wool	400 T/kg	40 T/kg
One Heifer		25,000 T
One Sheep		8,000 T

Activity3: Informal interviews will be carried out with key officials responsible for developing the livestock sector, including market development.

These are being gathered by the in-country national collaborators (Dr. Serik Aryngaziev, Kazakstan and Professor Almeev, Kryrgyzstan) and overseen by co-PI Dr. Nurlan Malmakov. The data will be available in early 2003.

Some data from Kazakstan were presented above in the section on Progress on Research. Dr. Nurlan and Dr. Kerven will be bringing other Kazak data to CSU in February 2003 for analysis.

In Kyrgyzstan, Prof. Almeev is interviewing seven traders and three national processors of wool and goat down, using a checklist of questions developed from the

Table 4 - Wool Production in Almaty Oblast

Wool type	Expected	Produced	Produced	Sold	Mean Price/kg
	2002	2001	2000	2002	
Fine	4678				
Semi-fine	781				
Semi-coarse	780				
Total	6239	6220	6188	6184	\$0.69 (106KZT)

(Source: Agricultural Department of Almaty Oblast Local Administration Akimat)

Table 5 - 2001 Export of Wool in the Republic of Kazakhstan

	Not carded, not combed wool		Animal wool, fine or coarse, not carded, not combed	
	Tons	Price/kg	Tons	Price/kg
Total NIS countries	7492	\$0.57	138	\$1.70
Russian Federation	7368		132	
Kyrgyzstan	90		6	
Tajikistan	20			
Byelorussia	14			
Other countries	704	\$0.40		\$0.39
China	684		495	
Estonia	20			

Table 6 - Prices in Almaty markets

Type of product	Price received by farmer 2002	Quantity per animal harvested
Angora goat hair	300-450 KZT/kg (\$2 - 3)	2 - 3 kg
Merino/Kazak sheep wool	100 KZT/kg (\$0.60)	6 - 7 kg
Kazak local goat (pregnant)	7,000 KZT (\$40)	
Saanen milk goat (female)	20,000 KZT (\$130)	

proposal. He is carrying out these interviews in Naryn town (Naryn Oblast), Bishkek, Akshiski Rayon (Jalal Abad Oblast) and Tokmok town (Chui Oblast). He will obtain national statistics on the export of wools and goat down from 1990 to 2002 and a list of all officially-registered traders and traders in wools and fibers operating with the country. He noted that many traders are not officially registered, so as to avoid paying tax, but the largest traders and processors are likely to be registered.

By December 2002, Dr. Almeev's report will be completed and then translated into

English by a Kyrgyz translator, Gulbara Tagaeva, who has previously worked on the topic of goat down and who assisted the team during C. Kerven's visit to Kyrgyzstan in August 2002.

Dr. Abdugani is carrying out the survey of 40 livestock-owning households, using the questionnaire developed for this project. The questionnaire was translated into Kyrgyz by Ms. Tagaeva and tested on several farmers in two villages during the visit. The questionnaire was revised three times and Dr. Abdugani was trained in using the questionnaire.

It was agreed that the survey should cover

two areas, one in which fine wool/Merino sheep were raised and another area in which downy goats were raised. Twenty farmers are being surveyed in Chui Oblast, Keminisky Rayon, where Merino and Kyrgyz fine wool sheep were kept and there is a demand from the Kasiet wool processing factory in Tokmok town. The village of Shabdan in this rayon is also being included as downy goats were introduced there in 1995 and it is likely that farmers in Shabdan village are selling goat down.

A further 20 farmers are being surveyed in Badken rayon of Badken Oblast, in the extreme southwest of the country at a distance of 1000 km from Bishkek. This oblast contains about 200,000 goats, 40% of all goats in the country, and farmers have been selling goat down for several years to traders from Uzbekistan and China. Two villages were selected: Samarkandik, 60 km from the oblast center and Aksi village, nearby.

Households were selected on a stratified sample, according to the level of smallstock ownership within each sampled village. Three ownership categories are being sampled: less than 30 head, 30-70 head, and plus 70 head.

The farmer survey will be completed by December 2002, and the questionnaires submitted by Abdugani to the regional PI, Dr. Malmakov. The raw data will then be processed at CSU. The data from the Kyrgyz farm survey will be compared to that from the survey in Kazakstan of 40 livestock-owning households, under the DARCA Macaulay Institute project.

Dr. Abdugani will also obtain maps showing the location of different sheep (for meat and wool) and goat breeds by ecological zone within Kyrgyzstan in the Soviet period.

Overall research outputs and recommendations to date:

Kazakstan

Training needed in sorting wool and fiber. The importance of training producers and traders in sorting wool and cashmere cannot be over-emphasized. The Soviet state farms had skilled personnel who graded all fibers; in the case of fine wool, using up to 30 grades. But nowadays private farmers and most traders do not have these skills. Traders usually offer a single low price for all unsorted wool and fiber that inevitably contains both poor and good quality products. Producers are thus unable to reap any benefit of selling better quality wool and fiber. This is summed up by a producer/trader who emigrated from Mongolia to one of the villages we visited: this man formerly worked as a fiber grader in Mongolia on a state farm. His comment is that "The public does not know that after sorting, we [traders] make a lot more money." However, few Kazak traders have these skills, and the raw unsorted product is therefore exported cheaply to other countries. Sorting adds value at the source of production.

Women should be prime targets for training on wool and fiber development.

Kazak and Kyrgyz women, in common with women in other parts of Central Asia, have traditionally processed livestock fiber products from sheep, goats, and camels into homemade articles such as carpets and clothing. Sometimes these articles are sold by women and provide a much-needed source of cash income. In handling wools and fibers, women comb, clean, sort, card, spin, weave, and knit as well as make felt and knotted carpets. When male household heads are interviewed about production and sales of wool and other fibers, they frequently refer to their wives for accurate

information, which rarely occurs in the case of other household livestock management questions. Central Asian women are more knowledgeable about and interested in wool and animal fibers, and should therefore be a focus of development efforts to improve marketability of these commodities.

Market development needs to reflect the regional variation of Kazakstan. The different ecological regions of Kazakstan each have particular potentials to develop wool and fiber marketing. Strategies to improve marketing and producer prices must therefore be geared to these regional advantages. Parts of Almaty, Pavlodar, and Dhambul Oblasts are suited for fine wool Merino crossbred sheep. Western Kazakstan and parts of Almaty Oblast are suited for semi-fine wool breeds. Coarse wool from local crosses is produced in almost all regions but has a very low commercial value. The Oblasts of Atrou, Aktubinsk, and Kyrzl Orda are the main areas for camel hair production. The desert portions of southern, western, and central Oblasts contain local cashmere goats. Our project will define more closely the development objectives for improved marketing in each region.

Loss of genetic resources and need to reinvigorate wool breeds. During the Soviet era, a number of specialized wool breeds were developed and adapted to the different ecological regions of Kazakstan. Many of these new breeds were derived from seven British breeds brought to Kazakstan in 1965. According to scientists at the Kazak Sheep Breeding Institute, some of the breeds resulting from crossing UK breeds with Kazak breeds in the past are still very suitable for the present market conditions and private sheep farmers. The Hampshire crossbreed is considered especially appropriate, as it is a fast-growing

meat-wool breed producing semi-fine wool for which there is a demand. From an original state flock of 60,000 Hampshire/Kazak crossbreeds, there are now only 2,000 remaining. Kazak scientists are keen to develop this breed for sale to private farmers and would like to reinvigorate the breed with new genetic material. Hampshire sheep are raised in the USA and UK.

Government taking control of wool and fiber marketing. As the last several years have seen a rise in the value of sheep wool and goat fiber following the deep slump in the mid 1990s, this trade has become profitable again. The Kazak government is now showing a renewed interest in regulating and, in particular, taxing this trade. This follows years of neglecting wool and fiber production in the post-independence period. Local informed opinion is that the state is seeking to share the profits in processing and selling wool and fiber. Examples given are the recent state intervention in a private wool processing company, which has been made into a joint stock company with a government share. The government is also enforcing more stringent taxation of the wool/fiber collection agencies. This has meant that many smaller companies do not register with the state, to avoid paying taxes.

Infrastructure development. It is the case that as people are located further away from principal markets, the price of their products declines. The prices would be higher if transport to markets such as Almaty could be obtained.

World prices. Producers and domestic traders need information on annual world prices for each commodity according to grade and type. Presently, farmers lack any

knowledge of the final worth of their products on the world market and therefore are in a very weak bargaining position with traders. At the same time, domestic traders are also unaware of the price differentials set by processors according to grade specifications. Traders therefore buy indiscriminately without regard for quality, paying only the lowest price for unsorted products. By increasing their awareness of international specifications, traders would be encouraged to set price premiums for better quality product. This would increase farmers' incentives to improve quality and sort their products.

Kyrgyzstan

Given the short period of time spent in Kyrgyzstan, little information could be obtained. However, interviews are being conducted. See Activity 3 under Research Progress. Prof. Almeev has prepared a report, which is being translated into English by Dr. Malmakov. Following is a summary:

Cashmere production. The estimated national production of goat down is between 40-45 tons. Most of last year's production was sold, mainly to traders from China and Uzbekistan. There is some unsold, for example, 4 tons in Badken and 2 tons in Aksikishi rayon. The price of goat down in 2002 was considerably lower than in 2001, as elsewhere in Central Asia. The average price in 2002 was \$7-8 kg for combed down, compared to \$11-12 in 2001, according to Prof. Almeev. Domestic collectors are holding onto their stocks from 2002 in the hope that prices will rise in future years.

Development of cashmere goat breeding. The World Bank-funded Cooperatives for Sheep Breeding (KAO) purchased and marketed goat down and sheep

wool last year (2001), for the first time. A new cooperative for farmers raising downy goats (cashmere) was also created under this project, in Talas Oblast in 2001. The goat farm is based at Chong Jirgitau village in Talasiskiy rayon. Prof. Almeev visited this farm recently. The farmer bought 150 downy goats from Aksikishi rayon of Jalal Abad, with financial assistance from GTZ (German aid). The farm aims to raise downy goats for distribution to other farmers.

Wool production. A visit was made to a village called Onbirjilghan in Chuiskiy Rayon, about 100 km east of Bishkek. Discussions were held with the village administrator, livestock specialist, and a large-scale sheep farmer. The village has 400 families. Very few farmers keep fine-wooled sheep, mostly having Kyrgyz fat-rumped (Kurduchne) breeds crossed with Kazak sheep, such as Edil Baiskiy and Digeres breeds. Farmers find it profitable to raise meat breeds as meat from local sheep is in high demand. Several years ago some Merino sheep were distributed to the village through the World Bank project, but the project took these back as farmers did not find them profitable. The Merino lambs required more care compared to local breeds and at that time there was a low price for fine wool. In 2002 villagers sold white wool from Kyrgyz fine wool sheep crossed with meat breeds, at a price of 30 som/kg (\$0.67/kg). The dark, coarse, so-called "black" wool from local breeds sells at 4 som/kg (less than \$0.10 cents) but many farmers do not sell this as there is no demand. Farmers use this type of wool for the home, to stuff mattresses and make rugs. No one in this village sells goat fiber though many goats are kept. The reason is that no one knows how to comb goats so traders do not come to buy combed down.



Figure 2 - Project researcher, Carol Kerven, sitting with Kazak family

Milking goats. Milking goats (Saananisky breed descended from Saanan European goats) are kept by some villagers. The does give between 3-6 litres milk a day and sell for \$30 each. There is some demand for these goats among villagers as they require less special feeding than milk cows.

GENDER

This project incorporates women researchers and women informants. K. Galvin and C. Kerven are the PIs on the project. Several women were interviewed by the PIs during their trip in August and many more will be represented in the household interviews. See Activity 2 under Research on the recommendations for women.

POLICY

We have the full support of the Kazak Research Institute of Sheep Breeding in Kazakstan and the Kyrgyz Livestock Research Institute in Kyrgyzstan. National scientists will receive technical assistance on household and trader survey and informal interview techniques. We have also purchased a computer for the Wool Standardization Lab at the Research Institute of Sheep Breeding in Kazakstan.

OUTREACH

Recommendations will be made for governments and the private sector on the priorities for allocating resources to develop livestock marketing support services. See our Research Outputs and Recommendations for Kazakstan above for some initial information for outreach.

DEVELOPMENTAL IMPACT

Environmental impact and relevance.

Though the project objectives do not directly address this question, it has become clear that market development needs to reflect regional ecological variations in the region. See previous section on market development outputs and recommendations.

Agricultural Sustainability. This project examines how livestock resources can be better exploited to meet new commercial demand as well as increase economic returns to producers. The results of this study will be of interest to two livestock development projects in Kyrgyzstan — the World Bank sheep development project and the new UK DFID project, “Support to livelihoods in livestock producing communities.” USAID does not presently fund livestock-focused projects in either country. Kazakstan does not have any livestock development projects, despite the importance of rangelands as a national resource, the tradition of extensive livestock rearing, and the contribution of livestock to rural household economies. This project proposes measures for assisting producers, researchers, and the commercial sector to realize greater value from wools and fibers through the market. These measures could be implemented through government and donor-assisted projects in the future.

Contributions to U.S. Agriculture.

Information from this project could be used to determine to what extent the US small stock, wool, and cashmere industries (to the extent that they exist) could become interested in Central Asian livestock products and contribute to the Central Asian breeding stock.

Contributions to Host Country. The case of Mongolia demonstrates the possible benefits to the host countries of developing a successful wool and fiber market. Selling raw cashmere has become the major source of income for privatized herders in Mongolia and Mongolia’s raw cashmere production has risen by 70% propelled by a strong demand from China, USA, and Europe. The Mongolian government has encouraged direct foreign investment and new technology.

Linkages and networking. This project is linked closely with the two other GL-CRSP funded projects for Central Asia. We have developed a plan for sharing and synthesis of data among projects.

Collaboration with international research centers. We work closely with Macaulay Institute, a leader in small stock research.

LEVERAGED FUNDS AND LINKED PROJECTS

Macaulay Land Use Research Institute, U.K., 2001 - Desertification and Regeneration in Kazakstan and Turkmenistan: Modeling the impacts of market reforms on Central Asian rangelands. (DARCA) EU (funding not available)

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PUBLICATIONS

Kerven, C., Russel, A.J. and Laker, J. 2002. Potential for increasing producers' income from wool, fiber and pelts in Central Asia.

Working Paper 45, ILRI/Macaulay Institute, Nairobi.

ABSTRACTS AND PRESENTATIONS

Galvin, K.A. 2002. Feasibility of market development for livestock products in Kazakstan and Kyrgyzstan. Paper presented at the USAID Global Livestock CRSP Program Conference, Washington, D.C., October 9-12.

Galvin, K.A., C. Kerven, Nurlan Malmakov and J. Sunderland. 2002. Livestock product marketing in Kazakstan. Poster presented at the US-AID Global Livestock CRSP Program Conference, Washington, D.C., October 9-12.

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IMPROVING WOOL PRODUCTION AND MARKETING THROUGH WOOL POOLS IN KAZAKHSTAN AND KYRGYZSTAN

NARRATIVE SUMMARY

After the breakdown of collective farms and privatization of livestock, sheep production became a significant means of livelihood for Kazakh and Kyrgyz rural populations. The majority of rural Kazakh and Kyrgyz families have been unable to engage in crop production due to the arid soils and lack of capital, technology, and other inputs. Moreover, after the dissolution of state farms, employment opportunities in the rural areas have been scarce and many families came to rely on their livestock for livelihood. Rural households are currently the largest producers of animal products, including meat and wool.

While the production of sheep meat and wool represents an important source of income for the rural population, market infrastructure for domestic sale and especially export of wool is emerging very slowly and especially small producers receive very low prices for their wool. This is partially due to the lack of governmental assistance and the non-existence of institutions such as producer associations, wool pools, and regional trading centers that could assist small producers with marketing wool and link them to domestic and foreign buyers and processors. Small farmers and households know little about the quality of wool they produce and have limited information about wool markets, marketing options, and the needs of wool buyers, domestic and foreign. Moreover, producers of small quantities of wool such as households are not organized to generate economies of

scale. This places them in a very weak bargaining position vis-a-vis the wool buyers.

The objective of this project is to research the existing situation in wool production and marketing in Kazakhstan and Kyrgyzstan and propose improvements in marketing infrastructure for different types of producers in ways that would open new markets for Kazakh and Kyrgyz wool and increase prices paid to producers. Specifically, the team will research the possibility of introducing wool pools and a wool grading system in the two countries. These institutions have been successfully used by US wool producers to improve their marketing capacities and receive higher wool prices.

After becoming effective in August 2002, the project moved forward with a set of activities in both the US and Kazakhstan, focused on gathering and preparing background data and material. This report describes these activities.

RESEARCH

Activity 1: Research on Wool Production and Marketing in Kazakhstan and Kyrgyzstan.

Problem Statement. The researchers will conduct a survey of households and sheep farms and interview producers, traders, buyers, and processors. The research will examine the commodity (types of wool produced), the main

actors involved in production and marketing (wool producers, traders, buyers, and processors), institutions and facilities (producer associations, wool warehouses, sheering, grading, packing and processing facilities), production and marketing processes (wool production, collection, handling, sales and processing), and markets for Kazakh wool. The team will focus on describing the relationships between the wool market participants and evaluate the different bargaining capacities, needs and problems of the producers, traders and buyers. It will focus on identifying the problems of small wool producers.

The team will evaluate the facilities for wool sorting, grading, measuring and packaging available in the area. These would include measuring and fiber testing equipment, sorting and packaging facilities, wool warehouses, pools, and processing facilities. The team will also assess the level of skill to sort and grade wool on the part of the producers and traders, and the availability of information about prices and markets for different grades of wool.

The team will also collect wool samples from farmers and households, test them in the US laboratory, and generate estimates regarding the amounts of wool of specific grades produced by farmers and population in the pilot region. The project will explore markets and marketing options, both foreign and domestic, for the different grades and quantities of wool produced in the pilot regions.

This information will allow us to develop a model of the current wool production and marketing processes. The team will use the data to document the movement of wool from the producers to the buyers and processors, identifying specific problems at different levels of this process. It will be used to create

a data-bank about the local wool producers, their marketing practices and the quantities and qualities of wool produced.

Progress. Nurlan Malmakov and Koyshibek Karymsakov began a survey of 60 sheep producers in three sites in the Almaty region of Kazakhstan in October 2002. Liba Brent plans to join them and finish the survey in May 2003. The project will coordinate with a small grant project led by Malcolm Childress to obtain data on Kyrgyz sheep producers.

Activity 2: The collection of information on US wool production and marketing with a focus on market institutions (wool pools, wool warehouses, sorting and grading processes) used by US wool farmers.

Problem Statement. Compared to Kazakh or Kyrgyz producers, American small sheep producers benefit from developed market infrastructure such as wool pools and grading systems. American wool producers solve the problems of small-scale wool production by pooling wool into wool pools or warehouses to achieve economies of scale and to obtain higher prices for wool. Marketing wool through wool pools has advantages for both buyers and sellers. Pooling wool permits producers to increase the amount of various kinds of wool and sort and combine the wool into lots based on fiber diameter, white-face, black-face, length, etc. By combining wool into larger lots, grading it, and marketing it through the wool pool, sellers increase their bargaining power and chances to find a buyer. The wool pools also allow for the producers to share the cost of baling and transporting wool to a buyer be it a mill or a middleman. Without sharing such costs and using services of the wool pool, it

would be difficult for the American producers to realize a profit from wool, especially given the world-wide decline in wool prices.

Information on sorting and grading practices and institutions such as wool pools used by American sheep producers will be assembled in a format that can be presented as an educational material to Kazakh sheep farmers. The Thomas-Brent team will collect data and information on American wool pools and grading system. Brent plans to visit wool pools, collect information about pooling, sorting, grading and marketing practices, and videotape the wool pool. The edited video and other educational materials will be used to inform the Kazakh wool farmers about production, sorting, grading, pooling, and marketing practices of US wool farmers, and the effects of these technologies and practices on the marketability of US wool.

Progress. Liba Brent visited two wool pools this summer and fall, one in Maryland and one in Montana. She videotaped the pools, interviewed the organizers and the sheep farmers, and collected information about wool handling, sorting, bailing, and marketing that was organized by the wool pools. She also visited a wool grading laboratory in Denver, Colorado and a wool processing lab at the University of Wyoming at Laramie. She videotaped the wool grading laboratory in Denver and the processing facilities at Laramie and collected data and information on wool grades, grading, and processing.

Brent is currently producing an educational video on American wool pools and grading system for the Kazakh and Kyrgyz sheep farmers. The video will be part of an educational seminar on wool handling and marketing that will be shown to Central Asian farmers in the spring of 2003. The objective of the seminar and the video on wool pools is

to show Central Asian wool producers how sheep farmers in the United States work to overcome marketing constraints that they share with Kazakh and Kyrgyz farmers such as the small scale of production and flocks of diverse breeds. The video material on wool grading and processing will serve to educate Central Asian sheep producers about the importance of grading and sorting wool to satisfy the needs of buyers and processors and improve market access and price.

Activity 3: Educational Seminar (Summer of 2003)

Problem Statement. The Central Asian farmers lack information about wool markets and the needs of wool buyers and processors. They also lack cooperative marketing institutions that can generate economies of scale in sorting, grading, bailing, and marketing and increase wool prices for small producers. The project plans to organize a seminar to inform and educate sheep producers about grading and marketing practices used by US sheep farmers to improve marketability of their wool, and explore the potentials and constraints for introducing similar practices in Kazakhstan and Kyrgyzstan.

The seminar will cover the following topics: 1) a general overview of the world wool market, recent market changes, and their impact on farmers in the US and Kazakhstan; 2) information on domestic and foreign markets for different grades of wool produced in the pilot area, prices and terms offered by the potential buyers; 3) information on different wool marketing strategies used by US sheep farmers and their advantages and disadvantages, including the video of the wool pools; 4) training in grading and sorting of wool; 5) discussion of strategies for improvement of wool production and

marketing in the pilot regions, including the potential development of wool pools. The team will document the process of organizing the seminar and evaluate its effectiveness.

Progress. Liba Brent is currently producing an educational video on wool pools, grading and processing, and collecting other information that will be included in the educational seminar.

Activity 4: Analysis of data on wool production in Kazakhstan and Kyrgyzstan and a proposal of new models of production and marketing that would enhance the production and marketing capacity of small producers. Evaluation of the possibility to introduce organizational/institutional technologies and structures used by US wool farmers in Kazakhstan.

Problem Statement. The team will analyze the data collected in Kazakhstan and propose specific improvements at the different levels of the wool production and marketing process. It will focus on identifying means of improving wool production and marketing capacity of Kazakh sheep farmers and households. The possibility of creating wool pools and grading system based on the US model will be examined. The researchers will explore markets and marketing options, both foreign and domestic, for the different grades and quantities of wool produced in the pilot region. It will identify improvements in production and marketing that are needed to increase the exportability of Kazakh wool. The proposals will be presented to wool producers and other market participants and the regional and federal governments.

Progress. Data on wool production and marketing is currently being collected through surveys by our Kazakh collaborators in the Almaty region. The survey will be finished in the spring of 2003 and analyzed in the summer of 2003.

GENDER

The project seeks to show Central Asian producers that sheep breeding and wool marketing is done by women as well as men in the United States. Through the video and other educational material on US wool pools, the project demonstrates the active role of women in sheep production and wool marketing. The example of American women sheep breeders may provide a model for Central Asian women to expand beyond their traditional roles in livestock production and in the household economy. Women in the households of sheep producers will be invited to participate in the seminar, and the research team will make a special effort to include women in the surveys of sheep producers. The seminar will explore opportunities to expand the role of women in wool handling, marketing and home processing.

POLICY

Local policy-makers will be included in the survey on wool production and marketing and informed about the objectives and activities of the project. They will be invited to participate in the seminar. The possibilities of improving marketing institutions will be discussed with the local policy-makers.

DEVELOPMENTAL IMPACT

The objective of the project is to promote the sustainability of small-scale sheep

production by sharing information and testing methods to increase income from wool. With an increased income from their product, producers will be better able to sustain their livelihoods through family and community-based sheep production.

U.S. agricultural expertise will be featured by the project. Demonstrational video of US wool pools will highlight US producers and promote farmer-to-farmer contact which offers opportunities for American participation in providing testing equipment, genetic resources, and commercial services. American sheep producers will also learn about sheep production in Central Asia. During 2002 Liba Brent produced a documentary video on sheep production in Kazakhstan. A copy of the video was given to Northern Montana Wool Pool and shown at a conference of Montana sheep producers.

The host country will benefit by improved wool marketing and accelerated adaptation of producers to the market-based sheep production system. Wool producers will learn about new methods of wool handling and about marketing organizations such as wool pools that can improve market access and generate higher prices for wool especially for small producers. Producers will also become better informed about wool sorting and grading standards that can facilitate their access to the world market.

The project creates a linkage between the US and Central Asian sheep producers through the exchange of video data and other information, and investigate the possibility of institutional transfer (i.e. transfer of wool pools and grading system from the US to Central Asia). The project also contributes to strengthening the linkage between Central Asian wool producers and domestic and foreign wool markets.

The project is also linked with two other

small grant projects led by Kathy Galvin of Colorado State University and Malcolm Childress of the University of Wisconsin that focus on different aspects of fiber production and marketing. The projects collaborate by sharing data and information and by proposing to conduct future research on a broader scale.

The project is coordinating with ICARDA, which is currently conducting related survey research on sheep and wool in Kazakhstan and Kyrgyzstan and is concerned with improving markets for livestock products in the region. Dave Thomas and Liba Brent met with ICARDA representatives in Madison in November 2002 and discussed possible avenues of collaboration.

OTHER CONTRIBUTIONS

The project is directly focused on the development of markets and market institutions. It is concerned with broad-based economic growth by focusing on market constraints for small producers and households that constitute the majority of rural population in Central Asia.

In compliance with the Mission objectives, the project supports the development of markets and private enterprise and promotes grass-root development of civil society institutions.

The project supports pro-democratic process and development of civil society by facilitating the development of grass-root organization of producers such as wool pools. Local wool marketing institutions such as wool pools could empower small sheep producers to collaborate on improving sheep production and market access and facilitating the development of communities of sheep producers that can become an active voice of civil society in the rural areas.

LEVERAGED FUNDS AND LINKED PROJECTS

The project is linked with GL-CRSP small grant projects led by Kathy Galvin and Malcolm Childress. The small grant project has not attempted to leverage funds. The project is also intended to serve as a first phase in a larger program proposed for the 2003-2006 by a consortium of CRSP researchers titled "Diversified Market Development Strategies for Sheep, Goat and Fiber Producers in Central Asia."

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Brent, Liba. 2002. Sheep Production in Kazakhstan. Video presented at Montana Sheep Producers' Meeting, November.

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LINKING SHEEP PRODUCERS AND MARKETS: THE ROLE OF THE KYRGYZ SHEEP BREEDERS ASSOCIATION IN EVALUATING AND PROMOTING PROFITABLE SHEEP MARKETING STRATEGIES

NARRATIVE SUMMARY

The Kyrgyz sheep producers are now creating new linkages between producers and consumers, replacing those of the Soviet system. How those linkages are formed, and how quickly they do so under global market conditions, is significant for the well-being of producers and for general economic development. The most profitable and sustainable strategies for producers and marketers are not always clear. One of the central questions for the sector has been posed by Schillhorn van Veen (1995):

“Will the sheep production system continue to produce fine wool in the future, or will it revert to the meat/coarse wool production system seen commonly throughout the Near East?”

Under current conditions of changing world market prices for wool, the relative profitabilities of producing mainly for fine wool or meat, or for both wool and meat are not entirely clear to either producers or marketers. Profitability depends on the marketing infrastructure available to producers and the availability of breeding rams and artificial insemination, as well as the cost structure. The success of fine wool production strategies in world markets, for example, depends importantly on the ability of producers to differentiate qualities with precise measurements of wool diameter, fiber length, fiber strength, color, and other variables, and

to provide bulk deliveries of these differentiated products. The dual purpose “wool-meat” strategies, which produce lambs from fine-wool ewes bred with meat-breed rams, depend for their success largely on the availability of the meat-breed rams, or semen and measures to promote prolificacy, as well as the sale of fine wool. Each of these strategies may face obstacles in Kyrgyz context: in breeding of fine wool sheep, in the marketing of fine wool, and in the sale of meat. The project is comparing breeding and production strategies from producers following different strategies and exploring how this information and other information on market conditions can be utilized by the Kyrgyz Sheep Breeders Association (KSBA) to link producers and markets. The comparison takes into account both household strategies, based on their current endowments of livestock and other assets, non-livestock opportunities and animal husbandry practices, and market opportunities through KSBA. During July-December 2002 the project mobilized local research teams and came close to finishing the first round of a planned three rounds of data gathering during 2002-2003.

RESEARCH

Activity 1: At the producer level, a group of quantitative case studies of sheep production budgets and practices will be used to compare production and marketing strategies around “fine wool,” “meat,” and “meat/wool” flocks.

After preliminary fieldwork and testing of the questionnaire by Childress, Stobart, and Rakaev in July 2002, subcontracts with KSBA and Center for Social and Economic Research (CASE) -Kyrgyzstan to carry out the field research were put in place in October 2002. KSBA and CASE-Kyrgyzstan have initiated the first round (of three planned rounds) of interviewing in Talas Oblast. Talas is the only oblast with significant representation of each domain of study. Childress visited KSBA field staff in Talas in December 2002 and took part in the ongoing fieldwork. Forty-two out of sixty first-round interviews have been completed.

Activity 2: At the level of the producers' association, the marketing opportunities and technical requirements for market infrastructure surrounding each of these three production strategies will be analyzed and used to produce extension material for local producer groups about the findings.

Work on this activity is in the stage of discussions with KSBA about its marketing activities and information sources.

GENDER

The research is predominantly interviewing male household heads who are generally in charge of sheep production in households and small farms.

POLICY

The export prohibition on raw wool in Kyrgyzstan is a policy issue which the research will comment on.

DEVELOPMENTAL IMPACT

The research has practical value to producers and their associations, both within Kyrgyzstan and regionally. Preliminary field visits in July 2002 by Childress, Stobart, and Rakaev revealed that in the current market environment, producers are unsure how to orient their flock expansion. Some believe that with global wool prices recovering, expansion of fine wool flocks is a profitable strategy. Others believe the opposite. The research will directly help KSBA and producers to plan. Improving producer income by better understanding of economically viable and environmentally sustainable sheep production strategies can have a direct impact on alleviating poverty in mountain communities. Reversing the declines in exports of wool and meat will contribute to raising producer incomes, help create jobs in the processing and transportation sectors, and improve the trade balance, making more capital available for investment in other sectors. Lessons learned from research in Kyrgyzstan are immediately relevant for producers in Kazakhstan who face similar market conditions, and has some relevance for producers in Uzbekistan and Turkmenistan who face the same world market conditions.

OTHER CONTRIBUTIONS

The project supports two key Mission objectives: both private enterprise and trade and the building of a more open, democratic culture are supported by facilitating the development of grass-root organization of producers through the KSBA's local member groups.

LEVERAGED FUNDS AND LINKED PROJECTS

The project is linked with GL-CRSP small grant projects led by Kathy Galvin and Dave Thomas. It is also sharing information and approaches with the BASIS CRSP project “Institutional Innovations for Land Reform Beneficiaries in Kyrgyzstan,” and the DFID Sustainable Livelihood for Livestock Producing Communities project (which has sites in Talas). The project is also collaborating closely with the World Bank Sheep Development Project. The project is intended to serve as a first phase in a larger program proposed for the 2003-2006 by a consortium of CRSP researchers titled “Diversified Market Development Strategies for Sheep, Goat and Fiber Producers in Central Asia.”

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Kachkinbay Kadyrkulov, Director Rural Advisory Service

ABSTRACTS AND PRESENTATIONS

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