LIVESTOCK PRODUCTION AND AGRICULTURE IN KYRGYZSTAN

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SUMMARY
Kyrgyzstan, located in the north eastern region of Central Asia, is struggling to emerge economically and psychologically from the demise of the Soviet system. Inexperience in the processes of the market economy is making it difficult for Kyrgyzstan to undertake its obligations and responsibilities under the World Trade Organisation and derive benefits. There is a need for a change in the Kyrgyz approach to livestock production, management and marketing in order to promote participation in world trade and produce much needed foreign exchange. Kyrgyzstan presents some interesting animal production and agricultural issues, which are briefly described in this paper.

Keywords: Kyrgyzstan, GTZ, Gissar, Gissarskay, photoperiod, yak

INTRODUCTION
A consultancy for the German Government consulting organisation, GTZ was undertaken during September and October 2003. The location of the mission was at Batken in south western Kyrgyzstan. The Terms of Reference were to (i) carry out a baseline survey of livestock production in Batken Oblast (Province), (ii) assess livestock marketing for opportunities to create improvement, and (iii) observe any opportunities for promotion of private enterprise in the livestock and agricultural sectors of Batken Oblast. A 5 year GTZ project is aimed at sustainably enhancing food security by building capacity for local self government and mitigation of conflict potential over scarce natural resources, chiefly water and land.

BACKGROUND
The Kyrgyz population is approximately 5 million people, with an ethnic mix of Kyrgyz (64%), Uzbeks (14%), Russians (13%), with the residual composed of many other nationalities and minorities (Dungeons, Uygur, Turks, Tadjiks, Germans, Kazakhs, Kalmias, Tatars). Ethnic disturbances occur, but currently no major problems exist. Within Batken Oblast are 2 Uzbek enclaves and 1 Tadjik enclave.

Kyrgyzstan has a surface area of 20 million ha. Located between 70-80°E and 39-43°N, it is bounded by Tadjikstan and China in the south west, south and east, Kazarkhstan in the north and Uzbekistan in the west. Ninety percent of the country has an average altitude of greater than 1500 m. The climate is dry continental, but variable over the country. Winters are cold (to -28°C) and the dry summers are hot (to 41°C). The potential plant growing period is 200-240 days. Northern Kyrgyzstan is situated at the western end of the Tian Shan mountains, whereas southern Kyrgyzstan forms the western arm of the Pamir range. Seventy to 80% of Kyrgyzstan is mountainous. It is topographically similar to the south island of New Zealand, with high mountains and broad valleys and plains. The mountain influence creates large climatic variations. Annual precipitation (375-400 mm) mainly falls as snow on the highlands between October and May. Water from melting snows irrigates rice, wheat, cotton, corn, sunflower, tobacco, melons, carrots, rasberries, alfalfa and other crops in the valleys. Dryland cereal, vegetable and oilseed crops are also grown (Bulthuis 2003).

The land area of Kyrgyzstan is composed of 10 million ha of agricultural land, including 900,000 ha of irrigated land, 1.4 million ha of dry arable land and 176,300 ha of hay fields. There are approximately 9.2 million ha of pasture land (Tabyshalieva 2001). Crop residues are vital for winter feeding. Large seasonal variations in animal body weights indicate animal feeding is for survival, not production. Feed nutritional value is generally low. The water reticulation system of open cement channels for bringing water from the melting snow has fallen into disrepair, thus reducing irrigation capability, and forcing potential irrigation areas to dryland use. A major effort in the GTZ project is to assist with rehabilitation of this system, as water distribution is a potential source of conflict between Kyrgyz villages and between ethnic groups.

ECONOMY AND HUMAN NUTRITION

The economy of Kyrgyzstan is in disarray. Average personal income is just over US$300 per annum. About 60% of the population is classified as rural. Poverty is rife, with an estimated 48% of the population below the poverty line. According to the United Nations, more than half of the population has a daily nutritional intake of less than 2,100 Kcal per day. Bread comprises 61% of the daily diet and meat 3%, which means a consumption of about 12.6 kg meat per person annually.

The central Government is functional, but due to lack of tax revenue, variable accounting procedures and corruption, has little money for the public service to implement legislation. Scientific and livestock research has largely ceased because of lack of funds. Dependable statistical information is difficult to obtain, particularly when outside the capital city, Bishkek. Developments in agriculture and livestock industries are occurring mainly from financial contributions by international donor organisations. This can lead to problems as donors usually tend to ensure that they retain partial, or total control of developments, which may not be in the best long term interests of the Kyrgyz people.

The Kyrgyz rural economy has experienced difficulties following the collapse of the Soviet system. There has been a continued decline in availability of fertilisers and large increases in price. Very often, the fertiliser nutrient analysis is incorrect, and farmers are charged for higher nutrient levels than are in the fertiliser. Insecticides and pesticides are largely unavailable at reasonable prices. Over recent years farmers delivering cotton, wheat and corn crops to processors have either had to wait many months for payment, or received no payment at all, despite signed contracts. There is no international livestock trading, and all animal selling occurs at the local town, or district bazaar. Individual animals are sold by traditional, individual negotiation between seller, buyer and agent over a hand shake. The country is not ready to change this system at present. Laws of Contract are legislated, but rarely enforced.

Table 1 : Kyrgyz output by main products (x 1,000) (Tabyshalieva 2001)

Item	Units	1992	1993	1994	1995	1996	1997	1998	1999	2003	Batken
Wheat	tonnes	634	831	566	625	964	1274	1204	1109		
Barley	tonnes	582	477	288	159	166	152	162	180		
Corn	tonnes	281	184	129	116	182	171	228	308		
Rice	tonnes	3	2	4	7	9	12	11	15		
Sugarbeet	tonnes	135	220	114	107	190	206	429	536		
Cotton	tonnes	52	49	54	75	73	62	78	87		
Tobacco	tonnes	53	49	36	18	18	26	28	30		
Oil from Seeds	tonnes	6	7	14	20	35	38	44	58		
Potatoes	tonnes	362	308	311	432	562	678	774	957		
Vegetables	tonnes	404	259	266	318	369	479	556	719		
Melons	tonnes	35	19	19	23	41	38	47	63		
Fruits & Berries	tonnes	118	45	79	67	83	111	103	101		
Grapes	tonnes	31	9	18	20	14	23	17	18		
Meat (L'weight)	tonnes	402	394	358	321	323	323	330	340		
Milk	tonnes	961	946	872	864	885	912	973	1064		
Eggs	million	591	389	202	147	160	164	176	193		
Wool	tonnes	34	31	21	15	12	11	12	12		
Cattle	head	1122	1062	920	869	848	885	911	932	988	98
Sheep & Goats	head	8742	7322	5076	4275	3716	3805	3811	3807	3765	435
Pigs	head	247	169	118	114	88	93	106	105	87	0.4
Horses	head	313	322	299	308	314	325	335	350	361	12
Poultry	head	10421	6917	2209	2032	2122	2330	2728	2980	3648	208

Table 1 outlines recent Kyrgyz crop, vegetable and livestock production and indicates that livestock numbers, apart from horses, have decreased dramatically since 1992. Donkey numbers are increasing, as they are used for transport and draught. The demise of the Soviet system destroyed Russian markets for all Kyrgyz products, including meat, milk, skins, wool and goat fibre. Domestic prices for livestock dropped to minimal values so that herders began to barter or eat their livestock, irrespective of the quality of the animals. Many highly selected and bred animals were slaughtered and eaten. Between 1993 and 1996, cattle numbers declined by 25%, sheep and goats by 58%, pigs by 64% and poultry by 80%. Along with this dramatic occurrence came decreased use, and lack of maintenance, of processing infrastructure. Factories ceased operation, processing expertise was lost and unemployment rose dramatically.

LIVESTOCK PRODUCTION

An intriguing observation was of the Gissar, or Gissarskay, sheep. This is a sheep capable of producing 2 lambings per year. The Gissar does not appear to react to photoperiodic influence. It will lamb and/or conceive, in winter, summer, or equinox periods. It is a fat rumped, black, or dark coloured wool sheep. It produces an excellent carcase. Anecdotal evidence states that a lamb can grow to about 70 kg in 9 months and produce a carcase of about 25 kg, plus a 6 kg fat rump. This animal apparently originated in the Hissar (Gissar) Valley in Tadjikstan and is well known throughout Tadjikstan, Uzbekistan and Kyrgyzstan.

Cattle. The country was famous throughout the Soviet Union for dairy production. Major effort was applied to developing the best dairy animal for the environmental conditions. There was a sophisticated hierarchical system of breeding, backed by performance recording. Holstein introductions proved incapable of coping with the environment, but the Swiss Brown made significant contributions to the local breed. The local Alatoo breed is stated to be able to produce 20-25 L of milk daily if fed adequately. The fat of the Alatoo is yellow and its meat is dark, so it would not be sought after on the international meat market. Efforts are being made to rekindle dairy production and export. There is no pure beef industry.

Yak. There are about 20,000 yak in Kyrgyzstan, with about 1300 in Batken Oblast. The Kyrgyz Government wants to increase the national herd to about 50,000, based on an assumed tourist demand for yak meat and also an assumption that there are yak meat markets in Europe. Local tourist demand requires about 1000 carcases per year, but to service international markets, a totally new slaughter industry, and associated infrastructure, would be required. This situation applies to all export meat production.

Goats. Goats vary from Cashmere and Angora types, to Saanan milking goats, and the Kyrgyz "local" goat for meat. There is opportunity for a small Cashmere industry, but over the past 20 years the Kyrgyz have been following the USSR standard, selecting for 18 to 20 micron fibre, which immediately puts them out of the world Cashmere market. In Batken Oblast, there are assumed to be 65,000-70,000 Cashmere type goats. There are programs for importing Cashmere goats from Mongolia to breed with Kyrgyz goats, but unless some discipline is instilled into the Kyrgyz programs, the genes of imported goats will be lost in the current goat population, producing no long term effect.

Sheep. During the mid-late 1990's, a major World Bank-backed program for developing the Merino industry in Kyrgyzstan was undertaken, with importation of Australian Merinos. Australian scientists were involved. Many factors worked against the success of this project, including world wool prices, collusion amongst wool buyers and lack of understanding of marketplace requirements by the Kyrgyz herders. Sheep appear to be predominantly fat tailed, or fat rumped breeds, with coloured coarse wool, particularly in southern Kyrgyzstan. Sheep and goats are normally run together in mixed mobs. Some herders state that the various animals are separated for mating, but in any herd or flock, it is plain to see that reciprocal matings have occurred within sheep and goat breeds, resulting in a range of genotypes within each species. Management routines aim to drop progeny at the beginning of spring, usually February to May.

DISCUSSION

From an Australian interest viewpoint, the genetic and physiological mechanisms of the Gissar sheep, that allow the ewe to come into oestrus within a month of parturition and become pregnant again, may deserve investigating. Some herders say that a well fed ewe, from 2 to 7 years of age, can produce twins at each lambing. The Swiss Rural Advisory Service (RAS) is helping some herders develop the breed.

Kyrgyz herders are conservative and do not want to produce 2 lambings per year, as it forces them to spend money on housing and fodder for the ewe over the winter period. Most herders cannot see the economic benefit of spending US$15 on providing feed to the animal, despite such an expenditure returning a profit of US$35, based on current prices. Therefore, there has been some active selection against the animal's natural genetic capability.

Kyrgyz herders consider themselves to be expert livestock managers. Traditionally, Kyrgyz herders were nomadic and would move livestock between the valley floors and the high mountain pastures on a seasonal basis (UNDP 2002). Collectivisation during the Soviet era destroyed the nomadic patterns and reduced knowledge of animal management. During Soviet times, the authorities imposed production policy and management decisions, as well as veterinary services, on herders. There was a focus on planned production output, irrespective of cost. Collection of products by State managed organisations meant there was a lack of free market competition. These factors blunted many management skills. Herders were workers under instruction. Personal responsibility for their livestock was taken away, and herders ceased to be decision makers. The remnants of the veterinary services are still operating and concentrate on disease prevention. Current lack of resources means that well trained and experienced veterinarians cannot cope with disease outbreaks. State veterinary officers are supplied with vaccines to combat brucellosis, tuberculosis, foot and mouth disease and clostridial infections, but many private herders will not spend the 25 Som (A$0.10) per head per year to protect their animals. Currently in Batken Oblast, brucellosis in all ruminant species is rampant and, unfortunately, there are cases of it passing into the human population.

According to official Oblast statistics, approximately 70% of all domestic livestock (cattle, sheep, goats, horses and donkeys) are owned by town dwellers. A large percentage of Kyrgyz livestock are poorly managed and fed inadequate diets, particularly during winter. Animal production in Kyrgyzstan appears to fall into 2 categories. There are the livestock owned by people domiciled in towns and villages and livestock owned by the bonafide herders who live outside the town areas. Town livestock trample over the same pastures each day on their way out to, and back from, more distant pastures. Owners contract with a professional herder to look after their animals each day. The grazing pressures these livestock apply to pastures around the towns and villages are enormous. There is little pasture feed and the animals, even after a reasonable season, are emaciated. Town people like to own a cow. They milk it, use what is required by the family and process the excess into butter, or yoghurt products for selling in the local bazaar. No milk processing factory is operating in southern Kyrgyzstan.

Livestock under bonafide herder management are possibly in a more favourable situation. The reduction in livestock numbers during 1992-1996 has presumably reduced grazing pressures on the total Kyrgyz pasture area. It is difficult to know if effective stocking rates near towns and cropping areas have dropped, but due to the cessation of nomadism, grazing pressures on the high mountain pastures has reduced. This has given Kyrgyz herders the feeling that there is abundant pasture available. Government policy is supporting a fast increase in livestock numbers, and this emphasises the need for increased excellence in livestock breeding and feeding. Herders feel no pressure to reduce livestock number when coming into winter. They appear to sell surplus animals only when they require cash for living expenses. There is a need for Kyrgyz people, farmers, herders and town-based businesses to begin compiling management records in order to understand comparative profitability of their farming enterprises and provide them with a business basis for entering and competing in the world market economy. Australian management, marketing and technical systems could be of great assistance to the Kyrgyz people.

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