

APPENDIX 5

SOCIO-ECONOMIC ANALYSES FOR FOUR FOCUS AREAS IN MONGOLIA

1. General

Mongolia is located in the central part of Asia and borders with Russia along 3445 km in the north and with China along 4676.9 km in the south. Mongolia comprises 15,641,000 km² of land. It is 2392 km from the western to the eastern frontier and 1259 km from north to south. It is administratively divided into 21 *aimags* (provinces). *Aimags* are divided into *soums* which are further divided into *bags*.

Mongolia's economy is small, with a GDP of US\$ 950 million. This is equivalent to US\$ 398 per capita. Agriculture is vital for the entire country as agricultural production contributes significantly to trade. Agriculture's share of GDP was 33.4% in 2000 followed by wholesale and retail trade, with 23.4%. No other sector contributed more than 9.5% to GDP.

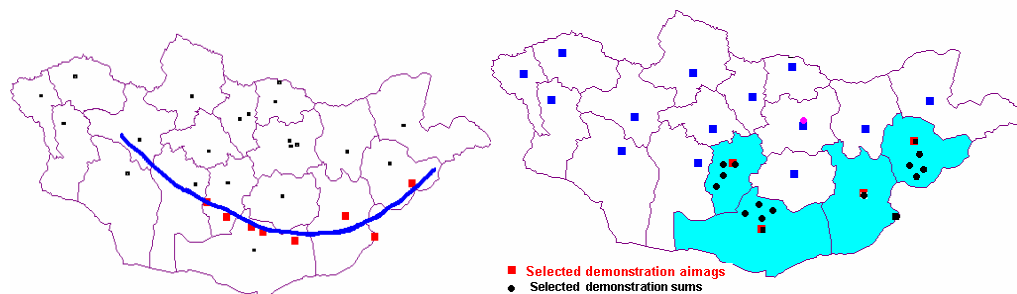
2. Socio-economic Considerations

2.1 Selection of Focus Areas

Four focus areas were selected by the groups of specialists nominated from MOE, including researchers, local community representatives, government officials and project team consultants. The selection was based on the following criteria:

- Located in main belt areas of the DSS storms
- Previous experiences and initiatives connecting with combat desertification and afforestation activities
- Mostly located in the Gobi area and located on the eastern side of Mongolia
- Close to the PRC to improve project management and coordination possibilities
- Future economical important zones as economic free zone and capital city
- Comparatively good infrastructure specially road and transportation

Figure A5.1 Locations of Selected Areas by *Aimag* and *Soums* in Relation to DSS Pathways and Source Areas



2.2 Socio-economic Influences on DSS

It is hard to define the way the socio-economic situation directly influences DSS but it could have the following influences listed in Box A5.1 although no research is made on these matters:

Box A5.1 Potential Interactions between Various Phenomena and DSS in Mongolia	
Directly influencing DSS	Indirectly Influencing DSS
<p><i>Natural ecological phenomena</i></p> <ul style="list-style-type: none"> • Global warming- • Pasture management system • Livestock privatization • Land tenure in rural areas • Bad road / infrastructure • Uses of pasture, wells, and water sources • Bad technology of crop farming - "Zero tillage" <p><i>Gold mining and its rehabilitation, restoration management</i></p>	<ul style="list-style-type: none"> • Poverty - unemployment • Urban movement

Due to Global warming, there has been drier climate, which exacerbated drought and zud occurring almost yearly in Mongolia. There is less rain in summer and the winters have become colder. These changes have reduced biomass and density of vegetation. Since 1999, the summer condition has gotten worse (Table A5.1)

Table A5.1 Worsening Drought Situation in Southern Mongolia, 1997-2002

Year	No. of <i>soums</i> which had good summer	No. of <i>soums</i> with dry condition	No. of <i>soums</i> with drought
1997	19	-	-
1998	18	1	-
1999	10	9	-
2000	1	18	-
2001	5	10	4
2002	-	6	13

As the climate has become drier, the soil has become more degraded so biomass is low and cover is sparse. The steppe areas and the Gobi *soums* have become more desertified. This environment became conducive to plagues brought about by harmful rodents¹.

¹ By October 2002, these rodents have caused the degradation of 78.9% all *soums* and 20 % of pasture land [1.4 million ha].

These natural changes have adversely influenced the livelihoods of many people living in the countryside. The number of livestock has decreased sharply, so living condition of most of the herders and their families became worse and the standard of living is nearing the poverty line².

2.3 Socio-economic Considerations of the Selection of Focus Areas

All 4 selected focus areas are located in the eastern side of Mongolia where the main economic contributions are from the agriculture sector (mainly livestock husbandry). The proposed joint cross-border project include Zamiin Uud (in Dornogobi *aimag*) where trade and commerce are the active sectors.

Figure A5.2 Trend in Livestock Population in the Focus Areas

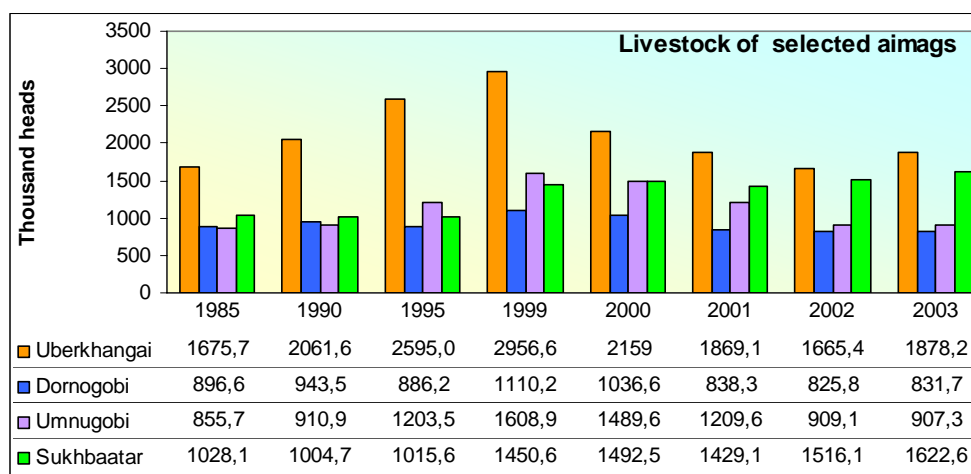


Table A5.2 Livestock in the Focus Areas

	1985	1990	1995	1999	2000	2001	2002	2003
Total of 4 aimags	4456,1	4920,7	5700,3	7126,3	6177,7	5346,1	4916,4	1622,6
State total	22485,6	25856,9	28580,9	33568,8	30227,4	26075,2	23897,6	25307,8
% of total livestock	19,8	19,0	19,9	21,2	20,4	20,5	20,6	6,4

² The Government of Mongolia determined the poverty line in 1991 for the first time. The National Statistical Office (NSO) conducted the first Living Standard Measurement Survey (LSMS) with the support from the World Bank (WB) in 1995 and the second LSMS with UNDP in 1998. The current poverty line was the revised one in 1999 based on the experience of these surveys.

Table A5.3 General Statistics of the Focus Areas

Items	Total State	Dornogobi	Overhangai	Omnogobi	Sukhbaatar	Subtotal	(%)
Territory ('000 km ²)	1, 564.10	109.5	62.9	165.4	82.3	420.1	27%
Number of <i>soums</i>	340	14	19	15	13	61	18%
Number of <i>bags</i>	1671	51	108	54	65	278	17%
Population	2475,4	520	113,9	47,2	56,1	737,2	30%
Population density (/km ²)	1.58	0.47	1.81	0.29	0.68	3.25	0.8
Name of city	Ulaanbaatar	Sainshand	Arvaikheer	Dalanzadgad	Baruun Urt		
From <i>aimag</i> to UB ¹ (km)		463	430	553	560		
Percentage of urban population (%)	57.4	52.3	18,3	28,4	20,7	*	*
Rural population (%)	42.6	47.7	81.7	71.6	79.3	*	*
Number of households (000)	568.6	12.7	28.3	11.9	13.1	66.0	12%
Urban	311,965	6,635	4,243	3,245	2,700	16,823	5%
Rural	256,660	6,048	24,035	8,628	10,365	49,076	19%
No female headed households	61,765	1,504	2,685	2,078	1,170	7,437	12%
No of herdsman household	175,911	3,933	7,814	6,482	7,573	25,802	15%
Number of herders	389,765	9,068	38,213	14,160	18,612	80,053	21%
Economically active.	901.7	20	47.7	21.0	24.4	113.1	13%
Employees (000)	870.8	19.6	45.5	20.6	23.7	109.4	13%
Unemployment	30,877	427	2,137	435	687	3,686	12%
Unemployment rate (%)	3.4	2.1	4.5	2.1	2.8	11.5	

1/ Ulaanbaatar

Source: Statistical Yearbook 2000 , 2003 of Mongolia

3. Dornogobi Aimag

Dornogobi *aimag* (land area - 48.700 km²) is located in the southern part of Mongolia. . Dornogobi has 51,100 thousand residents in 12 thousand households. The capital city is Sainshand 463 km from Ulaanbaatar. It is connected to Ulaanbaatar by railway and an unpaved road³. Sainshand is also the administrative center of Dornogobi.

Zamiin Uud is the southern-most *soum* of Dornogobi *Aimag* situated along the Mongolia-China border. It is 4.5 km from Erlian (Erinhot) City of Inner Mongolia Autonomous Region in the PRC. It was established in 1956, and was named "Zamiin Uud railway station". The main economic activity is trade and cross border activity and it is where the main international road and rail border-crossing point is located. Zamiin Uud is the biggest border crossing and an important entry/exit point for trade.

Zamiin Uud is a small *soum* of about 48,000 ha in area and has a population of over 7,110 residents and a floating population of up to 2,000 on some days (The PRC township of Erinhot across the border has a population of some 70,000 people). Zamiin Uud is situated 780 km from Ulaanbaatar and 230 km from the *aimag* center of Sainshand .

³ A new highway is under construction and will be finished in 2006

About 39% of the *Aimag* budget is self-generated, from taxes and fees (i.e. land use tax, customs tax, vehicle tax, income tax, and tax on animals) and the rest comes as a subsidy from the central government.

Table A5.4 Population of Zamiin uud

Years	Number of Households	Population	Of which		Of which	
			Male	Female	Urban	Rural
2000	1385	6127	2976	3151	6031	96
2001	1559	6253	3037	3216	3160	93
2002	1703	6681	3288	3393	3314	32
2003	1850	7112	3464	3602	7066	46

Source: Zamiin Uud Administration information

Zamiin Uud had 1850 households in 2003; 80% of the total population are children, and adults under 35 years.

While the income of the Soum is based on service sector activities (cross-border trade, rail and road traffic), its existence is threatened by increasing sand movement (particularly during the last 10 years), which disrupts rail and road traffic and life of the people. Mechanical measures such as concrete barriers have not been of much help to reduce the impact of sand movement

The Soum has developed a 10 year action plan to plant trees far reducing controlling the spread of desertification, but its implementation is constrained by lack of funds, man-power and technological support. So far, since 1998, some 30 ha have been planted, mainly with Elm (*Ulmus* sp) and Chinese poplars. The planted area is fenced and protected from grazing, resulting in increased appearance of local shrubs such as Caragana. Since the plants need watering during the initial years, the activity is rather expensive. The scale of planting is so small to have any impact against the Wide front of sand movement. The situation calls for an adequately large scale effort, including research on appropriate species and method of tree planting and maintenance to establish an effective system of desertification control. Mongolia is a signatory of the UN Convention to Combat Desertification and should be in a position to share experiences of countries which are actively working in this area.

The most threatening issue facing the *aimag* is serious desertification and sand movement. Both domesticated (livestock) and wild animals (eg. wild ass) are said to be highly in excess of the carrying capacity of the land. No scientific study, however, has been done to assess the problem. Fuelwood collection from the already depleted saxual (*Haloxylon ammodendron*) forests (of about 10,000 ha) is adding to the sand movement problem.

So far, no plans have been implemented to establish a system of pasture management (e.g. rotational grazing) or pasture improvement nor are there any comprehensive plans under consideration. (Also, there is no pasture expert within the administration of the *Aimag*). Some small scale projects of JICA and UNDP have been implemented as means improving pasture well and desertification. To address the increasing desertification and worsening climate, the *Aimag* government is expecting some assistance from Government.. Because of financial shortages the government is not doing much but local authorities understand the importance of trees in desertification control and pastureland management. The Government of the *aimag* is working in close contact with PRC and have visited some plant nurseries and regularly buy seedlings from PRC

4. Sukhbaatar Aimag

Sukhbaatar aimag (82,300 km²) is located in south- western part of Mongolia, There is a frontier with PRC on the South Dornogovi on the west, Khentii on the West and Dornod on the north-east. The city Baruun urt is located km 560km from Ulaanbaatar city. There are 13 sums and 67 bags of the local authority. Population density is 0.67 person /km². Sukhbaatar has a resident population of 51,100 and 12,000 households. Main economic income is from agriculture.

Table A5.5 Socio-economic baselines of Selected soums of Sukhbaatar Aimag

Items	Sukhbaatar aimag	Baruun urt city	Asgat sum	Dariganga sum	Ongon
Territory	8228715	54260	719800	481407	646837
Agricultural area	7760583	-	718595	405860	600623
Area of township	19976	5283	582	806	543
Area of infrastructure	5614	158	311	298	481
Number of bag	67	9	4	4	5
Distance to aimag (km)	0	0	48	168	160
Population density	0,67	0,80	0,26	0.59	0.58
Rural residents in 2000	41033		1891	2694	3959
Number of households in 2001	12657	3405	459	726	879
Household size (person)	4.3	4.2	4.3	4.5	4.5
Number of households with livestock	10121	1558	441	672	781
Herders households	7454	648	318	501	588
Number of herders	18243	1335	754	1118	1462
Livestock ('000 in 2001)	1,429,138	119515	80285	86741	153853
Of which Camel	12093	405	639	541	1114
Horses	182908	15111	13781	10530	16611
Cattle	137929	10220	63555	7789	14815
Sheep	708017	60394	35914	46786	84127
Goats	388191	33385	23596	21095	37186
Females	172381	15659	10814	10262	16232

Source: Sukhbaatar statistical yearbook 2002, - published latest version

The crop production has been developed since 1956, at that time 15 ha of land was sown to potato and other vegetables. In 2001, 47.2 ha of land was sown to potato and vegetables and 132.1 tonnes of produce was harvested.

5. Uberkhngai Aimag

Uberkhangai aimag (62,900 km²) was established in 1931 and is located 420 km from Ulaanbatar city by sealed road. Uberkhangai has 112,000 thousand residents and 1,650,000 livestock animals with 28,000 households. It is sparsely populated and is under

developed. Herding is the main activity. The population has been stable over the past few years.

The area has rich gold, coal and other natural reserves. The main economic production activities are agriculture and livestock husbandry. USAID funded "Gobi Initiative for economic growth" project is implementing many small projects supporting agriculture and livestock sector. This project supports pasture management and water supply serves and covers with 1103 herders of 602 households 58 herders group from 17 sums.

Table A5.6 Some Key Statistics for Uberkhangai Aimag

Items	Statistic
Territory of aimag	62,900 km ²
No.of soums	19
Population of aimag	113,900
No. of households in aimag	28,300
Population of Arviheer	21,600
Population density	1.81/km ²
% Rural residents in 2000	81.7%
Household size	4.2 persons
Distance to Ulaanbataur	430 km
No. of herders	38,312
No. of herder households	17,814
No. of animals/herder household	94
No.of livestock	1.7 million (15 per capita)

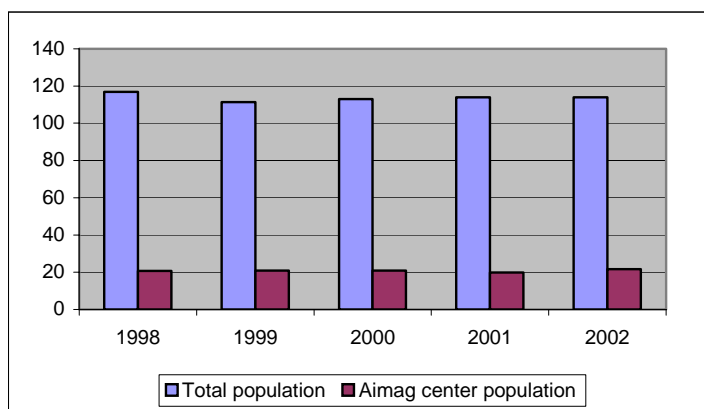


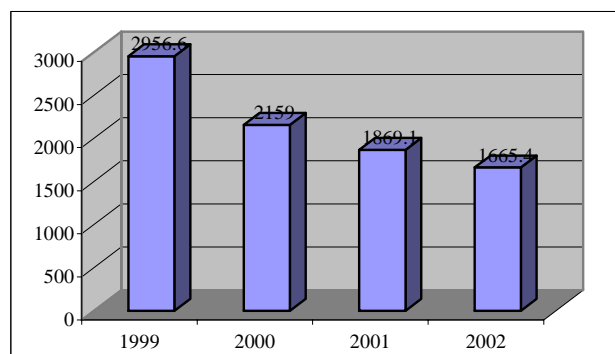
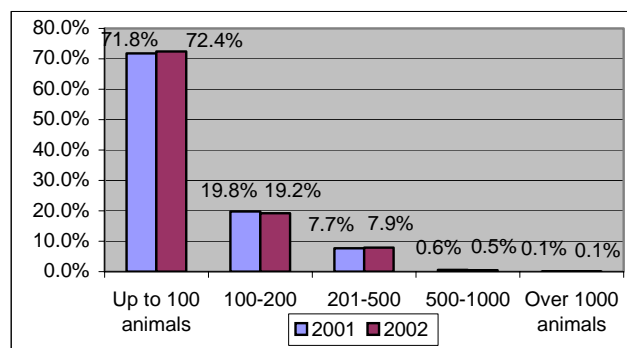
Figure A5.3 Population in Uberkhangai aimag

Table A5.7 Growth/decline of livestock in Uberkhangai aimag

	Types of animals	1999	2000	2001	2002	2003
1	Camel	19,300	16,500	14,700	13,300	
2	Horse	288,000	178,100	141,000	115,100	
3	Cattle	296,000	174,800	99,300	75,300	
4	Sheep	1,423,100	1,059,000	911,100	805,900	
5	Goat	930,400	730,600	703,000	655,700	
	Total	2,956,600	2,159,000	1,869,100	1,665,400	1,918,832

Table A5.8 Number and percentage of households with livestock

Year		Up to 100	100-200	201-500	501-1000	Over 1000
2001	#	15653	4324	1677	131	22
	%	71.8	19.8	7.7	0.6	0.1
2002	#	14902	3945	1627	93	11
	%	72.4	19.2	7.9	0.5	0.1

Figure A5.4 Growth/decline of livestock owners**Figure A5.5 Percentage of livestock**

Source: Uberkhangai statistical yearbook 2003 - published latest version

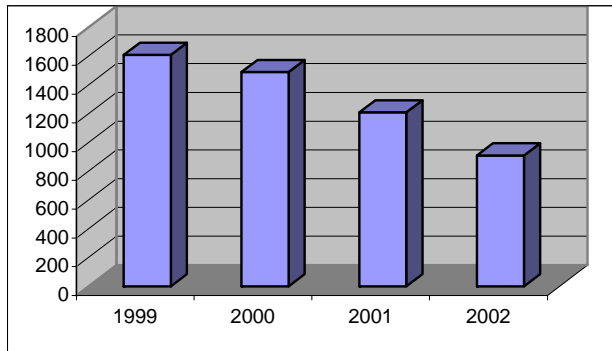
6. Omnogobi Aimag

Omnogobi *aimag* (165,400 km²) is located in Southern part of Mongolia 553 km from Ulaanbatar. It has 15 soums and a population of 47,200. Population growth of the aimag has been fairly stable since 1998. The capital city is Dalzanagad (population 13,966). Population density is low (0.29 persons/ km²) and the rural population is 72%. There are 11,900 households of which 7,600 are herders. Total livestock population is about 1 million. The average number of livestock per household is 139 and per capita 19.3. Water wells are critical to the herding economy and at present there 4,898 wells in the aimag.

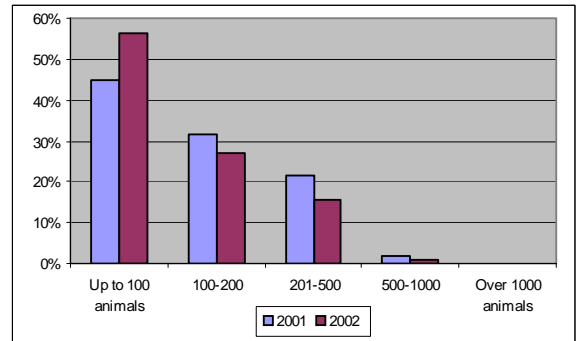
Table A5.9 Population Growth of Omnogobi Aimag

	1998	1999	2000	2001	2002
Total population	46,200	46,900	46,900	47,300	47,200
Aimag center population	12,631	12,803	12,686	13,420	13,966

Growth/decline of livestock

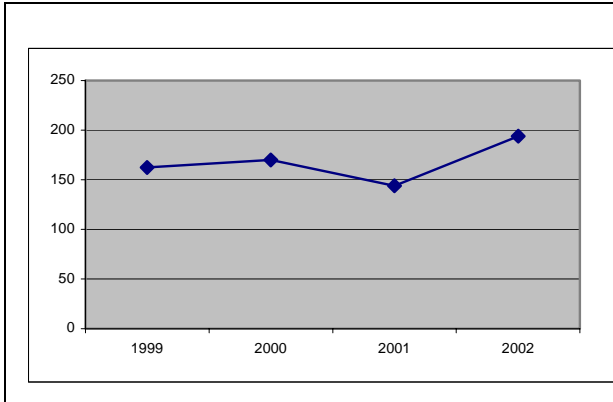


Percentage of households with livestock



Crop Farming

Growth of sown area



Growth of crops

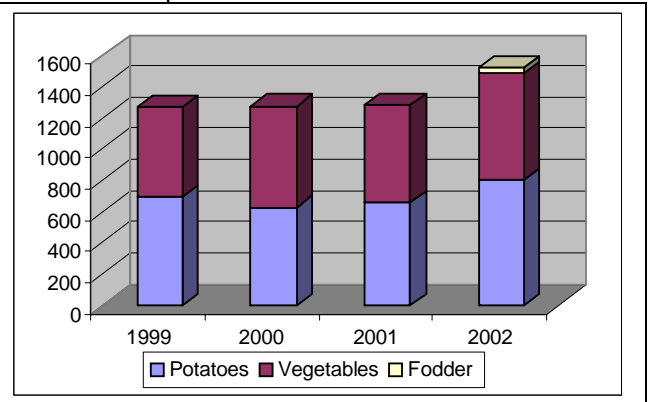


Table A5.9 Socio-economic Data of Focus Areas

Attribute	Dornogobi	Ovorhangai	Omnogobi	Sukhbaatar	Total
Territory ('000 km ²)	109,5	62,9	165,4	82,3	15641
Number of sums	14	19	15	13	340
Number of bags	51	108	54	65	1671
Population (thousands)	520	113,9	47,2	56,1	2475,4
Population of density	0,47	1,81	0,29	0,68	1,58
Name of capital city	Sainshand	Arvaikheer	Dalanzadgad	Baruun Urt	Ulaanbaatar
Distance between aimag and UB (km)	463	430	553	560	0
Percentage of resident population urban %	52,3	18,3	28,4	20,7	57,4
rural%	47,7	81,7	71,6	79,3	42,6
Number of households ('000)	12,7	28,3	11,9	13,1	568,6
urban	6635	4243	3245	2700	311965
Rural	6048	24035	8628	10365	256660
Number of female headed households	1504	2685	2078	1170	61765
Number of herdsmen household	3933	7814	6482	7573	175911
Number of herders	9068	38213	14160	18612	389765
Births	987	2366	977	1133	46922
Deaths	322	786	359	358	15857
Natural increase	665	1780	618	775	31065
Economically active population	20	47,7	21	24,4	901,7
employees (thousand)	19,6	45,5	20,6	23,7	870,8
Unemployment	427	2137	435	687	30877
unemployment rate	2,1	4,5	2,1	2,8	3,4
Aimags share in GDP (2001)	1,30%	1,90%	1,60%	1,60%	100
Number of facilities for community service					
Water supply					
Household using distributed water	5533	9535	4949	5925	232037
Environment					
Annual average temperature	5	3	6,4	2,5	
Number of days with rainfall					
Rainfall (mm)	109,8	119,5	75,4	203,7	
Days	56	87	62	95	
Climate precipitation	116,7	245,2	127,1	201,8	
Jan	-17,8	-14,7	-14,9	-21,5	
July	22,8	15,3	21,1	19,9	
Number of forest fires		5		2	323
Forest harvest volume ('000 m ³)		15,2	1,8		568,3
Revenue of local Government (mln/tg)	2520,8	3119,7	1555,2	1501,2	102604,8
Expenditure of local Government	4825,5	6161,1	3886,8	4298	164330,9
Subsidies from the central Government	1938,2	2534,9	2091	2463	49237,1
Total number of livestock(thousand head)	825,8	1665,4	909,1	1516,1	23897
Camel	28,2	13,3	72	12,4	253
Horse	74,8	115,1	42,2	188,8	1988,9
Cattle	37,3	75,3	6,9	140,4	1884,3

Sheep	340,4	805,9	227,7	711	10636,6
Goat	345	655,7	560,4	463,5	9134,8
Number of breeding stock	347,9	691,9	423,4	634,6	10479,3
Sown areas (hectares)	39,1	3512,2	193,9	1270	285719,2
Cereals		3258,6		1100	263045,6
Potatoes	18	168,1	119,8	46,8	10232,9
Vegetables	20,1	83	66,4	23,2	7095,7
Fodder crops	1	2,5	7,7	100	2953,7
Harvested total crops ('000 tons)		775,9		926	125861,5
Potatoes	65,2	952,2	803,8	175,4	51887,9
Vegetables	169,6	426,3	679,2	96,5	39721
Fodder crops		10,5	33,9	80	3526,9
Yield of cereals, potatoes (per hectare)					
Cereals		4		8,4	5,7
Potatoes	37,3	58,3	67,6	38	56,4
Gross hay harvest ('000 ton)	2,3	13	3,9	13,1	767
Hand made fodder (of fodder unit)	0,2	4,1	0,7	0,8	26,9