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GOVERNMENT OF MONGOLIA

MONGOLIA ARKHANGAY LIVESTOCK PROJECT: SURVEY AND IMPLICATIONS FOR PROJECT DESIGN

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Survey of Sums: Arkhangai Aimak: Архангай аймгийн сумдийн судалгаа

V E R S I O N 1 . 0

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Report to IFAD

Ulaan Baatar, September, 1995

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CURRENCY EQUIVALENTS

Currency Unit	=	Tugrik
USD 1.00	=	460 Tugriks

ABBREVIATIONS AND ACRONYMS

HMRC	High Mountain Research Centre, Ikh Tamir
IAH	Institute of Animal Husbandry, Zaisan
IDS	Institute of Development Studies
PALD	Policy Alternatives for Livestock Development
PIU	Project Implementation Unit
PRA	Participatory Rural Appaisal
SCF	Save the Children Fund
SSO	State Statistical Office

LOCAL TERMS USED IN THE TEXT

Aaral	Dried curd product
Aimag	Province
Bag	Administrative subdivision of a *sum*
Bod	Traditional large ruminant unit
Bog	Traditional small ruminant unit
Dzuud	A freezing over of the snow in spring which makes it impossible for grazing animals to penetrate to the grass below
Idesh	Slaughtering animals for meat before winter
Khuural	Meeting, assembly
Negdel	Co-operative herding enterprise established at *sum* level in the socialist era
Neg nutniighan	‘People of one place’ a social grouping
Otor	A rapid winter movement of stock in case of *dzuud*
Sum	One of the 19 administrative units into which the aimag is divided
Suur	Encampment. Now discontinued social unit prevalent in the Socialist period

Executive Summary

❈ To assure various aspects of the design of the IFAD Poverty Alleviation Programme in Arkhangai Aimag, a survey of 57 poor and 10 wealthy households was conducted across 12 *sums* in August/September, 1995.

❈ Key findings were as follows;

a) The Aimag is divided sharply between regions where yaks are the basis of subsistence (the alpine zone in the north and west) and those where cattle and sheep predominate (in the east)
b) Official government poverty figures can only be used with caution as they do not distinguish life-cycle poverty from chronic poverty
c) Herders have no experience of credit schemes and few skills in handling cash. They overwhelmingly support the notion of a credit scheme wholly in operated in livestock
d) The concept of the size of a minimum viable herd varies considerably from one household to another. Statistical tests suggest that the most important determinant of this figure is the number of animals presently owned by the household.
e) The species requested for credit were almost exclusively yaks, cattle and sheep. Despite high prices for goat cashmere, these were not requested by any poor households, because of management problems.
f) The mean repayment period suggested by the herders was 5.6 years, to return animals of comparable quality and with an additional number of *bod*s' interest.
g) 84% of poor households in both alpine and steppe *sums* were members of *khot ail*s, and the majority of these consisted entirely of kin.
h) 60% of rich herders interviewed expressed willingness to release breeding females, with the precondition that they were assured the animals would be managed properly.
i) No herders expressed anxiety about overgrazing, and all secondary indicators are that this will not be a problem within the life-span of the project.

❈ The implications for project design are as follows;

a) That the use of entirely in-kind repayments will avoid all problems with the banking system and be culturally appropriate.
b) That all loans should be calculated in Bods, since these are locally known and understood
c) The absence of insurance and the breakdown of the *negdel*s has increased all types of risk; from *dzuud*, predators and disease. Without institutional strengthening of risk management through the resources of the sum centres, the project cannot succeed.
d) That the amount of credit should be on an incremental basis, derive from the beneficiaries' current livestock holdings, rather than making up their herd to a supposed viable minimum.
e) Poor households proposed a mean repayment period of 5.6 years suggesting that 5 years could be set as practical term of credit.
f) That *khot ail* leaders should be the basis of the guarantee of the herding skills, motivation and labour availability of credit recipients.
g) That in the light of rapidly changing economic structures and nascent social institutions, the Project should make provision for a major redesign at the midterm review

Социологийн судалгаа: Удиртгал

Товч дүгнэлт

❄ ХАА-г хөгжүүлэх олон улсын сангаас "Архангай аймгийн ядуурлыг бууруулах хөтөлбөрийг" олон талаас нь нарийвчлан судалж боловсруулах ажлын хүрээнд 1995 оны 8 сараас 9 сарын хооронд тус аймгийн 12 суманд 57 ядуу өрх, 10 баян өрх айлуудыг хамарсан социологийн судалгаа явуулаа.

❄ **Судалгааны үр дүнд доорхи дүгнэлтэд хүрээд байна.**

а) Архангай аймгийн нийт малчдыг малынх нь үндсэн төрлөөр сарлаг (нутгийн хойд болон баруун хэсгийг хамарсан өндөр уулын бүс) болон үхэр, хонь(нутгийн зүүн хэсэг) голлон хариулж буй малчид гэж 2 хэсэгт хуваж болно.

б) Засгийн газраас гаргасан ядуурлын талаарх тоо, мэдээнд жинхэнэ ядуурал болон жирийн ядуурал хоёрыг ялгаварлан гаргаагүй тул түүн дээр үндэслэн үнэн зөв тооцоо хийх үндэслэл муу.

в) Малчид зээл авч буцааж төлж байсан туршлага огтхон ч байхгүй байгаагын дээр бэлэн мөнгөтэй тэр болгон харьцахгүй байна.

Малчид зээлээр мал авах, тэдэнд зээлээр мал өгөх зээлийн хувилбарыг маш их дэмжиж байна.

г) Өнөөдөр амьжаргаанд хэрэгцээтэй наад захын зүйлсийг хангахад шаардлагатай сүргийн хамгийн доод хэмжээ(малын тоо)-ний талаар малчидын бодол санаа өөр өөр байна.

Статистикийн шалгуур, тооцоон дээр үндэслэн авч үзвэл шаардлагатай байгаа сүргийн хэмжээг өнөөдөр тухайн өрхөд байгаа малын тоогоор тогтоох нь хамгийн оновчтой хэмээн үзэж болно.

д) Зээлээр авах малын төрлийн хувьд сарлаг, үхэр, хонь давамгайлж байна. Хэдийгээр ямааны ноолуур зах зээл дээр өндөр үнээр борлогдож байгаа ч гэлээ ядуу өрх айлууд ямааг хариулж маллах ажиллагаатай холбогдуулан зээлээр ямаа авахыг хүсэхгүй байна.

е) Зээлээ буцааж төлөхдөө зээлээр авсан малтай адилхан өндөр ашиг шимтэй сайн малаар, дээр нь зээлийн хүүгийн нэг бодыг нэмэн, төлөх хугацааг малчид 5-6 жилээр тооцож байна.

ё) Өндөр уулын бүс дэхь ядуу өрх айлуудын 80 хувь, тал хээрийн бүсийн ядуу өрхүүдийн 60 хувь нь хот айлаараа байна.

ж) Ярилцлага хийсэн баян малчидын 60 хувь нь өгсөн малыг өсгөж үржүүлээд байж чадах ядуу малчидад л өндөр ашиг шимтэй үржлийн хээлтэгч малаа зарах хүсэлтэйгээ илэрхийллээ.

з) Бэлчээрийн даацын талаар малчид огтхон ч санаа зовохгүй байгаа ба эндээс үзэхэд энэ төслийг хэрэгжүүлсэний дараа болон хэрэгжүүлэх явцад бэлчээрийн даацын талаар ямар нэгэн сөрөг асуудал, үр дагавар гарахгүй гэж хэлж болно.

❄ Төслийг боловсруулах явцад ихээхэн анхаарал татаж байгаа асуудлуудын талаар.

а) Зээлийн төлбөрийг бүтээгдхүүний хэлбэрээр хийх нь банкны системээр дамжуулах ямар нэгэн асуудлыг хөндөхгүй хамгийн тохиромжтой хэлбэр юм.

б) Малчид сайн ойлгож, мэдэж байдгийнх нь хувьд зээлийг бодоор тооцох нь зүйтэй.

в) Даатгалын систем үгүй болж нэгдэл задарсан нь зуд, махчин амьтан, өвчин зэрэг олон төрлийн аюул, рискийг нэмэгдүүлж байна.

Рискийг зохицуулан ажиллах талаар ямар нэгэн дорвитой алхам хийхгүйгээр төсөл амжилттай хэрэгжиж чадахгүй.

г) Төсөөлөн тооцсон амьжиргаанд хэрэгцээтэй наад захын зүйлийг хангаж байхад шаардлагатай сургийн доод хэмжээнээс илүүтэйгээр төсөлд хамрагдах өрх айлуудад өнөөдөр байгаа малын тоо толгой дээр үндэслэн зээлийн хэмжээг өсгөх хандлагаар тогтоох нь зүйтэй.

д) Зээлийг буцааж төлөх хугацаа 5 жил байх ёстой.

е) Зээлээр мал авах хүмүүсийн мал хариулах туршлага, чадварын талаар гаргах тодорхойлолтыг хот айлын тэргүүн гаргана.

ё) Өдрөөс өдөрт хурдан өөрчлөгдөж байгаа эдийн засгийн бүтцийн өөрчлөлт, шинээр бий болж буй нийгмийн байгуулагуудын үйл ажиллагаатай холбогдон төслийн баримт бичигт өөрчлөлт хийх тухай заавар дунд хугацааны тайланд оруулах ёстой.

I. PROJECT AND SECTORAL BACKGROUND

A. Background

1.1 IFAD first proposed a Poverty Alleviation Project for herders in Arkhangai Aimag following the initial discussions in early 1994. A mission visited Mongolia in September 1994 and the suggestions of the Formulation Report form the basis of the present document[1/].

1.2 To provide more comprehensive social and economic background data, FAO was requested to prepare a TCP, representing a collaboration between the PALD Project and locally recruited consultants. This was only approved in May, 1995, hence the TCP team was in the field simultaneously with the IFAD mission. A draft summary of their report is available along with some technical annexes (see references below). A compilation of research from the High Mountain Research Centre, Ikh Tamir (HMRC) is in preparation under the FAO/TCP project but was not available during the preparation of the appraisal report.

B. Survey of herder households

1.3 To complement the FAO/TCP findings, a survey was conducted in the Project Area, to address particular issues of specific concern in the design of the IFAD project. The survey took place between 23rd August and 7th September, 1995. The basic survey unit was rural households defined as poor according to information from the Aimag Government. In practice this corresponds to households having less than 15 *bod*s of livestock (see p. 5 for definitions). Some 57 poor households were surveyed using a standard questionnaire (Appendix III). In addition, 10 rich households were interviewed to establish their willingness to make available suitable animals for the scheme. This smaller number was not treated statistically, but their answers are considered indicative.

C. Existing literature

1.4 The principal source of information, both generally for Mongolia and in Arkhangai Aimag, is the series of reports of PALD (Policy Alternatives for Livestock Development) a collaboration between IDS, University of Sussex, and the IAH, Mongolian Agricultural University. The principal publications and reports of relevance to Arkhangai are as follows; Cooper (1993, 1995), Cooper & Narangerel (1993), Fernández-Giménez (1995), Mearns (1991, 1993), PALD (1993), Potkanski & Szynkiewicz (1993), Temple, Swift and Payne (1993). Apart from this, there are series of studies such as DanAgro (1992), SSO [State Statistical Office] (1994) and Honhold (1995). These are referred to in more detail at relevant points in this report.

1.5 In general, the literature is quite comprehensive, although the social and economic aspects have been much more intensively covered than animal production and ecology. Indeed, much of the information on productivity of animals has been analysed on the basis of large-scale statistical sources such as SSO (1994b), which present regional aggregated figures. Although there has been substantial investment in Remote-Sensing the extensive ground-truthing necessary to validate satellite information has yet to be undertaken.

[1] This report was written by R.M.Blench. The fieldwork was carried out jointly between R.M. Blench and Dalantai-nyam who also assisted with data processing and translation. Logistical support was provided by the Ministry of Food and Agriculture, Ulaan Baatar, through the offices of Dorligsuren, General Director of Economics and International Co-operation Department.

GOVERNMENT OF MONGOLIA
ARKHANGAY LIVESTOCK PROJECT
SOCIO-ECONOMIC SURVEY

II. PROJECT AREA

A. Development and Socio-economic Status

1. Ecology

2.1 The major ecological division in Arkhangai Aimag is between the alpine and steppe regions. The distinctive feature of this region is the climate, which is can reach a mean as low as -20ºC between December and February. Every few years some part of the Aimag experiences *dzuud*, a climatic condition when the ice freezes above the snow, preventing animals digging through to reach the grass. An analysis of climatic data by Temple, Swift & Payne (1993) classifies Arkhangai as a medium-risk province with a major *dzuud* once every 7-14 years.

2. Human population

2.2 The human population of the region is ethnically homogeneous, consisting almost entirely of Khalkh Mongols. The most recent population estimate for the Aimag is 103,000. It is divided into 19 *sums*, each of which has a population of around 1500-6500 individuals in 1000+ households. The capital, Tsetserleg is home to some 26,000 people. Using the official definition of household there are approximately 4 individuals in every household.

2.3 Poverty statistics are given for 1994 in the Formulation Report. Table 1 compares 1994 and 1995 figures.

Table 1. Comparison of 1994 and 1995 poverty statistics

1994	**Total**		***Sum* centre**		**Rural**	
	Households	**People**	**Households**	**People**	**Households**	**People**
Poor	6301	26889	3177		3124	
Very poor	1637	7190				
1995	**Total**		***Sum* centre**		**Rural**	
	Households	**People**	**Households**	**People**	**Households**	**People**
Poor	6601	27968	4574	18772	2027	9196
Very poor	1625	8948	926	5864	699	3084

2.4 The variation between 1994 and 1995 is caused by different measures of poor households. In 1994 each *sum* was allowed to calculate poverty thresholds according to its own measures, while in March 1995 a standard poverty threshold was used throughout the Aimag. The main effect of this has been to increase the number of poor households overall and in particular to raise the number in Aimag and *sum* centres.

2.5 Poverty is measured via a threshold of tugrigs per person per month, presently 3,700 tugrigs. Since many households have a very limited cash income, this requires a notional income to be attributed to a *Bod* (livestock unit). However, there is considerable variation in the both the cash that can be derived from particular species and the ability of poorer households to raise that cash. Poverty statistics can only provide a starting point for assessing numbers of poor households and degrees of poverty.

B. Social and administrative structures

Administrative systems

2.6 The principal units of administration throughout Mongolia are the Aimags (Provinces), *sums* (Districts) and *bag*s (subdistricts). Until 1991, a *negdel* or collective farm, corresponded approximately to each *sum*. These were divided into Brigades and *suur*s or encampments, groups of herders intended to co-operate, but which were artificially selected to ensure that non-kin had to work together. The *negdel*s' assets were distributed in 1991-3 and the system of Brigades and *suur*s was promptly eliminated.

2.7 At each level of administration, a *khuural* exists, an assembly of greater or less formality, to ratify policy and make low-level decisions. The centralisation of authority dating from the Socialist period has yet to be diluted in many areas and the *sums* and *bag*s have only very restricted powers to raise taxes and formulate new policies. This situation is likely to change over the next few years, as grazing fees are introduced.

Post-Socialist social structure

2.8 Following the disbanding of the collective farm system, and the collapse of many uneconomic urban industries maintained by Soviet subsidies, the period since 1991 has been a period of social fragmentation with unusual numbers of displaced people in the rural areas. One consequence has been to revive old or search for new social forms to replace those which had been artificially imposed. This section describes some of the patterns that have arisen.

Households

2.9 At present the statistical system tends to identify individual *ger*s with households. This concept was probably present in the Socialist era, but has been reinforced by two factors;

a) the notion that the more households were subdivided in the period leading up to privatisation, the more likely they were to receive a greater number of animals
b) the animal tax, which is not imposed on the first two *bod*s belonging to any household.

2.10 The consequence is that collateral relatives, such as unmarried or widowed brothers and sisters, are now counted in separate households. This is precisely contrary to the method of enumerating households in most pastoral systems where such residential groups would be regarded as part of a single, large extended family. The statistical consequences are that;

a) Mean household size is very small
b) Animal holdings in such split off households can appear to be very low
c) The number of women-headed households will appear to increase, because men die younger than women

2.11 The target group may thus be smaller than would appear from official poverty statistics. Extended families are a common residence pattern, with a household head surrounded by the *ger*s of his or her children. These families herd their animals together, make hay together and often prepare food for each

other. Such groups may or may not regard themselves as constituting a *khot ail*, but they mimic its functions very effectively.

Women-headed and matrifocal households

Women-headed households

2.12 Women-headed households constitute some 5% of total households in Arkhangai Aimag. This a quite a high proportion for a pastoral society and is a reflection of the fact that Mongolian social norms do not put a great deal of pressure on women to marry or widows to remarry, and tolerate women with children but no husband.

2.13 Such households are likely to be poorer than the norm, in part because the production of wealth is closely related to labour availability and such households will less easily recruit male labour for heavy tasks such as fuelwood cutting and haymaking. They must therefore exchange other resources (products, cash or work) to ensure these tasks are carried out.

Matrifocal households

2.14 One of the more remarkable features of Mongolian social structure are the presence of matrifocal households; i.e. units where there is no permanent male in residence and a woman lives with her unmarried daughters and grandchildren. Such households were first noted in the Gobi desert regions in the nineteenth century and are generally considered to have evolved from the culture of the lamaseries, which absorbed up to 30% of young males (Potkanski & Szynkiewicz, 1993).

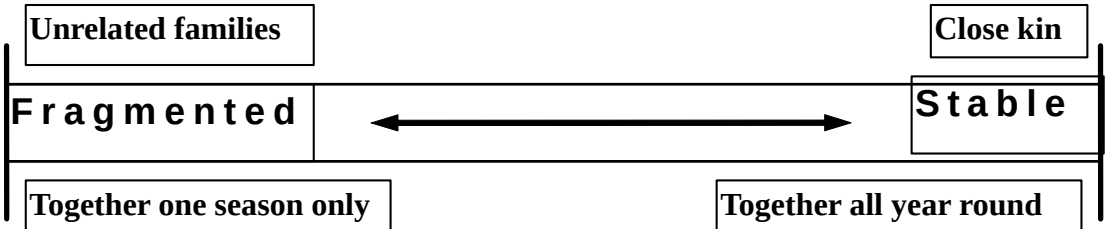
2.15 Whatever the origins of this pattern, it is not confined to the Gobi and matrifocal households are encountered throughout Arkhangai Aimak. It may well be a legacy of the socialist era, when women had a relatively high status, that no prejudice against such households exists and there is no societal condemnation of women with children but without husbands. Indeed, such households can only persist through co-operation with households with surplus male labour, so that heavy tasks, such as haymaking and cutting down trees are done for them. Since *khot ail*s and relatives are willing to form such co-operative bonds matrifocal households are likely to persist.

Genesis of the *khot ail*

2.16 An important aspect of the pre-1991 situation was that, as far as possible, kinship and relationship allegiances were ignored or actively discouraged by the system. Grazing camps, *suur*, were created of unconnected individuals intended to establish supra-kin bonds for herding purposes. Since this period there has been a nation-wide formation of co-operating herding groups usually called *khot ail*s. *Khot ail*s existed in the pre-Revolutionary era (prior to 1921) but information about their precise nature and functions is sketchy. These form no part of the administrative system and presently fluid in structure.

2.17 There have been various attempts to classify *khot ail*s according to composition and residential stability (e.g. PALD, 1993:II,87). However, as an institution undergoing development and change, it is likely that they are better viewed institutions with various axes of more or less stability. The key components are the degree to which the members related by kinship and to what extent they stay together in summer and winter (Figure 1).

Figure 1. Axes of Stability in Khot Ails



Larger social groupings

2.18 On a larger scale is the somewhat less structured *sakhalt ail*, a group linking several *khot ail*s, across which lambs are exchanged as part of a procedure to prevent them from suckling during the day. Such groups are more informal and apart from this virtually no other co-operation is practised.

2.19 It has been argued in various reports, notably PALD (1993), that there exists a larger-scale grouping, linking the peoples of one geographical region, a valley or riverine area. These have been called *neg nutgiinhan*, the 'people of one place', and may have existed in the pre-Revolutionary period. Again this has no formal structure at present.

2.20 At present, nothing stands between the *khot ail* leaders and the *bag* centres. As the economy becomes more monetarised and needs for local co-operation grow, perhaps in marketing and transport, it is likely that these shadowy social forms or others like them, will become more substantial.

Resurgence of Religion

2.21 During the Socialist era, religion of all types was severely discouraged and many Buddhist lamaseries were physically destroyed. One of the features of Buddhism that excited the opposition of the authorities was high proportion of younger men who became monks, thereby withdrawing from the labour force. This usually supposed to be responsible for the unusual number of women-headed households, and a corresponding tolerance of spinsters and other matrifocal structures.

2.22 The decline of Soviet influence post-1991 has seen a considerable revival in Buddhism and many lamaseries are being rebuilt. The practise of monasticism in the ascendant and may again act to withdraw young men from the herding economy during the next decade,

C. Reckoning livestock numbers

2.23 Mongolia has a remarkable statistical service, with records dating back to the 1930s. Hence it is possible to establish time-series data for livestock populations and search for trends. Appendix 2 summarises the materials for Arkhangai Aimag since 1970. There are, however, a number of pitfalls in using this data and these are discussed here.

2.24 Official government statistics in Mongolia usually add all different species together to give total livestock numbers. Such figures are of marginal value, as the varying composition of herds across the country means that comparable absolute figures may be composed of herds of very different economic value and grazing impact. The reason for this unusual procedure may be that there is an underlying conception of an ideal mixed herd, encompassing the five national species.

2.25 Mongols have a traditional system of comparing across species by normalising all animals to a single unit, the *bod*. The *bod* was taken to be one large animal, such as a yak or a horse. Small ruminants were known as *bog* and there were taken to be 7 *bog*s in a *bod*. This system has been somewhat elaborated in various reports and government documents, especially in relation to camels, and there are usually considered to be 1.5 camels in a *bod*. Similarly, some sources reduce the value attributed to goats, making them a tenth of a *bod*. Although this is probably more scientific, it is not used by herders and will therefore create management problems if adopted by a project. The version of the *bod* system used in this Annex is therefore;

Species	No. Bod
Camel	1.50
Horse	1.00
Yak	1.00
Cow	1.00
Sheep	0.14
Goat	0.14

2.26 The advantage of the *bod* system is that it is known and used by herders and is the usual means of expressing overall herd size. However, the administration also uses a more scientific measure, especially when calculating grazing pressure, the Mongolian Sheep Unit (MSU). This normalises all species to the presumed impact of a sheep. The table of equivalences is given below.

Species	No. Sheep Units
Camel	5.0
Horse	7.0
Yak	6.0
Cow	6.0
Sheep	1.0
Goat	0.9

2.27 The value of 5.0 attributed to a camel has been questioned by various authors (e.g. Honhold, 1995) and it is possible this was established in the Gobi, where browse is an important part of the diet. However, in Arkhangai, where camels must inevitably graze, 10.0 would probably be a more realistic value. However, since camels form only a very small proportion of the total livestock population and are not recommended for redistribution this can effectively be ignored.

The problem of yak/cattle numbers

2.28 One of the problems with official livestock statistics in Mongolia is that the numbers of all bovids, cattle, yaks and their crosses are amalgamated. The reason for this appears to be that it is considered they cannot be reliably distinguished. However, in an Aimag with extensive alpine regions, such as Arkhangai, yaks are of considerable importance to subsistence strategies both in terms of their products and their use in draught. At privatisation, yaks were generally considered to be worth two cattle (Cooper & Narangerel, 1993), an equivalence which suggests they would be well worth enumerating separately. This value attributed to yaks is not reflected livestock prices, presumably because yak meat is not appreciated in Ulaan Baatar.

2.29 Unpublished documents of the HMRC provide a very precise enumeration of the numbers of yaks, cattle and khainags in Arkhangai Aimag in 1991. It is not stated under what conditions this survey was carried out, nor why data exists only for this year. However, from the figures, proportions of particular species can be calculated and then extended by analogy to other years. The results of this exercise are given in Appendix 2.

D. Livestock Species

Camels

2.30 Bactrian camels exist in only small numbers in some eastern *sums*. They are used principally for transporting loads, especially the *ger*, in seasonal movements. Camel-hair has a ready market in Ulaan Baatar. Camels used by traders for leading the large herds of animals destined for the markets of Ulaan Baatar cross Arkhangai in the summer months, but are not resident. Camel populations are given in Appendix 2.

Horses

2.31 Horses remain one of the most important animals for Mongolian herders, both for personal transport and for the production of *airag*, fermented mare's milk, which is considered a national drink. Horses are of great symbolic importance and considerable status attaches to the owners of large herds. Rich herders frequently invest their surplus wealth in expanding their herd of horses, in part hoping to breed a prize-winning racing horse.

2.32 Horses are used to pull two-wheel carts in the northern *sums* of Arkhangai aimag. Horses are eaten, but are not raised as a meat animal, but rather slaughtered at the end of their useful life. The manes and tails of horses can be clipped and sold for small amounts every year. Horses are generally regarded as requiring little management, as they can largely be left to graze unherded and can find their own fodder even in the periods of deep snow. It seems likely that horse numbers will decrease nationally as Mongolia switches increasingly to a market economy. Horse numbers in Arkhangai are given in Appendix 2.

Yaks

2.33 Yaks form the basis of subsistence in most of the western *sums*. They have highly diverse coat colours, but the yaks in this region are all considered to belong to a single breed. Yaks have the ability to survive the intensely cold winters in the alpine regions and can usually find food throughout the year, except in the event of a *dzuud*.

2.34 The yak is the principal draught animal in the alpine regions. It can be crossed with cattle to produce a first generation cross, the khainag (see below). These animals are used to pull the carts that move the *gers* and their furniture during seasonal transhumance. Usually, several yak-carts are linked together to form a train to move hay, firewood and household goods.

2.35 Yaks produce a large number of saleable products. The long hair can be clipped and sold and also the yak down or fine body hair, which resembles goat cashmere. Prices for this are at present still low but are likely to increase as the market expands. Yak hides can be sold, although prices are not high. The cream content of yak milk makes possible the production of a great variety of dairy products (Appendix IV). The more solid products such as *aaral* curd can be stored and sold to traders.

2.36 As a species indigenous to the region, yaks have the advantage of requiring relatively low management. Once they have been taken to a pasture they can relatively often be left without a herder. Poor families in *sum* centres frequently allow their yaks to find grazing every morning and count on them to return in the evenings.

2.37 Yaks are reported have a high calf mortality, although there is no numerical data to support this at present.

2.38 Yaks and cattle interbreed and therefore making distinctions can be problematic. However, there are good genetic reasons for not perpetuating crosses into the second generation (see below) and most herds have remained reasonably pure. The importance of estimating yak numbers may be seen from the importance attached to them by poor herders. Estimated yak numbers in Arkhangai Aimag are shown in Appendix 2, based on the procedure described above in C.

Khainag and ortom

2.39 The first generation cross between cattle and yaks is known as a *khainag*. These hybrids are fertile, and generally show hybrid vigour. They are large in size and are often castrated and used for traction, pulling carts. If a *khainag* is bred again with a yak or a cow, the second generation cross is known as an *ortom* and is generally both weak and often infertile. Herders therefore generally take care to avoid the production of many *ortom*s and this acts as a natural brake on the wholesale crossbreeding of populations. Management of khainags appears to be the same as for yaks. Estimated *khainag* numbers in Arkhangai Aimag are shown in Appendix 2, based on the procedure described above in C.

Cattle

2.40 Cattle are the dominant subsistence species in the steppe areas and the whole eastern part of Arkhangai. The local races have the ability to withstand extreme temperatures. The milk of cattle is highly prestigious and the skins can be sold. Cattle may be castrated to create oxen for draught purposes and these are used to pull carts in the steppe area. Estimated cattle numbers in Arkhangai Aimag are shown in Appendix 2, based on the procedure described above in C.

Sheep

2.41 Sheep are the most numerous domestic species (in absolute terms). They are more common in the eastern *sums*, but large herds do also occur in the alpine regions. The local breed, known as Terkh, is a coarse-wooled breed. Although the milk of sheep is drunk, it is considerably less prestigious than that of yaks or cattle. However, mutton is considered to be the best meat for consumption and most often offered to guests.

2.42 Sheep require herding, partly to prevent them scattering and to keep away predators, principally wolves and snow-leopards. There are considerable economies of scale in herding sheep; — one man on horseback can herd as much as a thousand sheep, although most flocks are smaller than this.

Goats

2.43 The local breed of goats are known principally for their cashmere, a high-value export product. They are usually small, almost achondroplastic, with black coats. They have the reputation of being difficult to herd and the bucks must be separated from the does from March to September. The goat population has been increasing nationally, though not very rapidly in Arkhangai. In part this is because goats are not so cold-resistant, and because they have the reputation of being the most difficult animals to pasture. Their low milk yield is also held to count against them. Goat numbers are given in Appendix 2.

Pigs

2.44 During the socialist era when the Russian population was still high, pigs were kept on quite a large scale, especially close to military bases. The bran wastes from state farms could be used to feed the pigs which were otherwise left to root for food in the summer. Pig numbers have apparently much reduced since 1991. However, the increasing numbers of vegetable gardens may well induce producers to take up pigs again, since prices are high and pigs may be fed on vegetable wastes.

Poultry

2.45 Mongolia's climate may well seem inimical for poultry, but there are nonetheless some chickens kept in both herder households and *sum* centres. The trend towards the creation of permanent wooden houses, especially in the northern *sums*, may well make chicken production more practical on a larger scale.

GOVERNMENT OF MONGOLIA
ARKHANGAY LIVESTOCK PROJECT
SOCIO-ECONOMIC SURVEY

III. SURVEY DATA

A. Objectives and Methodology

3.1 The objective of the survey was to visit as many poor families as possible who might qualify as potential beneficiaries of the project to determine;

a) Family size, structure and labour availability
b) Present animal holdings
c) Estimates of the size of herd necessary to make the household viable
d) Preferred system of credit and estimates of repayment time
e) Perceived risks

3.2 In addition, a smaller number of rich households were visited to help assess their willingness to make available animals of the appropriate type.

3.3 A questionnaire was designed and tested in Bulgan *sum* and then copies were subsequently made and administered in 12 of the *sums*. Fewer *sums* were surveyed in the steppe area, so that there was an overall balance in mountain and steppe areas in terms of total questionnaires. The survey period was between 26/8/95 and 7/9/95. The *sums* and interviewees are listed in Appendix 5.

3.4 Households were chosen according to the 'poor family' criteria of *sum* government officials. These also include poor households in *sum* centres and these were excluded unless they were livestock producers. However, some of the households named appeared to have significant livestock holdings. If it proved that the household had more than 20 *bod*, the interview was cancelled, to prevent these numbers giving survey means an upward bias. In the case of rich households, those interviewed were locally agreed to be rich and in each case owned more than 100 *bod*. The final sample sizes are shown in Table 2;

Table 2. Interviews: Arkhangai aimak

	Alpine	Steppe	Total
Poor	32	25	57
Rich	6	4	10

3.5 An attempt was made always to interview household heads. In the case of interviews with poor households, this was not always possible, as the survey took place at the height of the haymaking season, when men work in teams until well after dark. In some cases the wives of household heads answered. Where neither were available, the interview was cancelled. For rich households, which are paradoxically easier to find than poor households, only household heads were interviewed.

3.6 Although women-headed households are certainly have a higher incidence among those classified as poor, they may well be over-represented in the sample. Emphasising the importance of such households to *sum* officials may well have led them to direct the survey to them preferentially.

3.7 The results were entered into the database Access 2.0 and processed statistically with Excel 5.0. These data files are separately available.

B. Results of the Survey

3.8 Some 57 poor households were surveyed, all of which held 16 Bod or below. The marital status of the interviewees was as follows (Table 3);

Table 3. Marital status of interviewees

	n	n=57 %
Married Man	30	52.6
Widow	18	31.6
Spinster	5	8.8
Widower	3	5.3
Divorced woman	1	1.8

3.9 Of particular interest are the number of spinsters, women who have decided not to marry but often live together with their unmarried daughters and sometimes grandchildren. Of the 10 rich households, 9 were headed by married men and 1 by a widow.

1. Household structures

Household Size and Composition

3.10 Table 4 shows the mean overall size of poor and rich households as well as those with male and female heads. This is somewhat larger than the Aimag mean which was 4.0 in 1994.

Table 4. Mean household sizes: Arkhangai aimak

Women-headed	Man-headed	Poor	Rich
4.8	6.2	5.6	6.2

3.11 Household composition shows one notable difference between rich and poor, a greater number of adult males (Table 5).

Table 5. Mean Household Composition: Arkhangai aimak

	Men	Women	Children*
	n	n	n
Poor	1.16	1.57	2.88
Rich	1.80	1.50	2.90

*Defined for survey purposes as under 14

3.12 This buttresses the argument that one of the crucial differences between rich and poor households is their ability to recruit male labour.

Age

3.13 Table 6 shows the mean age of household heads and analysed according to gender;

Table 6. Age of Household Head: Arkhangai aimak

	Men		Women		All	
	n	**Age**	**n**	**Age**	**n**	
Poor	34	43.8	23	50.6	57	46.3
Rich		n/a		n/a	10	53.4

3.14 As many of the women heading households were widows they had by definition outlived their husbands, hence the greater mean age.

Women-headed households

3.15 Overall, in the sample, the number of poor women-headed households was 23 (40%). This probably over-represents their presence in the overall population. Aimak level poverty statistics show 12% of poor and 22% of extremely poor households are headed by women. Such households have a smaller number of members and a higher proportion of women in them (Table 7).

Table 7. Mean Household Composition by Gender of Head: Arkhangai aimak

		Men	Women	Children *
	n	**n**	**n**	**n**
Woman-headed	23	0.83	1.78	2.17
Man-headed	34	1.38	1.44	3.35

*Defined for survey purposes as under 14. This threshold is intended to reflect local ideas about the availability of children for work.

3.16 The mean livestock holdings of women-headed households were also slightly below those of men (Table 11).

2. *Khot ail*s: Structure and membership

3.17 Most poor families are members of *khot ail*s, but by no means all. Table 8 shows the percentage of households interviewed in the two regions who were part of *khot ail*s. Numbers for wealthy households are included for comparison only.

Table 8. *Khot ail* membership: Arkhangai aimak

	Alpine		Steppe		Total	
	n	**%**	**n**	**%**	**n**	**%**
Poor	27	84	21	84	48	84
Rich	4		2		6	

3.18 There are advantages and disadvantages for wealthy households in joining *khot ail*s. An advantage is that where rotational herding is practised, households with larger livestock holdings have much reduced labour costs, since poorer households regularly herd their animals most days of the week. The disadvantage

is that wealthier households regularly have to 'carry' poor households in labour-intensive work such as haymaking.

3.19 Where rich households are large and have many branches, and the head of the household is surrounded by the *ger*s of his married sons, the resultant structure is very similar to a *khot ail* in all but name.

3.20 *Khot ail*s are by no means all of the same type; a crucial distinction can be made between those which consist entirely of relatives and 'mixed' *khot ail*s, where some families may be related, but unrelated households are also part of the membership. Of the sample of 57 poor households, some 30 (53%) were in kin-based *khot ail*s while 18 (32%) were in mixed *khot ail*s.

Rural and *sum* centre poverty: beneficiaries' development priorities

3.21 Poor households, following Poverty Alleviation Commission (PAC) definitions, are broadly evenly divided between rural areas and *sum* centres. As the survey focussed on herder households, reasons for poverty in *sum* centres were not examined in detail. It is important to emphasise that only certain classes of beneficiaries can be reached by a Project of this nature and livestock activities are not appropriate for all categories of poor household. This section explores the reasons for poverty encountered in rural areas.

Urban migration

3.22 One the consequences of the cessation of Russian subsidies to Mongolia in 1991 has been the collapse of many uneconomic industries based in the three main urban centres. Faced with unemployment, often of both wife and husband, the response has been back migration to either their regions of origin or the present residence of their relatives. Usually, the relatives supply a few animals and the loan of a *ger* to restart the herds of the newly arrived household. This is often successful, but two problems may arise;

a) the urban migrants lack the skills to manage their animals
b) needs acquired in the city for consumer goods cause them to sell animals faster than they can replace them

3.23 This process has yet to come to term, but such families will either successfully transform themselves back into herders, or will end up by returning to the *sum* centres.

'Poor lineages'

3.24 Although it is a problematic concept to quantify sociologically, some family groups seem to be chronically poor. One reflection of this is that individual householders, when asked where they would obtain breeding animals, specified non-kin. The reason for this is apparently that all related households are almost equally poor. This correspond strongly to a view expressed forcefully by rich herders, that some families will never succeed, through lack of motivation and skills. In an environment of poorly skilled herders, the incentive for better-motivated households to co-operate with them is limited, hence their skills never improve.

Family problems

3.25 One of the more common family dramas is either the desertion of husbands or their regular unavailability for work (e.g. through alcoholism). In a system which depends heavily on male labour, this can have disastrous results for a household's animal capital. In this case, the household may become effectively woman-headed and slide into poverty.

Sickness and disablement

3.26 One of the commonest reasons for poverty at the lower end of the range of livestock holdings is sickness and disablement. In a household where the head is in some way unfit for work, it is more difficult to keep younger members and as a consequence livestock holdings are smaller and less well managed. Such households are under-represented in the survey data, because household heads were often sick and sometimes actually in hospital and could thus not be interviewed. Of the sample of 57 poor households, 3 were receiving disability or invalid benefit. At least four interviews failed due to sickness of the household head.

Life-cycle poverty

3.27 Even when herder society is functioning normally there are two periods when households are likely to be poor; newly-married couples starting the family cycle and older people whose children have grown up and married. Such situations are not confined to Mongolia.

3.28 The usual system of passing on animals is pre-inheritance, and children are given animals at their marriage. They expect to begin with a small herd, and this type of poverty is both expected and is no reflection on the skills of the herd managers.

3.29 By the same token, once a family head has given animals to their children upon marriage, they can expect to have a reduced living standard, except when they are very rich. However, they usually also have less dependants and do not need either the dairy produce or the cash additional animals could produce. Part of the exchange in pre-inheritance is that children then support their parents with herding and haymaking labour and look after them when old.

3.30 Both classes of household appear in the official poverty statistics, but there is a case to be made for excluding them from the livestock redistribution programme. In both cases, their low level of stock is part of a typical social cycle and there is no good reason to intervene, especially as in both cases traditional support systems operate to make up shortfalls in food availability.

Assessing poverty via income proxies

3.31 Various reports (e.g. Cooper, 1995) have noted the problems of assessing levels of household wealth through income proxies. This was apparent during the course of the survey where the distinction between rich and poor households could not be assessed from the contents of the *ger*. Indeed, the most consumer goods were often found in those *ger*s inhabited by urban migrants who had bought them in cities before losing their jobs. Wealthy herders frequently criticised poor families for wasting money on consumer electronics rather than using it build up or maintain the health of their herds.

Patterns of animal ownership

Numbers

3.32 Tables showing overall animal numbers and holdings for the entire population are given in the Formulation Report. The following data refers only to the 57 poor households included in the survey. Table 9 and Figure 2 shows the actual holdings of the families interviewed, divided between steppe and alpine regions and then summed as both *bod*s and sheep units.

Table 9. Animal holdings of poor households: Arkhangai aimak n=57

Species	Alpine	Steppe	Overall
Sheep	4.47	10.92	7.30
Goat	2.66	4.72	3.56
Yak	2.38	0.84	1.70
Khainag	0.41	0.04	0.25
Cattle	1.16	3.08	2.00
Horse	0.81	1.48	1.11
Bod Units	**5.96**	**7.62**	**6.57**
Sheep Units	**37.50**	**49.2**	**42.47**

Figure 2. Livestock holdings of poor households in different ecozones

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3.33 These figures show expected differences, as small ruminants and cattle predominate in the steppe and yaks in the alpine region.

3.34 For comparative purposes, the contrast between rich and poor is shown in Table 10.

Table 10. Animal holdings by wealth status: Arkhangai aimak

Units	n=57 Poor	n=10 Rich
Bods	**6.57**	**103.72**
Sheep Units	**42.00**	**678.00**

3.35 In a broader perspective, the mean herd size of wealthy herders is comparatively low; pastoralists elsewhere in the world would consider 100 cattle as an average holding. Since private holdings were severely constrained in the Socialist era, the present situation may reflect no more than a transitional phase; in this case, the next few years will see the build-up of some much larger herds. Alternatively, the level of climatic risk may permanently deter herders from such a heavy investment in a single productive resource.

3.36 Although women-headed households have less *bod*s than those headed by men, the difference is not very marked (Table 11). This is probably because for poor households, the marginal costs of labour recruitment are not very different for either sex. In other words, if you have very few animals, the amount of male labour available to manage them makes less difference than when the herd s larger.

Table 11. Animal holdings by gender of head

Arkhangai aimak		**n=57**
Units	**Women-headed**	**Man-headed**
Bods	5.96	6.98
Sheep Units	37.90	44.70

b. Mix of Species

3.37 A key feature of the Mongolian herding system is the notion of the five national species; camel, horse, cattle/yak, sheep and goat. Although in reality these are in variable proportions in different ecological regions they dramatise the importance of mixed herds for Mongolian pastoralists. This is very much in contrast to many other systems of extensive pastoralism, where the labour requirements of multiple species have generally induced herders to specialise in one or two. Various reasons for this are given in PALD (1993) but these can probably be reduced to two;

a) the importance of draught and riding animals
b) the need to spread risk in the event of severe climatic events

3.38 In the period of the *negdel*s, the co-operative system made greater specialisation possible. The requirement for yaks and camels as draught animals was less because lorries were readily available. However, packing and moving *ger*s between seasonal pastures requires considerable draught resources. The common system is the use of wooden carts of the Tibetan type and as many as 15 yak/khainag/cattle carts may be chained together to move a household. With lorries no longer available, new draught animals must be acquired or bred.

3.39 Similarly, as risk increases with the breakdown of the safety net provided by the *negdel*s, a mixture of species represents a risk aversion strategy. Threats from climatic conditions/predation/disease may preferentially affect one species; a mix of species ensures that one or the other will survive.

5. Viable herds: concepts and definition

3.40 The size of a minimum viable herd (MVH) is inevitably an elusive concept and one inevitably influenced by preconceptions about standards and living and the availability of support systems. For example, if the veterinary service is deemed to be effective and epizootics (livestock epidemics) not a serious threat then the minimum herd can be considerably small than in a region where services are ineffectual. The FAO/TCP report considers this issue at some length and argues for a level of 20-25 Bod with 'true viability' around 35-50 Bod.

3.41 To determine how project beneficiaries perceive this issue, households interviewed were asked how many *bod*s would be necessary to survive; i.e. for the herd to produce sufficient offspring and products so that herders escape the cycle of selling productive animals to buy staples. Household heads responded either in terms of absolute numbers, or in terms of a number of *bod*s over and above those they already possessed.

3.42 To make these responses comparable they have been normalised to an absolute number of *bod*s, by adding the existing holdings to the desired additional animals. Two households were excluded; in one case, a spinster with 3 *bod*s wanted no more animals, in another case the household head wanted an extra 50 *bod*s. This response was so atypical that to include it would distort the statistics. Table 12 summarises the responses of the remaining 55 households.

Table 12. Conceptions of a Minimum Viable Herd

Arkhangai aimak			**n=55**
	Mean	**Minimum**	**Maximum**
Bods extra required	6.8	3	20
Total Bods required	13.3	4	36

3.43 This is a considerable range of variation and suggests that no consensus exists among herders about the level of minimum viable herd. The question then becomes, what is the determinant of this response? One proposal in Swift (ms) is that the age of the herders is important, younger herders requiring larger herds. A second possibility is that size of household determines the number of *bod*s required. However, it seemed likely that another factor was simply the number of animals herders already owned. These three relations were tested statistically as shown in Figure 3.

Figure 3. Comparison of Determinants of proposed Minimum Viable Herd

3.44 It is evident from this analysis that *bod*s owned is more significant statistically than even family size. The probable reason for this is that householders consider primarily the labour available for animal management. If a household has established a management system for a certain number of *bod*s then it is easy to conceptualise how this could be increased to a level slightly higher than that existing at present.

3.45 This finding has clear implications for project design; rather than trying to fix a target figure (such as 25 *bod*) and ensuring that all beneficiaries are loaned animals sufficient to attain that target, the notion that the MVH can vary from household to household and that it is more useful to make available animals in numbers that an individual household will find appropriate.

3.46 Existing livestock holdings are also important in determining eligibility; if the MVH is considered to be as high as 25 Bod, many smaller households in rural areas will be excluded because the size of their base herd is too small. Hence the lower limit should be set quite low; perhaps as low as 5 Bod in the case of two-person households. The other implication for project design is that instead of having variable loans, it may be possible to fix the number of animals loaned within a narrow band.

6. Sources, availability and constraints on stock for redistribution

3.47 The success of any livestock redistribution project depends crucially on the supply of animals. In Mongolia, where a market system barely operates, the sources of such supply are not evident. Moreover, in contrast to systems where the required animals are males (for example in animal traction schemes) the present requirement is for breeding females, the core animal capital of herders. In almost any system, these animals are the most difficult to obtain, and moreover, to ensure quality is problematic. Wealthy herders may be only too willing to use such a scheme to offload females they know to be of poor quality.

3.48 The question was approached in two directions, from the point of view of beneficiaries and wealthy herders. Poor household heads were asked where would they obtain animals of the required type if they were given credit. Rich herders were then asked if they would be willing to supply animals and if so under what conditions. Table 13 shows the responses of the poor households.

Table 13. Proposed sources of breeding females

Arkhangai aimak		n=56*
Source	**No.**	**%**
From nearby herders	27	48.2
From the Company	18	32.1
From relatives	5	8.9
From the people of the region	5	8.9
From State institutions	1	1.8

*Excluding one woman who did not want more animals

3.49 It should be remembered that poor householders have no experience of acquiring animals in this way, and their answers may not reflect a realistic appreciation of their availability. The responses show, intriguingly, that kin were not specified in the majority of cases. This suggests that poor households have relatives who are also poor and that these cannot be considered a likely source of surplus female animals. Moreover, poor herders may be aware of their reputation as lacking in skills and perhaps already know that wealthier relatives will be unwilling to release animals to them.

3.50 The most interesting response is the 'Company', the residual companies established after the assets of the *negdel*s were broken up. In some areas, Companies have still retained a marginal prestige because traders have yet to penetrate the region and the Company remains the principal supplier of consumer staples. More importantly, individuals have been operating via the *negdel*s for most of their lives. It is logical to continue allegiance to the Companies who are their successors. However, in view of the current financial status of these companies this idea is almost certainly unrealistic.

Wealthy herders and the supply of animals

3.51 Wealthy herders were interviewed to establish their willingness to supply breeding females for a stock redistribution scheme. Of the ten herders questioned, six stated they were willing to make animals available. The four who refused said that they were reserving their animals either for remaining unmarried children or for pre-marriage gifts to grandchildren.

3.52 All the rich herders made one important precondition for the sale of animals: that they should go to herders who would look after them. In other words the recipient of the animal credit should either be known to them or their skills be guaranteed by a trustworthy *khot ail* leader. This view is related to a common perception that animals are similar to people and that you should no more give away a female animal to an unknown herder than marry your daughter to someone anonymous.

3.53 This precondition has important implications for project design, as it suggests that animals will be redistributed within quite small geographical areas. Wealthy herders are likely to be familiar with other senior herders in their own valley or areas immediately adjacent. The advantage of such a system is that the donor herders will feel more constrained to supply better animals, since if they misuse the scheme to offload females of demonstrably poor quality this will soon become widely known.

3.54 Whether rich herders use the cash from the redistribution scheme to invest in the productivity of their herds will depend crucially on the economic situation in the next few years. The single most important investment mentioned in interviews was either a truck or a tractor, to move fodder and also animals in case of a *dzuud*. If these become more freely available it is likely that wealthier herders will buy them to improve herd management.

Livestock Species to be redistributed

3.55 Apart from the source of the animals, poor herders were also asked what species they would prefer to receive through the scheme and why. Their preferences were very marked and strongly related to ecological zone (Table 14);

Table 14. Preferences for animal species to receive on credit:

Arkhangai aimak						**n=71***
	Alpine		**Steppe**		**Total**	
Species	**n**	**%**	**n**	**%**	**n**	**%**
Yaks	21	30	6	8	27	38
Sheep	7	10	8	11	15	21
Cattle	9	13	17	24	26	37
Khainags	1	1	0	0	1	1
Horses	1	1	1	1	2	3

*Total number of responses

3.56 The absence of requests for goats is almost certainly related to labour requirements, despite the high value of cashmere. Although horses are part of the wish-list of all Mongolian herders, their low productivity in subsistence terms suggests they can be effectively excluded from the scheme and that loans can be confined to yaks, cattle and sheep.

Repayment strategies

3.57 Poor householders were asked whether such a scheme should operate in cash or animals; only two respondents requested cash. There are two reasons for this; simple unfamiliarity with the cash economy and the problem that if cash is available it is likely to be spent on immediate demands. For example, a herder who has cash can be under pressure to make it available for the hospital treatment of relatives, whereas it is much less likely he could be induced to sell an animal for the same purpose. For this reason an in-kind scheme is likely to result in much lower default rates.

3.58 Apart from this, herders were asked how many years it would take to repay a loan with additional animals to cover the notional interest. Many herders responded with 5 year and the mean of all responses was 5.6 years. This argues that setting a five-year term for credit is both practical and corresponds to herders' own assessments of their capabilities.

7. Markets, trade and product sales

3.59 In the era of the *negdel*s, livestock and its products were sold by the state farms to the central purchasing system. As a result, virtually no informal sector existed to trade in these products. The former system has been largely dismantled, but a true market system to replace it has yet to evolve. A major constraint on such a system is the lack of cash in the countryside. The majority of producers are unable to sell their animals for tugrigs and would not necessarily be able to buy staples (flour, tea, tobacco) in quantity even if they had the cash.

3.60 Traders are limited by the availability of both staples with which to barter and often petrol for vehicles. The consequence is that there is much greater market penetration in regions geographically close to

the capital. In terms of Arkhangai, this means the easternmost *sums*; some households in the west claimed to see only a single trader every two years.

3.61 Live animals are the single most important item of trade, and almost every household has to barter some stock against staples. The principal livestock products sold are dairy items, fibres, hides and skins. A list of the numerous types of dairy product is given in Appendix 4.

3.62 Poor households cannot usually afford to sell any dairy products as they must consume all they produce. Rich households usually sell those with long storage, such *aaral*, dried curds, and *tsurum*, dried yoghurt. Most households with more than 2-3 sheep sell wool and almost all those with goats sell the cashmere. Yak and cattle hair and yak down are often sold as well as the manes and tails of horses. Prices for these remain very low (Appendix 4). Almost all types of household sell skins, both of their own animals slaughtered for *idesh* and of any animals they eat.

3.63 There has been a national increase in the numbers of goats, presumably tracking the market in cashmere, but increases in Arkhangai are at quite a low level. None of the interviewees requested goats as credit to increase household viability, probably because of the labour requirements and the difficulty of exchanging the cash for staples.

3.64 Nonetheless, it seems inevitable that the next decade will see a substantial growth of the informal sector. Producer prices are presently low for products generally in high demand because traders have an almost closed market and virtually a free hand to set the value of barter goods. The more the Mongolian Government liberalises trade, the easier it will be for traders to reach remote areas. This in turn is likely to increase the volume of cash circulating in the rural economy and the broader monetarisation of transactions in livestock and livestock products. Despite this, livestock markets are still a remote concept, in part because of the cultural resistance to selling productive female animals to unknown buyers and in part because of the high costs of bringing individual animals to central locations.

8. Veterinary service and other types of extension

3.65 The veterinary service in Mongolia in the period of the *negdel*s is certainly now remembered as extremely efficient. The service has been described and evaluated by DanAgro (1992) and Edstrom (1993). Indeed, the main health worries for herders seem to refer to parasites rather than epizootics. This service still continues. The responsibility of the state is now limited to vaccination and dipping and a service charge (still very low) is made for this. Even so, the number of herders receiving this service is declining. Much seems to depend on the motivation of individual staff in the *sum* centres. shows the frequency of herders receiving service. Table 15 shows the percentage of poor and rich households making use of the veterinary services.

Table 15. Access to veterinary service: Arkhangai aimak

	Poor		**Rich**	
	n	**%**	**n**	**%**
	57		**10**	
Vaccination and dipping	51	89	8	80
Purchase drugs	17	30	8	80

3.66 Drugs to treat parasitic diseases, deworming medicines and acaricides, are usually available from the veterinary services at cost price. Even so, the problem of actually raising the cash to buy these drugs is very discouraging for poor herders and many have now returned to traditional herbal medicines.

3.67 Without intervention, there is every reason to believe that the veterinary service will gradually serve fewer herders. Rich herders in particular, may be able to pay for drugs, but the subsistence herds of the poor are increasingly threatened both by disease and low productivity. Traditional herbal medicines cannot be effective in preventing epizootics. This situation can only be remedied by intervention at the Aimag and *sum* level through recycling revenues from livestock tax and grazing fees.

9. Categories of risk and strategies of risk management

3.68 Risk and risk management have been considered by Temple, Swift and Payne (1993) in relation to Mongolia as a whole and by Fernández-Giménez (1995) in relation to Arkhangai. The main risks to livestock production were given by herders as the following;

a) *Dzuud*. Spring icing over of grass
b) Health risks. Both epizootic and enzootic (see above)
c) Predators
d) Theft

Dzuud

3.69 *Dzuud* is undoubtedly the single most serious threat to livestock production in the whole of Arkhangai. There was a severe *dzuud* in 1994-1995 in the more southerly *sums* and in 1993-4 in the north-eastern *sums*. Fernández-Giménez (ined) derives losses of some 20% of the 1994 herd for Battsengel *sum* and 8-9% for Ulziit and Undur-Ulaan.

3.70 Herders have essentially two strategies to counter *dzuud*; *otor*, a rapid movement of animals to a less affected area or bringing in hay or other fodder. The systems of maintaining strategic stocks have largely collapsed while the availability of transport to move animals has decreased. Without the development of replacement mechanisms, losses from *dzuud* are likely to increase further in coming years.

3.71 The only possible action an individual herder can take to protect his herd against *dzuud* is to prepare considerably more hay than would be usually needed. This has a high labour cost and to prepare every year for an emergency that happens once every seven years is extremely wasteful, especially as hay will not store more than one year. Hence herders of all wealth categories are willing to take the risk of preparing only a normal quantity of hay.

3.72 The conclusion is therefore that the preventive action must be taken at the sum level, where a truck can be kept to move fodder and hay can be stored every year and then sold off if not used. In most years this operation must make a loss, since unused winter hay is not very marketable. However, the value of livestock saved once every few years should counterbalance the annual losses.

Predators

3.73 Three species of predator were cited as a danger to herds by producers, wolves, snow-leopards and lynxes. Snow-leopards and lynxes are confined to the mountains on the southern edges of the aimak and are now in such small numbers, that this threat must be discounted. These two species are themselves severely threatened in this region and indeed should be a target for conservation efforts.

3.74 Wolves, however, are both common and regularly attack herds, even close to *sum* centres. As they often kill many more animals than they can eat, the impact on a small producer can be devastating. During

the period of the *negdel*s, large-scale collective hunts were organised each winter, to reduce wolf numbers. Unfortunately, this tradition has been disbanded since the break-up of the *negdel*s, with the consequence that wolf numbers are rising and attacks on flocks becoming more serious. Moreover, the poor herders may be worse affected, since the prevention of wolf attacks essentially requires labour, which is often the resource poor households lack.

3.75 Responses to predator attack mirror the problems of common property resources: hunting wolves is difficult work and there is no guarantee that the wolf an individual kills will attack his particular flock. Hence the need to organise wolf hunts collectively. This suggests that the *sums* have to be encouraged to restart the wolf-hunts, perhaps offering a bounty on wolf-skins.

Theft

3.76 The era of the *negdel*s was a period when livestock theft was almost unknown. The tight controls on movement, the absence of markets, and the control of transport made this an impractical crime. Theft is now becoming a worry to herders, although its incidence is still very low. None of the herders had had any of their own animals stolen, although they commonly cited cases of theft in the neighbourhood. However, as Fernández-Giménez (1995) observes, in Bayankhongor Aimak, due south of Arkhangai, theft of large animals has become a major problem. As the economy becomes more monetarised and markets and trade networks develop, theft will become a more serious threat to producers as it is elsewhere in the world. The practical response to a rising incidence of theft must be action at the *sum* level; increased policing, more effective reporting and checking on animals that disappear. Population densities are still very low and market networks still so tenuous that such action may be more effective in Mongolia than elsewhere in the world.

Insurance

3.77 Mongolia had a very effective system of livestock insurance during the *negdel* era, and it is said that some 90% of domestic animals were insured. Assessment of insurance claims was via the *negdel* authorities and some 80% of the value of an animal could be recovered via this system. Since privatisation, this system has entirely broken down as far as private producers are concerned. The absence of cash in the rural economy and the crumbling of the insurance companies themselves has meant that all types of individual household insurance are non-existent.

3.78 Projected beneficiary households were initially questioned about their willingness to insure animals made available through a project. However, it soon became apparent that they would accept any reasonable condition made by the project as long as it did not involve an initial cash outlay. Insurance, assuming a company could be found with an adequate track record and willingness to insure individual animals, would still have to be through cash made available by the project management. Given recent changes in payout rates (now reduced to 60%) and inflation, insurance does not appear to be a practical option for poor herder households.

Risk Management Strategies

3.79 If insurance is eliminated, then the alternative option is minimisation of risk through the *sum* and Aimag authorities. In most cases, the risks described threaten all classes of herders, although poor herders may well be worst affected. The revenues from taxes on producers should therefore be used to fund

emergencey services for herders. The *sum* authorities could be encouraged to take action by a system of mathcing grants.

3.80 The risk of *dzuud* can be reduced by the creation of *sum* centre fodder reserves. Health risks at present are quite low, and strengthening of the veterinary services could maintain cover at present levels. Predators and theft are real risks, but they depend largely on the vigilance and management skills of the herders. One of the objectives of loaning animals to herders with known skills is to minimise risks from these sources. In the light of these elements, the absence of functioning insurance may be adequately counterbalanced by the above measures. The relatively long payback period suggested for the loaned animals also allows beneficiaries some slack in, for example, breeding a sheep to replace on taken by wolves.

GOVERNMENT OF MONGOLIA
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SOCIO-ECONOMIC SURVEY

IV. OTHER PROJECT DESIGN CONSIDERATIONS

A. Environmental resources

1. The overgrazing debate

4.1 The literature on carrying capacity and overgrazing in Mongolia may best be described as an opposition between the 'panic' view and advice to maintain the status quo. The 'panic' view, most recently expounded by Honhold (1995) has it that;

a) Mongolia's livestock numbers and fertility are either static or falling
b) that this must be due to the falling productivity of the rangelands
c) that Mongolia's human population is rising and more animals will be needed to feed them
d) that there will therefore be a shortfall of animal products to feed the human population within the next thirty years
e) that this requires urgent interventions to increase the productivity of the rangelands

4.2 The alternative view is found in PALD (1993) which is that overgrazing is largely confined to *sum* centres, roadsides and particular areas of high livestock concentration. Extensive work in the African rangelands since the 1970s has generally confirmed that it is not easy to measure such concepts as degradation and carrying capacity directly or within a single observation. Rangelands have shown a remarkable capacity to recover given a rest from grazing or exceptional rainfall. For this reason, it is often more practical to make use of secondary indicators to establish the degree of pressure on pasture.

4.3 In Arkhangai at least, such indicators seem to indicate there is no immediate threat to pasture. These are;

a) Livestock populations have been broadly static since privatisation
b) High degree of biodiversity in wildflower populations
c) Absence of tussock formation
d) Little or no sheet or gully erosion
e) Dense grass cover in remoter pastures at the end of the summer grazing period

4.4 These all seem to suggest that overgrazing is not a matter of major concern at present and should not form an element in the Project.

4.5 Although Remote Sensing Technology is available in Mongolia, work on ground-truthing to relate actual rangeland conditions to digital images has barely begun. Mongolian grasslands are thought to contain some 5,000 species, most Graminaceae (Grubov, 1969) so this is likely to be a long task. Remote Sensing data will not make a substantial contribution to the overgrazing/carrying capacity debate for some years to come.

B. Likely Social Trends during the Project Period

4.6 It is a common observation that Mongolia is presently undergoing rapid social change and for this reason, any interventions premised on present social structures must be flexible enough to accommodate new patterns as they develop. This section enumerates some of the possible social trends and discusses their likely social consequences.

1. The trend towards monetarisation in rural areas will continue, especially as regards the trade in livestock and livestock products. Those with larger herds will become relatively rich in cash and will seek to invest in such items as trucks and processing equipment.

2. The speed at which the trade system develops will depend on investment in infrastructure and whether government liberalises prices for products such as cashmere and meat as well as access to key elements such as petrol and spare parts for vehicles.

3. The process of migration from urban centres by the unemployed is still continuing. Urban migrants and poor *sum* centre inhabitants who have gone into the herding as a result of privatisation are likely to either succeed and become fully-fledged herders, or fail and drift back to the *sum* centres.

4. The *khot ail*s will increasingly become kin-based and resemble ever more closely corporate households. Fragmented *khot ail*s will probably break up as individual members join their kin. Government is likely to increasingly recognise the *khot ail* as a formal or informal level of administration.

5. There will probably be a reverse drift of young men back to urban centres as new job opportunities open up in such sectors as tourism. Numbers of women-headed households are likely to increase still further as men migrate in search of work.

6. Buddhism is likely to experience a revival in many areas with the possible consequence that young men will spend some years in lamaseries, thus withdrawing their labour from the family pool. In some cases former Communist party officials have now become heads of lamaseries.

7. Services at *sum* centres will continue to decline in quality and quantity. This will have two contradictory consequences in terms of the exploitation of nearby pastures. The absence of services going out to remote pastures may induce poorer herders to move into the *sum* centres. At the same time, richer herders who will be increasingly self-sufficient may move further away in order to take advantage of the better grazing.

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V. PROPOSALS FOR PROJECT IMPLEMENTATION

A. Eligibility Criteria for Project Beneficiaries

General criteria

5.1 A set of eligibility criteria for project beneficiaries are given in the FAO/TCP draft report. Not all of these are adopted here. Following the findings of the present survey, eligibility criteria are proposed for project beneficiaries. The beneficiary should;

a) have at least 5 and not more than 20 Bod of livestock
b) live in a *khot ail*
c) be recommended by the *khot ail* leader as possessing basic labour resources and livestock management skills
d) have not intentionally divested themselves of stock as part of the process of distributing animals as inheritance to their children

5.2 In general, the beneficiaries should not live in *sum* centres but such a criterion may be difficult to apply rigidly, as many poor households with animals live close to *sum* centres. In view of the overgrazing problem near to *sum* centres, beneficiaries should either move out to rural sites or should be able to show they have an arrangement to graze animals in more distant pastures. This should minimise the environmental impact of the project.

5.3 The most problematic aspect of this is the number of livestock a household should already posses to be eligible. If it is assumed that the level of viability is as high as 25 Bod then households with 15-25 Bod are deemed to be near the margin of viability and hence are the prime candidates for restocking. However, this would exclude a large number of households existing in the rural areas who would otherwise meet the criteria listed above. Hence the proposed reduction in the minimum number of Bods required.

Should there be special conditions for women-headed households?

5.4 The survey has suggested that, while women-headed households are poorer than those headed by men and find it correspondingly more difficult to recruit labour for heavy tasks such as haymaking, they do *not* suffer the same discrimination that occurs in many otherwise similar societies. The eligibility criteria will inevitably apply to a larger percentage of women householders, and there is thus no need to include a specific component or project element. The Project Implementation Unit should however monitor the percentage of loans going to women-headed households, to ensure that it reflects their proportion in the category of poor households as a whole.

B. Role of PRA in ensuring beneficiaries' participation

5.5 In conjunction with IFAD and FAO, Save the Children Fund (SCF) conducted a PRA survey and workshop in Chuluut *sum* simultaneously with the present survey. Wealth-ranking and matrix-scoring were carried out in two *bag*s. A report of this exercise has now been submitted (Ebdon, 1995a,b).

5.6 On the basis of this, it has been proposed that a similar exercise be carried out in the remaining 18 *sums* between the present and the proposed project start date. This should feed in effectively to both the question of eligibility criteria and the actual identification of poor households.

5.7 These PRA reports may be said to contribute to the conceptual debate about the prevalence of poor households. However, the PIU will need more concrete data if it is to plan the disbursement of Project Funds. It is therefore proposed that pre-Project SOF Funding is used to conduct a survey of households in the *sums* of Arkhangai. The survey should aim to;

a) Survey a representative sample of poor households on the *sum* centre lists to establish how many also meet the eligibility criteria listed above
b) Survey other a range of other households to establish whether there exists a substantial class of poor households that have been excluded from official lists
c) Survey a sample of wealthy households to establish in more detail the likely availability of productive female animals

The objective would be to produce a simple to use set of guidelines for the PIU.

C. Structures for Project Implementation

Structure of authority

5.8 Membership of a *khot ail* has been used as one of the principal filters for eligibility for credit. This is based on the observation that the *khot ail*s are becoming more widespread, more kinship-based and more concrete in their functions.

5.9 This situation provides the background to the basic authority structure of the Project. The *khot ail* leaders should be the points of liaison with the herding community as they are in the best position to evaluate the herding skills and labour resources of their members. Proposed beneficiaries' names would be submitted to *khot ail* leaders for approval. The names would then go forward to the *bag khuural*, which would have to approve the selection of individuals. This would be intended to prevent *khot ail* leaders putting forward very close relatives or providing animals for their own children via this scheme. The names would be forwarded to the *sum* centre for recording and thence to the Project Implementation Unit at the Aimag Centre.

5.10 In view of the requirement of wealthy herders that their animals go to known recipients, it is likely that animals would circulate within a relatively small geographical area, which would in turn reduce transport and transaction costs. This area may well correspond in practice to the *neg nutniighan* and may have an additional function of increasing its co-operative functions. The *sum* centre officers would essentially have the role of brokers, bringing together herders willing to sell animals with poor families within *khot ail*s.

Recommendations for SOF Funding

5.11 In the light of findings from the survey, certain additions and changes are recommended in the local statistical system, to capture features of the livestock and human population structures relevant to project implementation. These are recommended for soft funding in the pre-project phase.

5.12 The central statistical section in Tsetserleg be provided with adequate training to computerise all livestock and human population available to date. In addition, the following changes in data collection are recommended during the year leading up to the project and throughout its course;

a. That henceforth yaks, khainags and cattle are counted separately in the statistics and not aggregated as at present.
b. That livestock numbers are converted to Bods and not total livestock numbers when assessing the livestock holdings of individual households
c. That the *sums* send to the aimag statistical office their raw data, rather than in aggregated form, making possible a wider variety of analyses through computerisation
d. That returns are made for the presence of vegetable gardens in individual *sums* with particular attention as to their existence in poor households

Statistical data will continue to be presented to the SSO in required format, but the information for local use can be prepared using the above guidelines.

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APPENDIX I. TERMS OF REFERENCE

1. He should conduct household interviews to identify the development priorities of project beneficiaries and to assess whether these are reflected in the proposed project activities

2. He should identify any potential socio-cultural constraints that could adversely affect project implementation. In particular he should assess whether herders with large stocks of animals are interested in: selling their animals for the restocking programme; providing training and assistance to poor herders; using the cash from their sales for what purpose. He should also assess risk perceptions of poor herders; their commitment to the restocking programme; and whether proposed terms and conditions or the restocking programme are acceptable to project beneficiaries.

3. He should also explore the problem both of risk of overgrazing through increase stock numbers and the problem of access to grazing once poor herders have obtained additional animals. He should also describe the mix of species presently used by herders and how this mix should be maintained or altered in the case of increases of herd size.

4. He will be responsible for reviewing implementation and targeting mechanisms of the restocking programme to channel benefits to the poorest herders and ensure that eligibility criteria to receive credit are appropriate.

5. He should review customary and formal rural institutions and identify appropriate arrangements to carry out project proposals. In particular, he will review how customary organisations like the *khot ail* can be used to implement project activities through group mechanisms.

6. He should also formulate proposals to ensure direct participation of project beneficiaries in project planning and implementation and that priorities of the target group are incorporated in project proposals. For this purpose he will discuss with SCF, Mongolia appropriate PRA methodology to be incorporated in the Project.

7. In carrying out the above he should constantly refer to gender analysis.

8. He should work in close collaboration with a local rural sociologist, to be identified and involve him very closely in the analysis and elaboration of project proposals.

APPENDIX II. QUESTIONNAIRE

IFAD ИФАД

MONGOLIA ARKHANGAY LIVESTOCK PROJECT SURVEY
Монгол Улс, Архангай аймаг-Мал аж ахуй төслийн судалгаа!

Survey of Sums: Arkhangay Aimak: Архангай аймгийн сумдийн судалгаа

To be used in conjunction with code sheet 1. Доорхи тэмдэглэлгээг ашиглан хариулна уу

N.B. Code: Yes=0 тийм=0 No=1 үгүй=1

HOUSEHOLD RECORD ӨРХИЙН БҮРТГЭЛ, ТООЦОО

1. Questionnaire No [| |] **1.** Санал асуулга Но

2. Date [| | 95] **2.** Он сар өдөр

3. Initials of Researcher [ ] **3.** Судлаач

4. *Sum* Name _____ **4.** Сумын нэр

5. *Bag* Name _____ **5.** Багын нэр

6. Are you in a *khot ail?* [ ] **6.** Танайхан хот айлаараа байна уу?

7. *Khot ail* Name _____ **7.** Хот айлын нэр

8. Type of *khot ail* [ ] **8.** Хот айлын бүтэц

9. Does khot ail stay together both seasons? [ ] **9.** Өвөлд хот айлаараа цугтаа өвөлждөг үү?

10. Informant's Name _____ **10.** Ярилцагчийн нэр

11. Informant's Gender **Male** Эрэгтэй ☐ **Female** Эмэгтэй ☐ [ ] **11.** Ярилцагчийн хүйс

12. Marital status [ ] **12.** Гэр бүлийн байдал

13. Total Size of Household [ ] **13. Өрхийн ам бүл**

Category	No.		Хүйс
Men			Эрэгтэй
Women			Эмэгтэй
Children*			Хүүхдүүд

*Under 14 years of age 14ээс дээш насны хүүхдүүд

14. Livestock Holdings **14. Малын тоо**

SPECIES Төрөл		Number Тоо				How many animals sold last year? 1994 онд худалдсан мал	COMMENTS Тэмдэглэл
SHEEP	Хонь						
GOATS	Ямаа						
CAMELS	Тэмээ						
YAKS	Сарлаг						
HAINAG	Хайнаг						
HORSES	Морь						
CATTLE	Үхэр						
DOGS	Нохой						

15. Should credit be in cash or animals? [ ] **15.** Та зээлээр мал авах уу? эсвэл мөнгө авах уу?

16. How many years would you take to repay? [ ] **16.** Хэдэн жилийн дотор та зээлээ төлж чадах вэ?

17. Where can you buy productive females? [___] **17.** Та ашиг шимтэй хээлтэгч мал худалдаж авах уу?

18. What species would you like to get? [ ] [ ] [ ] **18.** Ямар төрлийн мал та авах сонирхолтой байна вэ?

19. Why? [ ] [ ] [ ] **19.** Яагаад?

20. What animal products do you sell? [|] [|]

20. Та малын гаралтай ямар бүтээгдхүүн худалдаж байна вэ?

Dairy [|]

Сүүн бүтээгдхүүн

[|]
[|]
[|]
[|]

Fibre [|]

Ноос

[|]
[|]

Skins/hides [|]

Арьс шир

[|]
[|]

21. Do you use the veterinary services? [___]

21. Таны мал сүрэг мал эмнэлгийн үйлчилгээнд хамрагдаж байна уу?

22. Do you buy drugs to treat the animals yourself? [___]

22. Та өвчтэй малдаа шаардлагатай эм тариаг өөрийн мөнгөөр худалдаж авдаг уу?

23. Do you make hay? [___]

23. Танайх хадлан авдаг уу?

24. Are wolves a threat to your herd? [___]

24. Мал руу чоно дайрч байна уу?

Comments of Researcher

СУДЛААЧИЙН ТЭМДЭГЛЭЛ

APPENDIX III. LIVESTOCK PRODUCTS

The table shows the principal dairy products produced by Mongolian herders;

Mongolian	English
Aaruul	Solidified dried curds
Urum	Clotted cream
Shar Tos	Reduced Butter
Tsagaan Tos	Fermented butter?
Ezgi	Caramelised curd
Aartz	Boiled yoghurt
Tarag	Yoghurt
Byaslag	Cheese
Airag	Fermented mares' milk
Huuruulsen suu	Boiled milk
Tsurum	Dried yoghurt

Sample prices paid in tugrigs per kilogramme for livestock products in Bulgan (in the East and Tariat (in the west).

Product	Bulgan	Tariat
Urum		3-400
Aaral		3-400
Ezgi		250
Airag		8
Shar Tos		500
Byaslag		6-700
Wool	230	70-80
Cashmere	9000	2000
Yak down	85	20
Horsehair	80	40
Cattle-hide*	3000	2000
Sheep-skin*	1000	800

*per hide

Appendix IV. Dates, Sums and Informants for Survey

Date	Sum Name	Ecozone	Informant's Name	Female-headed?
08/23/95	Bulgan	Steppe	Tserenbadrah	No
08/23/95	Bulgan	Steppe	Tserenlham	Yes
08/23/95	Bulgan	Steppe	Densmaa	Yes
08/23/95	Bulgan	Steppe	Otgontseren	No
08/26/95	Unduur Ulaan	Alpine	Tsolmon	No
08/26/95	Unduur Ulaan	Alpine	Dumaa	Yes
08/26/95	Unduur Ulaan	Alpine	Sanjid	Yes
08/26/95	Unduur Ulaan	Alpine	Surenjav	Yes
08/26/95	Unduur Ulaan	Alpine	Ganhuyag	No
08/26/95	Tariat	Alpine	Purevdorj	No
08/27/95	Tariat	Alpine	Avirmed	Yes
08/27/95	Tariat	Alpine	Davaadulan	Yes
08/27/95	Tariat	Alpine	Jargal	Yes
08/27/95	Tariat	Alpine	Tomorhuyar	No
08/27/95	Tariat	Alpine	Gunjalam	Yes
08/27/95	Tariat	Alpine	Dashdavaa	Yes
08/28/95	Tsakher	Alpine	Lhagvaa	No
08/28/95	Tsakher	Alpine	Radnabazar	No
08/28/95	Tsakher	Alpine	Lhagvabayar	No
08/28/95	Tsakher	Alpine	Tovuu	No
08/28/95	Tsakher	Alpine	Badam	No
08/28/95	Tsakher	Alpine	Batbayar	No
08/29/95	Hangai	Alpine	Marush	Yes
08/29/95	Hangai	Alpine	Puruvsengee	No
08/29/95	Hangai	Alpine	Basanhuu	No
08/29/95	Hangai	Alpine	Ganbaatar	No
08/29/95	Hangai	Alpine	Saintogtoh	Yes
08/31/95	Ikh Tamir	Alpine	Nemehdelger	Yes
08/31/95	Ikh Tamir	Alpine	Tuvden Nyam	No
08/31/95	Ikh Tamir	Alpine	Ouyun	Yes
08/31/95	Ikh Tamir	Alpine	Monkh Jargal	No
08/31/95	Ikh Tamir	Alpine	Hurelbat	No
08/31/95	Ikh Tamir	Alpine	Erdene Chuluun	No
09/01/95	Tsenkher	Steppe	Tsend Aiyush	No
09/01/95	Tsenkher	Steppe	Sosorbaram	Yes
09/01/95	Tsenkher	Steppe	Khadbaatar	No
09/01/95	Tsenkher	Steppe	Boldoo	No
09/01/95	Tsenkher	Steppe	Ulzii Utus	No
09/02/95	Battsengel	Steppe	Sharavsuren	No
09/02/95	Battsengel	Steppe	Jamsranjav	No
09/02/95	Battsengel	Steppe	Tsetsegmaa	No
09/02/95	Battsengel	Steppe	Nyamsuren	Yes
09/04/95	Erdene Mandal	Steppe	Sharavjamts	No

Date	Sum Name	Ecozone	Informant's Name	Female-headed?
09/04/95	Erdene Mandal	Steppe	Batbaasan	Yes
09/04/95	Erdene Mandal	Steppe	Batsukh	No
09/04/95	Erdene Mandal	Steppe	Doljoo	No
09/05/95	Erdene Mandal	Steppe	Guragchaa	No
09/05/95	Jargalant	Alpine	Yadamsuren	No
09/05/95	Jargalant	Alpine	Otgon Bayar	No
09/05/95	Jargalant	Alpine	Myagmar	Yes
09/05/95	Jargalant	Alpine	Tserenbat	Yes
09/05/95	Jargalant	Alpine	Orsoo	No
09/05/95	Jargalant	Alpine	Chimedkhorol	Yes
09/06/95	Tsetserleg	Steppe	Jamtsambal	No
09/06/95	Tsetserleg	Steppe	Bilguun	No
09/06/95	Tsetserleg	Steppe	Otgon	No
09/06/95	Tsetserleg	Steppe	Samdan	No
09/06/95	Tsetserleg	Steppe	Tstsegmaa	Yes
09/07/95	Hairhan	Steppe	Norovdavaa	Yes
09/07/95	Hairhan	Steppe	Natsagbat	No
09/07/95	Hairhan	Steppe	Gonchigjantsam	No
09/07/95	Hairhan	Steppe	Monkhtor	No
09/07/95	Hairhan	Steppe	Binderya	No
09/07/95	Hairhan	Steppe	Erdernebat	No