

# Appendix A

## Report on Reindeer Herding in Mongolia - Reindeer Herding a Doomed Culture?



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### Introduction

#### Domesticated reindeer herding across borders

Domesticated reindeer herding in Mongolia takes place along the borders of the Russian autonomous republics of Tuva and Buryatia, on the south slopes of the Sayan Mountains. The area is in Tsaagan Nuur suum (district), within the Khovsgol aimag (province).

The areas used for herding reindeer lie between 51-52 degrees north (the same latitude as Belgium). This lies right on the edge of the transition between taiga and the steppe. In this particular area one can experience something as unusual as reindeer and camels grazing side by side.

The area is grass covered, leading to thinner coniferous forest (taiga) and tree lined valleys, sur-

rounded by permanently snow-clad peaks of up to 3100 metres.

At these outer limits of the reindeer's natural habitat, the climate is fairly dry. Temperatures are continental, with summer highs of up to +40°C and winter temperatures down to -40°C. The sun rises high in the sky at these southern latitudes, and as often as not the sky is cloudless. During the six month summer period this leads to extreme heat during the daytime, whilst the nights can be fairly cold, even at that time of the year. There is a lot of rainfall in the area during July and August, leading to lush grass growth and good conditions for grazing animals. As early as August there may be night frosts, and ice may form on water pools and in streams. Snow falls during October, and can reach a depth of 40-100 cm during the winter. The snow is usually quite loose and porous, which offers no problems to grazing reindeer. In some years there is still snow on the ground as late as July.

## Traditional herding culture

In Mongolia, the herding of domesticated reindeer is done by an ethnic minority, the Dukha. The Dukha are a sub-group of the Todsjin-Tuva people that are reindeer herders in the Tuva Autonomous Republic in Russia. The Dukha/Todsjin-Tuva are thought to be a mix of Turkish, Mongolian and Samojed peoples, and their language is of Turkish origin. They are closely related to two other reindeer herding peoples, the Sojot and the Tofalar.

The Dukha/Todsjin-Tuva's traditional herding areas are in the Sayan Mountains, specifically around the Bij-Kem and Ka-Kem areas, around the Jenisej springs within the Tuva Autonomous Republic in Russia, and within the Khovsgul province in Mongolia. Their herding traditions are believed to be ancient. Some experts believe that the herding of domesticated reindeer first began in the Sayan mountains, several thousand years ago. The oldest written reference to domesticated reindeer is to be found in these areas, recorded by a Chinese monk in 499 A.D.

The extent of the Dukha/Todsjin-Tuva's domestication of reindeer in the past is unknown. From the information that is available, it seems that there were around 1000 people involved in reindeer herding in the late 1800s and early 1900s. Today there are around 400 Dukha people in Mongolia, around 160-170 of these are still involved in reindeer herding.

The Dukha/Todsjin-Tuva still live a nomadic lifestyle, and live in tents out on the taiga all year round. Their tents are exactly like the lavvo of the Sami and the Nenet tjume. The herders move around in a defined pattern between seasonal grazing areas. This movement is to some degree influenced by the hunting conditions in the area. The whole family take part in the herding.

The type of herding is taiga-based, with small herds. The production of meat is of secondary importance. However, reindeer herding is the central element in their culture. Reindeer play a key role in their subsistence, which is based on hunting for food and for skins. Without reindeer it would be impossible to exploit these resources effectively. The reindeer are necessary for transport, and are a food source (the reindeer are milked daily), and are also a reserve in case of natural fluctuations in game stocks.

The and their neighbours, the Sojots and Tofalar, use the reindeer for riding and as pack animals. The type of reindeer (Woodland Reindeer) are large and strong, and well suited to the task. The Dukha/Todsjin-Tuva people are well-known for breeding

large animals. Their special breeding techniques are considered to be highly advanced, in relation to the normal methods used in breeding reindeer.

## The history of reindeer herding in Mongolia

### Historical retrospect

The Dukha/Todsjin-Tuva's herding areas have, throughout history, been of strategical interest to the dominant powers of China and Russia. Both Mongolia and Tuva were subject to Chinese rule from 1732 until 1911–12, when they broke away and declared their independence. The resulting political changes that took place were later to have a direct influence on the Dukha/Todsjin-Tuva's traditional use of their own areas.

The border between Mongolia and Tuva was formally declared in 1926/1927. This border divided their herding areas into two. When Tuva subsequently became a part of the Soviet Union, this effectively stopped the Dukha from transversing the border areas.

The Dukha remained in Mongolia at the outbreak of the second World War. At the time they were regarded almost as stateless, and attempts were made to drive them out of the country. This situation continued until 1956, until the Dukha were finally recognised as Mongolian citizens.

In Mongolia, most of the agriculture was in the form of collectives, according to the system established in the Soviet Union. Reindeer herding became politically a part of agriculture, but was not regarded as an independent industry. This may have been because of the limited extent of reindeer herding, and because hunting was the main way of life. Therefore no development plans were implemented for reindeer herding. In place of this, a fishing collective was established with a base at Tsaagan Nuur, in order to ensure a livelihood for the Dukha. Many of the Dukha gave up the nomadic way of life and sought work at the fishing collective. Many of the local population also joined the collective, which became a vital part of Mongolia's somewhat limited fishing industry.

In 1972 the fishing collective was extended to include hunting. The nomadic reindeer herders joined the collective as hunters. This had both positive and negative aspects: On the one side the domesticated reindeer herders were secured an income and other



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economic benefits from the collective. However, reindeer herding was subjected to an administration that did not always act in its best interests.

The commercialisation of reindeer herding began in 1979. The collective began to harvest velvet, which was sold to the Chinese market. This was the first step towards changing the perception of the industry.

In 1985 the status of reindeer herding changed, after the establishment of a new hunting and reindeer herding collective at Tsaagan Nuur. The aim of the collective was to secure the future of reindeer herding. The number of reindeer had sunk to 670 animals. After this time, great efforts were made to establish reindeer herding as an industry. A much needed regular veterinary service was provided. Reindeer were imported from Tuva (in 1986) in order to strengthen the breeding stock, which was considered to have been weakened by the small numbers of animals kept over a long period. All these efforts led to the rapid revitalisation of reindeer herding. Reindeer numbers increased, and reached approximately 1200 animals in 1990.

1990 marked the start of a period of change that would bring reindeer herding back to its original starting point. In that year the fishing collective was closed down, due to the over-exploitation of the fish resources. This coincided with a slump in the national economy. Many of those who had formerly worked in

the fishing collective, now went over to the hunting and reindeer herding collective and became nomads once more. Shortly after this, in 1992, this collective was also on the edge of bankruptcy. There were no more funds to pay the worker's wages. Therefore, a decision was made to allow the nomad families to take over the reindeer flocks on a lease basis. These were also allowed to run private businesses. This led to even more Dukha returning to reindeer herding, which naturally increased the strain on the industry.

### Dawn of a new era

Domesticated reindeer herding became 100% privatised in 1995. That year, the state-owned "Tsaagan Nuur hunting and reindeer herding collective" was closed down. All the reindeer formerly owned by the collective were distributed among the nomad families. The total number of reindeer at that time was approximately 900 animals.

The country was in the middle of a deep economic depression, and this naturally also greatly affected the reindeer herders. The change in numbers of reindeer during the following years shows that the situation was critical for the herders. The number of animals fell by a third, to around 620 animals in 1998. At that time around 30-40 families remained active in the

industry. Exactly how many were involved before this is not known.

The fall in reindeer numbers can be explained by the fact that there were too many people in the industry, and at the same time the game stocks fell dramatically. This in turn led to the slaughter of domesticated reindeer. It is also claimed other major influences were disease among the reindeer, and losses due to the increase in the number of predators.

Developments after 1998 show that the fall in the number of reindeer has stopped, and in fact is now on the way up again. The exact reason for this trend is unclear. One reason may be that there are fewer people involved in the industry, but there may also be other reasons. In spite of this, the situation for the reindeer herders is still extremely difficult. The number of people involved in the industry is still falling. Since 1998, 4-5 families have lost all their reindeer, and twice this number are in danger of also losing their animals.

## Analysis of current management

### Basis for use of areas

The rights to grazing land are based on customs and tradition, in the same manner as elsewhere in the country. Usage founded on tradition is a normal and commonly accepted legal principle, in a country where approximately half of the population are nomads with grazing animals. No taxes or levies are paid for the use of grazing land. The custom, or common law practice is that users of grazing land have priority for that area, but these can be take over by others when use ceases. This is in keeping with the accepted practice in other reindeer herding areas, among them the Sami domesticated reindeer areas in Norway, Sweden and Finland.

### Grazing areas and capacity

Domesticated reindeer herding takes place in two geographically divided areas (grazing areas). The border between the two is created by the River Shishket. This river runs west from the Tsaagan Nuur lake, and creates the western spur of the river Jenisej, known on the Russian side as Malyi Jenisej (Little Jenisej).

Zuun taiga (east taiga) lies to the north of Shishket. This is known as the "oldest" reindeer herding area, since there have been reindeer herders in the area for the last 200-250 years. This area has also been used in combination with other grazing areas within the Bij-Kam area, in the Todsja region in the Tuva Republic.

Baruun taiga (west taiga) lies to the south of Shishket. Until 1940 this area was used as a winter grazing area in combination with the summer grazing areas in the Tere-Hol area in the Kaa-kem region, in the Tuva Republic.

These two grazing areas constitute a total area of approx. 8000 square kilometres (800,000 ha) divided more or less equally between the two. There are no technical installations of any significance in the area. The only other users of these areas are cattle farmers, in the southern and eastern outer regions.

The grazing capacity for reindeer in the Zuun taiga and Baruun taiga is estimated by reindeer herders and local experts at 4000-5000 animals. This estimate seems reasonable, given the total extent of the area.

## Number of reindeer and distribution

The most recent, and possibly the most certain figures for the number of reindeer are from May/June 2001. These show a total of 717 reindeer in total. This amounts to an increase of 100 animals from 1998, approximately 5% per year on average.

The number of reindeer is divided thus: 262 animals (approx. 36.5%) in Zuun taiga, and 455 animals (63.5%) in Baruun taiga. This gives an average concentration of 0.07 and 0.01 respectively, of reindeer per square kilometer of grazing area, which must be considered as a minimal utilization of the assumed resources within the country.

In 2001 the herding was organised in such a way that there were 3 herding groups in the Zuun taiga and 4 groups in the Baruun taiga. This gives an average of approximately 100 animals in each flock unit, which is the usual number for a traditional taiga herd.

The reindeer herders consisted of 36 families, thereof 20 families (55%) in the Zuun taiga, and 16 families (45%) in the Baruun taiga. The total number involved in the industry is between 160-170 persons, including children and the elderly.

The operational status was very poor for all the herding families, excepting 2 families in the Baruun taiga that each had more than 100 reindeer. This number is seen as sufficient to provide for the food needs and other requirements of the families. The



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### Reindeer – age/sex composition and growth

The sex and age composition, and growth of reindeer are important indication of the technical expertise and level of quality within the industry.

other families had between 4-28 reindeer each, with an average of 13-15 per family. In other words, none of these had enough animals to provide for their meat requirements, and were dependent on providing for 40-100% of these needs by another method. In practice, these families were dependent on hunting.

The situation for the herding families is on the whole, unstable. In spite of the recent apparent increase in the number of reindeer, approximately 11% of the herding families are without production animals, and in practice without reindeer at all, and a further 22% appear to be in danger of losing all their reindeer within the next few years. Most of those at risk (70%) are in the Zuun taiga.

The sex composition of animals in the herds seems to be reasonably good in both areas. The composition is about the same as is found in the domesticated herds in Russia. It is, as can be expected, formed from a need for animals used for transport.

The age composition of the herds is difficult to ascertain from the material currently available. Even though this appears normal, it should be considered as a possibility that there is a deficit of young animals. In this case this may affect the population of reindeer sometime in the future, although development otherwise continues normally.

The growth in reindeer numbers in 2001 was 78% in the Zuun taiga, and somewhat higher, approx. 84% in Baruun taiga, in relation to full-grown females. The



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difference in numbers can be explained by the slaughter of baby calves in the Zuun taiga. The registration in this area took place at a later date than the Baruun taiga. The calving results must be described as excellent in both areas, indicating that the condition and reproductive abilities of the females is good, in both areas. The results indicate no difference in the quality of the two grazing areas, and no negative effects related to breeding.

### Loss of reindeer

Every year there are relatively extensive losses of reindeer in both areas. The losses are due to disease within the flocks, and due to predators, mainly wolves. However the data span is too narrow to be able to make any conclusions as to the extent of losses. It is also impossible to determine if losses have had any effect on the composition of the reindeer population, in a way that may bring future consequences.

The latest reports, from the spring of 2002, indicate that the number of calves being born is low, and that the reindeer population is once again falling. This may be an indication that there is an imbalance in the age composition that is due to large losses of younger animals over a period of time, or there have been

exceptionally large losses since the last registration took place.

### Production expectations and their value

There are no records regarding the slaughter of animals or other trade of reindeer products in the area. Apart from the horn trade, it is reckoned that most of the products from the animals are used by the herders themselves.

In order to calculate the production potential, comparison studies have been made, with domesticated reindeer herding in other areas. These calculations, which naturally are made with certain reservations, show that production in total is small, in relation to the number of families involved in the industry. This illustrates more than anything else the importance of hunting, and of how dependent the reindeer herders actually are on hunting. On the other hand this also shows a normal production per reindeer in the production flock (spring flock before calving). The versatile usage of reindeer products means that production per animal is more than any other domesticated reindeer area in the world.

In relation to the herders' needs, it must be mentioned that according to the herders in the Zuun taiga,

no more than approximately 50 reindeer are required in order to provide the meat and milk requirements for a family. This is confirmed by the estimates that have been made.

It is difficult to place an actual value on production. It would appear that velvet is the only thing to be sold for money. There is a rough idea of the price of this product, but it is more uncertain with regard to the rest of production. The highest current evaluations, which are of course subject to uncertainty, paint a surprisingly positive picture of the production value. The total value is naturally low, but the relative value of each animal seems in fact to be extremely high, compared to other domesticated reindeer herding areas.

The total picture that emerges supports the local estimates of the production value. According to the local herders, a nomad family can support itself with the production from a reindeer flock of around 80-100 animals, according to information given to WRH in September 2000. Given the anticipated cost levels of in the industry in this area, this seems to be true. This confirms the supposition that the reindeer in this area have a relative value that is much higher than in other domesticated reindeer herding areas in the world.

## Other

In addition to reindeer, the herder families keep horses. The horses cannot replace reindeer on the taiga, but are necessary in order to reach the settlements out on the steppe. Here, it is often too hot for the reindeer. Horses are also used to some degree for transport, along suitable routes in the taiga. In this respect they are a welcome addition in periods when, for example, the number of reindeer are as low as today's levels.

In 2001 the nomad families owned 111 horses and 13 foals in total. Of these, 70% are owned by families based on the Zuun taiga. Even though not all families owned horses, this would appear to cover requirements.

## Prospects for the future

### The most difficult challenge

Registration made after June 2001 indicates that approximately one third of the reindeer herding families will be without reindeer in the near future. How

this will affect the industry as a whole is unclear. On the one hand, one line of thought is that this form of shedding will lead to a better balance within the reindeer population. On the other hand, there is a grave danger that the more families are without reindeer, the more impossible it will become for a community that is already under great strain. Many families are already in a difficult situation. There are very limited job possibilities in the area. It is therefore feared that a new and larger wave of families losing their reindeer will not help the industry at all, but rather be a heavy burden upon it. It should be noted that those families who are in danger of complete loss of reindeer appear to save their animals used for transport (bucks) until the very end. This may indicate that they give priority to the nomadic way of life and to hunting more than anything else.

There appears to be nothing on the horizon that can prevent this situation from happening. The central authorities maintain they are aware of the Dukhas' difficult situation, but are unable to act, given the country's current economic situation. The authorities are considering offering support to the reindeer herders by providing other animals such as sheep, goats and yak, in order to provide food and support the families whilst rebuilding the reindeer population. This plan has yet to be implemented.

There is some uncertainty as to whether this type of project would have the desired affect. From a reindeer herder perspective, this type of combination is regarded as difficult. Their experience is the same as that of the the Sami people, that the simplest type of animals to combine with reindeer are goats. Goats, however are a poor food source part from their milk. the reindeer herders are also worried that the combination of animals will lead to an increased risk of disease among the reindeer. There is every reason to be cautious.

Another kind of provision, which may have a certain effect on the maintainance of reindeer numbers, are the aid projects started by several local and international voluntary agencies. These idea is to purchase food (dried goods) and equipment for the Dukha. All projects connected to voluntary efforts are of course random, but all efforts must be regarded as having some meaning. The effect of these plans is however limited by the lack of freezing and storage facilities available in the area. There are no regulated electrical power services in Tsaagan Nuur, other than an ancient ineffective diesel driven power generator that is only in operation for a few hours a day. However,

such projects are cheap and simple to put together, and they may have a temporary positive effect for the reindeer herders.

In this situation, only import of reindeer from outside sources can effectively prevent the expected downturn in the industry. No plans have yet been made in regard to this, apart from the plan to import a limited amount of reindeer from Tuva. Importation of a larger number of animals depends on the active support of the international community.

## Prospects for hunting and trapping

Hunting and trapping are, and have always been, extremely important for the Dukha. The nomad families have until now been able to exploit the hunting grounds without too much outside competition. This is due to the fact that the areas are difficult to access for those without reindeer for transport. Their hunting has largely been for game such as deer, wild reindeer, elk, roe deer and bear, in addition to furs of which sable is the most valuable. Hunting has been an absolute necessity for maintaining their industry and culture.

Unfortunately, changes are under way that will lead to poorer prospects for the nomad families. The number of game animals is reported to be falling rapidly, at the same time the number of hunters from outside the area, among them safari hunters, is increasing. New restrictions are steadily being introduced that limit the nomad families' hunting rights. Although the hunting stocks are gradually falling, it is difficult to believe that these areas will finally be reserved for the Dukha. Hunting will become therefore less important in the future. This fact is a serious threat to the herding of domestic reindeer.

## Disease among reindeer

There have been reports from both areas of an increase in spontaneous outbreaks of disease during the summer months. These have died out when the frost has set in. For example, an incident of an unknown contagious and fatal disease among the reindeer herds in Zuun taiga during the summer of 2000, which killed 30-35 animals. Norwegian veterinary surgeons at the Institute for Arctic Veterinary Medicine in Tromsø (IAV) were given a description of the symptoms, and guessed that the disease could be due to an infectious disease (*Bacilær hemoglobinuri*) which is common among cattle and sheep. Therefore there is every reason to

believe that some of these outbreaks can be attributed to the close proximity to cattle farms. Other common diseases are lung infections and hoof rot (*necrobassilosis*). The latter is known to occur more often in flocks that are intensively herded, such as in this case.

The herders themselves believe that the increase in disease among the herds is due to several factors, among them inbreeding, which is a consequence of too few animals, weakened autoimmunity due to the harvesting of velvet, and poor physical condition and resistance to disease because of overworking the few animals they own.

All these factors, including inbreeding, which has never been seen among reindeer before, are believed to be influences on the general health of the herds. In addition, the actual method of handling the reindeer can be of importance in this case. In these areas the reindeer are kept together close to the tents at night, in order to discourage attacks by predators. This type of herding clearly leads to an increased danger of contamination.

There is reason to suppose that diseases and epidemics will not subside in the near future, but will increase instead as long as the total number of reindeer continues to be low. The associated problems may increase, because the industry lacks the funds for a veterinary service, and because according to local veterinarians, it is impossible to obtain the necessary medicines and vaccines in Mongolia.

## Production prospects

There is reason to believe that production in the industry, apart from that of velvet, will decline in the coming future. It is not expected that any of the production will be for sale, apart from velvet and horn. Regarding production of velvet, there will most likely be an increase. Products command reasonably good prices, and production potential is not completely realised. Even though the production as a whole will be minimal, the income will be very important for the nomad families. There is however some scepticism regarding this production from the reindeer herders themselves. Their opinion is that the production methods used out in the field are not good enough. They are considered to be detrimental to the animals' health. In other words there is possibly something of a "time bomb" waiting to go off. There is a possibility, which must be taken in to account, that the health condition of the herds will deteriorate if velvet production increases.





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## Tourism

In more recent years there has been a marked increase in foreign tourism in the area. Khovsgol province is regarded as one of the finest nature areas in Mongolia. Travel companies, both national and international, point out in their marketing two things that are worth visiting: Khovsgol national park and a visit to the Dukha. The Dukha, or "Tsaatan" as they are known in Mongolian, are already so established a tourist concept that the authorities have begun to consider restrictions to protect the Dukhas' culture.

The Dukha themselves have not received any real benefit from tourism. There are a few however, who have tried to create a niche market. A co-operative has

been formed, comprising of nomad families and local people from Tsagaan Nuur, with the aim of developing tourism. The co-operative has not yet managed to fully establish itself within the tourism market. In any case, it is impossible to deny that tourism can be a promising prospect for domesticated reindeer herding. The challenge will be to organise these activities in such a way that they directly benefit the nomad families.

## Recruitment and employment

Like the rest of Mongolia's inhabitants, the Dukha are a young group within the population. Current figures

show that approximately 40% of reindeer herders are children and young people under 17 years of age, of which young females represent 70% of these. On the other hand there is a deficit of unmarried adult women. The rate of unmarried women to men is approximately 1:4.

Given the current situation there will be little chance of young people moving into domesticated reindeer herding. This is in spite of the fact that the calculated grazing capacity (4000-5000 reindeer) ought to support an increase in reindeer herding. The surplus of young girls under 17 will probably lead to many of them seeking work outside the industry. However, there are no factors that indicate any immediate failure in recruitment.

Alternative employment for those who choose to leave the industry appears sparse. Cattle herding, the most important industry in the area, is most likely already overcrowded. The catastrophic failure of the formerly rich fishing resources at Tsaagan Nuur lake means that there is no real chance of creating new employment within the fishing industry. The only area that seems to have a chance of succeeding in the future is within tourism. The point is, however, that jobs need to be created first, and these will demand a totally different kind of education to that which is available in the area today.

## Education

There is much evidence that the reindeer herders are at an educational disadvantage compared to the rest of the population. This may have to do with the Dukhas' special way of life. In addition, their everyday language is somewhat different to common Mongolian. The Dukha receive no education in their mother tongue.

The education situation appears to be worsening. An interim study shows that the education system functioned at its best between 1960-80. At that time around 80% received 8 years' schooling or more. Among adult reindeer herders, around 50% have received 8 years' education or more. The education system would appear to have fallen into decline in recent years. From 1980 until 1990 the number of those having 8 years education sank to 64%. After the country went into recession in the 1990s this level fell further, to approximately 55%. Among the whole of the reindeer herders there are today only 2-3 who have completed 10 years' education and 3-4 who have any further education. The latter is largely due to the efforts of an NGO organisation in Ulanbaatar, the Mongolian Reindeer Fund, which has been very active in recruiting young Dukha people into schools and colleges.

Among the Dukha, as among other reindeer herding peoples, fear has been expressed that a long education process may drain an important resource for the industry, namely young people. On the other hand it is clear that an increase in educational standards among the reindeer herders is necessary in order to create a "safety net" around the industry. Given the current situation it is especially important to offer good educational possibilities to young girls.

## Summary and recommendations

### Difficulties facing domesticated reindeer herding

The general impression is that the Dukhas' reindeer herding industry has been subjected to extreme conditions during the 20th and 21st centuries. During this period the Dukha have seemed to be pawns in a game of geopolitical conflict of interests, that ended in the decision to divide their traditional land areas and hunting grounds into two parts. They have been subject to restrictions on hunting, which is central to their basic way of life, without any compensating efforts to reinforce their existence in other ways. They have been drawn into a collective system, in which their traditional way of life was sidelined as a non-priority. Finally, when the economic crisis in the country became marked in the early 1990s, they were left to fend for themselves, as were many others.

This new situation was especially difficult for the domesticated reindeer herding industry. It seemed to be crushing the traditional ways of reindeer herding, which stood bare and defenceless. The fact that the industry survived at all is nothing short of a miracle. An important clue which may explain the reason why, despite everything, reindeer herding still exists, can be found in statements such as this:

- We are reindeer herders, and have no wish to be anything else, said the experienced reindeer herder and mother of three Ganbat Punsal (26), during WRH's visit to the herders in Mongolia in September 2000. This apparently simple and straightforward statement is representative of the Dukha culture - they regard themselves primarily as reindeer herders, despite the fact that their way of life is dependent on hunting. Without this kind of attitude it would be impossible to summon up the determination and effort necessary to carry on when the situation is at its worst.

Developments in the 1990s show that the reindeer herding industry has been affected, and is still affected by a serious crisis. Reindeer numbers, which were already at a low level, fell by a third within just a few years. A population of around 40 families had approximately 600 reindeer between them. Almost incredibly, the fall in numbers was checked, and this trend was turned around. However, the price was high. Today, there are 36 families remaining in the industry. Among these approximately one third are at

risk of losing their livelihood. At the same time there is a danger of dramatic fall in reindeer numbers.

Domesticated reindeer herding in Mongolia is currently balanced on a knife edge. The very foundations of the industry are in danger of crumbling. An outbreak of disease among the reindeer flocks, or a failure of the game stock in one year, can be disastrous for the Dukhas' reindeer industry.

## The road ahead

The future of domesticated reindeer herding will depend on the nomad families' ability to provide for their daily needs, without taxing the herds. Reductions in reindeer numbers and the repeated outbreaks of disease and epidemics within the flocks, and losses due to predators – all these factors make this a daunting challenge. With a growth rate similar to that of the period 1998 to 2001, it will take 12 years, at least, to build up reindeer numbers to a sustainable level, even if one third of the reindeer herding families should fall away. "A sustainable level" mentioned here refers to a sufficient number of animals to provide the meat requirements for enough reindeer herders to create a sufficiently competent group to enable the industry to develop. It is clear that this is a challenge that the industry cannot manage all by itself.

In any case, it is the total number of reindeer that is the key to continued successful reindeer herding in Mongolia. If the numbers fall further, the whole of the Dukha culture is under threat. Without the reindeer, the Dukha are forced to give up their way of life. The very foundations of their culture will crumble away, and the Dukha will be erased as a race. Their own unique reindeer species will also die out.

It must be pointed out that reindeer herding in Mongolia is a viable prospect. There are sufficient grazing areas in the country to sustain an effective industry, even given the changes in hunting and trapping conditions. The grazing resources offer the possibility for professional development, and the level of competence can be maintained and developed further. Last but not least, there is a level of knowledge and strength of will among the reindeer herders to be able to adapt to any changes demanded of them.

The lack of reindeer is the single largest threat to the herding culture in Mongolia today. This threat will not be eliminated without outside help.

## Measures

Effective steps to maintain and increase the number of reindeer by farming/breeding, for example by providing enough food supplies such that reindeer are not slaughtered, and providing veterinary services to protect the flocks, will have a temporary positive effect. However, such measures will not be enough to attain the target of a stable and sustainable reindeer herding industry. The only way to do this, within a reasonable time perspective, is to bring in live animals from elsewhere.

Building up the number of reindeer to the desired level can most likely be done at limited financial cost, in relation to the expected results. However it is plain that importing animals will not be possible without professional and financial help from outside sources.

Priority measures in this case should be:

- Pilot project in order to evaluate the technical and economical aspects of the import of reindeer to Mongolia
  - The project should have the aim of establishing a programme for the introduction of live animals, to be done within a limited time space. Their tasks should include evaluating the actual need for animals, to find venture partners in connection with finance, sales and among professional groups concerned with transport, animal health and genetics. The project should also include consultation with the potential recipients, to establish a professional follow-up programme. The cost of such a pilot project is estimated at between USD 15-20,000.
- Temporary observation programme, in order to follow developments within reindeer herding in Mongolia.
  - The programme can be created as a continuation of the field surveys that were taken for the WRH in 2001, albeit with some adjustments. The programme can be combined with veterinary services in the field, as was done during the field work in 2001. Registration should be carried out over a period of a few years. The annual cost for this programme is estimated at USD 2-2.000. Including veterinary services the cost is expected to be around USD 3-3.500.

## Earlier initiatives for domesticated reindeer herding

### Animal health

Formerly, when domestic reindeer herding was included in the hunting and reindeer herding collective, there existed a special programme for veterinary services for the industry. This was considered important and vital. This service ceased after the privatisation of domesticated reindeer herding in 1995. More recently, a number of studies of reindeer-specific diseases have been made, by both local and international researchers and veterinary surgeons. Comprehensive and valuable study has been done by the veterinary staff. M. Nansalma, Ulaanbataar, and Stuart Badger, N.Z.

### Import of reindeer

There have been earlier imports of reindeer to Mongolia, both in 1962 (20 animals) and in 1986 (50 animals). The reindeer were brought in from Tuva, where there is almost identical reindeer stock. Good results were reported.

Battulga Solnoi, currently the WRH's representative in Mongolia, and Dan Plumbly from Totem People Org. USA, have been working for a couple of years on importing more reindeer from Tuva. As yet, they have not yet succeeded in finalising the project.

### Registration and development with in reindeer herding

After their visit to Mongolia in 2000, WRH took the initiative for field registration, with the aim of achieving a full overview of the situation within reindeer herding. WRH's representative in Mongolia, Battulga Solnoi, carried out extensive field registration in May/June 2001. The work was carried out in association with a local veterinary surgeon, Bayaraa, who assisted with veterinary work in the field. His task was financed by Totem People Org. The data collected is the most complete record on domesticated reindeer herding in the area in recent times. The data has been adapted and translated by Tsoigtsaikhan Purev. This data is the foundation of the analyses in this report.

## Initiatives to improve economics for reindeer herders

In Tsagaan Nuur, the initiative was taken to create a co-operative, Tsaachin Corp., in order to improve the financial situation for reindeer herders, by organising activity tourism and the sale of hand made goods and other goods from the reindeer herding industry. There are currently 18 reindeer herding families that are members of the co-operative. The co-operative has had a difficult start and has yet to get the project properly started. The primus motor, and initial leader for the project, was the current mayor of Tsaagan Nuur, Erdenjav Yamadorm.

### Education and schooling

The Mongolian Reindeer Fund (MRF) and its leader Sukhbaatar O., and former employee Battulga S. have co-operated with international organisations to build a new school in Tsaagan Nuur. The old school burnt down in 1991. It is this school that the reindeer herder's children attend. Without the efforts of the MRF, there would be no local schooling in Tsaagan Nuur. MRF are currently working on a project for a new dormitory facility for the school, since the old one is in disrepair. UNDP are co-operating with MRF on this project.

### Other projects

Among other projects that have been created to assist the reindeer herders in Mongolia are the help programme for food, equipment and medicine supplies and health checks for the herders. These programmes have largely been financed by foreign organisations. In many of these projects, MRF represented by Sukhbaatar O., and Battulga S. have been central partners on the Mongolian side.

### Measures taken by the authorities

WRH received information from a central source in Ulaanbaatar in 2000, that no official programmes were currently being implemented for the domesticated reindeer industry and for the reindeer herders. The authorities stated that they were aware of the current difficult situation for the Dukha, but were unable to contribute significantly, given the current economic situation in Mongolia. The authorities stated also that here have been a few pilot projects to determine

the possibilities for combining reindeer herding with other animals, with a view to improving food supplies and for increasing reindeer numbers. These projects are currently shelved.