



Case study

Institutionalizing Pastoral Risk Management in Mongolia: Lessons Learned



Results from a study implemented three years after completion of the FAO project
Pastoral Risk Management Strategy, TCP/MON/0066

Rome 2007



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ABOUT THIS STUDY

Risk management attracted high attention in Mongolia during the 1990s as one of the activities that can make rural livelihoods more sustainable. The risks level is high in the more marginal and uncertain environments inhabited by pastoralists, and its management is a necessary condition for the survival of households and groups.

The Rural Institutions and Participation Service (SDAR) of FAO, funded by two TCP projects, with support from other technical divisions of FAO and from the Institute of Development Studies at the University of Sussex (IDS), supported from 1995-2003 the design and promotion of a pastoral risk management strategy for rural Mongolia.¹ Key parts of this strategy were incorporated into government policy as well as into projects funded by IFAD, the World Bank and UNDP among others. The work initially supported by FAO/SDAR thus encouraged the geographic spread and institutionalization of pastoral risk management in Mongolia. SDAR also did comparative work on pastoral risk in Kazakhstan, Kyrgyzstan and Qinghai, China.²

The aim of this study is to discover more precisely how far the risk management agenda developed initially by the two FAO/TCP projects in Mongolia has been implemented, what specific institutional reforms it has encouraged, how the agenda itself has developed and changed, and what has determined its successes and failures.

The objective of this report is to document some of the institutional and policy dimensions of a pastoral risk management strategy, some of the results such a strategy can achieve, and ideas about its further development. In particular the report emphasises the institutional dimensions of risk management, because these are often undervalued with the result that the most technically sophisticated and brilliant schemes are sometimes dismal failures.³

¹ The two projects were: FAO/TCP/4553 *Rural Development in Pastoral Areas of Arkhangai province* (1995-7), and FAO/TCP/0066, *Pastoral Risk Management Strategy*. (1999-2003).

² See FAO/SD website www.fao.org/sd.

³ This study is based on secondary sources and interviews in Ulaanbaatar in December 2006. We are grateful among others to the World Bank, UNDP, and the 'Green Gold' project of Swiss-Mongolian cooperation. We would like in particular to thank the Centre for Policy Research in Ulaanbaatar (and especially Dr A. Enkhamgalan and Professor B. Erdenebaatar) for discussions and permission to quote extensively from their research reports.

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Glossary of Mongolian Terms:

aimag - 'province', primary administrative unit

bag - lowest level of the administrative hierarchy

khural - representative assembly

otor - rapid movement with livestock to make use of distant pasture, to escape drought or *zud*, or to prepare animals for winter

sum - 'district', administrative unit below province

zud - winter disaster, often caused by frozen snow cover

Acronyms:

BIP	Base Insurance Product
CPR	Centre for Policy Research, Ulaanbaatar
DRP	Disaster Response Product
MFA	Ministry of Food and Agriculture
MNT	Mongolian <i>tugrik</i>
NEMA	National Emergency Management Agency
NPAP	National Poverty Alleviation Programme
SEFF	(former) State Emergency Fodder Fund
SLP	World Bank Sustainable Rural Livelihood Project
SRMC	<i>sum</i> Risk Management Committee

BACKGROUND AND OBJECTIVES OF THE STUDY

Risk management attracted attention during the 1990s as one of the activities that can make rural livelihoods more sustainable. Risk is high in the more marginal and uncertain environments inhabited by pastoralists, and its management is a necessary condition for the survival of households and groups. Herders were especially at risk in the former centrally-planned economies during the period of economic liberalisation. Here government had hitherto taken responsibility for most risk, protecting pastoral livelihoods through a range of economic and social measures, but suddenly ceased to do so as part of the economic reforms adopted from 1989 onwards. Herders in these countries found themselves bearing the whole economic and ecological cost of risk almost overnight.

The Rural Institutions and Participation Service (SDAR) of FAO, funded by two TCP projects, with support from other technical divisions of FAO and from the Institute of Development Studies at the University of Sussex (IDS), supported from 1995-2003 the design and promotion of a pastoral risk management strategy for rural Mongolia.⁴ Key parts of this strategy were incorporated into government policy as well as into projects funded by IFAD, the World Bank and UNDP among others. The work initially supported by FAO/SDAR thus encouraged the geographic spread and institutionalization of pastoral risk management in Mongolia. SDAR also did comparative work on pastoral risk in Kazakhstan, Kyrgyzstan and Qinghai, China.⁵

The aim of the present study is to discover more precisely how far the risk management agenda developed initially by the two FAO/TCP projects in Mongolia has been implemented, what specific institutional reforms it has encouraged, how the agenda itself has developed and changed, and what has determined its successes and failures. The objective is to document some of the institutional and policy dimensions of a pastoral risk management strategy, some of the results such a strategy can achieve, and ideas about its further development. This report is not comprehensive. It does not cover all aspects of pastoral risk management or all key actors (for example the innovative programmes of USAID in the Gobi are scarcely covered, nor those of several non-governmental organisations), but it does follow the adoption of the key concepts and practices of risk management by the Mongolian government and major donors. In particular the report emphasises the institutional dimensions of risk management, because these are often undervalued with the result that the most technically sophisticated and brilliant schemes are sometimes dismal failures.⁶

⁴ The two projects were: FAO/TCP/4553 *Rural Development in Pastoral Areas of Arkhangai province* (1995-7), and FAO/TCP/0066, *Pastoral Risk Management Strategy*. (1999-2003).

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PASTORAL RISK IN MONGOLIA

Sources of Pastoral Risk

There are many sources of risk and uncertainty in the Mongolian pastoral economy. The most important from the herders' point of view are:

Snow disaster. Snow disaster (*zud* in Mongolian) is ranked by most herders as the most important risk. A severe *zud* can kill several million animals.

The Mongolian meteorological service defines *zud* as a snow cover of more than 25 cms, a sudden prolonged snow storm, 2-3 cm of frozen snow cover, or prolonged extreme cold. Herders have a rich vocabulary to describe and analyse *zud*. The main criteria are not so much snow cover itself, as the consequences, especially in terms of animal mortality. A serious *zud* is one where there is very heavy snow which freezes to a permanent ice cover which prevents the animals from grazing. *Zuds* are also defined by their geographic coverage (a single valley or a whole ecological or administrative zone), and by their duration (heavy *zuds* exceed 20 days).

Mongolian herders classify several types of *zud*: 'black *zud*,' which does not involve snow at all, but is a freezing of surface water, making it inaccessible to the animals; 'white *zud*,' the classic snow disaster; 'storm *zud*,' when a severe snow storm lasts several days, forming deep drifts and stampeding animals down wind so they are lost; and 'freezing *zud*,' when temperatures descend so low that people and animals cannot maintain their body temperature, and die of cold. In Mongolia, dangerous *zuds* of this sort occur mainly during late autumn, winter or early spring.

Drought. Droughts occur in drier areas at any time outside the winter months. Late spring and early summer droughts are the most feared since they coincide with the new pasture. A moisture deficit at this time limits plant growth. In addition to direct stress on adult animals, drought cause high mortality among new-borns, and a large reduction in milk production. Pasture shortage results in less summer weight gain by animals, which are thus less well prepared to face the critical following winter-spring period.

Predation. Predation has always been a major threat to Mongolian herds but until the end of the 1980s was kept within manageable limits through predator control organised by the herders' collectives. Liberalisation including an end to predator control organised by the collectives resulted in a significant increase in predator damage to flocks. Wolves are the main threat, but snow leopards (not uncommon in Mongolia despite their global rarity), foxes, bears, eagles, vultures and other large birds all do damage. In general, good herders are expected to be able to protect their animals against most predation, although wolf packs have grown in some areas to a level where this is increasingly difficult.

Animal disease. Animal disease poses an obvious risk to herding livelihoods. This threat grew following a reduction in animal health services after partial privatisation in the early 1990s.

Animal theft. Animal theft is a recent risk, resulting from social breakdown after economic liberalisation. Theft is ranked as a growing risk by most herders.

Conflict. Social breakdown is also leading to increased conflict over pasture, access to other natural resources, and over theft of things other than animals. Herders who leave their winter animal sheds empty during the summer migration sometimes find the buildings vandalised and building materials stolen on their return. Fights over pasture are increasing.

Market failure. All herders depend on the market to a varying degree for their basic subsistence, and shortcomings in the market create a serious threat to livelihoods. Market risks are of two main sorts: inadequate market networks, and declining terms of trade.

Human illness. Illness is a particularly dangerous risk in a pastoral economy because the animals have to be tended every day; unlike farmers, herders cannot leave their animals for even a short time. Pastoral camps are in part an adaptation to this need, enabling households to group their animals so that one herder can tend the animals from several households. Households without the necessary social links or who are not members of an adequately large camp are particularly at risk.

Heavy spring rain, floods. In some areas of Mongolia heavy rain and floods are a risk to herders, especially when animals are weakened by a long and difficult winter. Heavy rain shortly after sheep have been sheared is particularly dangerous.

Fire. Wild fire is a significant risk to herders in the mountains and forests. Fires destroy not only pasture and browse, and may kill animals, but also threaten camps, and can destroy herders' possessions, barns, stored hay and food. Fighting fires may divert large amounts of labour from herding tasks at critical times.

Different risks are inter-related: for example, snow disaster may weaken surviving animals, making them susceptible to heavy spring rain. Different ecological or geographic zones may have characteristic combinations of risk: for example, areas close to markets are less likely to suffer from market risk than remote hinterlands, but may be more susceptible to animal theft.

Risk and Uncertainty

Economists distinguish between 'risk' and 'uncertainty.' *Risk* typically describes situations where the probability of harm can be estimated, at least approximately. These probabilities may be based on detailed and accurate records of past behaviour of a key variable (eg rainfall or livestock mortality), or be highly subjective: the herder's own personal estimate of the likely occurrence of the specific event. *Uncertainty* describes situations where it is not possible to estimate the probability of a particular harmful event.

Although good climatic and other records exist in Mongolia, it is still impossible to attach precise probabilities to particular harmful events, although the work on index insurance by the World Bank household livelihood support project is making progress in this direction. This means that we should really be talking about pastoral uncertainty management. However the term ‘risk management’ is now almost universally used in discussion of pastoral economies, and for that reason will be used here.

Individual and Covariate Risk

Pastoral risk may be categorised in various ways. For the purposes of management, the most important is to know who is affected: risks that affect individual households randomly (individual risks) are fundamentally different in impact from risks that affect all households in a given area (covariate risks) and call for different responses. Snow disaster or market collapse are covariate risks, affecting everyone in the area. Animal theft, predation or illness are generally individual risks. The ability of herding households to help neighbours or kin to recover from risk depends in part on the type of risk: in cases of individual risk, other households may be able to help an affected household, but in the case of covariate risk, everyone is in the same boat, and usually cannot.

Changing Levels of Risk

The frequency and severity of risks and potential detriments are not fixed. The main environmental risks, especially snow disaster and drought, may be subject to change from global warming, which is likely to have severe impacts in Mongolia. We do not yet know in any detail what these are likely to be, although greater climatic *variability*, and hence greater risk, is almost certain to be a part of the package.

Changing economic and social risk factors have also been important during the shift from socialism to the market economy as many risks were explicitly shifted from government to individual herders.

Snow disasters during the collective period were met with a massive state response: helicopters delivered fodder to remote herder households. After liberalisation, this became economically impossible. Before liberalisation, the State Emergency Fodder Fund (SEFF) was operational in all 22 provinces, with a total of 69 emergency fodder stores. By the late 1990s, responsibility, but no funds, had been shifted from central government to the provincial authorities; there are still nominal stores in all *aimags*, but none are effectively operational.⁷ As a result, there are no realistic emergency fodder provisions, making snow disasters much more dangerous.

Although reference is made to other types of risk and uncertainty in this report, we are mainly concerned with *zud* and related climatic phenomena, since *zud* remains the most dangerous risk, most work has been done on this, and *zud* plans and strategies are most advanced. Many of the principles of *zud* management are similar to those needed to manage other risks and uncertainties.

⁷ *Aimags* is the main unit of territorial governance, normally translated ‘province’.

The risk cycle

Risk develops in partially predictable patterns and sequences. Pastoral risk management is a family of four main tasks. Each has different actors and characteristic activities.

Risk Reduction and prevention

Risk reduction and risk prevention are the set of long term strategies elaborated by herders and government which reduce vulnerability. They include: institutional development, including new government structures and herder organisations to encourage collective action on risk management; a land tenure framework that encourages conservative pasture use; support for seasonal pasture allocation and creation of emergency grazing reserves; new financial institutions; development of risk-reducing herd management techniques; market development; development of long-term weather forecasting; training.

Risk Mitigation

Risk mitigation and contingency planning is the medium term set of activities designed to prepare the herding economy for stress periods such as summer drought or winter *zud*, and for sudden shocks. Activities include winter preparation by herders; support to fodder markets and strategic fodder reserves; better co-ordination of key risk actors at provincial and lower administrative levels; development of early warning and rapid reaction systems, and better risk forecasting. Contingency planning includes the preparation of 'shelf projects,' or the activities that will be triggered by warning of a deteriorating situation.

Preparedness for Response and Reacting to Disaster

Risk reaction is the set of activities triggered by warning of an impending disaster, or by the disaster itself. Key tasks at this stage include coordinated management, measures to facilitate herder mobility and access to emergency grazing reserves, the coordination of the emergency services, and perhaps food distribution. In this report we have put the preparedness for response and the reacting to disaster together because the latter have to be planned and organised in detail as a part of risk planning activities.

Recovering from Disaster

Disaster recovery is the medium term set of rehabilitation activities designed to help households recover their livelihood strategies. Recovery is important, since until household economies have recovered they remain especially vulnerable to new risks. Activities may include restocking through credit and creating alternative livelihoods for those made destitute but who do not want to return to full-time pastoralism.

Level of Risk Analysis

Economic analysis of risk and uncertainty generally focuses on household behaviour, and on individual household estimates of the probability of an event such as *zud* having a significant impact on its behaviour. However households do not generally make such decisions independently of wider circles of friends and acquaintances: immediate kin, members of the same camp, winter-spring grazing unit, or wider informal neighbourhood; often more distant urban-based kin and friends are also involved. Risk management is thus a social mechanism as well as a more restricted individual decision-making process. This report looks at the institutional mechanisms involved in risk management, as a way both of understanding household behaviour, and as a pointer towards more effective government policies.

DEVELOPMENT OF PASTORAL RISK MANAGEMENT IN MONGOLIA

A concern for pastoral risk management emerged in the mid-1990s as a direct result of the liberalisation of the Mongolian economy. Previously the state had carried the main responsibilities for risk management and for rehabilitation of herders impoverished by natural calamities. With a liberalized economy, many of these responsibilities passed from the state to individuals and small voluntary organisations.

The latter were not prepared for the task. Heavy losses were caused by the *zuds* of the mid-1990s, which created a new category of poor herders with little prospect of returning to productive pastoral employment. Within the framework of its national poverty alleviation programme (NPAP), the government of Mongolia developed a strategy for responding to some of the consequences of impoverishment, mainly in towns, but did not have the experience or the resources to put this into effect, especially in the countryside. There was no experience of pastoral risk management in Mongolia or other central Asian countries to learn from. In an attempt to meet this need, FAO/TCP initiated action research in Arkhangai *aimag* in 1995 with the aim of identifying and testing the main range management components to be implemented by a proposed IFAD poverty alleviation programme. IFAD pioneered several of the risk management proposals developed under the FAO/TCP project, and extended this work geographically in a second phase. FAO/TCP expanded its own work in a second project from 1999-2003, this time with the objective of assisting the World Bank to design a large scale sustainable rural livelihood project which focused principally on better management of pastoral risk.

In 2003 UNDP developed a sustainable grassland management project, which incorporated many of the same risk management activities. Within its Gobi Initiative, USAID developed its own approach to risk management, with emphasis on more efficient marketing. Several NGOs have smaller programmes with elements of risk management.

In summary, the main externally-funded initiatives in the field of pastoral risk management in Mongolia during this period, adopting elements of the proposed risk management agenda were:

FAO/TCP

- FAO/TCP/4553 '*Rural Development in Pastoral Areas, Arkhangai province*' (1995-7).
- FAO/TCP/0066 '*Pastoral Risk Management Strategy*' (1999-2003).

The conclusions of these two projects are outlined below.

IFAD

- IFAD '*Rural Poverty Alleviation Programme*' phases 1 and 2. The project worked from 1996 in Arkhangai and Khuvsgul, extending in phase 2 (renamed the *Rural Poverty Reduction Programme*) to Bulgan and Khentii. At first the project emphasized restocking poor households and the diversification of the rural economy into vegetable growing and small-scale income generation activities, but broadened its remit in the second phase to include rangeland management, rodent control, institutional development, water supply, hay production, better veterinary care, improved animal breeding, micro-credit, and a *zud* emergency fund.

World Bank

- World Bank, *Household Livelihood Security Project*. The first four year phase of a 12 year programme supporting the government's poverty alleviation plan in rural areas is now complete and the second stage has been appraised.⁸ It was intended that the bulk of project investments in the first stage would concentrate on the early stages of the risk cycle (risk avoidance and risk preparation – see next section) in recognition of the fact that significant government and donor resources are available for emergency response and rehabilitation activities. It is judged that the first phase was very successful, and the main activities will be scaled up to cover all *sums* in the country in the second stage. In addition to project management, the three main components are:
 - Pastoral risk management.
 - Microfinance.
 - Community initiatives fund.

⁸ For first stage, see World Bank, *Household Livelihood Support Project, Project Appraisal Document*. May 15, 2002. For second stage see World Bank, *Project Information Document (PID), Appraisal stage*. March 2007.

The objective of the *pastoral risk management component* is to develop an integrated strategy to reduce herder covariant risk, with main emphasis on preparedness. There are now four sub-components:

- Risk forecasting and contingency planning, including an early warning system and preparation of locally-prepared rapid reaction plans.
- Improved pasture use through development of community-based management plans; including creation and rehabilitation of emergency grazing reserves.
- Demonstrating good practice in livelihood improvement.
- Institutionalizing pastoral risk management.

The *micro-finance outreach component* is aimed at providing financial services to poor and vulnerable rural households. It includes a wholesale lending facility to accredited microfinance institutions for on-lending to the rural poor to enable them to diversify livelihood sources and rural incomes; and a programme to strengthen revolving loan funds created under the national poverty alleviation programme.

An *index insurance scheme* was originally included in the microfinance component but was later taken out of the project itself and funded in parallel through Japanese aid. Its aim is to develop a risk index and index insurance using objective third-party verifiable indicators based on historical data at *sum* level.⁹ Indemnities under the scheme will be triggered once the index exceeded the trigger level, irrespective of individual loss.

The third component is a *community initiatives fund* to help create local infrastructure and improve social services, responding to needs identified by *sum* and *bag* inhabitants.¹⁰

UNDP

- UNDP (MON/02/301) Sustainable *grassland management project*. Implemented 2002-6; a follow-up project is planned. This project was designed with a similar approach to risk as the others listed, and was also based on the work of FAO/TCP on risk management.

PASTORAL RISK MANAGEMENT AGENDA AND LESSONS LEARNED

The FAO/TCP 4553 project identified a broad pastoral risk management agenda; this was deepened and extended under FAO/TCP 0066 and by the work of government and other agencies especially IFAD, the World Bank and UNDP. There has been general agreement among the chief actors, including government, on the main components of this pastoral risk management agenda, although agencies have chosen their own priorities and have sometimes interpreted components in their own ways.

⁹ *Sum*, a smaller unit of territorial administration normally translated as 'district'.

¹⁰ *Bag* is the smallest unit of administration, technically a population rather than a geographic area.

Many policy areas are relevant to pastoral risk management. The following, sorted by task in the risk cycle, have been prominent in government and agency programmes and are likely to have greatest impact. In some cases (for example, restocking) there are several years of experience and from which lessons can be drawn; in others (for example, index insurance) activities have only just started, and it is too early to draw useful lessons. In a few cases there has so far been little or no action on the FAO/TCP agenda items.

Issue 1: Strengthen Risk Reduction and Prevention

A key task is to reduce the long term vulnerability of herders. Many measures can contribute to this.

1.1 Pasture Tenure Security

Uncertain pasture tenure is at the heart of the risks facing herders. Better pasture management can only happen with better designed and more strictly enforced tenure rules. Both FAO/TCP projects made recommendations about tenure security, especially in the all-important winter-spring pastures.

Current weak and contested tenure rules mean that herders do not have adequate incentives to use pastures in sustainable ways. This leads in places to increasing anarchy of use, overstocking, poor distribution of grazing pressure with overgrazing in some places and undergrazing elsewhere, pasture degradation, and greater herder vulnerability to natural risks.

Substantial progress has been made on these issues.¹¹ Pasture leases (normally referred to as ‘possession certificates’) based on land law article 52.2 are now widely accepted within local and central government as a component of risk management and leases are being given out in many areas. Leases are given only to groups, not to individuals. (Camp site leases are the only individual form of possession.) Similar provisions govern the leasing of hayfields. *Sum* governors are responsible, based on proposals received from the *bag khural*, for allocating winter-spring pastures to herders’ associations and groups.¹² These allocations are intended to recognise customary tenure. The *sum khural*, through the governor, and with advice from the land office, has some management powers. It can fix herd size limits for winter pastures within a range of 200 to 1,000 head, and can set and impose grazing fees.

To test the land law, the Centre for Policy Research (CPR) updated the possession certificates for winter and spring camp sites in all *sums* of eight *aimags*. In June 2006 more than half of a total of nearly 40,000 winter and spring camps were issued with new possession certificates. In addition, long-term contracts for winter-spring pastures were negotiated for 160 herder groups.

¹¹ CPR, *Final Report of the Pastureland Demonstration Area project*. World Bank, 2006.

¹² *Khural* is the representative assembly at *aimag*, *sum* and *bag* levels.

An assessment was carried out in seven of the project *aimags* later in 2006. Herder groups in all the *aimags* had signed grassland possession contracts with *sum* governments. In Tuv *aimag*, under these provisions, around 300 herder groups had been established, and had received possession certificates for winter-spring pastures, and their members had been allocated rights to campsites.

The assessment showed that herders recognise that possession certificates deliver some protection against ‘free-riding’, overstocking and degradation of pastures, and theoretically make it possible to adjust grazing pressure to pasture carrying capacity. As a result there is increasing willingness on the part of herders to take out possession certificates for pastures and hayfields, although the legal environment is still not fully satisfactory.

Herders questioned had a positive view of possession certificates. They commented that long-term pasture contracts:

- Encourage herders to respect each other’s grazing rights, i.e. to limit free-riding.
- Mobilize herders to take better care of pastures and not exceed the carrying capacity.
- Make it possible for local government to set and enforce agreed seasonal movement rules and reduce unsanctioned or out-of-season grazing and trespass.
- Give herders an incentive to settle in under-used and unused pastures.
- Encourage herders to adopt herd genetic improvements, and better management of key resources for haymaking and cropping.
- Oblige herders to negotiate and implement long-term group contracts for pasture use, which provides an excellent way for herders to learn more about how to cooperate and about the advantages of cooperation in resource management and in business.

There are difficulties however. UNDP reports that pasture tenure rights secured through the standard local government procedures outlined above do not give herders adequate protection against mining or industrial development. This arises because mining exploration and exploitation licences are delivered by *aimag* governors without consultation or negotiation with *sum* or *bag* authorities about pasture tenure certificates which may have already been issued.

In giving some security of tenure to herders, the land law has shown itself to be an important instrument for risk management, and herders clearly welcome it. But the law remains ambiguous over key issues concerning tenure security, and the issue of conflict with mining rights.

1.2 Pasture Management

The FAO/TCP projects identified particular features of pasture and natural resource management as essential to risk reduction over the long term. As discussed in the

previous section, insecure and weak tenure means that herders have little encouragement to use pastures in sustainable ways. Insecure tenure leads to conflicts over grazing. Many wells have broken down because of lack of maintenance and traditional water management has collapsed in many places, leaving herders more vulnerable to climatic risk. The FAO/TCP projects identified an urgent need for up-to-date pasture and water mapping, for better water management, for the preparation of manuals about pasture management, and for building herder capacity to manage natural resources.

The World Bank project is taking forward these recommendations.¹³ It concluded that participatory pasture-land management plans (which cover what is to be done in serious risk episodes such as *zud*) and their regular updating is the right approach, and provides a broader approach to risk planning at *sum* level. It has assisted herder groups and *sum/bag* officials to develop pasture management plans for 16 pilot *sums* in the first project year and to develop training materials and a training strategy to draft similar plans in the remaining eight core *aimags* over the following two years. Plans include identification and mapping of seasonal grazing areas, scheduling of pasture rotation, promotion of group-based tenure options under the land law (i.e. possession certificates), arrangements for reciprocal rights of access with other communities or herder groups during risk episodes, procedures for conflict management, developing ecological methods of rodent control, and participatory monitoring of range vegetation condition. These activities will be scaled up in phase II. To achieve lasting results, the Bank concluded that investment finance was needed for well rehabilitation, creation of fodder reserves, and other forms of action to support risk management and should be included in the *sum* government's annual planning and budgeting process. Phase I also rehabilitated around 400 wells in areas with high quality but currently underused pasture. Phase II of the project will mainstream the approval of pasture land management into regular *sum* level planning and decision making.

Although there have been some modest successes in improving pasture management so far, problems remain for herder groups wishing to set up and implement a pasture management scheme:

- Many herders continue to enlarge their herds in response to increased market demand.
- In addition to larger herds, processes such as climate change, and industrial, mining and processing activities, are putting heavier pressure on the pastures.
- Local and central government, and herder groups themselves, have failed to control grazing pressure and limit herd size to carrying capacity.

Attempts to meet the objectives listed above have only just started. More tenure security makes possible new approaches to pasture and water management. Recent experience suggests that herder group-based management, with significant participation by local government, is the most effective way to proceed. CPR has developed a methodology for pasture land use planning based on mapping undertaken largely by herders themselves;

¹³ World Bank, *Household Livelihood Support Project ...*

this can be incorporated into the general methodology for preparing annual *sum* land management plans. At the lowest level, with the help of herders, seasonal pasture use maps of *bag* and local neighbourhood grazing are drawn, and manuals have been written about use of such pastures, as well as on legal issues and risk management procedures.

The draft methodology has been approved by the Agency for Land Relations, Geodesy and Cartography¹⁴ for use in all *sums* starting in 2007. The methodology ensures participation of herders in planning and implementation, is flexible and able to respond to the highly variable natural environment, and ensures linkages between various components and activities.

Pasture use maps and pasture management plans, prepared in close consultation with herders, describe and make recommendations on the following activities:

- Identification and mapping of seasonal grazing areas.
- Scheduling of grazing rotation.
- Application by the group for possession rights to winter-spring grazing areas.
- Negotiating reciprocal access with other groups.
- Creating and managing fodder stocks.
- Reestablishment of inter-*sum* grazing reserves.
- Conflict management.
- Joint rodent control.
- Participatory monitoring of range vegetation condition.

CPR evaluated the success of these activities.¹⁵ The evaluation showed mixed results. The preparation and use of pasture use maps, instructions and manuals has been irregular, and depends on the herders' commitment and their financial capacity.

More than half the herders questioned said that the maps and other documents and materials were useful for setting rules for *bag* and group-based seasonal grazing management. A quarter thought they helped pasture protection and rehabilitation and pastoral risk planning, and around 20 percent thought they contributed to settling pasture use conflicts. Only around 15 percent of herders thought this approach was useful for estimating and adjusting to carrying capacity at *sum*, *bag* and herder group levels or for establishing *otor* and emergency grazing reserves.¹⁶

Local officials and professional had similar views. Nearly half considered the instructions, manuals, and maps on land legislation and pasture management to be appropriate for training and public awareness promotion; around 30 percent considered them helpful for developing seasonal grazing management, 22 percent for pasture improvement and preventing pasture degradation, and 24 percent for establishing *otor*

¹⁴ Resolution No. 131 dated 30 June 2006

¹⁵ CPR, *Final Report of the Pastureland Demonstration ...*

¹⁶ *Otor*: rapid movement of the herd, sometimes over long distance, to escape a risk or find new pasture.

and emergency reserves and enforcing local rules for passing through the pastures of other groups.

Poorer households do not participate as much as others in these pasture mapping and management activities. There is a need for communities to support and encourage poor households to participate fully in group activities, and insist on equal access to pastures and other natural resources as members of herder groups.

Pasture management activities are underway in many *sums*. However, they are not yet considered to be a priority by either local government or herders. Herder understanding of mapping and the needs of management varies greatly from place to place.

Regular training and extension activities, led by *sum/bag* officials and professionals, are needed for successful implementation of the land law, and to build the capacity of herders to use the maps and other materials effectively. Pasture mapping, and preparation and use of reference materials will become an integral part of *sum* land management planning.

UNDP's experience is broadly similar. Sustainable pasture management in the UNDP projects has been effective in *sums* where UNDP is working and in such *sums* pasture quality is improving. But it is thought that pasture may still be deteriorating on a national scale. Many sustainable pasture management activities have good demonstration value and need to be replicated and expanded at the national level. Engineered wells have more than doubled in *sums* where UNDP is working, and the tenure possession certificate system is working well.

1.3 Feed Production and Storage, Fodder Reserves, Emergency Grazing Reserves

The FAO/TCP recommendations put emphasis on fodder production, haymaking and storage, and on the development of a market in fodder.

Fodder preparation by households is an important component of winter preparation. Households have started to make their own hay again, but on a small scale. Key issues are, first, the allocation and security of tenure of hayfields to households, and second, access to the appropriate technology - especially animal powered hay mowers and rakes.

Little reliable evidence is available concerning the extent of current haymaking. Allocation of hayfield certificates has risen, and it seems likely that more hay is being made by herders. Herder haymaking is common wherever there is enough natural vegetation to make hay in places convenient for herders. Because of high transport costs, hay is only really useful if it can be made and stored close to where it will be required in winter and spring.

Sum reports indicate that establishing hay and fodder reserves and emergency fodder funds at *sum/bag* and group level has not been popular because of low hay yields. The overwhelming proportion of annual hay and fodder production is by herders, who individually prepare hay and hand-made feed for consumption during the year. No *sum* or *bag* fodder funds have been established with financial support from the *sum* authorities.

The conclusion is that annual feed production and storage at *sum* level is still largely if not entirely the result of work by individual herders and herder groups, who have so far not given it high priority.

The World Bank includes hay and fodder enterprise development in its programme. It will test and demonstrate business models for hay and fodder enterprise development with a range of technologies, using mechanised, draft and hand power.¹⁷ In general, suitable mechanised tools are not available.

Little progress has been made on wider issues of strategic or emergency animal feed reserves. In theory government holds strategic fodder reserves in every *aimag*, the remnants of the previous State Emergency Fodder Fund. In practice these seem not to be operational. In order to fill this gap, the Bank project supports *aimag* and *sum*-level fodder reserves, by exploring whether there are economic models which recover their operating and overhead costs both in bad and good years. The project constructs or rehabilitates storage facilities. Government will finance the fodder stocks under an existing programme.

In snow disasters and severe droughts, the ability of herders to move their animals away from the crisis is even more important than at other times, but is often constrained by a lack of accessible pasture to which they have right of access. Emergency grazing reserves are a critical factor at such times for the survival of the animals.

The FAO/TCP projects concluded that substantial under-grazed or normally ungrazed pasture reserves still exist which could be established as inter-*sum* and inter-*aimag* emergency *otor* reserves. They need to be mapped, and infrastructure (including water points and shelters) and management rules established. Some progress has been made on this by *sum* risk management committees. The World Bank project is rehabilitating two inter-*aimag* grazing reserves, by repairing or constructing fodder storage sheds, repairing around eight engineered wells in the grazing reserves, and developing management plans for these facilities. The project also supports the re-establishment of inter-*sum* grazing reserves by financing the rehabilitation of engineered wells.

1.4 Finance, Micro-credit, Insurance

One of the principal recommendations of FAO/TCP was that micro-finance could play an important role in pastoral risk reduction if appropriate and well-adapted financial products were available to herders.

Savings and credit can smooth consumption, help herders replace livestock after drought losses, allow productive herding enterprises to expand, diversify household income and reduce vulnerability to future shocks. Insurance could play a role in protecting herders from such losses. But until recently herders have benefited little from micro-finance programmes, mainly because of the difficulties lenders perceived in targeting such

¹⁷ World Bank, *Household Livelihood Support Project ...*

products to herders. FAO/TCP made a strong recommendation that micro-finance programmes for risk management should be designed and piloted as soon as possible.

Herder access to credit has improved greatly since these recommendations, mainly as a result of the extension of normal banking activity to the countryside. The Agricultural Bank now lends to herders and interest rates have fallen under competitive pressure. Pioneer rural credit agencies such as XAS have become important financial institutions. The quality of rural portfolios is high, the volume of lending is up, and interest rates are low. The first phase of the World Bank livelihoods project concluded that it was essential that there should be no subsidies in credit programmes.

More unusual is the situation of insurance. Classic insurance has a long history in Mongolia, largely through state insurance companies. In the original restocking exercises carried out by FAO and IFAD in the late 1990s, it was a condition that restocked households insured their animals against loss. Such individual animal loss insurance was not satisfactory in practice, due to high transaction costs and the danger of moral hazard.

The World Bank is experimenting with a different insurance concept for herders.¹⁸ Index insurance is based on the premise that the problems facing individual animal insurance – high transaction costs and moral hazard – can be overcome by insurance against the occurrence of risky events such as low rainfall or high levels of animal mortality in general, which can be easily and objectively verified and for which reliable long term data series are available making possible a reliable actuarial calculation of risk. The World Bank index insurance project, which runs in parallel with the Bank's household livelihood security project, combines:

- *Self-insurance*: herders take responsibility for small losses that do not affect the viability of their business.
- *Private insurance* for larger losses, through the purchase of *insurance index-linked to the historical record* of livestock mortality (other potential indices such as rainfall and primary plant production having been investigated and rejected).
- *Catastrophe insurance*, under which major losses are underwritten by government, initially with World Bank back-stopping.

The original feature of this approach is that the index insurance is not directly linked to individual loss of animals by herdsman, nor even to the occurrence of major hazards such as *zud*. Instead it depends on levels of livestock mortality, at *sum* level, as measured by the livestock service. The threshold levels at which payments are triggered are based on the analysis of 33 years of adult animal mortality data collected by the Ministry of Agriculture, and which are generally accepted as accurate. Payments are made to all who have bought insurance, irrespective of their actual losses. Unlike individual animal insurance, index insurance provides an incentive for good herd management, since a good

¹⁸ O. Mahul, J. Skees, 2005, *Mongolia – Index-Based Livestock Insurance Project (Project Information Document – Appraisal Stage)*. Washington: World Bank, through Microfinance Gateway.

manager, with less than average losses, still benefits equally from a general pay-out triggered by high levels of loss in his *sum*.

Index insurance is being piloted in three *aimags*. Two types of insurance product have been introduced:

- The *Base Insurance Product* (BIP) is the commercial insurance product, sold by insurance companies. Herders buy insurance based on the value of their animals as reported in the annual animal census, and the relative risk in their *sum*. They can insure between 25 and 100 percent of the estimated value of their animals. They receive a payment when animal mortality rates in their *sum* exceed the agreed trigger percentage, initially set at 7 percent, but open to modification in the light of experience. When mortality rates reach a defined ‘exhaustion point’ (initially set at 25-30 percent) responsibility is shifted from BIP and the private companies to the government through the ‘disaster response product.’ BIP is sold at full commercial cost.
- The *Disaster Response Product* (DRP) is a social safety net provided and funded by government with World Bank support. It kicks in when animal mortality rates exceed the BIP exhaustion threshold. Herders who buy BIP are automatically covered for DRP at no extra cost. DRP pays out the full value of the animals.

Because the risk of catastrophic *zud* or other disaster remains high and significantly co-variant, a further measure is included in the system: the Livestock Insurance Indemnity Pool. This is a syndicate pooling arrangement for insurance companies, under which herder premiums are deposited into LIIP until the settlement period. Thus indemnities are fully protected and the domestic insurance market is protected from extreme livestock losses. Participants share underwriting gains and losses caused by regionally localised events. It is hoped that this pooling will be the first step towards a significant level of reinsurance, or much wider sharing of the underlying risks.

Index insurance runs on a seasonal cycle. Sales take place in the summer and autumn. The first cycle started in April 2006, and sales have been much greater than expected. Herders have been the main clients, and the sales process has gone smoothly. There may however be a danger that if there are a few good winters in a row, herders will decide insurance is not worth it.

Index insurance for pastoral livestock is an innovative experiment which deserves to be monitored closely. If successful, it will have lessons for many other pastoral situations.

Task 2: Risk Mitigation and Preparedness for Response

2.1 Winter preparation and Contingency Planning

The FAO/TCP projects made a series of recommendations about winter preparation.

Winter preparation is a key set of activities already undertaken to some degree by herders. They include animal fattening during the short summer, accustoming animals progressively to winter cold by a regime of reduced feeding and watering, together with mineral supplements and exercise, grazing management to maintain their fatness in the cold season; decisions about how many animals can be carried through winter and early spring, and which animals should be sold or slaughtered in autumn, preparation and stocking of hay and other animal feed, and reinforcement of winter shelters and other enclosures.

Fodder preparation, haymaking and storage by households are important components of winter preparation which were considered in the previous section.

Winter camp preparation. Warm and well maintained winter shelters, corrals and other facilities for keeping adult and new born animals are decisive in helping herders cope with natural disasters like *zud*, freezing rain, wind and predators. Such pastoral infrastructure is now often in a poor state and needs urgent attention.

Otor movements. *Otor* is a critical part of winter preparation, and areas are available throughout Mongolia for herders to take their animals on *otor*. Action needs to be undertaken by herder groups and the local administration to re-establish *otor* schedules and rules, with the full support of *sums* and *aimags*.

FAO/TCP recommended that *winter preparedness reports and local contingency plans* should be prepared, based on comprehensive monitoring by herder groups, *bags*, *sums* and *aimags*, of a set of key indicators including, at the household level: livestock condition and health, state of pastures, autumn *otor* movements, threat of grazing trespass on winter-spring pastures, household feed reserves, state of household winter preparations, likely household winter offtake of livestock, potential threats facing herders, and the state of preparedness of herders and the local administration to face such threats. Other relevant information would be added at *bag*, *sum* and *aimag* level. The winter preparedness reports would be prepared at *bag* level initially and completed and submitted upwards to the Ministry of Food and Agriculture according to a strict annual schedule between September and November. The preparedness reports would be accompanied by a contingency plan setting out what actions would be undertaken by herders and by *sum* and *aimag* staff in the event of a bad winter.

Winter preparedness should be supported from the *sum* level. FAO/TCP recommended that a *sum* winter preparedness and risk forecasting group should be created, made up of officials from the ministries responsible and three experienced herders appointed by the *sum khural*. It should report to the *sum* standing emergency committee. A similar

working group should be set up at *aimag* level, including also three experienced herders appointed by the *aimag khural*.

These proposals have been developed in detail and taken forward by CPR on behalf of the World Bank.¹⁹ Contingency plans are being developed in 16 *sums*, with the intention of extending the work to the eight core project *aimags* over the life of the project. The UNDP sustainable grassland project is developing similar mechanisms.

The original FAO/TCP intention had been that risk planning should be closely reacted to, but carried out separately from other activities, whether pasture planning or winter preparedness reporting. This has changed in practice. At present contingency plans are drawn up and budgeted as a normal part of pasture planning. Pasture and risk-related activities are planned in outline in advance and the plan is reviewed during the course of the year if seasonal conditions warrant a review. The contingency plan made in advance can then be engaged if conditions warrant it.

Sum risk management committees (SRMC) have been set up to support existing formal bodies responsible for pastoral risk management. Reports from 127 SRMCs from seven *aimags* suggest that they are actively building herders' capacities to manage pastoral risks, including better pasture management and herder group development. SRMCs have become accepted institutions responsible for mobilizing herder organizations at *sum* level in pursuit of the risk management agenda. They are primarily responsible for preparation of local contingency plans. Some SRMCs are still weak, and their role is not yet understood clearly in some places, where they overlap with local formal institutions. This relationship needs to be clarified.

CPR has developed detailed guidelines for preparing an annual *sum* risk management plan. The guidelines were tested in two pilot *sums* using the methodologies for annual *sum* pasture management planning. They are the source of the content of the output contracts of *sum* level personnel discussed below.²⁰

The guidelines contain four sections:

- Measures to be adopted by herders and the administration under normal or favourable weather conditions.
- Drought and *zud* early warning.
- Measures to be implemented at each major risk management stage during *zud* emergencies.
- Measures to be implemented at each major risk management stage during drought emergencies.

Each section has the following parts:

¹⁹ CPR, *Community Mobilisation for Rangeland Management. Final Report*. Ulaanbaatar, July 2006.

²⁰ CPR, *Community Mobilisation for Rangeland Management ... Appendix 5*.

- Fodder stocks and their replenishment.
- Improvement of livestock breed and productive quality.
- *Otor* and emergency movements.
- Support and assistance to poor herding households.

The full guidelines for the preparation of contingency plans are in Appendix 1.

The adoption of the principle of *sum* contingency plans is an important step forward in risk management, and will make it possible to coordinate preparation for and reaction to major risks. The priority now is to extend the risk planning system to other areas, to experiment, monitor and evaluate the risk planning process, and refine the plans so they become a routine activity of local government and herders, working together.

2.3 Early Warning and Rapid Response

FAO/TCP recommended that there should be a better institutional base at provincial level to monitor potential emergencies, and provide early warning to herders and to provincial authorities. As a part of winter preparation, available information on potential risk during the forthcoming winter, including seasonal weather forecasts, estimates of over-winter pasture carrying capacity, estimates of household and local authority fodder reserves and estimates of the prospects of adjusting livestock numbers to available feed, should be consolidated into a pastoral risk early warning forecast in September each year, contained in the winter preparedness report and contingency plan. Forecasting would be based on a general qualitative assessment of key indicators, made by *sum* working groups.

Based on the pastoral risk forecast and early warning, it was proposed that a system of *warning stages* should be introduced at *sum* level. The warning stages are a standardised way of summing up information from many sources into a single statement about the vulnerability of a *sum* to disaster in the forthcoming winter, and the actions to be taken.

Weather Forecasting

The World Bank project is taking forward this recommendation. In the second phase of the Sustainable Livelihood project, it will support the development of a more detailed weather forecasting system within the Institute of Hydro-Meteorology and the Research Institute of Animal Husbandry. It is improving the dissemination of forecast information to herders, and improving the use of forecasting information for rapid response.²¹

All *sums* still receive and disseminate weather forecasts in the traditional manner: the *sum* governor's office and *sum* meteorological station or watchmen (if indeed there is a weather station) receive information from the *aimag* and pass it on to *bag* governors and *bag* meetings. Copies of short and long-term weather forecasts are displayed on boards at the *sum* administration office. The National Broadcasting System, in particular

²¹ World Bank, *Project information Document (Appraisal Stage), Sustainable Livelihoods Project II*. March 2007.

Mongolian Radio, remains the main channel by which officials and herders in all *sums* receive daily and short/mid-term weather forecasts.

The National Agency for Meteorology, Hydrology and Environmental Monitoring is responsible for weather forecasts, early warning of unusual climatic events and natural disasters, and for estimating losses caused by natural disaster, as well as informing government about disastrous events and losses. It publishes monthly and 10-day agricultural weather forecasts, forecasts of pasture growth and pest infestation, dates for haymaking, 10-day reviews of summer weather and winter snow cover, predictions of pasture carrying capacity, and six monthly weather forecasts in March and August each year. The Agency has difficulties getting its forecasts to herders. *Bags* have been equipped with radio telephones for transmission of such information, but these have not proved effective.

CPR and the World Bank jointly produced a bulletin entitled *Long-term weather forecast review and early risk warning* and delivered it to *aimags* and *sums*. The bulletin was used by senior officials, but herders' use of it was disappointingly low. There has been no active and productive involvement of *sum* meteorological stations and local people in long-term weather forecasting.

The mismatch between the good weather forecasts already available and the actual use of such information by herders and officials suggests that costly weather information is not being properly used for managing local risks. However short term forecasts are commonly used by local administrations and herders.

Adjusting to Over-winter Carrying Capacity

The FAO/TCP reports proposed a method by which *sums* would, at the end of the summer growing season, estimate the over-winter carrying capacity of pastures, public and private feed reserves and the number of livestock present, and on this basis estimate whether there was enough total feed available to get the animals present through the winter-spring bottleneck. In the case where there was not, the reports suggested ways of bringing animals and feed into balance. It seems from the papers available that this method has not been adopted in the major risk management projects.

The proposed *sum* agricultural and land officers' output contracts discussed below include the responsibility for taking measures to reduce herds which exceed carrying capacity and risk causing overstocking on winter pastures. Little practical action has taken place yet in this respect. In particular there is still an urgent need for development of a widely accepted method to estimate carrying capacity.

Issue 3: Reviewing Options for Recovering from Disaster

Task 3 comes into play when a major disaster event has occurred, and the main attention shifts from warning and preparation to effective reaction by herders and government, following the contingency plans made in earlier stages, to repair pastoral livelihoods.

3.1 Restocking

The immediate requirement after a disaster in which large numbers of animals have been lost is for households which have the skills and commitment to return to pastoralism to restock themselves or to be restocked so they can resume a productive livelihood. Previous restocking mechanisms based in the moral economy did not survive the collectivisation of herding, since the collectives ensured that all herding households had enough animals for efficient production. With the privatisation of livestock production, loss of animals through *zud*, drought or other contingency is a short route into poverty for herders. Not all herders wish or have the skills to return to full time herding, but for those who do, effective measures to restock them are a key part of risk management.

Lessons of Restocking Programmes after 1999/2000 *zud*

Prior to the FAO/TCP projects there had been no organised restocking in Mongolia. The FAO/TCP 4553 Arkhangai project experimented on a small scale with restocking in Arkhangai in 1995/6 as a pilot for the much larger IFAD project which restocked many households. Other donors subsequently set up restocking schemes and in the aftermath of the 1999/2000 *zud*, restocking was scaled up to become a key national policy response to rural poverty.

These projects were, in chronological order:

- *FAO/TCP*, pilot in Arkhangai 1995/6.
- *IFAD. Rural Poverty Alleviation Programme*, started in Arkhangai in 1997, and Khuvsgul in 1999.
- *Save the Children through National Poverty Alleviation Programme*. Bayanulgi, Khuvsgul, Uvs, Sukhbaatar, Bayankhongor and Dornod in 1998.
- *Aimag authorities*. Several *aimag* governors started their own restocking projects in 1998 and 1999. These are poorly documented outside the *aimag* concerned.
- *World Bank through the National Poverty Alleviation Programme*. Carried out in 2000 in Bayankhongor, Dundgobi, Zavkhan, Ovorkhangai and Uvs.
- *Japanese newspaper 'Sankei'*. Carried out in 2000 in Zavkhan and Bayankhongor.
- *Gobialtai schemes*. Carried out in 2001-2 in Gobialtai by a combination of two international NGOs (Joint Christian Services and EDS), the *aimag* administration, share-herding arrangements between rich and poor herders, and help from relatives.

By 2002, over six thousand households in ten *aimags* had been restocked by donors using a variety of procedures. The system initially adopted by most schemes was similar, and

had the following characteristics: detailed household selection criteria, proof of herd management experience and commitment, transparent selection procedures, obligatory insurance of restocked animals in the first year, and some shared community responsibility for the outcome. Animals were repaid in cash or kind over several years at varying rates of interest. The use of these criteria seems to have slipped with time.

All these schemes have now stopped distributing animals, although credit repayment, sometimes in the form of live animals which are given on to other needy households, continues.

An initial evaluation of the FAO/TCP restocking was carried out in 2002.²² The first IFAD scheme was evaluated in 2005.²³ Together with lessons of later schemes reviewed here, the main conclusions were:

Need for caution. The cautions expressed in the FAO/TCP reports about the purpose and methodologies for restocking were not taken into account in the design of most of the restocking projects which followed. Restocking was seen as politically popular, subject to considerable political pressure, and administratively simple. The procedures and safeguards of the early projects were largely ignored in later projects, with negative consequences. Unsurprisingly there has been a backlash against restocking. This potentially removes an important tool from the kit of measures available to deal with pastoral risk.

Restocking can work. Properly carried out, restocking can be a feasible and cost-effective strategy for reducing rural poverty. Restocking has a significant direct impact on household income, welfare and security, and on intangible but important things like self-respect, self-reliance and independence. It enables households to capture economies of scale in herding, and so can raise labour productivity. It can improve the quality of pasture management. The local multiplier effects are less clear: initially at least, it seems likely that some of the increased productivity is used for greater household consumption, but in the longer term restocking is likely to increase production and marketing of a range of livestock and other products.

But restocking is not a panacea. However, restocking is not the answer to everything. There are many situations where restocking does not provide the solution, most notably where people lack the commitment, skills, labour and social capital to make a success as herders, however many animals they may acquire. For restocking to be a success, it must be carefully targeted at households with the necessary qualifications. Schemes also demonstrated shortcomings, including a lack of national agreed rules, standards and procedures, little adaptation to local conditions, little attention to risk management, and little learning from past experience. Projects must plan for the worst case: further *zuds* during the period that household herds are recovering, but have not yet done so fully.

²² B. Erdenebaatar, nd, *Review of Restocking in Mongolia: Reality and Lessons*. Ms; Jeremy Swift and B. Erdenebaatar, 2002, *Poverty Reduction in Rural Mongolia: Restocking Poor Pastoralists*. FAO.

²³ Roger Blench, 2005, *Working Paper: Arkhangai and Khuvsgul aimags*. IFAD.

The evidence is that restocking can be an effective measure, on quite a small scale, provided stringent household selection criteria are applied. There is no reason why herders with an excellent reputation, adequate labour and social capital, but who have lost all their animals as a result of natural disaster, should not be restocked. But as a large-scale response to disaster, where small numbers of animals are given to large numbers of households, with little selectivity or monitoring, it is doomed to failure.

Restocking needs to target beneficiaries carefully. The success of restocking depends in part on careful targeting of beneficiary households. The original criteria worked well: residence away from urban centres, membership of a strong *khot ail* (in some experiments), labour adequacy, a minimum existing herd, and proven herd management skills.²⁴ Targeting to women-headed households, where it has been attempted, seems to have worked well but needs more attention in future. The FAO procedure, which required *khot ails* to take some joint responsibility for the restocked household, its management of the animals, and repayments, provided additional support to the restocked household. The best way to apply these selection criteria is through a close involvement of the restocked household's peers, especially through his or her *khot ail* leader or senior members, and through the *bag* leader and *khural*. Strict selection criteria should be maintained in future schemes.

Size of restocking package. The original rule of loaning on average enough animals to households, assuming an existing herd of 10-20 *bod*, to bring their total herd up to around 25 *bod* (judged to provide a small margin above the estimated minimum viable herd), remains appropriate.²⁵ It is important to monitor the ability of restocked households with herds of this size, close to the vulnerability threshold, to maintain repayment schedules without undermining their own economic viability. Methods should be devised to allow beneficiary households a role in the choice of the actual animals with which they are restocked, to avoid households being given inferior animals.

Credit and repayment. Credit conditions, repayment schedules and interest rates vary widely between schemes. In the long term this is confusing for herders. Although different ecological and risk conditions may lead to different circumstances in different places, there should be a homogenous national system, tied to national policy on micro-credit, through which loan conditions and interest rates are fixed. If restocking is to become a permanent and institutionalised response to pastoral poverty, interest rates will have to approximate to real interest rates in the Mongolian economy, and the full cost of the restocking operation will have to be covered. Peer pressure, especially from *khot ail* and *bag* leaders has played an important role in ensuring repayments on schedule. This role should be strengthened in future schemes. At the time of the evaluation of the original FAO/TCP restocking exercise, repayment rates had been high, although they were declining.

²⁴ *Khot ail*, herding camp made normally from two to ten or more households.

²⁵ *Bod* is a standard (cattle-based) animal unit: 1 *bod* = 1 horse, or 1 bovine, or 0.8 camels, or 8 sheep, or 8 goats. The definition of *bod* is not standardized and may vary slightly by user. Mongolians also use a sheep-based unit, *bog*.

Insurance. Insurance of restocked livestock against climatic and other risks is essential. The index insurance scheme being promoted by the World Bank might provide the answer.

Training. Training beneficiary households in herd management, animal health, livestock product marketing, and especially in financial matters and loan management, is important, as is training of project and government staff at *aimag* and *sum* level.

Cost per beneficiary. Costs per beneficiary in the FAO, SCF and IFAD schemes (\$4-500 per beneficiary household, excluding most administrative costs) were satisfactory compared to alternative ways of generating livelihoods. One scheme, set up after a disastrous winter when animal prices were high, and targeting households which had lost almost all their animals, had costs of \$800 per household. A poorly targeted and inadequately managed scheme had much higher costs (\$1,150-1,400 per household) and has apparently had high losses. Cost per beneficiary is an important measure of any restocking scheme's viability, and should be calculated in any proposals for new restocking projects.

Improving livestock productivity. Restocking creates further possibilities for enhancement of household herd productivity, but little advantage has been taken so far of these potentials. Restocking should be one part of a package of wider measures for improving livestock productivity.

Improving pasture management. Restocking also creates important possibilities for pasture co-management, by making possible a negotiation between the district and provincial authorities and the restocked household about where they will graze their animals. *Sum* authorities have adequate powers under existing legislation to follow restocking by attributing legal rights to underused pastures to groups containing restocked households.

Monitoring and evaluation. Monitoring and evaluation procedures were inadequate in most cases. Even where detailed data were recorded, little analysis was made, and the results were not generally used to modify procedures. This was particularly true of the impact of restocking on herder livelihoods. Future monitoring systems should answer the key question about the impact of the scheme: "were livelihoods improved and made more sustainable?"

Future institutional models for restocking. Restocking schemes were managed through varying institutional structures, ranging from dedicated project units to existing local government structures. Most were funded by donors or NGOs. This model has had some success, as documented above, but is vulnerable. Special project units rarely survive the end of donor finance. The heavily administered system (with high transaction costs), characteristic of all current models, will not be sustainable once donor funding is withdrawn.

There are two main options. The first is to integrate restocking into an existing or new micro-credit or insurance operation through a bank or dedicated micro-credit unit, with individual households making arrangements to borrow what they need subject to credit worthiness like any other micro-credit borrower, or through an insurance system, perhaps the index insurance discussed above. The alternative would be to manage restocking through a civil society institution such as herders' associations which would serve as restocking managers. They would negotiate with micro-finance providers for an overall credit allocation for their association, or would take out index-linked insurance on behalf of their members, and would manage whatever specific schemes were agreed. The advantage of such a system would be low transaction costs, high peer pressure for good management and repayment, and herders themselves would learn financial management skills.

3.2 Creating Alternatives to Pastoralism

In most cases, restocking should exclude a significant portion of the rural poor, those with fewer than around 10 large animals, those without good herding skills or strong social networks. Alternative livelihood strategies need to be found for them. Vegetable growing was initially successful in the IFAD project, but it was feared that project withdrawal would undermine that. Further economic diversification is needed everywhere in the countryside. The experience of national poverty alleviation programme loans for income generation and local development, targeted at poor people, suggests viable alternatives to herding are available. Several present donor projects include elements of livelihood diversification, mainly either by making credit available for new activities, or by providing training and demonstration. So far little information is available on the degree to which these are successful in the longer term.

Issue 4: Institutionalising Risk Management

4.1 Institutionalising Risk Management Within Central Government

The FAO/TCP work drew attention to the important formal institutional issues surrounding risk management. Sustainability can only be achieved by making risk management activities a regular part of government responsibilities and of the daily activities of herders. FAO/TCP made detailed recommendations about the governance structures needed for effective risk management, and these proposals were further developed by later donor projects. The chief recommendation of the FAO/TCP projects was to build herder institutions and progressively enable them to take on more tasks in risk management. But there is also an important role for government. FAO/TCP drew attention to the need for new policies and new allocation of government responsibilities on risk management.

Progress has been made by both government and civil society in the institutionalisation of risk management, but plenty remains to be done. An evaluation of the current risk management structure in government pointed to several shortcomings:²⁶

- Continued lack of coordinated management between institutions; not much had happened in this respect since the FAO/TCP recommendations.
- Many important activities are not well incorporated into the formal civil service planning and budgeting system.
- Little participation by herders and local institutions on pastoral risk management;
- Lack of longer-term vision and planning.
- Significant mismatch between on the one hand numerous governmental programme objectives and on the other a chronic lack of capacity especially at local level. This mismatch means that all government programmes are started and the available budget is divided between them; the result is that no single programme has an adequate budget.
- Lack of sustainability.

Some of these shortcomings are discussed below.

Policy and Law

Based in part on the information and proposals in the two FAO/TCO risk management project reports, the government enacted an enabling policy on drought and *zud* in 2001.²⁷

The main provisions were:

- *Aimags* and the capital city to prepare plans for livestock protection from risk specific to local conditions.
- *Aimags*, *sums* and urban districts to create hay and fodder reserves.
- *Aimags* to survey the status of those who had lost all their animals in the recent *zuds* and the poor more generally, and devise measures to combat poverty including restocking.
- Government to mobilise domestic and international funds to support this programme.
- Improve communications to *sum* and *bag*; and improve road and rail networks, communications and electricity.
- Fully implement the veterinary and livestock breeding programmes.
- Launch a national campaign for better winter preparation and encourage more successful livestock over-wintering.
- Prepare a national pastoral risk management action plan.

The 2002 Land Law is generally helpful to the risk management agenda. It emphasises the need to maintain access for all herders to key resources, the protection of winter-

²⁶ CPR, *Institutional framework approach*. World Bank, 2006.

²⁷ Government decree no. 47 of 13 March 2001 and government decree no. 48 of 13 March 2001.

spring pastures from out-of-season grazing, and provides for joint use of such pastures mediated through *khot ail* camps. It provides for joint possession or leasing of such pastures, and creates some security of tenure.

Ministerial Responsibility and Coordination

Progress has been made by both government and civil society in the institutionalisation of risk management along the lines proposed, although plenty remains to be done. An evaluation of the current risk management structure in government pointed to several shortcomings.²⁸

- Continued lack of coordinated management between institutions; not much had happened in this respect since the FAO/TCP recommendations.
- Many important activities are not well incorporated into the formal civil service planning and budgeting system;
- Little participation by herders and local institutions on pastoral risk management;
- Lack of longer-term vision and planning;
- Significant mismatch between on the one hand numerous government programme objectives and on the other a chronic lack of capacity especially at local level. The budget is divided between all government programmes, with the result that none has an adequate budget;
- Lack of sustainability.

Some of these shortcomings are discussed below.

Risk in general, and *zud* in particular, are complex events which do not respect disciplinary boundaries and emphasise the need for better coordination between Ministries. FAO/TCP pointed to the urgent need to the need to clarify government responsibilities, to strengthen inter-ministerial coordination in general and the ability of the relevant ministries to deal with *zud* and other risks. Two aspects are especially important: managing pastures and managing emergencies.

Pasture management. Pasture management is still subject to more than one Ministry. Several government departments have responsibilities for land possession and management at national and provincial level. These include at national level the Ministry of Agriculture, the Ministry of Nature and Environment and other agencies, and at *aimag* level the Land Office, the Food and Agriculture Office, and others. This leads to potential confusion and overlap.

The MFA is the main line ministry in charge of long term risk planning and managing disaster in the livestock sector. It has a substantial programme in well building and rehabilitation, and in rodent control. It coordinates donor-funded projects. It protects livestock from sudden climatic hazard. It is responsible for coordinating and organising

²⁸ CPR, *Institutional framework approach*. World Bank, 2006.

inter-*aimag otor* and emergency movements. It also supervises the management of state and *aimag* emergency fodder reserves. MFA cannot avoid playing a leading role in pastoral risk management. However, within the ministry there are no staff or integrated structures responsible for pastoral risk management. The creation of appropriate MFA staff positions and a budget was considered by FAO/TCP to be a major requirement for effective risk management, and remains so today.

Each *aimag* also has a Food and Agriculture Office representing the central Ministry of Food and Agriculture. Its functions include encouraging households to make and store hay and other types of feed; disseminate information about protecting livestock from drought and *zud*. It coordinates emergency *otor* movements between *aimags*. It is responsible for the legal environment for leasing pastures to herders. The MFA is tasked, among other things, with rehabilitating and improving degraded pasture; improving pasture water supply; and combating rodents. MFA also has responsibilities in emergency management. But the fact that there is only one officer in MFA headquarters responsible for all these issues is a reflection of the low priority given to pasture management and risk.

Other ministries have responsibilities in the general area of pasture management. They include the Ministry of Nature and Environment (responsible for land and nature protection), the Ministry of Construction and Urban Development, and the National Agency for Meteorology, Hydrology and Environmental Monitoring. At *aimag* level, the Land Office is responsible for general land management plans and maps, the land cadastre, establishing a land database, rational use of land, protecting and rehabilitating land, regulating inter-*sum* pasture disputes, and managing inter-*sum* and inter-*aimag otor* reserves. *Aimag* land offices allocate the land within winter and spring pastures used traditionally as campsites to herder households or groups. The Agency for Land Relations, Geodesy and Cartography is also represented at *aimag* level. It is responsible for land information, pastureland monitoring, and investigating damaged land.

Managing emergencies. The National Emergency Management Agency (NEMA) was created in 2004 with UNDP support under the 2003 Disaster Management Law. It had military origins in Civil Defence but is developing a civilian mission. *Aimag* Emergency Agencies are its key operational bodies. *Aimag* Emergency Divisions, made up of heads of *aimag* authorities and herder representatives, are responsible for disaster protection. There are officers in all *aimags* and in a small number of *sums*. NEMA convenes partnership committees at all levels in ordinary periods, and ad hoc *sum* and *aimag* emergency committees during emergencies. NEMA has absorbed the former State Reserves Agency (the State Emergency Fodder Fund – SEFF) and is responsible for hay and fodder reserves in all twenty one *aimags*, with grain and fuel reserves in several as well. NEMA's responsibilities are wide reaching, covering all aspects of emergency monitoring and management. However NEMA can have no more than a coordinating function for most of its activities, and must rely on, for example, the MFA for technical interventions. As is often the case, coordination with other ministries is not easy.

National Coordinating Council on Pastureland Management. In order to provide coordination of the activities of these various Ministries, in December 2005 the government established by Prime Ministerial decree a National Coordinating Council on Pastureland Management, with a budget and work plan, as the national framework within which pastoral issues should be debated and settled. It is too soon to evaluate whether this has fully resolved the issue of ministerial coordination, but is a step in the right direction.

4.2 Institutionalising Risk Management within Local Government

FAO/TCP recommended that *sum* and *aimag* working groups on winter preparation and risk forecasting and management should be created, made up of technical officers and experienced herders appointed by the *khural*. These working groups have been created and are active. They report to the *aimag* standing emergency committee and are responsible for all risk reporting at *sum* and *aimag* level, including drafting the annual winter preparedness report and risk forecast.

These committees and the reports they prepare are the most important link in the risk management strategy. The record is mixed. CPR evaluation of 2004 plans shows that in general, committees have combined the *sum* risk management plan with pasture plans, as agreed and discussed earlier.²⁹ The plans were discussed at *sum* committee meetings and approved by the committee. *Sums* have tried to adapt the guidelines and timetable for pastoral risk management to local conditions. This is encouraging.

However:

- The plans give no precise timing for activities; timing needs to be adjusted to key risk thresholds.
- Participation of herders and other stakeholders in planning is still weak; as a result, risk management plans often fail to deal adequately with herder cooperation, group-based grazing management, and local capacity building.
- Almost all activities are shown as the responsibility of a few *sum* specialists. This suggests that risk planning is still highly centralized and lacks grassroots participation.
- Expected outcomes are not clearly described.
- Many *sums* reported that their risk management plan had been developed with outside professional advice and not by the *sum* committee itself.

All *sum* committees prepared a 2005 work plan, using the same procedures as the 2004 plan, but with additional group training in integrated risk management planning in February 2005. *Sum* land management officers, food and agricultural officers, nature and

²⁹ CPR, *Institutional Framework Approach...*

environment protection inspectors and leaders of herders' groups attended this training. It is hoped that this may start to break down departmental isolation.

The government has demonstrated its commitment to decentralise and institutionalise risk management by giving responsibility to *aimag and sum khurals* to make decisions about budget planning for risk management.

4.3 Institutionalising Risk Management among Herders

Small households on their own lack the resources to undertake all the necessary tasks - including managing land, preparing fodder, organising *otor* migrations, acquiring information - and become more vulnerable to natural risks than large households. The last decade of high *zud* risk has created a sharp increase in awareness among herders about the importance of co-operation. The FAO/TCP projects recommended the creation of herder groups as an essential part of a risk management strategy.

There has been a substantial amount of work on herder cooperation since the FAO/TCP recommendations. Most donor-funded projects have a component promoting herder groups. This work suggests that the ability of herders to manage risk can be substantially increased through collective action. Herder groups are basic natural resource management units, but their activities tend to be much wider, including management of risk.

There is already some experience of organising co-operation among herders. Work by the Centre for Policy Research shows that herders can manage risk better through collective action. Herder groups are basic natural resource management units. Land leases between herder groups and local government encourage herders to use land rationally and rehabilitate it. The lease contract strengthens existing informal grazing arrangements rather than ignoring or destroying them. Herder groups help ensure that there is widespread participation in decision making and capacity building about risk management.

Through CPR the World Bank project is supporting herder self-help groups, which the project regards as the key to successful pastoral risk management, in eight *aimags* since August 2004.³⁰ The strategy is to establish and strengthen groups above the *khot ail* level based on existing patterns of cooperation between households. The project helps such groups to legally register and open and manage a bank account. Eligible groups receive matching loans for activities associated with livestock and associated economic activities. The project aims to improve the ability of herder groups to manage pastures and risk. The project concluded:³¹

- Local government officials and herders were trained in pasture and risk management and have acquired practical skills.

³⁰ World Bank, *Household Livelihood Support ...*

³¹ CPR, *Community Mobilisation for Rangeland Management ...*, CPR, *Institutional Framework Approach...*

- The process of risk planning was incorporated into local government practice and institutional mechanisms; this will guarantee future sustainability.
- Herder groups are the primary units for managing risk and pasture; they can accomplish much themselves, but need support from the local authorities in legal and technical matters.
- The experience, skills and knowledge accumulated by local officials and herders in establishing herder groups, and managing pastoral risks, is a powerful tool for the future.
- Monitoring the management of pastoral risks is an important responsibility for *sum* authorities.
- Herder groups and NGOs supported by the project consider the process to have been innovative and successful.

CPR has assessed in detail its work to strengthen herder groups, including in particular their performance on risk management.³² The strength of cooperation between members of herder groups varies between *aimags*. Although there are many successful initiatives, there are also failures.

The number of groups is increasing and they are becoming more organised. The general level of trust among members of groups is improving. There is wider involvement of groups in joint marketing transactions and income generating activities. About three quarters of groups which received loans expanded their activities and increased their income. The identification and dissemination of best practice among herder groups in all activities, including risk management, remains a high priority. More support from *aimag* and *sum* authorities is needed for the dissemination of best practice.

CPR conducted a participatory assessment with over 80 percent of all NGOs working with the World Bank SLP project, over half of the herder cooperatives and more than a quarter of the informal groups. The assessment reached a total of 335 herder organisations.³³

The most important conclusion is that herders are already making collective decisions in a wide range of fields related to risk management. Over 40 percent of the groups surveyed had group pasture leases. Most groups are now using winter/spring pastures jointly and collaborate on grazing management based on the pasture use map, including rotational grazing, establishment of grazing reserves, hay and pasture improvement and fencing. Over a quarter had repaired or built new winter and spring shelters and enclosures, and 18 percent had rehabilitated engineered wells.

Herder groups have diversified into a wide range of additional economic activities. Over half the groups surveyed had established revolving funds with an average per group of 1.5 m. MNT, which they use as start up capital for small businesses and for the purchase of hay and animal feed.

³² CPR, *Community Mobilisation for Rangeland Management ...*

³³ CPR, *Community Mobilisation for Rangeland Management...*

A quarter of the groups had engaged in joint preparation and storage of hand-made fodder, and 13 percent in joint haymaking and marketing. This suggests both a desire for collective action for fodder preparation and storage aimed at protecting livestock from risks, but it also allows herders to compete in local fodder markets. Only three percent of groups and cooperatives had not started any cooperative activities at all at the time of the assessment.

The World Bank argues in the light of its experience that the emphasis on legal registration of formal herder groups as NGOs or cooperatives under existing legislation led in some cases to the creating of artificial groups simply to take advantage of project support. It concluded that the focus should be more on strengthening the organisational capacity of existing informal or user groups.³⁴

The conclusion is that herder cooperation is increasing in many areas through herder organisations, and that activities associated with risk management are an important part of the agenda of such groups.

4.4 Making Pastoral Risk Management Sustainable

The FAO/TCP recommendations were concerned about the sustainability of risk management systems. There are three main elements to this: (i) first, clearly identifying who is responsible for each activity in the plan; (ii) the cost of the measures proposed, and (iii) how to maintain herders' interest and participation.

Attributing responsibilities. Perhaps the most important reason why risk management planning is still weak at local level is that pasture and risk management activities are not clearly the responsibility of specific, named government officers. These activities have not yet been incorporated into the job descriptions of relevant government staff. This weakens the commitment of civil servants. There is always the danger that good initiatives will not be sustained if the necessary tasks are not institutionalised, and civil service output targets are a good way of achieving this.

In the context of its work with the World Bank, the main ministries concerned, and local government at *sum* and *aimag* level, CPR has defined pasture and risk management outputs in a form that can be easily incorporated into civil service job descriptions. The objective was to translate key risk management activities into the formal mechanisms of an output-based budgeting, reporting and performance assessment system.

Results have been encouraging. In June 2005 eight *aimag* governors ordered that this system should be adopted in all *sums*.³⁵ Pasture and risk management activities have been incorporated into the 2006 output contracts of civil servants at all levels. Outputs

³⁴ World Bank, *Project information Document (Appraisal Stage), Sustainable Livelihoods Project II, March 2007.*

³⁵ The *aimags* are Bayanhongor, Bayan-Ulgii, Dundgobi, Dornod, Uvurhangai, Umnugobi, Uvs, Tuv.

proposed by CPR for each of government bodies and categories of civil servants concerned are in Appendix 2 of this report.

Examples of risk management activities written into civil service job descriptions at *sum* level include clear targets and activities such as the following (from governors' job descriptions in 143 pilot *sums*):

“Prepare and implement an annual plan for pastoral risk management and report on final outcomes. Such plans should cover local feed production and storage, improvements in herder cooperation and scaling up collaborative actions; in animal health and herd productivity; in organization and reporting on livestock over-wintering; in use and protection of pasture and water supply”.

Sum governors' job descriptions should also specify targets for protection of poor herders from risks, including taking out livestock insurance, as well as spreading information, pasture management, including improvements in land tenure and land use, and training.³⁶

Bag governors' job descriptions contain similar activities concerning targets on risk management including preparation and approval of annual pastoral risk management plans.

The main challenge to sustainability of risk management activities is a chronic lack of finance especially at local levels. Local stakeholders have great difficulties in continuing activities started by projects. Fiscal decentralization may provide part of the answer. For example, many areas of pastureland and risk management funding should be law come from the local government budget, particularly the governor's reserve funds. The necessary funding is usually not allocated to the local government budget making it very difficult to implement relevant activities.

Costs. CPR reports that the procedures that have been developed are intended to minimize additional costs to existing services and government procedures. The most expensive part of any risk management activity is reaching herder households scattered over huge territories with poor infrastructure. The least-cost solution to this problem is to use existing quarterly *bag* meetings for all discussions with herding households on risk management activities and decisions.

Although physical attendance at *bag* meetings averages only one third of member households, the number of households receiving information and contributing to the decision rises to 90-100 percent of households if attending household report back to other households in their *khot ail* (usually made up of 2-3 households) which do not attend. Evidence from pilot *sums* suggests that when pasture and risk management issues are discussed at *bag* meetings more herders are likely to come as they think such issues are essential to their livelihoods. However current *bag* meetings are still considered quite top-down events where the information flow is usually one way: from government to herders. This contributes to low attendance.

³⁶ CPR, *Institutional Framework Approach...*

The annual risk management plan and schedule discussed above were developed in part through *bag* meetings. The process overlaps the preparation of the annual calendar of pastoral and risk management activities, and is aligned with the job descriptions of *sum* personnel. The marginal costs of developing a risk management plan can be kept small.

Maintaining herders' interest. Maintaining herders' interest and participation in risk planning is potentially a problem if there is a series of good years without major *zud* or other threat. This applies especially to the index insurance. Herders may be discouraged from buying insurance if several years go by before they get any return. This will require a sustained education, extension and capacity building effort as part of the wider training and extension efforts directed at risk management. This is discussed in more detail in the following section.

4.5 Building Capacity

The capacity building requirements for a fully operational risk and management system are substantial. They include technical specialists, equipment and budgets in the *aimag* and *sum* land offices, the *aimag* and *sum* food and agricultural offices, the *bag* governor. Capacity building will require training in financial management, as well as relevant technical issues.

Substantial capacity building has been undertaken by CPR on behalf of the World Bank and by UNDP. This includes demonstration days and replication of best experiences and practices. In order to ensure the sustainability of risk management systems put in place, training sessions were conducted on the use of output contacts at all levels in the administrative hierarchy.

Risk management councils established in 143 *sums* have been provided with clear information on pasture and risk management. In most *sums* land officers were selected as local trainers and were trained in the knowledge and skills necessary for pasture management. They in turn gave relevant training to *bags* and individual herders. A *Community-based risk and pasture management* manual designed for both local trainers and herders has been distributed to all *aimags* and *sums* providing a sustainable basis for further training.

The development of risk management has drawn attention to the urgent need for new ways of conducting a dialogue between government and herders around new methods and new technologies. At present there is almost no extension capacity in the countryside. Urgent and innovative activities like risk management, and related new directions in livestock production and marketing, need ways through which knowledge and skills can be disseminated. Both public and private sector need to be involved, although initially risk management extension should be primarily a public sector task. New models of extension, like the CPR field days, where new techniques and ideas are demonstrated in pastoral camps to an invited audience of government and donor representatives, are urgently needed. A variety of innovative approaches of this sort should be developed.

The World Bank has prepared a large number of training manuals and booklets and organised training sessions based around them. Those dealing directly with risk management include:

- *Manual for design of sum pastoral risk management contingency plan*
- *Long-term weather forecasts and early risk warning*
- *Documentation and dissemination of local best practices*
- *Hayland management*
- *Reseeding of perennial forage seeds and establishing cultivated hay*
- *The better herd the better risk mitigation*
- *Roles of herders in pastoral risk management*
- *Community-based pasture and risk management, Manual for trainers.*

5. CONCLUSIONS AND RECOMMENDATIONS

The 'pastoral risk management agenda' developed by FAO/TCP through two projects in Mongolia in the late 1990s and early 2000s has been influential in creating new policy and project approaches to risk management since then. The main risk management proposals have been adopted by government and by most subsequent large donor-funded projects in the poverty and natural resource management field, and important lessons have been learned, not so much leading to changes in the agenda itself, but to increasing sophistication in implementation.

The most important lessons, and the recommendations which flow from them, are the following:

1. Characteristics and Impact of Pastoral Risk

There are many sources of risk and uncertainty in the Mongolian pastoral economy. Economic liberalisation starting in the early 1990s shifted all risk from government to herders. The most important risks from the herders' point of view are: snow disaster (*zud* in Mongolian), which herders rank as the most serious risk and which can kill several million animals in a few weeks. Less important, but still dangerous, are: drought, predation, animal disease, animal theft, conflict over natural resources, market failure, human illness, torrential rain and floods, and bush fires. Climate change is likely to make *zud* risk worse in the future, since it will probably create a more variable climate with more severe extremes.

Zud is especially dangerous because it creates a covariate risk, one that affects all herders in a given area, thus making it difficult for herders to help each other. For that reason this report concentrates on *zud*.

Recommendation: Pastoral risks, especially *zud*, are likely to increase in severity in Mongolia. Managing pastoral risk must remain a priority task for government and civil society.

2. Herder Groups

The creation and strengthening of herder groups was identified as a key reform if risk management is to be effective. Herder groups can organise collective action and capture economies of scale not available to individual herding households. Current efforts at building field level herder institutions is going well, but needs to be extended and deepened. The current variety of organisational forms, although sometimes confusing on paper, can serve as a real life laboratory from which lessons can be drawn. This is especially important given that the widely varying ecological conditions in Mongolia make it likely that there should not be one standard type of herder association, but rather that organisational forms should be adapted to local ecological and economic circumstances. Herder groups have not yet managed to include poor households as a matter of course.

Recommendation: The focus on creating and strengthening herder institutions is correct and should be pursued as the institutional basis for pastoral risk management throughout the country. The readiness of poor households to join such institutions needs to be explored, as does the willingness of richer households to include them, and of herder associations to give them additional support.

Herders forming a group have to choose between legal forms. Currently herder groups tend to prefer to register as NGOs. NGOs are legal bodies and can enter into legal relationships with other legal bodies including the *sum* government. The weakness of the NGO format becomes evident when an organization wants to undertake a larger volume of business but cannot since they are not businesses.

Recommendation: Herder associations should be encouraged to address the issue of poverty and make the associations the main defence against impoverishment and the escape from poverty. The institutional form to be adopted should continue to be decided by the group itself.

3. Land Reform and Tenure Security

More secure land rights, especially to winter-spring pasture and camping sites, are critical to better risk management. Good progress has been made on this under the provisions of the Land Law. The assessment showed that herders recognise that possession certificates delivered some protection against overstocking and degradation of pastures, and theoretically made it possible to adjust grazing pressure to pasture carrying capacity. As a result there is increasing willingness on the part of herders to take out possession certificates (i.e. sign formal lease certificates with the *sum* government) for pastures and hayfields.

However, the legal environment is still not fully satisfactory in this area, and uncertainties persist about the status of pasture lease certificates and the relationship between them and mining permits. The MFA is drafting amendments to the existing Land Law in order to create a better legal basis for the possession of pastures by herders.

Recommendation: Current work to make the land law fully supportive of possession of hayfields, camp sites and winter-spring pastures, and to protect herders from miners, should be completed as a priority. The Ministry of Food and Agriculture's initiative to make the necessary amendments to the land law should be supported. The respective powers of *sum* and *aimag* authorities to issue different types of lease should be clarified.

4. Grazing Conflicts

Grazing conflicts between *sums* and *aimags* are increasing. The authorities should coordinate seasonal migrations so that (i) the interests of both parties are taken into account (ii) the number of animals entering is based on estimates of carrying capacities of

the pastures. This negotiation task should be taken over progressively by the relevant herder associations.

Recommendation: Sums and aimags have an important role to play in coordinating seasonal movements. This task should be taken over progressively by herder associations as they gain experience.

5. Pasture Mapping and Pasture Management

The pasture mapping and management methodology has demonstrated its utility, especially when done in collaboration with local government and in areas where land possession certificates have been issued. It is capable of being used nationally to improve the quality of management and reduce conflicts. Differences in ecology and land use mean there should not be a uniform approach to pasture management. Although the mapping approach has been widely accepted by herders and local government, there is still some resistance. This approach has so far not made possible the adjustment of livestock numbers to over-winter carrying capacity.

Recommendation: Pasture management should be directed towards recovering and sustaining traditional best practice by introducing seasonal grazing rotation and emergency reserve pastures, supported by the new tenure arrangements, especially the possession certificates for winter camp sites and winter spring pastures, discussed above. The methodology developed by CPR, which involves herders drawing pasture maps and preparing seasonal grazing plans can assist this process. National policy should also, where appropriate, encourage herders to adopt alternative strategies (fencing, improved pastures) in areas where traditional seasonal rotation of grazing is constrained for whatever reason. Extension activities are needed to make pasture management a priority for herders and local government.

6. Fodder Production

Fodder preparation by households is an important component of winter preparation and risk management. Households make hay, but on a small scale. Key issues are, first, the allocation and security of tenure of hayfields to households, and second, access to the appropriate technology - especially animal powered hay mowers and rakes. Tenure has improved and herder who wish to make hay have greater security of tenure. Access to appropriate tools is still difficult. Natural hay productivity is low, and there are few proven technologies for raising yields.

Although they exist on paper, it seems that in practice there are at present no operational emergency fodder funds. The World Bank project is exploring economic models of successful feed and fodder storage. Emergency grazing reserves are being rehabilitated.

Recommendation: Adequate animal feed stored within the household is an essential part of winter preparation. Local government must continue to issue hay land possession certificates, and ensure these give real security of tenure to their holders.

Greater efforts must be made to make available better hay making equipment, especially animal drawn mowers and rakes. World Bank efforts to develop a viable commercial model of fodder production are worth while and should be supported and extended to herders if there is a successful outcome. Present efforts to re-establish inter-*sum* and inter-*aimag* emergency grazing reserves are important and deserve support, as do efforts to create a genuine national emergency fodder fund.

7. Finance

Micro-finance has a key, but so far under-utilised, role to play in pastoral risk management. Credit is becoming much more readily available in the countryside, as a result of the spread of normal banking and savings-and-loans operations, which is preferable to dedicated pastoral credit operations. Index insurance, as currently being piloted by the World Bank, offers a radical new approach to risk management.

Recommendation: The involvement of Mongolian banks in lending to, and accepting savings deposits from, herders is a welcome initiative, which if successful will have useful lessons for other pastoral situations. The lessons of current World Bank experiments with index insurance in the livestock sector should be made available as widely as possible as soon as possible. But it will probably require at least two or three seasons work to have a reliable idea of how well it will work under normal year to year weather fluctuation. An effort may be necessary to persuade herders to continue to buy index insurance if the next two or three years have unusually mild weather.

8. Winter Preparation and Contingency Planning

Winter preparation by herders is an essential element of a risk management strategy at household level and above. Local government can support herding households in this. Experience so far with the preparation of *sum* and *aimag* level winter preparedness and reports and risk forecasts has been positive. A start has been made in preparing contingency plans in conjunction with pasture mapping and management planning. *Sum* risk management committees have taken on these tasks, and have developed detailed guidelines for the preparation of annual risk management plans.

Recommendation: Contingency planning should be carried forward rapidly in several settings in order to test its potential and refine the methodology. Regular evaluation should be made of contingency plans to share experience between different ecological and economic zones.

9. Early Warning

Current weather forecasting is of a high standard, but distribution and use by herders is not satisfactory. Attempts have been made to improve this, and the resulting bulletins were used by officials, but so far not much by herders. Little progress has been made in incorporating a wider range of indicators into a genuine early warning bulletin. Little

progress has been made on adjusting animal numbers to estimated over-winter carrying capacity.

Recommendation: Early warning is an important part of risk management, and efforts to create an effective early warning bulletin, covering weather forecasts and other indicators should be pursued. Estimating and adjusting to over-winter carrying capacity is also important, and efforts to develop an appropriate methodology for doing this should be pursued.

10. Restocking

A wide variety of restocking exercises were carried out in the wake of the bad *zuds* at the start of the 2000s, and some of these have been evaluated and their lessons tabulated. Restocking has a potentially important role to play as a part of an anti-poverty strategy. However it is only a part of such a strategy, useful in certain circumstances, not a panacea. Some form of insurance of restocked animals (whether individually or through an index insurance) is essential, otherwise restocked households risk being made destitute with large debts in the case of another *zud* during the repayment period.

Several restocking exercises carried out in this period ignored the basic lessons available from earlier experience. As a result, they were unsuccessful, and there has been a backlash against restocking. But restocking remains a powerful tool in certain well-defined circumstances, and should not be ignored.

Recommendation: Restocking should remain a potentially important intervention to assist recovery from serious disaster only in the circumstances where it is likely to be successful (which are described in the main text). The lessons from earlier restocking schemes should be made widely available and any new restocking scheme should be based on them. Adequate insurance of restocked animals is essential to protect households from being tipped into extreme poverty by *zuds* during the repayment period. In particular the evaluation conclusions on the viability of restocking should be used by micro-credit agencies who lend to herders for herd reconstitution as a guide to best practice.

11. Institutionalising Risk Management

Progress has been made in institutionalising risk management within government in a sustainable manner. Notable steps include the creation of *sum* and *aimag* working groups on risk management which bring together all the key actors including herders, and which prepare and approve local risk management and pasture plans. Good progress has also been made in writing detailed responsibilities for risk management, in the form of clearly specified outputs, into the job descriptions and civil service contracts of officials at *aimag*, *sum* and *bag* level. This is an important initiative.

Reforms at central government level have been less evident. There remain a multiplicity of Ministries with responsibilities in the risk management and wider pasture management

fields, with overlaps and disputed mandates, while the Ministry most directly responsible - Food and Agriculture – has inadequate staffing and budget for these tasks. Linkages between the activities of different Ministries are not adequately made, for example between programmes to build the capacity of herder associations and technical activities such as well drilling or repair, where the herder association might make the best manager of the well.

Lack of funding remains a constraint to putting these reforms into operation. Some form of fiscal decentralisation, including use of revenues generated from local taxes on livestock or pasture, may be one route to follow, but there are many calls on this revenue.

Recommendation: The institutionalisation of risk management into the normal operations of government especially at *aimag* and *sum* level has started and must be pursued. Writing detailed risk management activities and outputs into civil service job descriptions and contracts is a useful initiative and should be further developed.

12. Capacity Building for Risk Management

The risk management agenda introduces a simple plan to manage risk. But this will have no effect unless herders and government staff at all levels understand and trust the plan, and play their part in its implementation. There is a need to build extension capacity at *aimag* and *sum* levels to disseminate the knowledge and skills necessary in risk management.

Recommendation: Extension teams will need to be supported until civil society organisations and the private sector can provide capacity-building.

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GUIDELINES FOR PREPARING AN ANNUAL SUM RISK MANAGEMENT PLAN (Source: CPR, 2006)

One: In normal (risk free) conditions (no declarable zud, droughts and other natural calamities occurred)

	Main activities and civil servants responsible for implementation	Activities and Measures to be taken	Timing, by months (designed to fit the annual timetable of pasture and risk management)
1.1. Fodder Supply and Replenishment			
1.1.1	Soum Governor	<p>Review and amend “Soum annual risk management plan”, drafted/submitted by the agricultural officer and arrange approval by the Soum Khural of Citizens’ Representatives</p> <p>Coordinate measures on preparation, supply and re-supply of animal fodder, incorporated in the output contracts and conduct regular evaluation and monitoring</p> <p>Based on the proposals of herding households, khot ails, herders groups and organizations:</p> <ul style="list-style-type: none"> - incorporate additional activities on distribution of hayland not allocated for contracted possession and unused hayfields in soum annual land management plan and arrange approval by the Soum Khural of Citizens’ Representative - issue a decree on distribution of hayland and hayfields <p>Organize measures of preparing animal fodder to meet the subsistence feeding norms under a devise “Prepare fodder for your animals and convene the subsistent feeding norms”</p> <p>Based on the proposals of herding households, khot ails, herders groups and organizations</p> <ul style="list-style-type: none"> - take measures on finance and management of sum emergency fodder reserve (hereafter referred as fodder reserve) for storing fodder concentrates - make a decision of and organize shifting fodder from the soum reserve to bags <p>Issue a rule for managing soum emergency fodder reserve by selling/disposing fodder stored prior quality deterioration and re-fill with high quality items</p> <p>Initiate effective cooperation and partnership with relevant organizations to raise finance for preparing, reserving and re-supplying the soum emergency fodder reserve</p>	<p>XII</p> <p>annually</p> <p>VII VII</p> <p>annually</p> <p>VI IX-X</p> <p>When required</p> <p>When required</p>
1.1.2	Agricultural Officer	<p>Achieve a full realization of measures and activities on improved animal fodders supply incorporated in the output contract as responsibility of agricultural officer</p> <p>Develop a draft of soum risk management plan by compiling proposals of herding households, khot ails, herders groups and organizations, and other specific measures to be implemented by soum administration and submit it to soum Governor</p> <p>Based on proposals of herding households, khot ails and herders groups, take necessary actions to assist allocation hayland unused and not allocated for possession:</p> <ul style="list-style-type: none"> - in cooperation with soum land officer, prepare and submit to soum Governor a proposal on incorporating additional measures and activities in the existing soum land management plan and name list of users to whom hayland to be allocated - arrange official delivery of the decision of Governor to bags and officially present at bag meetings 	<p>annually</p> <p>XII</p> <p>IV-V VI</p>

		<p>Review and analyze data on preparation and supply of fodder and develop proposal on:</p> <ul style="list-style-type: none"> - organizing training in estimation of subsistence feeding norms and technologies of making various hand-made fodder and concentrates - planning measures to import of markets through estimation of demand of various animal fodder - provision of supervision of effective implementation of measures on preparation and storage of animal fodder at bags - analyzing data on preparation of animal fodder collected from bags - developing a proposal on how the fodder supply could be brought up to the pre-planned volume and plan of necessary activities, and submit to soum Governor for issuing a decision 	<p>III VI VIII-IX When required X</p>
		<p>Plan and implement measures and activities on compiling, disposal and re-filling soum emergency fodder reserves, and set up storages at bags</p> <p>In accordance of the decision of the Governor, draft measures on finance and management of the soum emergency fodder reserve – accumulation, disposal and re-fill of reserve</p> <p>Develop a rule for managing soum emergence fodder reserve and get approved by Governor</p> <p>Arrange measures to shift fodder from the soum emergency reserve to bags</p> <p>Manage/control the disposal of emergency fodder stored at bags and make final disposal report</p>	<p>VI-VII When required IX-X When required</p>
1.1.3	Bag Governor	<p>Ensure a full implementation of activities incorporated in the output contract on improved livestock fodder supply</p> <p>Collect proposals of herding households, herders’ groups, khot ails and organizations and compile as bag proposals to be incorporated in soum risk management plan:</p> <ul style="list-style-type: none"> - distribute formats to herding households, herders’ groups, khot ails and organizations - collect formats from herding households, herders’ groups, khot ails and organizations - compile as bag proposals <p>Implement measures of preparation of animal fodder:</p> <ul style="list-style-type: none"> - collect and compile proposals of herding households, herders’ groups, khot ails and organizations as bag proposals, and deliver to agricultural officer - arrange bag-level activities to promote making animal fodder using locally-available sources and field demonstration and other activities for the exchange of local best skills and experiences - organize measures to mobilize herders to shift and store hay and other fodder they prepared, to winter and spring campsites - collect and compile data on quantity of hay and other types of animal fodder prepared by bag herders, groups and organizations and deliver to agricultural officer 	
1.2. Improvement of Livestock Breed and Productive Quality			
1.2.1	Soum Governor	<p>Review and amend draft of activities on improvement of breed and productive quality of livestock to be incorporated in soum risk management plan, prepared by agricultural officer and arrange measures for immediate implementation</p> <p>Take measures to provide bag and herders with information on meat/on-the foot animal markets and fairs/shows for exchange and sell of best pedigree stock ; Ensure better services by veterinary and achieving a full implementation of three-way service</p>	

		contract
1.2.2	Agricultural Officer	Based on proposals of herding households and herders' groups, draft proposals on measures and activities on improved breed and productive quality of soum livestock herd to be incorporated in soum annual risk management plan and output contracts and submit to soum Governor Provide professional expertise on check up best stock and issuing pedigree certificates ;Plan and implement annual activities on rearing and selling/exchange of pedigree stock in soum and beyond
1.2.3	Bag Governor	Based on the decision/s by legal authorities and professional guidance/coordination of soum agricultural officer, implement measures of improvement of breed and productive quality of bag herd Organize demonstration and other activities in cooperation with owners of best stock/herds Collect and compile proposals of herding households, khot ails and herders' groups on rearing and selling/exchange of pedigree stock and deliver to agricultural officer
3. Otor and Emergency Movement		
1.3.1	Soum Governor	Incorporate in soum risk management plan and pasture use maps a scheme (drafted by agricultural officer) showing the destination areas and routes of emergency otor and movements of households and herds to evacuate out of risk-affected areas Take decisions on financing and organizing emergency otor and movements Make decisions on pre-arrangements of shifting fodder from the soum emergency fodder reserve and ensure preparations at both soum and bags
1.3.2	Agricultural officer	Arrange incorporating of a scheme showing the destination areas and routes of emergency otor and movements of households and herds out of affected areas during risk occurrence in soum risk management plan and pasture use maps Arrange preparations at bags for the emergency movements and otor and ensure better preparedness Estimate approximate demand in emergency fodder supply and draft and submit to Governor a proposal on shift fodder to otor and emergency movement areas
1.3.3	Bag Governor	Receive proposals from herding households, khot ails and herders' groups on otor/movement destinations and timing and compile into an emergency otor/movement scheme, and arrange debates at bag meeting and submit to agricultural officer Agree and arrange better preparedness with herders upon the emergency otor/movements to pre-determined destinations Discuss with herders about potential demand in emergency fodder supply and ways to shift if such fodder available and submit a proposal to agricultural officer along with approximate quantity estimates

1.4. Support and Assistance to Poor Herding Households			
1.4.1.	Soum Governor	<p>Make a decision on types, ways of delivery and sources of official and charity supports and assistances to poor herding households to be provided by soum</p> <p>Oversee delivery of assistances to poor herding households and arrange measures to self-sustaining such measures</p>	<p>VI</p> <p>When required</p>
1.4.2.	Agricultural officer	<p>Based on proposals of bags, prepare a proposal on feasible measures of supports and assistances to poor herding households and ways of delivery, and submit to Governor to be reviewed and appropriate decisions made</p> <p>Arrange and oversee/monitor the delivery of assistances to poor herding households by soum organizations, private sector and citizens</p>	<p>VI</p> <p>When necessary</p>
1.4.3.	Bag Governor	<p>Conduct surveys on vulnerable poor herding households and actual supports and assistances needed</p> <p>Collect and compile offers of other herders, organizations, private sector and citizens on potential forms and quantitative merits of helps and assistances to poor herding households and deliver to agricultural officer</p> <p>In accordance of the decision of the Governor, arrange measures of the delivery of supports and assistances to poor herding households</p>	<p>VI, X</p> <p>VI, X</p> <p>When arranged</p>

Two: Drought and Zud Risk Early Warning

	Main activities and civil servants responsible for implementation	Activities and Measures to be taken	Timing, by months
Prepare Drought and Zud Risk Early Warning			
2.1	Soum Governor	<p>Conduct risk assessment and take measures on urgent early warning as the below described situations occurred (in signs of clear and high probability of potential shocks or early stages of potential risk situations occurred):</p> <ul style="list-style-type: none"> – occurrence and spread of zud and drought risks over whole soum or territories larger than a bag is officially assessed and confirmed by competent national and aimag bodies of Emergency Management and Meteorology and Environment Assessment – occurrence of disastrous situations caused by sudden/unpredictable natural hazards over whole bag or areas larger than a bag – risks and associated hardships that are officially verified by on-ground assessments by bag and soum authorities based on information accompanied with verifiable facts that delivered by herders directly or indirectly. <p>Early warning upon potential risks and time-bound situations:</p> <ul style="list-style-type: none"> - develop a potential risk early warning - deliver and announce the early warning on potential risks and anticipated situations to bags - urgently inform/update aimag authorities and officials upon potential risks soum faces and early warning released by soum 	When necessary
2.2	Agricultural officer	<p>Take the below described measures in connection with build up of signs of potential risks and shocks:</p> <ul style="list-style-type: none"> – revise and analyze information and other facts provided by herders, bags and other potential organizations upon the probability and severity of potential risks and shocks – draft a early warning on potential risks and anticipated situations at soum and bag levels and submit to Governor <p>Through bag and other local channels, inform herders upon the early risk warning and primary activities to be taken at household level to enhance better risk preparation and preparedness</p> <p>Develop a proposal on measures to be taken at soum and other primary levels and risk-related issues to get sanctioned by aimag authorities and submit to soum Governor and arrange necessary measures</p>	When required
2.3	Bag Governor	<p>Make a urgent on-ground verification of those information delivered by herders upon risks and hardship situations that occurred over the bag territory</p> <p>Draft a bag assessment of potential risks and on-ground situations and proposal on urgent measures to be taken, and deliver to agricultural officer/soum governor</p> <p>Based on the decision of, and guidelines by Governor, take related measures at household, group and khot ail levels</p>	When required

Three: Measures to be planned and implemented over the major risk management stages during zud emergencies (approximately from Oct-Nov of the current year to the end of April of the next year)

Main activities and civil servants responsible for implementation	Measures to be taken during different stages of risk management planning		
	In clear signs of potential risk occurrence	During real risk occurrence and shocks	Recovery from risks
Fodder supply			
Soum Governor	<ul style="list-style-type: none"> Review proposal on re-supply of fodder (purchase at markets and supply on loans, etc) and make appropriate decision Plan and oversee disposal of soum emergency fodder reserve 	<ul style="list-style-type: none"> Make a decision and arrange disposal of soum fodder reserve according to the situations and needs Organize purchase of fodder from the state and aimag fodder reserves 	<ul style="list-style-type: none"> Review disposal of soum fodder reserve and take decision to settle/liquidate payment Take efficient measures to recover soum fodder supply to achieve the normal supply level (as stated in 1.1.1.4)
Agricultural officer	<ul style="list-style-type: none"> Deliver a proposal to soum governor along with estimates of potential needs of importing and re-supply of animal fodder Make a plan of distribution and transportation of fodder stored at soum reserve and at bags Conduct a survey on potential markets where various types of animal fodder can be purchased, when needed Make estimates and proposal to purchase fodder from state/aimag emergency reserves 	<ul style="list-style-type: none"> Based on the risk assessment, draft a proposal on measures on improved supply of fodder Organize and oversee distribution of fodder allocated from state and aimag emergency reserves Plan/organize and oversee distribution and urgent delivery of fodder accordingly bag proposals and current needs 	<ul style="list-style-type: none"> Estimate disposal of fodder and prepare a proposal on settling unpaid and due debts, and arrange measures for immediate settlement Prepare and submit to soum governor an aggregated proposal on measures to re-fill soum emergency fodder reserve.
Bag Governor	<ul style="list-style-type: none"> Estimate types and quantity of animal fodder to be purchased from state and aimag reserves, by households and groups DisrrIBUTE hayfields (unused and not allocated to contracted possession) to herding households and herders' groups Compile request of herders to get hayfields by bag and deliver to agricultural officer Arrange distribution of soum reserve fodder stored at bag accordingly with the decision by soum authorities 	<ul style="list-style-type: none"> Deliver bag estimates of additional supply of fodder to agricultural officer Arrange bag-level urgent activities to distribute and deliver fodder to herding households Make and deliver a report on disposal of fodder supplied through different channels 	<ul style="list-style-type: none"> Make estimates of unpaid fodder delivery and other payments due by households and submit to agricultural officer Arrange settlement/liquidate payments in accordance of the decision by soum Governor Deliver a bag proposal on improved supply, storage and distribution of animal fodder meeting the normal supply rate, developed on the basis of discussion and consultations with bag herders
Otor and Emergency Movement/Migration			
Soum Governor	<ul style="list-style-type: none"> Revise the otor and emergency movement scheme incorporated in the soum annual risk management plan (see 1.3.1.1) Issue a decree on delivery of assistance and helps to the emergency migration of herding households (including poor households) Organize migration of herds and households to 	<ul style="list-style-type: none"> Implement the decree on emergency movements/migration of herding households and otor Arrange a decree-based measures to provide assistance to herding households to move the destination areas agreed with neighbouring soums and aimags 	<ul style="list-style-type: none"> Review proposal drafted by agricultural officer and make feasible decision Provide due to support to sustaining a community-based mechanism to extend supports and assistances to emergency movements of herding households

	neighbouring soums and aimags accordingly to the agreements previously made	<ul style="list-style-type: none"> Make decision and oversee the emergency delivery of services to households migrated 	
Agricultural officer	<ul style="list-style-type: none"> Prepare a proposal to revise otor and emergency movement scheme incorporated in soum annual risk management plan (see 1.3.1) and measures on assistance with transportation and other helps to households in need Take measures to enhance preparation for the implementation of activities for otor and emergency migration of herding households within soum and beyond 	<ul style="list-style-type: none"> Provide guidance and supervision to bags towards urgent organization of emergency otor migration of herding households and otor Oversee overall progress of emergency migration and make sure if herders migrated to other aimag and soums reached the pre-determined destinations Oversee the delivery of fodder and other services to migrated herding households 	<ul style="list-style-type: none"> Review finding of surveys carried out by bags and refine important lessons for emergency management Draft a proposal on measures on improved arrangements for emergency migration and movement and submit to soum Governor
Bag Governor	<ul style="list-style-type: none"> Make a bag proposal to revise otor and emergency movement scheme incorporated in the soum annual risk management plan (see 1.3.1.) and assistances and needs to be provided by soum and submit to agricultural officer Arrange preparation by households to move designed areas specified by the decision of soum Governor Make a proposal on emergency demand of bag herders in fodder and services and submit to agricultural officer 	<ul style="list-style-type: none"> Arrange urgent migration of herders out of risk-affected areas Provide support to delivery of medical and veterinary services and other facilitations to herders 	<ul style="list-style-type: none"> Carry out questionnaire survey on benefits of measures and actions taken during the emergencies and analyze lessons learnt Prepare a proposal on measures and actions to be taken in the future and submit to agricultural officer
Protection of Productive and Pedigree Herds			
Soum Governor	<ul style="list-style-type: none"> Make decision to enhance measures of soum-initiated protection of best herds affected by risks Provide herders and livestock owners with market information on selling/exchange of pedigree animals Arrange measures with soum veterinary service to exaggerate supply of important drugs and other supplies 	<ul style="list-style-type: none"> Make a decision on allocation of fodder from soum reserve for protection of best herds as a special soum-initiated arrangements and conduct regular monitoring Oversee the fulfilment of measures to provide risk-affected households with veterinary drugs and supplies 	<ul style="list-style-type: none"> Make a decision on measures for improved protection of soum-certified best herds Assess the efficiency of measures taken by veterinary service during emergencies Implement measures for the fulfilment of three way animal health contract
Agricultural officer	<ul style="list-style-type: none"> Make record of best herd owners (households, groups and entities) to be covered by soum-initiated risk protection measures Draft a proposal on improved emergency fodder supply to the registered best herd owners and submit to Governor for immediate decision Plan key measures with soum veterinary service to exaggerate supply of important drugs and other supplies and exert regular oversight upon the fulfilment of drug supply 	<ul style="list-style-type: none"> Propose on provision of best herd owners with fodder from soum reserve Implement measures to allocate and deliver fodder to best herd owners Oversee supply of veterinary drugs 	<ul style="list-style-type: none"> Make an assessment of measures on protection of best herds using data on reduced mortality and survival rate Estimate due payment and arrange settlement
Bag Governor	<ul style="list-style-type: none"> Make a record of soum-certified best herd owners and submit to agricultural officer 	<ul style="list-style-type: none"> Arrange urgent delivery of fodder to best herd owners from soum reserve and take control on 	<ul style="list-style-type: none"> Estimate livestock mortality over pre- and post-risk periods as a key performance indicator of the

	<ul style="list-style-type: none"> Make estimates of additional needs of registered best herd owners in various types of fodder Make list of drugs needed, by revising availability and demand of important veterinary drugs and supplies 	<p>disposal</p> <ul style="list-style-type: none"> Provide soum authorities with timely information on demand in additional fodder supply Oversee the supply of veterinary drugs and delivery of timely services 	<p>fulfilment of 3 way contract</p> <ul style="list-style-type: none"> Make analyses of best herd protection measures as a performance indicator of soum-initiated actions
Special Supports and Assistancess to Poor Herding Households			
Soum Governor	<ul style="list-style-type: none"> Review the proposal prepared by agricultural officer and make relevant decision 	<ul style="list-style-type: none"> Issue a decree on the implementation of measures of moving poor herding households out the areas affected by zud 	<ul style="list-style-type: none"> Make decision on improvement of the benefits of arranging measures of emergency migration of poor herding Based on lessons learnt, make a decision to support and encourage herding communities "Assist poor herders to protect from risks"
Agricultural officer	<ul style="list-style-type: none"> On the basis of bag proposals, develop below listed proposals and submit to soum Governor: <ul style="list-style-type: none"> soum-initiated special measures for emergency migration of poor herding households allocation of fodder and other assistances from soum fodder reserve and other sources to poor households as grant and subsidized support measures with bags to arrange due preparation for provision of assistances in the framework of cooperation among herding households and launch necessary activities 	<ul style="list-style-type: none"> On the basis of bag survey, develop and submit to soum Governor, a proposal on provision of necessary supports and assistance to migration poor herding households in zud-affected areas Provide organizational support to allocation of support and helps within cooperating herding units and by soum, private sector and citizens for the migration of poor herding households out of zud affected areas 	<ul style="list-style-type: none"> Analyze benefits and lessons resulting from measures implemented to support zud-affected poor herding households Support and encourage local initiatives among herders "Herders assist herders in emergencies", "Managing emergencies and risks based on herders' cooperation and collaboration" Plan and implement measures based on herders' cooperation to reduce vulnerability of poor herding households to zud risks
Bag Governor	<ul style="list-style-type: none"> Arrange relevant activities and measures to enhance preparation and preparedness for emergency movement of poor herding households at bag level Provide agricultural officer with proposals on needs in support and assistance from soum Make a bag record of zud risk vulnerable poor herding households Investigate types and scope of assistance and helps to poor herding households by herders' groups and cooperatives in the framework of existing collaboration and other organizations and private sector Develop a bag proposal on provision of support and assistances poor herding households with fodder, transportation and other services by bag and deliver to agricultural officer 	<ul style="list-style-type: none"> Provide agricultural officer with: <ul style="list-style-type: none"> a bag proposal on first priority measures to be taken in emergencies; either to migrate herds first or move households information related to the needs of bag in means of transportation to move poor herding households out the zud areas Urgently arrange activities to provide helps and assistances by bag communities as a measure taken in the framework of bag community cooperation 	<ul style="list-style-type: none"> Implement measures that would help to reduce vulnerability of poor herding households and put the process onto a normal regime of risk management efforts

Four: Measures to be planned and implemented over the major risk management stages during drought emergencies (approximately from May to the end of September)

Main activities and civil servants responsible for implementation	Measures to be taken during different stages of risk management planning		
	In clear signs of potential risk occurrence	During real risk occurrence and shocks	Recovery from risks
Fodder supply			
Soum Governor	<ul style="list-style-type: none"> Under the general soum strategy of animal fodder production, implement measures to encourage preparation and storage of more hay and hand-made fodder and to improve water supply in areas hit by droughts Investigate existing potential of soum to re-distribute hayfields to herding households and groups in emergency areas to assist making more hay and make relevant decision if necessary Initiate a community movement to assist drought-affected herding households and groups by making hay and other types of animal fodder by soum organizations and private sector 	<ul style="list-style-type: none"> Make a drought risk assessment and inform/warn herding households, groups and entities Make additional planning to purchase more fodder from external sources in drought and post drought periods and arrange immediate actions if necessary Re-estimate the carrying capacity of pasture in non-drought affected areas and identify opportunities to bring more livestock in and plan appropriate measures <p>Make a decision in advance to distribute fodder from soum fodder reserve and other potential sources to herding households and herders' groups, which are expected to stay in drought-affected areas over the forthcoming winter and spring</p>	<ul style="list-style-type: none"> Take an assessment of the accuracy and reliability of drought risk assessment Analyze the benefits and lessons from those measures implemented in accordance of risk assessment and risk management planning Initiate effective adaptive measures towards enhanced preparation of fodder and water supply over the forthcoming winter-spring season through mobilizing resources and potentials of herders and in framework of cooperation and collaboration among herding communities
Agricultural officer	<ul style="list-style-type: none"> Make an assessment of drought by investigating herders' perceptions to initiate a periodical drought warning Plan urgent measures for migration of affected households, when needed, through careful monitoring location of individual households and number of livestock in areas potential to be hit by risks In connection with the severity of drought risks, prepare a proposal to obtain fodder from state reserves and submit to soum Governor 	<ul style="list-style-type: none"> Make drought risk assessment and prepare early warning to submit to soum Governor Prepare and submit to soum Governor a proposal to move/migrate livestock and herding households to otor and emergency migration areas Arrange measures to move/migrate herding households and livestock out of affected areas <p>In advance, prepare a plan to distribute fodder from soum fodder reserve and other potential sources to herding households and herders' groups, which are expected to stay in drought-affected areas over the forthcoming winter and spring</p>	<ul style="list-style-type: none"> Analyze benefits and lessons resulting from measures implemented at soum level Prepare a proposal for improved drought preparation and preparedness at soum level
Bag Governor	<ul style="list-style-type: none"> Provide agricultural officer with timely and regular information on location of households and number of livestock Held regular talks with herders and agree upon an ordered migration out of areas suspicious to be severely hit by droughts and inform agricultural officer 	<ul style="list-style-type: none"> In sign of increased drought severity, make a risk assessment in cooperation with bag herders and submit the findings to agricultural officer Organize urgent measures to implement the decision of soum Governor to move/migrate households and livestock to otor and emergency reserve areas Make a survey of households to remain in drought- 	<ul style="list-style-type: none"> Conduct a questionnaire survey to assess the returns of measures during drought-affected period to refine relevant lessons Strengthen cooperation and collaboration among herders towards prevention and overcoming drought-borne risks at bag level

		affected areas and prepare and submit to agricultural officer a proposal on provision of necessary assistances	
Protection of Best and Productive Herds			
Soum Governor	<ul style="list-style-type: none"> ▪ Prepare and deliver to herders recommendations on small stock mating campaign ▪ Search and provide herders with market information on purchase of alive animals and carcass meat 	<ul style="list-style-type: none"> ▪ Make a decision on protection of best herds from drought risks and implement planned measures 	<ul style="list-style-type: none"> ▪ Inform bag meeting on the results of measures implemented to protect best herds and lesson learnt ▪ Investigate herders' perception to determine potential measures and actions to be taken in the future
Agricultural officer	<ul style="list-style-type: none"> ▪ Develop soum-specific recommendations to organize campaign on mating small stock in relation to the existing drought risks and overview of severity of potential risks which may occur in the forthcoming winter-spring season ▪ Make survey of best herd owners to be covered by soum-initiated risk protection measures ▪ Estimate floor level demand of such owners in animal fodder and prepare a draft of decision to be made by soum Governor 	<ul style="list-style-type: none"> ▪ Prepare and submit to soum Governor a proposal on provision of assistance to best herd owners ▪ Arrange necessary measures to implement the decision made by soum Governor 	<ul style="list-style-type: none"> ▪ Evaluate the survival of best herders provided with special soum-initiated risk protection ▪ Make an aggregated analyses of results of measures taken to protect best herds from drought risks and refine relevant conclusions/lessons
Bag Governor	<ul style="list-style-type: none"> ▪ Make a compile of best herd owners which are to be covered by soum-specific measures of risk protection measures and submit to agricultural officer 	<ul style="list-style-type: none"> ▪ Provide agricultural officer with revised information on permanent and temporary location of herding households and herd size. ▪ Arrange and implement measures on best herd protection in the framework of the scope set by soum 	<ul style="list-style-type: none"> ▪ Collect personal views of herders regarding the measures implemented and recommendations on activities/measures to be taken in the future ▪ Determine feasible activities and works to be arranged at bag level
Otor and Emergency Movements			
Soum Governor	<ul style="list-style-type: none"> ▪ Make a decision on protection of grazing reserve (reserve pasture, otor and pre-determined reserves) and seasonal pasture (as specified in 1.3.1.), which could be potentially used during persisted droughts ▪ Make legal agreements with neighbouring aimags and soums based on precise estimates of number/species composition of herds to be migrated and approximate duration of emergency stay ▪ Make decisions on the following issues: (i) delivery of services to herders on otor and emergency migration ; (ii) provision of assistance - to poor and vulnerable households with transportation and other means of mobility 	<ul style="list-style-type: none"> ▪ Make a decision on moving households and herds to soum grazing reserves and seasonal pastures based on the estimated carrying capacity and stocking density and revised maps and emergency movement scheme developed by agricultural officer ▪ Arrange organizational measures for the migration and otor of herds in neighbouring aimags and soums ▪ Issue a decree on provision of services to migrated herders 	<ul style="list-style-type: none"> ▪ Conduct analyses of activities/measures taken by soum in drought affected season/s and disseminate to herders ▪ Plan and implement short- and midterm measures for reduction of the drought vulnerability as "Herders assist herders in emergencies", "Managing emergencies and risks based on herders' cooperation and collaboration"

Agricultural officer	<ul style="list-style-type: none"> ▪ Make an inventory of grazing reserve (reserve pasture, otor and pre-determined reserves) and seasonal pasture, which could be potentially used during droughts and revise maps (see 1.3.1.1.) ▪ Provide soum Governor with information on areas in neighbouring aimags and soums where livestock and households can be moved in ▪ Conduct a review of requests delivered by bags for assistance and helps in transportation and services and other facilities and prepare a proposal to submit to soum Governor 	<ul style="list-style-type: none"> ▪ In connection with occurrence of drought risks, make estimates and revisions and deliver to soum Governor to be made appropriate decisions on: <ul style="list-style-type: none"> - arranging emergency movement of households and herds based on existing grazing resources and seasonal pastures and water points specified in the revised map (1.3.1.1) - short-term emergency migration and otor movements to other aimags and soums ▪ implementing measures to organize emergency migration and otor to other aimags and soums in accordance with the decree of soum Government ▪ Make agreements with soum service deliverers and businesses on provide migrated herders with main services 	<ul style="list-style-type: none"> ▪ Conduct an evaluation of results of measures of emergency migration of households and herds to other aimags and herds and identify measures to be taken in the future ▪ Strengthen risk management planning based on the existing soum resources and the cooperation between herders and soum organizations, private sector and citizens
Bag Governor	<ul style="list-style-type: none"> ▪ Collect herders' requests on grazing reserves and seasonal pasture and water points to be used in droughts ▪ Prepare and submit to agricultural officer bag proposals on otor and emergency movements of households and herds to incorporate in the otor and emergency movement map ▪ Deliver bag request of transportation to move poor herding households and deliver services, to agricultural officer 	<ul style="list-style-type: none"> ▪ In accordance with the decision of soum Governor, arrange emergency and otor movements of households and herds ▪ Provide support to delivery of services to herders ▪ Organize measures within bag to provide herders with transportation for in and out emergency migration and otor movements 	<ul style="list-style-type: none"> ▪ Update herders on the results of measures implemented by bag and lessons learnt ▪ Plan and implement activities/measures at bag level integrated with the soum activities and measures through consultations with herders about existing possibilities of cooperation in emergencies
Support and Assistances to Poor Herding Households			
Soum Governor	<ul style="list-style-type: none"> ▪ Make a decision on the planning necessary measures on provision of support and assistance to poor herding households in risk-affected areas during the emergencies and forthcoming winter-spring ▪ Issue a decree on the urgent measures to allocate assistance and support to based on the information provided by agricultural officer and other sources 	<ul style="list-style-type: none"> ▪ Organize activities on realization of the planned measures to allocate necessary assistance and support to poor herding households 	<ul style="list-style-type: none"> ▪ Deliver to soum communities a full information on the benefits from measures and activities implemented to assist and support poor herding households affected by drought risks and the rate to which the poor households used/benefited from such arrangements ▪ Implement measures to stabilize/sustain the previously arranged measures on provision of assistance and support to poor herding households based on partnership, cooperation and mutual helps
Agricultural officer	<ul style="list-style-type: none"> ▪ Prepare and deliver to soum Governor a proposal on potential measures to provide assistance and supports based on the estimates and proposals by bags 	<ul style="list-style-type: none"> ▪ Consult with relevant organizations, groups, cooperatives and citizens on provision of assistances to poor herding households and launch measures on delivery of extremely needed assistances ▪ Provide stage-based organizational arrangements to the delivery of assistances in the view of build up 	<ul style="list-style-type: none"> ▪ Organize various activities such as open discussion and debates to improve the efficiency of measures and activities to help poor households and broadcast best/bad experiences and evidences/cases ▪ Prepare proposal on initiating measures to stabilize previously arranged measures on provision of

		of the risky situations and occurrence of immediate and sharp needs	assistance and support to poor herding households based on partnership, cooperation and mutual helps
Bag Governor	<ul style="list-style-type: none"> ▪ Make a list of poor herding households in drought-affected areas and those who will stay over winter and spring seasons ▪ Determine current needs of drought-affected poor herding households in assistance and supports 	<ul style="list-style-type: none"> ▪ Enhance bag-level arrangements of necessary activities and measures to deliver assistances and support to poor herding households ▪ Oversee if the assistances and helps are timely delivered to right beneficiaries 	<ul style="list-style-type: none"> ▪ Make initiatives to streamline assistances and supports provided by soum and other stakeholders to strengthen capacity of poor households to improve risk preparation and preparedness and quickest recovery from risks to bring the process back on its normal regime

1. To make this reference as a full soum annual risk management plan, other issues referring to disease, livestock thieving, predation and other measures are to be added.
2. Measures related to veterinary service should be incorporated in the annual risk management plan as they are specified in the existing rules of the delivery of veterinary services
3. Measures of combating livestock thieving and predation should be built up on feasible proposals/recommendations raised by herders (herders are expected to contribute their inputs with the filled in formats for herders' proposals) and bag, to which other activities and measures to be initiated by soum, are added.

An annual calendar of activities associated with pasture and risk management activities is also available.

Output Targets for Government Departments Relating to Pasture and Risk Management:

From CPR HLSPO final report

At aimag Level:

Clear policy targets and activities aimed at improving pastureland and risk management have been incorporated into the action plans of the Governors of the Bayanhongor, Bayan-Ulgii, Dundgobi, Dornod, Uvurhangai, Umnugobi, Uvs, Tuv aimags for the period 2004-2008.

The action plan of the Bayan-Ulgii aimag Governor has specified to:

- Improve the management of extensive livestock system, establish proper utilization procedures for pastureland, and assist in resolving grazing conflicts.
- Incorporate issues on pasture and hay land protection and recovery into an annual *sum* land management plan based on the proposals from herders and officials.

In addition, output contracts of *aimag* agricultural and land offices with the *aimag* governor include specific outputs on pastureland risk management.

At sum Level:

The specific outputs of sum officials on pastureland and risk management have been incorporated into output contracts in all aimags and sums making strong motivation for their enforcement.

Sum governors' output contracts include the following classes of outputs on risk management:

- Design, approval and implementation of annual plan of pastoral risk management and report on final outcomes.
- Feed production and storage.
- Promote herders' cooperation and scale up collaborative actions.
- Improved animal health and herd productivity.
- Improve organization and reporting on activities for livestock over wintering.
- Use and protection of pasture and water supply.
- Implement target activities for protection of poor herders from risks and delivery of livestock insurance services and information dissemination & networking.

Sum governors' output contracts include the following classes of outputs on pastureland management:

- Improve legal and institutional environment of land tenure and land use.
- Activities for improvement of pasture use and protection.
- Monitoring the implementation of the sum land management plan.
- Training and awareness building activities regarding land legislation, use and protection of pastures.

Sum land officers' output contracts include the following classes of outputs on pastureland management:

- Develop annual land management plan of the sum.
- Develop rules/guidelines to promote sustainable use and protection of pastures & hayfields.
- Possession of winter and spring camp sites and contractual use of pastures and hayfields.
- Activities to protect, improve and rehabilitate pastures & hayfields.
- Local assessment of characteristics of pasture & hayfield.
- Establish otor and other reserve pastures within bag and herders' groups.
- Combat pasture rodents and locusts.
- Utilization of unused pasture.
- Organize otor and other migrations.
- Training and awareness building.
- Conclude the implementation of a sum annual land management plan.

Sum agricultural officers' output contracts include the following classes of outputs on pastureland management:

- Activities to protect, improve and rehabilitate pastures.
- Organize collection and dissemination of best practices on use, protection, improvement and rehabilitation of pastures among herders and herders' groups.
- Combat rodents and locusts on pastures.
- Organize otors and other movements.

Sum environmental officers' output contracts include the following classes of outputs on pastureland management:

- Develop guidelines & rules to be enforced locally for the sustainable use & protection of pastures & hayfields.
- Possession of winter and spring camp sites and contractual use of pastures and hayfields.
- Activities to protect, improve and rehabilitate of pasture.

Sum agricultural officers' output contracts include the following classes of outputs on risk management:

- Develop annual sum plan of pastoral livestock risk management.
- Promote herders cooperation and scale up collaborative actions.
- Preparation, distribution and storage of hay, concentrates and hand-made feed.
- Estimate carrying capacity of winter-spring pasture and sum animal feed supply.
- Improved animal health and herd productivity.
- Improved preparation for livestock over wintering.
- Implement locally appropriate measures for reduction of exceeded carrying capacity and overstocking.
- Implement target activities for protection of poor herders from risks.
- Delivery of livestock insurance service and information dissemination & networking.
- Training, consultancy, public information dissemination and networking.
- Improve information networking on risk warning and communication.
- Report on fulfilment of sum pastoral risk management plan.

Sum land officers' output contracts include the following classes of outputs on risk management:

- Implement locally appropriate measures for reduction of exceeded carrying capacity and overstocking.
- Implement target activities for protection of poor herders from the risks.

Output contracts of sum law, taxation, treasury officers', veterinary unit and weather post, include the following classes of outputs on risk management:

- Promote and extend cooperation and collaboration of herders.
- Improve production of hay, concentrates and hand-made feed and storage.
- Improve warning and information networking.

At bag level:

Bag governors' output contracts include the following classes of outputs on risk management:

- Participate in preparation and approval of sum annual pastoral risk management plan.
- Promote cooperation and collaboration of herders.
- Preparation, distribution and storage of hay, concentrates and hand-made fodder.
- Adjust bag livestock herd to estimated carrying capacity of seasonal pasture
- Organize and report on livestock over wintering.
- Report on the fulfilment of sum pastoral risk management plan.

Bag governors' output contracts include the following classes of outputs on pastureland management:

- Develop and approve the annual land management plan of the sum.
- Possession of winter and spring camps sites and contracting pastures & hayfields to herders' groups.
- Bag assessment of the pasture & hayfield quality.
- Establish otor reserve pastures within the ?????????????????? **(Fragment Mr. Baas to conclude sentence)**
- Manage land disputes.
- Organize otors and movements.
- Training and awareness building.
- Conclude the implementation of the sum land management plan.